

# COREMEDIA CONTENT CLOUD

## Release Notes



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CoreMedia GmbH

Altes Klöpperhaus, 5. OG

Rödingsmarkt 9

20459 Hamburg

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December 08, 2023 [Release 11.2307]

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# 1. Preface

This manual contains the release notes for all *CoreMedia Content Cloud* releases. You will find the latest version of this manual at the following URL: <https://documentation.coremedia.com/cmcc-11/release-notes>.



# 1.1 Audience

This manual is intended for everyone interested in the detailed changes between *CoreMedia Content Cloud* releases. It is specifically intended for developers and operators who want to update their CoreMedia system.

# 1.2 Typographic Conventions

This manual contains different fonts and types in order to label different elements. The following table lists typographic conventions for this documentation:

Element	Typographic format	Example
Source code	Courier new	cm systeminfo
Command line entries		
Parameter and values		
Menu names and entries	Bold, linked with	Open the menu entry <b>Format Normal</b>
Field names	Italic	Enter in the field <i>Heading</i>
CoreMedia Components		The <i>CoreMedia Component</i>
Entries	In quotation marks	Enter "On"
[Simultaneously] pressed keys	Bracketed in "<>", linked with "+"	Press the keys <Ctrl>+<A>
Emphasis	Italic	It is <i>not</i> saved
Buttons	Bold, with square brackets	Click on the <b>[OK]</b> button
Glossary entry	>>-shaped icon	>> LDAP
Code lines in code examples which continue in the next line	\	cm systeminfo \ -u user

Table 1.1. Typographic conventions

## 2. Overview

*CoreMedia Content Cloud* releases have one of the following types:

- **Advanced Maintenance Pack (AMP)** contain mostly bug fixes and minor improvements. AMPs are kept free of breaking changes, meaning that projects usually have only minor upgrade work to carry out, for example merging and regression testing.
- **Advanced Enhancement Pack (AEP)** also contain bug fixes and improvements. But they also include new features and enhancements, which might be breaking. Therefore, projects are often required to carry out upgrade tasks.

The very first AEP release of a new major version (for example, CoreMedia CMS 9) that is available to all customers, is also called the **General Availability (GA)** release.

The release overview site at <https://releases.coremedia.com/cmcc-11/overview/archive.html> provides an overview of all available release versions of *CoreMedia Content Cloud*.

Subscribe to the help center at <https://support.coremedia.com/hc/en-us/sections/360005297394-CoreMedia-Content-Cloud-Self-Managed> to receive notifications about release and product announcements.

The release notes of *CoreMedia Content Cloud* are sorted by the main modules of the CoreMedia system. Each section bundles details about a number of technical components as shown in the following table:

- **CoreMedia Core:** All changes related to the CoreMedia core components.
  - Content Server
  - Workflow Server
  - Content Application Engine [CAE]
  - Content Feeder
  - Importer
  - Site Manager
  - Search Engine
  - Command Line Tools
- **CoreMedia Studio:** All changes related to *CoreMedia Studio*
- **CoreMedia Elastic Social:** All changes related to Elastic Social
- **CoreMedia Adaptive Personalization:** All changes related to Adaptive Personalization
- **CoreMedia Frontend:** All changes related to the CoreMedia Frontend Workspace.

*Release types*

*Available releases*

*Helpcenter*

*Module organization*

Templates

Bricks

Themes

- **CoreMedia Headless Server:** All changes related to CoreMedia Headless Server
- **CoreMedia Workspace:** All changes related to the CoreMedia Workspace.
- **CoreMedia Deployment:** All changes related to the CoreMedia Deployment.
- **Miscellaneous:** All changes which cannot be assigned to a specific module.

## 3. Software License Agreement Changes

This notice is to inform you of some important changes to our software license agreement, beginning with the general availability of CoreMedia Content Cloud version 10 (CMCC 10).

CMCC 10 introduces new software add-on components that require a separate license, specifically:

- CoreMedia Content Hub
- CoreMedia Experience Feedback Hub
- CoreMedia Commerce Hub

The following components require a license for CoreMedia Commerce Hub:

- CoreMedia Connector for Salesforce Commerce Cloud
- CoreMedia Connector for SAP Commerce Cloud
- CoreMedia Connector for HCL Commerce
- CoreMedia Marketing Automation Hub

The following components require a license for CoreMedia Commerce Hub:

- CoreMedia Connector for Salesforce Marketing Cloud

For more details, see the file marked Schedule 1 Product Specification CMCC.

CoreMedia plans to release more Hubs and Connectors in the future and reserves the right to amend the software license agreement with regards to these new components and connectors.

## Existing Customers

Existing CoreMedia customers may be entitled to the Commerce Hub component and connector at no additional cost. Additional connectors may need to be licensed.

A license for the first three adapters for the components Content Hub and Experience Feedback Hub is included in your existing software license agreement; additional connectors will require a license upgrade.

For full details regarding your contract please contact your CoreMedia account manager.

## 4. Release Information

This chapter contains all release notes for CoreMedia Content Cloud ordered by release version. Each release version shows the changes to its predecessor. Each subsection provides the following information:

- Notable highlights of the release.
- Breaking changes, which require action on your side. The necessary steps are described later in the upgrade section of this document.
- Changes and improvements that introduce new features or change behavior. These usually do not require any action.
- The issues that are fixed with this release.

# 4.1 Release 2307.3

The release contains:

- Breaking changes: 2
- Changes and improvements: 7
- Bugfixes: 54

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-12-08

## Breaking Changes

- CMS-21988: [The disableInheritance and defaultInheritance flags for pagegrid of non augmented categories and products work now as intended](#)
- CMS-23635: [Media hash calculation relies on configurable properties for image transformation](#)

## Changes and Improvements

- CMS-23451: [Upgrade to Solr 9.4.0](#)
- CMS-23745: [Update GraphQL-Java to 20.7](#)
- CMS-23714: [Fixed headless-server-base Dependencies](#)
- CMS-23829: [Updated CMS dependencies](#)
- CMS-23780: [Updated ESAPI](#)

## Bugfixes

- CMS-23910: [Fixed Content Feeder Bug that Causes Reindexing after Restart](#)
- CMS-23678: [Fixed Bug in Workflow Converter](#)
- CMS-23648: [Updated JSON-Java](#)
- CMS-23625: [Updated Netty](#)
- CMS-23614: [Third-Party Update: Jetty](#)
- CMS-23602: [Fixed Solr Deadlock](#)
- CMS-23597: [Ambiguous published navigation tree will be detected](#)



- CMS-12532: Studio Search and Special Characters in Prefix Queries
- CMS-23758: [Partly] Fixed Bug Where Studio Client Creation of Content Objects Took Too Long
- CMS-23730: Fixed Bug Where UUID Listeners on Studio Client Remote Beans Lead to Unnecessary Invalidations
- CMS-23600: Fixed Library Column Header Localization
- CMS-23560: Fieldlabel of BlobPropertyField
- CMS-23441: CompoundPlugin Works with Plugin Configs again
- CMS-23821: The logging of the class `org.apache.coyote.http11.Http11InputBuffer` is muted
- CMS-23659: Fixed Taxonomy Renaming
- CMS-23495: Fixed invalid comment in pom.xml
- CMS-23900: Prevent exceptions when logging resource paths
- CMS-23595: HeadlessServer: More tolerant request handling for invalid hashes on MediaController
- CMS-23913: Updated logback dependencies
- CMS-23787: Restored Missing Solr JMX MBeans
- CMS-23657: Updated Apache Tomcat

### 4.1.1 Breaking Changes

## CoreMedia Content Application Engine

The `disableInheritance` and `defaultInheritance` flags for pagegrid of non augmented categories and products work now as intended

In the pagegrid layout document the `disableInheritance` flag is used to disable the inheritance and the `defaultInheritance` flag to change the default inheritance. This feature works now also for the non-augmented commercial categories and products. This is fixed for studio, headless server and cae. To that end `com.coremedia.blueprint.base.pagegrid.ContentBackedPageGridService` is extended by following public API methods:

Follow [Section “The disableInheritance and defaultInheritance flags for pagegrid of non augmented categories and products work now as intended” \[422\]](#) for upgrade information.

*[CMS-21988]*

## CoreMedia Headless Server

### Media hash calculation relies on configurable properties for image transformation

Previously the media hash calculation for the media endpoint included all properties from site or global image transformation settings. This led to an unexpected change of the media hash, when changing non-relevant transformation properties, e.g. `minWidth`. This change introduces the application property `caas.media.hash-property-names`, which defaults to the list of these values: `"width", "height", "widthRatio", "heightRatio"`.

Follow [Section “Media hash calculation relies on configurable properties for image transformation” \[423\]](#) for upgrade information.

[CMS-23635]

## 4.1.2 Changes and Improvements

### CoreMedia Core

#### Upgrade to Solr 9.4.0

Solr has been upgraded to release 9.4.0. This release fixes several bugs and security issues and offers new features. See [https://solr.apache.org/docs/9\\_4\\_0/changes/Changes.html](https://solr.apache.org/docs/9_4_0/changes/Changes.html) for a list of changes. Alongside, a new coremedia/solr-base Docker image with tag 2.1-cm-9.4.0 was released.

Refer to previous release notes for details on how to upgrade from Solr version 8 or older [CMCC 11 2304 and prior].

With this release, configuration of a proxy in communication of clients with Solr via HTTP/2 is possible. To enable a proxy, use these new properties:

- `solr.proxy-host` : Proxy host for Solr communication.
- `solr.proxy-port` : Proxy port for Solr communication.
- `solr.proxy-is-socks4` : SOCKS 4 flag for Solr proxy. Default is `false`.
- `solr.proxy-is-secure` : Secure flag for Solr proxy. Default is `false`.

Leaving `solr.proxy-host` or `solr.proxy-port` unset, disables proxy configuration and lets the clients communicate with Solr directly. Environment variables `_HTTP_PROXY_` and `_HTTPS_PROXY_` are not evaluated and thus have no effect.

[CMS-23451]

## CoreMedia Headless Server

### Update GraphQL-Java to 20.7

Increase the GraphQL-Java version to 20.7 to get the newest bug fixes. See <https://github.com/graphql-java/graphql-java/compare/v20.4...v20.7> for a detailed comparison of the changes in GraphQL-Java. This should be non-breaking for customers.

[CMS-23745]

### Fixed headless-server-base Dependencies

Removed `headless-server-p13n` test dependency from `headless-server-base`.

[CMS-23714]

## Miscellaneous

### Updated CMS dependencies

Updated several dependency and plugin versions:

- [Commerce Client API and Mock Adapter for Commerce Hub](#) from 2.1.9 to 2.1.12
- [Adapter for SAP Commerce Cloud](#) from 2.1.7 to 2.1.9
- [Adapter for Salesforce Commerce Cloud B2C](#) from 2.1.9 to 2.1.11
- [Adapter for HCL Commerce](#) from 2.1.8 to 2.1.10
- [Bouncy Castle](#) from 1.76 to 1.77
- [gRPC-Java](#) from 1.58.0 to 1.59.1
- [Guava](#) from 32.1.2-jre to 32.1.3-jre
- [Jackson](#) from 2.15.2 to 2.15.3
- [Netty](#) from 4.1.100.Final to 4.1.101.Final
- [Protocol Buffers for Java](#) from 3.24.3 to 3.25.1
- [Spring Boot](#) from 2.7.16 to 2.7.18
- [Spring Data](#) from 2021.2.12 to 2021.2.18
- [Spring Framework](#) 5.3.30 to 5.3.31
- [Spring Security](#) from 5.8.7 to 5.8.8
- [Tomcat](#) from 9.0.82 to 9.0.83

[CMS-23829]

#### Updated ESAPI

Updated **ESAPI** from 2.4.0.0 to 2.5.2.0.

[CMS-23780]

## 4.1.3 Fixed Issues

### CoreMedia Core

#### Fixed Content Feeder Bug that Causes Reindexing after Restart

Fixed a bug in the Content Feeder, that after restart, old content events are handled once again and cause up-to-date content to be re-indexed, which may take some time. Furthermore, the bug caused the PendingEvents metric to stay at a high value until restart. The reason of this bug was that the Content Feeder has not always correctly stored the last processed timestamp in Solr.

[CMS-23910]

#### Fixed Bug in Workflow Converter

Fixed a bug in the Workflow Converter's check to detect incompatible code changes for existing workflow definitions. The bug caused workflow definitions to be treated as incompatible, even if nothing had changed. This could lead to unnecessary conversion of workflow definitions, and also delay Workflow Server startup if it's configured with `workflow.server.enable-workflow-converter=true`.

[CMS-23678]

#### Updated JSON-Java

Updated **JSON-Java** from 20230227 to 20231013

[CMS-23648]

#### Updated Netty

Updated **Netty** to 4.1.100

[CMS-23625]

#### Third-Party Update: Jetty

Jetty has been updated to version 10.0.17 [9.4.53.v20231009 for Site Manager] to avoid reported security vulnerabilities of previous versions.

[CMS-23614]

### Fixed Solr Deadlock

Solr 9 contains a bug that may cause a deadlock in rare cases, if a JMX request is received for an index that is still being created: <https://issues.apache.org/jira/browse/SOLR-17060>. Such requests may happen automatically at any time with the Prometheus JMX Exporter.

As workaround, we have disabled the problematic JMX MBean attribute `solr.<core>.INDEX.segments` in the `solr.xml` configuration file.

[CMS-23602]

### Ambiguous published navigation tree will be detected

If an already published navigation node (a page) has been moved under another node, then it was a common error that the old parent node was not also updated/published. If only the new parent node was published then suddenly there were 2 parent nodes on the live side, both of which linking to the moved child page. No validator has drawn attention to this yet.

A new Studio validator "PublishedNavigationTreeValidator" is introduced to address this issue. A warning is displayed both on the moved page and on the new parent page. It says that there is still a published parent page that should also be updated/published.

[CMS-23597]

### Studio Search and Special Characters in Prefix Queries

Fixed a bug in the Studio search functionality, that some content items were not returned for a prefix query, if the query contained special characters like dashes or slashes. This fix also affects the suggested content items for link list fields, and the suggested folders in the folder chooser.

A prefix query is a query that ends with an asterisk like "2023-04\*". Such queries can be used in the library's search view to find content items containing words that start with a given string. Suggestions for link list fields and the folder chooser use such prefix queries internally.

Previously, these queries did not return all expected results, if the query prefix contained certain special characters. This has been fixed by replacing special characters internally before sending queries to the Solr Server.

In case of unexpected problems, the old behavior can be restored by configuring the Studio Server with `studio.rest.search-service.replace-special-characters-in-prefix-or-wildcard-query=false`.

[CMS-12532]

## CoreMedia Studio Client

### [Partly] Fixed Bug Where Studio Client Creation of Content Objects Took Too Long

We fixed a bug where the creation of content [ContentImpl] objects on the Studio Client took unnecessarily long.

[CMS-23758]

### Fixed Bug Where UUID Listeners on Studio Client Remote Beans Lead to Unnecessary Invalidations

We fixed a bug where unloaded remote beans on the Studio Client were accidentally loaded on invalidation because of a "uuid" property listener.

[CMS-23730]

### Fixed Library Column Header Localization

Added missing translations for the column sorting dropdown menu.

[CMS-23600]

### Fieldlabel of BlobPropertyField

The fieldlabel of the BlobPropertyField is shown correctly now.

[CMS-23560]

### CompoundPlugin Works with Plugin Configs again

The CompoundPlugin works again when using Plugin Configs. Before, it assumed that the given `plugins` were already instantiated.

[CMS-23441]

## CoreMedia Studio Server

### The logging of the class `org.apache.coyote.http11.Http11InputBuffer` is muted

The class `org.apache.coyote.http11.Http11InputBuffer` logs - on the debug level - all requests to the Studio Server. To prevent the logging of sensitive information the logging of the class is per default muted. You have to set the log level of the class explicitly to `debug` to reverse the default.

[CMS-23821]

### Fixed Taxonomy Renaming

Fixed issue that a taxonomy document was automatically renamed when users with different Studio languages accessing it via Taxonomy Mananger.

[CMS-23659]

## CoreMedia Workspace

### Fixed invalid comment in pom.xml

Invalid comment in pom.xml has been fixed, so maven-release-plugin update-version command works.

[CMS-23495]

## CoreMedia Headless Server

### Prevent exceptions when logging resource paths

Logging resource paths with `org.springframework.core.io.Resource#getURI` can fail on Windows development environments in some cases. To prevent such exceptions, log statements have been changed to just use the implicit `toString()`.

[CMS-23900]

### HeadlessServer: More tolerant request handling for invalid hashes on MediaController

Previously the validation on the MediaController denied requests with wrong or outdated hashes. HeadlessServer now accepts requests with wrong or outdated hashes as long as the rest of the url parameters are conclusive (id, crop name, filename, width). If this is the case HeadlessServer now responds with a HTTP 301 / Moved Permanently to the correct URL of the corresponding media, instead of a HTTP 401 / Not Found.

[CMS-23595]

## Miscellaneous

### Updated logback dependencies

`ch.qos.logback:logback-core` and `ch.qos.logback:logback-classic` have been updated to 1.2.13.

[CMS-23913]

### Restored Missing Solr JMX MBeans

Fixed a bug that Solr metrics starting with "solr.jetty", "solr.jvm", and "solr.node" were missing as JMX Mbeans with Solr 9. These metrics have been re-enabled now in the solr.xml configuration file.

[CMS-23787]

### Updated Apache Tomcat

Updated [Apache Tomcat](#) to 9.0.82

[CMS-23657]



## 4.2 Release 2307.2

The release contains:

- Breaking changes: 2
- Changes and improvements: 20
- Bugfixes: 69

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-10-13

### Breaking Changes

- CMS-23472: [CKEditor 5: Simplify License Management](#)
- CMS-23320: [CKEditor 5 and CoreMedia CKEditor 5 Plugins Updated](#)

### Changes and Improvements

- CMS-23038: [Studio is showing less commerce validation issues](#)
- CMS-22884: [Provide Mapping of MIME Types for CAE Image Variant Links](#)
- CMS-23484: [Added documentation for Locale Switcher](#)
- CMS-23468: [Optimized Dashboard Requests](#)
- CMS-23181: [Added flag to disable library auto search](#)
- CMS-23039: [Removed Taxonomy User Check](#)
- CMS-23549: [Updated project dependencies](#)
- CMS-23525: [Upgraded Spring, Spring Boot and Spring Security](#)
- CMS-23324: [Updated Commerce Adapters](#)
- CMS-23314: [Improved Fragment Parameter Handling](#)
- CMS-22894: [Update Prometheus Javaagent in Java base image to version 0.19.0](#)

### Bugfixes

- CMS-23504: [Updated Jetty 9](#)
- CMS-23476: [Updated Tomcat](#)

- CMS-23311: [cm serverimport](#) flushes more often
- CMS-23303: [cm serverexport](#): Base Directory Created On Demand (Again)
- CMS-23275: Updated Spring Security to v5.8.5
- CMS-17895: Fixed a Bug in [ParameterAppendingLinkTransformer](#)
- CMS-23534: Assets can no longer be created outside the "Assets" folder
- CMS-23531: [ConfigureDocumentTypes.includeSubtypes](#) is now effective
- CMS-23530: Prevent Auto-Logout during Bulk Upload
- CMS-23462: Fixed Folder Chooser For Content Hub Import
- CMS-23323: Enabled Mouse Selection During Tree Node Renaming
- CMS-23268: Fixed Error in [SiteSelector](#) for Site-IDs with Language Tag Name
- CMS-23241: Fixed Content Selection for Starting Update Workflows in Locale Switcher
- CMS-23153: Fixed Layout of Welcome Widget
- CMS-23128: [CKEditor 4](#): Update to 4.22.1
- CMS-22916: Allow [PageGrid](#) to have no Row Widgets
- CMS-22067: Fixed Document Form Scroll Positioning
- CMS-23506: Removed redundant cycle check for "DefaultTaxonomy"
- CMS-23470: Fixed Dependencies of Blueprint Module [ec-studio-lib](#)
- CMS-23432: Issue with Rich Text Editing and Tab Reuse Fixed
- CMS-23421: Fixed duplicate forms [itemId](#) "localSettingsForm"
- CMS-23420: [studio.auto-logout.delay](#) property converts plain numbers to seconds again
- CMS-23325: Corrected File Name For Downloaded Blobs From Struct Properties
- CMS-23255: Fixed Thumbnail Images For [CMDownload](#) Content Items Where Data Is Not An Image
- CMS-23053: Taxonomy list component is cut off.
- CMS-18317: Fixed Missing Label of [StringListPropertyField](#)
- CMS-17674: Fixed [LinkList](#) Scrolling
- CMS-23309: [HeadlessServer](#): Prevent potential (but unlikely) NPE in [ResponsiveMediaHashCodeKey](#)
- CMS-23341: Documented "maxFileSize" Setting

## 4.2.1 Breaking Changes

### CoreMedia Studio Client

#### CKEditor 5: Simplify License Management

The license management for CKEditor 5 has been simplified by extracting the `licenseKey` configuration into an extra sidecar file `ckeditor5License.ts`.

Follow [Section “CKEditor 5: Simplify License Management” \[424\]](#) for upgrade information.

[CMS-23472]

#### CKEditor 5 and CoreMedia CKEditor 5 Plugins Updated

CKEditor 5 has been updated to version 39.0.2 and CoreMedia's CKEditor 5 Plugins have been updated to version 16.0.0.

Follow [Section “CKEditor 5 and CoreMedia CKEditor 5 Plugins Updated” \[424\]](#) for upgrade information.

[CMS-23320]

## 4.2.2 Changes and Improvements

### CoreMedia Core

#### Studio is showing less commerce validation issues

Studio search can display commerce related validation issues, e.g if an augmented category cannot be found in the catalog. In the past, however, the studio showed a lot of errors if the commerce system was temporarily not available. Practically each commerce related content item (e.g. augmented categories, products, product teasers, product lists) appeared in the list as “invalid commerce id” issues. Now connectivity issues of the commerce adapter with the commerce system are recognized and no content issues are created. This feature requires a commerce adapter with a base adapter of at least version 2.2.x, because it propagates the gRPC response status UNAVAILABLE in case of connectivity issues with the commerce system.

[CMS-23038]

## CoreMedia Content Application Engine

### Provide Mapping of MIME Types for CAE Image Variant Links

When building links to image variants in the CAE, the MIME type of the original image is used by default to determine the file extension of the links. To adjust these MIME types you can now provide a mapping of original MIME types to desired MIME types in the setting `linkMimeTypeMapping`. For details see section "Images" below "Website Management" in the Blueprint Developer Manual.

[CMS-22884]

## CoreMedia Studio Client

### Added documentation for Locale Switcher

The Locale Switcher provides some configuration flags that have been documented in the Studio developer manual.

[CMS-23484]

### Optimized Dashboard Requests

Fixed issue that the initial dashboard loading executed Solr requests twice for every search widget.

[CMS-23468]

### Added flag to disable library auto search

The configuration flag `_CollectionViewBase.GLOBAL_SEARCH_FALLBACK_ENABLED_` can be set to false if the extended search for empty results in the library should be disabled.

[CMS-23181]

### Removed Taxonomy User Check

The check wasn't anymore but there were remaing code snippets and also some documentation which has not been removed properly.

[CMS-23039]

## Miscellaneous

### Updated project dependencies

Updated several dependency and plugin versions:

## Release Information | Changes and Improvements

- [Apache Commons Compress](#) from 1.22 to 1.24.0
- [Bouncy Castle for JDK 1.8 and up](#) from 1.75 to 1.76
- [FasterXML Jackson](#) from 2.15.0 to 2.15.2
- [gRPC-Java](#) from 1.57.2 to 1.58.0
- [Guava](#) from 32.0.1 to 32.1.2
- [Jetty](#) from 10.0.15 to 10.0.16
- [Micrometer](#) from 1.10.7 to 1.10.11
- [Netty](#) from 4.1.94 to 4.1.98
- [OWASP Dependency-Check Maven Plugin](#) from 8.1.2 to 8.4.0
- [Protocol Buffers for Java](#) from 3.22.3 to 3.24.3
- [SnakeYAML](#) from 1.33 to 2.2

[CMS-23549]

### Upgraded Spring, Spring Boot and Spring Security

Updated the following dependencies

- Spring Framework from 5.3.27 to 5.3.30 - see [Spring Framework Releases](#)
- Spring Boot from 2.7.12 to 2.7.16 - see [Spring Boot Releases](#)
- Spring Security from 5.8.5 to 5.8.7 - see [Spring Security Releases](#)

[CMS-23525]

Update Nginx Base Image to 1.2-cm-1.25-alpine

[CMS-23511]

### Updated Commerce Adapters

Updated commerce adapters and commerce client API to their latest versions:

- [Commerce Client API and Mock Adapter for Commerce Hub](#) 2.1.9
- [Adapter for SAP Commerce Cloud](#) 2.1.7
- [Adapter for Salesforce Commerce Cloud B2C](#) 2.1.9
- [Adapter for HCL Commerce](#) 2.1.8

[CMS-23324]

### Improved Fragment Parameter Handling

Fragment parameters 'externalId' and 'parameters' were expected to be encoded twice so that encoded slashes were not rejected by spring MVC. These fragment parameters may now be URL encoded one or two times.

[CMS-23314]

Update Prometheus Javaagent in Java base image to version 0.19.0

A v a i l a b l e w i t h  
<https://github.com/coremedia-contributions/docker.java-application-base/releases/tag/1.3.0-cm-11.0.19>

[CMS-22894]

## 4.2.3 Fixed Issues

### CoreMedia Core

#### Updated Jetty 9

Updated **Jetty 9** from 9.4.51 to 9.4.52

[CMS-23504]

#### Updated Tomcat

U p d a t e d T o m c a t t o 9 . 0 . 8 0 , s e e  
<https://tomcat.apache.org/tomcat-9.0-doc/changelog.html> for more information.

[CMS-23476]

#### **cm serverimport** flushes more often

Especially when importing huge content-sets in a multi-site environment, you may have observed out-of-memory-errors.

To reduce the memory consumption, an internal optimization has been applied to **cm serverimport**, so that it flushes changes more often to the server while updating the imported content.

[CMS-23311]

#### **cm serverexport**: Base Directory Created On Demand (Again)

Since several releases, when invoking **cm serverexport** given a base-directory that does not exist yet, no exported contents were available afterward (but **server export** reported successful export).

This has been fixed. The folder is now created on demand again, if not yet existing.

[CMS-23303]

# CoreMedia Content Application Engine

## Updated Spring Security to v5.8.5

Updated Spring Security to version 5.8.5 to prevent potential CVEs for customers using Spring WebFlux

[CMS-23275]

## Fixed a Bug in ParameterAppendingLinkTransformer

The CAE util class `com.coremedia.objectserver.web.links.ParameterAppendingLinkTransformer` did not respect anchor links in source URLs in all prior releases. It now ensures that parameters are only appended to the [ *query* part of a URI] <https://datatracker.ietf.org/doc/html/rfc3986#section-3.4> .

[CMS-17895]

# CoreMedia Studio Client

## Assets can no longer be created outside the "Assets" folder

Asset Management establishes an "Assets" folder that is shown as a new top-level folder in the library. The Asset Management Studio Plugin is supposed to prevent the user from creating assets outside of this "Assets" folder. However, a bug [CMS 23531] broke this feature: "Document Asset", "Picture Asset", and "Video Asset" can still be created anywhere, i.e. they still appear in the "Create new content" drop-down, even if some folder that is not below the "Asset" root folder is selected. Now that the bug is fixed, the intended behavior is restored. If you prefer to still allow users to create Asset documents anywhere, you can *restore the old behavior* by removing the following lines in `AMStudioPlugin.ts`,

```
new ConfigureDocumentTypes({
    names: AssetConstants.DOCTYPE_ASSET,
    includeSubtypes: true,
    mayCreate: AMStudioPluginBase.mayCreate,
}),
```

If you want, you can then also remove the now unused method `AMStudioPluginBase.mayCreate` .

[CMS-23534]

## ConfigureDocumentTypes.includeSubtypes is now effective

Setting the flag `includeSubtypes` of `ConfigureDocumentTypes` did not have the intended effect as described in its documentation:

Used for the 'mayCreate' function: if true, the mayCreate function will be evaluated for subtypes too.

Note that all Studio plugins that use `includeSubtypes: true` now behave as intended, which may lead to less document types being offered for creation, as specified by their `mayCreate` function.

[CMS-23531]

### Prevent Auto-Logout during Bulk Upload

While bulk uploads are active, Studio now prevents auto-logout, which could interrupt uploads.

[CMS-23530]

### Fixed Folder Chooser For Content Hub Import

Fixed issues with the default folder initialization of the Content Hub import dialog. The defaults from the content creation settings are now applied.

[CMS-23462]

### Enabled Mouse Selection During Tree Node Renaming

Fixed an issue where the library tree node text was not selectable during renaming via mouse pointer.

[CMS-23323]

### Fixed Error in SiteSelector for Site-IDs with Language Tag Name

Fixed an issue where when the id of a site was the value of a language tag (e.g. "de"), the site selector did not work anymore.

[CMS-23268]

### Fixed Content Selection for Starting Update Workflows in Locale Switcher

When a content was selected for updating via the locale switcher, the workflow dialog was always opened with the root content of the site hierarchy, not the content that needs the update.

[CMS-23241]

### Fixed Layout of Welcome Widget

Improved layout of the Welcome Widget that got broken when the Studio's browser window got too small. Please note that component may still get cut off when the screen is too small, but this bugfix improves the overall layout and usage of the existing space inside this widget.

[CMS-23153]



### CKEditor 4: Update to 4.22.1

CKEditor 4 has been updated to 4.22.1.

For an overview of changes, consult the [CKEditor 4 release notes](#).

While in CoreMedia Blueprint, no adaptations had to be applied using the new CKEditor 4 version, your adaptations may be affected (or benefit) from applied changes.

For detailed information, you may want to take a look at these release notes:

- [CKEditor 4.19.1](#)
- [CKEditor 4.20.0](#)
- [CKEditor 4.20.1](#)
- [CKEditor 4.20.2](#)
- [CKEditor 4.21.0](#)
- [CKEditor 4.22.0 / 4.22.1](#)

[CMS-23128]

### Allow PageGrid to have no Row Widgets

The expand/collapse button is gone now if the page grid is configured with no row widgets.

[CMS-22916]

### Fixed Document Form Scroll Positioning

Fixed the correct scroll position restoring for tab reuse.

[CMS-22067]

## CoreMedia Studio Server

### Removed redundant cycle check for "DefaultTaxonomy"

The "DefaultTaxonomy" implementation contained an additional check inside the path calculation. For large amounts of taxonomies, this lead to performance issues. Since the check is already part of the "parent" calculation, this redundant and expensive check has been removed.

[CMS-23506]

### Fixed Dependencies of Blueprint Module `ec-studio-lib`

Moved code related to augmentation of commerce objects from `ec-studio-lib` to `lc-studio-lib` so that `ec-studio-lib` no longer depends on `com.coremedia.blueprint.base:bpbase-lc-augmentation`.

[CMS-23470]

### Issue with Rich Text Editing and Tab Reuse Fixed

An issue with the CKEditor 5, where the editor would end up in an unresponsive state regarding the CoreMedia Studio integration (such as auto-checkout), was fixed. This issue occurred while changing tabs with editors, containing the same rich text content.

[CMS-23432]

### Fixed duplicate forms itemId "localSettingsForm"

The document sub-form "MiscSettingsForm" has now it's own itemId called "miscSettingsForm".

[CMS-23421]

### studio.auto-logout.delay property converts plain numbers to seconds again

With the release of 2304.1 a bug around the conversion of numbers of the studio.auto-logout.delay property was introduced. Since then, when a plain number was specified for this property, it was interpreted as milliseconds instead of seconds. This bug is now fixed. A number will from now on forward be interpreted as seconds again. In case you changed a number for that property to milliseconds, convert it back to seconds, or specify the delay in ISO-8601 standard.

[CMS-23420]

### Corrected File Name For Downloaded Blobs From Struct Properties

Blobs downloaded from struct sub-properties now have the correct file name in the Content-Disposition-Header with correct file name ending.

[CMS-23325]

### Fixed Thumbnail Images For CMDownload Content Items Where Data Is Not An Image

We fixed a bug where the new picture resolving mechanism displayed broken thumbnails for content items where non-image blobs where resolved.

[CMS-23255]

### Taxonomy list component is cut off.

Possibly miscalculated height on taxonomy list component fixed.

[CMS-23053]

### Fixed Missing Label of StringListPropertyField

Changed base class of StringListPropertyField so that the property field label is shown.

[CMS-18317]

### Fixed LinkList Scrolling

Fixed issue with LinkList scrolling caused by tab reuse.

[CMS-17674]

## CoreMedia Headless Server

### HeadlessServer: Prevent potential [but unlikely] NPE in ResponsiveMediaHashCacheKey

A potential but highly unlikely `NullPointerException` in `ResponsiveMediaHashCacheKey` is now prevented.

[CMS-23309]

## CoreMedia Documentation

### Documented "maxFileSize" Setting

Added the missing "maxFileSize" setting for the uploads settings to the documentation and to the demo content.

[CMS-23341]

## 4.3 Release 2307.1

The release contains:

- Breaking changes: 12
- Changes and improvements: 41
- Bugfixes: 74

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-07-31

### Breaking Changes

- CMS-23131: [CAE Feeder Database Locking Changes](#)
- CMS-22658: [Upgrade to Solr 9](#)
- CMS-20035: [New Recommended Final Action For Localization Workflows: CleanIn-TranslationFinalAction](#)
- CMS-17737: [Public API Changes in LdapAuthProvider](#)
- CMS-22955: [Enhanced JooUnit Tests](#)
- CMS-17400: [Studio Spring Security Configuration Rework](#)
- CMS-6760: [Livecontext Services API Changes](#)
- CMS-6742: [Cleanup Up Package com.coremedia.blueprint.base.livecontext.util](#)
- CMS-22895: [Security fix: Refactor instantiation of Snakeyaml and prepare update to Snakeyaml 2.0](#)
- CMS-23163: [Update of maven-surefire-plugin, maven-failsafe-plugin and junit-bom](#)
- CMS-16541: [Migration of Component XML and Properties Files to Spring Boot AutoConfigurations](#)
- CMS-23344: [Feedback Hub Compatibility Issue](#)

### Changes and Improvements

- CMS-23084: [Third-Party Update: Apache Tika and Transitive Dependencies](#)
- CMS-23186: [Optimized Spring Prototype Bean Creation](#)
- CMS-22596: [Layout paths can be configured in CommerceAugmentedPageGridForm](#)

- CMS-21515: No Switch Back To ExtJs Drag Drop Any Longer
- CMS-23277: Upgraded pnpm to 8.6.9
- CMS-22888: Provide ARM build support
- CMS-14144: Added Note in Documentation
- CMS-23200: 3rd Party Library Update of GraphQL-Java and Extended Scalars
- CMS-23179: HeadlessServer 3rd Party Library Update for Maintenance

## Bugfixes

- CMS-23203: Banned Dependency: net.sf.jtidy:jtidy
- CMS-23169: Removed transitive dependency snappy-java
- CMS-21419: Removal of Elastic Social models from search index
- CMS-23075: Blanks between inline tags are not swallowed anymore
- CMS-23260: Removed transitive dependency to vm2
- CMS-23197: TeaserText Delegate does not work if section is initially collapsed.
- CMS-23142: Fixed: Concurrent editing breaks CKEditor autosave
- CMS-23115: More robust layout resolving for commerce categories
- CMS-23095: Fixed Struct Editor Performance Problem With Long Struct Lists
- CMS-23071: Fixed Taxonomy Node Readonly State in LinkLists
- CMS-23054: Fixed "mimeType" parameter of BlobPropertyEditor
- CMS-23036: Finished Workflows Now Always Show in Content App Sidebar
- CMS-22990: Missing CKEditor Styles for TeaserOverlay if CKE4 is disabled
- CMS-22904: Fixed Library Column Header Localization
- CMS-22485: Content Issue Text
- CMS-19467: Fixed Accidental Folder Creation on DoubleClick
- CMS-23170: XLIFF Upload in Studio: Case-Insensitive
- CMS-23155: Improved Performance of Taxonomy Path Calculation
- CMS-23077: Fixed German Translation of "May"
- CMS-22950: Optimized Taxonomy Search
- CMS-14582: ComboBoxes No Longer get Accidentally Enabled After Studio Tab Reuse
- CMS-23157: Updated Bouncy Castle to fix CVE-2023-33201
- CMS-23146: Updated project dependencies to fix reported CVEs
- CMS-23120: Updated Janino Compiler

- [CMS-23068: Updated Spring Boot and transitive dependencies](#)
- [CMS-22543: Fixed Workflow Steps Dialog Height](#)

## 4.3.1 Breaking Changes

### CoreMedia Core

#### CAE Feeder Database Locking Changes

The *CAE Feeder* stores information in the database table `pclocks` to detect configuration errors, where another application unexpectedly uses the same database schema. The implementation of this check and the database table definition has changed with the new release. The database table is automatically adapted. No additional action is required. However please note, that it is not possible to start a CAE Feeder of a previous release on the database after the new CAE Feeder has adapted the database tables.

[CMS-23131]

#### Upgrade to Solr 9

The search engine was updated from Solr 8.11.2 to Solr 9.2.1. Alongside, a new *core-media/solr-base* Docker image with tag 2.0-cm-9.2.1 was released.

Follow [Section “Upgrade to Solr 9” \[427\]](#) for upgrade information.

[CMS-22658]

#### New Recommended Final Action For Localization Workflows: `CleanInTranslationFinalAction`

For all localization workflows, we offer a new `FinalAction` for cleaning up the *in-translation* state for involved contents early, thus, earlier than done by `CleanInTranslation` scheduled task.

Follow [Section “New Recommended Final Action For Localization Workflows: CleanInTranslationFinalAction” \[428\]](#) for upgrade information.

[CMS-20035]

#### Public API Changes in `LdapUserProvider`

The internal caching of the `LdapUserProvider` had a major design issue and has therefore been reimplemented. It is now based on Caffeine Cache. The reimplementation implied some changes of the public API:

Follow [Section “Public API Changes in LdapUserProvider” \[430\]](#) for upgrade information.

[CMS-17737]

## CoreMedia Studio Client

### Enhanced JooUnit Tests

In all JooUnit tests, the following two refactorings have been applied to improve readability:

Follow [Section “Enhanced JooUnit Tests” \[431\]](#) for upgrade information.

*[CMS-22955]*

## CoreMedia Studio Server

### Studio Spring Security Configuration Rework

The Spring Security configuration in the studio server has been simplified and improved for easier customization. The module `editing-rest-security-component` has been merged into the module `editing-rest-security`. The Configuration classes `EditingRestSecurityBaseConfiguration` and `EditingRestSecurityAutoConfiguration` have been moved from package `com.coremedia.springframework.component.security` to `com.coremedia.rest.security.config`. The unused classes `SimpleLogoutAccessDeniedHandler` and `SimpleUrlAccessDeniedHandler.java` have been removed. The section “Single Sign On Integration” in the Studio Developer Manual has been adjusted.

Follow [Section “Studio Spring Security Configuration Rework” \[432\]](#) for upgrade information.

*[CMS-17400]*

## CoreMedia Commerce Hub

### Livecontext Services API Changes

Blueprint used private API in a few places related to Livecontext implementation. To fix this situation, the new public API packages `com.coremedia.blueprint.base.livecontext.augmentation.config` and `com.coremedia.blueprint.base.livecontext.augmentation.tree` have been introduced while `META-INF/coremedia/lc-services.xml` of module `lc-services-lib` has been deleted.

Follow [Section “Livecontext Services API Changes” \[432\]](#) for upgrade information.

*[CMS-6760]*

### Cleanup Up Package `com.coremedia.blueprint.base.livecontext.util`

The formerly private API package `com.coremedia.blueprint.base.livecontext.util` was added to public API. In that course, class `com.coremedia.blueprint.base.livecontext.util.LocaleHelper` was moved to package `com.coremedia.livecontext.asset` of module `lc-asset-cae-component` and class `com.coremedia.blueprint.base.livecontext.util.CommerceSettingsCatalogConfigListCacheKey` has been removed.

[CMS-6742]

## CoreMedia Headless Server

### Security fix: Refactor instantiation of Snakeyaml and prepare update to Snakeyaml 2.0

This is a change in order to be prepared for upcoming updates in SpringBoot, which will use Snakeyaml version 2.0!

Follow [Section "Security fix: Refactor instantiation of Snakeyaml and prepare update to Snakeyaml 2.0" \[433\]](#) for upgrade information.

[CMS-22895]

## Miscellaneous

### Update of maven-surefire-plugin, maven-failsafe-plugin and junit-bom

The following dependencies have been updated:

Follow [Section "Update of maven-surefire-plugin, maven-failsafe-plugin and junit-bom" \[434\]](#) for upgrade information.

[CMS-23163]

### Migration of Component XML and Properties Files to Spring Boot AutoConfigurations

In our efforts to reduce technical debt, former `component-\*.xml` and `component-\*.properties` files were renamed and are now being imported in Spring Boot AutoConfigurations in the same module instead.

Follow [Section "Migration of Component XML and Properties Files to Spring Boot AutoConfigurations" \[434\]](#) for upgrade information.

[CMS-16541]



### Feedback Hub Compatibility Issue

For Feedback Hub plugins that used the non-public API class *BindingLookup*, an update is required since the constructor of the class has changed.

[CMS-23344]

## 4.3.2 Changes and Improvements

### CoreMedia Core

#### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.8.0. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika.

Updated dependencies:

- Apache Tika 2.8.0
- Apache Commons CSV 1.10.0
- ASM 9.5
- Jackson 2.15.0
- PDFBox 2.0.28
- Rome 1.19.0

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-23084]

### CoreMedia Content Application Engine

#### Optimized Spring Prototype Bean Creation

Spring prototype beans such as `cmpage` may have lead to lock contention because of Spring's internal dependency lookup. The beans have been refactored so that the dependencies are resolved at application startup time.

[CMS-23186]

## CoreMedia Studio Client

### Layout paths can be configured in CommerceAugmentedPageGridForm

Configuration option "layoutPaths" added to CommerceAugmentedPageGridFormConfig, that is passed on to PageGridPropertyField (which already supports it), so customers can more easily adjust their forms to use dedicated layoutPaths for Augmented Categories - without needing to modify or copy Blueprint code.

[CMS-22596]

### No Switch Back To ExtJs Drag Drop Any Longer

There still was a CM10 backwards compatibility switch in play that switched from HTML5 drag/drop to ExtJs drag/drop when only Studio App was present (e.g. when you removed the Workflow App). This switch was removed, not least because the CKEditor 5 only works with HTML5 drag / drop.

[CMS-21515]

## CoreMedia Frontend Workspace

### Upgraded pnpm to 8.6.9

All packages in frontend workspace and studio-client now require at least pnpm 8.6.9. Also all minor versions of dependencies in the frontend workspace, including jQuery to v3.7.0, has been updated.

[CMS-23277]

## CoreMedia Deployment

### Provide ARM build support

With this change, the Studio Client image can be build natively on ARM. There is currently no base-image available from the CoreMedia DockerHub registry but if you manage your NginX base images yourself, you can set the following Docker buildx build argument to build on ARM.

```
APPLICATION_BASE_IMAGE=nginx:stable-alpine3.17
```

In addition to the Studio Client build, the Docker Compose setup has been restuctured slightly:

- the mysql and mongo images are no longer build during the compose setup, instead the default images from dockerhub are being used and config is mounted.

- the nginx base image for the overview container is now configurable

To make use of the local ARM containers, add the following environment variable to your `.env` file in the workspace:

```
NGINX_BASE_IMAGE=nginx:stable-alpine3.17
```

To build CoreMedia Java based applications for ARM, you will have to wait until the `coremedia/java-application-base` and the `coremedia/solr-base` images on DockerHub have images for ARM as well.

[CMS-22888]

## CoreMedia Commerce Hub

### Added Note in Documentation

Added note to Studio User Manual regarding IPTC metadata extraction.

[CMS-14144]

## CoreMedia Headless Server

### 3rd Party Library Update of GraphQL-Java and Extended Scalars

For maintenance and in order to prevent potential security issues the 3rd party library `com.graphql-java:graphql-java` was updated from version 19.x to 20.4 and `com.graphql-java:graphql-java-extended-scalars` from version 19.x to 20.2.

For details about the updates please see the original release notes:

- <https://github.com/graphql-java/graphql-java/releases>
- <https://github.com/graphql-java/graphql-java-extended-scalars/releases>

[CMS-23200]

### HeadlessServer 3rd Party Library Update for Maintenance

The following libraries were updated for maintenance reasons:

- Spring Boot from 2.7.12 to 2.7.13
- `com.schibsted.spt.data:jslt` from 0.1.11 to 0.1.14
- `org.glassfish:javax.json` from 1.1 to 1.1.4
- `io.rest-assured:rest-assured` and `io.rest-assured:spring-web-test-client` (unit testing) from 5.0.1 to 5.3.1

- `org.hamcrest:hamcrest` (unit testing) from 2.1 to 2.2

[CMS-23179]

## 4.3.3 Fixed Issues

### CoreMedia Core

#### Banned Dependency: `net.sf.jtidy:jtidy`

`pkg:maven/net.sf.jtidy:jtidy@r938` is affected by `CVE-2023-34623`, a possible denial-of-service (DoS) attack with deeply nested DOM structures.

We validated that the deprecated CoreMedia Site Manager application is affected, as soon as authorized editors or services add rich text documents containing deeply nested DOM nodes.

As only the deprecated application is affected, which is only open for administrative usage, we took the following countermeasures:

- We banned `net.sf.jtidy:jtidy` as dependency on global scope.
- We only allowed `net.sf.jtidy:jtidy` for modules having `com.coremedia.blueprint:site-manager.blueprint-parent` as parent by configuring corresponding `bannedDependenciesIncludes` property.

If your Blueprint customizations are affected by this change, you have the following options:

- Include the banned dependency for your module by corresponding configuration.
- Evaluate, if `com.github.jtidy:jtidy` is suitable for your needs. According to the release notes, it resolves `CVE-2023-34623` with 1.0.4 and introduced HTML5-support with previous version 1.0.3.

[CMS-23203]

#### Removed transitive dependency `snappy-java`

`snappy-java` is a dependency of Zookeeper, which is used by Solr for SolrCloud. It's not used for the Solr standalone or Solr Leader/Follower setup. The latter is used in CMCC/S, hence it's not actually needed and was removed to avoid (false-positive) CVE reports for that dependency.

[CMS-23169]

### Removal of Elastic Social models from search index

Models are now removed from the search index, if `Model#remove()` is invoked and a corresponding search index exists.

[CMS-21419]

## CoreMedia Content Application Engine

### Blanks between inline tags are not swallowed anymore

The ParagraphHelper doesn't swallow blanks between inline tags in CoreMedia Richtext anymore.

[CMS-23075]

## CoreMedia Studio Client

### Removed transitive dependency to vm2

Removed transitive dependency to (recently) deprecated "vm2" to resolve CVE-2023-37466. "vm2" was utilized as a transitive dependency coming from "proxy-agent" and its sub packages which from studio-client side is utilized to download plugins during studio-client build. Currently, no information regarding "proxy-agent" and CVE-2023-37466 is available. As it was used by the functionality utilizing PAC files for proxy configuration and we are not exposing any configuration options for PAC files we assume that this issue does not affect us.

[CMS-23260]

### TeaserText Delegate does not work if section is initially collapsed.

There was a bug in the `CKEditor5RichTextFieldDelegatePlugin` which would prevent delegation from working properly when the editor was not ready when the plugin got initialized. This issue is now resolved.

[CMS-23197]

### Fixed: Concurrent editing breaks CKEditor autosave

The CKEditor5RichTextArea's save callback would not resolve properly if the editor is (or was) in readonly mode. This issue is now resolved.

[CMS-23142]

### More robust layout resolving for commerce categories

There is a pitfall in the commerce integration, the root category of a commerce catalog must be augmented. If not, there are some obscure errors when resolving the page layout for commerce pages [augmented categories and products]. The resolving is more

robust now. If the root category is not augmented by mistake you will see a warning in the browser console log.

[CMS-23115]

### Fixed Struct Editor Performance Problem With Long Struct Lists

We fixed an issue where the Struct Editor was hardly usable when there were long struct lists in play (over 1000 list elements).

[CMS-23095]

### Fixed Taxonomy Node Readonly State in LinkLists

Checked-out taxonomy nodes have been rendered as "Element not visible". These nodes are now rendered as regular ones, since the checked-out state does not affect the link list editing here.

[CMS-23071]

### Fixed "mimeType" parameter of BlobPropertyEditor

The property should filter the type of files that are allowed for uploading, but did break the editor after file selection. The parameter can now be used again.

[CMS-23054]

### Finished Workflows Now Always Show in Content App Sidebar

We fixed a bug where finished workflows were not always correctly displayed in the Content App Sidebar.

[CMS-23036]

### Missing CKEditor Styles for TeaserOverlay if CKE4 is disabled

TeaserOverlay styles are fixed when CKEditor 4 is disabled

[CMS-22990]

### Fixed Library Column Header Localization

Added translations for "Columns", "Sort Ascending" and "Sort Descending".

[CMS-22904]

### Content Issue Text

A content issue sometimes contained the text "Element not visible" although the referenced content is visible to the user. This is fixed now.

[CMS-22485]

### Fixed Accidental Folder Creation on DoubleClick

Fixed an issue that under some circumstance a new folder creation was triggered by a doubleclick when the library was busy with other stuff.

[CMS-19467]

## CoreMedia Studio Server

### XLIFF Upload in Studio: Case-Insensitive

XLIFF-Upload in Studio did not have worked as expected if file extensions [ `.xliFF` , `.xlf` ] did not match strictly the given case.

Now, the detection mechanism ignores the case for these file extensions.

[CMS-23170]

### Improved Performance of Taxonomy Path Calculation

The taxonomy leaf calculation has been improved by checking if there is only one child available, instead of calculating all of them.

[CMS-23155]

### Fixed German Translation of "May"

Fixed German translation of month May to "Mai".

[CMS-23077]

### Optimized Taxonomy Search

Removed leading wildcard for taxonomy search which caused a huge performance drop.

[CMS-22950]

### ComboBoxes No Longer get Accidentally Enabled After Studio Tab Reuse

We fixed a bug where ComboBoxes were always enabled after Studio Tab reuse, regardless of plugin logic that would have them disabled.

[CMS-14582]

## Miscellaneous

### Updated Bouncy Castle to fix CVE-2023-33201

Updated *Bouncy Castle* for *JDK 1.8 and up* from 1.72 to 1.75 - see [Bouncy Castle Release Notes](#)

[CMS-23157]

### Updated project dependencies to fix reported CVEs

Updated project dependencies to fix reported CVEs:

- gRPC-Java from 1.54.1 to 1.56.0 - see [gRPC-Java Releases](#)
- HtmlCleaner from 2.22 to 2.29 - see [HtmlCleaner Release Notes](#)
- Netty from 4.1.92.Final to 4.1.94.Final - see [Netty Project News](#)

[CMS-23146]

### Updated Janino Compiler

Updated [Janino Compiler](#) to 3.1.10

[CMS-23120]

### Updated Spring Boot and transitive dependencies

Update Spring Boot and transitive dependencies to mitigate reported CVEs:

- Spring Boot from 2.7.10 to 2.7.12 - see [Spring Boot Releases](#)
- Spring Data BOM from 2021.2.11 to 2021.2.12 - see [Spring Data BOM Releases](#)
- Logback from 1.2.11 to 1.2.12 [Logback News](#)
- Micrometer from 1.10.6 to 1.10.7 - see [Micrometer Releases](#)
- MySQL and Connector/J from 8.0.32 to 8.0.33 - see [MySQL 8.0 Release Notes](#) and [MySQL Connector/J 8.0 Release Notes](#)
- Netty from 4.1.87.Final to 4.1.91.Final - see [Netty Project News](#)
- Tomcat from 9.0.74 to 9.0.75 - see [Tomcat 9 Changelog](#)

[CMS-23068]

### Fixed Workflow Steps Dialog Height

The dialog has now a max height, so that if a long list of "next step" buttons are available, their parent panel is scrollable.

[CMS-22543]



# 4.4 Release 2304.2

The release contains:

- Breaking changes: 2
- Changes and improvements: 29
- Bugfixes: 115

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-10-13

## Breaking Changes

- CMS-23472: [CKEditor 5: Simplify License Management](#)
- CMS-23320: [CKEditor 5 and CoreMedia CKEditor 5 Plugins Updated](#)

## Changes and Improvements

- CMS-23038: [Studio is showing less commerce validation issues](#)
- CMS-22884: [Provide Mapping of MIME Types for CAE Image Variant Links](#)
- CMS-23484: [Added documentation for Locale Switcher](#)
- CMS-23468: [Optimized Dashboard Requests](#)
- CMS-23181: [Added flag to disable library auto search](#)
- CMS-23039: [Removed Taxonomy User Check](#)
- CMS-22596: [Layout paths can be configured in CommerceAugmentedPageGridForm](#)
- CMS-21515: [No Switch Back To ExtJs Drag Drop Any Longer](#)
- CMS-14144: [Added Note in Documentation](#)
- CMS-23200: [3rd Party Library Update of GraphQL-Java and Extended Scalars](#)
- CMS-23179: [HeadlessServer 3rd Party Library Update for Maintenance](#)
- CMS-23550: [Updated project dependencies](#)
- CMS-23549: [Updated project dependencies](#)
- CMS-23525: [Upgraded Spring, Spring Boot and Spring Security](#)
- CMS-23314: [Improved Fragment Parameter Handling](#)
- CMS-23212: [Updated Commerce Adapters](#)

- CMS-22894: Update Prometheus Javaagent in Java base image to version 0.19.0

## Bugfixes

- CMS-23476: Updated Tomcat
- CMS-23311: cm serverimport flushes more often
- CMS-23303: cm serverexport: Base Directory Created On Demand (Again)
- CMS-23203: Banned Dependency: net.sf.jtidy:jtidy
- CMS-23169: Removed transitive dependency snappy-java
- CMS-21419: Removal of Elastic Social models from search index
- CMS-23275: Updated Spring Security to v5.8.5
- CMS-17895: Fixed a Bug in ParameterAppendingLinkTransformer
- CMS-23462: Fixed Folder Chooser For Content Hub Import
- CMS-23323: Enabled Mouse Selection During Tree Node Renaming
- CMS-23268: Fixed Error in SiteSelector for Site-IDs with Language Tag Name
- CMS-23260: Removed transitive dependency to vm2
- CMS-23241: Fixed Content Selection for Starting Update Workflows in Locale Switcher
- CMS-23197: TeaserText Delegate does not work if section is initially collapsed.
- CMS-23153: Fixed Layout of Welcome Widget
- CMS-23142: Fixed: Concurrent editing breaks CKEditor autosave
- CMS-23128: CKEditor 4: Update to 4.22.1
- CMS-23115: More robust layout resolving for commerce categories
- CMS-23095: Fixed Struct Editor Performance Problem With Long Struct Lists
- CMS-23071: Fixed Taxonomy Node Readonly State in LinkLists
- CMS-23054: Fixed "mimeType" parameter of BlobPropertyEditor
- CMS-23036: Finished Workflows Now Always Show in Content App Sidebar
- CMS-22990: Missing CKEditor Styles for TeaserOverlay if CKE4 is disabled
- CMS-22916: Allow PageGrid to have no Row Widgets
- CMS-22904: Fixed Library Column Header Localization
- CMS-22485: Content Issue Text
- CMS-22067: Fixed Document Form Scroll Positioning
- CMS-19467: Fixed Accidental Folder Creation on DoubleClick
- CMS-23506: Removed redundant cycle check for "DefaultTaxonomy"

- CMS-23432: Issue with Rich Text Editing and Tab Reuse Fixed
- CMS-23421: Fixed duplicate forms itemId "localSettingsForm"
- CMS-23420: studio.auto-logout.delay property converts plain numbers to seconds again
- CMS-23325: Corrected File Name For Downloaded Blobs From Struct Properties
- CMS-23255: Fixed Thumbnail Images For CMDownload Content Items Where Data Is Not An Image
- CMS-23170: XLIFF Upload in Studio: Case-Insensitive
- CMS-23155: Improved Performance of Taxonomy Path Calculation
- CMS-23077: Fixed German Translation of "May"
- CMS-22950: Optimized Taxonomy Search
- CMS-18317: Fixed Missing Label of StringListPropertyField
- CMS-17674: Fixed LinkList Scrolling
- CMS-14582: ComboBoxes No Longer get Accidentally Enabled After Studio Tab Reuse
- CMS-23309: HeadlessServer: Prevent potential (but unlikely) NPE in ResponsiveMediaHashCodeKey
- CMS-23341: Documented "maxFileSize" Setting
- CMS-23592: Updated Jetty
- CMS-23157: Updated Bouncy Castle to fix CVE-2023-33201
- CMS-23146: Updated project dependencies to fix reported CVEs
- CMS-23120: Updated Janino Compiler
- CMS-23068: Updated Spring Boot and transitive dependencies
- CMS-22543: Fixed Workflow Steps Dialog Height

## 4.4.1 Breaking Changes

### CoreMedia Studio Client

#### CKEditor 5: Simplify License Management

The license management for CKEditor 5 has been simplified by extracting the `licenseKey` configuration into an extra sidecar file `ckeditor5License.ts`.

Follow [Section "CKEditor 5: Simplify License Management" \[437\]](#) for upgrade information.

[CMS-23472]

### CKEditor 5 and CoreMedia CKEditor 5 Plugins Updated

CKEditor 5 has been updated to version 39.0.2 and CoreMedia's CKEditor 5 Plugins have been updated to version 16.0.0.

Follow [Section "CKEditor 5 and CoreMedia CKEditor 5 Plugins Updated" \[437\]](#) for upgrade information.

[CMS-23320]

## 4.4.2 Changes and Improvements

### CoreMedia Core

#### Studio is showing less commerce validation issues

Studio search can display commerce related validation issues, e.g if an augmented category cannot be found in the catalog. In the past, however, the studio showed a lot of errors if the commerce system was temporarily not available. Practically each commerce related content item (e.g. augmented categories, products, product teasers, product lists) appeared in the list as "invalid commerce id" issues. Now connectivity issues of the commerce adapter with the commerce system are recognized and no content issues are created. This feature requires a commerce adapter with a base adapter of at least version 2.2.x, because it propagates the gRPC response status UNAVAILABLE in case of connectivity issues with the commerce system.

[CMS-23038]

### CoreMedia Content Application Engine

#### Provide Mapping of MIME Types for CAE Image Variant Links

When building links to image variants in the CAE, the MIME type of the original image is used by default to determine the file extension of the links. To adjust these MIME types you can now provide a mapping of original MIME types to desired MIME types in the setting [linkMimeTypeMapping](#). For details see section "Images" below "Website Management" in the Blueprint Developer Manual.

[CMS-22884]

## CoreMedia Studio Client

### Added documentation for Locale Switcher

The Locale Switcher provides some configuration flags that have been documented in the Studio developer manual.

[CMS-23484]

### Optimized Dashboard Requests

Fixed issue that the initial dashboard loading executed Solr requests twice for every search widget.

[CMS-23468]

### Added flag to disable library auto search

The configuration flag `_CollectionViewBase.GLOBAL_SEARCH_FALLBACK_ENABLED_` can be set to false if the extended search for empty results in the library should be disabled.

[CMS-23181]

### Removed Taxonomy User Check

The check wasn't anymore but there were remaing code snippets and also some documentation which has not been removed properly.

[CMS-23039]

### Layout paths can be configured in CommerceAugmentedPageGridForm

Configuration option "layoutPaths" added to CommerceAugmentedPageGridFormConfig, that is passed on to PageGridPropertyField (which already supports it), so customers can more easily adjust their forms to use dedicated layoutPaths for Augmented Categories - without needing to modify or copy Blueprint code.

[CMS-22596]

### No Switch Back To ExtJs Drag Drop Any Longer

There still was a CM10 backwards compatibility switch in play that switched from HTML5 drag/drop to ExtJs drag/drop when only Studio App was present (e.g. when you removed the Workflow App). This switch was removed, not least because the CKEditor 5 only works with HTML5 drag / drop.

[CMS-21515]

## CoreMedia Commerce Hub

### Added Note in Documentation

Added note to Studio User Manual regarding IPTC metadata extraction.

[CMS-14144]

## CoreMedia Headless Server

### 3rd Party Library Update of GraphQL-Java and Extended Scalars

For maintenance and in order to prevent potential security issues the 3rd party library `com.graphql-java:graphql-java` was updated from version 19.x to 20.4 and `com.graphql-java:graphql-java-extended-scalars` from version 19.x to 20.2.

For details about the updates please see the original release notes:

- <https://github.com/graphql-java/graphql-java/releases>
- <https://github.com/graphql-java/graphql-java-extended-scalars/releases>

[CMS-23200]

### HeadlessServer 3rd Party Library Update for Maintenance

The following libraries were updated for maintenance reasons:

- Spring Boot from 2.7.12 to 2.7.13
- `com.schibsted.spt.data:jslt` from 0.1.11 to 0.1.14
- `org.glassfish:javax.json` from 1.1 to 1.1.4
- `io.rest-assured:rest-assured` and `io.rest-assured:spring-web-test-client` (unit testing) from 5.0.1 to 5.3.1
- `org.hamcrest:hamcrest` (unit testing) from 2.1 to 2.2

[CMS-23179]

## Miscellaneous

### Updated project dependencies

Updated several dependency and plugin versions:

- [Apache Commons Compress](#) from 1.22 to 1.24.0

## Release Information | Changes and Improvements

- [Bouncy Castle for JDK 1.8 and up](#) from 1.75 to 1.76
- [FasterXML Jackson](#) from 2.14.2 to 2.15.2
- [gRPC-Java](#) from 1.57.2 to 1.58.0
- [Guava](#) from 32.0.1 to 32.1.2
- [Micrometer](#) from 1.10.7 to 1.10.11
- [Netty](#) from 4.1.94 to 4.1.98
- [OWASP Dependency-Check Maven Plugin](#) from 8.1.2 to 8.4.0
- [Protocol Buffers for Java](#) from 3.22.3 to 3.24.3

[CMS-23550]

### Updated project dependencies

Updated several dependency and plugin versions:

- [Apache Commons Compress](#) from 1.22 to 1.24.0
- [Bouncy Castle for JDK 1.8 and up](#) from 1.75 to 1.76
- [FasterXML Jackson](#) from 2.15.0 to 2.15.2
- [gRPC-Java](#) from 1.57.2 to 1.58.0
- [Guava](#) from 32.0.1 to 32.1.2
- [Jetty](#) from 10.0.15 to 10.0.16
- [Micrometer](#) from 1.10.7 to 1.10.11
- [Netty](#) from 4.1.94 to 4.1.98
- [OWASP Dependency-Check Maven Plugin](#) from 8.1.2 to 8.4.0
- [Protocol Buffers for Java](#) from 3.22.3 to 3.24.3
- [SnakeYAML](#) from 1.33 to 2.2

[CMS-23549]

### Upgraded Spring, Spring Boot and Spring Security

Updated the following dependencies

- Spring Framework from 5.3.27 to 5.3.30 - see [Spring Framework Releases](#)
- Spring Boot from 2.7.12 to 2.7.16 - see [Spring Boot Releases](#)
- Spring Security from 5.8.5 to 5.8.7 - see [Spring Security Releases](#)

[CMS-23525]

Update Nginx Base Image to 1.2-cm-1.25-alpine

[CMS-23511]

### Improved Fragment Parameter Handling

Fragment parameters 'externalId' and 'parameters' were expected to be encoded twice so that encoded slashes were not rejected by spring MVC. These fragment parameters may now be URL encoded one or two times.

[CMS-23314]

### Updated Commerce Adapters

Updated commerce adapters and commerce client API to their latest versions:

- [Commerce Client API and Mock Adapter for Commerce Hub 2.1.9](#)
- [Adapter for SAP Commerce Cloud 2.1.7](#)
- [Adapter for Salesforce Commerce Cloud B2C 2.1.9](#)
- [Adapter for HCL Commerce 2.1.8](#)

[CMS-23212]

### Update Prometheus Javaagent in Java base image to version 0.19.0

A v a i l a b l e w i t h  
<https://github.com/coremedia-contributions/docker.java-application-base/releases/tag/1.3.0-cm-11.0.19>

[CMS-22894]

## 4.4.3 Fixed Issues

## CoreMedia Core

### Updated Tomcat

U p d a t e d T o m c a t t o 9 . 0 . 8 0 , s e e  
<https://tomcat.apache.org/tomcat-9.0-doc/changelog.html> for more information.

[CMS-23476]

### cm serverimport flushes more often

Especially when importing huge content-sets in a multi-site environment, you may have observed out-of-memory-errors.

To reduce the memory consumption, an internal optimization has been applied to `cm serverimport`, so that it flushes changes more often to the server while updating the imported content.

[CMS-23311]



### cm serverexport: Base Directory Created On Demand (Again)

Since several releases, when invoking `cm serverexport` given a base-directory that does not exist yet, no exported contents were available afterward (but `serverexport` reported successful export).

This has been fixed. The folder is now created on demand again, if not yet existing.

[CMS-23303]

### Banned Dependency: net.sf.jtidy:jtidy

`pkg:maven/net.sf.jtidy:jtidy@r938` is affected by CVE-2023-34623, a possible denial-of-service (DoS) attack with deeply nested DOM structures.

We validated that the deprecated CoreMedia Site Manager application is affected, as soon as authorized editors or services add rich text documents containing deeply nested DOM nodes.

As only the deprecated application is affected, which is only open for administrative usage, we took the following countermeasures:

- We banned `net.sf.jtidy:jtidy` as dependency on global scope.
- We only allowed `net.sf.jtidy:jtidy` for modules having `com.coremedia.blueprint:site-manager.blueprint-parent` as parent by configuring corresponding `bannedDependenciesIncludes` property.

If your Blueprint customizations are affected by this change, you have the following options:

- Include the banned dependency for your module by corresponding configuration.
- Evaluate, if `com.github.jtidy:jtidy` is suitable for your needs. According to the release notes, it resolves CVE-2023-34623 with 1.0.4 and introduced HTML5-support with previous version 1.0.3.

[CMS-23203]

### Removed transitive dependency snappy-java

`snappy-java` is a dependency of Zookeeper, which is used by Solr for SolrCloud. It's not used for the Solr standalone or Solr Leader/Follower setup. The latter is used in CMCC/S, hence it's not actually needed and was removed to avoid (false-positive) CVE reports for that dependency.

[CMS-23169]

### Removal of Elastic Social models from search index

Models are now removed from the search index, if `Model#remove()` is invoked and a corresponding search index exists.

[CMS-21419]

## CoreMedia Content Application Engine

### Updated Spring Security to v5.8.5

Updated Spring Security to version 5.8.5 to prevent potential CVEs for customers using Spring WebFlux

[CMS-23275]

### Fixed a Bug in ParameterAppendingLinkTransformer

The CAE util class `com.coremedia.objectserver.web.links.ParameterAppendingLinkTransformer` did not respect anchor links in source URLs in all prior releases. It now ensures that parameters are only appended to the [ *query* part of a URI] <https://datatracker.ietf.org/doc/html/rfc3986#section-3.4> .

[CMS-17895]

## CoreMedia Studio Client

### Fixed Folder Chooser For Content Hub Import

Fixed issues with the default folder initialization of the Content Hub import dialog. The defaults from the content creation settings are now applied.

[CMS-23462]

### Enabled Mouse Selection During Tree Node Renaming

Fixed an issue where the library tree node text was not selectable during renaming via mouse pointer.

[CMS-23323]

### Fixed Error in SiteSelector for Site-IDs with Language Tag Name

Fixed an issue where when the id of a site was the value of a language tag (e.g. "de"), the site selector did not work anymore.

[CMS-23268]

### Removed transitive dependency to vm2

Removed transitive dependency to (recently) deprecated "vm2" to resolve CVE-2023-37466. "vm2" was utilized as a transitive dependency coming from "proxy-agent" and its sub packages which from studio-client side is utilized to download plugins during studio-client build. Currently, no information regarding "proxy-agent" and CVE-2023-37466 is available. As it was used by the functionality utilizing PAC files for proxy configuration and we are not exposing any configuration options for PAC files we assume that this issue does not affect us.

[CMS-23260]

### Fixed Content Selection for Starting Update Workflows in Locale Switcher

When a content was selected for updating via the locale switcher, the workflow dialog was always opened with the root content of the site hierarchy, not the content that needs the update.

[CMS-23241]

### TeaserText Delegate does not work if section is initially collapsed.

There was a bug in the `CKEditor5RichTextFieldDelegatePlugin` which would prevent delegation from working properly when the editor was not ready when the plugin got initialized. This issue is now resolved.

[CMS-23197]

### Fixed Layout of Welcome Widget

Improved layout of the Welcome Widget that got broken when the Studio's browser window got too small. Please note that component may still get cut off when the screen is too small, but this bugfix improves the overall layout and usage of the existing space inside this widget.

[CMS-23153]

### Fixed: Concurrent editing breaks CKEditor autosave

The `CKEditor5RichTextArea`'s save callback would not resolve properly if the editor is (or was) in readonly mode. This issue is now resolved.

[CMS-23142]

### CKEditor 4: Update to 4.22.1

CKEditor 4 has been updated to 4.22.1.

For an overview of changes, consult the [CKEditor 4 release notes](#).

While in CoreMedia Blueprint, no adaptations had to be applied using the new CKEditor 4 version, your adaptations may be affected (or benefit) from applied changes.

For detailed information, you may want to take a look at these release notes:

- [CKEditor 4.19.1](#)
- [CKEditor 4.20.0](#)
- [CKEditor 4.20.1](#)
- [CKEditor 4.20.2](#)
- [CKEditor 4.21.0](#)
- [CKEditor 4.22.0 / 4.22.1](#)

[CMS-23128]

### More robust layout resolving for commerce categories

There is a pitfall in the commerce integration, the root category of a commerce catalog must be augmented. If not, there are some obscure errors when resolving the page layout for commerce pages [augmented categories and products]. The resolving is more robust now. If the root category is not augmented by mistake you will see a warning in the browser console log.

[CMS-23115]

### Fixed Struct Editor Performance Problem With Long Struct Lists

We fixed an issue where the Struct Editor was hardly usable when there were long struct lists in play (over 1000 list elements).

[CMS-23095]

### Fixed Taxonomy Node Readonly State in LinkLists

Checked-out taxonomy nodes have been rendered as "Element not visible". These nodes are now rendered as regular ones, since the checked-out state does not affect the link list editing here.

[CMS-23071]

### Fixed "mimeType" parameter of BlobPropertyEditor

The property should filter the type of files that are allowed for uploading, but did break the editor after file selection. The parameter can now be used again.

[CMS-23054]

### Finished Workflows Now Always Show in Content App Sidebar

We fixed a bug where finished workflows were not always correctly displayed in the Content App Sidebar.

[CMS-23036]

### Missing CKEditor Styles for TeaserOverlay if CKE4 is disabled

TeaserOverlay styles are fixed when CKEditor 4 is disabled

[CMS-22990]

### Allow PageGrid to have no Row Widgets

The expand/collapse button is gone now if the page grid is configured with no row widgets.

[CMS-22916]

### Fixed Library Column Header Localization

Added translations for "Columns", "Sort Ascending" and "Sort Descending".

[CMS-22904]

### Content Issue Text

A content issue sometimes contained the text "Element not visible" although the referenced content is visible to the user. This is fixed now.

[CMS-22485]

### Fixed Document Form Scroll Positioning

Fixed the correct scroll position restoring for tab reuse.

[CMS-22067]

### Fixed Accidental Folder Creation on DoubleClick

Fixed an issue that under some circumstance a new folder creation was triggered by a doubleclick when the library was busy with other stuff.

[CMS-19467]

## CoreMedia Studio Server

### Removed redundant cycle check for "DefaultTaxonomy"

The "DefaultTaxonomy" implementation contained an additional check inside the path calculation. For large amounts of taxonomies, this lead to performance issues. Since the check is already part of the "parent" calculation, this redundant and expensive check has been removed.

[CMS-23506]

### Issue with Rich Text Editing and Tab Reuse Fixed

An issue with the CKEditor 5, where the editor would end up in an unresponsive state regarding the CoreMedia Studio integration (such as auto-checkout), was fixed. This issue occurred while changing tabs with editors, containing the same rich text content.

[CMS-23432]

### Fixed duplicate forms itemId "localSettingsForm"

The document sub-form "MiscSettingsForm" has now it's own itemId called "miscSettingsForm".

[CMS-23421]

### studio.auto-logout.delay property converts plain numbers to seconds again

With the release of 2304.1 a bug around the conversion of numbers of the studio.auto-logout.delay property was introduced. Since then, when a plain number was specified for this property, it was interpreted as milliseconds instead of seconds. This bug is now

fixed. A number will from now on forward be interpreted as seconds again. In case you changed a number for that property to milliseconds, convert it back to seconds, or specify the delay in ISO-8601 standard.

[CMS-23420]

### Corrected File Name For Downloaded Blobs From Struct Properties

Blobs downloaded from struct sub-properties now have the correct file name in the Content-Disposition-Header with correct file name ending.

[CMS-23325]

### Fixed Thumbnail Images For CMDownload Content Items Where Data Is Not An Image

We fixed a bug where the new picture resolving mechanism displayed broken thumbnails for content items where non-image blobs where resolved.

[CMS-23255]

### XLIFF Upload in Studio: Case-Insensitive

XLIFF-Upload in Studio did not have worked as expected if file extensions [ `.xliFF` , `.xlf` ] did not match strictly the given case.

Now, the detection mechanism ignores the case for these file extensions.

[CMS-23170]

### Improved Performance of Taxonomy Path Calculation

The taxonomy leaf calculation has been improved by checking if there is only one child available, instead of calculating all of them.

[CMS-23155]

### Fixed German Translation of "May"

Fixed German translation of month May to "Mai".

[CMS-23077]

### Optimized Taxonomy Search

Removed leading wildcard for taxonomy search which caused a huge performance drop.

[CMS-22950]

### Fixed Missing Label of StringListPropertyField

Changed base class of StringListPropertyField so that the property field label is shown.

[CMS-18317]

### Fixed LinkList Scrolling

Fixed issue with LinkList scrolling caused by tab reuse.

[CMS-17674]

### ComboBoxes No Longer get Accidentally Enabled After Studio Tab Reuse

We fixed a bug where ComboBoxes were always enabled after Studio Tab reuse, regardless of plugin logic that would have them disabled.

[CMS-14582]

## CoreMedia Headless Server

### HeadlessServer: Prevent potential (but unlikely) NPE in ResponsiveMediaHashCacheKey

A potential but highly unlikely `NullPointerException` in `ResponsiveMediaHashCacheKey` is now prevented.

[CMS-23309]

## CoreMedia Documentation

### Documented "maxFileSize" Setting

Added the missing "maxFileSize" setting for the uploads settings to the documentation and to the demo content.

[CMS-23341]

## Miscellaneous

### Updated Jetty

Updated [Jetty](#) from 9.4.51 to 9.4.52

[CMS-23592]

### Updated Bouncy Castle to fix CVE-2023-33201

Updated *Bouncy Castle for JDK 1.8 and up* from 1.72 to 1.75 - see [Bouncy Castle Release Notes](#)

[CMS-23157]

### Updated project dependencies to fix reported CVEs

Updated project dependencies to fix reported CVEs:

- gRPC-Java from 1.54.1 to 1.56.0 - see [gRPC-Java Releases](#)
- HtmlCleaner from 2.22 to 2.29 - see [HtmlCleaner Release Notes](#)

- Netty from 4.1.92.Final to 4.1.94.Final - see [Netty Project News](#)

[CMS-23146]

### Updated Janino Compiler

Updated [Janino Compiler](#) to 3.1.10

[CMS-23120]

### Updated Spring Boot and transitive dependencies

Update Spring Boot and transitive dependencies to mitigate reported CVEs:

- Spring Boot from 2.7.10 to 2.7.12 - see [Spring Boot Releases](#)
- Spring Data BOM from 2021.2.11 to 2021.2.12 - see [Spring Data BOM Releases](#)
- Logback from 1.2.11 to 1.2.12 [Logback News](#)
- Micrometer from 1.10.6 to 1.10.7 - see [Micrometer Releases](#)
- MySQL and Connector/J from 8.0.32 to 8.0.33 - see [MySQL 8.0 Release Notes](#) and [MySQL Connector/J 8.0 Release Notes](#)
- Netty from 4.1.87.Final to 4.1.91.Final - see [Netty Project News](#)
- Tomcat from 9.0.74 to 9.0.75 - see [Tomcat 9 Changelog](#)

[CMS-23068]

### Fixed Workflow Steps Dialog Height

The dialog has now a max height, so that if a long list of "next step" buttons are available, their parent panel is scrollable.

[CMS-22543]



# 4.5 Release 2304.1

The release contains:

- Breaking changes: 21
- Changes and improvements: 40
- Bugfixes: 158

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-05-19

## Breaking Changes

- CMS-22561: [Enhanced Output of cm download](#)
- CMS-22072: [MongoDB update to version 6.0.5](#)
- CMS-22569: [XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs](#)
- CMS-22911: [CoreMedia CKEditor plugins updated to 15.0.1](#)
- CMS-22883: [Upgraded pnpm to 8.1.0](#)
- CMS-22744: [Studio Client Thumbnail Resolving Mechanism Deprecated In Favor of New Studio Server Mechanism](#)
- CMS-22246: [Third-Party Update: Upgraded Node.js to 18 LTS](#)
- CMS-22761: [CoreMedia CKEditor 5 Plugins Updated](#)
- CMS-22887: [Studio Server Now Uses PathPatternParser for URL Matching](#)
- CMS-7389: [Removed Migration of Legacy Content Sets to Projects](#)
- CMS-22731: [Changed multipart request handling from Commons Fileupload to Servlet API](#)
- CMS-23074: [Upgraded pnpm to 8.1.0](#)
- CMS-23072: [Third-Party Update: Upgraded Node.js to 18 LTS](#)
- CMS-6805: [Moved com.coremedia.cms:metadata-serialization to com.core-media.cms:cae-core-bom](#)
- CMS-22496: [Security: GraphQL Schema Introspection disabled by default](#)
- CMS-22945: [Updated project dependencies](#)
- CMS-22752: [Mockito dependency update from 4.11 to 5.2.](#)

- CMS-22669: [XmlContentConnector Validates Content IDs](#)
- CMS-22589: [Removed unused dependency management for Selenium and OkHttp](#)
- CMS-21423: [Update of Google Analytics Connector to Google Analytics 4](#)
- CMS-12436: [Consolidated "BELOW folder" Query Condition](#)

## Changes and Improvements

- CMS-22906: [Better logging when diagnosing cross site links in commerce fragments](#)
- CMS-22573: [Update Freemarker Library to 2.3.32](#)
- CMS-22690: [Struct Property is now supported for ThumbnailResolver](#)
- CMS-22554: [Improved Content Search with open Link Balloon in CKEditor 5](#)
- CMS-22468: [Package generation for Sencha CMD now keeps caret and tilde dependency versions](#)
- CMS-22036: [CKEditor5RichTextPropertyFieldDelegatePlugin introduced](#)
- CMS-19916: [Editor Link Protocol Configuration moved to Blueprint](#)
- CMS-19542: [Unified Date Format](#)
- CMS-22867: [Content Quick Search Change](#)
- CMS-22371: [New Validator: MasterLinkInAugmentationValidator for Multi-Site](#)
- CMS-22888: [Provide ARM build support](#)
- CMS-22741: [Updated Commerce Adapters](#)
- CMS-22551: [Documentation: Hints on Well-formedness of XML Markup Properties](#)
- CMS-21838: [Updated Documentation for Unit Testing a CAE Application](#)
- CMS-22946: [Third-Party Update: Apache Tika and Transitive Dependencies](#)
- CMS-22764: [Commerce Headless Schema Deprecation](#)
- CMS-22520: [Updated Guava](#)

## Bugfixes

- CMS-22915: [Fixed bug that caused CAE Feeder repeated re-indexing for contents with blobs in structs](#)
- CMS-22882: [Synchronization: CopyOver Merge Strategy Hardened](#)
- CMS-22792: [CAE Feeder Navigation Path Feeding Robustness](#)
- CMS-22659: [Workflow Server Health Check for UAPI Connection](#)
- CMS-18204: [Fixed Localization Workflows to not Copy the Home Page Segment to Derived Sites](#)

- CMS-8763: Content Feeder Event Handling Robustness
- CMS-22913: Fixed dynamic include errors caused by unlicensed elastic social
- CMS-22675: Fixed a bug where the timezone was always GMT
- CMS-17459: RSS Feed Source for CMChannel Fixed
- CMS-23060: Upgraded vm2
- CMS-22937: Fix Label Issue with PropertyFieldGroups
- CMS-22935: Fixed BlobPropertyField Issues
- CMS-22917: Upgraded vm2
- CMS-22903: Fixed Possible Path Error in Upload Dialog
- CMS-22898: Fixed Preferred Site Selection
- CMS-22840: Fixed Layout of BlobProperty
- CMS-22829: Fixed Cut Off Member Name
- CMS-22828: Fixed UserManager Documentation
- CMS-22800: Fixed CVE-2023-28154
- CMS-22791: Delegation of Article Title to Teaser Title Re-Enabled
- CMS-22775: CKEditor 4/5: Adjust Up- and Downgrade Information
- CMS-22750: CKEditor 5
- CMS-22739: CKEditor 5: Fixed Possibly Mixed Up Markup Property Values From Different Documents
- CMS-22700: Workflow Labels for PossiblyMissingMasterReferenceValidator
- CMS-22698: OpenPremularAction: New PremularConfiguration focusPropertyField
- CMS-22630: Embedded images in richtext are now referenced by relative URI
- CMS-22626: Change in Data Types / Flavors of Drag Data and Clipboard Items
- CMS-22624: Content Hub Pagination: getChildren() call triggered too many times.
- CMS-22612: CKEditor 5 now ignores images with empty xlink-href attribute
- CMS-22608: Embedded Workflow App Can Handle Task Delegation
- CMS-22605: EditorType in TeaserOverlayContainer fixed
- CMS-22594: Removed "manageHeight" setting from document forms
- CMS-22585: Fixed documentation of configuration in jangaroo.config.js
- CMS-22495: Fixed Possible Premular Tab Restore Error
- CMS-22395: Fixed Renaming in Library
- CMS-22357: Fixed Locale Switcher Workflow Action
- CMS-21763: Fixed Resetting of Search Terms in Link List Field

- CMS-18196: Fixed Y-Units of PI Graph
- CMS-22972: Added Taxonomy Cycle Check
- CMS-22874: Fixed "Create From Template" Issues
- CMS-22734: Fixed Translation for "Cancel" Buttons
- CMS-22727: Fixed Position of New Content Menu
- CMS-22710: Moderation App: Umlauts in category filter
- CMS-22668: Fixed Timezone Refresh
- CMS-19712: Wrong display of hotzones on image maps
- CMS-22995: fix yaml syntax in compose files with multiple yaml anchors
- CMS-22709: Fixed a Bug Regarding Headless Augmentation Calls without Commerce Connection
- CMS-22878: Update GraphQL-Java to fix security vulnerability
- CMS-22723: Bugfix: Some characters in repository paths causes InvalidPathException on Windows systems
- CMS-22483: Wrap returned content item into list
- CMS-22442: Fix NullPointerException in wildcard settings query
- CMS-22135: Fixed a Bug Regarding Page Grid Lookup in Headless Augmentation Calls
- CMS-22993: Fixed File Extension for MIME-Type application/vnd.oasis.opendocument.text-master
- CMS-22871: Fixed File Extension for RAR MIME-Types
- CMS-22863: Fixed Missing Workflow Localizations
- CMS-22852: Updated Spring Framework to version 5.3.26
- CMS-22850: Added Workflow Abort Action
- CMS-22748: CKEditor 5 36.0.1
- CMS-22725: Possible NullPointerException fixed for Markup in Structs XLIFF export
- CMS-22672: Fixed Cache Bug that causes RecursiveCacheLookupException
- CMS-22638: Fixed LdapAuthProvider Configuration
- CMS-21947: Updated OWASP Dependency Check Maven Plugin

## 4.5.1 Breaking Changes

### CoreMedia Core

#### Enhanced Output of cm download

The workflow-server tool `cm download` now outputs the absolute paths of created artifacts, instead of just a relative path.

Follow [Section “Enhanced Output of cm download” \[440\]](#) for upgrade information.

*[CMS-22561]*

#### MongoDB update to version 6.0.5

MongoDB has been updated to version 6.0.5 for the Docker Deployment. Note that an upgrade is only possible from a 5.0.x version. An upgrade from an earlier version needs to be done successively. Please refer to the official MongoDB documentation on how to upgrade: <https://www.mongodb.com/docs/manual/release-notes/6.0-upgrade-standalone/>. The compatibility changes are described here: <https://www.mongodb.com/docs/manual/release-notes/6.0-compatibility/>. The mongo shell is removed from MongoDB 6.0, the replacement is mongosh.

*[CMS-22072]*

#### XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs

XLIFF support for Markup in Structs has been enhanced in that way, that Markup nodes can now be restored from XLIFF regarding their corresponding grammar settings.

Follow [Section “XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs” \[441\]](#) for upgrade information.

*[CMS-22569]*

### CoreMedia Studio Client

#### CoreMedia CKEditor plugins updated to 15.0.1

The CoreMedia CKEditor Plugins have been updated from 14.1.1 to 15.0.1.

Follow [Section “CoreMedia CKEditor plugins updated to 15.0.1” \[441\]](#) for upgrade information.

*[CMS-22911]*

### Upgraded pnpm to 8.1.0

All packages in studio-client now require at least pnpm 8.1.0.

Follow [Section “Upgraded pnpm to 8.1.0” \[442\]](#) for upgrade information.

*[CMS-22883]*

### Studio Client Thumbnail Resolving Mechanism Deprecated In Favor of New Studio Server Mechanism

On the Studio Client side, the `ThumbnailService` and the `EditorContext` allow to register `ThumbnailResolvers`. This mechanism has been deprecated. It has been replaced by a new mechanism for resolving default pictures for entities (content items, commerce items, projects, workflows, etc.) on the Studio Server. This new mechanism is customizable on different levels. For details, see the Studio developer reference documentation under “Thumbnails” > “Default Pictures”.

Follow [Section “Studio Client Thumbnail Resolving Mechanism Deprecated In Favor of New Studio Server Mechanism” \[443\]](#) for upgrade information.

*[CMS-22744]*

### Third-Party Update: Upgraded Node.js to 18 LTS

Since October 2022 the new LTS of Node.js is v18. All workspaces were adjusted accordingly.

*[CMS-22246]*

### CoreMedia CKEditor 5 Plugins Updated

The CKEditor 5 Plugins provided by CoreMedia have been updated to 14.1.1.

Follow [Section “CoreMedia CKEditor 5 Plugins Updated” \[444\]](#) for upgrade information.

*[CMS-22761]*

## CoreMedia Studio Server

### Studio Server Now Uses PathPatternParser for URL Matching

`PathPatternParser` has been the Spring Boot default path matching strategy since version 2.6. Studio server had explicitly overridden this by default by setting the property `spring.mvc.pathmatch.matching-strategy` to `ant_path_matcher`. Studio server now uses the Spring Boot default.

Follow [Section “Studio Server Now Uses PathPatternParser for URL Matching” \[445\]](#) for upgrade information.

*[CMS-22887]*

### Removed Migration of Legacy Content Sets to Projects

When Studio Projects were introduced many years ago in CMS 8 [7.1.10] and DXP 8 [7.5.34], they replaced a feature called Content Sets. The Content Sets feature was removed at that time, and data was automatically migrated to Projects. This automatic migration has been removed with this release.

Follow [Section “Removed Migration of Legacy Content Sets to Projects” \[446\]](#) for upgrade information.

*[CMS-7389]*

### Changed multipart request handling from Commons Fileupload to Servlet API

The runtime dependency `commons-fileupload:commons-fileupload` has been removed in order to prevent vulnerability [CVE-2023-24998](#). By removing the application property `spring.servlet.multipart.enabled=true`, the Studio server configuration has been changed from using *Commons Fileupload* for handling multipart requests to using the *Servlet API*.

Follow [Section “Changed multipart request handling from Commons Fileupload to Servlet API” \[446\]](#) for upgrade information.

*[CMS-22731]*

## CoreMedia Frontend Workspace

### Upgraded pnpm to 8.1.0

All packages in frontend workspace now require at least pnpm 8.1.0.

Follow [Section “Upgraded pnpm to 8.1.0” \[447\]](#) for upgrade information.

*[CMS-23074]*

### Third-Party Update: Upgraded Node.js to 18 LTS

Since October 2022 the new LTS of Node.js is v18. All workspaces were adjusted accordingly.

Follow [Section “Third-Party Update: Upgraded Node.js to 18 LTS” \[447\]](#) for upgrade information.

*[CMS-23072]*

## CoreMedia Commerce Hub

Moved `com.coremedia.cms:metadata-serialization` to `com.coremedia.cms:cae-core-bom`

Moved artefact `com.coremedia.cms:metadata-serialization` from `com.core-media.cms:middle-core-bom` to `com.coremedia.cms:cae-core-bom`.

[CMS-6805]

## CoreMedia Headless Server

### Security: GraphQL Schema Introspection disabled by default

The GraphQL schema introspection is now **disabled by default** . In preview mode however, introspection is still enabled.

Follow [Section "Security: GraphQL Schema Introspection disabled by default" \[448\]](#) for upgrade information.

[CMS-22496]

## Miscellaneous

### Updated project dependencies

Updated several project dependencies:

Follow [Section "Updated project dependencies" \[449\]](#) for upgrade information.

[CMS-22945]

### Mockito dependency update from 4.11 to 5.2.

The testing library Mockito has been updated from 4.11 to 5.2. The respective Mockito Release Notes can be found here: <https://github.com/mockito/mockito/releases> A major change of the version 5 release is the switch of the default mockmaker to `mockito-inline` .

[CMS-22752]

### XmlContentConnector Validates Content IDs

XmlContentConnector is active in XML-repository-based tests. It did not validate content IDs up to now which lead to ignored content. It now validates that the content IDs assigned in the XML source match the expectations of `com.coremedia.cap.common.IdHelper` which expects folder content IDs to be odd and document content



IDs to be even. Correct the content IDs in your XML, if your tests fail due to this validation.

[CMS-22669]

### Removed unused dependency management for Selenium and OkHttp

The dependency management for Selenium and its transitive dependency OkHttp have been removed from the BOMs that are imported by the `blueprint-parent` POMs, because they're never used. Projects using these frameworks should manage these dependencies themselves.

[CMS-22589]

### Update of Google Analytics Connector to Google Analytics 4

As Google Universal Analytics will be discontinued from 1. July 2023 on, the CoreMedia Google Analytics Connector is updated to use the Google Analytics 4 API, see [GA4 Documentation](#).

Follow [Section "Update of Google Analytics Connector to Google Analytics 4" \[450\]](#) for upgrade information.

[CMS-21423]

### Consolidated "BELOW folder" Query Condition

The documentation of the UAPI QueryService states that a "BELOW folder" condition also matches the folder itself. However, due to a bug this was only true for some corner cases. This has been fixed, a "BELOW folder" condition always matches the folder itself now.

Follow [Section "Consolidated "BELOW folder" Query Condition" \[451\]](#) for upgrade information.

[CMS-12436]

## 4.5.2 Changes and Improvements

### CoreMedia Content Application Engine

#### Better logging when diagnosing cross site links in commerce fragments

Cross site links are not supported in commerce fragments. Instead a simple "#" is rendered. Debug logging of `com.coremedia.livecontext.fragment.links.transformer.LiveContextLinkTransformer` was extended to support analysis why a commerce link is not built.

[CMS-22906]

### Update Freemarker Library to 2.3.32

The Freemarker Library was updated to patch version 2.3.32. See Changelog for more informations: [https://freemarker.apache.org/docs/versions\\_2\\_3\\_32.html](https://freemarker.apache.org/docs/versions_2_3_32.html)

[CMS-22573]

## CoreMedia Studio Client

### Struct Property is now supported for ThumbnailResolver

The ThumbnailResolver can now be configured to include a struct property like:

```
localSettings.thumbnail
```

[CMS-22690]

### Improved Content Search with open Link Balloon in CKEditor 5

MouseDown- and Click-Events in the Studio-Library will not close the CKEditor's Link Balloon anymore.

[CMS-22554]

### Package generation for Sencha CMD now keeps caret and tilde dependency versions

Before the change the currently installed version was added to the "requires" field of the sencha packages disallowing any upgrades although semantic versioning was used in the original package. When using caret or tilde dependency versions the version range is now added to the generated Sencha CMD package. Any other form of semantic versioning keeps unsupported due to not being mapable.

[CMS-22468]

### CKEditor5RichTextFieldDelegatePlugin introduced

`CKEditor5RichTextFieldDelegatePlugin` was introduced to enable delegation of values to CKEditor 5. Usages of `RichTextFieldDelegatePlugin` for CKEditor 4 should be replaced with the new plugin when upgrading to CKEditor 5.

[CMS-22036]

### Editor Link Protocol Configuration moved to Blueprint

The protocol for external links in the CKEditor can now be set in the editor configuration in the Blueprint, e.g. in `ckeditorDefault.ts`. It defaults to 'https'. This configuration is a replacement for the `cmLink_defaultUrlPrefix` flag, used for external links in CKEditor 4.

[CMS-19916]

### Unified Date Format

The date formats of the Studio have been unified. All date and time formats are defined through the `_BaseModel_properties.ts_`.

[CMS-19542]

## CoreMedia Studio Server

### Content Quick Search Change

The quick search dialog does filter deleted contents now. If deleted contents should be searched, the regular library has to be used instead.

[CMS-22867]

### New Validator: MasterLinkInAugmentationValidator for Multi-Site

The new MasterLinkInAugmentationValidator is aware of augmenting content and able to find cross-site language siblings. In the past similar issues were only found, if the paths in each site were exactly the same. Now it is also based on the commerce reference in the augmenting content. If those are the same then its a candidate for linking as language sibling (the "master" link). The changes affect the validate-multisite tool, as well as the studio validators. Additionally all issues are fed into Solr and can be found via Studio search. This also implies the possibility to save it as Dashboard widget. Please note that issues in the library and Dashboard are currently only shown if "Show Products and Categories as Content" preference setting is enabled.

#### Upgrade Notice

No upgrade steps are required unless you consider these warnings irrelevant in your setup. In this case you may customize the severity by setting `master-link-in-augmentation-validator.severity` to `INFO` (it defaults to `WARN`).

#### validate-multisite

The `cm` tool `validate-multisite` detects the following new issues:

- `MS-VALIDATION-9000` – An augmenting content of the master site is missing in a derived site.
- `MS-VALIDATION-9001` – An augmenting content of the master site is missing in a derived site, although a content item with the same external id reference exists which is not linked to the master content.
- `MS-VALIDATION-9002` – An augmenting content of a derived site is not derived from a master content.
- `MS-VALIDATION-9003` – An augmenting content of the derived site is missing in a master site, although a content item with the same external id reference exists but is not linked as master content.

- `MS-VALIDATION-9004` - The augmenting content misses an external id.
- `MS-VALIDATION-9005` - There are several contents within a site that refer to the same commerce object.

[CMS-22371]

## CoreMedia Deployment

### Provide ARM build support

With this change, the Studio Client image can be build natively on ARM. There is currently no base-image available from the CoreMedia DockerHub registry but if you manage your NginX base images yourself, you can set the following Docker buildx build argument to build on ARM.

```
APPLICATION_BASE_IMAGE=nginx:stable-alpine3.17
```

In addition to the Studio Client build, the Docker Compose setup has been restuctured slightly:

- the mysql and mongo images are no longer build during the compose setup, instead the default images from dockerhub are being used and config is mounted.
- the nginx base image for the overview container is now configurable

To make use of the local ARM containers, add the following environment variable to your `.env` file in the workspace:

```
NGINX_BASE_IMAGE=nginx:stable-alpine3.17
```

To build CoreMedia Java based applications for ARM, you will have to wait until the `coremedia/java-application-base` and the `coremedia/solr-base` images on DockerHub have images for ARM as well.

[CMS-22888]

## CoreMedia Commerce Hub

### Updated Commerce Adapters

Updated commerce adapters to their latest releases.

- Base Adapter (and commerce client API) to 2.1.3
- SFCC to 2.1.3
- HCL/WCS to 2.1.2

- SAP/Hybris to 2.1.2

[CMS-22741]

# CoreMedia Documentation

## Documentation: Hints on Well-formedness of XML Markup Properties

Hints on how to achieve well-formedness of XML markup properties have been added.

[CMS-22551]

## Updated Documentation for Unit Testing a CAE Application

The test code examples in the chapter *Unit Testing a CAE Application* in the *CAE Developer Manual* were updated to JUnit5.

[CMS-21838]

# Miscellaneous

## Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.7.0. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika.

Updated dependencies:

- Apache Tika 2.7.0
- Apache James Mime4J 0.8.9
- Bouncycastle 1.72
  - Artifact names have changed from `*jdk15on` to `*jdk18on` as part of this update.
- albfernandez/juniversalchardet 2.4.0
  - This dependency replaces a previous dependency with different Maven coordinates: `com.googlecode.juniversalchardet:universalchardet 1.0.3`.

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-22946]

### Commerce Headless Schema Deprecation

Deprecated the following headless commerce augmentation calls:

- `commerce.productAugmentationBySite`
- `commerce.productAugmentationByStore`
- `commerce.categoryAugmentationBySite`
- `commerce.categoryAugmentationByStore`
- `commerce.augmentationForCommerceIdBySite`

Use the corresponding augmentation calls of the `content` root object instead.

[CMS-22764]

### Updated Guava

Updated Guava from 30.1.1 to 31.1 - see [Guava Releases](#) . Please be aware of the *Nullness annotations* changes in version 31.0.

[CMS-22520]

## 4.5.3 Fixed Issues

### CoreMedia Core

#### Fixed bug that caused CAE Feeder repeated re-indexing for contents with blobs in structs

Fixed a bug, that caused the *CAE Feeder* to repeatedly re-index contents (by default every 12 hours), for contents that contain blobs in struct properties. The bug caused the recording of a "time dependency" when such a content was loaded, and this led to later invalidations and re-indexing of that content, even if those structs and contained blob values were not used during feeding.

The fix avoids recording such unneeded time dependencies. Note, that even with the fix, contents may still be re-indexed once, because time dependencies may still be present in the *CAE Feeder* database and won't be removed before the content is re-indexed.

[CMS-22915]

#### Synchronization: CopyOver Merge Strategy Hardened

The CopyOver merge strategy of the synchronization workflow has been hardened regarding its auto-merge behavior. Previously, it had the same strong demands on the

base version of a master (also-known-as latest translated/synchronized version) as the related translation workflow.

As the base version is irrelevant in copy-over context, this evaluation path is now skipped for CopyOver workflow.

Along with that, debug logging has been enhanced, to report more details such as for logger `com.coremedia.translate.workflow.AutoMergeTranslationAction`, where you may see more details, when link redirection fails, which may cause subsequent issues.

[CMS-22882]

### CAE Feeder Navigation Path Feeding Robustness

The *CAE Feeder* sets the correct value in Solr field "navigationpaths" now, even if the site root channel is unexpectedly linked as child page of some unrelated page that is not part of the navigation hierarchy. Previously, this could have led to empty values in Solr field "navigationpaths" for all contents below that site.

[CMS-22792]

### Workflow Server Health Check for UAPI Connection

Workflow Server's health check (accessible through actuator *health*) did not reflect a working connection to the Content Management Server and could show *healthy*, even if the connection to the Content Management Server was broken and the Workflow Server thus partly inoperable. This is now fixed and connection status will be reflected properly.

[CMS-22659]

### Fixed Localization Workflows to not Copy the Home Page Segment to Derived Sites

Previously, Translation and Synchronization workflows tried to copy changes of the segment field of the master site's root page (aka home page) to derived sites, as part of the auto-merge functionality. This has been fixed now, and changes to the root page segment are no longer copied to derived sites. The behavior hasn't changed for child pages.

Home pages of different sites must have different values in the segment property. Because of that, it was a bug to copy the value of a master site to derived sites. Furthermore, a change of the segment in the master site caused problems in workflows: Translation workflows showed a warning about a merge conflict, synchronization workflows with conflict resolution "Manual" failed completely (escalated) and had to be aborted, and synchronization workflows with conflict resolution "Overwrite Target Site" overwrote the root segment of derived sites, which caused an illegal content state because root segments must differ between sites.

The Blueprint configuration for the Spring beans `defaultAutoMergePredicateFactory` and `allMergeablePropertiesPredicateFactory` was

changed now to exclude the root channel segment from auto-merge. These beans are defined in Blueprint class `com.coremedia.blueprint.workflow.boot.BlueprintWorkflowServerAutoConfiguration`.

[CMS-18204]

### Content Feeder Event Handling Robustness

The Content Feeder's event handling has been made more robust, so that it can recover from temporary connection problems to the Content Server after initial feeding has completed. Before this change, the Content Feeder would stop after connection problems, and log an error like "An unexpected error occurred while processing a change". This change now avoids the need to restart the Content Feeder in such cases.

[CMS-8763]

## CoreMedia Content Application Engine

### Fixed dynamic include errors caused by unlicensed elastic social

Added template fallback to avoid dynamic include errors if the "Elastic Social" extension is used, but Elastic Social is not licensed.

[CMS-22913]

### Fixed a bug where the timezone was always GMT

Fixed a bug in the `com.coremedia.livecontext.handler.FragmentCommerceContextInterceptor` where the timezone would always be translated to GMT no matter what value it had.

[CMS-22675]

### RSS Feed Source for CMChannel Fixed

Method `CMChannelImpl#getFeedItems()` would return the linked items of page placement *main* in the wrong type, leaving an RSS feed for a page empty. This is fixed and RSS feeds for a page can now be delivered.

[CMS-17459]

## CoreMedia Studio Client

### Upgraded vm2

Upgraded "vm2" to version 3.9.19 to resolve CVE-2023-32314. "vm2" is utilized as a transitive dependency coming from "proxy-agent" and its sub packages which from studio-client side is utilized to download plugins during studio-client build. Currently, no information regarding "proxy-agent" and CVE-2023-32314 is available. As it is used



by the functionality utilizing PAC files for proxy configuration and we are not exposing any configuration options for PAC files we assume that this issue does not affect us.

[CMS-23060]

### Fix Label Issue with PropertyFieldGroups

Fixed an issue where the first label of a PropertyFieldGroup wasn't displayed after expanding.

[CMS-22937]

### Fixed BlobPropertyField Issues

- Fixed wrong preview URL calculation for image blobs.
- Fixed missing removal of load mask after uploads.

[CMS-22935]

### Upgraded vm2

Upgraded "vm2" to version 3.9.17 to resolve CVE-2023-29017 and CVE-2023-30547. "vm2" is utilized as a transitive dependency coming from "proxy-agent" and its sub packages which from studio-client side is utilized to download plugins during studio-client build. Currently, no information regarding "proxy-agent" and CVE-2023-29017 or CVE-2023-30547 is available. As it is used by the functionality utilizing PAC files for proxy configuration and we are not exposing any configuration options for PAC files we assume that this issue does not affect us.

[CMS-22917]

### Fixed Possible Path Error in Upload Dialog

Fixed an error that occurred when not default path was set in the settings "Content Creation" for document type "CMDownload".

[CMS-22903]

### Fixed Preferred Site Selection

Fixed missing selection of the preferred site in the library when the preferred site was changed via site selector.

[CMS-22898]

### Fixed Layout of BlobProperty

Fixed an issue with the property editor where it was cut off when loaded with empty data.

[CMS-22840]

### Fixed Cut Off Member Name

Fixed layout where member names were cut off in the user manager when "German" was selected as Studio language.

[CMS-22829]

### Fixed UserManager Documentation

Updated documentation about home folders in the Studio user manual.

[CMS-22828]

### Fixed CVE-2023-28154

Fixed CVE-2023-28154 by upgrading webpack to version 5.76.1.

[CMS-22800]

### Delegation of Article Title to Teaser Title Re-Enabled

The delegation of the article title to the teaser title has been re-enabled. If the teaser title is empty, the article title will be used.

This aligns with the re-introduced delegation of teaser text via `CKEditor5RichTextPropertyFieldDelegatePlugin`.

[CMS-22791]

### CKEditor 4/5: Adjust Up- and Downgrade Information

Some examples in Studio Developer Manual for up- and downgrading CKEditor 4 vs. CKEditor 5 referred to `blueprintVersion`, whereas corresponding artifacts are shipped as part of the CoreMedia Studio Client release. Corresponding artifact coordinates got adapted accordingly.

[CMS-22775]

### CKEditor 5

Fixed menu clipping of CKEditor 5 if style panel is collapsed.

[CMS-22750]

### CKEditor 5: Fixed Possibly Mixed Up Markup Property Values From Different Documents

When accessing multiple documents in parallel in CoreMedia Studio, it may have occurred, that one documents gets opened with Markup values from another document opened in parallel. In parallel, the affected document also got checked-out, so that in the end editors may accidentally persist the mixed up Markup to the affected document.

This behavior has been fixed.

An update is recommended, as subsequent editorial actions may cause corrupted data.

[CMS-22739]

### Workflow Labels for PossiblyMissingMasterReferenceValidator

Added missing Labels for PossiblyMissingMasterReferenceValidator (introduced in 2301.1/CMS-22371) when the warning is shown e.g. in the translation workflow window.

[CMS-22700]

### OpenPremularAction: New PremularConfiguration focusPropertyField

`OpenPremularAction [ @coremedia/studio-client.ext.form-services-toolkit/actions/OpenPremularAction ]` uses the new property `focusPropertyField` of `PremularConfiguration [ @coremedia/studio-client.form-models/premular/PremularConfiguration ]` to make the property field with the given name visible after opening / focusing the Premular's document tab. This includes switching to the correct property tab and expanding any surrounding field groups and the property field itself. The full property field name must be used, i.e. including the `"properties."` prefix.

[CMS-22698]

### Embedded images in richtext are now referenced by relative URI

Images embedded in richtext were rendered with an URI relative to the host which caused issues with local development setups where Studio was running with a context [e.g. localhost/studio]. Now images embedded in richtext are rendered with a relative URI.

[CMS-22630]

### Change in Data Types / Flavors of Drag Data and Clipboard Items

Previously, when dragging/dropping and copy/pasting remote beans like content items and users/groups, the drag/drop events' `dataTransfer` property and the items (`IClipboardItem`) of the clipboard contained a `"cm/uri-list"` type/flavor (containing a list of `{ $Ref: uri }` objects). This is now deprecated. Instead we now support different flavors with more specific context:

`"cm-studio-rest/uri-list"`: a list the remote bean URIs as understood by the Studio Rest service

`"cm-content/uuid-list"`: a list of content UUIDs as understood by the content server

`"cm-member/uuid-list"`: a list of user/group UUIDs as understood by the user management server

[CMS-22626]

### Content Hub Pagination: `getChildren()` call triggered too many times.

A bug has been fixed which triggered the `getChildren()` call too many times when using pagination in the Content Hub.

[CMS-22624]

### CKEditor 5 now ignores images with empty xlink-href attribute

CKEditor 5 now ignores images with empty xlink-href attribute and displays them as broken images.

[CMS-22612]

### Embedded Workflow App Can Handle Task Delegation

A bug was fixed where the Workflow App, when embedded into the Content App's side bar, did not update in case of task delegation.

[CMS-22608]

### EditorType in TeaserOverlayContainer fixed

The `TeaserOverlayContainer` now passes the `editorType` property to the underlying `RichTextField`.

[CMS-22605]

### Removed "manageHeight" setting from document forms

Removed `manageHeight` setting from `DetailsDocumentForm` and `PersonDetailsDocumentForm` to fix layout issues

[CMS-22594]

### Fixed documentation of configuration in jangaroo.config.js

Parts of the documentation contained wrong or outdated configuration options for `jangaroo.config.js`, e.g. `additionalCssNonBundle`. This has been fixed now.

[CMS-22585]

### Fixed Possible Premular Tab Restore Error

Fixed a possible error that may happen during tab restoring for tabs that have been removed through plugins.

[CMS-22495]

### Fixed Renaming in Library

Fixed blocked renaming selection via mouse in the library, caused by drag and drop plugin.

[CMS-22395]

### Fixed Locale Switcher Workflow Action

Fixed issue for the locale switcher where the action for starting a workflow wasn't shown for content items without a parent representation in their master site.

[CMS-22357]

### Fixed Resetting of Search Terms in Link List Field

Search terms in Studio link list fields like, e.g., *Related Content Items* could be reset while typing. This is fixed now.

[CMS-21763]

### Fixed Y-Units of PI Graph

The y-label of the site performance graph only shows decimal numbers now.

[CMS-18196]

## CoreMedia Studio Server

### Added Taxonomy Cycle Check

Added missing taxonomy cycle check for the parent and path calculation.

[CMS-22972]

### Fixed "Create From Template" Issues

Fixed several minor issues for the "Create From Template" dialog.

[CMS-22874]

### Fixed Translation for "Cancel" Buttons

Added missing translation for "Cancel" buttons in some confirmation dialogs.

[CMS-22734]

### Fixed Position of New Content Menu

Fixed issue where the "New Content" menu was misaligned when opened from a docked library.

[CMS-22727]

### Moderation App: Umlauts in category filter

The category filter in the Moderation App can handle filter values with umlauts now.

[CMS-22710]

### Fixed Timezone Refresh

Fixed issue where the timezone combo of *DateTimePropertyFields* would not update during tab-reuse. Note that the selected timezone may still not change between content tab switches when no date has been selected for it.

[CMS-22668]

### Wrong display of hotzones on image maps

When the same picture was reused for image maps and tab reusability was configured, hotzones were displayed incorrectly. This is fixed now.

[CMS-19712]

## CoreMedia Deployment

### fix yaml syntax in compose files with multiple yaml anchors

Starting with compose version 2.17, yaml parsing has become more strict and the formerly accepted but invalid syntax to define multiple yaml anchors is now rejected.

To apply the fix manually, replace:

```
environment:
  << : *envs-anchor-1
  << : *envs-anchor-2
```

with:

```
environment:
  << : [*envs-anchor-1, *envs-anchor-2]
```

[CMS-22995]

## CoreMedia Commerce Hub

### Fixed a Bug Regarding Headless Augmentation Calls without Commerce Connection

Headless augmentation calls still require a commerce connection to retrieve basic information such as the *vendor*, *storeId*, *catalogId*, *catalog alias mapping*, and *category hierarchy*. The newly introduced package `com.coremedia.blueprint.caas.augmentation.connection` provides a fallback commerce connection implementation for development purposes.

[CMS-22709]

## CoreMedia Headless Server

### Update GraphQL-Java to fix security vulnerability

Upgrade GraphQL-Java to 19.4 to fix the stack based overflow vulnerability CVE-2023-28867.

[CMS-22878]

### Bugfix: Some characters in repository paths causes InvalidPathException on Windows systems

Whenever a repository path for a content contains characters like ':', '?', '!' etc, which are invalid for paths on windows systems, headless threw an InvalidPathException. This behaviour was fixed using os agnostic path matching.

[CMS-22723]

### Wrap returned content item into list

Based on the API a list of contents is expected, but no list was previously returned. Now a list with only one content item is returned.

[CMS-22483]

### Fix NullPointerException in wildcard settings query

When calling the wildcard settings query on a content object where local settings are null, previously a NullPointerException was thrown. This is now prevented by a null check and instead only returns an empty result.

[CMS-22442]

### Fixed a Bug Regarding Page Grid Lookup in Headless Augmentation Calls

Headless augmentation calls did not correctly consider the category breadcrumb passed with the request to the server to cache computed page grids. The page grid is now computed according to the breadcrumb with fallback to the site's root navigation.

[CMS-22135]

## Miscellaneous

### Fixed File Extension for MIME-Type application/vnd.oasis.opendocument.text-master

Fixed the file extension for blobs of MIME-Type "application/vnd.oasis.opendocument.text-master". The correct file extension is ".odm". Previously, the wrong extension ".otm" was used instead.

[CMS-22993]

### Fixed File Extension for RAR MIME-Types

Fixed the file extension for blobs of MIME-Type "application/x-rar-compressed;version=4" and "application/x-rar-compressed;version=5" to be ".rar".

[CMS-22871]

### Fixed Missing Workflow Localizations

Added missing German texts for workflow related toast messages.

[CMS-22863]

### Updated Spring Framework to version 5.3.26

Updated Spring Framework to version 5.3.26 in order to mitigate CVE-2023-20860 and CVE-2023-20861.

[CMS-22852]

### Added Workflow Abort Action

Administrators can always abort workflows now. The action is always shown in the three-dot menu of the footer toolbar.

[CMS-22850]

### CKEditor 5 36.0.1

CKEditor 5 has been updated to 36.0.1. The update is included in the version 14.0.2 of the CoreMedia plugins. For further information see the [release notes](#) of 14.0.2.

[CMS-22748]

### Possible NullPointerException fixed for Markup in Structs XLIFF export

You may observe a `NullPointerException` when exporting Markup in Structs to XLIFF. This is caused by newly created Markup nodes in Struct properties, that didn't get a value yet.

This issue has been fixed. Markup properties in Struct that are `null` as value are not tried to be exported anymore.

[CMS-22725]

### Fixed Cache Bug that causes RecursiveCacheLookupException

Fixed a bug in the central CoreMedia cache component, that can cause sporadic failures when evaluating cached values from multiple threads under high load. Cache evaluations could have failed with a `RecursiveCacheLookupException`, because computations were incorrectly identified as being cyclic computations that could loop endlessly. This has been fixed now.

[CMS-22672]

### Fixed LdapAuthProvider Configuration

Due to a bug in `LdapAuthProvider`, the configuration properties

```
cap.server.userproviders[n].java.naming.referral
cap.server.userproviders[n].java.naming.ldap.version
```

had no effect. Now they are supported. For backward compatible behaviour, delete these properties from the configuration of your content servers. (You probably did not set them anyway, because the defaults are appropriate in most cases.)



The support of `java.naming.referral` should also improve the default behaviour of the `ActiveDirectoryUserProviders`, when they encounter referrals. This typically happens if LDAP groups have many (e.g. >1500, depends on the AD version) direct members, or if LDAP users are direct members of many groups.

Moreover, the configuration property `cap.server.userprovider.sn.java.naming.security.protocol` is now passed as JNDI connection parameter `java.naming.security.protocol`, as it is recommended by the JNDI documentation. LDAP over SSL (ldaps) worked also before, because the property is considered in an additional way.

[CMS-22638]

### Updated OWASP Dependency Check Maven Plugin

The OWASP Dependency Check Maven Plugin has been updated from 7.4.4 to 8.1.2 - see

- [OWASP Dependency-Check Releases](#)
- [Dependency-Check 8.0.0 Upgrade Notice](#) (for customers using an externally hosted OWASP database instead of the embedded H2 database)

[CMS-21947]

## 4.6 Release 2301.4

The release contains:

- Breaking changes: 0
- Changes and improvements: 8
- Bugfixes: 35

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-07-18

### Breaking Changes

### Changes and Improvements

- CMS-22596: [Layout paths can be configured in CommerceAugmentedPageGridForm](#)
- CMS-22468: [Package generation for Sencha CMD now keeps caret and tilde dependency versions](#)
- CMS-21515: [No Switch Back To ExtJs Drag Drop Any Longer](#)
- CMS-23211: [Updated commerce adapters](#)

### Bugfixes

- CMS-23203: [Banned Dependency: net.sf.jtidy:jtidy](#)
- CMS-23169: [Removed transitive dependency snappy-java](#)
- CMS-21419: [Removal of Elastic Social models from search index](#)
- CMS-23197: [TeaserText Delegate does not work if section is initially collapsed.](#)
- CMS-23142: [Fixed: Concurrent editing breaks CKEditor autosave](#)
- CMS-23115: [More robust layout resolving for commerce categories](#)
- CMS-23071: [Fixed Taxonomy Node Readonly State in LinkLists](#)
- CMS-23036: [Finished Workflows Now Always Show in Content App Sidebar](#)
- CMS-22990: [Missing CKEditor Styles for TeaserOverlay if CKE4 is disabled](#)
- CMS-22904: [Fixed Library Column Header Localization](#)
- CMS-22485: [Content Issue Text](#)

- CMS-23170: [XLIFF Upload in Studio: Case-Insensitive](#)
- CMS-23077: [Fixed German Translation of "May"](#)
- CMS-14582: [ComboBoxes No Longer get Accidentally Enabled After Studio Tab Reuse](#)
- CMS-23185: [Third-Party Update: Bouncycastle](#)
- CMS-23146: [Updated project dependencies to fix reported CVEs](#)
- CMS-23120: [Updated Janino Compiler](#)

## 4.6.1 Breaking Changes

This release contains no breaking changes

## 4.6.2 Changes and Improvements

### CoreMedia Studio Client

#### Layout paths can be configured in CommerceAugmentedPageGridForm

Configuration option "layoutPaths" added to CommerceAugmentedPageGridFormConfig, that is passed on to PageGridPropertyField (which already supports it), so customers can more easily adjust their forms to use dedicated layoutPaths for Augmented Categories - without needing to modify or copy Blueprint code.

[CMS-22596]

#### Package generation for Sencha CMD now keeps caret and tilde dependency versions

Before the change the currently installed version was added to the "requires" field of the sencha packages disallowing any upgrades although semantic versioning was used in the original package. When using caret or tilde dependency versions the version range is now added to the generated Sencha CMD package. Any other form of semantic versioning keeps unsupported due to not being mapable.

[CMS-22468]

#### No Switch Back To ExtJs Drag Drop Any Longer

There still was a CM10 backwards compatibility switch in play that switched from HTML5 drag/drop to ExtJs drag/drop when only Studio App was present (e.g. when you removed the Workflow App). This switch was removed, not least because the CKEditor 5 only works with HTML5 drag / drop.

[CMS-21515]

## Miscellaneous

### Updated commerce adapters

Updated commerce adapters and commerce client API to their latest versions:

- [Commerce Client API and Mock Adapter for Commerce Hub 2.1.7](#)
- [Adapter for SAP Commerce Cloud 2.1.5](#)
- [Adapter for Salesforce Commerce Cloud B2C 2.1.7](#)
- [Adapter for HCL Commerce 2.1.6](#)

[CMS-23211]

## 4.6.3 Fixed Issues

### CoreMedia Core

#### Banned Dependency: `net.sf.jtidy:jtidy`

`pkg:maven/net.sf.jtidy:jtidy@r938` is affected by `CVE-2023-34623`, a possible denial-of-service (DoS) attack with deeply nested DOM structures.

We validated that the deprecated CoreMedia Site Manager application is affected, as soon as authorized editors or services add rich text documents containing deeply nested DOM nodes.

As only the deprecated application is affected, which is only open for administrative usage, we took the following countermeasures:

- We banned `net.sf.jtidy:jtidy` as dependency on global scope.
- We only allowed `net.sf.jtidy:jtidy` for modules having `com.coremedia.blueprint:site-manager.blueprint-parent` as parent by configuring corresponding `bannedDependenciesIncludes` property.

If your Blueprint customizations are affected by this change, you have the following options:

- Include the banned dependency for your module by corresponding configuration.

- Evaluate, if `com.github.jtidy:jtidy` is suitable for your needs. According to the release notes, it resolves `CVE-2023-34623` with 1.0.4 and introduced HTML5-support with previous version 1.0.3.

[CMS-23203]

### Removed transitive dependency `snappy-java`

`snappy-java` is a dependency of Zookeeper, which is used by Solr for SolrCloud. It's not used for the Solr standalone or Solr Leader/Follower setup. The latter is used in CMCC/S, hence it's not actually needed and was removed to avoid (false-positive) CVE reports for that dependency.

[CMS-23169]

### Removal of Elastic Social models from search index

Models are now removed from the search index, if `Model#remove()` is invoked and a corresponding search index exists.

[CMS-21419]

## CoreMedia Studio Client

### TeaserText Delegate does not work if section is initially collapsed.

There was a bug in the `CKEditor5RichTextFieldDelegatePlugin` which would prevent delegation from working properly when the editor was not ready when the plugin got initialized. This issue is now resolved.

[CMS-23197]

### Fixed: Concurrent editing breaks CKEditor autosave

The `CKEditor5RichTextArea`'s save callback would not resolve properly if the editor is (or was) in readonly mode. This issue is now resolved.

[CMS-23142]

### More robust layout resolving for commerce categories

There is a pitfall in the commerce integration, the root category of a commerce catalog must be augmented. If not, there are some obscure errors when resolving the page layout for commerce pages (augmented categories and products). The resolving is more robust now. If the root category is not augmented by mistake you will see a warning in the browser console log.

[CMS-23115]

### Fixed Taxonomy Node Readonly State in LinkLists

Checked-out taxonomy nodes have been rendered as "Element not visible". These nodes are now rendered as regular ones, since the checked-out state does not affect the link list editing here.

[CMS-23071]

### Finished Workflows Now Always Show in Content App Sidebar

We fixed a bug where finished workflows were not always correctly displayed in the Content App Sidebar.

[CMS-23036]

### Missing CKEditor Styles for TeaserOverlay if CKE4 is disabled

TeaserOverlay styles are fixed when CKEditor 4 is disabled

[CMS-22990]

### Fixed Library Column Header Localization

Added translations for "Columns", "Sort Ascending" and "Sort Descending".

[CMS-22904]

### Content Issue Text

A content issue sometimes contained the text "Element not visible" although the referenced content is visible to the user. This is fixed now.

[CMS-22485]

## CoreMedia Studio Server

### XLIFF Upload in Studio: Case-Insensitive

XLIFF-Upload in Studio did not have worked as expected if file extensions [ `.xliff` , `.xlf` ] did not match strictly the given case.

Now, the detection mechanism ignores the case for these file extensions.

[CMS-23170]

### Fixed German Translation of "May"

Fixed German translation of month May to "Mai".

[CMS-23077]

### ComboBoxes No Longer get Accidentally Enabled After Studio Tab Reuse

We fixed a bug where ComboBoxes were always enabled after Studio Tab reuse, regardless of plugin logic that would have them disabled.

[CMS-14582]

## Miscellaneous

### Third-Party Update: Bouncycastle

Bouncycastle was updated to version 1.75 to fix security issue CVE-2023-33201. Note, that artifact names have changed from \*jdk15on to \*jdk18on as part of this update.

[CMS-23185]

### Updated project dependencies to fix reported CVEs

Updated project dependencies to fix reported CVEs:

- gRPC-Java from 1.54.1 to 1.56.0 - see [gRPC-Java Releases](#)
- HtmlCleaner from 2.22 to 2.29 - see [HtmlCleaner Release Notes](#)
- Netty from 4.1.92.Final to 4.1.94.Final - see [Netty Project News](#)

[CMS-23146]

### Updated Janino Compiler

Updated [Janino Compiler](#) to 3.1.10

[CMS-23120]

## 4.7 Release 2301.3

The release contains:

- Breaking changes: 1
- Changes and improvements: 6
- Bugfixes: 72

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-06-02

### Breaking Changes

- CMS-21423: [Update of Google Analytics Connector to Google Analytics 4](#)

### Changes and Improvements

- CMS-22906: [Better logging when diagnosing cross site links in commerce fragments](#)
- CMS-22867: [Content Quick Search Change](#)
- CMS-22888: [Provide ARM build support](#)
- CMS-22952: [Updated project dependencies](#)

### Bugfixes

- CMS-22915: [Fixed bug that caused CAE Feeder repeated re-indexing for contents with blobs in structs](#)
- CMS-22882: [Synchronization: CopyOver Merge Strategy Hardened](#)
- CMS-22792: [CAE Feeder Navigation Path Feeding Robustness](#)
- CMS-18204: [Fixed Localization Workflows to not Copy the Home Page Segment to Derived Sites](#)
- CMS-8763: [Content Feeder Event Handling Robustness](#)
- CMS-22913: [Fixed dynamic include errors caused by unlicensed elastic social](#)
- CMS-23060: [Upgraded vm2](#)
- CMS-23054: [Fixed "mimeType" parameter of BlobPropertyEditor](#)
- CMS-22937: [Fix Label Issue with PropertyFieldGroups](#)



- CMS-22935: Fixed BlobPropertyField Issues
- CMS-22917: Upgraded vm2
- CMS-22903: Fixed Possible Path Error in Upload Dialog
- CMS-22898: Fixed Preferred Site Selection
- CMS-22840: Fixed Layout of BlobProperty
- CMS-22829: Fixed Cut Off Member Name
- CMS-22828: Fixed UserManager Documentation
- CMS-22698: OpenPremularAction: New PremularConfiguration focusPropertyField
- CMS-22608: Embedded Workflow App Can Handle Task Delegation
- CMS-22395: Fixed Renaming in Library
- CMS-21763: Fixed Resetting of Search Terms in Link List Field
- CMS-19467: Fixed Accidental Folder Creation on DoubleClick
- CMS-18196: Fixed Y-Units of PI Graph
- CMS-22972: Added Taxonomy Cycle Check
- CMS-22874: Fixed "Create From Template" Issues
- CMS-22727: Fixed Position of New Content Menu
- CMS-22710: Moderation App: Umlauts in category filter
- CMS-19712: Wrong display of hotzones on image maps
- CMS-22995: fix yaml syntax in compose files with multiple yaml anchors
- CMS-22878: Update GraphQL-Java to fix security vulnerability
- CMS-22442: Fix NullPointerException in wildcard settings query
- CMS-22993: Fixed File Extension for MIME-Type application/vnd.oasis.opendocument.text-master
- CMS-22871: Fixed File Extension for RAR MIME-Types
- CMS-22863: Fixed Missing Workflow Localizations
- CMS-22852: Updated Spring Framework to version 5.3.26
- CMS-22850: Added Workflow Abort Action
- CMS-22543: Fixed Workflow Steps Dialog Height

## 4.7.1 Breaking Changes

### Miscellaneous

#### Update of Google Analytics Connector to Google Analytics 4

As Google Universal Analytics will be discontinued from 1. July 2023 on, the CoreMedia Google Analytics Connector is updated to use the Google Analytics 4 API, see [GA4 Documentation](#).

Follow [Section "Update of Google Analytics Connector to Google Analytics 4" \[454\]](#) for upgrade information.

[CMS-21423]

## 4.7.2 Changes and Improvements

### CoreMedia Content Application Engine

#### Better logging when diagnosing cross site links in commerce fragments

Cross site links are not supported in commerce fragments. Instead a simple "#" is rendered. Debug logging of `com.coremedia.livecontext.fragment.links.transformer.LiveContextLinkTransformer` was extended to support analysis why a commerce link is not built.

[CMS-22906]

### CoreMedia Studio Server

#### Content Quick Search Change

The quick search dialog does filter deleted contents now. If deleted contents should be searched, the regular library has to be used instead.

[CMS-22867]

## CoreMedia Deployment

### Provide ARM build support

With this change, the Studio Client image can be build natively on ARM. There is currently no base-image available from the CoreMedia DockerHub registry but if you manage your NginX base images yourself, you can set the following Docker buildx build argument to build on ARM.

```
APPLICATION_BASE_IMAGE=nginx:stable-alpine3.17
```

In addition to the Studio Client build, the Docker Compose setup has been restuctured slightly:

- the mysql and mongo images are no longer build during the compose setup, instead the default images from dockerhub are being used and config is mounted.
- the nginx base image for the overview container is now configurable

To make use of the local ARM containers, add the following environment variable to your `.env` file in the workspace:

```
NGINX_BASE_IMAGE=nginx:stable-alpine3.17
```

To build CoreMedia Java based applications for ARM, you will have to wait until the `coremedia/java-application-base` and the `coremedia/solr-base` images on DockerHub have images for ARM as well.

[CMS-22888]

## Miscellaneous

### Updated project dependencies

Updated several project dependencies:

- Commerce Adapter Mock (and commerce client API) from 2.1.2 to 2.1.4
- Commerce Adapter SFCC from 2.1.3 to 2.1.4
- Commerce Adapter HCL/WCS from 2.1.2 to 2.1.3
- Commerce Adapter SAP/Hybris from 2.1.2 to 2.1.3
- Spring Boot from 2.7.7 to 2.7.12 - see [Spring Boot Releases](#)
- Spring Security from 5.8.1 to 5.8.3 - see [Spring Security Releases](#)
- Spring Framework from 5.3.26 to 5.3.27 - see [Spring Framework Releases](#)

- Spring Data BOM from 2021.2.7 to 2021.2.12 - see [Spring Data BOM Releases](#)
- Spring GraphQL from 1.0.3 to 1.0.4 - see [Spring for GraphQL Releases](#)
- ByteBuddy from 1.12.22 to 1.12.23 - see [Byte Buddy Releases](#)
- FasterXML Jackson from 2.14.1 to 2.14.2 - see [Jackson Releases](#)
- gRPC-Java from 1.52.1 to 1.54.1 - see [gRPC-Java Releases](#)
- Hibernate from 5.6.14.Final to 5.6.15.Final - see [Hibernate ORM 5.6 Releases](#)
- JAXB Runtime from 2.3.7 to 2.3.8 - see [Jakarta XML Binding 2.3.x Release Notes](#)
- Jetty from 9.4.50 to 9.4.51 - see [Eclipse Jetty Release](#)
- JSON-Java from 20220320 to 20230227 - see [JSON-Java Releases](#)
- Liquibase from 4.19.0 to 4.19.1 - see [Liquibase Release Notes](#)
- Logback from 1.2.11 to 1.2.12 [Logback News](#)
- MariaDB Driver from 3.1.0 to 3.1.3 - see [List of MariaDB Connector/J Releases](#)
- Micrometer from 1.10.3 to 1.10.7 - see [Micrometer Releases](#)
- MySQL and Connector/J from 8.0.32 to 8.0.33 - see [MySQL 8.0 Release Notes](#) and [MySQL Connector/J 8.0 Release Notes](#)
- Netty from 4.1.87.Final to 4.1.91.Final - see [Netty Project News](#)
- Java Protocol Buffers from 3.21.12 to 3.22.3 - see [Java Protocol Buffers Releases](#)
- PostgreSQL Connector from 42.5.1 to 42.5.4 - see [PostgreSQL JDBC Driver Changelogs](#)
- Tomcat from 9.0.71 to 9.0.75 - see [Tomcat 9 Changelog](#)

[CMS-22952]

## 4.7.3 Fixed Issues

### CoreMedia Core

Fixed bug that caused CAE Feeder repeated re-indexing for contents with blobs in structs

Fixed a bug, that caused the *CAE Feeder* to repeatedly re-index contents (by default every 12 hours), for contents that contain blobs in struct properties. The bug caused the recording of a "time dependency" when such a content was loaded, and this led to later invalidations and re-indexing of that content, even if those structs and contained blob values were not used during feeding.

The fix avoids recording such unneeded time dependencies. Note, that even with the fix, contents may still be re-indexed once, because time dependencies may still be present in the *CAE Feeder* database and won't be removed before the content is re-indexed.

[CMS-22915]

### Synchronization: CopyOver Merge Strategy Hardened

The CopyOver merge strategy of the synchronization workflow has been hardened regarding its auto-merge behavior. Previously, it had the same strong demands on the base version of a master (also-known-as latest translated/synchronized version) as the related translation workflow.

As the base version is irrelevant in copy-over context, this evaluation path is now skipped for CopyOver workflow.

Along with that, debug logging has been enhanced, to report more details such as for logger `com.coremedia.translate.workflow.AutoMergeTranslationAction`, where you may see more details, when link redirection fails, which may cause subsequent issues.

[CMS-22882]

### CAE Feeder Navigation Path Feeding Robustness

The *CAE Feeder* sets the correct value in Solr field "navigationpaths" now, even if the site root channel is unexpectedly linked as child page of some unrelated page that is not part of the navigation hierarchy. Previously, this could have led to empty values in Solr field "navigationpaths" for all contents below that site.

[CMS-22792]

### Fixed Localization Workflows to not Copy the Home Page Segment to Derived Sites

Previously, Translation and Synchronization workflows tried to copy changes of the segment field of the master site's root page (aka home page) to derived sites, as part of the auto-merge functionality. This has been fixed now, and changes to the root page segment are no longer copied to derived sites. The behavior hasn't changed for child pages.

Home pages of different sites must have different values in the segment property. Because of that, it was a bug to copy the value of a master site to derived sites. Furthermore, a change of the segment in the master site caused problems in workflows: Translation workflows showed a warning about a merge conflict, synchronization workflows with conflict resolution "Manual" failed completely [escalated] and had to be aborted, and synchronization workflows with conflict resolution "Overwrite Target Site" overwrote the root segment of derived sites, which caused an illegal content state because root segments must differ between sites.

The Blueprint configuration for the Spring beans `defaultAutoMergePredicateFactory` and `allMergeablePropertiesPredicateFactory` was changed now to exclude the root channel segment from auto-merge. These beans are defined in Blueprint class `com.coremedia.blueprint.workflow.boot.BlueprintWorkflowServerAutoConfiguration`.

[CMS-18204]

### Content Feeder Event Handling Robustness

The Content Feeder's event handling has been made more robust, so that it can recover from temporary connection problems to the Content Server after initial feeding has completed. Before this change, the Content Feeder would stop after connection problems, and log an error like "An unexpected error occurred while processing a change". This change now avoids the need to restart the Content Feeder in such cases.

[CMS-8763]

## CoreMedia Content Application Engine

### Fixed dynamic include errors caused by unlicensed elastic social

Added template fallback to avoid dynamic include errors if the "Elastic Social" extension is used, but Elastic Social is not licensed.

[CMS-22913]

## CoreMedia Studio Client

### Upgraded vm2

Upgraded "vm2" to version 3.9.19 to resolve CVE-2023-32314. "vm2" is utilized as a transitive dependency coming from "proxy-agent" and its sub packages which from studio-client side is utilized to download plugins during studio-client build. Currently, no information regarding "proxy-agent" and CVE-2023-32314 is available. As it is used by the functionality utilizing PAC files for proxy configuration and we are not exposing any configuration options for PAC files we assume that this issue does not affect us.

[CMS-23060]

### Fixed "mimeType" parameter of BlobPropertyEditor

The property should filter the type of files that are allowed for uploading, but did break the editor after file selection. The parameter can now be used again.

[CMS-23054]

### Fix Label Issue with PropertyFieldGroups

Fixed an issue where the first label of a PropertyFieldGroup wasn't displayed after expanding.

[CMS-22937]

### Fixed BlobPropertyField Issues

- Fixed wrong preview URL calculation for image blobs.
- Fixed missing removal of load mask after uploads.

[CMS-22935]

### Upgraded vm2

Upgraded "vm2" to version 3.9.17 to resolve CVE-2023-29017 and CVE-2023-30547. "vm2" is utilized as a transitive dependency coming from "proxy-agent" and its sub packages which from studio-client side is utilized to download plugins during studio-client build. Currently, no information regarding "proxy-agent" and CVE-2023-29017 or CVE-2023-30547 is available. As it is used by the functionality utilizing PAC files for proxy configuration and we are not exposing any configuration options for PAC files we assume that this issue does not affect us.

[CMS-22917]

### Fixed Possible Path Error in Upload Dialog

Fixed an error that occurred when not default path was set in the settings "Content Creation" for document type "CMDownload".

[CMS-22903]

### Fixed Preferred Site Selection

Fixed missing selection of the preferred site in the library when the preferred site was changed via site selector.

[CMS-22898]

### Fixed Layout of BlobProperty

Fixed an issue with the property editor where it was cut off when loaded with empty data.

[CMS-22840]

### Fixed Cut Off Member Name

Fixed layout where member names were cut off in the user manager when "German" was selected as Studio language.

[CMS-22829]

### Fixed UserManager Documentation

Updated documentation about home folders in the Studio user manual.

[CMS-22828]

### OpenPremularAction: New PremularConfiguration focusPropertyField

`OpenPremularAction [ @coremedia/studio-client.ext.form-services-toolkit/actions/OpenPremularAction ]` uses the new property `focusPropertyField` of `PremularConfiguration [ @coremedia/studio-client.form-models/premular/PremularConfiguration ]` to make the property field with the given name visible after opening / focusing the Premular's document tab. This includes switching to the correct property tab and expanding any surrounding field groups and the property field itself. The full property field name must be used, i.e. including the `"properties."` prefix.

[CMS-22698]

### Embedded Workflow App Can Handle Task Delegation

A bug was fixed where the Workflow App, when embedded into the Content App's side bar, did not update in case of task delegation.

[CMS-22608]

### Fixed Renaming in Library

Fixed blocked renaming selection via mouse in the library, caused by drag and drop plugin.

[CMS-22395]

### Fixed Resetting of Search Terms in Link List Field

Search terms in Studio link list fields like, e.g., *Related Content Items* could be reset while typing. This is fixed now.

[CMS-21763]

### Fixed Accidental Folder Creation on DoubleClick

Fixed an issue that under some circumstance a new folder creation was triggered by a doubleclick when the library was busy with other stuff.

[CMS-19467]

### Fixed Y-Units of PI Graph

The y-label of the site performance graph only shows decimal numbers now.

[CMS-18196]



## CoreMedia Studio Server

### Added Taxonomy Cycle Check

Added missing taxonomy cycle check for the parent and path calculation.

[CMS-22972]

### Fixed "Create From Template" Issues

Fixed several minor issues for the "Create From Template" dialog.

[CMS-22874]

### Fixed Position of New Content Menu

Fixed issue where the "New Content" menu was misaligned when opened from a docked library.

[CMS-22727]

### Moderation App: Umlauts in category filter

The category filter in the Moderation App can handle filter values with umlauts now.

[CMS-22710]

### Wrong display of hotzones on image maps

When the same picture was reused for image maps and tab reusability was configured, hotzones were displayed incorrectly. This is fixed now.

[CMS-19712]

## CoreMedia Deployment

### fix yaml syntax in compose files with multiple yaml anchors

Starting with compose version 2.17, yaml parsing has become more strict and the formerly accepted but invalid syntax to define multiple yaml anchors is now rejected.

To apply the fix manually, replace:

```
environment:
  << : *envs-anchor-1
  << : *envs-anchor-2
```

with:

```
environment:
  << : [*envs-anchor-1, *envs-anchor-2]
```

[CMS-22995]

## CoreMedia Headless Server

### Update GraphQL-Java to fix security vulnerability

Upgrade GraphQL-Java to 19.4 to fix the stack based overflow vulnerability CVE-2023-28867.

[CMS-22878]

### Fix NullPointer in wildcard settings query

When calling the wildcard settings query on a content object where local settings are null, previously a NullPointer Exception was thrown. This is now prevented by a null check and instead only returns an empty result.

[CMS-22442]

## Miscellaneous

### Fixed File Extension for MIME-Type application/vnd.oasis.opendocument.text-master

Fixed the file extension for blobs of MIME-Type "application/vnd.oasis.opendocument.text-master". The correct file extension is ".odm". Previously, the wrong extension ".otm" was used instead.

[CMS-22993]

### Fixed File Extension for RAR MIME-Types

Fixed the file extension for blobs of MIME-Type "application/x-rar-compressed;version=4" and "application/x-rar-compressed;version=5" to be ".rar".

[CMS-22871]

### Fixed Missing Workflow Localizations

Added missing German texts for workflow related toast messages.

[CMS-22863]

### Updated Spring Framework to version 5.3.26

Updated Spring Framework to version 5.3.26 in order to mitigate CVE-2023-20860 and CVE-2023-20861.

[CMS-22852]

### **Added Workflow Abort Action**

Administrators can always abort workflows now. The action is always shown in the three-dot menu of the footer toolbar.

[CMS-22850]

### **Fixed Workflow Steps Dialog Height**

The dialog has now a max height, so that if a long list of "next step" buttons are available, their parent panel is scrollable.

[CMS-22543]

## 4.8 Release 2301.2

The release contains:

- Breaking changes: 3
- Changes and improvements: 8
- Bugfixes: 48

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-03-22

### Breaking Changes

- CMS-22757: [XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs](#)
- CMS-22761: [CoreMedia CKEditor 5 Plugins Updated](#)
- CMS-22731: [Changed multipart request handling from Commons Fileupload to Servlet API](#)

### Changes and Improvements

- CMS-22690: [Struct Property is now supported for ThumbnailResolver](#)
- CMS-22554: [Improved Content Search with open Link Balloon in CKEditor 5](#)
- CMS-22036: [CKEditor5RichTextPropertyFieldDelegatePlugin introduced](#)
- CMS-22741: [Updated Commerce Adapters](#)
- CMS-22551: [Documentation: Hints on Well-formedness of XML Markup Properties](#)

### Bugfixes

- CMS-22659: [Workflow Server Health Check for UAPI Connection](#)
- CMS-22675: [Fixed a bug where the timezone was always GMT](#)
- CMS-22800: [Fixed CVE-2023-28154](#)
- CMS-22791: [Delegation of Article Title to Teaser Title Re-Enabled](#)
- CMS-22775: [CKEditor 4/5: Adjust Up- and Downgrade Information](#)
- CMS-22750: [CKEditor 5](#)

- CMS-22739: CKEditor 5: Fixed Possibly Mixed Up Markup Property Values From Different Documents
- CMS-22700: Workflow Labels for PossiblyMissingMasterReferenceValidator
- CMS-22624: Content Hub Pagination: getChildren() call triggered too many times.
- CMS-22612: CKEditor 5 now ignores images with empty xlink-href attribute
- CMS-22605: EditorType in TeaserOverlayContainer fixed
- CMS-22594: Removed "manageHeight" setting from document forms
- CMS-22585: Fixed documentation of configuration in jangaroo.config.js
- CMS-22495: Fixed Possible Premular Tab Restore Error
- CMS-22357: Fixed Locale Switcher Workflow Action
- CMS-22734: Fixed Translation for "Cancel" Buttons
- CMS-22668: Fixed Timezone Refresh
- CMS-22709: Fixed a Bug Regarding Headless Augmentation Calls without Commerce Connection
- CMS-22723: Bugfix: Some characters in repository paths causes InvalidPathException on Windows systems
- CMS-22135: Fixed a Bug Regarding Page Grid Lookup in Headless Augmentation Calls
- CMS-22748: CKEditor 5 36.0.1
- CMS-22725: Possible NullPointerException fixed for Markup in Structs XLIFF export
- CMS-22672: Fixed Cache Bug that causes RecursiveCacheLookupException
- CMS-22638: Fixed LdapUserProvider Configuration
- CMS-21947: Updated OWASP Dependency Check Maven Plugin

## 4.8.1 Breaking Changes

### CoreMedia Core

#### XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs

XLIFF support for Markup in Structs has been enhanced in that way, that Markup nodes can now be restored from XLIFF regarding their corresponding grammar settings.

Follow [Section "XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs" \[456\]](#) for upgrade information.

*[CMS-22757]*

## CoreMedia Studio Client

### CoreMedia CKEditor 5 Plugins Updated

The CKEditor 5 Plugins provided by CoreMedia have been updated to 14.1.1.

Follow [Section “CoreMedia CKEditor 5 Plugins Updated” \[457\]](#) for upgrade information.

[CMS-22761]

## CoreMedia Studio Server

### Changed multipart request handling from Commons Fileupload to Servlet API

The runtime dependency `commons-fileupload:commons-fileupload` has been removed in order to prevent vulnerability [CVE-2023-24998](#) . By removing the application property `spring.servlet.multipart.enabled=true` , the Studio server configuration has been changed from using *Commons Fileupload* for handling multipart requests to using the *Servlet API* .

Follow [Section “Changed multipart request handling from Commons Fileupload to Servlet API” \[458\]](#) for upgrade information.

[CMS-22731]

## 4.8.2 Changes and Improvements

## CoreMedia Studio Client

### Struct Property is now supported for ThumbnailResolver

The ThumbnailResolver can now be configured to include a struct property like:

```
localSettings.thumbnail
```

[CMS-22690]

### Improved Content Search with open Link Balloon in CKEditor 5

MouseDown- and Click-Events in the Studio-Library will not close the CKEditor's Link Balloon anymore.

[CMS-22554]

### CKEditor5RichTextFieldDelegatePlugin introduced

`CKEditor5RichTextFieldDelegatePlugin` was introduced to enable delegation of values to CKEditor 5. Usages of `RichTextFieldDelegatePlugin` for CKEditor 4 should be replaced with the new plugin when upgrading to CKEditor 5.

[CMS-22036]

## CoreMedia Commerce Hub

### Updated Commerce Adapters

Updated commerce adapters to their latest releases.

- Base Adapter (and commerce client API) to 2.1.3
- SFCC to 2.1.3
- HCL/WCS to 2.1.2
- SAP/Hybris to 2.1.2

[CMS-22741]

## CoreMedia Documentation

### Documentation: Hints on Well-formedness of XML Markup Properties

Hints on how to achieve well-formedness of XML markup properties have been added.

[CMS-22551]

## 4.8.3 Fixed Issues

## CoreMedia Core

### Workflow Server Health Check for UAPI Connection

Workflow Server's health check (accessible through actuator *health* ) did not reflect a working connection to the Content Management Server and could show *healthy* , even if the connection to the Content Management Server was broken and the Workflow Server thus partly inoperable. This is now fixed and connection status will be reflected properly.

[CMS-22659]

## CoreMedia Content Application Engine

### Fixed a bug where the timezone was always GMT

Fixed a bug in the `com.coremedia.livecontext.handler.FragmentCommerceContextInterceptor` where the timezone would always be translated to GMT no matter what value it had.

[CMS-22675]

## CoreMedia Studio Client

### Fixed CVE-2023-28154

Fixed CVE-2023-28154 by upgrading webpack to version 5.76.1.

[CMS-22800]

### Delegation of Article Title to Teaser Title Re-Enabled

The delegation of the article title to the teaser title has been re-enabled. If the teaser title is empty, the article title will be used.

This aligns with the re-introduced delegation of teaser text via `CKEditor5RichTextPropertyFieldDelegatePlugin`.

[CMS-22791]

### CKEditor 4/5: Adjust Up- and Downgrade Information

Some examples in Studio Developer Manual for up- and downgrading CKEditor 4 vs. CKEditor 5 referred to `blueprintVersion`, whereas corresponding artifacts are shipped as part of the CoreMedia Studio Client release. Corresponding artifact coordinates got adapted accordingly.

[CMS-22775]

### CKEditor 5

Fixed menu clipping of CKEditor 5 if style panel is collapsed.

[CMS-22750]

### CKEditor 5: Fixed Possibly Mixed Up Markup Property Values From Different Documents

When accessing multiple documents in parallel in CoreMedia Studio, it may have occurred, that one documents gets opened with Markup values from another document



opened in parallel. In parallel, the affected document also got checked-out, so that in the end editors may accidentally persist the mixed up Markup to the affected document.

This behavior has been fixed.

An update is recommended, as subsequent editorial actions may cause corrupted data.

[CMS-22739]

### Workflow Labels for PossiblyMissingMasterReferenceValidator

Added missing Labels for PossiblyMissingMasterReferenceValidator (introduced in 2301.1/CMS-22371) when the warning is shown e.g. in the translation workflow window.

[CMS-22700]

### Content Hub Pagination: getChildren() call triggered too many times.

A bug has been fixed which triggered the getChildren() call too many times when using pagination in the Content Hub.

[CMS-22624]

### CKEditor 5 now ignores images with empty xlink:href attribute

CKEditor 5 now ignores images with empty xlink:href attribute and displays them as broken images.

[CMS-22612]

### EditorType in TeaserOverlayContainer fixed

The `TeaserOverlayContainer` now passes the `editorType` property to the underlying `RichTextField`.

[CMS-22605]

### Removed "manageHeight" setting from document forms

Removed `manageHeight` setting from `DetailsDocumentForm` and `PersonDetailsDocumentForm` to fix layout issues

[CMS-22594]

### Fixed documentation of configuration in jangaroo.config.js

Parts of the documentation contained wrong or outdated configuration options for `jangaroo.config.js`, e.g. `additionalCssNonBundle`. This has been fixed now.

[CMS-22585]

### Fixed Possible Premular Tab Restore Error

Fixed a possible error that may happen during tab restoring for tabs that have been removed through plugins.

[CMS-22495]

### Fixed Locale Switcher Workflow Action

Fixed issue for the locale switcher where the action for starting a workflow wasn't shown for content items without a parent representation in their master site.

[CMS-22357]

## CoreMedia Studio Server

### Fixed Translation for "Cancel" Buttons

Added missing translation for "Cancel" buttons in some confirmation dialogs.

[CMS-22734]

### Fixed Timezone Refresh

Fixed issue where the timezone combo of *DateTimePropertyFields* would not update during tab-reuse. Note that the selected timezone may still not change between content tab switches when no date has been selected for it.

[CMS-22668]

## CoreMedia Commerce Hub

### Fixed a Bug Regarding Headless Augmentation Calls without Commerce Connection

Headless augmentation calls still require a commerce connection to retrieve basic information such as the *vendor*, *storeId*, *catalogId*, *catalog alias mapping*, and *category hierarchy*. The newly introduced package `com.coremedia.blueprint.caas.augmentation.connection` provides a fallback commerce connection implementation for development purposes.

[CMS-22709]

## CoreMedia Headless Server

### Bugfix: Some characters in repository paths causes InvalidPathException on Windows systems

Whenever a repository path for a content contains characters like ':', '?', '!' etc, which are invalid for paths on windows systems, headless threw an `InvalidPathException`. This behaviour was fixed using os agnostic path matching.

[CMS-22723]

### Fixed a Bug Regarding Page Grid Lookup in Headless Augmentation Calls

Headless augmentation calls did not correctly consider the category breadcrumb passed with the request to the server to cache computed page grids. The page grid is now computed according to the breadcrumb with fallback to the site's root navigation.

[CMS-22135]

## Miscellaneous

### CKEditor 5 36.0.1

CKEditor 5 has been updated to 36.0.1. The update is included in the version 14.0.2 of the CoreMedia plugins. For further information see the [release notes](#) of 14.0.2.

[CMS-22748]

### Possible NullPointerException fixed for Markup in Structs XLIFF export

You may observe a `NullPointerException` when exporting Markup in Structs to XLIFF. This is caused by newly created Markup nodes in Struct properties, that didn't get a value yet.

This issue has been fixed. Markup properties in Struct that are `null` as value are not tried to be exported anymore.

[CMS-22725]

### Fixed Cache Bug that causes RecursiveCacheLookupException

Fixed a bug in the central CoreMedia cache component, that can cause sporadic failures when evaluating cached values from multiple threads under high load. Cache evaluations could have failed with a `RecursiveCacheLookupException`, because computations were incorrectly identified as being cyclic computations that could loop endlessly. This has been fixed now.

[CMS-22672]

### Fixed LdapUserProvider Configuration

Due to a bug in `LdapUserProvider`, the configuration properties

```
cap.server.userproviders[n].java.naming.referral
cap.server.userproviders[n].java.naming.ldap.version
```

had no effect. Now they are supported. For backward compatible behaviour, delete these properties from the configuration of your content servers. (You probably did not set them anyway, because the defaults are appropriate in most cases.)

The support of `java.naming.referral` should also improve the default behaviour of the `ActiveDirectoryUserProviders`, when they encounter referrals. This typically happens

if LDAP groups have many (e.g. >1500, depends on the AD version) direct members, or if LDAP users are direct members of many groups.

Moreover, the configuration property `cap.server.userprovider.sn.java.naming.security.protocol` is now passed as JNDI connection parameter `java.naming.security.protocol`, as it is recommended by the JNDI documentation. LDAP over SSL (ldaps) worked also before, because the property is considered in an additional way.

[CMS-22638]

### Updated OWASP Dependency Check Maven Plugin

The OWASP Dependency Check Maven Plugin has been updated from 7.4.4 to 8.1.2 - see

- [OWASP Dependency-Check Releases](#)
- [Dependency-Check 8.0.0 Upgrade Notice](#) [for customers using an externally hosted OWASP database instead of the embedded H2 database]

[CMS-21947]

## 4.9 Release 2301.1

The release contains:

- Breaking changes: 20
- Changes and improvements: 64
- Bugfixes: 132

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-02-09

### Breaking Changes

- CMS-12050: [SQL Server: Content Server Database Schema Change](#)
- CMS-22524: [Replaced invocations of deprecated and breaking Spring Security code](#)
- CMS-22461: [Replaced deprecated WebSecurityConfigurerAdapter](#)
- CMS-22251: [P2TagFilter Deprecated and Replaced by ReservedClassToElementFilter](#)
- CMS-14235: [Removed UnknownMimetypeCharacterEncodingFilter](#)
- CMS-22521: [Updated Tomcat version to 9.0.71 and changed property names](#)
- CMS-22433: [Guess mime-type from extension for local development resources in the CAE](#)
- CMS-22455: [Changed Configuration for Headings in CKEditor 5](#)
- CMS-22306: [Load Internal Member in User Manager \(again\)](#)
- CMS-21494: [Updated Taxonomy/Topic Pages Administration Access](#)
- CMS-22471: [Home Directories of inactive Users](#)
- CMS-22460: [Replaced deprecated WebSecurityConfigurerAdapter](#)
- CMS-21715: [Updated Spring Boot, Spring Security and transitive dependencies](#)
- CMS-22241: [JMX Beans use Spring Application Name as Application Key](#)
- CMS-22516: [Updated gRPC Spring Boot Starter](#)
- CMS-22616: [CoreMedia CKEditor plugins updated to 11.0.0](#)
- CMS-22568: [Removed Usage of Deprecated Spring Annotations and Classes](#)
- CMS-22508: [Removed maven-shade-plugin](#)
- CMS-22462: [Updated auto configurations](#)

- CMS-22542: CKEditor 5 Updated to 34.0.0 and CoreMedia's Plugins to 10.4.0

## Changes and Improvements

- CMS-22225: Third-Party Update: Apache Tika and Transitive Dependencies
- CMS-22573: Update Freemarker Library to 2.3.32
- CMS-22329: Added Spring's Nullable Annotation to CAE Handlers
- CMS-22102: Corrected Sitemap Generation Ports
- CMS-21890: Allow `Customize.Mode.APPEND` for `permittedLinkParameterNames` Handlers
- CMS-14206: Improved performance of `SitesService#getSiteFor[]` / `ContentObject-SiteAspect#getSite[]`
- CMS-22336: Removed Halloween & Christmas Animations
- CMS-20689: Configuration Feature Flags for CKEditor 5
- CMS-20674: Additional Plugins enabled for CKEditor 5
- CMS-22371: New Validator: `MasterLinkInAugmentationValidator` for Multi-Site
- CMS-21956: A Change in Java (amazoncorretto-11-11.0.17.8.1) Fixes Transformations of Some GIFs.
- CMS-22250: Self reference for locale added in HTML Head
- CMS-22205: java-application-base image update
- CMS-22592: Updated commerce adapters
- CMS-22421: Headless Server New Feature: Block documents from delivery with confidential contents
- CMS-22447: Analytics connectors: Separate live and backend properties
- CMS-22396: Upgrade to Docker compose v2
- CMS-20116: `getReferringVersion` methods have been added to Content

## Bugfixes

- CMS-22528: XLIFF Import: Markup in Structs Support Enhanced
- CMS-22527: `RichTextInStructTranslatablePredicate`: `NullPointerException` Fixed
- CMS-22464: Fixed Bug in "cm content-uuid-import"
- CMS-22314: Third-Party Update: Woodstox
- CMS-22212: Fixed Studio Search Information Disclosure
- CMS-21264: Improved BELOW Content Query Execution

- CMS-19571: [Fixed CAE Feeder Possible Deadlock](#)
- CMS-22354: [Updated \(Embedded\) Tomcat to 9.0.68](#)
- CMS-22268: [Third-Party Update: commons-text](#)
- CMS-22183: [Added Nullability Annotations to Validator and ValidationService](#)
- CMS-21318: [Fixed Atom Feed Validation](#)
- CMS-19436: [Bugfix: Image Map Hotzones Misplaced when "Fit Image to Crop"](#)
- CMS-17459: [RSS Feed Source for CMChannel Fixed](#)
- CMS-22630: [Embedded images in richtext are now referenced by relative URI](#)
- CMS-22626: [Change in Data Types / Flavors of Drag Data and Clipboard Items](#)
- CMS-22559: [Simplify Configuration for Local Studio Client Development against Server with Custom Path Prefix](#)
- CMS-22555: [Improved studio-client development documentation](#)
- CMS-22481: [Fixed German Labels](#)
- CMS-22456: [Editor contents in new HTMLFragments are now editable](#)
- CMS-22446: [Added missing favicon in Workflow App](#)
- CMS-22365: [Problems starting \[remote\] apps with devDependencies](#)
- CMS-22363: [Fixed An Issue Where Drag&Drop Between Content App and Workflow App Did Not Work](#)
- CMS-22313: [CKEditor 5: Drag & Drop of contents from external systems into RichText and Link Balloon](#)
- CMS-22305: [Fixed Document Lifecycle Status Icon](#)
- CMS-22304: [Fixed Notification Error for Custom Notifications](#)
- CMS-22272: [Fixed Issues Tooltip](#)
- CMS-22201: [Fixed Initialization of FolderChooserList](#)
- CMS-21883: [SASS file check in jangaroo build does now respect custom SASS Namespace](#)
- CMS-19374: [Documentation: Added Hints on Handling of EXIF Orientation in Image Metadata](#)
- CMS-19100: [Added Optional Force Collapse State](#)
- CMS-22593: [Studio Server Now Logs Whether an Invalidation Source Requests a Full Invalidation](#)
- CMS-22525: [Improved Robustness of Augmentation](#)
- CMS-22523: [Components not Fully Shutting Down in Case of Spring Context Setup Problems](#)

- CMS-19111: [Content with links to destroyed content can now be partially restored](#)
- CMS-14262: [Fixed Bug Where the Preview Panel Grew Smaller After Collapsing + Expanding](#)
- CMS-22509: [Third-Party Update: json5](#)
- CMS-22385: [Link Properties in Settings on Windows Systems](#)
- CMS-22243: [Relocation of MySQL Database Driver](#)
- CMS-22550: [Fix Solr Configuration for Replication Handler](#)
- CMS-22510: [Updated gRPC, Netty and transitive dependencies](#)
- CMS-22450: [Third-Party Update: postgresql Driver](#)
- CMS-22440: [Bugfix: Robustness against Invalid Background Colors in Image Transformation](#)
- CMS-22355: [Updated Spring Security to 5.6.9](#)

## 4.9.1 Breaking Changes

### CoreMedia Core

#### SQL Server: Content Server Database Schema Change

For Microsoft SQL Server, the *Content Server* will automatically change a database index definition, when it starts the first time after upgrading. Other databases are not affected. This change improves the performance when the *Content Server* deletes unused markup in a SQL Server database.

Follow [Section “SQL Server: Content Server Database Schema Change” \[460\]](#) for upgrade information.

*[CMS-12050]*

### CoreMedia Content Application Engine

#### Replaced invocations of deprecated and breaking Spring Security code

With the update to Spring Security 5.8, there're a number of deprecations whose invocations have been replaced:

Follow [Section “Replaced invocations of deprecated and breaking Spring Security code” \[460\]](#) for upgrade information.



[CMS-22524]

### Replaced deprecated WebSecurityConfigurerAdapter

For the default CAE:

Follow [Section “Replaced deprecated WebSecurityConfigurerAdapter” \[462\]](#) for upgrade information.

[CMS-22461]

### P2TagFilter Deprecated and Replaced by ReservedClassToElementFilter

Class `P2TagFilter` had a bug with additional attributes (except `class`). With this change, processing of CoreMedia Rich Text to generate XHTML is no longer performed by `P2TagFilter` but `ReservedClassToElementFilter`. Blueprint's default rich text filter configuration has been adjusted accordingly. Class `P2TagFilter` is now deprecated.

Follow [Section “P2TagFilter Deprecated and Replaced by ReservedClassToElementFilter” \[463\]](#) for upgrade information.

[CMS-22251]

### Removed UnknownMimetypeCharacterEncodingFilter

Removed class `com.coremedia.blueprint.cae.filter.UnknownMimetypeCharacterEncodingFilter` as it is not used with embedded tomcat.

[CMS-14235]

### Updated Tomcat version to 9.0.71 and changed property names

Tomcat has been updated to version 9.0.71 (see [Changelog Tomcat 9.0.71](#)) to prevent known vulnerabilities.

Follow [Section “Updated Tomcat version to 9.0.71 and changed property names” \[465\]](#) for upgrade information.

[CMS-22521]

### Guess mime-type from extension for local development resources in the CAE

For the local code resources it is assumed that guessing the mime-type based on the file extension is more robust than guessing based on file content.

Follow [Section “Guess mime-type from extension for local development resources in the CAE” \[465\]](#) for upgrade information.

[CMS-22433]

## CoreMedia Studio Client

### Changed Configuration for Headings in CKEditor 5

The configuration for Headings in the default CKEditor 5 in the Blueprint was changed to match the configuration for CKEditor 4. After switching to CKEditor 5 in CoreMedia Studio, we kept the default configuration for Headings in CKEditor 5, which maps `Heading 1` to `<h2>` and so on. We changed this to match the mapping we had for CKEditor 4. [`Heading 1` maps to `<h1>` etc.]

[CMS-22455]

### Load Internal Member in User Manager [again]

If the user groups are built-in, the user manager should show again all groups and users by default. We cleared the list mainly because of external groups and members, so that large number are not automatically imported into the content repository. For internal members, this cannot happen. So we show all members now again in the list view, if an internal domain is selected. The previous workaround by setting the max search character count to "0" now only applies to external domains.

[CMS-22306]

### Updated Taxonomy/Topic Pages Administration Access

Since the 2110 release, the access to topic pages and the taxonomy manager is not configurable via content anymore. Instead, user groups must be added to the `jangaroo.config.js` file of the corresponding studio-client module. These files and the documentation have been updated with default groups and the removed from the demo content.

[CMS-21494]

## CoreMedia Studio Server

### Home Directories of inactive Users

When an external (LDAP) user was deactivated, his home folder remained untouched. When a new user with the same name and domain appeared, he took over the existing home folder by name match, including any content of the deactivated user. This is not appropriate with respect to data privacy. Moreover, it is awkward if system documents like `EditorPreferences` are still checked-out by the deactivated user and thus cannot be modified by the new user.

Follow [Section "Home Directories of inactive Users" \[466\]](#) for upgrade information.

[CMS-22471]

### Replaced deprecated `WebSecurityConfigurerAdapter`

With the update to Spring Boot 2.7 and Spring Security 5.8, the `org.springframework.security.config.annotation.web.configuration.WebSecurityConfigurerAdapter` is now deprecated. Hence, the `com.coremedia.springframework.component.security.EditingRestSecurityAutoConfiguration` has been migrated regarding to the Spring Boot 2.7 migration documentation. The migrated configuration now:

Follow [Section “Replaced deprecated `WebSecurityConfigurerAdapter`” \[467\]](#) for upgrade information.

*[CMS-22460]*

## CoreMedia Workspace

### Updated Spring Boot, Spring Security and transitive dependencies

Updated Spring Boot, Spring Security and their transitive dependencies to the latest baseline versions.

Follow [Section “Updated Spring Boot, Spring Security and transitive dependencies” \[467\]](#) for upgrade information.

*[CMS-21715]*

### JMX Beans use Spring Application Name as Application Key

The value of the JMX bean name key "application" was formerly derived from the web application path within the servlet container. Now the value of the spring boot property `spring.application.name` is used. The fallback is still the value `coremedia`.

Follow [Section “JMX Beans use Spring Application Name as Application Key” \[470\]](#) for upgrade information.

*[CMS-22241]*

## CoreMedia Commerce Hub

### Updated gRPC Spring Boot Starter

Updated gRPC Spring Boot Starter to 2.14.0.

Follow [Section “Updated gRPC Spring Boot Starter” \[470\]](#) for upgrade information.

*[CMS-22516]*

## Miscellaneous

### CoreMedia CKEditor plugins updated to 11.0.0

The CoreMedia CKEditor Plugins have been updated from 10.5.0 to 11.0.0.

Follow [Section "CoreMedia CKEditor plugins updated to 11.0.0" \[470\]](#) for upgrade information.

*[CMS-22616]*

### Removed Usage of Deprecated Spring Annotations and Classes

The following spring classes are deprecated and will be removed with Spring 6:

Follow [Section "Removed Usage of Deprecated Spring Annotations and Classes" \[471\]](#) for upgrade information.

*[CMS-22568]*

### Removed maven-shade-plugin

`org.apache.maven.plugins:maven-shade-plugin` has been removed because it wasn't used anymore and is no longer managed.

*[CMS-22508]*

### Updated auto configurations

With the update to Spring Boot 2.7, there have been changes to auto configurations and management context configurations:

Follow [Section "Updated auto configurations" \[472\]](#) for upgrade information.

*[CMS-22462]*

### CKEditor 5 Updated to 34.0.0 and CoreMedia's Plugins to 10.4.0

The CoreMedia CKEditor Plugins have been updated from 10.3.0 to 10.4.0.

Follow [Section "CKEditor 5 Updated to 34.0.0 and CoreMedia's Plugins to 10.4.0" \[473\]](#) for upgrade information.

*[CMS-22542]*

## 4.9.2 Changes and Improvements

### CoreMedia Core

#### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.6.0. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika.

Updated dependencies:

- Apache Commons Compress 1.22
- Apache PDFBox 2.0.27
- Apache POI 5.2.3
- Apache Tika 2.6.0
- Apache XMLBeans 5.1.1
- ASM 9.4
- Jackson Databind 2.13.4.2

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-22225]

### CoreMedia Content Application Engine

#### Update Freemarker Library to 2.3.32

The Freemarker Library was updated to patch version 2.3.32. See Changelog for more informations: [https://freemarker.apache.org/docs/versions\\_2\\_3\\_32.html](https://freemarker.apache.org/docs/versions_2_3_32.html)

[CMS-22573]

#### Added Spring's Nullable Annotation to CAE Handlers

The update to spring 5.3 included a change how spring webmvc treated conversion of path and request parameters whose values are null. Hence we refined most of our CAE handlers to accept null values and to respond with NOT\_FOUND [404] in this case instead of producing a conversion error.

[CMS-22329]

### Corrected Sitemap Generation Ports

There was some confusion throughout the application properties files and the documentation, concerning the port of the sitemap generation endpoint. The endpoint is still included in the spring boot management context of the Live CAE and is available by default at port 8081 in the Docker Container and mapped to port 42181 of the host. The obsolete property `cae.sitemap.cae-port` has been removed.

[CMS-22102]

### Allow Customize.Mode.APPEND for permittedLinkParameterNames Handlers

It is now possible to add entries to the permittedLinkParameterNames of handlers via customizer.

[CMS-21890]

### Improved performance of SitesService#getSiteFor[] / ContentObjectSiteAspect#getSite[]

The internal cache entry containing the site data has been refactored to a tree-like structure for faster lookup of sites by path.

[CMS-14206]

## CoreMedia Studio Client

### Removed Halloween & Christmas Animations

These animations have been removed, because we currently have no possibility to lazy load them and the animations consume too much CPU.

[CMS-22336]

### Configuration Feature Flags for CKEditor 5

CKEditor 5 configurations can now be adjusted via `feature flags` as a lightweight approach for minor adaptations. Conditional changes can now be applied via Studio plugins for CKEditor 5, as known from documents with CKEditor 4.

[CMS-20689]

### Additional Plugins enabled for CKEditor 5

The following plugins were enabled for the default CKEditor in CoreMedia Studio:

- Autoformatting
- Find and replace
- Code block

- Alt Text of Image Plugin

[CMS-20674]

# CoreMedia Studio Server

## New Validator: MasterLinkInAugmentationValidator for Multi-Site

The new MasterLinkInAugmentationValidator is aware of augmenting content and able to find cross-site language siblings. In the past similar issues were only found, if the paths in each site were exactly the same. Now it is also based on the commerce reference in the augmenting content. If those are the same then its a candidate for linking as language sibling (the "master" link). The changes affect the validate-multisite tool, as well es the studio validators. Additionally all issues are fed into Solr and can be found via Studio search. This also implies the possibility to save it as Dashboard widget. Please note that issues in the library and Dashboard are currently only shown if "Show Products and Categories as Content" preference setting is enabled.

### Upgrade Notice

No upgrade steps are required unless you consider these warnings irrelevant in your setup. In this case you may customize the severity by setting `master-link-in-augmentation-validator.severity` to `INFO` (it defaults to `WARN` ).

### validate-multisite

The `cm` tool `validate-multisite` detects the following new issues:

- `MS-VALIDATION-9000` – An augmenting content of the master site is missing in a derived site.
- `MS-VALIDATION-9001` – An augmenting content of the master site is missing in a derived site, although a content item with the same external id reference exists which is not linked to the master content.
- `MS-VALIDATION-9002` – An augmenting content of a derived site is not derived from a master content.
- `MS-VALIDATION-9003` – An augmenting content of the derived site is missing in a master site, although a content item with the same external id reference exists but is not linked as master content.
- `MS-VALIDATION-9004` – The augmenting content misses an external id.
- `MS-VALIDATION-9005` – There are several contents within a site that refer to the same commerce object.

[CMS-22371]

## A Change in Java [amazoncorretto-11-11.0.17.8.1] Fixes Transformations of Some GIFs.

A change in Java [amazoncorretto-11-11.0.17.8.1] fixes transformations of some gifs.

[CMS-21956]

# CoreMedia Frontend Workspace

## Self reference for locale added in HTML Head

In the frontend templates `hreflang` link tags for Internationalisation in the HTML head did not include a link the active locale. This has been added.

[CMS-22250]

# CoreMedia Deployment

## java-application-base image update

The `coremedia/java-application-base` image has been updated. The update includes the following fixes:

- the `/coremedia/prometheus/jmx_prometheus_javaagent.jar` now has the correct filemode so it can be used with a different user than `coremedia:1000`.
- the environment variable `SPRING_PROFILES` has been replaced with the correct environment variable `SPRING_PROFILES_ACTIVE` as `SPRING_PROFILES` has been deprecated by Spring. If `SPRING_PROFILES_ACTIVE` is not set the application script will first check `SPRING_PROFILES` as a compatibility fallback before setting the default `default`.
- The environment variable `ZGC` to toggle the experimental Z garbage collector has been removed. This was an experimental feature.
- There was a leftover `corretto` rpm binary in the `corretto` image that unnecessarily increased the image size. It has been removed.
- The images had wrongly overridden the `default.policy` file that is shipped with the `jvm` distros. Instead now the `JAVA_HOME/config/security/java.policy` is overridden and all changes from the current included JVM will now be active.

[CMS-22205]



## CoreMedia Commerce Hub

### Updated commerce adapters

Updated commerce adapters and commerce client API to their latest versions:

- [Commerce Client API and Mock Adapter for Commerce Hub 2.1.2](#)
- [Adapter for commercetools 2.1.1](#)
- [Adapter for SAP Commerce Cloud 2.1.1](#)
- [Adapter for Salesforce Commerce Cloud B2C 2.1.1](#)
- [Adapter for HCL Commerce 2.1.1](#)

[CMS-22592]

## CoreMedia Headless Server

### Headless Server New Feature: Block documents from delivery with confidential contents

Although not recommended, there might be circumstances, where it can't be avoided to store confidential data or settings in the content. For these cases, Headless Server now supports a list of repository paths, which are to be blocked in delivery. The paths to block are defined in the configuration property `caas.graphql.repository-path-exclude-patterns`, e.g.

```
caas.graphql.repository-path-exclude-patterns[0]=/A/B/C/D
caas.graphql.repository-path-exclude-patterns[1]=/A/*/C/*
caas.graphql.repository-path-exclude-patterns[2]=/A/B/**
caas.graphql.repository-path-exclude-patterns[3]=/A/**/C/*
```

For details please see the deployment manual and the knowledgebase [article](#) .

[CMS-22421]

## Miscellaneous

### Analytics connectors: Separate live and backend properties

Some settings for the analytics connectors can contain secret information and should not be published. Therefore these internal settings should be separated from settings, that are required on live systems and they should not be published. Internal analytics settings can be configured for a site in `<site>/Options/Settings/Internal/InternalAnalyticsSettings` . The containing folder `<site>/Op`

`tions/Settings/Internal` and the path of the p12 file should be configured in the blacklist to prevent delivery of the content in headless environments.

See documentation for details.

[CMS-22447]

### Upgrade to Docker compose v2

Docker compose v2 is no longer a separate tool but is now a plugin to the docker binary. This change only affects the documentation of how to use the compose setup.

[CMS-22396]

### getReferringVersion methods have been added to Content

`com.coremedia.cap.content.Content` has been extended by methods starting with the prefix `getReferringVersion*` to retrieve referring versions similar to the existing `getReferrer*` methods that retrieve referring content.

[CMS-20116]

## 4.9.3 Fixed Issues

### CoreMedia Core

#### XLIFF Import: Markup in Structs Support Enhanced

XLIFF Import of Markup in Structs may have failed, reporting an invalid property value. This got caused by Markup nodes in Struct, where only the Markup value holds grammar information.

This got fixed in that way, that if no other information is available, a fallback to CoreMedia Rich Text 1.0 grammar is applied to the imported Markup node.

[CMS-22528]

#### RichTextInStructTranslatablePredicate: NullPointerException Fixed

`RichTextInStructTranslatablePredicate`, used to mark all Struct nodes with CoreMedia RichText 1.0 Grammar as *translatable* failed with `NullPointerException` if `Markup` nodes exist without grammar set at Struct node.

The robustness has been increased: Struct `Markup` nodes without grammar set at node are now ignored, not being marked as *translatable*.

Note, that having this, nodes without grammar declared at Struct, but with `Markup` values having a grammar set, are ignored, too. A corresponding issue exists, to address

this, but this requires more fundamental changes, as `TranslatablePredicate` instances do not have access to the value of a property, yet.

Thus, for best support by CoreMedia Multi-Site feature, it is recommended to set the grammar at Struct Markup nodes always.

[CMS-22527]

### Fixed Bug in "cm content-uuid-import"

Fixed a bug in the command-line tool to import content UUIDs (`cm content-uuid-import`) that could cause failures like `IndexOutOfBoundsException`.

[CMS-22464]

### Third-Party Update: Woodstox

FasterXML Woodstox has been updated to version 6.4.0 to avoid security vulnerabilities of previous versions.

[CMS-22314]

### Fixed Studio Search Information Disclosure

Original exception messages from Solr, which contain sensitive information in some cases, are no longer passed to clients through Studio Server REST Endpoints.

[CMS-22212]

### Improved BELOW Content Query Execution

The *Content Server* executes content queries with "BELOW" folder clause(s) more efficiently now. This is especially true, if the server is not maintaining a folder index. For details, see the description of the 'cm dbindex' tool in the Content Server Manual.

The server now uses more efficient SQL queries (recursive common table expressions) to query the database, if no folder index was created. The query performance for BELOW queries with enabled folder index will still be slightly better, but the performance difference got a lot smaller, and query performance without folder index can be acceptable for many use cases. In case of problems, the old less efficient implementation can still be enabled by setting *Content Server* configuration property `sql.store.use-ctes-for-below-queries=false`.

Some improvements have also been made for query execution with enabled folder index. In rare cases a content query never returned if PostgreSQL was used as database. This has been fixed.

If the folder index is enabled, queries have to wait for the index to be up-to-date, which may take some time after large folders have been moved. In rare cases, this can take quite a long time and block querying applications. A timeout has been added now, so that waiting queries will be executed without the folder index, if the folder index isn't

available for some time. The timeout can be set with the *Content Server* configuration property `sql.store.folder-index-timeout` and defaults to 1 minute.

[CMS-21264]

### Fixed CAE Feeder Possible Deadlock

Fixed a bug that could lead to a dead lock of the *CAE Feeder* in case of cyclic navigation structures.

[CMS-19571]

## CoreMedia Content Application Engine

### Updated [Embedded] Tomcat to 9.0.68

Updated [Embedded] Tomcat to version 9.0.68 to prevent potential CVE-2022-42252, although we don't use the vulnerable setting `rejectIllegalHeader`.

[CMS-22354]

### Third-Party Update: commons-text

Apache commons-text has been updated to version 1.10.0 to avoid security vulnerability CVE-2022-42889.

[CMS-22268]

### Added Nullability Annotations to Validator and ValidationService

Nullability annotations are added to Validator and ValidationService. Fixed a possible `NullPointerException` in `com.coremedia.blueprint.common.services.validation.AbstractValidator`.

[CMS-22183]

### Fixed Atom Feed Validation

Added missing mandatory fields `id` and `updated` to Atom feed.

By this change, the optional fields `pubDate` and `dc:date` were also added to the RSS feed.

[CMS-21318]

### Bugfix: Image Map Hotzones Misplaced when "Fit Image to Crop"

Image Map hotzones could be misplaced in CAE and Headless Server rendering, if "*Fit image to crop*" is active on corresponding image. This change resolves the issue. Existing image map hotzones do *not* need to be changed.

[CMS-19436]

### RSS Feed Source for CMChannel Fixed

Method `CMChannelImpl#getFeedItems()` would return the linked items of page placement *main* in the wrong type, leaving an RSS feed for a page empty. This is fixed and RSS feeds for a page can now be delivered.

[CMS-17459]

## CoreMedia Studio Client

### Embedded images in richtext are now referenced by relative URI

Images embedded in richtext were rendered with an URI relative to the host which caused issues with local development setups where Studio was running with a context (e.g. `localhost/studio`). Now images embedded in richtext are rendered with a relative URI.

[CMS-22630]

### Change in Data Types / Flavors of Drag Data and Clipboard Items

Previously, when dragging/dropping and copy/pasting remote beans like content items and users/groups, the drag/drop events' `dataTransfer` property and the items (`IClipboardItem`) of the clipboard contained a "cm/uri-list" type/flavor (containing a list of `{ $Ref: uri }` objects). This is now deprecated. Instead we now support different flavors with more specific context:

"cm-studio-rest/uri-list": a list the remote bean URIs as understood by the Studio Rest service

"cm-content/uuid-list": a list of content UUIDs as understood by the content server

"cm-member/uuid-list": a list of user/group UUIDs as understood by the user management server

[CMS-22626]

### Simplify Configuration for Local Studio Client Development against Server with Custom Path Prefix

For Studio Client development using `pnpm ... start` with a `proxyTargetUri` containing a non-empty path prefix ( `https://mydomain.com/some-path/rest` ), previously, you had to change the default for `proxyPathSpec` from `/rest/` to `/rest` and use a `proxyTargetUri` without a trailing slash. Any other configuration would result in errors. To simplify the configuration for such setups and at the same time be backwards-compatible, the values for `proxyTargetUri` and `proxyPathSpec` are now robust against presence of a trailing slash. In practice, this means you can always keep the default for `proxyPathSpec` ( `/rest/` ) and it does not matter whether your `proxyTargetUri` ends with a slash or not.

[CMS-22559]

### Improved studio-client development documentation

A wrong command was listed for starting studio and an obsolete note box was removed about a "--" which is no longer needed.

[CMS-22555]

### Fixed German Labels

Fixed issues with German labels on the login mask and user-manager.

[CMS-22481]

### Editor contents in new HTMLFragments are now editable

The `Slim` editor was missing a crucial plugin, that did not allow to edit contents in new HTMLFragment editors.

[CMS-22456]

### Added missing favicon in Workflow App

Missing workflow favicon has been added.

[CMS-22446]

### Problems starting [remote] apps with devDependencies

Only relevant when using the experimental custom apps feature: Packages not located in the workspace are downloaded from an NPM registry. If this is the case for an app and the package contains "devDependencies" the studio-client could not be started.

[CMS-22365]

### Fixed An Issue Where Drag&Drop Between Content App and Workflow App Did Not Work

In case the apps were running via "http" and not on "localhost" drag&drop between content app and workflow app was not working.

Note: Such a setup is only recommended for testing or development purposes not for production!

[CMS-22363]

### CKEditor 5: Drag & Drop of contents from external systems into RichText and Link Balloon

It is now possible again to drag and drop contents into CKEditor 5 components like in CKEditor 4. When a content from a thirdparty system (e.g. a commerce system or a content-hub provider) is dropped, the content will be imported into the CMS and linked or embedded in the like a content.

[CMS-22313]

### Fixed Document Lifecycle Status Icon

Fixed the update of the status icon located before the locale switcher.

[CMS-22305]

### Fixed Notification Error for Custom Notifications

Fixed an error thrown by custom notifications that want to use the default notification wrapper for displaying the notification details.

[CMS-22304]

### Fixed Issues Tooltip

Added missing linebreaks in issues tooltip.

[CMS-22272]

### Fixed Initialization of FolderChooserList

The chooser is only initialized with the calculated path if no other value was set through the *bindTo* expression of the component.

[CMS-22201]

### SASS file check in jangaroo build does now respect custom SASS Namespace

In case a custom sass namespace was set in the `jangaroo.config.js` of a package the SASS file check might have reported a false positive about unused sass files inside the package. This has been fixed now.

[CMS-21883]

### Documentation: Added Hints on Handling of EXIF Orientation in Image Metadata

Hints on handling of EXIF orientation in metadata of images uploaded to the CMS have been added to Studio User Manual.

[CMS-19374]

### Added Optional Force Collapse State

In case the initial expanding of property editors is too time consuming (especially on older hardware), the premular configuration can be changed, so that all editors stay collapsed on opening.

[CMS-19100]

## CoreMedia Studio Server

### Studio Server Now Logs Whether an Invalidation Source Requests a Full Invalidation

When an InvalidationSource of the Studio Server exceeds its capacity it requests a full invalidation (indicated by "invalidations: null" in the response of an "invalidations" Studio Client request). This most of the time leads to an unresponsive Studio Client. The Studio Server now logs [WARN] if this happens.

[CMS-22593]

### Improved Robustness of Augmentation

When augmenting Categories or Products with names longer than 64 characters an error occurred so far. Values longer than 64 characters are now automatically shortened to the maximum number of characters defined via the document model. The value of the `externalId` property of a content item cannot be shortened automatically as this would have serious side effects. In case that the name of a Category or Project that is to be augmented is longer than the maximum value defined via the document model (256 characters by default), an exception is still thrown.

[CMS-22525]

### Components not Fully Shutting Down in Case of Spring Context Setup Problems

If during startup of a CMS component, e.g., the *Studio Server*, problems with the Spring Context setup occur, it could happen that the process would not shut down entirely. This was due to plugins not being stopped correctly. The bugfix cures the issue so that the operational environment may detect the process shutdown and try to restart the CMS component.

[CMS-22523]

### Content with links to destroyed content can now be partially restored

Content that references a destroyed content in a Link property can now be restored successfully in Studio. The property containing the destroyed link will however NOT be restored! In that case the editor gets a hint to check the Comparison View.

[CMS-19111]

### Fixed Bug Where the Preview Panel Grew Smaller After Collapsing + Expanding

We fixed bug where the Preview panel grew smaller after collapsing + expanding.

[CMS-14262]

## CoreMedia Frontend Workspace

### Third-Party Update: json5

The dependency `json5` and all other dependencies with minor version changes has been updated in the frontend workspace to avoid security vulnerability CVE-2022-46175.

[CMS-22509]

### Link Properties in Settings on Windows Systems

When using link settings in the frontend workspace (via `.settings.json`) importing on Windows System caused the links to be not properly resolved (and being removed as a consequence). This has been fixed now.



[CMS-22385]

## CoreMedia Documentation

### Relocation of MySQL Database Driver

With version 8.0.31, The MySQL database driver has been relocated from `mysql:mysql-connector-java` to `com.mysql:mysql-connector-j` within <https://mvnrepository.com/>. All dependencies in the blueprint have been adjusted.

[CMS-22243]

## Miscellaneous

### Fix Solr Configuration for Replication Handler

The Solr configuration files (`solrconfig.xml`) for CAE and Studio indices have been fixed to not configure example credentials for basic authentication for the Solr replication anymore. These settings had been introduced accidentally and caused problems when trying to override them externally.

[CMS-22550]

### Updated gRPC, Netty and transitive dependencies

To prevent known CVEs, Netty and related dependencies have been updated to their latest non-breaking versions:

- gRPC Spring Boot Starter 2.13.1.RELEASE (see [gRPC Spring Boot Starter Releases](#) )
- gRPC-Java 1.52.1 (see [gRPC-Java Releases](#) )
- Java Protocol Buffers 3.21.12 (see [Java Protocol Buffers Releases](#) )
- Netty 4.1.87.Final (see [Netty Project News](#) )
- Error Prone Annotations 2.17.0 (see [Error Prone Releases](#) )
- AWS SDK for Java 2.17.295 (see [AWS SDK for Java Changelog](#) )

[CMS-22510]

### Third-Party Update: postgresql Driver

postgresql has been updated to version 42.5.1 to avoid reported security vulnerabilities of previous versions.

[CMS-22450]

### Bugfix: Robustness against Invalid Background Colors in Image Transformation

Illegal values for a background color led to exceptions and failure in image transformation. Background color can be defined in image document's setting *coloring.background*. A new Studio validator *ColorSettingValidator* ensures that errors of this kind are reported as content issues in Studio and prohibit publication of the respective documents. Furthermore, illegal values are replaced by default values in preview so that no exceptions are raised in this case.

[CMS-22440]

### Updated Spring Security to 5.6.9

Updated Spring Security to version 5.6.9 to prevent potential CVEs for customers using OAuth2

[CMS-22355]

## 4.10 Release 2210.3

The release contains:

- Breaking changes: 5
- Changes and improvements: 20
- Bugfixes: 92

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-04-03

### Breaking Changes

- CMS-22757: [XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs](#)
- CMS-22761: [CoreMedia CKEditor 5 Plugins Updated](#)
- CMS-21494: [Updated Taxonomy/Topic Pages Administration Access](#)
- CMS-22731: [Changed multipart request handling from Commons Fileupload to Servlet API](#)
- CMS-22616: [CoreMedia CKEditor plugins updated to 11.0.0](#)

### Changes and Improvements

- CMS-22690: [Struct Property is now supported for ThumbnailResolver](#)
- CMS-22554: [Improved Content Search with open Link Balloon in CKEditor 5](#)
- CMS-22036: [CKEditor5RichTextFieldDelegatePlugin introduced](#)
- CMS-22551: [Documentation: Hints on Well-formedness of XML Markup Properties](#)
- CMS-22396: [Upgrade to Docker compose v2](#)

### Bugfixes

- CMS-22877: [Updated \[embedded\] Tomcat to 9.0.73](#)
- CMS-22659: [Workflow Server Health Check for UAPI Connection](#)
- CMS-22528: [XLIFF Import: Markup in Structs Support Enhanced](#)
- CMS-22527: [RichtextInStructTranslatablePredicate: NullPointerException Fixed](#)

- CMS-8763: Content Feeder Event Handling Robustness
- CMS-22675: Fixed a bug where the timezone was always GMT
- CMS-17459: RSS Feed Source for CMChannel Fixed
- CMS-22800: Fixed CVE-2023-28154
- CMS-22791: Delegation of Article Title to Teaser Title Re-Enabled
- CMS-22775: CKEditor 4/5: Adjust Up- and Downgrade Information
- CMS-22750: CKEditor 5
- CMS-22739: CKEditor 5: Fixed Possibly Mixed Up Markup Property Values From Different Documents
- CMS-22698: OpenPremularAction: New PremularConfiguration focusPropertyField
- CMS-22630: Embedded images in richtext are now referenced by relative URI
- CMS-22626: Change in Data Types / Flavors of Drag Data and Clipboard Items
- CMS-22624: Content Hub Pagination: getChildren() call triggered too many times.
- CMS-22612: CKEditor 5 now ignores images with empty xlink:href attribute
- CMS-22605: EditorType in TeaserOverlayContainer fixed
- CMS-22594: Removed "manageHeight" setting from document forms
- CMS-22585: Fixed documentation of configuration in jangaroo.config.js
- CMS-22559: Simplify Configuration for Local Studio Client Development against Server with Custom Path Prefix
- CMS-22395: Fixed Renaming in Library
- CMS-22357: Fixed Locale Switcher Workflow Action
- CMS-22272: Fixed Issues Tooltip
- CMS-21883: SASS file check in jangaroo build does now respect custom SASS Namespace
- CMS-22593: Studio Server Now Logs Whether an Invalidation Source Requests a Full Invalidation
- CMS-22525: Improved Robustness of Augmentation
- CMS-22523: Components not Fully Shutting Down in Case of Spring Context Setup Problems
- CMS-19111: Content with links to destroyed content can now be partially restored
- CMS-22709: Fixed a Bug Regarding Headless Augmentation Calls without Commerce Connection
- CMS-22878: Update GraphQL-Java to fix security vulnerability

- [CMS-22723: Bugfix: Some characters in repository paths causes InvalidPathException on Windows systems](#)
- [CMS-22852: Updated Spring Framework to version 5.3.26](#)
- [CMS-22748: CKEditor 5 36.0.1](#)
- [CMS-22725: Possible NullPointerException fixed for Markup in Structs XLIFF export](#)
- [CMS-22672: Fixed Cache Bug that causes RecursiveCacheLookupException](#)
- [CMS-22638: Fixed LdapUserProvider Configuration](#)
- [CMS-22550: Fix Solr Configuration for Replication Handler](#)
- [CMS-21947: Updated OWASP Dependency Check Maven Plugin](#)

## 4.10.1 Breaking Changes

### CoreMedia Core

#### XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs

XLIFF support for Markup in Structs has been enhanced in that way, that Markup nodes can now be restored from XLIFF regarding their corresponding grammar settings.

Follow [Section “XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs” \[474\]](#) for upgrade information.

*[CMS-22757]*

### CoreMedia Studio Client

#### CoreMedia CKEditor 5 Plugins Updated

The CKEditor 5 Plugins provided by CoreMedia have been updated to 14.1.1.

Follow [Section “CoreMedia CKEditor 5 Plugins Updated” \[475\]](#) for upgrade information.

*[CMS-22761]*

#### Updated Taxonomy/Topic Pages Administration Access

Since the 2110 release, the access to topic pages and the taxonomy manager is not configurable via content anymore. Instead, user groups must be added to the *jangaroo.config.js* file of the corresponding studio-client module. These files and the documentation have been updated with default groups and the removed from the demo content.

[CMS-21494]

## CoreMedia Studio Server

### Changed multipart request handling from Commons Fileupload to Servlet API

The runtime dependency `commons-fileupload:commons-fileupload` has been removed in order to prevent vulnerability [CVE-2023-24998](#) . By removing the application property `spring.servlet.multipart.enabled=true` , the Studio server configuration has been changed from using *Commons Fileupload* for handling multipart requests to using the *Servlet API* .

Follow [Section “Changed multipart request handling from Commons Fileupload to Servlet API” \[477\]](#) for upgrade information.

[CMS-22731]

## Miscellaneous

### CoreMedia CKEditor plugins updated to 11.0.0

The CoreMedia CKEditor Plugins have been updated from 10.5.0 to 11.0.0.

Follow [Section “CoreMedia CKEditor plugins updated to 11.0.0” \[477\]](#) for upgrade information.

[CMS-22616]

## 4.10.2 Changes and Improvements

## CoreMedia Studio Client

### Struct Property is now supported for ThumbnailResolver

The ThumbnailResolver can now be configured to include a struct property like:

```
localSettings.thumbnail
```

[CMS-22690]

### Improved Content Search with open Link Balloon in CKEditor 5

MouseDown- and Click-Events in the Studio-Library will not close the CKEditor's Link Balloon anymore.

[CMS-22554]

#### CKEditor5RichTextFieldDelegatePlugin introduced

`CKEditor5RichTextFieldDelegatePlugin` was introduced to enable delegation of values to CKEditor 5. Usages of `RichTextFieldDelegatePlugin` for CKEditor 4 should be replaced with the new plugin when upgrading to CKEditor 5.

[CMS-22036]

## CoreMedia Documentation

#### Documentation: Hints on Well-formedness of XML Markup Properties

Hints on how to achieve well-formedness of XML markup properties have been added.

[CMS-22551]

## Miscellaneous

#### Upgrade to Docker compose v2

Docker compose v2 is no longer a separate tool but is now a plugin to the docker binary. This change only affects the documentation of how to use the compose setup.

[CMS-22396]

## 4.10.3 Fixed Issues

## CoreMedia Core

#### Updated [embedded] Tomcat to 9.0.73

Embedded Tomcat has been updated to version 9.0.73 (see [Changelog Tomcat 9.0.73](#) and predecessors) to prevent known vulnerabilities.

[CMS-22877]

#### Workflow Server Health Check for UAPI Connection

Workflow Server's health check (accessible through actuator *health* ) did not reflect a working connection to the Content Management Server and could show *healthy* , even if the connection to the Content Management Server was broken and the Workflow

Server thus partly inoperable. This is now fixed and connection status will be reflected properly.

[CMS-22659]

### XLIFF Import: Markup in Structs Support Enhanced

XLIFF Import of Markup in Structs may have failed, reporting an invalid property value. This got caused by Markup nodes in Struct, where only the Markup value holds grammar information.

This got fixed in that way, that if no other information is available, a fallback to CoreMedia Rich Text 1.0 grammar is applied to the imported Markup node.

[CMS-22528]

### RichTextInStructTranslatablePredicate: NullPointerException Fixed

`RichTextInStructTranslatablePredicate`, used to mark all Struct nodes with CoreMedia RichText 1.0 Grammar as *translatable* failed with `NullPointerException` if `Markup` nodes exist without grammar set at Struct node.

The robustness has been increased: Struct `Markup` nodes without grammar set at node are now ignored, not being marked as *translatable*.

Note, that having this, nodes without grammar declared at Struct, but with `Markup` values having a grammar set, are ignored, too. A corresponding issue exists, to address this, but this requires more fundamental changes, as `TranslatablePredicate` instances do not have access to the value of a property, yet.

Thus, for best support by CoreMedia Multi-Site feature, it is recommended to set the grammar at Struct `Markup` nodes always.

[CMS-22527]

### Content Feeder Event Handling Robustness

The Content Feeder's event handling has been made more robust, so that it can recover from temporary connection problems to the Content Server after initial feeding has completed. Before this change, the Content Feeder would stop after connection problems, and log an error like "An unexpected error occurred while processing a change". This change now avoids the need to restart the Content Feeder in such cases.

[CMS-8763]



## CoreMedia Content Application Engine

### Fixed a bug where the timezone was always GMT

Fixed a bug in the `com.coremedia.livecontext.handler.FragmentCommerceContextInt-erceptor` where the timezone would always be translated to GMT no matter what value it had.

[CMS-22675]

### RSS Feed Source for CMChannel Fixed

Method `CMChannelImpl#getFeedItems()` would return the linked items of page placement *main* in the wrong type, leaving an RSS feed for a page empty. This is fixed and RSS feeds for a page can now be delivered.

[CMS-17459]

## CoreMedia Studio Client

### Fixed CVE-2023-28154

Fixed CVE-2023-28154 by upgrading webpack to version 5.76.1.

[CMS-22800]

### Delegation of Article Title to Teaser Title Re-Enabled

The delegation of the article title to the teaser title has been re-enabled. If the teaser title is empty, the article title will be used.

This aligns with the re-introduced delegation of teaser text via `CKEditor5RichTextPropertyFieldDelegatePlugin`.

[CMS-22791]

### CKEditor 4/5: Adjust Up- and Downgrade Information

Some examples in Studio Developer Manual for up- and downgrading CKEditor 4 vs. CKEditor 5 referred to `blueprintVersion`, whereas corresponding artifacts are shipped as part of the CoreMedia Studio Client release. Corresponding artifact coordinates got adapted accordingly.

[CMS-22775]

### CKEditor 5

Fixed menu clipping of CKEditor 5 if style panel is collapsed.

[CMS-22750]

### CKEditor 5: Fixed Possibly Mixed Up Markup Property Values From Different Documents

When accessing multiple documents in parallel in CoreMedia Studio, it may have occurred, that one documents gets opened with Markup values from another document opened in parallel. In parallel, the affected document also got checked-out, so that in the end editors may accidentally persist the mixed up Markup to the affected document.

This behavior has been fixed.

An update is recommended, as subsequent editorial actions may cause corrupted data.

[CMS-22739]

### OpenPremularAction: New PremularConfiguration focusPropertyField

`OpenPremularAction ( @coremedia/studio-client.ext.form-services-toolkit/actions/OpenPremularAction )` uses the new property `focusPropertyField` of `PremularConfiguration ( @coremedia/studio-client.form-models/premular/PremularConfiguration )` to make the property field with the given name visible after opening / focusing the Premular's document tab. This includes switching to the correct property tab and expanding any surrounding field groups and the property field itself. The full property field name must be used, i.e. including the `"properties."` prefix.

[CMS-22698]

### Embedded images in richtext are now referenced by relative URI

Images embedded in richtext were rendered with an URI relative to the host which caused issues with local development setups where Studio was running with a context (e.g. `localhost/studio`). Now images embedded in richtext are rendered with a relative URI.

[CMS-22630]

### Change in Data Types / Flavors of Drag Data and Clipboard Items

Previously, when dragging/dropping and copy/pasting remote beans like content items and users/groups, the drag/drop events' `dataTransfer` property and the items (`IClipboardItem`) of the clipboard contained a `"cm/uri-list"` type/flavor (containing a list of `{ $Ref: uri }` objects). This is now deprecated. Instead we now support different flavors with more specific context:

`"cm-studio-rest/uri-list"`: a list the remote bean URIs as understood by the Studio Rest service

`"cm-content/uuid-list"`: a list of content UUIDs as understood by the content server

`"cm-member/uuid-list"`: a list of user/group UUIDs as understood by the user management server

[CMS-22626]

### Content Hub Pagination: `getChildren()` call triggered too many times.

A bug has been fixed which triggered the `getChildren()` call too many times when using pagination in the Content Hub.

[CMS-22624]

### CKEditor 5 now ignores images with empty `xlink:href` attribute

CKEditor 5 now ignores images with empty `xlink:href` attribute and displays them as broken images.

[CMS-22612]

### EditorType in TeaserOverlayContainer fixed

The `TeaserOverlayContainer` now passes the `editorType` property to the underlying `RichTextField`.

[CMS-22605]

### Removed "manageHeight" setting from document forms

Removed `manageHeight` setting from `DetailsDocumentForm` and `PersonDetailsDocumentForm` to fix layout issues

[CMS-22594]

### Fixed documentation of configuration in `jangaroo.config.js`

Parts of the documentation contained wrong or outdated configuration options for `jangaroo.config.js`, e.g. `additionalCssNonBundle`. This has been fixed now.

[CMS-22585]

### Simplify Configuration for Local Studio Client Development against Server with Custom Path Prefix

For Studio Client development using `pnpm ... start` with a `proxyTargetUri` containing a non-empty path prefix ( `https://mydomain.com/some-path/rest` ), previously, you had to change the default for `proxyPathSpec` from `/rest/` to `/rest` and use a `proxyTargetUri` *without* a trailing slash. Any other configuration would result in errors. To simplify the configuration for such setups and at the same time be backwards-compatible, the values for `proxyTargetUri` and `proxyPathSpec` are now robust against presence of a trailing slash. In practice, this means you can always keep the default for `proxyPathSpec` ( `/rest/` ) and it does not matter whether your `proxyTargetUri` ends with a slash or not.

[CMS-22559]

### Fixed Renaming in Library

Fixed blocked renaming selection via mouse in the library, caused by drag and drop plugin.

[CMS-22395]

### Fixed Locale Switcher Workflow Action

Fixed issue for the locale switcher where the action for starting a workflow wasn't shown for content items without a parent representation in their master site.

[CMS-22357]

### Fixed Issues Tooltip

Added missing linebreaks in issues tooltip.

[CMS-22272]

### SASS file check in jangaroo build does now respect custom SASS Namespace

In case a custom sass namespace was set in the `jangaroo.config.js` of a package the SASS file check might have reported a false positive about unused sass files inside the package. This has been fixed now.

[CMS-21883]

## CoreMedia Studio Server

### Studio Server Now Logs Whether an Invalidation Source Requests a Full Invalidation

When an InvalidationSource of the Studio Server exceeds its capacity it requests a full invalidation (indicated by "invalidations: null" in the response of an "invalidations" Studio Client request). This most of the time leads to an unresponsive Studio Client. The Studio Server now logs (WARN) if this happens.

[CMS-22593]

### Improved Robustness of Augmentation

When augmenting Categories or Products with names longer than 64 characters an error occurred so far. Values longer than 64 characters are now automatically shortened to the maximum number of characters defined via the document model. The value of the `externalId` property of a content item cannot be shortened automatically as this would have serious side effects. In case that the name of a Category or Project that is to be augmented is longer than the maximum value defined via the document model (256 characters by default), an exception is still thrown.

[CMS-22525]

### Components not Fully Shutting Down in Case of Spring Context Setup Problems

If during startup of a CMS component, e.g., the *Studio Server*, problems with the Spring Context setup occur, it could happen that the process would not shut down entirely. This was due to plugins not being stopped correctly. The bugfix cures the issue so that

the operational environment may detect the process shutdown and try to restart the CMS component.

[CMS-22523]

### Content with links to destroyed content can now be partially restored

Content that references a destroyed content in a Link property can now be restored successfully in Studio. The property containing the destroyed link will however NOT be restored! In that case the editor gets a hint to check the Comparison View.

[CMS-19111]

## CoreMedia Commerce Hub

### Fixed a Bug Regarding Headless Augmentation Calls without Commerce Connection

Headless augmentation calls still require a commerce connection to retrieve basic information such as the *vendor*, *storeId*, *catalogId*, *catalog alias mapping*, and *category hierarchy*. The newly introduced package `com.coremedia.blueprint.caas.augmentation.connection` provides a fallback commerce connection implementation for development purposes.

[CMS-22709]

## CoreMedia Headless Server

### Update GraphQL-Java to fix security vulnerability

Upgrade GraphQL-Java to 19.4 to fix the stack based overflow vulnerability CVE-2023-28867.

[CMS-22878]

### Bugfix: Some characters in repository paths causes InvalidPathException on Windows systems

Whenever a repository path for a content contains characters like ':', '?', '!' etc, which are invalid for paths on windows systems, headless threw an InvalidPathException. This behaviour was fixed using os agnostic path matching.

[CMS-22723]

## Miscellaneous

### Updated Spring Framework to version 5.3.26

Updated Spring Framework to version 5.3.26 in order to mitigate CVE-2023-20860 and CVE-2023-20861.

[CMS-22852]

### CKEditor 5 36.0.1

CKEditor 5 has been updated to 36.0.1. The update is included in the version 14.0.2 of the CoreMedia plugins. For further information see the [release notes](#) of 14.0.2.

[CMS-22748]

### Possible NullPointerException fixed for Markup in Structs XLIFF export

You may observe a `NullPointerException` when exporting Markup in Structs to XLIFF. This is caused by newly created Markup nodes in Struct properties, that didn't get a value yet.

This issue has been fixed. Markup properties in Struct that are `null` as value are not tried to be exported anymore.

[CMS-22725]

### Fixed Cache Bug that causes RecursiveCacheLookupException

Fixed a bug in the central CoreMedia cache component, that can cause sporadic failures when evaluating cached values from multiple threads under high load. Cache evaluations could have failed with a `RecursiveCacheLookupException`, because computations were incorrectly identified as being cyclic computations that could loop endlessly. This has been fixed now.

[CMS-22672]

### Fixed LdapAuthProvider Configuration

Due to a bug in `LdapAuthProvider`, the configuration properties

```
cap.server.userproviders[n].java.naming.referral  
cap.server.userproviders[n].java.naming.ldap.version
```

had no effect. Now they are supported. For backward compatible behaviour, delete these properties from the configuration of your content servers. (You probably did not set them anyway, because the defaults are appropriate in most cases.)

The support of `java.naming.referral` should also improve the default behaviour of the `ActiveDirectoryUserProviders`, when they encounter referrals. This typically happens if LDAP groups have many (e.g. >1500, depends on the AD version) direct members, or if LDAP users are direct members of many groups.

Moreover, the configuration property `cap.server.userprovider.sn.java.naming.security.protocol` is now passed as JNDI connection parameter `java.naming.security.protocol`, as it is recommended by the JNDI documentation. LDAP over SSL (ldaps) worked also before, because the property is considered in an additional way.

[CMS-22638]

### Fix Solr Configuration for Replication Handler

The Solr configuration files (solrconfig.xml) for CAE and Studio indices have been fixed to not configure example credentials for basic authentication for the Solr replication anymore. These settings had been introduced accidentally and caused problems when trying to override them externally.

[CMS-22550]

### Updated OWASP Dependency Check Maven Plugin

The OWASP Dependency Check Maven Plugin has been updated from 7.4.4 to 8.1.2 - see

- [OWASP Dependency-Check Releases](#)
- [Dependency-Check 8.0.0 Upgrade Notice](#) (for customers using an externally hosted OWASP database instead of the embedded H2 database)

[CMS-21947]

## 4.11 Release 2210.2

The release contains:

- Breaking changes: 2
- Changes and improvements: 23
- Bugfixes: 65

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-01-18

### Breaking Changes

- CMS-22455: [Changed Configuration for Headings in CKEditor 5](#)
- CMS-22542: [CKEditor 5 Updated to 34.0.0 and CoreMedia's Plugins to 10.4.0](#)

### Changes and Improvements

- CMS-22225: [Third-Party Update: Apache Tika and Transitive Dependencies](#)
- CMS-22329: [Added Spring's Nullable Annotation to CAE Handlers](#)
- CMS-22102: [Corrected Sitemap Generation Ports](#)
- CMS-21890: [Allow Customize.Mode.APPEND for permittedLinkParameterNames Handlers](#)
- CMS-22336: [Removed Halloween & Christmas Animations](#)
- CMS-20689: [Configuration Feature Flags for CKEditor 5](#)
- CMS-20674: [Additional Plugins enabled for CKEditor 5](#)
- CMS-21956: [A Change in Java \(amazoncorretto-11-11.0.17.8.1\) Fixes Transformations of Some GIFs.](#)
- CMS-22205: [java-application-base image update](#)
- CMS-22421: [Headless Server New Feature: Block documents from delivery with confidential contents](#)
- CMS-22447: [Analytics connectors: Separate live and backend properties](#)



## Bugfixes

- CMS-22464: Fixed Bug in "cm content-uuid-import"
- CMS-22444: Third-Party Update: postgresql Driver
- CMS-22314: Third-Party Update: Woodstox
- CMS-22212: Fixed Studio Search Information Disclosure
- CMS-21264: Improved BELOW Content Query Execution
- CMS-19571: Fixed CAE Feeder Possible Deadlock
- CMS-22519: Updated (embedded) Tomcat to 9.0.70
- CMS-22354: Updated (Embedded) Tomcat to 9.0.68
- CMS-22183: Added Nullability Annotations to Validator and ValidationService
- CMS-21318: Fixed Atom Feed Validation
- CMS-19436: Bugfix: Image Map Hotzones Misplaced when "Fit Image to Crop"
- CMS-22555: Improved studio-client development documentation
- CMS-22481: Fixed German Labels
- CMS-22456: Editor contents in new HTMLFragments are now editable
- CMS-22446: Added missing favicon in Workflow App
- CMS-22365: Problems starting (remote) apps with devDependencies
- CMS-22363: Fixed An Issue Where Drag&Drop Between Content App and Workflow App Did Not Work
- CMS-22313: CKEditor 5: Drag & Drop of contents from external systems into RichText and Link Balloon
- CMS-22305: Fixed Document Lifecycle Status Icon
- CMS-22304: Fixed Notification Error for Custom Notifications
- CMS-22201: Fixed Initialization of FolderChooserList
- CMS-19374: Documentation: Added Hints on Handling of EXIF Orientation in Image Metadata
- CMS-14262: Fixed Bug Where the Preview Panel Grew Smaller After Collapsing + Expanding
- CMS-22509: Third-Party Update: json5
- CMS-22385: Link Properties in Settings on Windows Systems
- CMS-22243: Relocation of MySQL Database Driver
- CMS-22510: Updated gRPC, Netty and transitive dependencies

- [CMS-22440: Bugfix: Robustness against Invalid Background Colors in Image Transformation](#)
- [CMS-22355: Updated Spring Security to 5.6.9](#)

## 4.11.1 Breaking Changes

### CoreMedia Studio Client

#### Changed Configuration for Headings in CKEditor 5

The configuration for Headings in the default CKEditor 5 in the Blueprint was changed to match the configuration for CKEditor 4. After switching to CKEditor 5 in CoreMedia Studio, we kept the default configuration for Headings in CKEditor 5, which maps `Heading 1` to `<h2>` and so on. We changed this to match the mapping we had for CKEditor 4. [`Heading 1` maps to `<h1>` etc.]

*[CMS-22455]*

### Miscellaneous

#### CKEditor 5 Updated to 34.0.0 and CoreMedia's Plugins to 10.4.0

The CoreMedia CKEditor Plugins have been updated from 10.3.0 to 10.4.0.

Follow [Section "CKEditor 5 Updated to 34.0.0 and CoreMedia's Plugins to 10.4.0" \[479\]](#) for upgrade information.

*[CMS-22542]*

## 4.11.2 Changes and Improvements

### CoreMedia Core

#### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.6.0. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika.

Updated dependencies:

- Apache Commons Compress 1.22
- Apache PDFBox 2.0.27
- Apache POI 5.2.3
- Apache Tika 2.6.0
- Apache XMLBeans 5.1.1
- ASM 9.4
- Jackson Databind 2.13.4.2

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-22225]

# CoreMedia Content Application Engine

## Added Spring's Nullable Annotation to CAE Handlers

The update to spring 5.3 included a change how spring webmvc treated conversion of path and request parameters whose values are null. Hence we refined most of our CAE handlers to accept null values and to respond with NOT\_FOUND [404] in this case instead of producing a conversion error.

[CMS-22329]

## Corrected Sitemap Generation Ports

There was some confusion throughout the application properties files and the documentation, concerning the port of the sitemap generation endpoint. The endpoint is still included in the spring boot management context of the Live CAE and is available by default at port 8081 in the Docker Container and mapped to port 42181 of the host. The obsolete property `cae.sitemap.cae-port` has been removed.

[CMS-22102]

## Allow Customize.Mode.APPEND for permittedLinkParameterNames Handlers

It is now possible to add entries to the permittedLinkParameterNames of handlers via customizer.

[CMS-21890]

## CoreMedia Studio Client

### Removed Halloween & Christmas Animations

These animations have been removed, because we currently have no possibility to lazy load them and the animations consume too much CPU.

[CMS-22336]

### Configuration Feature Flags for CKEditor 5

CKEditor 5 configurations can now be adjusted via `feature flags` as a lightweight approach for minor adaptations. Conditional changes can now be applied via Studio plugins for CKEditor 5, as known from documents with CKEditor 4.

[CMS-20689]

### Additional Plugins enabled for CKEditor 5

The following plugins were enabled for the default CKEditor in CoreMedia Studio:

- Autoformatting
- Find and replace
- Code block
- Alt Text of Image Plugin

[CMS-20674]

## CoreMedia Studio Server

### A Change in Java [amazoncorretto-11-11.0.17.8.1] Fixes Transformations of Some GIFs.

A change in Java [amazoncorretto-11-11.0.17.8.1] fixes transformations of some gifs.

[CMS-21956]

## CoreMedia Deployment

### java-application-base image update

The `coremedia/java-application-base` image has been updated. The update includes the following fixes:

- the `/coremedia/prometheus/jmx_prometheus_javaagent.jar` now has the correct filemode so it can be used with a different user than `coremedia:1000`.

- the environment variable `SPRING_PROFILES` has been replaced with the correct environment variable `SPRING_PROFILES_ACTIVE` as `SPRING_PROFILES` has been deprecated by Spring. If `SPRING_PROFILES_ACTIVE` is not set the application script will first check `SPRING_PROFILES` as a compatibility fallback before setting the default `default`.
- The environment variable `ZGC` to toggle the experimental Z garbage collector has been removed. This was an experimental feature.
- There was a leftover corretto rpm binary in the corretto image that unnecessarily increased the image size. It has been removed.
- The images had wrongly overridden the `default.policy` file that is shipped with the jvm distros. Instead now the `JAVA_HOME/config/security/java.policy` is overridden and all changes from the current included JVM will now be active.

[CMS-22205]

## CoreMedia Headless Server

### Headless Server New Feature: Block documents from delivery with confidential contents

Although not recommended, there might be circumstances, where it can't be avoided to store confidential data or settings in the content. For these cases, Headless Server now supports a list of repository paths, which are to be blocked in delivery. The paths to block are defined in the configuration property `caas.graphql.repository-path-exclude-patterns`, e.g.

```
caas.graphql.repository-path-exclude-patterns[0]=A/B/C/D
caas.graphql.repository-path-exclude-patterns[1]=A/**/C/*
caas.graphql.repository-path-exclude-patterns[2]=A/B/**
caas.graphql.repository-path-exclude-patterns[3]=A/**/C/*
```

For details please see the deployment manual and the knowledgebase [article](#).

[CMS-22421]

## Miscellaneous

### Analytics connectors: Separate live and backend properties

Some settings for the analytics connectors can contain secret information and should not be published. Therefore these internal settings should be separated from settings, that are required on live systems and they should not be published. Internal analytics settings can be configured for a site in `<site>/Options/Settings/Internal/InternalAnalyticsSettings`. The containing folder `<site>/Op`

`tions/Settings/Internal` and the path of the p12 file should be configured in the blacklist to prevent delivery of the content in headless environments.

See documentation for details.

[CMS-22447]

## 4.11.3 Fixed Issues

### CoreMedia Core

#### Fixed Bug in "cm content-uuid-import"

Fixed a bug in the command-line tool to import content UUIDs (`cm content-uuid-import`) that could cause failures like `IndexOutOfBoundsException`.

[CMS-22464]

#### Third-Party Update: postgresql Driver

postgresql has been updated to version 42.4.3 to avoid reported security vulnerabilities of previous versions.

[CMS-22444]

#### Third-Party Update: Woodstox

FasterXML Woodstox has been updated to version 6.4.0 to avoid security vulnerabilities of previous versions.

[CMS-22314]

#### Fixed Studio Search Information Disclosure

Original exception messages from Solr, which contain sensitive information in some cases, are no longer passed to clients through Studio Server REST Endpoints.

[CMS-22212]

#### Improved BELOW Content Query Execution

The *Content Server* executes content queries with "BELOW" folder clause(s) more efficiently now. This is especially true, if the server is not maintaining a folder index. For details, see the description of the 'cm dbindex' tool in the Content Server Manual.

The server now uses more efficient SQL queries (recursive common table expressions) to query the database, if no folder index was created. The query performance for BELOW queries with enabled folder index will still be slightly better, but the performance difference got a lot smaller, and query performance without folder index can be acceptable

for many use cases. In case of problems, the old less efficient implementation can still be enabled by setting *Content Server* configuration property `sql.store.use-ct-es-for-below-queries=false`.

Some improvements have also been made for query execution with enabled folder index. In rare cases a content query never returned if PostgreSQL was used as database. This has been fixed.

If the folder index is enabled, queries have to wait for the index to be up-to-date, which may take some time after large folders have been moved. In rare cases, this can take quite a long time and block querying applications. A timeout has been added now, so that waiting queries will be executed without the folder index, if the folder index isn't available for some time. The timeout can be set with the *Content Server* configuration property `sql.store.folder-index-timeout` and defaults to 1 minute.

[CMS-21264]

### Fixed CAE Feeder Possible Deadlock

Fixed a bug that could lead to a dead lock of the *CAE Feeder* in case of cyclic navigation structures.

[CMS-19571]

## CoreMedia Content Application Engine

### Updated (embedded) Tomcat to 9.0.70

Embedded Tomcat has been updated to version 9.0.70 (see [Changelog Tomcat 9.0.70](#)) to prevent known vulnerabilities.

Please be aware that Tomcat  $\geq 9.0.69$  serves cookies with dates formatted as required by RFC 6265 (see [Changelog Tomcat 9.0.69](#)). This may have to be respected in HTTP client implementations. When e.g. the *Apache HttpClient* is used and cookies are retrieved via the [CookieStore](#), the cookie specification must be set to `standard` - see [Request-Config.Builder#setCookieSpec](#) and [CookieSpecs](#).

[CMS-22519]

### Updated (Embedded) Tomcat to 9.0.68

Updated (Embedded) Tomcat to version 9.0.68 to prevent potential CVE-2022-42252, although we don't use the vulnerable setting `rejectIllegalHeader`.

[CMS-22354]

### Added Nullability Annotations to Validator and ValidationService

Nullability annotations are added to Validator and ValidationService. Fixed a possible `NullPointerException` in `com.coremedia.blueprint.common.services.validation.AbstractValidator`.

[CMS-22183]

### Fixed Atom Feed Validation

Added missing mandatory fields `id` and `updated` to Atom feed.

By this change, the optional fields `pubDate` and `dc:date` were also added to the RSS feed.

[CMS-21318]

### Bugfix: Image Map Hotzones Misplaced when "Fit Image to Crop"

Image Map hotzones could be misplaced in CAE and Headless Server rendering, if "*Fit image to crop*" is active on corresponding image. This change resolves the issue. Existing image map hotzones do *not* need to be changed.

[CMS-19436]

## CoreMedia Studio Client

### Improved studio-client development documentation

A wrong command was listed for starting studio and an obsolete note box was removed about a "--" which is no longer needed.

[CMS-22555]

### Fixed German Labels

Fixed issues with German labels on the login mask and user-manager.

[CMS-22481]

### Editor contents in new HTMLFragments are now editable

The `SLi` editor was missing a crucial plugin, that did not allow to edit contents in new HTMLFragment editors.

[CMS-22456]

### Added missing favicon in Workflow App

Missing workflow favicon has been added.

[CMS-22446]



### Problems starting (remote) apps with devDependencies

Only relevant when using the experimental custom apps feature: Packages not located in the workspace are downloaded from an NPM registry. If this is the case for an app and the package contains "devDependencies" the studio-client could not be started.

[CMS-22365]

### Fixed An Issue Where Drag&Drop Between Content App and Workflow App Did Not Work

In case the apps were running via "http" and not on "localhost" drag&drop between content app and workflow app was not working.

Note: Such a setup is only recommended for testing or development purposes not for production!

[CMS-22363]

### CKEditor 5: Drag & Drop of contents from external systems into RichText and Link Balloon

It is now possible again to drag and drop contents into CKEditor 5 components like in CKEditor 4. When a content from a thirdparty system (e.g. a commerce system or a content-hub provider) is dropped, the content will be imported into the CMS and linked or embedded in the like a content.

[CMS-22313]

### Fixed Document Lifecycle Status Icon

Fixed the update of the status icon located before the locale switcher.

[CMS-22305]

### Fixed Notification Error for Custom Notifications

Fixed an error thrown by custom notifications that want to use the default notification wrapper for displaying the notification details.

[CMS-22304]

### Fixed Initialization of FolderChooserList

The chooser is only initialized with the calculated path if no other value was set through the *bindTo* expression of the component.

[CMS-22201]

### Documentation: Added Hints on Handling of EXIF Orientation in Image Metadata

Hints on handling of EXIF orientation in metadata of images uploaded to the CMS have been added to Studio User Manual.

[CMS-19374]

## CoreMedia Studio Server

### Fixed Bug Where the Preview Panel Grew Smaller After Collapsing + Expanding

We fixed bug where the Preview panel grew smaller after collapsing + expanding.

[CMS-14262]

## CoreMedia Frontend Workspace

### Third-Party Update: json5

The dependency `json5` and all other dependencies with minor version changes has been updated in the frontend workspace to avoid security vulnerability CVE-2022-46175.

[CMS-22509]

### Link Properties in Settings on Windows Systems

When using link settings in the frontend workspace (via `.settings.json`) importing on Windows System caused the links to be not properly resolved (and being removed as a consequence). This has been fixed now.

[CMS-22385]

## CoreMedia Documentation

### Relocation of MySQL Database Driver

With version 8.0.31, The MySQL database driver has been relocated from `mysql:mysql-connector-java` to `com.mysql:mysql-connector-j` within <https://mvnrepository.com/>. All dependencies in the blueprint have been adjusted.

[CMS-22243]

## Miscellaneous

### Updated gRPC, Netty and transitive dependencies

To prevent known CVEs, Netty and related dependencies have been updated to their latest non-breaking versions:

- gRPC Spring Boot Starter 2.13.1.RELEASE (see [gRPC Spring Boot Starter Releases](#) )

- gRPC-Java 1.52.1 [see [gRPC-Java Releases](#) ]
- Java Protocol Buffers 3.21.12 [see [Java Protocol Buffers Releases](#) ]
- Netty 4.1.87.Final [see [Netty Project News](#) ]
- Error Prone Annotations 2.17.0 [see [Error Prone Releases](#) ]
- AWS SDK for Java 2.17.295 [see [AWS SDK for Java Changelog](#) ]

[CMS-22510]

### Bugfix: Robustness against Invalid Background Colors in Image Transformation

Illegal values for a background color led to exceptions and failure in image transformation. Background color can be defined in image document's setting *coloring.background*. A new Studio validator *ColorSettingValidator* ensures that errors of this kind are reported as content issues in Studio and prohibit publication of the respective documents. Furthermore, illegal values are replaced by default values in preview so that no exceptions are raised in this case.

[CMS-22440]

### Updated Spring Security to 5.6.9

Updated Spring Security to version 5.6.9 to prevent potential CVEs for customers using OAuth2

[CMS-22355]

## 4.12 Release 2210.1

The release contains:

- Breaking changes: 27
- Changes and improvements: 64
- Bugfixes: 141

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2022-11-02

### Breaking Changes

- CMS-21210: [Cli Tool Argument Checks are Improved](#)
- CMS-22226: [cae-base-lib: Introducing ReservedClassToElementFilter and Aligned with Headless-Server and CKEditor 5](#)
- CMS-22070: [Spring Bean Type Refinement](#)
- CMS-22194: [BlueprintLinksServicesConfiguration#contentLinkBuilder now Correctly uses sitesService as Bean Name](#)
- CMS-21919: [Fix and Deprecate Method TransformImageService#getTransformation-String](#)
- CMS-22032: [Docker: Renamed Flag SKIP\\_GENERATE\\_LOCK\\_FILE to FROZEN\\_GENERATED\\_FILES](#)
- CMS-22020: ["Open In Tab" Settings is Read from EditorPreferences](#)
- CMS-21771: [Removed Preference to Hide all Toast Messages](#)
- CMS-21422: [Dashboard Improvements](#)
- CMS-19865: [Delegate Feature Removed in Teaser Fields](#)
- CMS-21997: [Third-Party Update: TypeScript to 4.8.2](#)
- CMS-19300: [Fixed Validation State of InputChipsField](#)
- CMS-16753: [Changed Home Folder Assignment](#)
- CMS-19273: [Fixed DST Issue for Struct Date Property Editor](#)
- CMS-18419: [Removal: Freemarker function bp.getBlobLink\(\) has been removed](#)
- CMS-22091: [Third-Party Update: GraphQL-Java to 19.2](#)

- CMS-21585: Configured a Cache Control max-age Default for Headless Server GET Requests
- CMS-21962: Control Surrounding Root Tag of Richtext by Query Parameter
- CMS-21901: Change getName Method in PluginSchemaAdapterFactory to NonNull
- CMS-21831: Headless Server now Offers Full Configurable CORS Support
- CMS-19191: Rich Text Editing Switched to CKEditor 5 in CoreMedia Studio
- CMS-18701: Lower Limit for "My Edited Content"
- CMS-22022: Changed CMS Version Compatibility Check For Plugins
- CMS-21849: Switching to Rolling Tags for Docker Base Images
- CMS-22172: SolrCloud Configuration Disabled /sql Request Handler

## Changes and Improvements

- CMS-21653: Multi-Site Manual: Hints on CleanInTranslation
- CMS-16997: Content UUIDs on Live Servers
- CMS-21796: Removal: Bean Generator
- CMS-19122: Ignore View Name on File Navigation Attempts
- CMS-21825: Fixed "mailto" Link Validator
- CMS-20220: Added Quick Search Dialog
- CMS-22227: Improved Locale Switcher Performance
- CMS-14741: Added Extension Point for Image Editors Forms
- CMS-19722: Fixed Shutdown of Applications in Case Spring Application Context Startup Failed
- CMS-22203: Updated Commerce Adapters and Base API to Latest Versions
- CMS-21892: Headless New Feature: Retrieval of all Settings at Once via Wildcard \*
- CMS-21706: Bring Headless Default Values for UAPI Heap and Blob Cache Size in Line With CAE
- CMS-16843: UUID Support for Content Schema of Headless Server
- CMS-22189: Third-Party Update: SnakeYAML
- CMS-22088: Java API to Create Content with UUID
- CMS-21847: CAP Connection Actuator Endpoint
- CMS-20403: Add Asset Taxonomies to Plugin

## Bugfixes

- CMS-22228: Third-Party Update: gRPC and Protobuf-Java Dependencies
- CMS-22210: Third-Party Update: FasterXML Jackson Dependencies
- CMS-22185: Content UUID Migration Includes Folders
- CMS-22144: Bugfix: Content UUID Migration Tooling Fails on Missing UUIDs
- CMS-22017: ImageCropSizeValidator Reads Image Dimensions from Properties
- CMS-21995: Third-Party Update: Postgresql
- CMS-21932: Derive Site Robustness: Handle Links to Destroyed Contents
- CMS-21773: Documentation on How to Derive a Site
- CMS-21408: New ServerExport Option to Export Files in Lowercase
- CMS-20981: The Content Feeder Now Also Feeds String Lists And Considers Nested Structs
- CMS-20106: Cleaned up application-mls-local.properties
- CMS-22268: Third-Party Update: commons-text
- CMS-22058: Removed pbe Taglib Declaration from Blueprint taglibs.jinc
- CMS-22043: Fixed a Bug Regarding Annotation Lookup of Link Schemes
- CMS-22031: Fixed the Order of the 'viewEngines' Bean
- CMS-22011: Bugfix: Issue with Responsive Image Delivery for Extremely Small Images
- CMS-22001: Fixed the Handling of Preview Date
- CMS-21878: CORS Configurations are Now Ordered by Best-matching Path Pattern
- CMS-19083: Fixed a Bug Regarding Encoding of Resource URLs
- CMS-22182: Fixed ItemId Formatting
- CMS-22163: Adjusted Documentation for Build with Extensions
- CMS-22076: Fixed "Create From Template" Folder Initialization
- CMS-22068: Fixed Folder Suggestions for Content Rules
- CMS-21987: Workflow Window: Start Workflow Button is Disabled Until Validation is Finished
- CMS-21915: Fixed 'minSearchCharacters' of User Manager Search
- CMS-21885: Fixed Collapse State Handling of Form View and Preview
- CMS-19826: Fix Tab Tooltips Issue
- CMS-19590: Fixed Workarea Header Rendering Issue
- CMS-19557: Fixed Possible ActionsToolbar Disappearance

- CMS-18543: Fixed Logout Problem for Invalid Users
- CMS-17961: Start Workflow Window: Start button is disabled during starting the workflow
- CMS-17394: Fixed Logger Messages
- CMS-22177: Fixed Possible DocType Menu Error
- CMS-21505: Enhanced Studio-Server Support for Markup in Structs
- CMS-20639: Fixed Date Picker and Calendar Localization
- CMS-20154: SpringSecurityCapSessionFilter sends GET /logout Request
- CMS-16733: CKEditor Tab-Reuse Issue
- CMS-15645: Fixed Drag in LinkLists of Annotated LinkLists
- CMS-15119: Improved ContentInitializer
- CMS-22168: Brick Creator no Longer Creates Invalid JavaScript When Brick Name Contains a Dash
- CMS-22164: Fix Security Vulnerability CVE-2022-37734
- CMS-21968: Expose id of CMPlaceholder
- CMS-21725: JavaDoc Updates: Null-Behavior for Struct List Properties in StructBuilder
- CMS-22000: Examples Workspace Builds Again

## 4.12.1 Breaking Changes

### CoreMedia Core

#### Cli Tool Argument Checks are Improved

Especially the `cm bulkpublish` command and other tools have not checked their parameter and arguments. In this specific case, a folder was passed to the `bulkpublish` command without the necessary `-f` option (because other tools do it that way). However, the tool did not complain about the unknown argument and simply assumed a default value for the folder. This is now checked more closely for all tools that don't need further arguments and a usage message is printed. This change is only breaking if you have used the tools with wrong parameters. If you used them correctly, the behavior does not change.

*(CMS-21210)*

# CoreMedia Content Application Engine

## cae-base-lib: Introducing ReservedClassToElementFilter and Aligned with Headless-Server and CKEditor 5

The `cae-base-lib` ships with a new filter for CoreMedia RichText 1.0, that covers typical mappings of HTML elements to rich text and vice versa.

Follow [Section "cae-base-lib: Introducing ReservedClassToElementFilter and Aligned with Headless-Server and CKEditor 5" \[480\]](#) for upgrade information.

[CMS-22226]

## Spring Bean Type Refinement

The Spring bean `throttlingBlobTransformer` in `BlobTransformerConfiguration#BlobTransformerInternalConfiguration` is now exposed by its concrete type `ThrottlingBlobTransformer` for technical reasons. This makes injections of type `BlobTransformer` possibly ambiguous in project code. For backward compatible behaviour, use the concrete type `ThrottlingBlobTransformer` or the exact name `throttlingBlobTransformer` to inject this bean.

[CMS-22070]

## BlueprintLinksServicesConfiguration#contentLinkBuilder now Correctly uses sitesService as Bean Name

Adding a second bean of type `com.coremedia.cap.multisite.SitesService` prevented the CAE from starting because `BlueprintLinksServicesConfiguration#contentLinkBuilder` used a wrong bean name for the `SitesService` bean. It now uses the correct bean name `sitesService`.

[CMS-22194]

## Fix and Deprecate Method `TransformImageService#getTransformationString`

The method `com.coremedia.cap.transform.TransformImageService#getTransformationString(...)` has been changed to return null for non-existing blobs instead of throwing a `NullPointerException`. Further the method has been marked as deprecated for removal because it was not intended to be public API.

[CMS-21919]



# CoreMedia Studio Client

## Docker: Renamed Flag SKIP\_GENERATE\_LOCK\_FILE to FROZEN\_GENERATED\_FILES

The Docker build in the studio-client workspaces provides an option to avoid a build failure if the `pnpm-lock.yaml` is outdated. As the check was extended to also cover outdated `tsconfig.json` files in the workspace and it did not make sense to introduce a second dedicated flag renamed the existing `SKIP_GENERATE_LOCK_FILE` flag to `FROZEN_GENERATED_FILES`. As before the flag is enabled by default. Only disable the flag if you have good reasons to ignore a consistent state of the aforementioned files in the workspace.

[CMS-22032]

## "Open In Tab" Settings is Read from EditorPreferences

The initial value for the "Open In Tab" checkbox of the upload dialog is now read from the EditorPreferences of the user.

[CMS-22020]

## Removed Preference to Hide all Toast Messages

The preference option "Show Toasts" has been removed from the preferences dialog, as this feature seemed superfluous to us.

[CMS-21771]

## Dashboard Improvements

The dashboard button has been removed from the header toolbar and is available now as non-closeable first workarea tab panel. Additionally, a welcome widget and a bookmark widget have been introduced. Including with the "My Edited Contents" widgets, these widgets are used as the new default dashboard configuration for new users or users that haven't adapted the dashboard yet.

[CMS-21422]

## Delegate Feature Removed in Teaser Fields

The `DelegatePlugin` was removed from `TeaserOverlayTitle` and `TeaserOverlayText` fields. This means, there is no fallback to the Article Title and Text visible and/or editable anymore. This straightens the behavior in that way, that whether a fallback text is used or not is rather up to the delivery component and not influenced directly by editors.

[CMS-19865]

## Third-Party Update: TypeScript to 4.8.2

Fixed a problem when building the studio-client workspace in Windows if a certain path length was exceeded by upgrading to TypeScript 4.8.2.

Follow [Section "Third-Party Update: TypeScript to 4.8.2" \[484\]](#) for upgrade information.

[CMS-21997]

### Fixed Validation State of InputChipsField

The issue was caused by a mixed usage of the editor: it is used as a property editor and in other contexts as a "regular" editor. To solve this problem the new property editor *InputChipsPropertyField* has been introduced for regular content property editing. This new property editor is used e.g. for the free keyword selection on *CMTeasables*. While the existing *InputChipField* still exists, the package name has been refactored and does not accept the *bindTo ValueExpression* anymore. For these reasons the issue has been marked as breaking.

[CMS-19300]

### Changed Home Folder Assignment

The link list field for assigning home folders is not longer available in the user manager. Instead, the home folder is renamed if the user is renamed too. Additional validators have been added to the "Edit User" dialog for this.

[CMS-16753]

## CoreMedia Studio Server

### Fixed DST Issue for Struct Date Property Editor

Fixed an issue where the hour value was switching between DST dates. This issue was introduced on purpose 6 years ago. In order to unify the behavior of both date time property editors (struct and regular date properties), this change has been reverted.

[CMS-19273]

## CoreMedia Frontend Workspace

### Removal: Freemarker function `bp.getBlobLink()` has been removed

The Freemarker function `bp.getBlobLink()` has been removed. Use the default link function `cm.getLink()` instead.

Follow [Section "Removal: Freemarker function `bp.getBlobLink\(\)` has been removed" \[486\]](#) for upgrade information.

[CMS-18419]

# CoreMedia Headless Server

## Third-Party Update: GraphQL-Java to 19.2

The library `com.graphql-java:graphql-java` was updated from 18.1 to 19.2. It contains several bugfixes and some security relevant improvements.

Follow [Section "Third-Party Update: GraphQL-Java to 19.2" \[486\]](#) for upgrade information.

*[CMS-22091]*

## Configured a Cache Control max-age Default for Headless Server GET Requests

Configured a default of 5 minutes for the Headless Server's Cache-Control max-age value to prevent that REST responses including properties of a content which is erroneously configured to be valid for a long time will be cached for a long time.

*[CMS-21585]*

## Control Surrounding Root Tag of Richtext by Query Parameter

Richtext property fields, which deliver string based content, now support the new optional Boolean parameter `suppressRootTag`. The parameter defaults to the value of the server config parameter `caas.stax.suppressRootTag`. If `true`, the surrounding root tag of a richtext will be parsed out. This is the new default!

Follow [Section "Control Surrounding Root Tag of Richtext by Query Parameter" \[487\]](#) for upgrade information.

*[CMS-21962]*

## Change getName Method in PluginSchemaAdapterFactory to NonNull

The method was changed to be NonNull, since semantically it should be NonNull and it does not make sense to allow null as an identifier for adapters. This change is only considered breaking, if the interface is implemented and the implemented method returns null for the name. If this is not the case, it is not considered breaking.

*[CMS-21901]*

## Headless Server now Offers Full Configurable CORS Support

The former basic CORS support which implemented an "allow all origins" policy in `CaasConfig` was replaced by a fully configurable implementation. See the deployment manual about how to configure CORS on headless (properties `caas.cors.*`).

Follow [Section "Headless Server now Offers Full Configurable CORS Support" \[488\]](#) for upgrade information.

*[CMS-21831]*

## CoreMedia Documentation

### Rich Text Editing Switched to CKEditor 5 in CoreMedia Studio

Rich Text Editing in CoreMedia Studio now defaults to CKEditor 5.

Follow [Section "Rich Text Editing Switched to CKEditor 5 in CoreMedia Studio" \[488\]](#) for upgrade information.

[CMS-19191]

### Lower Limit for "My Edited Content"

The default value of the Spring property "userchanges.max-length" for the *User Changes App* is now set to 1000 .

Follow [Section "Lower Limit for "My Edited Content"" \[489\]](#) for upgrade information.

[CMS-18701]

## Miscellaneous

### Changed CMS Version Compatibility Check For Plugins

The plugin property `plugin.requires` and the programmatic version check for Java Plugins in the CMS has been removed to fix a bug with the required cms version and to prevent further confusion.

Follow [Section "Changed CMS Version Compatibility Check For Plugins" \[489\]](#) for upgrade information.

[CMS-22022]

### Switching to Rolling Tags for Docker Base Images

CoreMedia base images are based on official Docker Hub images. These official images are regularly affected by security vulnerabilities - some more, some less. This is one reason why we are publishing our images independently from the Blueprint on Docker Hub. You can upgrade to a new version without having to wait for a new CMCC release.

Follow [Section "Switching to Rolling Tags for Docker Base Images" \[490\]](#) for upgrade information.

[CMS-21849]

### SolrCloud Configuration Disabled /sql Request Handler

The Solr configuration in all `solrconfig.xml` files has been changed for security reasons, and now disables the `/sql` request handler. This handler was never used but

it was enabled implicitly in SolrCloud installations. You can ignore this release note, if you don't use SolrCloud.

Follow [Section "SolrCloud Configuration Disabled /sql Request Handler" \[490\]](#) for upgrade information.

[CMS-22172]

## 4.12.2 Changes and Improvements

### CoreMedia Core

#### Multi-Site Manual: Hints on CleanInTranslation

`CleanInTranslation` is a scheduled task related to the CoreMedia Multi-Site feature that is executed in workflow server. It may happen, that this scheduled tasks struggles with the state of some localization workflows, which prevents clean-up of false-positive *in translation* states of some contents.

A manual section "*CleanInTranslation Challenges*" has been added to the Multi-Site Manual describing possible issues in detail, how to analyze and possibly fix them.

[CMS-21653]

#### Content UUIDs on Live Servers

Stable and universally unique identifiers (UUIDs) for content are now also available on the *Master Live Server* and on *Replication Live Servers*. In previous releases, UUIDs for content were only available on the *Content Management Server*. Content that is newly created on a live server will now receive the same UUID as on the *Content Management Server*. However, existing contents that have been published or replicated with a previous release will not automatically receive UUIDs.

To assign UUIDs to already published content on live servers, it's recommended to synchronize UUIDs by running the `cm content-uuid-export` and `cm cm content-uuid-import` as described in the *Content Server Manual*, section "Configuration and Operation | Server Utility Programs | Operation | Content-UUID-Migration".

For more details on UUIDs, see the *Unified API Developer Manual*, section "The Content Repository | UUIDs".

[CMS-16997]

## CoreMedia Content Application Engine

### Removal: Bean Generator

The outdated bean generator tool is removed.

Along with the removal of the bean generator the ant dependency was removed and is no longer managed in `com.coremedia.cms:common-thirdparty-bom`.

[CMS-21796]

### Ignore View Name on File Navigation Attempts

When a request with a suspicious view name is provided that tries to traverse the filesystem, the view will now be ignored instead of forwarding to an error page. This is the same behavior like for other invalid view names. For such suspicious requests, an info will be logged.

[CMS-19122]

## CoreMedia Studio Client

### Fixed "mailto" Link Validator

The link validator now allows the possible parameters that can be passed to this type of links.

[CMS-21825]

### Added Quick Search Dialog

A quick search dialog has been added to Studio. The dialog can be opened by clicking on the quick-search icon in the header toolbar or by using the shortcut CTRL+ALT+Space.

[CMS-20220]

## CoreMedia Studio Server

### Improved Locale Switcher Performance

With a larger amount of sites, the Locale Switcher caused serious performance issues. Because the derived content calculation is performed on tab opening, the editor was forced to wait until this calculation has been finished. The dropdown now loads the variants when it is expanded. Additionally, the calculation has been improved so that a lot less request are required now. However, be aware that when opening the switcher the first time, the calculation may take a little bit longer, because the client needs to load and cache the folder structure of the variants once.

[CMS-22227]

### Added Extension Point for Image Editors Forms

The image editor hotzone form is shown in a separate component called *ImageMapEditorTargetEditors* now. The form can be extended by writing a *NestedRulePlugin* for the *ImageEditor* component.

[CMS-14741]

## CoreMedia Workspace

### Fixed Shutdown of Applications in Case Spring Application Context Startup Failed

Spring blob transformer configuration contained a bug preventing the JVM to terminate when the Spring application context failed. The bug is fixed, so that the JVM now properly terminates if the Spring application context failed.

[CMS-19722]

## CoreMedia Commerce Hub

### Updated Commerce Adapters and Base API to Latest Versions

The commerce adapter base API and the commerce adapters have been updated to their latest versions:

- Base API: 2.0.9
- commerce-adapter-mock: 2.0.9
- commerce-adapter-commercetools: 2.0.8
- commerce-adapter-hybris: 2.0.9
- commerce-adapter-sfcc: 2.0.12
- commerce-adapter-wcs: 2.0.13

Please see the release notes of the commerce adapters for more details.

[CMS-22203]

## CoreMedia Headless Server

### Headless New Feature: Retrieval of all Settings at Once via Wildcard \*

It is now possible to retrieve all local settings of a content object at once, using the new wildcard '\*'.

```
...
settings: paths("**")
...
```

[CMS-21892]

### Bring Headless Default Values for UAPI Heap and Blob Cache Size in Line With CAE

Update the default values for UAPI heap and blob cache size of the Headless Server in `headless-server-app/src/main/resources/application.properties` to be in line with the CAE.

The defaults are:

```
repository.heapCacheSize = 104857600
repository.blobCacheSize = 10737418240
```

[CMS-21706]

### UUID Support for Content Schema of Headless Server

Headless Server now comes with UUID support for the content schema. All content objects now expose a `uuid` property of scalar type `UUID`. All content based queries using a content id parameter support additionally the usage of a `uuid`.

[CMS-16843]

## Miscellaneous

### Third-Party Update: SnakeYAML

The SnakeYAML dependency was updated to `org.yaml:snakeyaml:1.33` for all applications to fix several known vulnerabilities.

[CMS-22189]

### Java API to Create Content with UUID

The Unified API interface `com.coremedia.cap.content.create.ContentBuilder` got the new method `#uuid(java.lang.UUID)`, which makes it possible to create Content with a predefined UUID. The API can be used in custom code, for example to preserve UUIDs when transferring content from one server to another.

[CMS-22088]

### CAP Connection Actuator Endpoint

Added a new Spring Boot actuator endpoint for the CapConnection with information about the configuration of the connection, and the possibility to change some properties. For more information, see the Operation Basics Manual, section "Basics of Operation | Actuator Endpoints | CapConnection Endpoint".



[CMS-21847]

#### Add Asset Taxonomies to Plugin

Add asset taxonomies to the asset management plugin and enable find contents by taxonomy path.

[CMS-20403]

## 4.12.3 Fixed Issues

### CoreMedia Core

#### Third-Party Update: gRPC and Protobuf-Java Dependencies

The dependencies for the commerce adapter connections have been updated to their latest versions fix known vulnerabilities:

- gRPC dependencies: 1.49.2
- Protobuf-Java: 3.21.7

[CMS-22228]

#### Third-Party Update: FasterXML Jackson Dependencies

The FasterXML Jackson dependencies have been updated to version 2.13.4 to fix a known vulnerability.

[CMS-22210]

#### Content UUID Migration Includes Folders

Previously, tools for content UUID migration [ *content-uuid-export* , *generate-content-uuid-map* , and *content-uuid-import* ] would not transfer UUIDs for folders. With the update, folder IDs are now included, too. UUID export data created with the current version of *content-uuid-export* should not be used with older versions of the mapping and import tools, though.

[CMS-22185]

#### Bugfix: Content UUID Migration Tooling Fails on Missing UUIDs

Content UUID migration tool *content-uuid-export* failed, if any of the export contents did not have a UUID assigned yet. This is fixed by creating new UUIDs on-the-fly during export for those contents that are missing a UUID and storing these newly created UUIDs in the *Content Management Server* database. Log output of *content-uuid-export* reports the number of generated UUIDs, should this happen during export. Generating a lot of missing UUIDs, however, can slow down export severely.

[CMS-22144]

### ImageCropSizeValidator Reads Image Dimensions from Properties

The `ImageCropSizeValidator` now uses the "width" and "height" properties of the validated `CMPicture` document to determine the image dimensions. Image dimensions are needed to compute the default crop dimensions when crop information in the "localSettings" struct of the content is missing. These properties are set by the `PictureUploadInterceptor` when uploading an image via *Studio*.

In the *Studio Server*, the validator falls back to compute image dimensions from the blob data, if "width" and "height" properties are not set in the `CMPicture` document. For issue indexing in the *Content Feeder*, the validator will not read image dimensions from blob data. If image dimensions are needed for validation but not available in the "width" and "height" properties, then no `ImageCropSizeValidator` issues will be indexed for that document. The documents with missing dimensions are logged on DEBUG level.

The reason for this change is a performance optimization as previously the *Content Feeder* had to load the picture's binary data to compute image dimensions for every `CMPicture` document and every time content issues were updated in the search index.

Whether to compute missing dimensions from blob data can be configured with `ImageCropSizeValidator#setComputeImageDimensions(boolean)`.

[CMS-22017]

### Third-Party Update: Postgresql

Updated the postgresql driver to 42.4.1 to benefit from latest security bugfixes.

[CMS-21995]

### Derive Site Robustness: Handle Links to Destroyed Contents

While links to destroyed contents should be prevented, actions such as *Derive Site* should be robust to handle them.

*Derive Site* has been hardened accordingly, which means:

- links to destroyed contents are kept as is (and should be fixed afterwards)
- links to destroyed master contents are rewritten as expected to the new master content

[CMS-21932]

### Documentation on How to Derive a Site

Deriving a new localized site in *Studio* can lead to several issues when content of the master site is not managed carefully. A new section *Multi-Site Challenges | Deriving a*

*Site* in the *Multi-Site Manual* gives recommendations on how to perform the task in order to achieve best results.

[CMS-21773]

### New ServerExport Option to Export Files in Lowercase

Use option `--lowercase` to store the exported content using lowercase filenames. This option can be helpful to mitigate problems with non-case-sensitive file systems. The paths are kept unique by appending a hash to the stored file name. The converted path will not affect the reimport of the exported files.

[CMS-21408]

### The Content Feeder Now Also Feeds String Lists And Considers Nested Structs

StructFeedablePopulator has been extended to also feed all keys, strings and string lists in nested structs or struct lists. Of course it is necessary that the respective content is re-indexed before these properties are searchable.

[CMS-20981]

### Cleaned up application-mls-local.properties

The property `repository.url` and its helper property `content-management-server.host` in `application-mls-local.properties` have been superfluous ever since and have now been deleted.

[CMS-20106]

## CoreMedia Content Application Engine

### Third-Party Update: commons-text

Apache commons-text has been updated to version 1.10.0 to avoid security vulnerability CVE-2022-42889.

[CMS-22268]

### Removed pbe Taglib Declaration from Blueprint taglibs.jinc

Removed pbe taglib declaration from cae-base-lib's taglibs.jinc, since cap-editing-pbe-taglib-component has been removed as of 2110.1.

[CMS-22058]

### Fixed a Bug Regarding Annotation Lookup of Link Schemes

Lookup of @Link Annotation failed under certain conditions. This bug is fixed.

[CMS-22043]

### Fixed the Order of the 'viewEngines' Bean

The type of the 'viewEngines' bean was changed to 'LinkedHashMap', so that custom view engines can be correctly prepended or appended.

[CMS-22031]

### Bugfix: Issue with Responsive Image Delivery for Extremely Small Images

Delivery of responsive images could fail, if the original image is extremely small and no crops had been defined in CoreMedia Studio. More specifically, this issue arose for images whose dimensions were smaller than the corresponding aspect ratio.

[CMS-22011]

### Fixed the Handling of Preview Date

Fixed the handling of preview date parameter, so that the preview date parameter is ignored by the live CAE.

[CMS-22001]

### CORS Configurations are Now Ordered by Best-matching Path Pattern

The CORS configurations that are assembled from the `cae.cors.*` configuration properties are now sorted by best-matching [URI templates](#), where configurations with more detailed path patterns win over those with more generic patterns.

[CMS-21878]

### Fixed a Bug Regarding Encoding of Resource URLs

Resource URLs containing non URL characters were encoded twice. This bug has been fixed.

[CMS-19083]

## CoreMedia Studio Client

### Fixed ItemId Formatting

Added additional check if `_itemId_s` have a leading number. If true, the *itemId* will be prefixed with *id-*.

[CMS-22182]

### Adjusted Documentation for Build with Extensions

The documentation in the README.adoc of the studio-client did not mention the flag `FROZEN_GENERATED_FILES` (or `SKIP_GENERATE_LOCK_FILE` for 2207 and below) in the docker build call for "Build with Extensions". This has been added now.

[CMS-22163]

### Fixed "Create From Template" Folder Initialization

Fixed issue where the base folders in the dialog have been initialized with wrong values when opened the first time.

[CMS-22076]

### Fixed Folder Suggestions for Content Rules

Fixed an issue where folder names have not been accepted by the rule folder suggestion component.

[CMS-22068]

### Workflow Window: Start Workflow Button is Disabled Until Validation is Finished

The start button of the workflow window for publication/translation was enabled when opening the window. For a large content set it might take some time until the validation finished. During the validation the button was usable but the usage of the button caused errors in the case the validation is not successful. Now the start button is disabled and will be enabled if the validation has been completed successfully.

[CMS-21987]

### Fixed 'minSearchCharacters' of User Manager Search

If set to '0', the user manager now shows all users and groups immediately. This previously only worked with the workaround setting the value to '-1'.

[CMS-21915]

### Fixed Collapse State Handling of Form View and Preview

The collapse state of form view and preview was not restored correctly, this is fixed now.

[CMS-21885]

### Fix Tab Tooltips Issue

Fix issue where tab tool tips may be rendered above the tabs context menu.

[CMS-19826]

### Fixed Workarea Header Rendering Issue

Fixed the issue that the tab of a document form sometime took the full screen width.

[CMS-19590]

### Fixed Possible ActionsToolbar Disappearance

Fixed an issue where the actions toolbar was moved out of the screen because of the document formular and docked library width. The issue has been fixed by supporting a overflow menu for the preview toolbar.

[CMS-19557]

### Fixed Logout Problem for Invalid Users

Fixed an issue where the session of an invalid CAP user has not been properly destroyed.

[CMS-18543]

### Start Workflow Window: Start button is disabled during starting the workflow

In the window for starting workflows [publication/translation] the start button was in some cases enabled after the start was triggered. If an author clicked the start button multiple times problems in the server occurred. Now the start button is always disabled while the workflow is starting.

[CMS-17961]

### Fixed Logger Messages

Fixed log messages where constructor names or component names have been logged as anonymous functions or object strings.

[CMS-17394]

## CoreMedia Studio Server

### Fixed Possible DocType Menu Error

Fixed issue where the document type dropdown for content creation threw an error for unknown document types.

[CMS-22177]

### Enhanced Studio-Server Support for Markup in Structs

Studio-Server may not have been able to deliver some Markup stored in Structs to Studio-Client, recorded in Studio-Server Log as `org.w3c.dom.DOMException: HIERARCHY_REQUEST_ERR`.

Studio-Server now can handle such Markup, which may be, for example, a result of importing pretty-printed `serverexport` data.

To work around this issue in previous versions, it is recommended not to use pretty-print option for `serverexport`, if these exported data are meant to be imported to CMS again.

[CMS-21505]

### Fixed Date Picker and Calendar Localization

Fixed localization of date and time pickers and calendar components.

[CMS-20639]

### SpringSecurityCapSessionFilter sends GET /logout Request

Fixed issue where a logout redirect was sent for invalid users. The session is now invalidated instead and the user will be get a message this way to login again.

[CMS-20154]

### CKEditor Tab-Reuse Issue

Fixed through migration to CKEditor 5.

[CMS-16733]

### Fixed Drag in LinkLists of Annotated LinkLists

Fixed an issue where drops in linklists that have been used in annotated linklists did not work.

[CMS-15645]

### Improved ContentInitializer

The ContentInitializer.ts of the Studio now cuts values if they exceed the max length of the target field.

[CMS-15119]

## CoreMedia Frontend Workspace

### Brick Creator no Longer Creates Invalid JavaScript When Brick Name Contains a Dash

As the title says the brick creator does no longer create a "src/js/init.js" with invalid JavaScript code when the brick name contains a dash.

[CMS-22168]

## CoreMedia Headless Server

### Fix Security Vulnerability CVE-2022-37734

The library `com.graphql-java:graphql-java-extended-scalars` was updated from version 18.1 to 19.0 in order to address CVE-2022-37734.

[CMS-22164]

### Expose id of CMPlaceholder

Expose the `CMPlaceholder` property `id` as `placeholderId`, since before it has been shadowed via the content id.

[CMS-21968]

## CoreMedia Documentation

### JavaDoc Updates: Null-Behavior for Struct List Properties in StructBuilder

The `StructBuilder` does not accept `null` entries for list properties. While the behavior did not change, the documentation got updated accordingly to emphasize this behavior.

[CMS-21725]

## Miscellaneous

### Examples Workspace Builds Again

A Maven plugin version issue has been resolved in the parent pom file of the examples workspace.

[CMS-22000]



## 4.13 Release 2207.2

The release contains:

- Breaking changes: 6
- Changes and improvements: 32
- Bugfixes: 126

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2023-01-09

### Breaking Changes

- CMS-21210: [Cli Tool Argument Checks are Improved](#)
- CMS-22194: [BlueprintLinksServicesConfiguration#contentLinkBuilder now Correctly uses sitesService as Bean Name](#)
- CMS-21997: [Third-Party Update: TypeScript to 4.8.2](#)
- CMS-19300: [Fixed Validation State of InputChipsField](#)
- CMS-22091: [Third-Party Update: GraphQL-Java to 19.2](#)
- CMS-22172: [SolrCloud Configuration Disabled /sql Request Handler](#)

### Changes and Improvements

- CMS-22225: [Third-Party Update: Apache Tika and Transitive Dependencies](#)
- CMS-21653: [Multi-Site Manual: Hints on CleanInTranslation](#)
- CMS-22329: [Added Spring's Nullable Annotation to CAE Handlers](#)
- CMS-22102: [Corrected Sitemap Generation Ports](#)
- CMS-21890: [Allow Customize.Mode.APPEND for permittedLinkParameterNames Handlers](#)
- CMS-19122: [Ignore View Name on File Navigation Attempts](#)
- CMS-22336: [Removed Halloween & Christmas Animations](#)
- CMS-21825: [Fixed "mailto" Link Validator](#)
- CMS-22227: [Improved Locale Switcher Performance](#)

- CMS-21956: A Change in Java (amazoncorretto-11-11.0.17.8.1) Fixes Transformations of Some GIFs.
- CMS-19722: Fixed Shutdown of Applications in Case Spring Application Context Startup Failed
- CMS-22203: Updated Commerce Adapters and Base API to Latest Versions
- CMS-22421: Headless Server New Feature: Block documents from delivery with confidential contents
- CMS-22447: Analytics connectors: Separate live and backend properties
- CMS-22189: Third-Party Update: SnakeYAML
- CMS-22014: Changed CMS Version Compatibility Check For Plugins

## Bugfixes

- CMS-22464: Fixed Bug in "cm content-uuid-import"
- CMS-22444: Third-Party Update: postgresql Driver
- CMS-22314: Third-Party Update: Woodstox
- CMS-22228: Third-Party Update: gRPC and Protobuf-Java Dependencies
- CMS-22212: Fixed Studio Search Information Disclosure
- CMS-22210: Third-Party Update: FasterXML Jackson Dependencies
- CMS-22185: Content UUID Migration Includes Folders
- CMS-22144: Bugfix: Content UUID Migration Tooling Fails on Missing UUIDs
- CMS-21995: Third-Party Update: Postgresql
- CMS-21980: Third-Party Update: NGINX
- CMS-21932: Derive Site Robustness: Handle Links to Destroyed Contents
- CMS-21773: Documentation on How to Derive a Site
- CMS-21408: New ServerExport Option to Export Files in Lowercase
- CMS-20981: The Content Feeder Now Also Feeds String Lists And Considers Nested Structs
- CMS-20106: Cleaned up application-mls-local.properties
- CMS-19571: Fixed CAE Feeder Possible Deadlock
- CMS-22354: Updated (Embedded) Tomcat to 9.0.68
- CMS-22268: Third-Party Update: commons-text
- CMS-22058: Removed pbe Taglib Declaration from Blueprint taglibs.jinc
- CMS-22043: Fixed a Bug Regarding Annotation Lookup of Link Schemes

- CMS-22031: Fixed the Order of the 'viewEngines' Bean
- CMS-22011: Bugfix: Issue with Responsive Image Delivery for Extremely Small Images
- CMS-22001: Fixed the Handling of Preview Date
- CMS-21878: CORS Configurations are Now Ordered by Best-matching Path Pattern
- CMS-21318: Fixed Atom Feed Validation
- CMS-19436: Bugfix: Image Map Hotzones Misplaced when "Fit Image to Crop"
- CMS-19083: Fixed a Bug Regarding Encoding of Resource URLs
- CMS-22446: Added missing favicon in Workflow App
- CMS-22365: Problems starting [remote] apps with devDependencies
- CMS-22363: Fixed An Issue Where Drag&Drop Between Content App and Workflow App Did Not Work
- CMS-22305: Fixed Document Lifecycle Status Icon
- CMS-22304: Fixed Notification Error for Custom Notifications
- CMS-22201: Fixed Initialization of FolderChooserList
- CMS-22182: Fixed ItemId Formatting
- CMS-22163: Adjusted Documentation for Build with Extensions
- CMS-22076: Fixed "Create From Template" Folder Initialization
- CMS-22068: Fixed Folder Suggestions for Content Rules
- CMS-21987: Workflow Window: Start Workflow Button is Disabled Until Validation is Finished
- CMS-21915: Fixed 'minSearchCharacters' of User Manager Search
- CMS-21885: Fixed Collapse State Handling of Form View and Preview
- CMS-19826: Fix Tab Tooltips Issue
- CMS-17961: Start Workflow Window: Start button is disabled during starting the workflow
- CMS-22177: Fixed Possible DocType Menu Error
- CMS-21505: Enhanced Studio-Server Support for Markup in Structs
- CMS-15645: Fixed Drag in LinkLists of Annotated LinkLists
- CMS-14262: Fixed Bug Where the Preview Panel Grew Smaller After Collapsing + Expanding
- CMS-22509: Third-Party Update: json5
- CMS-22385: Link Properties in Settings on Windows Systems
- CMS-22168: Brick Creator no Longer Creates Invalid JavaScript When Brick Name Contains a Dash
- CMS-22164: Fix Security Vulnerability CVE-2022-37734

- CMS-21968: [Expose id of CMPlaceholder](#)
- CMS-22243: [Relocation of MySQL Database Driver](#)
- CMS-21725: [JavaDoc Updates: Null-Behavior for Struct List Properties in StructBuilder](#)
- CMS-22510: [Updated gRPC, Netty and transitive dependencies](#)
- CMS-22355: [Updated Spring Security to 5.6.9](#)
- CMS-22000: [Examples Workspace Builds Again](#)
- CMS-21975: [Update of Docker Image of Java-Application-Base](#)

## 4.13.1 Breaking Changes

### CoreMedia Core

#### Cli Tool Argument Checks are Improved

Especially the `cm bulkpublish` command and other tools have not checked their parameter and arguments. In this specific case, a folder was passed to the `bulkpublish` command without the necessary `-f` option (because other tools do it that way). However, the tool did not complain about the unknown argument and simply assumed a default value for the folder. This is now checked more closely for all tools that don't need further arguments and a usage message is printed. This change is only breaking if you have used the tools with wrong parameters. If you used them correctly, the behavior does not change.

*[CMS-21210]*

### CoreMedia Content Application Engine

#### BlueprintLinksServicesConfiguration#contentLinkBuilder now Correctly uses sitesService as Bean Name

Adding a second bean of type `com.coremedia.cap.multisite.SitesService` prevented the CAE from starting because `BlueprintLinksServicesConfiguration#contentLinkBuilder` used a wrong bean name for the `SitesService` bean. It now uses the correct bean name `sitesService`.

*[CMS-22194]*

## CoreMedia Studio Client

### Third-Party Update: TypeScript to 4.8.2

Fixed a problem when building the studio-client workspace in Windows if a certain path length was exceeded by upgrading to TypeScript 4.8.2.

Follow [Section “Third-Party Update: TypeScript to 4.8.2” \[493\]](#) for upgrade information.

[CMS-21997]

### Fixed Validation State of InputChipsField

The issue was caused by a mixed usage of the editor: it is used as a property editor and in other contexts as a "regular" editor. To solve this problem the new property editor *InputChipsPropertyField* has been introduced for regular content property editing. This new property editor is used e.g. for the free keyword selection on *CMTeasables*. While the existing *InputChipField* still exists, the package name has been refactored and does not accept the *bindTo ValueExpression* anymore. For these reasons the issue has been marked as breaking.

[CMS-19300]

## CoreMedia Headless Server

### Third-Party Update: GraphQL-Java to 19.2

The library `com.graphql-java:graphql-java` was updated from 18.1 to 19.2. It contains several bugfixes and some security relevant improvements.

Follow [Section “Third-Party Update: GraphQL-Java to 19.2” \[493\]](#) for upgrade information.

[CMS-22091]

## Miscellaneous

### SolrCloud Configuration Disabled /sql Request Handler

The Solr configuration in all `solrconfig.xml` files has been changed for security reasons, and now disables the `/sql` request handler. This handler was never used but it was enabled implicitly in SolrCloud installations. You can ignore this release note, if you don't use SolrCloud.

Follow [Section “SolrCloud Configuration Disabled /sql Request Handler” \[494\]](#) for upgrade information.

[CMS-22172]

## 4.13.2 Changes and Improvements

### CoreMedia Core

#### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.6.0. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika.

Updated dependencies:

- Apache Commons Compress 1.22
- Apache PDFBox 2.0.27
- Apache POI 5.2.3
- Apache Tika 2.6.0
- Apache XMLBeans 5.1.1
- ASM 9.4
- Jackson Databind 2.13.4.2

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-22225]

#### Multi-Site Manual: Hints on CleanInTranslation

`CleanInTranslation` is a scheduled task related to the CoreMedia Multi-Site feature that is executed in workflow server. It may happen, that this scheduled tasks struggles with the state of some localization workflows, which prevents clean-up of false-positive *in translation* states of some contents.

A manual section "*CleanInTranslation Challenges*" has been added to the Multi-Site Manual describing possible issues in detail, how to analyze and possibly fix them.

[CMS-21653]

## CoreMedia Content Application Engine

### Added Spring's Nullable Annotation to CAE Handlers

The update to spring 5.3 included a change how spring webmvc treated conversion of path and request parameters whose values are null. Hence we refined most of our CAE handlers to accept null values and to respond with NOT\_FOUND (404) in this case instead of producing a conversion error.

[CMS-22329]

### Corrected Sitemap Generation Ports

There was some confusion throughout the application properties files and the documentation, concerning the port of the sitemap generation endpoint. The endpoint is still included in the spring boot management context of the Live CAE and is available by default at port 8081 in the Docker Container and mapped to port 42181 of the host. The obsolete property `cae.sitemap.cae-port` has been removed.

[CMS-22102]

### Allow Customize.Mode.APPEND for permittedLinkParameterNames Handlers

It is now possible to add entries to the permittedLinkParameterNames of handlers via customizer.

[CMS-21890]

### Ignore View Name on File Navigation Attempts

When a request with a suspicious view name is provided that tries to traverse the filesystem, the view will now be ignored instead of forwarding to an error page. This is the same behavior like for other invalid view names. For such suspicious requests, an info will be logged.

[CMS-19122]

## CoreMedia Studio Client

### Removed Halloween & Christmas Animations

These animations have been removed, because we currently have no possibility to lazy load them and the animations consume too much CPU.

[CMS-22336]

### Fixed "mailto" Link Validator

The link validator now allows the possible parameters that can be passed to this type of links.

[CMS-21825]

## CoreMedia Studio Server

### Improved Locale Switcher Performance

With a large amount of sites, the Locale Switcher caused serious performance issues. Because the derived content calculation is performed on tab opening, the editor was forced to wait until this calculation has been finished. The dropdown now loads the variants when it is expanded. Additionally, the calculation has been improved so that a lot less request are required now. However, be aware that when opening the switcher the first time, the calculation may take a little bit longer, because the client needs to load and cache the folder structure of the variants once.

[CMS-22227]

### A Change in Java [amazoncorretto-11-11.0.17.8.1] Fixes Transformations of Some GIFs.

A change in Java [amazoncorretto-11-11.0.17.8.1] fixes transformations of some gifs.

[CMS-21956]

## CoreMedia Workspace

### Fixed Shutdown of Applications in Case Spring Application Context Startup Failed

Spring blob transformer configuration contained a bug preventing the JVM to terminate when the Spring application context failed. The bug is fixed, so that the JVM now properly terminates if the Spring application context failed.

[CMS-19722]

## CoreMedia Commerce Hub

### Updated Commerce Adapters and Base API to Latest Versions

The commerce adapter base API and the commerce adapters have been updated to their latest versions:

- Base API: 2.0.9
- commerce-adapter-mock: 2.0.9
- commerce-adapter-commercetools: 2.0.8
- commerce-adapter-hybris: 2.0.9
- commerce-adapter-sfcc: 2.0.12



- commerce-adapter-wcs: 2.0.13

Please see the release notes of the commerce adapters for more details.

[CMS-22203]

# CoreMedia Headless Server

## Headless Server New Feature: Block documents from delivery with confidential contents

Although not recommended, there might be circumstances, where it can't be avoided to store confidential data or settings in the content. For these cases, Headless Server now supports a list of repository paths, which are to be blocked in delivery. The paths to block are defined in the configuration property `caas.graphql.repository-path-exclude-patterns`, e.g.

```
caas.graphql.repository-path-exclude-patterns[0]=/A/B/C/D
caas.graphql.repository-path-exclude-patterns[1]=/A/*/C/*
caas.graphql.repository-path-exclude-patterns[2]=/A/B/**
caas.graphql.repository-path-exclude-patterns[3]=/A/**/C/*
```

For details please see the deployment manual and the knowledgebase [article](#) .

[CMS-22421]

# Miscellaneous

## Analytics connectors: Separate live and backend properties

Some settings for the analytics connectors can contain secret information and should not be published. Therefore these internal settings should be separated from settings, that are required on live systems and they should not be published. Internal analytics settings can be configured for a site in `<site>/Options/Settings/Internal/InternalAnalyticsSettings` . The containing folder `<site>/Options/Settings/Internal` and the path of the p12 file should be configured in the blocklist to prevent delivery of the content in headless environments.

See documentation for details.

[CMS-22447]

## Third-Party Update: SnakeYAML

The SnakeYAML dependency was updated to `org.yaml:snakeyaml:1.33` for all applications to fix several known vulnerabilities.

[CMS-22189]

### Changed CMS Version Compatibility Check For Plugins

- The plugin property `plugin.requires` and the programmatic version check for Java Plugins in the CMS has been removed to fix a bug with the required cms version and to prevent further confusion.
- A new Plugin Schema has been released: <https://releases.coremedia.com/plugins/plugin-schema-3.0.0.json>.

The schema now requires a `minimum-cms-version`. The property is not verified automatically, but is used for documentation purposes and enables clients to implement such a check in their deployment processes.

[CMS-22014]

## 4.13.3 Fixed Issues

### CoreMedia Core

#### Fixed Bug in "cm content-uuid-import"

Fixed a bug in the command-line tool to import content UUIDs (`cm content-uuid-import`) that could cause failures like `IndexOutOfBoundsException`.

[CMS-22464]

#### Third-Party Update: postgresql Driver

postgresql has been updated to version 42.4.3 to avoid reported security vulnerabilities of previous versions.

[CMS-22444]

#### Third-Party Update: Woodstox

FasterXML Woodstox has been updated to version 6.4.0 to avoid security vulnerabilities of previous versions.

[CMS-22314]

#### Third-Party Update: gRPC and Protobuf-Java Dependencies

The dependencies for the commerce adapter connections have been updated to their latest versions fix known vulnerabilities:

- gRPC dependencies: 1.49.2
- Protobuf-Java: 3.21.7

[CMS-22228]

### Fixed Studio Search Information Disclosure

Original exception messages from Solr, which contain sensitive information in some cases, are no longer passed to clients through Studio Server REST Endpoints.

[CMS-22212]

### Third-Party Update: FasterXML Jackson Dependencies

The FasterXML Jackson dependencies have been updated to version 2.13.4 to fix a known vulnerability.

[CMS-22210]

### Content UUID Migration Includes Folders

Previously, tools for content UUID migration [ *content-uuid-export* , *generate-content-uuid-map* , and *content-uuid-import* ] would not transfer UUIDs for folders. With the update, folder IDs are now included, too. UUID export data created with the current version of *content-uuid-export* should not be used with older versions of the mapping and import tools, though.

[CMS-22185]

### Bugfix: Content UUID Migration Tooling Fails on Missing UUIDs

Content UUID migration tool *content-uuid-export* failed, if any of the export contents did not have a UUID assigned yet. This is fixed by creating new UUIDs on-the-fly during export for those contents that are missing a UUID and storing these newly created UUIDs in the *Content Management Server* database. Log output of *content-uuid-export* reports the number of generated UUIDs, should this happen during export. Generating a lot of missing UUIDs, however, can slow down export severely.

[CMS-22144]

### Third-Party Update: Postgresql

Updated the postgresql driver to 42.4.1 to benefit from latest security bugfixes.

[CMS-21995]

### Third-Party Update: NGINX

The NGINX docker image has been updated to the latest version 1.23.1-alpine to avoid security issues of its OS base image.

In an upcoming CMCC release we will switch to a rolling tag to get updates of the OS base image with every build. We recommended that you manually switch to a rolling tag like *1.23-alpine* to cope with the moving target of security vulnerabilities in the libraries of the underlying OS.

Among others, the update fixes: CVE-2022-32207 CVE-2022-28391 CVE-2022-27404  
CVE-2022-28391 CVE-2022-1586 CVE-2022-1587

[CMS-21980]

### Derive Site Robustness: Handle Links to Destroyed Contents

While links to destroyed contents should be prevented, actions such as *Derive Site* should be robust to handle them.

*Derive Site* has been hardened accordingly, which means:

- links to destroyed contents are kept as is [and should be fixed afterwards]
- links to destroyed master contents are rewritten as expected to the new master content

[CMS-21932]

### Documentation on How to Derive a Site

Deriving a new localized site in Studio can lead to several issues when content of the master site is not managed carefully. A new section *Multi-Site Challenges | Deriving a Site* in the *Multi-Site Manual* gives recommendations on how to perform the task in order to achieve best results.

[CMS-21773]

### New ServerExport Option to Export Files in Lowercase

Use option `--lowercase` to store the exported content using lowercase filenames. This option can be helpful to mitigate problems with non-case-sensitive file systems. The paths are kept unique by appending a hash to the stored file name. The converted path will not affect the reimport of the exported files.

[CMS-21408]

### The Content Feeder Now Also Feeds String Lists And Considers Nested Structs

StructFeedablePopulator has been extended to also feed all keys, strings and string lists in nested structs or struct lists. Of course it is necessary that the respective content is re-indexed before these properties are searchable.

[CMS-20981]

### Cleaned up application-mls-local.properties

The property `repository.url` and its helper property `content-management-server.host` in `application-mls-local.properties` have been superfluous ever since and have now been deleted.

[CMS-20106]

### Fixed CAE Feeder Possible Deadlock

Fixed a bug that could lead to a dead lock of the *CAE Feeder* in case of cyclic navigation structures.

[CMS-19571]

## CoreMedia Content Application Engine

### Updated [Embedded] Tomcat to 9.0.68

Updated [Embedded] Tomcat to version 9.0.68 to prevent potential CVE-2022-42252, although we don't use the vulnerable setting `rejectIllegalHeader`.

[CMS-22354]

### Third-Party Update: commons-text

Apache commons-text has been updated to version 1.10.0 to avoid security vulnerability CVE-2022-42889.

[CMS-22268]

### Removed pbe Taglib Declaration from Blueprint taglibs.jinc

Removed pbe taglib declaration from `cae-base-lib's taglibs.jinc`, since `cap-editing-pbe-taglib-component` has been removed as of 2110.1.

[CMS-22058]

### Fixed a Bug Regarding Annotation Lookup of Link Schemes

Lookup of `@Link` Annotation failed under certain conditions. This bug is fixed.

[CMS-22043]

### Fixed the Order of the 'viewEngines' Bean

The type of the 'viewEngines' bean was changed to 'LinkedHashMap', so that custom view engines can be correctly prepended or appended.

[CMS-22031]

### Bugfix: Issue with Responsive Image Delivery for Extremely Small Images

Delivery of responsive images could fail, if the original image is extremely small and no crops had been defined in CoreMedia Studio. More specifically, this issue arose for images whose dimensions were smaller than the corresponding aspect ratio.

[CMS-22011]

### Fixed the Handling of Preview Date

Fixed the handling of preview date parameter, so that the preview date parameter is ignored by the live CAE.

[CMS-22001]

### CORS Configurations are Now Ordered by Best-matching Path Pattern

The CORS configurations that are assembled from the `cae.cors.*` configuration properties are now sorted by best-matching [URI templates](#), where configurations with more detailed path patterns win over those with more generic patterns.

[CMS-21878]

### Fixed Atom Feed Validation

Added missing mandatory fields `id` and `updated` to Atom feed.

By this change, the optional fields `pubDate` and `dc:date` were also added to the RSS feed.

[CMS-21318]

### Bugfix: Image Map Hotzones Misplaced when "Fit Image to Crop"

Image Map hotzones could be misplaced in CAE and Headless Server rendering, if "*Fit image to crop*" is active on corresponding image. This change resolves the issue. Existing image map hotzones do *not* need to be changed.

[CMS-19436]

### Fixed a Bug Regarding Encoding of Resource URLs

Resource URLs containing non URL characters were encoded twice. This bug has been fixed.

[CMS-19083]

## CoreMedia Studio Client

### Added missing favicon in Workflow App

Missing workflow favicon has been added.

[CMS-22446]

### Problems starting (remote) apps with devDependencies

Only relevant when using the experimental custom apps feature: Packages not located in the workspace are downloaded from an NPM registry. If this is the case for an app and the package contains "devDependencies" the studio-client could not be started.

[CMS-22365]

### Fixed An Issue Where Drag&Drop Between Content App and Workflow App Did Not Work

In case the apps were running via "http" and not on "localhost" drag&drop between content app and workflow app was not working.

Note: Such a setup is only recommended for testing or development purposes not for production!

[CMS-22363]

### Fixed Document Lifecycle Status Icon

Fixed the update of the status icon located before the locale switcher.

[CMS-22305]

### Fixed Notification Error for Custom Notifications

Fixed an error thrown by custom notifications that want to use the default notification wrapper for displaying the notification details.

[CMS-22304]

### Fixed Initialization of FolderChooserList

The chooser is only initialized with the calculated path if no other value was set through the *bindTo* expression of the component.

[CMS-22201]

### Fixed ItemId Formatting

Added additional check if *\_itemId\_s* have a leading number. If true, the *itemId* will be prefixed with *id-*.

[CMS-22182]

### Adjusted Documentation for Build with Extensions

The documentation in the README.adoc of the studio-client did not mention the flag FROZEN\_GENERATED\_FILES (or SKIP\_GENERATE\_LOCK\_FILE for 2207 and below) in the docker build call for "Build with Extensions". This has been added now.

[CMS-22163]

### Fixed "Create From Template" Folder Initialization

Fixed issue where the base folders in the dialog have been initialized with wrong values when opened the first time.

[CMS-22076]

### Fixed Folder Suggestions for Content Rules

Fixed an issue where folder names have not been accepted by the rule folder suggestion component.

[CMS-22068]

### Workflow Window: Start Workflow Button is Disabled Until Validation is Finished

The start button of the workflow window for publication/translation was enabled when opening the window. For a large content set it might take some time until the validation finished. During the validation the button was usable but the usage of the button caused errors in the case the validation is not successful. Now the start button is disabled and will be enabled if the validation has been completed successfully.

[CMS-21987]

### Fixed 'minSearchCharacters' of User Manager Search

If set to '0', the user manager now shows all users and groups immediately. This previously only worked with the workaround setting the value to '-1'.

[CMS-21915]

### Fixed Collapse State Handling of Form View and Preview

The collapse state of form view and preview was not restored correctly, this is fixed now.

[CMS-21885]

### Fix Tab Tooltips Issue

Fix issue where tab tool tips may be rendered above the tabs context menu.

[CMS-19826]

### Start Workflow Window: Start button is disabled during starting the workflow

In the window for starting workflows [publication/translation] the start button was in some cases enabled after the start was triggered. If an author clicked the start button multiple times problems in the server occurred. Now the start button is always disabled while the workflow is starting.

[CMS-17961]

## CoreMedia Studio Server

### Fixed Possible DocType Menu Error

Fixed issue where the document type dropdown for content creation threw an error for unknown document types.

[CMS-22177]

### Enhanced Studio-Server Support for Markup in Structs

Studio-Server may not have been able to deliver some Markup stored in Structs to Studio-Client, recorded in Studio-Server Log as `org.w3c.dom.DOMException: HIERARCHY_REQUEST_ERR`.



Studio-Server now can handle such Markup, which may be, for example, a result of importing pretty-printed `serverexport` data.

To work around this issue in previous versions, it is recommended not to use pretty-print option for `serverexport` , if these exported data are meant to be imported to CMS again.

[CMS-21505]

### Fixed Drag in LinkLists of Annotated LinkLists

Fixed an issue where drops in linklists that have been used in annotated linklists did not work.

[CMS-15645]

### Fixed Bug Where the Preview Panel Grew Smaller After Collapsing + Expanding

We fixed bug where the Preview panel grew smaller after collapsing + expanding.

[CMS-14262]

## CoreMedia Frontend Workspace

### Third-Party Update: json5

The dependency `json5` and all other dependencies with minor version changes has been updated in the frontend workspace to avoid security vulnerability CVE-2022-46175.

[CMS-22509]

### Link Properties in Settings on Windows Systems

When using link settings in the frontend workspace (via `.settings.json`) importing on Windows System caused the links to be not properly resolved (and being removed as a consequence). This has been fixed now.

[CMS-22385]

### Brick Creator no Longer Creates Invalid JavaScript When Brick Name Contains a Dash

As the title says the brick creator does no longer create a `"src/js/init.js"` with invalid JavaScript code when the brick name contains a dash.

[CMS-22168]

## CoreMedia Headless Server

### Fix Security Vulnerability CVE-2022-37734

The library `com.graphql-java:graphql-java-extended-scalars` was updated from version 18.1 to 19.0 in order to address CVE-2022-37734.

[CMS-22164]

### Expose id of CMPlaceholder

Expose the `CMPlaceholder` property `id` as `placeholderId`, since before it has been shadowed via the content id.

[CMS-21968]

## CoreMedia Documentation

### Relocation of MySQL Database Driver

With version 8.0.31, The MySQL database driver has been relocated from `mysql:mysql-connector-java` to `com.mysql:mysql-connector-j` within <https://mvnrepository.com/>. All dependencies in the blueprint have been adjusted.

[CMS-22243]

### JavaDoc Updates: Null-Behavior for Struct List Properties in StructBuilder

The `StructBuilder` does not accept `null` entries for list properties. While the behavior did not change, the documentation got updated accordingly to emphasize this behavior.

[CMS-21725]

## Miscellaneous

### Updated gRPC, Netty and transitive dependencies

To prevent known CVEs, Netty and related dependencies have been updated to their latest non-breaking versions:

- gRPC Spring Boot Starter 2.13.1.RELEASE (see [gRPC Spring Boot Starter Releases](#) )
- gRPC-Java 1.52.1 (see [gRPC-Java Releases](#) )
- Java Protocol Buffers 3.21.12 (see [Java Protocol Buffers Releases](#) )

- Netty 4.1.87.Final (see [Netty Project News](#) )
- Error Prone Annotations 2.17.0 (see [Error Prone Releases](#) )
- AWS SDK for Java 2.17.295 (see [AWS SDK for Java Changelog](#) )

[CMS-22510]

### Updated Spring Security to 5.6.9

Updated Spring Security to version 5.6.9 to prevent potential CVEs for customers using OAuth2

[CMS-22355]

### Examples Workspace Builds Again

A Maven plugin version issue has been resolved in the parent pom file of the examples workspace.

[CMS-22000]

### Update of Docker Image of Java-Application-Base

The Java Application Base image of all Spring Boot applications has been updated to version 2.4.5 to fix CVE-2022-34169.

The new release includes updated to the latest version 11.0.16 of the respective JDKs.

See <https://hub.docker.com/r/coremedia/java-application-base> for details.

[CMS-21975]

## 4.14 Release 2207.1

The release contains:

- Breaking changes: 22
- Changes and improvements: 47
- Bugfixes: 107

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2022-07-29

### Breaking Changes

- CMS-21879: [Database Improvement](#)
- CMS-21688: [Log Level Change for Publication Failure](#)
- CMS-19909: [Auto-Merge Robustness for Ambiguous and Deleted Links enhanced](#)
- CMS-21736: [Deprecation Removal: UrlProvider Leftovers from lc-cae](#)
- CMS-21919: [Fix and Deprecate Method TransformImageService#getTransformation-String](#)
- CMS-21409: [Freemarker Macro {{<@cm.message />}} Escapes Output by Default](#)
- CMS-21867: [Maximum Pending Amount of Parallel Requests from studio-client to studio-server Adapted](#)
- CMS-21750: [Added Promises-based Alternatives for Callback-based Studio Client API](#)
- CMS-21747: [TypeScript Source Code Simplifications](#)
- CMS-21584: [Third-Party Update: pnpm to version 7](#)
- CMS-21566: [Library Commerce Toolbar and Context Enhancement](#)
- CMS-19271: [Updated Upload Components Layout](#)
- CMS-21476: [Fixed Incorrect Defer Flag During Theme Import](#)
- CMS-21777: [Third-Party Update: Spring Boot and Related Dependencies](#)
- CMS-21703: [Removal: Flag "enableDuplicateSassImportsFix"](#)
- CMS-21705: [Fixed a Bug That in Some Cases SASS Files Could be Included Multiple Times](#)
- CMS-21585: [Configured a Cache Control max-age Default for Headless Server GET Requests](#)

- CMS-21901: Change getName Method in PluginSchemaAdapterFactory to NonNull
- CMS-21765: Picture Local Setting 'disableCropping' now Supported by Link Building
- CMS-21728: Updated cms-blueprint-parent to 2.0.0
- CMS-21612: Fixed Prometheus Cache Metrics
- CMS-10266: Removed Generic Type Argument of Blueprint SearchPreprocessor Interface

## Changes and Improvements

- CMS-21719: Third-Party Update: Apache Solr
- CMS-21652: Fixed Handling of Broken Internal Links in RichText
- CMS-20733: Deprecation: Bean Generator tool has been deprecated
- CMS-18964: Configured Less Strict Cookie Defaults for Local Development
- CMS-21690: Fixed 'minSearchCharacters' of User Manager Search
- CMS-21721: Third-Party Update: Apache Tika and Transitive Dependencies
- CMS-21798: Deprecation: Freemarker function bp.getBlobLink() has been deprecated
- CMS-21774: Base Image Update
- CMS-21766: Headless Server now Sends Content-Disposition Header for Non-viewable Responses
- CMS-21748: Add SolrSearchResultFactory as a bean for plugins
- CMS-21651: Third-Party Update: graphql-java to 18.1
- CMS-21546: Added User Consent Dialog
- CMS-21390: Third-Party Update : Maven Surefire
- CMS-21248: Deprecation: com.coremedia.workflow.common.actions.Log#setFatal
- CMS-20967: CoreMedia Cache Actuator Endpoint

## Bugfixes

- CMS-21739: Fixed ServerExport of Nested Blobs In Structs
- CMS-21695: Enhancement: Watchdog to Prevent DB Scheduler Deadlocks
- CMS-21627: Third-Party Update : Drew Noakes Metadata Extractor
- CMS-21579: Third-Party Update: google-oauth-client
- CMS-21516: Irritating and unhelpful logging in EditorialCommentEventFetcher for timestamps with `getNano()`
- CMS-21769: Fixed CSRF Documentation Bug

- CMS-19526: Segment Validator Warns of Unfavourable Segment Names
- CMS-18984: Improved CAE Local Properties for Template Development
- CMS-21884: Re-introduce RichTextPropertyFieldDelegatePlugin
- CMS-21802: Fixed Memory Leaks in CMPictureForm and CMLImageMapForm.
- CMS-21781: Third-Party Update: CKEditor 4 to 4.19.0
- CMS-21641: Fixed Upload Settings "maxFileSize"
- CMS-21628: Fixed Library Performance Issue
- CMS-21626: Bad UX: Don't Show "Accepted" in Localization Nagbar is full of quirks
- CMS-21586: hideLabel Does not Always Work in PropertyFieldGroups.
- CMS-21561: Deprecated RotateStyleClassPlugin
- CMS-21471: RotateStyleClassPlugin Is Now Robust Against Being Destroyed While Active
- CMS-20621: Feedback Hub Comment Button Misplaced For Two Level Field Group Hierarchy
- CMS-21791: Configuration of cspHeader frameSrc
- CMS-21790: Content Hub Adapter YouTube Update
- CMS-21671: Fixed Update of Start Translation Workflow Issues
- CMS-12288: Preview Urls allows Anchors now
- CMS-21645: Third-Party Update: Spring Framework and ASM
- CMS-21843: Headless won't Start with Deactivated P13N Extension
- CMS-21800: Image Hash Calculation Leads to Client-Side Caching Problems
- CMS-21669: MediaController now sets Content-Disposition Header
- CMS-21187: Changed Return Type of Authors Field to CMPerson
- CMS-22570: The integer property is now properly handled when creating a new content via ingest service.
- CMS-21881: Fixed Unified API Bug in Working Version References
- CMS-21877: Third-Party Update: Jetty
- CMS-21809: Third-Party Update: org.json:json
- CMS-21624: Third-Party Update: Netty
- CMS-21553: Third-Party Update: ESAPI

## 4.14.1 Breaking Changes

### CoreMedia Core

#### Database Improvement

Our PostgreSQL database schema utilizes PostgreSQL's "Large Objects" and references them by the `content` column of the `pgblobstore` table. Since this was only an `integer` column, PostgreSQL's `vacuumlo` tool deemed the Large Objects orphaned and deleted them. Now, we have changed the column type to `oid` to save our Large Objects from `vacuumlo`.

Follow [Section "Database Improvement" \[495\]](#) for upgrade information.

[CMS-21879]

#### Log Level Change for Publication Failure

Publication failures were logged with level `WARN` in *Content Management Server*. This wrongly indicated an operational issue that would require action by the operational team, while it actually is a content issue that has to be handled by editorial staff. The log level has thus been changed to `INFO`. Feedback on publication failures in *Studio* and in command line tools remains unchanged.

Follow [Section "Log Level Change for Publication Failure" \[495\]](#) for upgrade information.

[CMS-21688]

#### Auto-Merge Robustness for Ambiguous and Deleted Links enhanced

Prior to addressing this issue, you may have observed auto-merge conflicts, for example, when a still linked content in the derived site got deleted, or when there are two derived contents (one of them linked) in the same site, which reference the same master. While auto-merge issues in these scenarios may still happen, a prediction mechanism tries to resolve these conflicts at best effort now.

Follow [Section "Auto-Merge Robustness for Ambiguous and Deleted Links enhanced" \[496\]](#) for upgrade information.

[CMS-19909]

# CoreMedia Content Application Engine

## Deprecation Removal: UrlProvider Leftovers from lc-cae

Since link building for commerce URLs has already been moved to the commerce adapters, the UrlProviders in the lc-cae extension for commerce urls shouldn't be used anymore and were deprecated previously.

Follow [Section “Deprecation Removal: UrlProvider Leftovers from lc-cae” \[497\]](#) for upgrade information.

*[CMS-21736]*

## Fix and Deprecate Method TransformImageService#getTransformationString

The method `com.coremedia.cap.transform.TransformImageService#getTransformationString(...)` has been changed to return null for non-existing blobs instead of throwing a `NullPointerException`. Further the method has been marked as deprecated for removal because it was not intended to be public API.

*[CMS-21919]*

## Freemarker Macro `{{<@cm.message />}}` Escapes Output by Default

While the output of the Freemarker function `${cm.getMessage() }` is escaped by Freemarker, the same functionality as Freemarker macro `<@cm.message />` was not. For security reasons we changed it, so both are escaped now by default. This is important if you add unchecked user input values into the message strings, like for example in search result headers.

Follow [Section “Freemarker Macro `{{<@cm.message />}}` Escapes Output by Default” \[498\]](#) for upgrade information.

*[CMS-21409]*

# CoreMedia Studio Client

## Maximum Pending Amount of Parallel Requests from studio-client to studio-server Adapted

Until now the maximum amount of pending requests from studio-client to studio-server was set to six. This limit was given by the use of HTTP/1.1. Nowadays HTTP/2 is used and with HTTP/2 the limit has increased significantly. By default the maximum amount of pending requests is now set to 50 and can be adapted by setting the property `rest.network.maxRequests` in the studio-server.

*[CMS-21867]*



### Added Promises-based Alternatives for Callback-based Studio Client API

In Studio Client's remote API, all callback-based API methods now support an alternative signature: When called without the `callback` argument, they return a `Promise` instead of `void`. For example, `Content#rename()` now has the following over-loaded signatures:

Follow [Section "Added Promises-based Alternatives for Callback-based Studio Client API" \[499\]](#) for upgrade information.

[CMS-21750]

### TypeScript Source Code Simplifications

In the 2207 Blueprint workspace, certain TypeScript source patterns have been simplified. The changes described below can be applied automatically by a tool CoreMedia provides. To do so, make sure your CoreMedia Blueprint workspace is in a clean VCS state. Then start by enabling all extensions:

Follow [Section "TypeScript Source Code Simplifications" \[499\]](#) for upgrade information.

[CMS-21747]

### Third-Party Update: pnpm to version 7

You now need at least pnpm 7.1.5 to build the frontend workspace and the studio-client. Please take note of the list of changes here <https://github.com/pnpm/pnpm/releases/tag/v7.0.0>

Follow [Section "Third-Party Update: pnpm to version 7" \[501\]](#) for upgrade information.

[CMS-21584]

### Library Commerce Toolbar and Context Enhancement

The *commerce toolbar* and *context menu* have been cleaned up from not applicable actions and the functionalities available on augmented commerce objects, together with the user interface, have been aligned between *repository list* and *search mode*.

Follow [Section "Library Commerce Toolbar and Context Enhancement" \[502\]](#) for upgrade information.

[CMS-21566]

### Updated Upload Components Layout

The layout of dropareas for HTML5 uploads has been updated. The bulk upload dialog, image editor and blob property field give a visual feedback now, when files are dragged into the Studio. Additionally, the drop area size for blob property fields has been increased and some labels have been changed.

[CMS-19271]

## CoreMedia Studio Server

### Fixed Incorrect Defer Flag During Theme Import

A s d e s c r i b e d i n <https://documentation.coremedia.com/cmcc-11/artifacts/2201/webhelp/frontend-en/content/ThemeConfigReference.html> you can set the "defer" flag in your theme configuration to defer the execution of a JavaScript file. Due to a bug all CMJavaScript documents generated by the theme importer that were not meant to be deferred were configured in a way that caused the following HTML output:

Follow [Section "Fixed Incorrect Defer Flag During Theme Import" \[503\]](#) for upgrade information.

[CMS-21476]

## CoreMedia Workspace

### Third-Party Update: Spring Boot and Related Dependencies

Spring Boot has been updated to version 2.6.8. Related dependencies have been updated to at least the versions used by Spring Boot. This includes updates to fix reported security issues in Spring Security and Tomcat [CVE-2022-22976, CVE-2022-22978, CVE-2022-29885]. The new version of Spring Security contains a bug fix for certain configurations of password hashing [CVE-2022-22976], which may require additional upgrade steps if you have changed the configuration for password hashing in the *Content Server* or *Elastic Social*.

Follow [Section "Third-Party Update: Spring Boot and Related Dependencies" \[503\]](#) for upgrade information.

[CMS-21777]

## CoreMedia Frontend Workspace

### Removal: Flag "enableDuplicateSassImportsFix"

The compability flag "enableDuplicateSassImportsFix" has been removed from the theme configuration causing the fix to be enabled by default. If you have utilized the flag in your theme configuration and set it to "true" you can safely remove it. if you have not utilized the flag or set it to "false" please be aware that every SASS files is now again only included once in a theme build [as intended].

[CMS-21703]

### Fixed a Bug That in Some Cases SASS Files Could be Included Multiple Times

A bug in the theme tool chain caused that the SCSS files of a brick were included multiple times in some cases. As the files were loaded in a way that these duplicates might also have been overriding other styling rules and this will no longer happen after fixing the bug this is considered a potentially breaking change.

[CMS-21705]

## CoreMedia Headless Server

### Configured a Cache Control max-age Default for Headless Server GET Requests

Configured a default of 5 minutes for the Headless Server's Cache-Control max-age value to prevent that REST responses including properties of a content which is erroneously configured to be valid for a long time will be cached for a long time.

[CMS-21585]

### Change getName Method in PluginSchemaAdapterFactory to NonNull

The method was changed to be NonNull, since semantically it should be NonNull and it does not make sense to allow null as an identifier for adapters. This change is only considered breaking, if the interface is implemented and the implemented method returns null for the name. If this is not the case, it is not considered breaking.

[CMS-21901]

### Picture Local Setting 'disableCropping' now Supported by Link Building

The flag `disableCropping` in the local settings of a picture was not respected by the link building for the GraphQL property `uriTemplate`. This misbehaviour was fixed. Also, the delivery will now validate this flag. This means that uri with disabled cropping won't work when request the image with a cropName and width. As a consequence, this bugfix is considered breaking, as the validation may break previously working delivery image URLs!

Follow [Section "Picture Local Setting 'disableCropping' now Supported by Link Building" \[506\]](#) for upgrade information.

[CMS-21765]

## Miscellaneous

### Updated cms-blueprint-parent to 2.0.0

The plugins managed in the parent have been updated to the recent versions. The following updates might require small adjustments in your project:

Follow [Section “Updated cms-blueprint-parent to 2.0.0” \[506\]](#) for upgrade information.

[CMS-21728]

### Fixed Prometheus Cache Metrics

Spring Boot actuator endpoint `/metrics` provides several metrics on CoreMedia components [see *Operations Basics Manual* , section *Basics of Operation | Actuator Endpoints | Metrics Endpoint* ]. In addition to that, actuator endpoint `/prometheus` publishes this data for scraping by monitoring application *Prometheus* . However, cache metrics were incomplete for some CoreMedia components when using this endpoint. With this fix, the complete set of cache information can now be retrieved from it.

Follow [Section “Fixed Prometheus Cache Metrics” \[507\]](#) for upgrade information.

[CMS-21612]

### Removed Generic Type Argument of Blueprint SearchPreprocessor Interface

Removed the generic type argument of `com.coremedia.blueprint.cae.search.solr.SearchPreprocessor` as it is intended to preprocess beans of type `com.coremedia.blueprint.cae.search.SearchQueryBean` only.

[CMS-10266]

## 4.14.2 Changes and Improvements

### CoreMedia Core

#### Third-Party Update: Apache Solr

Apache Solr has been updated to version 8.11.2.

For detailed changes of Apache Solr have a look at <https://solr.apache.org/news.html> and [https://solr.apache.org/docs/8\\_11\\_2/changes/Changes.html](https://solr.apache.org/docs/8_11_2/changes/Changes.html) .

For CMCC 11, a new coremedia/solr-base Docker image was released with tag 8.11.2, which is used in the Blueprint in `apps/solr/blueprint/solr-image/pom.xml` .

[CMS-21719]

## CoreMedia Content Application Engine

### Fixed Handling of Broken Internal Links in RichText

In case that an internal Link in RichText cannot be built because the LinkFormatter throws an exception, the live CAE used to discard the whole RichText. Now it just discards the A-Tag. Preview CAE still displays the exception.

[CMS-21652]

### Deprecation: Bean Generator tool has been deprecated

Bean Generator tool is outdated and has been deprecated.

[CMS-20733]

### Configured Less Strict Cookie Defaults for Local Development

The `local` spring profile for live and preview CAE now configures the following cookie defaults:

```
cae.cookie.force-secure=false
cae.cookie.same-site=Lax
```

[CMS-18964]

## CoreMedia Studio Client

### Fixed 'minSearchCharacters' of User Manager Search

- Fixed a documentation issue where the field *minSearchCharacters* had the default value *0* instead of *3*.
- Fixed user manager search behaviour when *minSearchCharacters* is set to *0*: When this field has value *0* now, all users or groups are shown by default.

[CMS-21690]

## CoreMedia Workspace

### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.4.1 to avoid security vulnerabilities CVE-2022-30126, CVE-2022-25169, and CVE-2022-33879. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika.

Updated dependencies:

- Apache PDFBox 2.0.26
- Apache Tika 2.4.1
- ASM 9.3
- JHighlight 1.1.0

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-21721]

## CoreMedia Frontend Workspace

**Deprecation: Freemarker function `bp.getBlobLink()` has been deprecated**

The Freemarker function `bp.getBlobLink()` has been deprecated. Use the default link function `cm.getLink()` instead.

[CMS-21798]

## CoreMedia Deployment

### Base Image Update

The base image of all Spring Boot applications has been updated to `coremedia/java-application-base:2.4.4-corretto-11`.

The update includes:

- update to Oracle Corretto `11.0.15`
- jmx exporter to `0.17.0`

see <https://hub.docker.com/r/coremedia/java-application-base> for details

[CMS-21774]

## CoreMedia Headless Server

### Headless Server now Sends Content-Disposition Header for Non-viewable Responses

For security reasons, HeadlessServer now sends a Content-Disposition HTTP header of type "attachment" with filename="api.json" for all requests to the GraphQL endpoints.

[CMS-21766]

### Add SolrSearchResultFactory as a bean for plugins

Added the SolrSearchResultFactory as a bean for plugins. This way plugins can use it to run Solr queries and retrieve the results.

[CMS-21748]

### Third-Party Update: graphql-java to 18.1

The library `com.graphql-java:graphql-java` has been updated to version `18.1`. The update contains several deprecations, that may affect custom code. Please see the original documentation of graphql-java for details.

[CMS-21651]

## Miscellaneous

### Added User Consent Dialog

If Studio has a data tracking plugin installed, a user consent dialog is shown now. The dialog is only shown once. Accepting the user consent will enable the data tracking (if a provider is installed). This data tracking will anonymously track the click behavior of the user and sends these data to an external data provider. The user can revoke the user consent anytime in the User Preferences dialog which automatically disables the tracking.

[CMS-21546]

### Third-Party Update : Maven Surefire

Maven Surefire has been updated to 3.0.0-M7.

[CMS-21390]

### Deprecation: `com.coremedia.workflow.common.actions.Log#setFatal`

In the Java API, the method `#setFatal(boolean)` of workflow action `com.coremedia.workflow.common.actions.Log` has been deprecated. It's recommended to use `#setError(boolean)` instead, which has the same effect.

The method may also be used in a workflow definition with `<Action class="Log" fatal="true" ...>`. It's recommended to use attribute `error="true"` instead of `fatal="true"` in such as case.

[CMS-21248]

### CoreMedia Cache Actuator Endpoint

Added a new Spring Boot actuator endpoint for the CoreMedia cache with information about the configuration and usage of the cache, and the possibility to change cache capacities, clear the cache, or trigger a cache eviction at runtime. For more information,

see the *Operation Basics Manual* , section "Basics of Operation | Actuator Endpoints | Cache Endpoint".

[CMS-20967]

## 4.14.3 Fixed Issues

### CoreMedia Core

#### Fixed ServerExport of Nested Blobs In Structs

Fixed a bug in the `cm serverexport` command-line tool, that no files were exported for nested blob properties that are defined inside struct properties.

[CMS-21739]

#### Enhancement: Watchdog to Prevent DB Scheduler Deadlocks

It may happen that the scheduler for database transactions locks up. In such a case, the *Content Management Server* will block all operations and become unresponsive. To prevent this, a new service-internal watchdog has been introduced which will regularly check the scheduler for a deadlock situation. If a deadlock situation is suspected, the scheduler's queue will be re-arranged to release the deadlock.

For operation of the watchdog, three new configuration properties have been introduced:

- `sql.pool.scheduler-watchdog-enabled` enables the watchdog (default `true`).
- `sql.pool.scheduler-watch-interval` defines the watch interval in seconds (default 10 seconds).
- `sql.pool.scheduler-pull-up-ratio` defines the amount of the scheduler queue to be re-arranged in case of a suspected deadlock (default 10%).

See *Deployment Manual* , section *Properties for the Connection to the Database* for details on these properties.

[CMS-21695]

#### Third-Party Update : Drew Noakes Metadata Extractor

Third-party library `com.drewnoakes:metadata-extractor` has been updated to version 2.18.0 to avoid security vulnerabilities of the previous version.

[CMS-21627]



### Third-Party Update: google-oauth-client

The third-party library `com.google.oauth-client:google-oauth-client` has been updated to 1.33.3 to avoid security vulnerability CVE-2021-22573.

[CMS-21579]

### Irritating and unhelpful logging in `EditorialCommentEventFetcher` for timestamps with `getNano()`

Improved Timestamp Logging in `EditorialCommentEventFetcher`. Timestamps are now More Readable.

[CMS-21516]

## CoreMedia Content Application Engine

### Fixed CSRF Documentation Bug

The documented example of backward compatible CSRF tokens contained a bug that was fixed.

[CMS-21769]

### Segment Validator Warns of Unfavourable Segment Names

It is not recommended to use a segment name in pages ending with a number preceded by a minus sign. The default request mapping can get confused by interpreting the number as content ID. In some rare cases that can lead to CAE handler error and such a page is not accessible. The `ChannelSegmentValidator` warns about such unfavourable segment names.

[CMS-19526]

### Improved CAE Local Properties for Template Development

The `local` spring profile for live and preview CAE now configures the following cookie defaults:

```
server.servlet.jsp.init-parameters.development=true
freemarker.template.update.delay.in.seconds=1
```

[CMS-18984]

## CoreMedia Studio Client

### Re-introduce `RichTextFieldDelegatePlugin`

The `RichTextFieldDelegatePlugin` was removed in CMCC 11, but is now reintroduced. It can now be found in the `@coremedia/studio-cli`

```
ent.main.ckeditor4-components package. It can be imported as follows:  
import RichTextFieldDelegatePlugin from  
"@coremedia/studio-client.main.ckeditor4-components/plu  
gins/RichTextFieldDelegatePlugin";
```

[CMS-21884]

### Fixed Memory Leaks in CMPictureForm and CMLImageMapForm.

We fixed memory leaks in CMPictureForm and CMLImageMapForm.

[CMS-21802]

### Third-Party Update: CKEditor 4 to 4.19.0

CKEditor 4 has been updated from 4.17.1 to 4.19.0. This also includes 4.18.0 which contains highly recommended security fixes.

[CMS-21781]

### Fixed Upload Settings "maxFileSize"

The upload setting *maxFileSize* can overwrite the existing maximum upload size of 64MB now. The size is valid for all upload fields.

[CMS-21641]

### Fixed Library Performance Issue

Fixed issue of too many *NewContentActions* which slowed down the library significantly.

[CMS-21628]

### Bad UX: Don't Show "Accepted" in Localization Nagbar is full of quirks

The behaviour of the *In Localization Nagbar* was changed: The Nagbar does not disappear anymore if the user accepts the mentioned workflow.

[CMS-21626]

### hideLabel Does not Always Work in PropertyFieldGroups.

An issue with the *hideSingleComponentLabel* configuration in *PropertyFieldGroups* has been resolved: The *hideLabel* config now works for all group items.

[CMS-21586]

### Deprecated RotateStyleClassPlugin

If you are still using it, please switch to the *BindStyleClassPlugin* and use CSS animations instead of relying on the plugin toggling CSS classes.

[CMS-21561]

### RotateStyleClassPlugin Is Now Robust Against Being Destroyed While Active

Before the change the timer wasn't properly cleaned up which could have led to many console errors.

[CMS-21471]

### Feedback Hub Comment Button Misplaced For Two Level Field Group Hierarchy

Components like `StringPropertyField` and `RichTextPropertyField` now provide the `sideButtonVerticalAdjustment` and `sideButtonHorizontalAdjustment` config options to reposition their `EditorialCommentsButton`.

[CMS-20621]

## CoreMedia Studio Server

### Configuration of cspHeader frameSrc

Now it is possible to configure a `previewUrlWhitelist` or `previewUri` and additional custom `frameSrc` values.

[CMS-21791]

### Content Hub Adapter YouTube Update

The bundled plugin Content Hub Adapter Youtube has been updated to version 2.0.3. For details see the change log of the plugin at <https://github.com/CoreMedia/content-hub-adapter-youtube/blob/v2.0.3/CHANGELOG.md>. This includes updates of transitive dependencies used by the plugin, for example library `google-oauth-client` was updated to avoid security vulnerability CVE-2021-22573 that was reported for the previous version.

[CMS-21790]

### Fixed Update of Start Translation Workflow Issues

Fixed a bug in the start translation workflow window, which showed errors for dependent content items, even after all links to the problematic content items have been removed.

[CMS-21671]

### Preview Urls allows Anchors now

Previously anchors in preview urls were swallowed. Now they are passed to the links-schemes.

[CMS-12288]

## CoreMedia Workspace

### Third-Party Update: Spring Framework and ASM

The Spring Framework has been updated to version 5.3.20 to avoid security vulnerabilities CVE-2022-22970 and CVE-2022-22971. ASM has been updated to version 9.3 to match the version used by Spring.

[CMS-21645]

## CoreMedia Headless Server

### Headless won't Start with Deactivated P13N Extension

Due to a refactored component scan, two xml resources were not discovered anymore when the P13N extension is deactivated, which in turn caused a failed headless server start. This bugfix reinserts the missing resources.

[CMS-21843]

### Image Hash Calculation Leads to Client-Side Caching Problems

When the changing a crop (e.g. clipping), the hash of the image did not change and as a consequence the URL also did not change anymore. This led to the problem that browser caches did not invalidate their caches. This bugfix fixes the hash calculation.

[CMS-21800]

### MediaController now sets Content-Disposition Header

When downloading binaries via HeadlessServers media endpoint, the HTTP header `Content-Disposition` is now set, when using the media endpoints with a filename.

Additionally the manual was complemented by the section 'MediaType Content Negotiation', explaining options to configure individually document types to suppress a Spring Web MVC default behaviour on potentially unsafe content types.

[CMS-21669]

### Changed Return Type of Authors Field to CMPerson

Changed the return type of the authors field in CMTeasable to CMPerson. This is not breaking, since the previous type was CMTeasable, which is the superclass of CMPerson.

[CMS-21187]

## Miscellaneous

The integer property is now properly handled when creating a new content via ingest service.

The integer property is now properly handled when creating a new content via ingest service.

[CMS-22570]

### Fixed Unified API Bug in Working Version References

Fixed a bug in the Unified API when retrieving references to other content items for the working version of some content. Before the fix, methods `Version#getReferences()`, `Version#getReferencesMap()`, and `Version#getReferences(CapPropertyDescriptor)` could return outdated data for the special so-called "working version" (compare `Version#isWorkingVersion`).

[CMS-21881]

### Third-Party Update: Jetty

Jetty has been updated to version 9.4.48.v20220622 to avoid reported security vulnerabilities of previous versions.

[CMS-21877]

### Third-Party Update: org.json:json

The Java third-party library `org.json:json` has been updated to version 20220320 to avoid reported security vulnerabilities of previous versions.

[CMS-21809]

### Third-Party Update: Netty

Netty has been updated to version 4.1.77.Final to avoid security vulnerabilities of previous versions.

[CMS-21624]

### Third-Party Update: ESAPI

The third-party library `org.owasp.esapi:esapi` has been updated to version 2.4.0.0 to avoid security vulnerabilities reported for previous versions.

[CMS-21553]

# 4.15 Release 2204.3

The release contains:

- Breaking changes: 3
- Changes and improvements: 7
- Bugfixes: 65

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2022-09-13

## Breaking Changes

- CMS-21210: [Cli Tool Argument Checks are Improved](#)
- CMS-21919: [Fix and Deprecate Method TransformImageService#getTransformation-String](#)
- CMS-22091: [Third-Party Update: GraphQL-Java to 19.2](#)

## Changes and Improvements

- CMS-21653: [Multi-Site Manual: Hints on CleanInTranslation](#)
- CMS-22014: [Changed CMS Version Compatibility Check For Plugins](#)

## Bugfixes

- CMS-21995: [Third-Party Update: Postgresql](#)
- CMS-21980: [Third-Party Update: NGINX](#)
- CMS-21932: [Derive Site Robustness: Handle Links to Destroyed Contents](#)
- CMS-21773: [Documentation on How to Derive a Site](#)
- CMS-21516: [Irritating and unhelpful logging in EditorialCommentEventFetcher for timestamps with 'getNano\(\)'](#)
- CMS-21408: [New ServerExport Option to Export Files in Lowercase](#)
- CMS-20981: [The Content Feeder Now Also Feeds String Lists And Considers Nested Structs](#)
- CMS-20106: [Cleaned up application-mls-local.properties](#)

- CMS-22058: Removed pbe Taglib Declaration from Blueprint taglibs.jinc
- CMS-22043: Fixed a Bug Regarding Annotation Lookup of Link Schemes
- CMS-22031: Fixed the Order of the 'viewEngines' Bean
- CMS-22011: Bugfix: Issue with Responsive Image Delivery for Extremely Small Images
- CMS-22001: Fixed the Handling of Preview Date
- CMS-21769: Fixed CSRF Documentation Bug
- CMS-19083: Fixed a Bug Regarding Encoding of Resource URLs
- CMS-22076: Fixed "Create From Template" Folder Initialization
- CMS-22068: Fixed Folder Suggestions for Content Rules
- CMS-21987: Workflow Window: Start Workflow Button is Disabled Until Validation is Finished
- CMS-21915: Fixed 'minSearchCharacters' of User Manager Search
- CMS-21885: Fixed Collapse State Handling of Form View and Preview
- CMS-21802: Fixed Memory Leaks in CMPictureForm and CMImageMapForm.
- CMS-21781: Third-Party Update: CKEditor 4 to 4.19.0
- CMS-17961: Start Workflow Window: Start button is disabled during starting the workflow
- CMS-21671: Fixed Update of Start Translation Workflow Issues
- CMS-21505: Enhanced Studio-Server Support for Markup in Structs
- CMS-15645: Fixed Drag in LinkLists of Annotated LinkLists
- CMS-22082: Headless Server Library Update of Snake YAML
- CMS-21968: Expose id of CMPlaceholder
- CMS-21843: Headless won't Start with Deactivated P13N Extension
- CMS-21725: JavaDoc Updates: Null-Behavior for Struct List Properties in StructBuilder
- CMS-21881: Fixed Unified API Bug in Working Version References

## 4.15.1 Breaking Changes

### CoreMedia Core

#### Cli Tool Argument Checks are Improved

Especially the `cm bulkpublish` command and other tools have not checked their parameter and arguments. In this specific case, a folder was passed to the `bulkpublish`

command without the necessary `-f` option (because other tools do it that way). However, the tool did not complain about the unknown argument and simply assumed a default value for the folder. This is now checked more closely for all tools that don't need further arguments and a usage message is printed. This change is only breaking if you have used the tools with wrong parameters. If you used them correctly, the behavior does not change.

[CMS-21210]

## CoreMedia Content Application Engine

### Fix and Deprecate Method `TransformImageService#getTransformationString`

The method `com.coremedia.cap.transform.TransformImageService#getTransformationString(...)` has been changed to return null for non-existing blobs instead of throwing a `NullPointerException`. Further the method has been marked as deprecated for removal because it was not intended to be public API.

[CMS-21919]

## CoreMedia Headless Server

### Third-Party Update: GraphQL-Java to 19.2

The library `com.graphql-java:graphql-java` was updated from 18.1 to 19.2. It contains several bugfixes and some security relevant improvements.

Follow [Section "Third-Party Update: GraphQL-Java to 19.2" \[510\]](#) for upgrade information.

[CMS-22091]

## 4.15.2 Changes and Improvements

## CoreMedia Core

### Multi-Site Manual: Hints on `CleanInTranslation`

`CleanInTranslation` is a scheduled task related to the CoreMedia Multi-Site feature that is executed in workflow server. It may happen, that this scheduled tasks struggles with the state of some localization workflows, which prevents clean-up of false-positive *in translation* states of some contents.



A manual section "*CleanInTranslation Challenges*" has been added to the Multi-Site Manual describing possible issues in detail, how to analyze and possibly fix them.

[CMS-21653]

## Miscellaneous

### Changed CMS Version Compatibility Check For Plugins

- The plugin property `plugin.requires` and the programmatic version check for Java Plugins in the CMS has been removed to fix a bug with the required cms version and to prevent further confusion.
- A new Plugin Schema has been released: <https://releases.coremedia.com/plugins/plugin-schema-3.0.0.json>.

The schema now requires a `minimum-cms-version`. The property is not verified automatically, but is used for documentation purposes and enables clients to implement such a check in their deployment processes.

[CMS-22014]

## 4.15.3 Fixed Issues

### CoreMedia Core

#### Third-Party Update: Postgresql

Updated the postgresql driver to 42.4.1 to benefit from latest security bugfixes.

[CMS-21995]

#### Third-Party Update: NGINX

The NGINX docker image has been updated to the latest version 1.23.1-alpine to avoid security issues of its OS base image.

In an upcoming CMCC release we will switch to a rolling tag to get updates of the OS base image with every build. We recommended that you manually switch to a rolling tag like `1.23-alpine` to cope with the moving target of security vulnerabilities in the libraries of the underlying OS.

Among others, the update fixes: CVE-2022-32207 CVE-2022-28391 CVE-2022-27404 CVE-2022-28391 CVE-2022-1586 CVE-2022-1587

[CMS-21980]

### Derive Site Robustness: Handle Links to Destroyed Contents

While links to destroyed contents should be prevented, actions such as *Derive Site* should be robust to handle them.

*Derive Site* has been hardened accordingly, which means:

- links to destroyed contents are kept as is (and should be fixed afterwards)
- links to destroyed master contents are rewritten as expected to the new master content

[CMS-21932]

### Documentation on How to Derive a Site

Deriving a new localized site in Studio can lead to several issues when content of the master site is not managed carefully. A new section *Multi-Site Challenges | Deriving a Site* in the *Multi-Site Manual* gives recommendations on how to perform the task in order to achieve best results.

[CMS-21773]

### Irritating and unhelpful logging in EditorialCommentEventFetcher for timestamps with 'getNano()'

Improved Timestamp Logging in `EditorialCommentEventFetcher`. Timestamps are now More Readable.

[CMS-21516]

### New ServerExport Option to Export Files in Lowercase

Use option `--lowercase` to store the exported content using lowercase filenames. This option can be helpful to mitigate problems with non-case-sensitive file systems. The paths are kept unique by appending a hash to the stored file name. The converted path will not affect the reimport of the exported files.

[CMS-21408]

### The Content Feeder Now Also Feeds String Lists And Considers Nested Structs

`StructFeedablePopulator` has been extended to also feed all keys, strings and string lists in nested structs or struct lists. Of course it is necessary that the respective content is re-indexed before these properties are searchable.

[CMS-20981]

### Cleaned up application-mls-local.properties

The property `repository.url` and its helper property `content-management-server.host` in `application-mls-local.properties` have been superfluous ever since and have now been deleted.

[CMS-20106]

## CoreMedia Content Application Engine

### Removed pbe Taglib Declaration from Blueprint taglibs.jinc

Removed pbe taglib declaration from cae-base-lib's taglibs.jinc, since cap-editing-pbe-taglib-component has been removed as of 2110.1.

[CMS-22058]

### Fixed a Bug Regarding Annotation Lookup of Link Schemes

Lookup of @Link Annotation failed under certain conditions. This bug is fixed.

[CMS-22043]

### Fixed the Order of the 'viewEngines' Bean

The type of the 'viewEngines' bean was changed to 'LinkedHashMap', so that custom view engines can be correctly prepended or appended.

[CMS-22031]

### Bugfix: Issue with Responsive Image Delivery for Extremely Small Images

Delivery of responsive images could fail, if the original image is extremely small and no crops had been defined in CoreMedia Studio. More specifically, this issue arose for images whose dimensions were smaller than the corresponding aspect ratio.

[CMS-22011]

### Fixed the Handling of Preview Date

Fixed the handling of preview date parameter, so that the preview date parameter is ignored by the live CAE.

[CMS-22001]

### Fixed CSRF Documentation Bug

The documented example of backward compatible CSRF tokens contained a bug that was fixed.

[CMS-21769]

### Fixed a Bug Regarding Encoding of Resource URLs

Resource URLs containing non URL characters were encoded twice. This bug has been fixed.

[CMS-19083]

## CoreMedia Studio Client

### Fixed "Create From Template" Folder Initialization

Fixed issue where the base folders in the dialog have been initialized with wrong values when opened the first time.

[CMS-22076]

### Fixed Folder Suggestions for Content Rules

Fixed an issue where folder names have not been accepted by the rule folder suggestion component.

[CMS-22068]

### Workflow Window: Start Workflow Button is Disabled Until Validation is Finished

The start button of the workflow window for publication/translation was enabled when opening the window. For a large content set it might take some time until the validation finished. During the validation the button was usable but the usage of the button caused errors in the case the validation is not successful. Now the start button is disabled and will be enabled if the validation has been completed successfully.

[CMS-21987]

### Fixed 'minSearchCharacters' of User Manager Search

If set to '0', the user manager now shows all users and groups immediately. This previously only worked with the workaround setting the value to '-1'.

[CMS-21915]

### Fixed Collapse State Handling of Form View and Preview

The collapse state of form view and preview was not restored correctly, this is fixed now.

[CMS-21885]

### Fixed Memory Leaks in CMPictureForm and CMLImageMapForm.

We fixed memory leaks in CMPictureForm and CMLImageMapForm.

[CMS-21802]

### Third-Party Update: CKEditor 4 to 4.19.0

CKEditor 4 has been updated from 4.17.1 to 4.19.0. This also includes 4.18.0 which contains highly recommended security fixes.

[CMS-21781]

### Start Workflow Window: Start button is disabled during starting the workflow

In the window for starting workflows [publication/translation] the start button was in some cases enabled after the start was triggered. If an author clicked the start button multiple times problems in the server occurred. Now the start button is always disabled while the workflow is starting.

[CMS-17961]

## CoreMedia Studio Server

### Fixed Update of Start Translation Workflow Issues

Fixed a bug in the start translation workflow window, which showed errors for dependent content items, even after all links to the problematic content items have been removed.

[CMS-21671]

### Enhanced Studio-Server Support for Markup in Structs

Studio-Server may not have been able to deliver some Markup stored in Structs to Studio-Client, recorded in Studio-Server Log as `org.w3c.dom.DOMException: HIERARCHY_REQUEST_ERR`.

Studio-Server now can handle such Markup, which may be, for example, a result of importing pretty-printed `serverexport` data.

To work around this issue in previous versions, it is recommended not to use pretty-print option for `serverexport`, if these exported data are meant to be imported to CMS again.

[CMS-21505]

### Fixed Drag in LinkLists of Annotated LinkLists

Fixed an issue where drops in linklists that have been used in annotated linklists did not work.

[CMS-15645]

## CoreMedia Headless Server

### Headless Server Library Update of Snake YAML

Snake YAML library was updated from `org.yaml:snakeyaml:1.29` to `org.yaml:snakeyaml:1.31`

[CMS-22082]

### Expose id of CMPlaceholder

Expose the `CMPlaceholder` property `id` as `placeholderId` , since before it has been shadowed via the content `id`.

[CMS-21968]

### Headless won't Start with Deactivated P13N Extension

Due to a refactored component scan, two xml resources were not discovered anymore when the P13N extension is deactivated, which in turn caused a failed headless server start. This bugfix reinserts the missing resources.

[CMS-21843]

## CoreMedia Documentation

### JavaDoc Updates: Null-Behavior for Struct List Properties in StructBuilder

The `StructBuilder` does not accept `null` entries for list properties. While the behavior did not change, the documentation got updated accordingly to emphasize this behavior.

[CMS-21725]

## Miscellaneous

### Fixed Unified API Bug in Working Version References

Fixed a bug in the Unified API when retrieving references to other content items for the working version of some content. Before the fix, methods `Version#getReferences()` , `Version#getReferencesMap()` , and `Version#getReferences(CapPropertyDescriptor)` could return outdated data for the special so-called "working version" [compare `Version#isWorkingVersion`].

[CMS-21881]

## 4.16 Release 2204.2

The release contains:

- Breaking changes: 5
- Changes and improvements: 15
- Bugfixes: 63

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2022-07-18

### Breaking Changes

- CMS-21688: [Log Level Change for Publication Failure](#)
- CMS-21476: [Fixed Incorrect Defer Flag During Theme Import](#)
- CMS-21777: [Third-Party Update: Spring Boot and Related Dependencies](#)
- CMS-21765: [Picture Local Setting 'disableCropping' now Supported by Link Building](#)
- CMS-21612: [Fixed Prometheus Cache Metrics](#)

### Changes and Improvements

- CMS-21719: [Third-Party Update: Apache Solr](#)
- CMS-21855: [Deprecated UrlProvider leftovers from lc-cae](#)
- CMS-21652: [Fixed Handling of Broken Internal Links in RichText](#)
- CMS-20733: [Deprecation: Bean Generator tool has been deprecated](#)
- CMS-18964: [Configured Less Strict Cookie Defaults for Local Development](#)
- CMS-21690: [Fixed 'minSearchCharacters' of User Manager Search](#)
- CMS-21721: [Third-Party Update: Apache Tika and Transitive Dependencies](#)
- CMS-21774: [Base Image Update](#)
- CMS-21766: [Headless Server now Sends Content-Disposition Header for Non-viewable Responses](#)
- CMS-21651: [Third-Party Update: graphql-java to 18.1](#)
- CMS-21390: [Third-Party Update : Maven Surefire](#)

### Bugfixes

- CMS-21739: Fixed ServerExport of Nested Blobs In Structs
- CMS-18984: Improved CAE Local Properties for Template Development
- CMS-21884: Re-introduce RichTextFieldDelegatePlugin
- CMS-21717: Scripts and documentation now make sure that pnpm 6.x is used
- CMS-21641: Fixed Upload Settings "maxFileSize"
- CMS-21628: Fixed Library Performance Issue
- CMS-21626: Bad UX: Don't Show "Accepted" in Localization Nagbar is full of quirks
- CMS-21586: hideLabel Does not Always Work in PropertyFieldGroups.
- CMS-21471: RotateStyleClassPlugin Is Now Robust Against Being Destroyed While Active
- CMS-20621: Feedback Hub Comment Button Misplaced For Two Level Field Group Hierarchy
- CMS-21790: Content Hub Adapter YouTube Update
- CMS-19627: Fixed a bug that in some cases SASS files could be included multiple times
- CMS-21800: Image Hash Calculation Leads to Client-Side Caching Problems
- CMS-21669: MediaController now sets Content-Disposition Header
- CMS-21187: Changed Return Type of Authors Field to CMPerson
- CMS-21877: Third-Party Update: Jetty
- CMS-21809: Third-Party Update: org.json:json
- CMS-21624: Third-Party Update: Netty

## 4.16.1 Breaking Changes

### CoreMedia Core

#### Log Level Change for Publication Failure

Publication failures were logged with level *WARN* in *Content Management Server* . This wrongly indicated an operational issue that would require action by the operational team, while it actually is a content issue that has to be handled by editorial staff. The log level has thus been changed to *INFO* . Feedback on publication failures in *Studio* and in command line tools remains unchanged.



Follow [Section "Log Level Change for Publication Failure" \[511\]](#) for upgrade information.

[CMS-21688]

## CoreMedia Studio Server

### Fixed Incorrect Defer Flag During Theme Import

As described in <https://documentation.coremedia.com/cmcc-11/artifacts/2201/webhelp/frontend-en/content/ThemeConfigReference.html> you can set the "defer" flag in your theme configuration to defer the execution of a JavaScript file. Due to a bug all CMJavaScript documents generated by the theme importer that were not meant to be deferred were configured in a way that caused the following HTML output:

Follow [Section "Fixed Incorrect Defer Flag During Theme Import" \[512\]](#) for upgrade information.

[CMS-21476]

## CoreMedia Workspace

### Third-Party Update: Spring Boot and Related Dependencies

Spring Boot has been updated to version 2.6.8. Related dependencies have been updated to at least the versions used by Spring Boot. This includes updates to fix reported security issues in Spring Security and Tomcat [CVE-2022-22976, CVE-2022-22978, CVE-2022-29885]. The new version of Spring Security contains a bug fix for certain configurations of password hashing [CVE-2022-22976], which may require additional upgrade steps if you have changed the configuration for password hashing in the *Content Server* or *Elastic Social*.

Follow [Section "Third-Party Update: Spring Boot and Related Dependencies" \[512\]](#) for upgrade information.

[CMS-21777]

## CoreMedia Headless Server

### Picture Local Setting 'disableCropping' now Supported by Link Building

The flag `disableCropping` in the local settings of a picture was not respected by the link building for the GraphQL property `uriTemplate`. This misbehaviour was fixed. Also, the delivery will now validate this flag. This means that uri with disabled cropping won't work when request the image with a `cropName` and width. As a con-

sequence, this bugfix is considered breaking, as the validation may break previously working delivery image URLs!

Follow [Section "Picture Local Setting 'disableCropping' now Supported by Link Building" \[513\]](#) for upgrade information.

[CMS-21765]

## Miscellaneous

### Fixed Prometheus Cache Metrics

Spring Boot actuator endpoint `/metrics` provides several metrics on CoreMedia components (see *Operations Basics Manual*, section *Basics of Operation | Actuator Endpoints | Metrics Endpoint*). In addition to that, actuator endpoint `/prometheus` publishes this data for scraping by monitoring application *Prometheus*. However, cache metrics were incomplete for some CoreMedia components when using this endpoint. With this fix, the complete set of cache information can now be retrieved from it.

Follow [Section "Fixed Prometheus Cache Metrics" \[514\]](#) for upgrade information.

[CMS-21612]

## 4.16.2 Changes and Improvements

## CoreMedia Core

### Third-Party Update: Apache Solr

Apache Solr has been updated to version 8.11.2.

For detailed changes of Apache Solr have a look at <https://solr.apache.org/news.html> and [https://solr.apache.org/docs/8\\_11\\_2/changes/Changes.html](https://solr.apache.org/docs/8_11_2/changes/Changes.html).

For CMCC 11, a new coremedia/solr-base Docker image was released with tag 8.11.2, which is used in the Blueprint in `apps/solr/blueprint/solr-image/pom.xml`.

[CMS-21719]

## CoreMedia Content Application Engine

### Deprecated UrlProvider leftovers from lc-cae

Since link building for commerce URLs has already been moved to the commerce adapters, the UrlProviders in the lc-cae extension for commerce urls shouldn't be used anymore and are now deprecated for removal in the next AEP.

If you do not have any customizations in LiveContextUrlProvider or CommerceSearchRedirectUrlProvider, you do not need to do anything. If your code is customized, please try to adapt your adapter configuration accordingly.

[CMS-21855]

### Fixed Handling of Broken Internal Links in RichText

In case that an internal Link in RichText cannot be built because the LinkFormatter throws an exception, the live CAE used to discard the whole RichText. Now it just discards the A-Tag. Preview CAE still displays the exception.

[CMS-21652]

### Deprecation: Bean Generator tool has been deprecated

Bean Generator tool is outdated and has been deprecated.

[CMS-20733]

### Configured Less Strict Cookie Defaults for Local Development

The `local` spring profile for live and preview CAE now configures the following cookie defaults:

```
cae.cookie.force-secure=false
cae.cookie.same-site=Lax
```

[CMS-18964]

## CoreMedia Studio Client

### Fixed 'minSearchCharacters' of User Manager Search

- Fixed a documentation issue where the field *minSearchCharacters* had the default value *0* instead of *3*.
- Fixed user manager search behaviour when *minSearchCharacters* is set to *0*: When this field has value *0* now, all users or groups are shown by default.

[CMS-21690]

## CoreMedia Workspace

### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.4.1 to avoid security vulnerabilities CVE-2022-30126, CVE-2022-25169, and CVE-2022-33879. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika.

Updated dependencies:

- Apache PDFBox 2.0.26
- Apache Tika 2.4.1
- ASM 9.3
- JHighlight 1.1.0

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-21721]

## CoreMedia Deployment

### Base Image Update

The base image of all Spring Boot applications has been updated to `coremedia/java-application-base:2.4.4-corretto-11`.

The update includes:

- update to Oracle Corretto `11.0.15`
- jmx exporter to `0.17.0`

see <https://hub.docker.com/r/coremedia/java-application-base> for details

[CMS-21774]

## CoreMedia Headless Server

### Headless Server now Sends Content-Disposition Header for Non-viewable Responses

For security reasons, HeadlessServer now sends a Content-Disposition HTTP header of type "attachment" with filename="api.json" for all requests to the GraphQL endpoints.

[CMS-21766]

#### Third-Party Update: graphql-java to 18.1

The library `com.graphql-java:graphql-java` has been updated to version `18.1`. The update contains several deprecations, that may affect custom code. Please see the original documentation of graphql-java for details.

[CMS-21651]

## Miscellaneous

#### Third-Party Update : Maven Surefire

Maven Surefire has been updated to 3.0.0-M7.

[CMS-21390]

## 4.16.3 Fixed Issues

### CoreMedia Core

#### Fixed ServerExport of Nested Blobs In Structs

Fixed a bug in the `cm serverexport` command-line tool, that no files were exported for nested blob properties that are defined inside struct properties.

[CMS-21739]

## CoreMedia Content Application Engine

#### Improved CAE Local Properties for Template Development

The `local` spring profile for live and preview CAE now configures the following cookie defaults:

```
server.servlet.jsp.init-parameters.development=true
freemarker.template.update.delay.in.seconds=1
```

[CMS-18984]

## CoreMedia Studio Client

### Re-introduce RichTextFieldDelegatePlugin

The `RichTextFieldDelegatePlugin` was removed in CMCC 11, but is now reintroduced. It can now be found in the `@coremedia/studio-client.main.ckeditor4-components` package. It can be imported as follows:

```
import RichTextFieldDelegatePlugin from
"@coremedia/studio-client.main.ckeditor4-components/plu
gins/RichTextFieldDelegatePlugin";
```

[CMS-21884]

### Scripts and documentation now make sure that pnpm 6.x is used

Although suggested by the pnpm client simply upgrading to pnpm 7.x leads to errors in the frontend workspace as well for the studio-client. If you have already upgraded to pnpm 7, please downgrade the used version by executing:

```
npm install -g pnpm@6
```

[CMS-21717]

### Fixed Upload Settings "maxFileSize"

The upload setting `maxFileSize` can overwrite the existing maximum upload size of 64MB now. The size is valid for all upload fields.

[CMS-21641]

### Fixed Library Performance Issue

Fixed issue of too many *NewContentActions* which slowed down the library significantly.

[CMS-21628]

### Bad UX: Don't Show "Accepted" in Localization Nagbar is full of quirks

The behaviour of the `In Localization Nagbar` was changed: The Nagbar does not disappear anymore if the user accepts the mentioned workflow.

[CMS-21626]

### hideLabel Does not Always Work in PropertyFieldGroups.

An issue with the `hideSingleComponentLabel` configuration in `PropertyFieldGroups` has been resolved: The `hideLabel` config now works for all group items.

[CMS-21586]

### RotateStyleClassPlugin Is Now Robust Against Being Destroyed While Active

Before the change the timer wasn't properly cleaned up which could have led to many console errors.

[CMS-21471]

### Feedback Hub Comment Button Misplaced For Two Level Field Group Hierarchy

Components like `StringPropertyField` and `RichTextPropertyField` now provide the `sideButtonVerticalAdjustment` and `sideButtonHorizontalAdjustment` config options to reposition their `EditorialCommentsButton`.

[CMS-20621]

## CoreMedia Studio Server

### Content Hub Adapter YouTube Update

The bundled plugin Content Hub Adapter Youtube has been updated to version 2.0.3. For details see the change log of the plugin at <https://github.com/CoreMedia/content-hub-adapter-youtube/blob/v2.0.3/CHANGELOG.md>. This includes updates of transitive dependencies used by the plugin, for example library google-oauth-client was updated to avoid security vulnerability CVE-2021-22573 that was reported for the previous version.

[CMS-21790]

## CoreMedia Frontend Workspace

### Fixed a bug that in some cases SASS files could be included multiple times

A bug in the theme tool chain caused that the SCSS files of a brick were included multiple times in some cases. As the files were loaded in a way that these duplicates might also have been overriding other styling rules and this will no longer happen after fixing the bug this is considered a potentially breaking change. For that reason the fix is for now only enabled if the feature flag "enableDuplicateSassImportsFix" is set in the theme.config.json like this:

```
{
  ...
  "enableDuplicateSassImportsFix": true
}
```

[CMS-19627]

## CoreMedia Headless Server

### Image Hash Calculation Leads to Client-Side Caching Problems

When the changing a crop [e.g. clipping], the hash of the image did not change and as a consequence the URL also did not change anymore. This led to the problem that browser caches did not invalidate their caches. This bugfix fixes the hash calculation.

[CMS-21800]

### MediaController now sets Content-Disposition Header

When downloading binaries via HeadlessServers media endpoint, the HTTP header `Content-Disposition` is now set, when using the media endpoints with a file-name.

Additionally the manual was complemented by the section 'MediaType Content Negotiation', explaining options to configure individually document types to suppress a Spring Web MVC default behaviour on potentially unsafe content types.

[CMS-21669]

### Changed Return Type of Authors Field to CMPerson

Changed the return type of the authors field in CMTeasable to CMPerson. This is not breaking, since the previous type was CMTeasable, which is the superclass of CMPerson.

[CMS-21187]

## Miscellaneous

### Third-Party Update: Jetty

Jetty has been updated to version 9.4.48.v20220622 to avoid reported security vulnerabilities of previous versions.

[CMS-21877]

### Third-Party Update: org.json:json

The Java third-party library org.json:json has been updated to version 20220320 to avoid reported security vulnerabilities of previous versions.

[CMS-21809]

### Third-Party Update: Netty

Netty has been updated to version 4.1.77.Final to avoid security vulnerabilities of previous versions.



[CMS-21624]

## 4.17 Release 2204.1

The release contains:

- Breaking changes: 21
- Changes and improvements: 77
- Bugfixes: 180

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2022-05-20

### Breaking Changes

- CMS-21491: [Class "TransformationService" Cleaned Up](#)
- CMS-21481: [New Method to Transform Image by "Image Transformation String" Directly](#)
- CMS-18001: [Unified API: ContentRepository.createContentBuilder\(\) Available](#)
- CMS-21355: [Runlevel Health Indicator Signals Wrong State in Runlevel MAINTENANCE](#)
- CMS-21279: [Changed SitesService Setup in cmd Tools](#)
- CMS-20760: [Changed User Manager Search](#)
- CMS-22223: [Moved thumbnailService and Helper Classes to cap-base-models](#)
- CMS-22220: [Third-Party Update: rxjs from 6.x to 7.x](#)
- CMS-21454: [Added Support for Multiple Bookmarks](#)
- CMS-21089: [Studio Client Unified API: Improved TypeScript Types](#)
- CMS-21144: [Fixed babel Configuration in studio-client](#)
- CMS-19126: [Enhancement: Custom Validation for Built-In Workflows](#)
- CMS-20445: [Third-Party Update: Spring Boot and Related Dependencies](#)
- CMS-21441: [Refactorings of the Traefik Configuration for the Developer docker-compose Setup](#)
- CMS-21079: [Fixed Directory Ownership in Container Images](#)
- CMS-21432: [Deleted Demo Content Site Apparel US](#)
- CMS-21256: [New Search Adapter with ExtensionPoint](#)
- CMS-21076: [FilterQueryArg now Part of Plugin Support Library](#)
- CMS-21063: [Expose SolrQueryBuilders as Beans for Plugins](#)

- CMS-21317: [MediaController Validates URL Parameters](#)
- CMS-19390: [Blob Upload Robustness](#)

## Changes and Improvements

- CMS-21364: [The management-tools Container can now be Configured to Redirect the Tools Output](#)
- CMS-21111: [Third-Party Update: Apache Tika and Transitive Dependencies](#)
- CMS-21031: [Content Server Actuator Endpoint to Suspend Blob Collector](#)
- CMS-20166: [Content-Feeder Health can be Monitored](#)
- CMS-20022: [Workflow Metrics](#)
- CMS-19255: [Automated Workflow Conversion](#)
- CMS-17476: [New Hints for Contents "In Localization"](#)
- CMS-21502: [DataviewFactory Metrics are now Exposed via Micrometer](#)
- CMS-16537: [Added new 'customizations' Actuator Endpoint to serve Spring Bean Customizations](#)
- CMS-16536: [Added new 'linkhandlers' Actuator Endpoint to Serve Spring Bean Link Handlers](#)
- CMS-21415: [Third-Party Update: Moment.js](#)
- CMS-21397: [Introduced New Search Nagbar](#)
- CMS-21067: [Added Member Refresh Button](#)
- CMS-20979: [Improved Preview Generation Label For Uploaded Files](#)
- CMS-20978: [Support of Catalog Objects Augmentation Using Multiple Selection](#)
- CMS-20636: [Translation/Synchronization: Support for Folder-Links in Dependent Content](#)
- CMS-19529: [Added Warning For Deleted Comments](#)
- CMS-21110: [Third-Party Update: MySQL](#)
- CMS-21466: [Third-Party Update: JSLT lib to Version 0.1.11 \(was 0.1.8\)](#)
- CMS-20710: [New Search Suggestions and ExtensionPoint](#)
- CMS-21352: [Adds npnm Create Command](#)
- CMS-21526: [Third-Party Update: AWS SDK](#)
- CMS-21281: [Maven Dependency Management For Plugins](#)
- CMS-20696: [Sort Order of Catalog now Persistent in Thumbnail View](#)
- CMS-16589: [Faceted Search for Headless](#)

- CMS-16540: Removed Artifact 'com.coremedia.cms:coremedia-service'.

## Bugfixes

- CMS-21627: Third-Party Update : Drew Noakes Metadata Extractor
- CMS-21579: Third-Party Update: google-oauth-client
- CMS-21404: Info Actuator Endpoint Runs into Jackson Exception if Build Enables git-commit-id-plugin
- CMS-21360: motd and tools-context Function Missing in management-tools Container
- CMS-21105: Fixed Bug that Required Exact User Names for Login
- CMS-21065: Fixed NullPointerException in FeedableImpl
- CMS-20799: The License Check Now Considers IPs of all Network Interfaces
- CMS-20596: Documentation on Passwords in Tools dumpusers/restoreusers
- CMS-20536: The Garbage Collector is Now Robust Against Long Link Chains in Trash
- CMS-20535: Limit Content Server Threads Checking Database Connections
- CMS-20175: Fixed Parsing of Workflow Timer Element
- CMS-21402: coremedia.preview.js: Added Note About False Positive SAST Report
- CMS-21393: Search Query In Download Portal Is Now Escaped
- CMS-21346: Fixed Links to Categories with Apostrophes in IDs
- CMS-20774: Fixed Cache Capacity Handling and Reporting of DataViewFactory
- CMS-19526: Segment Validator Warns of Unfavourable Segment Names
- CMS-21582: TypeScript Handbook Is Now Properly Provided
- CMS-21513: Jangaroo npm Updated to Version 1.1.3
- CMS-21452: Fixed JavaScript in Taxonomy Manager
- CMS-21448: Fixed Referrer List Panel
- CMS-21438: Augmentation Folder Issue Fixed
- CMS-21399: raphael.js: Added Note About False Positive SAST Report
- CMS-21351: Fixed Layout of Additional Workflow Fields
- CMS-21255: Bug Fixed where Certain Domains Caused Error in Studio Login Screen
- CMS-21237: JavaScript Source-Maps for Some ExtJS Classes are no Longer Broken
- CMS-21167: Changed Editor Preferences for "Site Chooser"
- CMS-20723: State of MergeStrategyChooser is persisted in Studio
- CMS-19997: Fixed Tooltips For Pagegrid Layout Preview
- CMS-18177: Fixed Firefox Lazy Loading Problem

- CMS-21359: HideService Ignores ActionColumn
- CMS-21282: Third-Party Update: Liquibase
- CMS-21238: Fixed Disposing of Uploaded Temp Files
- CMS-19960: Changed Upload Dialog Behaviour
- CMS-19446: Fixed Possible "Undefined" Error in Notifications Menu
- CMS-19192: Fixed Library Selection
- CMS-19142: Change "contentType" Property on BlobPropertyField
- CMS-17814: Fixed Persona Checkout Issue
- CMS-17566: Studio-Apps Can Now Be Installed As App
- CMS-21645: Third-Party Update: Spring Framework and ASM
- CMS-21340: Fixed Security Issues
- CMS-21175: Preserve Order in Maps Returned by Headless Server
- CMS-21071: Handling DataFetcherResult in DataFetchers
- CMS-22570: The integer property is now properly handled when creating a new content via ingest service.
- CMS-21553: Third-Party Update: ESAPI
- CMS-21453: Fix Catalog Repository Toolbar icon
- CMS-21319: Third-Party Update: Jackson
- CMS-21153: Third-Party Updates: gRPC-Java 1.44.1 and Netty 4.1.74.Final
- CMS-21150: Icon Fonts Should now Always be Up-to-date after Upgrading the Studio Client
- CMS-21148: Third-Party Update: commons-dbcp2
- CMS-21140: Third-Party Update: PostgreSQL JDBC Driver
- CMS-20627: Third-Party Update: ImageIO 3.8.2
- CMS-19910: Fixed Loading of Image Variants

## 4.17.1 Breaking Changes

### CoreMedia Core

#### Class "TransformationService" Cleaned Up

Class `TransformationService` has been refactored to delegate image transformations to a new method in `TransformImageService`. As a consequence, obsoleted references to `BlobTransformer` and `NamedTransformBeanBlobTransformer` have been removed. `TransformationService`'s constructor as well as the corresponding Spring bean configuration in `TransformationServiceConfiguration` have been adjusted accordingly.

[CMS-21491]

#### New Method to Transform Image by "Image Transformation String" Directly

A new method `transformWithDimensions(Content content, String property, String operations):Optional<Blob>` was added to interface `TransformImageService` and its implementing class. With this new method, an image transformation can be requested via an Image Transformation String directly (see <https://documentation.coremedia.com/cmcc-11/artifacts/220/webhelp/cae-developer-en/content/imageTransformationAPI.html>).

Follow [Section "New Method to Transform Image by "Image Transformation String" Directly" \[516\]](#) for upgrade information.

[CMS-21481]

#### Unified API: `ContentRepository.createContentBuilder()` Available

A new way of creating contents within the Unified API is available:

Follow [Section "Unified API: `ContentRepository.createContentBuilder\(\)` Available" \[517\]](#) for upgrade information.

[CMS-18001]

#### Runlevel Health Indicator Signals Wrong State in Runlevel MAINTENANCE

When the Content Server is switched to runlevel MAINTENANCE either during startup or manually, the `health/runlevel` endpoint signals the server is UP. This makes it impossible to use the indicator for a readiness probe in Kubernetes, because the pod will be added to the services endpoint too early and UAPI clients that listen on a services availability would fail during the creation of the repository connection.

Follow [Section "Runlevel Health Indicator Signals Wrong State in Runlevel MAINTENANCE" \[518\]](#) for upgrade information.

[CMS-21355]

### Changed SitesService Setup in cmd Tools

The `sitesService` bean is injected from `commandline-tools-context.xml` now instead of being registered programmatically. Now obsolete methods `registerSitesService` and `hasSingletonBeanOfType` in `com.coremedia.cmdline.SpringHelper` have been removed.

[CMS-21279]

### Changed User Manager Search

The user manager does not load all users or group on initialization anymore. Instead an empty state panel is shown and a load is only triggered when more than `n` characters are inputted into the search field. The amount of characters can be configured via the Spring property `studio.usermanager.minSearchCharacters` and defaults to '3'. The previous behavior can be restored by setting the property to '0'.

[CMS-20760]

## CoreMedia Studio Client

### Moved thumbnailService and Helper Classes to cap-base-models

This note covers changes to private API. Although private API is not subject to release notes and it can be changed without further notice we detected that this API was leaked in the blueprint so the code might have been copied or customized that is why we declared this change as possibly breaking.

Follow [Section "Moved thumbnailService and Helper Classes to cap-base-models" \[520\]](#) for upgrade information.

[CMS-22223]

### Third-Party Update: rxjs from 6.x to 7.x

We now use the latest major version of rxjs in the studio-client workspace. In case you made any use of it in one of your packages make sure to upgrade rxjs as well. The changes can be seen here: <https://rxjs.dev/deprecations/breaking-changes>

[CMS-22220]

### Added Support for Multiple Bookmarks

Inside the library, multiple content items can be bookmarked now. Additional properties have been added to `_Editor_properties.ts_` for this:

[CMS-21454]

### Studio Client Unified API: Improved TypeScript Types

The part of Studio Client API that corresponds to CMCC's Unified API in Java (content, workflow, users) has been overhauled to provide more precise TypeScript types. Studio Client TypeScript code has been migrated from `ActionScript`, where it was not possible to describe callback function signatures and certain complex types (unions, intersections, generic types / type parameters). With TypeScript, now it is. To provide an improved formal description of the API, all vague types like `AnyFunction` or `any` have been replaced by more specific types, mostly already given in the textual documentation. This affects the packages `@coremedia/studio-client.client-core` and `@coremedia/studio-client.cap-rest-client`. Formally, changing the API to be more specific is a breaking change. But the required callback signatures, array element types and union types have already been documented as text, so if your code adheres these constraints, it is not going to break. Otherwise, only the TypeScript types of your code might have to be adapted, or the new, more precise types may even find hidden bugs in client code that need to be fixed.

*[CMS-21089]*

### Fixed babel Configuration in studio-client

We fixed our internal babel configuration for the studio-client so code is no longer transpiled using the so called "loose" mode. This will cause that the resulting JavaScript code is now more precise regarding ES6 standards than before.

Follow [Section "Fixed babel Configuration in studio-client" \[522\]](#) for upgrade information.

*[CMS-21144]*

## CoreMedia Studio Server

### Enhancement: Custom Validation for Built-In Workflows

Custom start validators for built-in workflows (translation, synchronization, simple publication, and two-step publication) can now be configured via properties.

Follow [Section "Enhancement: Custom Validation for Built-In Workflows" \[522\]](#) for upgrade information.

*[CMS-19126]*



## CoreMedia Workspace

### Third-Party Update: Spring Boot and Related Dependencies

In order to benefit from the improvements of the latest version of Spring Boot and the Spring framework and to prepare for making use of the new features various 3rd party libraries have been updated.

Follow [Section “Third-Party Update: Spring Boot and Related Dependencies” \[523\]](#) for upgrade information.

*[CMS-20445]*

## CoreMedia Deployment

### Refactorings of the Traefik Configuration for the Developer docker-compose Setup

The Traefik configuration for the docker-compose developer setup has been refactored.

Follow [Section “Refactorings of the Traefik Configuration for the Developer docker-compose Setup” \[524\]](#) for upgrade information.

*[CMS-21441]*

### Fixed Directory Ownership in Container Images

The ownership of the `/coremedia` directory was root but should be coremedia.

*[CMS-21079]*

## CoreMedia Connector for SAP Commerce Cloud

### Deleted Demo Content Site Apparel US

Demo content for site Apparel US was deleted because SAP Commerce does not provide a US site by default. The Apparel UK and Apparel DE still remain in demo content as example sites for the SAP Commerce integration.

*[CMS-21432]*

## CoreMedia Headless Server

### New Search Adapter with ExtensionPoint

The former `SearchServiceAdapter` and corresponding classes were replaced by the new `SearchAdapter`, featuring a SPI architecture and offering `SearchServiceProvider` as an `ExtensionPoint`. The default implementation in `DefaultSearchServiceProvider` implements the same behaviour as the former `SearchServiceAdapter`.

Follow [Section “New Search Adapter with ExtensionPoint” \[526\]](#) for upgrade information.

*[CMS-21256]*

### FilterQueryArg now Part of Plugin Support Library

In order to enable customizations of the search via plugin extension points, it was necessary to move input type mode `FilterQueryArg` to plugin support. As a consequence the package has changed. Otherwise this change is nonbreaking.

*[CMS-21076]*

### Expose SolrQueryBuilders as Beans for Plugins

In order to enable customizations of the search via plugin extension points, it was necessary to expose the so called `SolrQueryBuilders` as beans for plugins. As a consequence, `SolrQueryBuilder` had to be refactored to prevent circular bean dependencies with other search related extension points.

Follow [Section “Expose SolrQueryBuilders as Beans for Plugins” \[527\]](#) for upgrade information.

*[CMS-21063]*

### MediaController Validates URL Parameters

The `MediaController` now validates the URL parameters 'id', 'propertyName', 'hash', 'cropName', 'width' and 'filename'. The missing validation was added for security reasons to prevent DOS attacks.

Follow [Section “MediaController Validates URL Parameters” \[527\]](#) for upgrade information.

*[CMS-21317]*

## Miscellaneous

### Blob Upload Robustness

Sometimes, CMCC client threads got stuck due to broken BLOB upload HTTP connections.

Follow [Section “Blob Upload Robustness” \[528\]](#) for upgrade information.

[CMS-19390]

## 4.17.2 Changes and Improvements

### CoreMedia Core

#### The management-tools Container can now be Configured to Redirect the Tools Output

The management-tools container can now be configured to redirect the tools output either to a logfile per tool or to stdout. This can be configured using the `OUTPUT_REDIRECT` environment variable set to:

```
console [default] log - output will be written to /core  
media/tools/var/log/<TOOL>.out null - output will be suppressed
```

[CMS-21364]

#### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.3.0. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika. This includes an update of Apache POI to fix security issue CVE-2022-2633.

Updated dependencies:

- Apache Commons IO 2.11.0
- Apache Log4J API and SLF4J Adapter 2.17.2
- Apache PDFBox 2.0.25
- Apache POI 5.2.2
- Apache Tika 2.3.0
- Apache XMLBeans 5.0.3
- BouncyCastle 1.70
- Curves API 1.07
- Glassfish JAXB 2.3.6
- Rome 1.18.0
- SLF4J 1.7.36

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-21111]

### Content Server Actuator Endpoint to Suspend Blob Collector

The *Content Server* has a new Spring Boot actuator endpoint "blobcollector" that can be used to suspend (and resume) deletion of unused blobs at runtime.

Suspending blob deletion is a required step when making backups of non-transactional blobs stores like a file blob store. Previously, this required a change to configuration property `sql.store.collector.suspend` and a server restart. With the new actuator endpoint, no restart is required anymore. See section "Basics of Operation | Actuator Endpoints | Content Server Blob Collector Endpoint" in the Operations Basics Manual for details.

[CMS-21031]

### Content-Feeder Health can be Monitored

The content-feeder is now added as an endpoint for health-check and can be monitored. It returns the state of the feeder.

[CMS-20166]

### Workflow Metrics

Metrics for the number of open workflows are now available at the Spring Boot Actuator Metrics Endpoint. For details, see the Operations Basics Manual, section "Basics of Operation | Actuator Endpoints | Metrics Endpoint | Workflow Server Metrics".

[CMS-20022]

### Automated Workflow Conversion

As an alternative to the workflowconverter tool (s. see section "Workflowconverter" in Workflow Manual), the conversion can now be done automatically by the workflow server. You can activate the automatic conversion by setting the application property `workflow.server.enable-workflow-converter` to `true`.

[CMS-19255]

### New Hints for Contents "In Localization"

The Studio UI has been extended by hints in document forms (nagbars) when contents are part of an active localization process.

Similar to "Locked by Workflow" for publication processes, editors will get a hint "In Localization".

Possible implications, i.e., what editors facing this hint should be aware of, is described in Multi-Site Manual "Multi-Site Challenges" in section "Concurrent Editing Feature".

[CMS-17476]

## CoreMedia Content Application Engine

### DataviewFactory Metrics are now Exposed via Micrometer

DataviewFactory Metrics are exposed via DataViewFactory MBean some of which are provided as maps. When using the Prometheus `jmx_exporter` the maps are not exported to Prometheus. Thus, only accumulated metrics are available instead of the metrics per dataview class.

The dataview factory metrics are now exposed via Micrometer allowing Prometheus to receive the metrics per dataview class.

[CMS-21502]

### Added new 'customizations' Actuator Endpoint to serve Spring Bean Customizations

Spring bean customizations are printed to the log upon application startup. There's now a new 'customizations' actuator endpoint serving the customizations report.

[CMS-16537]

### Added new 'linkhandlers' Actuator Endpoint to Serve Spring Bean Link Handlers

Spring bean link handlers were printed to the log upon CAE startup. The logging on facility `com.coremedia.application.routing` was removed. There's now an actuator endpoint called 'linkhandlers' serving the resolved link handlers and link post processors.

[CMS-16536]

## CoreMedia Studio Client

### Third-Party Update: Moment.js

Updated Moment.js version to 2.29.2 to fix reported security issue [GHSA-8hfj-j24r-96c4](#)

[CMS-21415]

### Introduced New Search Nagbar

When no search results have been found in the Studio library, the search will be executed again on the root folder and a nagbar is shown that the search results for this fallback are shown. This nagbar replaces the former "Retry Search in All Content" link, shown in the result list panel.

[CMS-21397]

### Added Member Refresh Button

The user manager contains additional toolbar button to refresh members. These refresh button invalidate the selection from the UAPI cache, allowing to detect changes from the connected user provider.

[CMS-21067]

### Improved Preview Generation Label For Uploaded Files

When files are dropped on the bulk upload dialog, a message is shown that a preview is generated. The message text has changed to emphasize that preview thumbnails are only generated for images.

[CMS-20979]

### Support of Catalog Objects Augmentation Using Multiple Selection

The Studio allows now to augment a group a catalog objects of the same type( *Category* or *Product* ) via multiple selection. The augmentation functionality will be active in the context menu and toolbar.

- Single catalog element are augmented with the same behavior as before.
- Multiple catalog elements are augmented by running the operation as *CoreMedia Studio Job* instead and the created contents are not automatically opened as a tab.

[CMS-20978]

### Translation/Synchronization: Support for Folder-Links in Dependent Content

Prior to this fix, documents linking to folders (sometimes used in Settings-documents, for example), could not translated/synchronized from within CoreMedia Studio. A false-positive warning on missing document properties was raised.

With this fix, folders are supported in translation and synchronization workflows as **dependent content only** . Thus, you may safely translate/synchronize contents linking to folders.

Note, that these folders will not be listed within the workflow's detail view, as folders are considered implicitly created during a translation/synchronization workflow within that view.

[CMS-20636]

## CoreMedia Studio Server

### Added Warning For Deleted Comments

When a notification is clicked that points to a comment that has been deleted, a warning message is shown now, that this comment is not available anymore.

[CMS-19529]

## CoreMedia Deployment

### Third-Party Update: MySQL

MySQL was updated to version 8.0.28 in `global/deployment/docker/mysql/Dockerfile`.

[CMS-21110]

## CoreMedia Headless Server

### Third-Party Update: JSLT lib to Version 0.1.11 [was 0.1.8]

This is a drop in replacement maintenance update, containing non breaking bugfixes and new features only. For details please see original release notes at <https://github.com/schibsted/jslt/releases>

[CMS-21466]

### New Search Suggestions and ExtensionPoint

The Headless server now offers suggestions for search expressions. Suggestions are retrieved via the new `SuggestionsAdapter`, where the business logic is implemented and replaceable by an SPI via the plugin `ExtensionPoint Suggestion SearchServiceProvider`.

Please see the headless manual for details.

[CMS-20710]

## CoreMedia Documentation

### Adds pnpm Create Command

Adds command for call of CoreMedia pnpm Starter Kit to manual.

[CMS-21352]

## Miscellaneous

### Third-Party Update: AWS SDK

In order to benefit from fixes for known bugs and security issues, the Amazon AWS SDK has been updated to version 2.17.169. There are no known issues or incompatibilities concerning CMCC.

[CMS-21526]

### Maven Dependency Management For Plugins

The versions of Java third-party libraries Micrometer, Jakarta Validation API, and Hibernate Validator are now managed in the `common-thirdparty-for-plugins-bom` Maven artifact. Application plugins do not need to manage versions of these libraries themselves anymore, if they use these libraries with scope "provided" and import the above BOM Maven artifact.

[CMS-21281]

### Sort Order of Catalog now Persistent in Thumbnail View

When the commerce catalog in the library is sorted by any of the columns in the list view, switching to the thumbnail view preserves the applied order.

[CMS-20696]

### Faceted Search for Headless

HeadlessServer now comes with a new GraphQL query for a faceted search. See the headless manual for details.

[CMS-16589]

### Removed Artifact 'com.coremedia.cms:coremedia-service'.

Removed the internal artifact 'com.coremedia.cms:coremedia-service'.

Versions of servlet container and java dependencies are now listed by the 'info' actuator if one of the 'dev' or 'local' spring profiles is active.

[CMS-16540]



## 4.17.3 Fixed Issues

### CoreMedia Core

#### Third-Party Update : Drew Noakes Metadata Extractor

Third-party library `com.drewnoakes:metadata-extractor` has been updated to version 2.18.0 to avoid security vulnerabilities of the previous version.

[CMS-21627]

#### Third-Party Update: google-oauth-client

The third-party library `com.google.oauth-client:google-oauth-client` has been updated to 1.33.3 to avoid security vulnerability CVE-2021-22573.

[CMS-21579]

#### Info Actuator Endpoint Runs into Jackson Exception if Build Enables `git-commit-id-plugin`

If a build included the Git Commit ID [via enabling the `git-commit-id-plugin`], the actuator endpoint `info` ran into an exception for *Studio Server* and *CAE*. This has been fixed. The Git Commit ID will now be returned again properly.

[CMS-21404]

#### `motd` and `tools-context` Function Missing in `management-tools` Container

Due to the switch from openJDK to Amazon Corretto as a base image, there is also a switch from Debian to a CentOS base image and therefore the locations of these convenience scripts changed. This change fixes the behaviour when running with the Amazon Corretto base image.

[CMS-21360]

#### Fixed Bug that Required Exact User Names for Login

Fixed the bug that users from a specially customized user provider could not log in with a different identifier than the user name. For releases before 2007.1, custom user providers could return users for other login identifiers, but more recent releases prevented this. The possibility has been restored now, so that these custom user providers continue to work.

[CMS-21105]

### Fixed NullPointerException in FeedableImpl

When the type of a collection set as feedable element cannot be determined, the type now correctly defaults to String.

[CMS-21065]

### The License Check Now Considers IPs of all Network Interfaces

For IP based licenses all network interfaces are considered now and the check passes if there is at least one IP that can be successfully validated against the IP range configured in the license.

[CMS-20799]

### Documentation on Passwords in Tools dumpusers/restoreusers

Documentation of tools dumpusers/restoreusers has been extended to give additional information on handling of passwords.

[CMS-20596]

### The Garbage Collector is Now Robust Against Long Link Chains in Trash

The Garbage Collector is now robust against long link chains in trash.

[CMS-20536]

### Limit Content Server Threads Checking Database Connections

Fixed the bug that the number of threads used by the *Content Server* for checking database connections wasn't limited. This could have led to instabilities in cases, where many calls to the database are blocked due to some problems with the database. By default, the number of such threads is now limited to twice the maximum number of database connections. The limit can be changed with configuration property `sql.pool.check-connection-max-threads` as described in the Deployment Manual in section "CoreMedia Properties Overview | Content Server Properties | Properties for the Connection to the Database".

[CMS-20535]

### Fixed Parsing of Workflow Timer Element

Timer elements in workflow definitions with relative values but without explicitly setting the property `relative` are now recognized correctly as 'relative' even for values > 999.

[CMS-20175]

# CoreMedia Content Application Engine

## coremedia.preview.js: Added Note About False Positive SAST Report

coremedia.preview.js might be reported by SAST tools like checkmarx. This is a false positive, the code injection is a central part of the preview integration and can only be performed by postMessage calls of authorized origins (see <https://documentation.coremedia.com/cmcc-11/artifacts/2201/webhelp/studio-developer-en/content/SecurityCSP.html>).

[CMS-21402]

## Search Query In Download Portal Is Now Escaped

Before the change the search query could contain HTML which was added to the search result without being escaped .

[CMS-21393]

## Fixed Links to Categories with Apostrophes in IDs

When rendering a Teaser in a fragment that has pointed to a category in Salesforce with an apostrophe in the ID the Velocity interpreter in Salesforce was crashing during the link building. That was affecting the whole page. Such apostrophes in link parameters will be "escaped".

[CMS-21346]

## Fixed Cache Capacity Handling and Reporting of DataViewFactory

The DataViewFactory did not respect the configured cache capacities and fell back to the capacity of "java.lang.Object" for cache capacities whose keys did not represent the names of classes extending `com.coremedia.objectserv er.dataviews.AssumesIdentity` or `com.coremedia.objectserv er.dataviews.DataView` . This is the case for `com.coremedia.blue print.common.contentbeans .Page` , for example. The DataViewFactory no longer maintains its own mapping of cache capacities but uses the capacities which are configured at the Cache bean. The DataViewFactory records the used cache classes and reports the corresponding cache capacities via JMX using the `CacheSizes` attribute or the `getCacheSizes` operation.

The cache size definitions from dataviews XML have lower precedence than those defined at the cache. So if your project contains a `cachesize` entry for class `X` with value `Y` and your application config contains an entry `cache.capacities.X=Z` then the cache capacity is `Z` .

[CMS-20774]

## Segment Validator Warns of Unfavourable Segment Names

It is not recommended to use a segment name in pages ending with a number preceded by a minus sign. The default request mapping can get confused by interpreting the number as content ID. In some rare cases that can lead to CAE handler error and such a page is not accessible. The ChannelSegmentValidator warns about such unfavourable segment names.

[CMS-19526]

# CoreMedia Studio Client

## TypeScript Handbook Is Now Properly Provided

The link in the README of the studio-client pointed to a dead end. This has been fixed now.

[CMS-21582]

## Jangaroo npm Updated to Version 1.1.3

This fixes an issue when declaring a bindable Ext Config in TypeScript with a `#`-private field name with the same name as the public property *and* adding custom logic to the `set` accessor, like in this example:

```
interface MyComponentConfig extends ... {
  Pick<MyComponent, ... | "myConfig"> {
  }
}

class MyComponent ... {
  #myConfig: number = 42;
  get myConfig(): number {
    return this.#myConfig;
  }
  set myConfig(value: number) {
    this.#myConfig = value;
    // any custom code, otherwise the accessor will be suppressed:
    console.log("gotcha!");
  }
}
```

The private field used to be rewritten to a public field with the same name, so that the line

```
this.#myConfig = value;
```

resulted in an infinite recursion at run-time.

Now, the private field is rewritten to use an `_` prefix like Ext does for Configs, so in the example, `_myConfig` would be used. As a workaround, you can use `#_myConfig` directly in the TypeScript source code, but after the fix, the `#`-private field name without underscore should be best practice.

Furthermore, Jangaroo npm 1.1.3 updates the Jest version from 26 to 28 and it is now possible to customize the `jest.config.js` as the jangaroo build will no longer regenerate it.

[CMS-21513]

### Fixed JavaScript in Taxonomy Manager

Fixed a JavaScript error that was triggered through a right-click in the taxonomy manager.

[CMS-21452]

### Fixed Referrer List Panel

The `bindTo` expression for the referrer list panel allows `null` values now too.

[CMS-21448]

### Augmentation Folder Issue Fixed

The display name of a categories (and its parent categories) is used as storage path below the Augmentations folder. If such a category name contained a space at the end the augmentation functionality was broken (nothing happened, the error was only visible in the browser console). These illegal characters are now removed from the storage path.

[CMS-21438]

### raphael.js: Added Note About False Positive SAST Report

- First of all: the code is not reached by any of our usages
- Even if the part were reached the assignment to `innerHTML` actually is escaped (some tools do seem to detect it properly)
- The remaining two usages are assignments to actual properties of a DOM element which may not need to be escaped at all

[CMS-21399]

### Fixed Layout of Additional Workflow Fields

The fields added as an additional workflow fields are now using the available width automatically - no additional configuration required.

[CMS-21351]

### Bug Fixed where Certain Domains Caused Error in Studio Login Screen

We fixed a bug where domain names with certain character in it (e.g. `'` or `/`) caused an error in the Studio loading screen.

[CMS-21255]

### JavaScript Source-Maps for Some ExtJS Classes are no Longer Broken

A recent third-party dependency upgrade did break the source-maps for some of the ExtJS classes. This has been fixed now.

[CMS-21237]

### Changed Editor Preferences for "Site Chooser"

The settings property "Site Chooser" has been renamed to "Site Selector". It isn't possible to hide the locale string inside the menu's dropdown button anymore. Also, the "Show Site Name" setting has been replaced with "Show Site Selector" which enables the user to hide the site selector completely. The default is *false* for this setting.

[CMS-21167]

### State of MergeStrategyChooser is persisted in Studio

The MergeStrategyChooser has a state handling now.

[CMS-20723]

### Fixed Tooltips For Pagegrid Layout Preview

The tooltips for the iconized page grid preview has been rendered with *null* values. The tooltips are now rendering the placement names in this preview properly.

[CMS-19997]

### Fixed Firefox Lazy Loading Problem

Fixed an issue where the lazy loading of a hug amount of content items sometimes did not work for Firefox.

[CMS-18177]

## CoreMedia Studio Server

### HideService Ignores ActionColumn

The HideService ignores the ActionColumn as the component offers items only as Array instead of ItemCollection. Now the use of ActionColumn doesn't interfere with HideService.

[CMS-21359]

### Third-Party Update: Liquibase

Liquibase has been updated to version 4.8.0 to avoid security vulnerability CVE-2022-0839.

[CMS-21282]

### Fixed Disposing of Uploaded Temp Files

When a blob is uploaded to Studio, it is converted to a temporary file, backing a temporary Blob object. This object/files is properly disposed/deleted now.

[CMS-21238]

### Changed Upload Dialog Behaviour

The upload dialog is not modal anymore. This way, it is possible now to drop a target folder to the dialog from the docked library too.

[CMS-19960]

### Fixed Possible "Undefined" Error in Notifications Menu

Fixed an issue where a possible undefined error lead to warnings in the console log.

[CMS-19446]

### Fixed Library Selection

Fixed issue where items opened in the library are sometimes not selected.

[CMS-19192]

### Change "contentType" Property on BlobPropertyField

According to the documentation, the field *contentType* for the *BlobPropertyField* allows to filter uploaded files for it's mime type. This field was only used the localization of the button label and the help text.

A new field *mimetypes* has been introduced which configures the valid mime types for the blob field in CSV format. The list of values may only contain primary mime types, such as "image" or "application".

[CMS-19142]

### Fixed Persona Checkout Issue

Fixed an issue where personas are automatically checked out once they are opened in a tab.

[CMS-17814]

### Studio-Apps Can Now Be Installed As App

When using the "install this site as an app" feature of Chrome-Based browsers caused the studio to not properly load. This has been fixed now.

[CMS-17566]

## CoreMedia Workspace

### Third-Party Update: Spring Framework and ASM

The Spring Framework has been updated to version 5.3.20 to avoid security vulnerabilities CVE-2022-22970 and CVE-2022-22971. ASM has been updated to version 9.3 to match the version used by Spring.

[CMS-21645]

## CoreMedia Headless Server

### Fixed Security Issues

Fixed Security Issues in JsonPreviewController.

[CMS-21340]

### Preserve Order in Maps Returned by Headless Server

Previously the order of maps from structs were not preserved in the Headless Server. This was due to a bug in the implementation of the `{@MapToNestedMapsConverter }` which is now fixed. This affects all the maps retrieved from structs and the results of the `MapOf*` scalar types.

[CMS-21175]

### Handling DataFetcherResult in DataFetchers

When the argument data of a DataFetcher (`environment#getSource()`) is wrapped in a DataFetcherResult, some DataFetchers did not resolve the value properly. This affected the `FilteringDataFetcher`, `ConvertingDataFetcher` and `CapStructPropertyDataFetcher`. The filter predicates `InProductionFilterPredicate` and `ValidityDateFilterPredicate` were not applied then, which led to unexpected visibility issues. This is fixed now.

[CMS-21071]

## Miscellaneous

### The integer property is now properly handled when creating a new content via ingest service.

The integer property is now properly handled when creating a new content via ingest service.

[CMS-22570]



### Third-Party Update: ESAPI

The third-party library `org.owasp.esapi:esapi` has been updated to version 2.4.0.0 to avoid security vulnerabilities reported for previous versions.

[CMS-21553]

### Fix Catalog Repository Toolbar icon

Create product teaser icon on the catalog repository toolbar is displayed correctly

[CMS-21453]

### Third-Party Update: Jackson

Jackson has been updated to version 2.13.2 and Jackson Databind has been updated to 2.13.2.1 to avoid security vulnerability CVE-2020-36518.

[CMS-21319]

### Third-Party Updates: gRPC-Java 1.44.1 and Netty 4.1.74.Final

In order to benefit from fixes for known bugs and security issues, the gRPC-Java and Netty libraries have been updated to their latest versions:

- `io.grpc*:1.44.1`
- `io.netty*:4.1.74.Final`

[CMS-21153]

### Icon Fonts Should now Always be Up-to-date after Upgrading the Studio Client

We added a timestamp to the URL the icon font is loaded from so new versions will always be updated after upgrading the Studio Client.

[CMS-21150]

### Third-Party Update: commons-dbcp2

Apache commons-dbcp2 has been updated to version 2.9.0 to avoid a security issue of the previous version.

[CMS-21148]

### Third-Party Update: PostgreSQL JDBC Driver

The PostgreSQL JDBC driver has been updated to version 42.3.3 to avoid security issues of the previous version [CVE-2022-21724, GHSA-673j-qm5f-xpv8].

[CMS-21140]

### Third-Party Update: ImageIO 3.8.2

In order to benefit from the latest security improvements the third-party library ImageIO was updated to version 3.8.2

[CMS-20627]

### Fixed Loading of Image Variants

Fixed an issue where image variants taken from the file `mediatransform.xml` have been appended to the list of content variants. These entries are not simply concatenated anymore, but variants taken from the XML file will be overwritten by content image variants if they have the same name. By default, the image editor will sort the variants by name. If the default sort order (by name/ascending) should be changed, this can be done by using the utility class `ImageVariantsSorter.ts`. It can be changed to descending by applying

```
ImageVariantsSorter.VARIANTS_DEFAULT_SORT_ORDER =  
ImageVariantsSorter.SORT_TYPE.SORT_BY_NAME_DESC;
```

or by initializing the variable `ImageVariantsSorter.VARIANTS_DEFAULT_SORT_ORDER_BY_NAME` with a string array, which contains the name of the variants. If variant entries are missing in this list, they will be appended to result, sorted alphabetically.

[CMS-19910]

## 4.18 Release 2201.3

The release contains:

- Breaking changes: 7
- Changes and improvements: 23
- Bugfixes: 106

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2022-07-21

### Breaking Changes

- CMS-21355: [Runlevel Health Indicator Signals Wrong State in Runlevel MAINTENANCE](#)
- CMS-21476: [Fixed Incorrect Defer Flag During Theme Import](#)
- CMS-21780: [Third-Party Update: Spring Boot and Related Dependencies](#)
- CMS-21432: [Deleted Demo Content Site Apparel US](#)
- CMS-21765: [Picture Local Setting 'disableCropping' now Supported by Link Building](#)
- CMS-21382: [MediaController with Parameter Validation](#)
- CMS-21612: [Fixed Prometheus Cache Metrics](#)

### Changes and Improvements

- CMS-21719: [Third-Party Update: Apache Solr](#)
- CMS-21031: [Content Server Actuator Endpoint to Suspend Blob Collector](#)
- CMS-21652: [Fixed Handling of Broken Internal Links in RichText](#)
- CMS-21502: [DataviewFactory Metrics are now Exposed via Micrometer](#)
- CMS-18964: [Configured Less Strict Cookie Defaults for Local Development](#)
- CMS-21690: [Fixed 'minSearchCharacters' of User Manager Search](#)
- CMS-21721: [Third-Party Update: Apache Tika and Transitive Dependencies](#)
- CMS-21774: [Base Image Update](#)
- CMS-21766: [Headless Server now Sends Content-Disposition Header for Non-viewable Responses](#)
- CMS-21651: [Third-Party Update: graphql-java to 18.1](#)

- CMS-21466: Third-Party Update: JSLT lib to Version 0.1.11 [was 0.1.8]
- CMS-21526: Third-Party Update: AWS SDK
- CMS-21390: Third-Party Update : Maven Surefire

## Bugfixes

- CMS-21739: Fixed ServerExport of Nested Blobs In Structs
- CMS-21627: Third-Party Update : Drew Noakes Metadata Extractor
- CMS-21579: Third-Party Update: google-oauth-client
- CMS-21516: Irritating and unhelpful logging in EditorialCommentEventFetcher for timestamps with `getNano()`
- CMS-21404: Info Actuator Endpoint Runs into Jackson Exception if Build Enables git-commit-id-plugin
- CMS-20596: Documentation on Passwords in Tools dumpusers/restoreusers
- CMS-20536: The Garbage Collector is Now Robust Against Long Link Chains in Trash
- CMS-21769: Fixed CSRF Documentation Bug
- CMS-21393: Search Query In Download Portal Is Now Escaped
- CMS-19526: Segment Validator Warns of Unfavourable Segment Names
- CMS-18984: Improved CAE Local Properties for Template Development
- CMS-21884: Re-introduce RichTextFieldPropertyFieldDelegatePlugin
- CMS-21802: Fixed Memory Leaks in CMPictureForm and CMLImageMapForm.
- CMS-21781: Third-Party Update: CKEditor 4 to 4.19.0
- CMS-21717: Scripts and documentation now make sure that pnpm 6.x is used
- CMS-21641: Fixed Upload Settings "maxFileSize"
- CMS-21628: Fixed Library Performance Issue
- CMS-21586: hideLabel Does not Always Work in PropertyFieldGroups.
- CMS-21582: TypeScript Handbook Is Now Properly Provided
- CMS-21513: Jangaroo npm Updated to Version 1.1.3
- CMS-21471: RotateStyleClassPlugin Is Now Robust Against Being Destroyed While Active
- CMS-21448: Fixed Referrer List Panel
- CMS-21438: Augmentation Folder Issue Fixed
- CMS-21399: raphael.js: Added Note About False Positive SAST Report
- CMS-21351: Fixed Layout of Additional Workflow Fields

- CMS-20723: State of MergeStrategyChooser is persisted in Studio
- CMS-20621: Feedback Hub Comment Button Misplaced For Two Level Field Group Hierarchy
- CMS-21790: Content Hub Adapter YouTube Update
- CMS-21671: Fixed Update of Start Translation Workflow Issues
- CMS-21238: Fixed Disposing of Uploaded Temp Files
- CMS-17566: Studio-Apps Can Now Be Installed As App
- CMS-21645: Third-Party Update: Spring Framework and ASM
- CMS-19627: Fixed a bug that in some cases SASS files could be included multiple times
- CMS-21843: Headless won't Start with Deactivated P13N Extension
- CMS-21800: Image Hash Calculation Leads to Client-Side Caching Problems
- CMS-21669: MediaController now sets Content-Disposition Header
- CMS-21340: Fixed Security Issues
- CMS-21187: Changed Return Type of Authors Field to CMPerson
- CMS-21881: Fixed Unified API Bug in Working Version References
- CMS-21877: Third-Party Update: Jetty
- CMS-21809: Third-Party Update: org.json:json
- CMS-21624: Third-Party Update: Netty
- CMS-21553: Third-Party Update: ESAPI
- CMS-21453: Fix Catalog Repository Toolbar icon

## 4.18.1 Breaking Changes

### CoreMedia Core

#### Runlevel Health Indicator Signals Wrong State in Runlevel MAINTENANCE

When the Content Server is switched to runlevel MAINTENANCE either during startup or manually, the `health/runlevel` endpoint signals the server is UP. This makes it impossible to use the indicator for a readiness probe in Kubernetes, because the pod will be added to the services endpoint too early and UAPI clients that listen on a services availability would fail during the creation of the repository connection.

Follow [Section “Runlevel Health Indicator Signals Wrong State in Runlevel MAINTENANCE” \[529\]](#) for upgrade information.

[CMS-21355]

# CoreMedia Studio Server

## Fixed Incorrect Defer Flag During Theme Import

As described in <https://documentation.coremedia.com/cmcc-11/artifacts/2201/webhelp/frontend-en/content/ThemeConfigReference.html>, you can set the "defer" flag in your theme configuration to defer the execution of a JavaScript file. Due to a bug all CMJavaScript documents generated by the theme importer that were not meant to be deferred were configured in a way that caused the following HTML output:

Follow [Section “Fixed Incorrect Defer Flag During Theme Import” \[530\]](#) for upgrade information.

[CMS-21476]

# CoreMedia Workspace

## Third-Party Update: Spring Boot and Related Dependencies

Spring Boot has been updated to version 2.5.14. Related dependencies have been updated to at least the versions used by Spring Boot. This includes updates to fix reported security issues in Spring Security and Tomcat [CVE-2022-22976, CVE-2022-22978, CVE-2022-29885]. The new version of Spring Security contains a bug fix for certain configurations of password hashing [CVE-2022-22976], which may require additional upgrade steps if you have changed the configuration for password hashing in the *Content Server* or *Elastic Social*.

Follow [Section “Third-Party Update: Spring Boot and Related Dependencies” \[530\]](#) for upgrade information.

[CMS-21780]

# CoreMedia Connector for SAP Commerce Cloud

## Deleted Demo Content Site Apparel US

Demo content for site Apparel US was deleted because SAP Commerce does not provide a US site by default. The Apparel UK and Apparel DE still remain in demo content as example sites for the SAP Commerce integration.

[CMS-21432]

## CoreMedia Headless Server

### Picture Local Setting 'disableCropping' now Supported by Link Building

The flag `disableCropping` in the local settings of a picture was not respected by the link building for the GraphQL property `uriTemplate`. This misbehaviour was fixed. Also, the delivery will now validate this flag. This means that uri with disabled cropping won't work when request the image with a `cropName` and `width`. As a consequence, this bugfix is considered breaking, as the validation may break previously working delivery image URLs!

Follow [Section "Picture Local Setting 'disableCropping' now Supported by Link Building" \[532\]](#) for upgrade information.

[CMS-21765]

### MediaController with Parameter Validation

The `MediaController` now validates the URL parameters 'id', 'propertyName', 'hash', 'cropName', 'width' and 'filename'. The missing validation was added for security reasons to prevent DoS attacks.

Follow [Section "MediaController with Parameter Validation" \[532\]](#) for upgrade information.

[CMS-21382]

## Miscellaneous

### Fixed Prometheus Cache Metrics

Spring Boot actuator endpoint `/metrics` provides several metrics on CoreMedia components [see *Operations Basics Manual*, section *Basics of Operation | Actuator Endpoints | Metrics Endpoint*]. In addition to that, actuator endpoint `/prometheus` publishes this data for scraping by monitoring application *Prometheus*. However, cache metrics were incomplete for some CoreMedia components when using this endpoint. With this fix, the complete set of cache information can now be retrieved from it.

Follow [Section "Fixed Prometheus Cache Metrics" \[533\]](#) for upgrade information.

[CMS-21612]

## 4.18.2 Changes and Improvements

### CoreMedia Core

#### Third-Party Update: Apache Solr

Apache Solr has been updated to version 8.11.2.

For detailed changes of Apache Solr have a look at <https://solr.apache.org/news.html> and [https://solr.apache.org/docs/8\\_11\\_2/changes/Changes.html](https://solr.apache.org/docs/8_11_2/changes/Changes.html).

For CMCC 11, a new coremedia/solr-base Docker image was released with tag 8.11.2, which is used in the Blueprint in `apps/solr/blueprint/solr-image/pom.xml`.

[CMS-21719]

#### Content Server Actuator Endpoint to Suspend Blob Collector

The *Content Server* has a new Spring Boot actuator endpoint "blobcollector" that can be used to suspend (and resume) deletion of unused blobs at runtime.

Suspending blob deletion is a required step when making backups of non-transactional blobs stores like a file blob store. Previously, this required a change to configuration property `sql.store.collector.suspend` and a server restart. With the new actuator endpoint, no restart is required anymore. See section "Basics of Operation | Actuator Endpoints | Content Server Blob Collector Endpoint" in the Operations Basics Manual for details.

[CMS-21031]

### CoreMedia Content Application Engine

#### Fixed Handling of Broken Internal Links in RichText

In case that an internal Link in RichText cannot be built because the LinkFormatter throws an exception, the live CAE used to discard the whole RichText. Now it just discards the A-Tag. Preview CAE still displays the exception.

[CMS-21652]

#### DataviewFactory Metrics are now Exposed via Micrometer

DataviewFactory Metrics are exposed via DataViewFactory MBean some of which are provided as maps. When using the Prometheus `jmx_exporter` the maps are not



exported to Prometheus. Thus, only accumulated metrics are available instead of the metrics per dataview class.

The dataview factory metrics are now exposed via Micrometer allowing Prometheus to receive the metrics per dataview class.

[CMS-21502]

### Configured Less Strict Cookie Defaults for Local Development

The `local` spring profile for live and preview CAE now configures the following cookie defaults:

```
cae.cookie.force-secure=false
cae.cookie.same-site=Lax
```

[CMS-18964]

## CoreMedia Studio Client

### Fixed 'minSearchCharacters' of User Manager Search

- Fixed a documentation issue where the field *minSearchCharacters* had the default value *0* instead of *3*.
- Fixed user manager search behaviour when *minSearchCharacters* is set to *0*: When this field has value *0* now, all users or groups are shown by default.

[CMS-21690]

## CoreMedia Workspace

### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.4.1 to avoid security vulnerabilities CVE-2022-30126, CVE-2022-25169, and CVE-2022-33879. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika.

Updated dependencies:

- Apache PDFBox 2.0.26
- Apache Tika 2.4.1
- ASM 9.3
- JHighlight 1.1.0

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-21721]

# CoreMedia Deployment

## Base Image Update

The base image of all Spring Boot applications has been updated to `coremedia/java-application-base:2.4.4-corretto-11`.

The update includes:

- update to Oracle Corretto `11.0.15`
- jmx exporter to `0.17.0`

see <https://hub.docker.com/r/coremedia/java-application-base> for details

[CMS-21774]

# CoreMedia Headless Server

## Headless Server now Sends Content-Disposition Header for Non-viewable Responses

For security reasons, HeadlessServer now sends a Content-Disposition HTTP header of type "attachment" with filename="api.json" for all requests to the GraphQL endpoints.

[CMS-21766]

## Third-Party Update: graphql-java to 18.1

The library `com.graphql-java:graphql-java` has been updated to version `18.1`. The update contains several deprecations, that may affect custom code. Please see the original documentation of graphql-java for details.

[CMS-21651]

## Third-Party Update: JSLT lib to Version 0.1.11 [was 0.1.8]

This is a drop in replacement maintenance update, containing non breaking bugfixes and new features only. For details please see original release notes at <https://github.com/schibsted/jslt/releases>

[CMS-21466]

## Miscellaneous

### Third-Party Update: AWS SDK

In order to benefit from fixes for known bugs and security issues, the Amazon AWS SDK has been updated to version 2.17.169. There are no known issues or incompatibilities concerning CMCC.

[CMS-21526]

### Third-Party Update : Maven Surefire

Maven Surefire has been updated to 3.0.0-M7.

[CMS-21390]

## 4.18.3 Fixed Issues

## CoreMedia Core

### Fixed ServerExport of Nested Blobs In Structs

Fixed a bug in the `cm serverexport` command-line tool, that no files were exported for nested blob properties that are defined inside struct properties.

[CMS-21739]

### Third-Party Update : Drew Noakes Metadata Extractor

Third-party library `com.drewnoakes:metadata-extractor` has been updated to version 2.18.0 to avoid security vulnerabilities of the previous version.

[CMS-21627]

### Third-Party Update: google-oauth-client

The third-party library `com.google.oauth-client:google-oauth-client` has been updated to 1.33.3 to avoid security vulnerability CVE-2021-22573.

[CMS-21579]

### Irritating and unhelpful logging in EditorialCommentEventFetcher for timestamps with `getNano()`

Improved Timestamp Logging in `EditorialCommentEventFetcher`. Timestamps are now More Readable.

[CMS-21516]

### Info Actuator Endpoint Runs into Jackson Exception if Build Enables `git-commit-id-plugin`

If a build included the Git Commit ID (via enabling the `git-commit-id-plugin`), the actuator endpoint `info` ran into an exception for *Studio Server* and *CAE*. This has been fixed. The Git Commit ID will now be returned again properly.

[CMS-21404]

### Documentation on Passwords in Tools `dumpusers/restoreusers`

Documentation of tools `dumpusers/restoreusers` has been extended to give additional information on handling of passwords.

[CMS-20596]

### The Garbage Collector is Now Robust Against Long Link Chains in Trash

The Garbage Collector is now robust against long link chains in trash.

[CMS-20536]

## CoreMedia Content Application Engine

### Fixed CSRF Documentation Bug

The documented example of backward compatible CSRF tokens contained a bug that was fixed.

[CMS-21769]

### Search Query In Download Portal Is Now Escaped

Before the change the search query could contain HTML which was added to the search result without being escaped.

[CMS-21393]

### Segment Validator Warns of Unfavourable Segment Names

It is not recommended to use a segment name in pages ending with a number preceded by a minus sign. The default request mapping can get confused by interpreting the number as content ID. In some rare cases that can lead to CAE handler error and such a page is not accessible. The `ChannelSegmentValidator` warns about such unfavourable segment names.

[CMS-19526]

### Improved CAE Local Properties for Template Development

The `local` spring profile for live and preview CAE now configures the following cookie defaults:

```
server.servlet.jsp.init-parameters.development=true  
freemarker.template.update.delay.in.seconds=1
```

[CMS-18984]

## CoreMedia Studio Client

### Re-introduce RichTextFieldDelegatePlugin

The `RichTextFieldDelegatePlugin` was removed in CMCC 11, but is now reintroduced. It can now be found in the `@coremedia/studio-client.main.ckeditor4-components` package. It can be imported as follows:

```
import RichTextFieldDelegatePlugin from  
"@coremedia/studio-client.main.ckeditor4-components/plugins/RichTextFieldDelegatePlugin";
```

[CMS-21884]

### Fixed Memory Leaks in CMPictureForm and CMImageMapForm.

We fixed memory leaks in `CMPictureForm` and `CMImageMapForm`.

[CMS-21802]

### Third-Party Update: CKEditor 4 to 4.19.0

CKEditor 4 has been updated from 4.17.1 to 4.19.0. This also includes 4.18.0 which contains highly recommended security fixes.

[CMS-21781]

### Scripts and documentation now make sure that pnpm 6.x is used

Although suggested by the pnpm client simply upgrading to pnpm 7.x leads to errors in the frontend workspace as well for the studio-client. If you have already upgraded to pnpm 7, please downgrade the used version by executing:

```
npm install -g pnpm@6
```

[CMS-21717]

### Fixed Upload Settings "maxFileSize"

The upload setting `maxFileSize` can overwrite the existing maximum upload size of 64MB now. The size is valid for all upload fields.

[CMS-21641]

### Fixed Library Performance Issue

Fixed issue of too many `NewContentActions` which slowed down the library significantly.

[CMS-21628]

### hideLabel Does not Always Work in PropertyFieldGroups.

An issue with the `hideSingleComponentLabel` configuration in `PropertyFieldGroups` has been resolved: The `hideLabel` config now works for all group items.

[CMS-21586]

### TypeScript Handbook Is Now Properly Provided

The link in the README of the studio-client pointed to a dead end. This has been fixed now.

[CMS-21582]

### Jangaroo npm Updated to Version 1.1.3

This fixes an issue when declaring a bindable Ext Config in TypeScript with a `#` -private field name with the same name as the public property *and* adding custom logic to the `set` accessor, like in this example:

```
interface MyComponentConfig extends ...,
  Pick<MyComponent, ... | "myConfig"> {
}

class MyComponent ... {
  #myConfig: number = 42;
  get myConfig(): number {
    return this.#myConfig;
  }
  set myConfig(value: number) {
    this.#myConfig = value;
    // any custom code, otherwise the accessor will be suppressed:
    console.log("gotcha!");
  }
}
```

The private field used to be rewritten to a public field with the same name, so that the line

```
this.#myConfig = value;
```

resulted in an infinite recursion at run-time.

Now, the private field is rewritten to use an `_` prefix like Ext does for Configs, so in the example, `_myConfig` would be used. As a workaround, you can use `#_myConfig` directly in the TypeScript source code, but after the fix, the `#` -private field name without underscore should be best practice.

Furthermore, Jangaroo npm 1.1.3 updates the Jest version from 26 to 28 and it is now possible to customize the `jest.config.js` as the jangaroo build will no longer regenerate it.

[CMS-21513]

### RotateStyleClassPlugin Is Now Robust Against Being Destroyed While Active

Before the change the timer wasn't properly cleaned up which could have led to many console errors.

[CMS-21471]

### Fixed Referrer List Panel

The *bindTo* expression for the referrer list panel allows *null* values now too.

[CMS-21448]

### Augmentation Folder Issue Fixed

The display name of a categories (and its parent categories) is used as storage path below the Augmentations folder. If such a category name contained a space at the end the augmentation functionality was broken (nothing happened, the error was only visible in the browser console). These illegal characters are now removed from the storage path.

[CMS-21438]

### raphael.js: Added Note About False Positive SAST Report

- First of all: the code is not reached by any of our usages
- Even if the part were reached the assignment to `innerHTML` actually is escaped (some tools do seem to detect it properly)
- The remaining two usages are assignments to actual properties of a DOM element which may not need to be escaped at all

[CMS-21399]

### Fixed Layout of Additional Workflow Fields

The fields added as an additional workflow fields are now using the available width automatically - no additional configuration required.

[CMS-21351]

### State of MergeStrategyChooser is persisted in Studio

The MergeStrategyChooser has a state handling now.

[CMS-20723]

### Feedback Hub Comment Button Misplaced For Two Level Field Group Hierarchy

Components like `StringPropertyField` and `RichTextPropertyField` now provide the `sideButtonVerticalAdjustment` and `sideButtonHorizontalAdjustment` config options to reposition their `EditorialCommentsButton`.

[CMS-20621]

## CoreMedia Studio Server

### Content Hub Adapter YouTube Update

The bundled plugin Content Hub Adapter Youtube has been updated to version 2.0.3. For details see the change log of the plugin at <https://github.com/CoreMedia/content-hub-adapter-youtube/blob/v2.0.3/CHANGELOG.md>. This includes updates of transitive dependencies used by the plugin, for example library google-oauth-client was updated to avoid security vulnerability CVE-2021-22573 that was reported for the previous version.

[CMS-21790]

### Fixed Update of Start Translation Workflow Issues

Fixed a bug in the start translation workflow window, which showed errors for dependent content items, even after all links to the problematic content items have been removed.

[CMS-21671]

### Fixed Disposing of Uploaded Temp Files

When a blob is uploaded to Studio, it is converted to a temporary file, backing a temporary Blob object. This object/files is properly disposed/deleted now.

[CMS-21238]

### Studio-Apps Can Now Be Installed As App

When using the "install this site as an app" feature of Chrome-Based browsers caused the studio to not properly load. This has been fixed now.

[CMS-17566]

## CoreMedia Workspace

### Third-Party Update: Spring Framework and ASM

The Spring Framework has been updated to version 5.3.20 to avoid security vulnerabilities CVE-2022-22970 and CVE-2022-22971. ASM has been updated to version 9.3 to match the version used by Spring.

[CMS-21645]



## CoreMedia Frontend Workspace

### Fixed a bug that in some cases SASS files could be included multiple times

A bug in the theme tool chain caused that the SCSS files of a brick were included multiple times in some cases. As the files were loaded in a way that these duplicates might also have been overriding other styling rules and this will no longer happen after fixing the bug this is considered a potentially breaking change. For that reason the fix is for now only enabled if the feature flag "enableDuplicateSassImportsFix" is set in the theme.config.json like this:

```
{
  ...
  "enableDuplicateSassImportsFix": true
}
```

[CMS-19627]

## CoreMedia Headless Server

### Headless won't Start with Deactivated P13N Extension

Due to a refactored component scan, two xml resources were not discovered anymore when the P13N extension is deactivated, which in turn caused a failed headless server start. This bugfix reinserts the missing resources.

[CMS-21843]

### Image Hash Calculation Leads to Client-Side Caching Problems

When the changing a crop (e.g. clipping), the hash of the image did not change and as a consequence the URL also did not change anymore. This led to the problem that browser caches did not invalidate their caches. This bugfix fixes the hash calculation.

[CMS-21800]

### MediaController now sets Content-Disposition Header

When downloading binaries via HeadlessServers media endpoint, the HTTP header `Content-Disposition` is now set, when using the media endpoints with a filename.

Additionally the manual was complemented by the section 'MediaType Content Negotiation', explaining options to configure individually document types to suppress a Spring Web MVC default behaviour on potentially unsafe content types.

[CMS-21669]

### Fixed Security Issues

Fixed Security Issues in `JsonPreviewController`.

[CMS-21340]

### Changed Return Type of Authors Field to `CMPerson`

Changed the return type of the authors field in `CMTeasable` to `CMPerson`. This is not breaking, since the previous type was `CMTeasable`, which is the superclass of `CMPerson`.

[CMS-21187]

## Miscellaneous

### Fixed Unified API Bug in Working Version References

Fixed a bug in the Unified API when retrieving references to other content items for the working version of some content. Before the fix, methods `Version#getReferences()`, `Version#getReferencesMap()`, and `Version#getReferences(CapPropertyDescriptor)` could return outdated data for the special so-called "working version" (compare `Version#isWorkingVersion`).

[CMS-21881]

### Third-Party Update: Jetty

Jetty has been updated to version 9.4.48.v20220622 to avoid reported security vulnerabilities of previous versions.

[CMS-21877]

### Third-Party Update: `org.json:json`

The Java third-party library `org.json:json` has been updated to version 20220320 to avoid reported security vulnerabilities of previous versions.

[CMS-21809]

### Third-Party Update: Netty

Netty has been updated to version 4.1.77.Final to avoid security vulnerabilities of previous versions.

[CMS-21624]

### Third-Party Update: ESAPI

The third-party library `org.owasp.esapi:esapi` has been updated to version 2.4.0.0 to avoid security vulnerabilities reported for previous versions.

[CMS-21553]

### Fix Catalog Repository Toolbar icon

Create product teaser icon on the catalog repository toolbar is displayed correctly

[CMS-21453]

## 4.19 Release 2201.2

The release contains:

- Breaking changes: 3
- Changes and improvements: 18
- Bugfixes: 67

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2022-04-25

### Breaking Changes

- CMS-20760: [Changed User Manager Search](#)
- CMS-21256: [New Search Adapter with ExtensionPoint](#)
- CMS-19390: [Blob Upload Robustness](#)

### Changes and Improvements

- CMS-21364: [The management-tools Container can now be Configured to Redirect the Tools Output](#)
- CMS-21111: [Third-Party Update: Apache Tika and Transitive Dependencies](#)
- CMS-21415: [Third-Party Update: Moment.js](#)
- CMS-21067: [Added Member Refresh Button](#)
- CMS-20636: [Translation/Synchronization: Support for Folder-Links in Dependent Content](#)
- CMS-19529: [Added Warning For Deleted Comments](#)
- CMS-21110: [Third-Party Update: MySQL](#)
- CMS-21352: [Adds npm Create Command](#)

### Bugfixes

- CMS-21360: [motd and tools-context Function Missing in management-tools Container](#)
- CMS-21105: [Fixed Bug that Required Exact User Names for Login](#)
- CMS-21065: [Fixed NullPointerException in FeedableImpl](#)

- CMS-20799: The License Check Now Considers IPs of all Network Interfaces
- CMS-20535: Limit Content Server Threads Checking Database Connections
- CMS-20175: Fixed Parsing of Workflow Timer Element
- CMS-21402: `coremedia.preview.js`: Added Note About False Positive SAST Report
- CMS-21346: Fixed Links to Categories with Apostrophes in IDs
- CMS-21255: Bug Fixed where Certain Domains Caused Error in Studio Login Screen
- CMS-21237: JavaScript Source-Maps for Some ExtJS Classes are no Longer Broken
- CMS-21359: HideService Ignores ActionColumn
- CMS-21282: Third-Party Update: Liquibase
- CMS-17814: Fixed Persona Checkout Issue
- CMS-15095: Fixed Upload Error Handling
- CMS-21369: Third-Party Update: Spring
- CMS-21175: Preserve Order in Maps Returned by Headless Server
- CMS-21071: Handling `DataFetcherResult` in `DataFetchers`
- CMS-21319: Third-Party Update: Jackson
- CMS-21153: Third-Party Updates: gRPC-Java 1.44.1 and Netty 4.1.74.Final
- CMS-21150: Icon Fonts Should now Always be Up-to-date after Upgrading the Studio Client

## 4.19.1 Breaking Changes

### CoreMedia Core

#### Changed User Manager Search

The user manager does not load all users or group on initialization anymore. Instead an empty state panel is shown and a load is only triggered when more than `n` characters are inputted into the search field. The amount of characters can be configured via the Spring property `studio.usermanager.minSearchCharacters` and defaults to '3'. The previous behavior can be restored by setting the property to '0'.

[CMS-20760]

## CoreMedia Headless Server

### New Search Adapter with ExtensionPoint

The former `SearchServiceAdapter` and corresponding classes were replaced by the new `SearchAdapter`, featuring a SPI architecture and offering `SearchServiceProvider` as an `ExtensionPoint`. The default implementation in `DefaultSearchServiceProvider` implements the same behaviour as the former `SearchServiceAdapter`.

Follow [Section “New Search Adapter with ExtensionPoint” \[534\]](#) for upgrade information.

*[CMS-21256]*

## Miscellaneous

### Blob Upload Robustness

Sometimes, CMCC client threads got stuck due to broken BLOB upload HTTP connections.

Follow [Section “Blob Upload Robustness” \[535\]](#) for upgrade information.

*[CMS-19390]*

## 4.19.2 Changes and Improvements

## CoreMedia Core

### The management-tools Container can now be Configured to Redirect the Tools Output

The management-tools container can now be configured to redirect the tools output either to a logfile per tool or to stdout. This can be configured using the `OUTPUT_DIRECT` environment variable set to:

```
console [default] log - output will be written to /core  
media/tools/var/log/<TOOL>.out null - output will be suppressed
```

*[CMS-21364]*

### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.3.0. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika. This includes an update of Apache POI to fix security issue CVE-2022-2633.

Updated dependencies:

- Apache Commons IO 2.11.0
- Apache Log4J API and SLF4J Adapter 2.17.2
- Apache PDFBox 2.0.25
- Apache POI 5.2.2
- Apache Tika 2.3.0
- Apache XMLBeans 5.0.3
- BouncyCastle 1.70
- Curves API 1.07
- Glassfish JAXB 2.3.6
- Rome 1.18.0
- SLF4J 1.7.36

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-21111]

## CoreMedia Studio Client

### Third-Party Update: Moment.js

Updated Moment.js version to 2.29.2 to fix reported security issue [GHSA-8hfg-j24r-96c4](#)

[CMS-21415]

### Added Member Refresh Button

The user manager contains additional toolbar button to refresh members. These refresh button invalidate the selection from the UAPI cache, allowing to detect changes from the connected user provider.

[CMS-21067]

### Translation/Synchronization: Support for Folder-Links in Dependent Content

Prior to this fix, documents linking to folders (sometimes used in Settings-documents, for example), could not translated/synchronized from within CoreMedia Studio. A false-positive warning on missing document properties was raised.

With this fix, folders are supported in translation and synchronization workflows **as dependent content only** . Thus, you may safely translate/synchronize contents linking to folders.

Note, that these folders will not be listed within the workflow's detail view, as folders are considered implicitly created during a translation/synchronization workflow within that view.

[CMS-20636]

## CoreMedia Studio Server

### Added Warning For Deleted Comments

When a notification is clicked that points to a comment that has been deleted, a warning message is shown now, that this comment is not available anymore.

[CMS-19529]

## CoreMedia Deployment

### Third-Party Update: MySQL

MySQL was updated to version 8.0.28 in `global/deployment/docker/mysql/Dockerfile`.

[CMS-21110]

## CoreMedia Documentation

### Adds npnm Create Command

Adds command for call of CoreMedia npnm Starter Kit to manual.

[CMS-21352]



## 4.19.3 Fixed Issues

### CoreMedia Core

#### motd and tools-context Function Missing in management-tools Container

Due to the switch from openJDK to Amazon Corretto as a base image, there is also a switch from Debian to a CentOS base image and therefore the locations of these convenience scripts changed. This change fixes the behaviour when running with the Amazon Corretto base image.

[CMS-21360]

#### Fixed Bug that Required Exact User Names for Login

Fixed the bug that users from a specially customized user provider could not log in with a different identifier than the user name. For releases before 2007.1, custom user providers could return users for other login identifiers, but more recent releases prevented this. The possibility has been restored now, so that these custom user providers continue to work.

[CMS-21105]

#### Fixed NullPointerException in FeedableImpl

When the type of a collection set as feedable element cannot be determined, the type now correctly defaults to String.

[CMS-21065]

#### The License Check Now Considers IPs of all Network Interfaces

For IP based licenses all network interfaces are considered now and the check passes if there is at least one IP that can be successfully validated against the IP range configured in the license.

[CMS-20799]

#### Limit Content Server Threads Checking Database Connections

Fixed the bug that the number of threads used by the *Content Server* for checking database connections wasn't limited. This could have led to instabilities in cases, where many calls to the database are blocked due to some problems with the database. By default, the number of such threads is now limited to twice the maximum number of database connections. The limit can be changed with configuration property `sql.pool.check-connection-max-threads` as described in the Deployment Manual in section "CoreMedia Properties Overview | Content Server Properties | Properties for the Connection to the Database".

[CMS-20535]

### Fixed Parsing of Workflow Timer Element

Timer elements in workflow definitions with relative values but without explicitly setting the property `relative` are now recognized correctly as 'relative' even for values > 999.

[CMS-20175]

## CoreMedia Content Application Engine

### coremedia.preview.js: Added Note About False Positive SAST Report

coremedia.preview.js might be reported by SAST tools like checkmarx. This is a false positive, the code injection is a central part of the preview integration and can only be performed by `postMessage` calls of authorized origins (see <https://documentation.coremedia.com/cmcc-11/artifacts/220/webhelp/studio-developer-en/content/SecurityCSP.html>).

[CMS-21402]

### Fixed Links to Categories with Apostrophes in IDs

When rendering a Teaser in a fragment that has pointed to a category in Salesforce with an apostrophe in the ID the Velocity interpreter in Salesforce was crashing during the link building. That was affecting the whole page. Such apostrophes in link parameters will be "escaped".

[CMS-21346]

## CoreMedia Studio Client

### Bug Fixed where Certain Domains Caused Error in Studio Login Screen

We fixed a bug where domain names with certain character in it (e.g. '.' or '/') caused an error in the Studio loading screen.

[CMS-21255]

### JavaScript Source-Maps for Some ExtJS Classes are no Longer Broken

A recent third-party dependency upgrade did break the source-maps for some of the ExtJS classes. This has been fixed now.

[CMS-21237]

## CoreMedia Studio Server

### HideService Ignores ActionColumn

The HideService ignores the ActionColumn as the component offers items only as Array instead of ItemCollection. Now the use of ActionColumn doesn't interfere with HideService.

[CMS-21359]

### Third-Party Update: Liquibase

Liquibase has been updated to version 4.8.0 to avoid security vulnerability CVE-2022-0839.

[CMS-21282]

### Fixed Persona Checkout Issue

Fixed an issue where personas are automatically checked out once they are opened in a tab.

[CMS-17814]

### Fixed Upload Error Handling

Error messages in toasts have been improved for failing uploads.

[CMS-15095]

## CoreMedia Workspace

### Third-Party Update: Spring

Spring Boot and Spring Framework have been updated to version 2.5.12 and 5.3.18, respectively. This includes Spring Framework fixes for security vulnerabilities CVE-2022-22965 (Spring4Shell) and CVE-2022-22950. As part of this change, the following related dependencies have been updated to match versions used by Spring Boot.

- Hibernate Validator 6.2.3.Final
- JBoss Logging 3.4.3.Final
- Jetty 9.4.45.v20220203
- Logback 1.2.11
- Maven Jar Plugin 3.2.2
- Micrometer 1.7.10
- Netty 4.1.75.Final
- Spring Boot 2.5.12

- Spring Data Bom 2021.0.10
- Spring Framework 5.3.18
- Spring Security 5.5.5
- Thymeleaf 3.0.15.RELEASE
- Tomcat 9.0.60

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-21369]

## CoreMedia Headless Server

### Preserve Order in Maps Returned by Headless Server

Previously the order of maps from structs were not preserved in the Headless Server. This was due to a bug in the implementation of the `MapToNestedMapsConverter` which is now fixed. This affects all the maps retrieved from structs and the results of the `MapOf*` scalar types.

[CMS-21175]

### Handling `DataFetcherResult` in `DataFetchers`

When the argument data of a `DataFetcher` (`environment.getSource()`) is wrapped in a `DataFetcherResult`, some `DataFetchers` did not resolve the value properly. This affected the `FilteringDataFetcher`, `ConvertingDataFetcher` and `CapStructPropertyDataFetcher`. The filter predicates `InProductionFilterPredicate` and `ValidityDateFilterPredicate` were not applied then, which led to unexpected visibility issues. This is fixed now.

[CMS-21071]

## Miscellaneous

### Third-Party Update: Jackson

Jackson has been updated to version 2.13.2 and Jackson Databind has been updated to 2.13.2.1 to avoid security vulnerability CVE-2020-36518.

[CMS-21319]

### Third-Party Updates: gRPC-Java 1.44.1 and Netty 4.1.74.Final

In order to benefit from fixes for known bugs and security issues, the gRPC-Java and Netty libraries have been updated to their latest versions:

- `io.grpc*:1.44.1`
- `io.netty*:4.1.74.Final`

[CMS-21153]

### Icon Fonts Should now Always be Up-to-date after Upgrading the Studio Client

We added a timestamp to the URL the icon font is loaded from so new versions will always be updated after upgrading the Studio Client.

[CMS-21150]

## 4.20 Release 2201.1

The release contains:

- Breaking changes: 23
- Changes and improvements: 74
- Bugfixes: 216

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2022-02-24

### Breaking Changes

- CMS-20366: [Reduced Overhead for Background Task CleanInTranslation](#)
- CMS-16439: [Fixing Possibly False-Negative In-Translation State](#)
- CMS-20410: [New method TransformImageService#getTransformationString](#)
- CMS-20501: [The preview CAE now runs with standalone mode disabled](#)
- CMS-20471: [Static Files of External Preview moved to /static folder](#)
- CMS-20431: [Freemarker function bp.truncateText always returns un-encoded text](#)
- CMS-21089: [Studio Client Unified API: Improved TypeScript Types](#)
- CMS-20963: [ToastManager has been changed to toastService](#)
- CMS-20732: [New Rule REST API](#)
- CMS-20652: [Strict Signature of Content Initializers](#)
- CMS-20580: [Third-Party Update: CKEditor 4 to 4.17.1](#)
- CMS-18728: [Studio Client Resource Bundle Changes](#)
- CMS-21144: [Fixed babel Configuration in studio-client](#)
- CMS-20989: [Master Version Texts Improved](#)
- CMS-20775: [Use new Maven Plugin to Handle CoreMedia Plugins](#)
- CMS-20575: [SFMCI Extensions Extracted from Blueprint](#)
- CMS-21079: [Fixed Directory Ownership in Container Images](#)
- CMS-19581: [Link Building for Augmented Pages \[commerce-led\]](#)
- CMS-20620: [Refactored Scalar FilterQueryArg to input type CustomFilterQuery](#)
- CMS-19110: [Added CacheControl support to Headless Server](#)

- CMS-20448: Removed Usage of PowerMock Java Test Library
- CMS-20367: New ExtensionPoint CustomFilterQuery
- CMS-20962: Third-Party Update: mysql-connector-java

## Changes and Improvements

- CMS-20425: Third-Party Update: Apache Solr
- CMS-20376: JMX metrics for state of folder index
- CMS-19587: Link Parameters are passed into Commerce-Led Link Generation
- CMS-21054: Plugins for studio-client can now be Downloaded Behind a Proxy
- CMS-20683: LibraryTree declares drop events
- CMS-20619: Deprecation: OpenCalais
- CMS-20229: Added Form Locale Switcher
- CMS-19547: Added "Properties" Dialog for Folders
- CMS-17536: Unified Uploads
- CMS-20546: Preloading of child categories in Studio is configurable
- CMS-20434: Third-Party Update: Checker Framework
- CMS-21075: Update to coremedia/java-application-base
- CMS-20991: The java-application-base image has been updated
- CMS-21016: Updated commerce adapters to latest versions
- CMS-20711: Add plugin extension point to add Spring Converters to the headless server
- CMS-20327: Automatic conversion of input types to Java objects for adapters
- CMS-19709: Support for viewtype specific queries
- CMS-20982: Documentation for preloadChildCategories
- CMS-20645: Third-Party Update: log4j-to-slf4j
- CMS-19391: Enhancement in logging for UAPI
- CMS-19053: Cache Metrics for Spring Boot Actuator Metrics Endpoint

## Bugfixes

- CMS-20984: Directory permissions and ownership corrected for management-tools image
- CMS-20899: Enhanced Robustness in Translation Workflows (Pre-Processing Stage)
- CMS-20768: cm cleanversions: Respect Versions Being in Translation

- CMS-20680: Start Translation Workflow Validation: May Report "No content to translate."
- CMS-20615: Third-Party Update : Netty
- CMS-20574: Improve Robustness and Error Messages for Translation Workflow Rollback
- CMS-20302: Updated documentation of extensions and their dependencies
- CMS-20137: Third-Party Update: NGINX
- CMS-19628: Third-Party Update: JDOM2
- CMS-19354: Fixed Content Feeder for slow content queries
- CMS-17243: "Force" Option for workflowconverter
- CMS-20776: Multi Catalog Preview
- CMS-20774: Fixed Cache Capacity Handling and Reporting of DataViewFactory
- CMS-20663: Fixed support for IE expressions in legacy template Page\_additional-Head.ftl
- CMS-20610: Updated blueprint to support projects with only corporate-cae as extension
- CMS-20447: Fixed resolution of local message resources in developer mode
- CMS-19648: Fixed logging of CustomizeAnnotationBeanPostProcessor
- CMS-19458: Solved a Bug Preventing CAE Background Tasks to Access Contents Filtered by Validity Dates
- CMS-19259: Prevent Errors when Formatting Links from Download File Names
- CMS-18963: Fixed Context Path of External Preview
- CMS-20730: BindReadOnlyPlugin and AbstractBindEditablePlugin are no longer deprecated
- CMS-20647: Fixed: Richtext Differencing in Studio May Provide Invalid Results
- CMS-20611: WorkflowTransition#defaultNextTask is deprecated
- CMS-20517: Image Editor: Broken crops after change fixed
- CMS-20446: StringListPropertyField is once again editable
- CMS-20382: UI Enhancement: Contents Draggable from Translation Workflows
- CMS-20377: Updated Documentation
- CMS-19788: LargeOperationHelper is more robust in non-blueprint-setups
- CMS-19448: Content Hub Import: Show error when import fails
- CMS-21053: Content-Hub: Images broken
- CMS-20777: Multi Catalog Search
- CMS-20744: Content Hub Import: Class Cast Exception if ContentModel Contains List



- CMS-20699: Fixed Taxonomy Root Node Resolving
- CMS-20650: Third-party : h2database Dependency Removed
- CMS-20450: Prevented Wrong Segment Format Validation Issues
- CMS-20380: ContentHub UrlBlobBuilder and Proxies
- CMS-20318: Fixed User Manager Delete Action
- CMS-20042: Better Login Check
- CMS-20010: Filter destroyed taxonomies when creating a comment
- CMS-20618: Third-Party Update : Logback
- CMS-20394: Timeout increased for TenantInitializerTest#tenantsRegistered
- CMS-21011: Improved Exception Handling of Exceptions during Validation Phase
- CMS-20600: Bugfix: Extending a GraphQL Enum causes a ClassCastException
- CMS-21148: Third-Party Update: commons-dbcp2
- CMS-21140: Third-Party Update: PostgreSQL JDBC Driver
- CMS-21009: Fixed a bug preventing apps to shutdown properly
- CMS-20961: Third-Party Update: Tomcat
- CMS-20686: Third-Party Update: Spring Boot 2.5.8
- CMS-20685: Updated Protocol Buffers for Java to 3.19.3
- CMS-20646: Third-Party Update : Jackson
- CMS-20627: Third-Party Update: ImageIO 3.8.2
- CMS-20592: Shared HCL/WCS Commerce Proxy enhancements
- CMS-20430: Root Category Preview
- CMS-20198: Images: Parameters in MIME types fixed
- CMS-19471: Fixed a bug preventing replacement of CAE richtext filter beans
- CMS-18634: Calista and Aurora UK site removed

## 4.20.1 Breaking Changes

### CoreMedia Core

#### Reduced Overhead for Background Task CleanInTranslation

You may experience the Workflow Server's Background Task `CleanInTranslation` to cause considerable load on your CPU. We have addressed this issue with several ad-

options. Some of them might be applied manually to existing systems already (for details see the end of this section). In addition to the updates below, `CleanInTranslation` got updated internally, providing an additional performance gain.

Follow [Section "Reduced Overhead for Background Task CleanInTranslation" \[536\]](#) for upgrade information.

[CMS-20366]

### Fixing Possibly False-Negative In-Translation State

The scheduled job `com.coremedia.translate.workflow.CleanInTranslation` is, roughly speaking, responsible for garbage collecting meanwhile invalid "in-translation" states of contents due to aborted or escalated translation workflows.

Follow [Section "Fixing Possibly False-Negative In-Translation State" \[537\]](#) for upgrade information.

[CMS-16439]

## CoreMedia Content Application Engine

### New method `TransformImageService#getTransformationString`

`com.coremedia.cap.transform.TransformImageService` has been extended by a new method: `getTransformationString(...)` The method was introduced to enable future use cases of this class. You can use it to compute the transformation string for a given content, property, variant name, breakpoint width and height, and extension. If you have implemented this interface in a custom class, please make sure to implement this method as well. It is not used by default in the Blueprint, so you can theoretically leave the implementation empty.

[CMS-20410]

### The preview CAE now runs with standalone mode disabled

The property `delivery.standalone` is now disabled by default in the preview CAE. As a result the preview CAE uses the same URLs as the live CAE and the default proxy configuration no longer requires `/blueprint/servlet` to be accessible when running behind a web proxy.

[CMS-20501]

### Static Files of External Preview moved to `/static` folder

In order to simplify proxy rules to split requests to static files and dynamic servlets, the static files of the external preview have been moved to a static folder and are now served at

[CMS-20471]

### Freemarker function `bp.truncateText` always returns un-encoded text

The Freemarker function `bp.truncateText()` lead to double encoded text, when used with markup, because the markup is first encoded by the function and secondly by Freemarker itself. Now, the encoding is left to do by Freemarker and the function returns un-encoded text for markup input as well as for strings. An implemented work-around with `"?no_esc"` is no longer needed and should be removed.

[CMS-20431]

## CoreMedia Studio Client

### Studio Client Unified API: Improved TypeScript Types

The part of Studio Client API that corresponds to CMCC's Unified API in Java (content, workflow, users) has been overhauled to provide more precise TypeScript types. Studio Client TypeScript code has been migrated from `ActionScript`, where it was not possible to describe callback function signatures and certain complex types (unions, intersections, generic types / type parameters). With TypeScript, now it is. To provide an improved formal description of the API, all vague types like `AnyFunction` or `any` have been replaced by more specific types, mostly already given in the textual documentation. This affects the packages `@coremedia/studio-client.client-core` and `@coremedia/studio-client.cap-rest-client`. Formally, changing the API to be more specific is a breaking change. But the required callback signatures, array element types and union types have already been documented as text, so if your code adheres these constraints, it is not going to break. Otherwise, only the TypeScript types of your code might have to be adapted, or the new, more precise types may even find hidden bugs in client code that need to be fixed.

[CMS-21089]

### ToastManager has been changed to toastService

The access to the *ToastManager* has been changed. It has been replaced by the global service *toastService*.

[CMS-20963]

### New Rule REST API

With the introduction of the dialog "Folder Properties" a new REST API has been introduced for managing group and content permission via rules. `Content.ts` and `Group.ts` support the method `getRules` now. It returns a remote bean which contains a list of rule remote beans. These ones are displayed either in the Folder Properties dialog or on the rule tab of a user managers group tab.

Follow [Section "New Rule REST API" \[540\]](#) for upgrade information.

[CMS-20732]

### Strict Signature of Content Initializers

The Content Initializer API has been stated more formally precise by specifying the initializer function signature as a TypeScript type `(content: Content) => void`. This concerns the following methods in `IEditorContext` (`@coremedia/studio-client.main.editor-components/sdk/IEditorContext`) and `IContentTypeContext` (`@coremedia/studio-client.cap-base-models/content/IContentTypeContext`):

Follow [Section “Strict Signature of Content Initializers” \[541\]](#) for upgrade information.

[CMS-20652]

### Third-Party Update: CKEditor 4 to 4.17.1

CKEditor 4 has been updated to 4.17.1. It is included in `@jangaroo/ckeditor4`, version 1.1.0.

Follow [Section “Third-Party Update: CKEditor 4 to 4.17.1” \[541\]](#) for upgrade information.

[CMS-20580]

### Studio Client Resource Bundle Changes

In the process of pulling features out of the editor-components module in order to make them available for the new Workflow app, many changes to resource bundles had to be made (these changes are in addition to the changes that happened due to the new content type localization mechanism). As the list is too extensive for a release note, we refer to [this link to a Coremedia Help Center article](#).

[CMS-18728]

### Fixed babel Configuration in studio-client

We fixed our internal babel configuration for the studio-client so code is no longer transpiled using the so called “loose” mode. This will cause that the resulting JavaScript code is now more precise regarding ES6 standards than before.

Follow [Section “Fixed babel Configuration in studio-client” \[542\]](#) for upgrade information.

[CMS-21144]

### Master Version Texts Improved

The description texts above the master version property field have been improved. Existing texts have been removed from the *Editor.properties* resource bundle. For this reason, the ticket is marked as breaking.

[CMS-20989]

## CoreMedia Workspace

### Use new Maven Plugin to Handle CoreMedia Plugins

CoreMedia plugins are now synchronized by means of the `coremedia-plugins-maven-plugin` which handles adding, removing and downloading the respective plugins. The Groovy scripts in the `<workspace>-app/pom.xml` files (e.g. `cae/spring-boot/cae-live-app/pom.xml`) have been replaced with the `coremedia-plugins-maven-plugin` which supports caching of downloaded artifacts and respects Maven's proxy settings.

*[CMS-20775]*

### SFMC Extensions Extracted from Blueprint

The extensions `sfmc`, `sfmc-p13n` and `sfmc-es-p13n` have been removed from Blueprint. The extensions for your version can be requested from the CoreMedia Support Team.

*[CMS-20575]*

## CoreMedia Deployment

### Fixed Directory Ownership in Container Images

The ownership of the `/coremedia` directory was root but should be coremedia.

*[CMS-21079]*

## CoreMedia Connector for Salesforce Commerce Cloud

### Link Building for Augmented Pages [commerce-led]

For Augmented Pages [CMExternalPage] the external page ID and the external URI path can be set. If configured both, both values will now be rendered into the Json/VTL include template of the fragment response. Make sure your link rendering template on the commerce side can handle both parameters.

*[CMS-19581]*

## CoreMedia Headless Server

### Refactored Scalar `FilterQueryArg` to input type `CustomFilterQuery`

The former scalar `FilterQueryArg`, which was used to define the custom filter queries in a search query, was refactored to a GraphQL input type of the same name. In contrast to complex scalars, input types offer full support of auto completion and documentation while formulating a GraphQL query.

Follow [Section "Refactored Scalar `FilterQueryArg` to input type `CustomFilterQuery`" \[544\]](#) for upgrade information.

*[CMS-20620]*

### Added `CacheControl` support to Headless Server

Headless Server now supports sending `CacheControl` headers for GET requests. Defaults can be configured using the `caas.cache-control.*` properties. The value of the the max-age directive is the minimum of the configured max-age value for the given request URL and the values of the `validFrom/validTo` properties of the requested contents. If no cache control configuration exists and the content does not contain a value for `validFrom/validTo` then no `CacheControl` header is sent. A negative max-age value indicates that no `CacheControl` header should be sent even in the presence of configured `validFrom/validTo` dates.

Follow [Section "Added `CacheControl` support to Headless Server" \[545\]](#) for upgrade information.

*[CMS-19110]*

## Miscellaneous

### Removed Usage of PowerMock Java Test Library

Previous releases used the PowerMock library in a small number of Java unit tests to mock static methods and object construction. These usages have now been replaced with new functionality of the Mockito testing library. PowerMock isn't used anymore.

Follow [Section "Removed Usage of PowerMock Java Test Library" \[545\]](#) for upgrade information.

*[CMS-20448]*

### New `ExtensionPoint CustomFilterQuery`

The new release offers the new `ExtensionPoint CustomFilterQuery` in order to provide custom filter queries by a plugin.

Follow [Section “New ExtensionPoint CustomFilterQuery” \[546\]](#) for upgrade information.

[CMS-20367]

### Third-Party Update: mysql-connector-java

The mysql-connector-java Java library has been updated in `shared/common/modules/shared/database-drivers/pom.xml` to version 8.0.28 to avoid security vulnerability CVE-2022-21363 of the previous version. Note, that the updated version of mysql-connector-java also dropped support for deprecated TLSv1 and TLSv1.1 connection protocols and requires using more-secure TLSv1.2 or TLSv1.3 protocols, which have to be supported by the used MySQL server.

Follow [Section “Third-Party Update: mysql-connector-java” \[546\]](#) for upgrade information.

[CMS-20962]

## 4.20.2 Changes and Improvements

### CoreMedia Core

#### Third-Party Update: Apache Solr

Apache Solr has been updated to version 8.11.1. This includes a fix to avoid the Log4J security vulnerability CVE-2021-44228 in Solr.

For detailed changes of Apache Solr have a look at <https://solr.apache.org/news.html> and [https://solr.apache.org/docs/8\\_11\\_1/changes/Changes.html](https://solr.apache.org/docs/8_11_1/changes/Changes.html).

For CMCC 11, a new coremedia/solr-base Docker image was released with tag 8.11.1, which is used in the Blueprint in `apps/solr/blueprint/solr-image/pom.xml`.

[CMS-20425]

#### JMX metrics for state of folder index

Two attributes were added to the `Server` management bean of the *Content Server*: `FolderIndexState` and `FolderIndexStateNumeric`. These attributes report the state of the folder index, which can be enabled using the `cm dbindex` tool and which speeds up server queries that are limited to subfolders of a given folder. Possible states are:

- `None` (0): Index has not yet been created.
- `Invalid` (1): Index is inconsistent.
- `Online` (2): Index is online.

- `Offline` [3]: Index is offline.
- `Unknown` [4]: Index state is unknown at the moment.

While `FolderIndexState` reports the descriptive string, `FolderIndexState` `Numeric` reports the numeric value.

[CMS-20376]

# CoreMedia Content Application Engine

## Link Parameters are passed into Commerce-Led Link Generation

Link parameters (e.g. "view") are passed into commerce-led link generation for commerce links. Template:

```
<#assign linkParams={ "name" : "peter", "city": "Hamburg" } >
<#assign testLink=cm.getLink(self, "niceView", linkParams) />
```

Sfcc Link in Fragment Response:

```
<!--VTL
$include.url('CM-Content', 'contentId', '14992-14992', 'name', 'peter', 'city', 'Hamburg', 'view', 'niceView')
VTL-->
```

[CMS-19587]

# CoreMedia Studio Client

## Plugins for studio-client can now be Downloaded Behind a Proxy

The "http\_proxy" and "https\_proxy" configuration of NPM (see <https://docs.npmjs.com/cli/v8/using-npm/config#https-proxy>) is now automatically taken into account when downloading plugins during studio-client build.

[CMS-21054]

## LibraryTree declares drop events

Since `LibraryTree` always adds a `ContentTreeViewDragDropPlugin`, it now declares the additional events fired by that plugins as its own events. This allows you to attach listeners for these events in a type-safe way. This affects the events `beforedrop` and `drop`. Without the fix, to add listeners for these event, you must use a type assertion ( `as any` ) or ignore the resulting type error ( `//@ts-expect-error` ).

[CMS-20683]



### Deprecation: OpenCalais

The OpenCalais integration for automatic tagging of content has been deprecated and will be removed with the next major release. For now, it has been disabled in the *TaxonomyStudioPlugin.ts*.

[CMS-20619]

### Added Form Locale Switcher

Document formulators now have a locale switcher located on the toolbar of the form. It allows to switch between the different localized versions of the document and shows the version synchronization state.

[CMS-20229]

### Added "Properties" Dialog for Folders

The context menu of the library tree and list view contains an additional entry "Properties" now. This entry is only visible for a folder selection and allows users to see details about the selected folder. If the user has supervise rights or is an administrative user, an additional tab is shown to modify the access permissions of the folder and configure supervise rights.

[CMS-19547]

### Unified Uploads

The global or site specific configuration file "Upload Settings" or "UploadSettings" is responsible for timeout configurations now. If not configured, the default timeout of five minutes is used. This value may be overwritten via updating the variable `_UploadSettings.DEFAULT_TIMEOUT_MS_`.

[CMS-17536]

## CoreMedia Studio Server

### Preloading of child categories in Studio is configurable

All child categories are fully preloaded in Studio by default to determine if they are virtual or not. Set the property `"studio.commerce.preload-child-categories"` to `"ALL_EXCEPT_TOP_LEVEL"` if the top level categories shouldn't be preloaded when loading the root category. It can be useful if there is a huge number of top level categories and you are sure about that none of them are virtual. In commerce systems without a physical root category it can't be any other way. Moreover, if you are sure that there is no virtual category at all in the tree you can use the value `"NONE"`. In case a child category is not preloaded its virtual state is always false.

[CMS-20546]

## CoreMedia Workspace

### Third-Party Update: Checker Framework

The Checker Framework has been updated to version 3.15.0.

[CMS-20434]

## CoreMedia Deployment

### Update to coremedia/java-application-base

The base image `coremedia/java-application-base` has been updated to `2.4.2`. This update includes the JVM update to `11.0.14`.

[CMS-21075]

### The java-application-base image has been updated

The base image of all Spring-Boot based services build by the blueprint has been updated to `coremedia/java-application-base:2.4.1-corretto-11`.

This update includes Amazon Corretto 11.0.14.

[CMS-20991]

## CoreMedia Commerce Hub

### Updated commerce adapters to latest versions

Updated the commerce adapters to the latest versions containing bug and security fixes:

- `commerce-adapter-mock` and Commerce Hub Base API: v2.0.6
- `commerce-adapter-hybris` : v2.0.6
- `commerce-adapter-sfcc` : v2.0.9
- `commerce-adapter-commercetools` : v2.0.5
- `commerce-adapter-wcs` : v2.0.7

Please see the release notes of the commerce adapters for more details.

[CMS-21016]

## CoreMedia Headless Server

### Add plugin extension point to add Spring Converters to the headless server

Add new plugin extension point to add one or more Spring `Converter` , to convert among other things the GraphQL input types which is needed when adding custom input types in plugins.

[CMS-20711]

### Automatic conversion of input types to Java objects for adapters

The `graphqlConversionService` is a standard Spring `org.springframework.core.convert.ConversionService` enhanced by all instances of `org.springframework.core.convert.converter.Converter` created as regular Spring Beans.

Using this `ConversionService` together with the Spring Expression Language, adapters in the `content-schema` now may use typed parameters instead of a composition of collection objects deserialized when using GraphQL input types. If a suitable `Converter` is available, the `ConversionService` will invoke the conversion transparently.

[CMS-20327]

### Support for viewtype specific queries

The Headless-Server now supports viewtype specific queries for `CMCollection` and `PageGridPlacement`. See documentation for details.

[CMS-19709]

## CoreMedia Documentation

### Documentation for preloadChildCategories

Added documentation for new configuration option `studio.commerce.preloadChildCategories` that was introduced with CMS-20546.

[CMS-20982]

## Miscellaneous

### Third-Party Update: log4j-to-slf4j

The Log4J library `log4j-to-slf4j` has been updated to version 2.17.1.

Note that recent security vulnerabilities for Log4J like CVE-2021-44228 ("Log4Shell"), CVE-2021-45046, CVE-2021-45105, and CVE-2021-44832 do not affect the usage of the Log4J adapter library `log4j-to-slf4j` that is used in CMCC to forward logging via SLF4J to Logback.

[CMS-20645]

### Enhancement in logging for UAPI

A display in the log is added whenever there is an attempt to connect workflow server stating "Trying to connect to workflow server." In theme importer , connection to workflow server is removed. If the customer wants to establish the connection to workflow server, they can just change the `_repository.workflow.connect_` to true in application properties of theme-importer.

[CMS-19391]

### Cache Metrics for Spring Boot Actuator Metrics Endpoint

Metrics for `com.coremedia.cache.Cache` usage are now available at the Spring Boot Actuator Metrics Endpoint. They are also still available via JMX as before. For details, see the *Operations Basics Manual* , section "Basics of Operation | Actuator Endpoints | Metrics Endpoint".

[CMS-19053]

## 4.20.3 Fixed Issues

## CoreMedia Core

### Directory permissions and ownership corrected for management-tools image

With this release, the management-tools image directory ownership for some directories will be fixed and set correctly to `coremedia:coremedia` . Affected directories are:

- `/coremedia`
- `/coremedia/tools`

In addition the following directories have been made volumes and are precreated so the tools can actually write to it, even when they are anonymous volumes.

- `coremedia/export`
- `coremedia/import`

[CMS-20984]

### Enhanced Robustness in Translation Workflows (Pre-Processing Stage)

When translation workflows create contents in derived target sites, they may stumble across issues while doing so. Previously, this may have left created targets checked out by the artificial user `translation-workflow-robot`.

The processing in this pre-processing stage of the translation (and synchronization) workflow has been enhanced, so that at best effort, contents should not be left checked out by the artificial user.

Corresponding exceptions are still forwarded and will escalate the translation workflow. They should not be ignored, but investigated, as the intermediate content state may now be corrupted.

[CMS-20899]

### cm cleanversions: Respect Versions Being in Translation

Prior to this fix, `cm cleanversions` may have removed versions of a master content which are referenced from an active translation or synchronization workflow. This may cause those workflows to escalate.

Now, `cm cleanversions` respects these so-called *Merge Versions*, which are those versions of a master content, which are *just about to be translated into some derived content*.

An update is strongly recommended, if you regularly use `cm cleanversions` with rather strict limits regarding `-keep-days` for example.

[CMS-20768]

### Start Translation Workflow Validation: May Report "No content to translate."

When trying to start a translation workflow in CoreMedia Studio, it may report *No content to translate*, although contents have been selected.

This may happen, when you added contents from different sites or when you added a content which is not within a site.

This behavior is fixed now, and you will instead see the expected violation issues, such as:

- *There is a content item that does not belong to a site.*
- *There are content items that belong to different sites.*

[CMS-20680]

### Third-Party Update : Netty

Netty has been updated to version 4.1.72.Final to avoid security vulnerabilities of the previous version.

[CMS-20615]

### Improve Robustness and Error Messages for Translation Workflow Rollback

Translation Workflows are now more robust against errors during Rollback and generate more helpful log messages.

[CMS-20574]

### Updated documentation of extensions and their dependencies

The section "Extensions and Their Dependencies" of the Blueprint manual has been updated. Before, the extension es-alx was listed in a wrong context.

[CMS-20302]

### Third-Party Update: NGINX

The NGINX docker image that is used with CMCC has been updated to 1.21.5-alpine to avoid security issues of the previous version.

[CMS-20137]

### Third-Party Update: JDOM2

JDOM2 has been updated to version 2.0.6.1 to avoid a reported security vulnerability of the previous version [CVE-2021-33813].

[CMS-19628]

### Fixed Content Feeder for slow content queries

Fixed a bug in the *Content Feeder* that caused delayed index updates and blocked JMX calls, when it executed a long-running content query for less important changes that should be processed in the background.

[CMS-19354]

### "Force" Option for workflowconverter

As an alternative to `-c`, you can now use `-f` in order to enforce conversion of process definitions. This is useful, if an LDAP group, which is used as role in a process definition, accidentally vanishes, reappears and gets a new CAP ID in the contentserver. The workflowconverter checks only for class incompatibilities but does not detect invalid group ids, and thus would not convert the workflow without the force option.

[CMS-17243]

# CoreMedia Content Application Engine

## Multi Catalog Preview

Commerce categories and products from a non-default catalog are now correctly opened in the preview using the correct catalog. This currently only affects our HCL Commerce integration out of the box, which supports multiple catalogs.

[CMS-20776]

## Fixed Cache Capacity Handling and Reporting of DataViewFactory

The DataViewFactory did not respect the configured cache capacities and fell back to the capacity of "java.lang.Object" for cache capacities whose keys did not represent the names of classes extending `com.coremedia.objectserv`  
`er.dataviews.AssumesIdentity` or `com.coremedia.objectserv`  
`er.dataviews.DataView`. This is the case for `com.coremedia.blue`  
`print.common.contentbeans.Page`, for example. The DataViewFactory no longer maintains its own mapping of cache capacities but uses the capacities which are configured at the Cache bean. The DataViewFactory records the used cache classes and reports the corresponding cache capacities via JMX using the `CacheSizes` attribute or the `getCacheSizes` operation.

The cache size definitions from dataviews XML files have lower precedence than those defined at the cache. So if your project contains a `cachesize` entry for class `X` with value `Y` and your application config contains an entry `cache.capacities.X=Z` then the cache capacity is `Z`.

[CMS-20774]

## Fixed support for IE expressions in legacy template Page.\_additionalHead.ftl

Fixed support for IE expressions in legacy template "Page.\_additionalHead.ftl" of "cae-base-lib" causing that no IE specific CSS/JS was loaded at all under certain conditions [e.g. if the "page" brick was not used].

[CMS-20663]

## Updated blueprint to support projects with only corporate-cae as extension

Added the module `ec-cae-lib` as runtime dependency to `corporate-cae` to solve CAE startup failure on projects that ran the blueprint with only the corporate cae extension enabled.

[CMS-20610]

## Fixed resolution of local message resources in developer mode

The loading of message resources from the local workspace [when `delivery.local-resources=true`] has been fixed. Like CSS and JS resources, they are now

loaded from the extra resources directories (see configuration of `spring.boot.tomcat.extraResources`).

[CMS-20447]

### Fixed logging of CustomizeAnnotationBeanPostProcessor

`CustomizeAnnotationBeanPostProcessor` sometimes erroneously logged that a bean customizer wasn't applied although it had been applied successfully.

[CMS-19648]

### Solved a Bug Preventing CAE Background Tasks to Access Contents Filtered by Validity Dates

Bean `BlueprintHandlersCaeBaseLibConfiguration#validUntilConsumer` no longer throws an exception if the current request is not available when consuming a validity change instant.

[CMS-19458]

### Prevent Errors when Formatting Links from Download File Names

The `'CapBlobHandler'` now returns a `UriComponentsBuilder` object instead of a `String` when when building download links. This prevents error-prone guessing if provided links are URL encoded or not in the link formatter. Such errors could occur when `useCMDDownloadFilename=true` and the file name of a download contains both, encoded and unencoded characters (e.g. a `+` and a space).

[CMS-19259]

### Fixed Context Path of External Preview

Resources for the external preview resources are loaded from a the "static" context path. The optional "servlet" segment is removed from path.

[CMS-18963]

## CoreMedia Studio Client

### BindReadOnlyPlugin and AbstractBindEditablePlugin are no longer deprecated

Actually the deprecation was a mistake, the given replacement has never made it into a release.

[CMS-20730]

### Fixed: Richtext Differencing in Studio May Provide Invalid Results

Due to an issue in data-processing of CKEditor 4, you may have experienced invalid change annotations in differencing view for CoreMedia Richtext properties. One observed effect: Sections were marked as deleted, which never were deleted.



A workaround got applied in data-processing, which ships with CoreMedia Studio.

If you rely on differencing results, an update is strongly recommended.

[CMS-20647]

### **WorkflowTransition#defaultNextTask is deprecated**

WorkflowTransition#defaultNextTask is deprecated and will be removed in the future. Please use the new config defaultNextStep instead.

[CMS-20611]

### **Image Editor: Broken crops after change fixed**

In some cases resizing crops were broken by a recent bug fix. Now all crops can be resized again.

[CMS-20517]

### **StringListPropertyField is once again editable**

As the title says items added to a StringListPropertyField can once again be edited.

[CMS-20446]

### **UI Enhancement: Contents Draggable from Translation Workflows**

Contents, displayed in translation workflows, can now be dragged and dropped to different areas of the Studio.

[CMS-20382]

### **Updated Documentation**

Removed documentation about deleted public API method *IEditorContext#getEnabled-SearchFilterIds* .

[CMS-20377]

### **LargeOperationHelper is more robust in non-blueprint-setups**

In non-Blueprint setups, copy/paste operations in the library could fail due to the LargeOperationHelper. This is fixed now.

[CMS-19788]

### **Content Hub Import: Show error when import fails**

When an import terminates with an exception the import will now be visualized as failed instead of successful.

[CMS-19448]

# CoreMedia Studio Server

## Content-Hub: Images broken

Due to a bug in JVM version 11.0.14.9 the content-hub images (pictures) could not be loaded. The container base image `coremedia/java-application-base` has been updated to JVM version 11.0.14.10.

[CMS-21053]

## Multi Catalog Search

Search within commerce products from a non-default catalog is now correctly executed. This currently only affects our HCL Commerce integration out of the box, which supports multiple catalogs. The fix requires HCL Commerce Adapter version 2.0.7 or higher.

[CMS-20777]

## Content Hub Import: Class Cast Exception if ContentModel Contains List

To import a ContentHubItem the ContentModel can specify which properties has to be set in the imported Content by setting ContentModel.contentProperties. If the ContentModel.contentProperties contains a list of ContentModelReference the references are resolved and imported as Content too. Unfortunately a for Lists other than ContentModelReference a ClassCastException has been thrown and the import failed. This behavior has been resolved and Lists other than ContentModelReference stay untouched and will be copied as Content property to the imported Content.

[CMS-20744]

## Fixed Taxonomy Root Node Resolving

The resolving of taxonomy root nodes is now implemented with a content query. This way, nodes are not skipped because of the SOLR search limit.

[CMS-20699]

## Third-party : h2database Dependency Removed

h2database dependency raised issue in security scans and since this dependency was used only for testing purpose, it has been removed.

[CMS-20650]

## Prevented Wrong Segment Format Validation Issues

The `SegmentFormatValidator` now makes use of `UrlPathFormattingHelper#tidyUrlPath` before the actual validation takes place. This ensures that the validation is based on the same segment formatting that is used in the deliveries and thus prevents false-positive validation issues.

[CMS-20450]

### ContentHub UriBlobBuilder and Proxies

The UriBlobBuilder (Studio-Server API for Content Hub) now respects a possibly set authenticator via `java.net.Authenticator#setDefault`. This, for example, provides the opportunity, to enable password authentication, if Studio server runs behind a proxy requiring authentication.

[CMS-20380]

### Fixed User Manager Delete Action

Admin users are no longer able to delete themselves when logged into the Studio.

[CMS-20318]

### Better Login Check

The login now checks the permissions of the given user more detaily.

[CMS-20042]

### Filter destroyed taxonomies when creating a comment

When creating a new comment, an exception occurred, if the linked taxonomy was deleted or destroyed. This is fixed now, the affected taxonomies are filtered out.

[CMS-20010]

## CoreMedia Workspace

### Third-Party Update : Logback

Logback has been updated to version 1.2.10 to avoid security vulnerabilities of the previous version.

[CMS-20618]

### Timeout increased for `TenantInitializerTest#tenantsRegistered`

The timeout for `TenantInitializerTest#tenantsRegistered` has been increased. Before, the test could fail under high load.

[CMS-20394]

## CoreMedia Headless Server

### Improved Exception Handling of Exceptions during Validation Phase

Exceptions during the validation phase of a GraphQL query resulted in a HTTP 500 error for a validation error, e.g. "maximum query depth exceeded". This was caused by an incorrect exception handling in the `PreparedDocumentProvider` of Caas

**Config** . The bugfix now handles all Exceptions, returning a HTTP 200 OK with the correct GraphQL error message.

[CMS-21011]

### Bugfix: Extending a GraphQL Enum causes a ClassCastException

Extending a GraphQL Enum caused a ClassCastException while server start. This bug was fixed.

[CMS-20600]

## Miscellaneous

### Third-Party Update: commons-dbcp2

Apache commons-dbcp2 has been updated to version 2.9.0 to avoid a security issue of the previous version.

[CMS-21148]

### Third-Party Update: PostgreSQL JDBC Driver

The PostgreSQL JDBC driver has been updated to version 42.3.3 to avoid security issues of the previous version [CVE-2022-21724, GHSA-673j-qm5f-xpv8].

[CMS-21140]

### Fixed a bug preventing apps to shutdown properly

Apps using the CoreMedia cache sometimes failed to destroy the cache instance leaving a thread named "coremedia-cache-CacheTimer" behind. This thread is now terminated when the spring application context shuts down.

[CMS-21009]

### Third-Party Update: Tomcat

Tomcat has been updated to version 9.0.58 to avoid security vulnerabilities of the previous version.

[CMS-20961]

### Third-Party Update: Spring Boot 2.5.8

In order to benefit from the improvements of the latest version of the Spring framework and to prepare for making use of the new features various 3rd party libraries have been updated.

- Caffeine 2.9.3
- GSON 2.8.9
- Hibernate 5.4.33

- HttpCore 4.4.15
- Micrometer 1.7.7
- Spring Boot 2.5.8
- Spring Data 2021.0.7
- Spring Framework 5.3.14
- Spring Security 5.5.4
- XmlUnit2 2.8.4

[CMS-20686]

### Updated Protocol Buffers for Java to 3.19.3

Updated `com.google.protobuf:protobuf-java` dependencies to version 3.19.3 to fix known security vulnerabilities.

[CMS-20685]

### Third-Party Update : Jackson

Jackson has been updated to version 2.12.6 to avoid security vulnerabilities of the previous version.

[CMS-20646]

### Third-Party Update: ImageIO 3.8.2

In order to benefit from the latest security improvements the third-party library ImageIO was updated to version 3.8.2

[CMS-20627]

### Shared HCL/WCS Commerce Proxy enhancements

The blueprint based `commerce-proxy` in the Docker deployment was enhanced to better support shared HCL/WCS Commerce setups where multiple CMS systems share a single commerce system. Product Asset URLs using the `catalogimage` path are now postprocessed in the `commerce proxy` and the hostname is now correctly set to the proxied CMS hostname instead of the default `cmsHost` that is configured in the commerce system.

[CMS-20592]

### Root Category Preview

We fixed the preview for the virtual root categories that do not have a corresponding shop URL. Instead of the previously rendered error, we now render its placements as a content page through the storefront. The layout is not accurate but it should give editorial users enough preview possibilities to create placement content that is used for inheritance to other subcategories.

[CMS-20430]

### Images: Parameters in MIME types fixed

During transformation a lookup by MIME type must be done to find MIME type specific implementations. The MIME type was compared with parameters. MIME types are syntactically allowed to have parameters [see RFC 2046] but for images no parameters are specified. Unfortunately if there were parameters no specific implementation could be found even if it was possible to transform the image.

Now the MIME type parameters are ignored for the lookup.

[CMS-20198]

### Fixed a bug preventing replacement of CAE richtext filter beans

`BlueprintRichtextFiltersConfiguration` does no longer expose richtext filter beans by their implementation types. It no longer references the richtext filter beans by type. It uses the filter bean names as qualifiers instead.

[CMS-19471]

### Calista and Aurora UK site removed

The English / United Kingdom ("en\_UK") demo content for Calista and Aurora Augmentation has been removed. The reason is that a default HCL Commerce system does not provide "en\_UK" out of the box. When using the UK sites in Studio, the preview always showed the "en\_US" storefront and pulled fragments from the "en\_US" site. Any content changes made in the "en\_UK" site were not reflected in the preview and this confused editorial users in a demo or testing scenario. This removal only affects demo content.

[CMS-18634]

# 4.21 Release 2110.3

The release contains:

- Breaking changes: 4
- Changes and improvements: 21
- Bugfixes: 85

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2022-04-11

## Breaking Changes

- CMS-21144: [Fixed babel Configuration in studio-client](#)
- CMS-20775: [Use new Maven Plugin to Handle CoreMedia Plugins](#)
- CMS-21079: [Fixed Directory Ownership in Container Images](#)
- CMS-19110: [Added CacheControl support to Headless Server](#)

## Changes and Improvements

- CMS-21111: [Third-Party Update: Apache Tika and Transitive Dependencies](#)
- CMS-19587: [Link Parameters are passed into Commerce-Led Link Generation](#)
- CMS-21054: [Plugins for studio-client can now be Downloaded Behind a Proxy](#)
- CMS-20636: [Translation/Synchronization: Support for Folder-Links in Dependent Content](#)
- CMS-21110: [Third-Party Update: MySQL](#)
- CMS-21075: [Update to coremedia/java-application-base](#)
- CMS-20982: [Documentation for preloadChildCategories](#)

## Bugfixes

- CMS-21105: [Fixed Bug that Required Exact User Names for Login](#)
- CMS-21065: [Fixed NullPointerException in FeedableImpl](#)
- CMS-20899: [Enhanced Robustness in Translation Workflows \(Pre-Processing Stage\)](#)
- CMS-20799: [The License Check Now Considers IPs of all Network Interfaces](#)

- CMS-20768: [cm cleanversions: Respect Versions Being in Translation](#)
- CMS-20766: [Recommended Change for CleanInTranslation](#)
- CMS-20680: [Start Translation Workflow Validation: May Report "No content to translate."](#)
- CMS-20593: [Performance Tuning: CleanInTranslation](#)
- CMS-20574: [Improve Robustness and Error Messages for Translation Workflow Rollback](#)
- CMS-20535: [Limit Content Server Threads Checking Database Connections](#)
- CMS-20175: [Fixed Parsing of Workflow Timer Element](#)
- CMS-20774: [Fixed Cache Capacity Handling and Reporting of DataViewFactory](#)
- CMS-19458: [Solved a Bug Preventing CAE Background Tasks to Access Contents Filtered by Validity Dates](#)
- CMS-19259: [Prevent Errors when Formatting Links from Download File Names](#)
- CMS-21569: [Conversion to TypeScript now supports Windows](#)
- CMS-21255: [Bug Fixed where Certain Domains Caused Error in Studio Login Screen](#)
- CMS-21237: [JavaScript Source-Maps for Some ExtJS Classes are no Longer Broken](#)
- CMS-20647: [Fixed: Richtext Differencing in Studio May Provide Invalid Results](#)
- CMS-20382: [UI Enhancement: Contents Draggable from Translation Workflows](#)
- CMS-19448: [Content Hub Import: Show error when import fails](#)
- CMS-21282: [Third-Party Update: Liquibase](#)
- CMS-21053: [Content-Hub: Images broken](#)
- CMS-20744: [Content Hub Import: Class Cast Exception if ContentModel Contains List](#)
- CMS-20650: [Third-party : h2database Dependency Removed](#)
- CMS-20450: [Prevented Wrong Segment Format Validation Issues](#)
- CMS-21369: [Third-Party Update: Spring](#)
- CMS-21071: [Handling DataFetcherResult in DataFetchers](#)
- CMS-21011: [Improved Exception Handling of Exceptions during Validation Phase](#)
- CMS-21319: [Third-Party Update: Jackson](#)
- CMS-21153: [Third-Party Updates: gRPC-Java 1.44.1 and Netty 4.1.74.Final](#)
- CMS-21150: [Icon Fonts Should now Always be Up-to-date after Upgrading the Studio Client](#)
- CMS-21148: [Third-Party Update: commons-dbcp2](#)
- CMS-21140: [Third-Party Update: PostgreSQL JDBC Driver](#)
- CMS-20627: [Third-Party Update: ImageIO 3.8.2](#)



## 4.21.1 Breaking Changes

### CoreMedia Studio Client

#### Fixed babel Configuration in studio-client

We fixed our internal babel configuration for the studio-client so code is no longer transpiled using the so called "loose" mode. This will cause that the resulting JavaScript code is now more precise regarding ES6 standards than before.

Follow [Section "Fixed babel Configuration in studio-client" \[548\]](#) for upgrade information.

*[CMS-21144]*

### CoreMedia Workspace

#### Use new Maven Plugin to Handle CoreMedia Plugins

CoreMedia plugins are now synchronized by means of the `coremedia-plugins-maven-plugin` which handles adding, removing and downloading the respective plugins. The Groovy scripts in the `<workspace>-app/pom.xml` files (e.g. `cae/spring-boot/cae-live-app/pom.xml`) have been replaced with the `coremedia-plugins-maven-plugin` which supports caching of downloaded artifacts and respects Maven's proxy settings.

*[CMS-20775]*

### CoreMedia Deployment

#### Fixed Directory Ownership in Container Images

The ownership of the `/coremedia` directory was root but should be coremedia.

*[CMS-21079]*

### CoreMedia Headless Server

#### Added CacheControl support to Headless Server

Headless Server now supports sending CacheControl headers for GET requests. Defaults can be configured using the `caas.cache-control.*` properties. The value of

the the max-age directive is the minimum of the configured max-age value for the given request URL and the values of the validFrom/validTo properties of the requested contents. If no cache control configuration exists and the content does not contain a value for validFrom/validTo then no CacheControl header is sent. A negative max-age value indicates that no CacheControl header should be sent even in the presence of configured validFrom/validTo dates.

Follow [Section “Added CacheControl support to Headless Server” \[549\]](#) for upgrade information.

*(CMS-19110)*

## 4.21.2 Changes and Improvements

### CoreMedia Core

#### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 2.3.0. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika. This includes an update of Apache POI to fix security issue CVE-2022-2633.

Updated dependencies:

- Apache Commons IO 2.11.0
- Apache Log4J API and SLF4J Adapter 2.17.2
- Apache PDFBox 2.0.25
- Apache POI 5.2.2
- Apache Tika 2.3.0
- Apache XMLBeans 5.0.3
- BouncyCastle 1.70
- Curves API 1.07
- Glassfish JAXB 2.3.6
- Rome 1.18.0
- SLF4J 1.7.36

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-2111]

## CoreMedia Content Application Engine

### Link Parameters are passed into Commerce-Led Link Generation

Link parameters (e.g. "view") are passed into commerce-led link generation for commerce links. Template:

```
<#assign linkParams={ "name" : "peter", "city": "Hamburg" } >
<#assign testLink=cm.getLink(self, "niceView", linkParams)/>
```

Sfcc Link in Fragment Response:

```
<!--VTL
$include.url('CM-Content','contentId','14992-14992','name','peter','city','Hamburg','view','niceView')
VTL-->
```

[CMS-19587]

## CoreMedia Studio Client

### Plugins for studio-client can now be Downloaded Behind a Proxy

The "http\_proxy" and "https\_proxy" configuration of NPM (see <https://docs.npmjs.com/cli/v8/using-npm/config#https-proxy>) is now automatically taken into account when downloading plugins during studio-client build.

[CMS-21054]

### Translation/Synchronization: Support for Folder-Links in Dependent Content

Prior to this fix, documents linking to folders (sometimes used in Settings-documents, for example), could not translated/synchronized from within CoreMedia Studio. A false-positive warning on missing document properties was raised.

With this fix, folders are supported in translation and synchronization workflows **as dependent content only**. Thus, you may safely translate/synchronize contents linking to folders.

Note, that these folders will not be listed within the workflow's detail view, as folders are considered implicitly created during a translation/synchronization workflow within that view.

[CMS-20636]

## CoreMedia Deployment

### Third-Party Update: MySQL

MySQL was updated to version 8.0.28 in `global/deployment/docker/mysql/Dockerfile`.

[CMS-21110]

### Update to coremedia/java-application-base

The base image `coremedia/java-application-base` has been updated to `2.4.2`. This update includes the JVM update to `11.0.14`.

[CMS-21075]

## CoreMedia Documentation

### Documentation for preloadChildCategories

Added documentation for new configuration option `studio.commerce.preloadChildCategories` that was introduced with CMS-20546.

[CMS-20982]

## 4.21.3 Fixed Issues

## CoreMedia Core

### Fixed Bug that Required Exact User Names for Login

Fixed the bug that users from a specially customized user provider could not log in with a different identifier than the user name. For releases before 2007.1, custom user providers could return users for other login identifiers, but more recent releases prevented this. The possibility has been restored now, so that these custom user providers continue to work.

[CMS-21105]

### Fixed NullPointerException in FeedableImpl

When the type of a collection set as feedable element cannot be determined, the type now correctly defaults to String.

[CMS-21065]

### Enhanced Robustness in Translation Workflows (Pre-Processing Stage)

When translation workflows create contents in derived target sites, they may stumble across issues while doing so. Previously, this may have left created targets checked out by the artificial user `translation-workflow-robot`.

The processing in this pre-processing stage of the translation (and synchronization) workflow has been enhanced, so that at best effort, contents should not be left checked out by the artificial user.

Corresponding exceptions are still forwarded and will escalate the translation workflow. They should not be ignored, but investigated, as the intermediate content state may now be corrupted.

[CMS-20899]

### The License Check Now Considers IPs of all Network Interfaces

For IP based licenses all network interfaces are considered now and the check passes if there is at least one IP that can be successfully validated against the IP range configured in the license.

[CMS-20799]

### cm cleanversions: Respect Versions Being in Translation

Prior to this fix, `cm cleanversions` may have removed versions of a master content which are referenced from an active translation or synchronization workflow. This may cause those workflows to escalate.

Now, `cm cleanversions` respects these so-called *Merge Versions*, which are those versions of a master content, which are *just about to be translated into some derived content*.

An update is strongly recommended, if you regularly use `cm cleanversions` with rather strict limits regarding `-keep-days` for example.

[CMS-20768]

### Recommended Change for CleanInTranslation

The scheduled task `CleanInTranslation` (package: `com.coremedia.translate.workflow`) got extended by a constructor having an additional parameter: `confidenceThreshold`.

`confidenceThreshold` defaults to 0 (zero), which simulates the old behavior using the former (still existing) constructor.

To change the threshold, you have to update your `BlueprintWorkflowServerAutoConfiguration`, like for example to recommended threshold of 1 (one):

```

@Bean
CleanInTranslation
cleanInTranslation(List<TranslationWorkflowDerivedContentsStrategy> strategies,
                    ContentRepository contentRepository,
                    SitesService sitesService) {
    // 1 is the recommended threshold
    return new CleanInTranslation(strategies, contentRepository, sitesService,
    1);
}

```

#### Why should I consider changing the threshold [and what is it for]?

Increasing the threshold decreases the likeliness of a false-negative "in-translation" state. Editors would see this as, for example, not being warned, when a given content is already in translation.

Along with `cm cleanversions` such false-negative state may even cause translation or synchronization workflows to escalate.

With 2201.1 a configuration option will be introduced for `CleanInTranslation`, which will then default to 1.

More technically, the threshold defines how often to run additional checks, if a master version is meanwhile referenced by a translation or synchronization workflow prior to consider it as *stalled* and remove the corresponding marker (known as *Merge Version*).

The lower you choose your scheduling interval for `CleanInTranslation` within `BlueprintWorkflowServerAutoConfiguration` (and thus, increasing the execution frequency), the higher you may want to choose the threshold. In general, 1 [one] should be sufficient. More than 10 is discouraged, as it will take longer until possibly false-positive "in translation" warnings appear for editors.

[CMS-20766]

#### Start Translation Workflow Validation: May Report "No content to translate."

When trying to start a translation workflow in CoreMedia Studio, it may report *No content to translate*, although contents have been selected.

This may happen, when you added contents from different sites or when you added a content which is not within a site.

This behavior is fixed now, and you will instead see the expected violation issues, such as:

- *There is a content item that does not belong to a site.*
- *There are content items that belong to different sites.*

[CMS-20680]

### Performance Tuning: CleanInTranslation

The scheduled workflow process `CleanInTranslation` has been optimized for performance.

As an additional adjustment, it is strongly recommended adding the following adjustments to your system:

**Database Index:** For the database of Content Management Server, add the following index:

```
create index nmergeversionsIndex on Resources (nMergeVersions_);
```

Using exactly this index definition ensures, that you will not collide with later versions of CMCC, which ship automatically having this index.

**Adjust Scheduling:** In `BlueprintWorkflowServerAutoConfiguration` reduce the frequency ( `fixedDelay` ) of `CleanInTranslation` . The default delay is 5 seconds. We recommend a delay of at least 5 minutes, instead. In later versions, we will default to 15 minutes even.

Scheduler to adjust:

```
@Scheduled(initialDelay = 10_000, fixedDelay = 5_000)
void doCleanInTranslation() {
    cleanInTranslation.run();
}
```

For example, change it to:

```
@Scheduled(
    initialDelay = 10,
    fixedDelay = 900,
    timeUnit = TimeUnit.SECONDS)
void doCleanInTranslation() {
    cleanInTranslation.run();
}
```

[CMS-20593]

### Improve Robustness and Error Messages for Translation Workflow Rollback

Translation Workflows are now more robust against errors during Rollback and generate more helpful log messages.

[CMS-20574]

### Limit Content Server Threads Checking Database Connections

Fixed the bug that the number of threads used by the *Content Server* for checking database connections wasn't limited. This could have led to instabilities in cases, where many calls to the database are blocked due to some problems with the database. By default, the number of such threads is now limited to twice the maximum number of database connections. The limit can be changed with configuration property `sql.pool.check-connection-max-threads` as described in the Deploy-

ment Manual in section "CoreMedia Properties Overview | Content Server Properties | Properties for the Connection to the Database".

[CMS-20535]

### Fixed Parsing of Workflow Timer Element

Timer elements in workflow definitions with relative values but without explicitly setting the property `relative` are now recognized correctly as 'relative' even for values > 999.

[CMS-20175]

## CoreMedia Content Application Engine

### Fixed Cache Capacity Handling and Reporting of DataViewFactory

The DataViewFactory did not respect the configured cache capacities and fell back to the capacity of "java.lang.Object" for cache capacities whose keys did not represent the names of classes extending `com.coremedia.objectserv`  
`er.dataviews.AssumesIdentity` or `com.coremedia.objectserv`  
`er.dataviews.DataView`. This is the case for `com.coremedia.blue`  
`print.common.contentbeans.Page`, for example. The DataViewFactory no longer maintains its own mapping of cache capacities but uses the capacities which are configured at the Cache bean. The DataViewFactory records the used cache classes and reports the corresponding cache capacities via JMX using the `CacheSizes` attribute or the `getCacheSizes` operation.

The cache size definitions from dataviews XML files have lower precedence than those defined at the cache. So if your project contains a `cachesize` entry for class `X` with value `Y` and your application config contains an entry `cache.capacities.X=Z` then the cache capacity is `Z`.

[CMS-20774]

### Solved a Bug Preventing CAE Background Tasks to Access Contents Filtered by Validity Dates

Bean `BlueprintHandlersCaeBaseLibConfiguration#valid`  
`idUntilConsumer` no longer throws an exception if the current request is not available when consuming a validity change instant.

[CMS-19458]

### Prevent Errors when Formatting Links from Download File Names

The `CapBlobHandler` now returns a `UriComponentsBuilder` object instead of a `String` when building download links. This prevents error-prone guessing if provided links are URL encoded or not in the link formatter. Such errors could occur



when `useCMDDownloadFilename=true` and the file name of a download contains both, encoded and unencoded characters (e.g. a `+` and a space).

[CMS-19259]

## CoreMedia Studio Client

### Conversion to TypeScript now supports Windows

A few Windows-specific issues in the workspace conversion process as described in the Upgrade Guide have been fixed, documentation as well as tooling. We still recommend using Linux or Mac for workspace conversion, but it works under Windows now, too.

[CMS-21569]

### Bug Fixed where Certain Domains Caused Error in Studio Login Screen

We fixed a bug where domain names with certain character in it (e.g. `'` or `/`) caused an error in the Studio loading screen.

[CMS-21255]

### JavaScript Source-Maps for Some ExtJS Classes are no Longer Broken

A recent third-party dependency upgrade did break the source-maps for some of the ExtJS classes. This has been fixed now.

[CMS-21237]

### Fixed: Richtext Differencing in Studio May Provide Invalid Results

Due to an issue in data-processing of CKEditor 4, you may have experienced invalid change annotations in differencing view for CoreMedia Richtext properties. One observed effect: Sections were marked as deleted, which never were deleted.

A workaround got applied in data-processing, which ships with CoreMedia Studio.

If you rely on differencing results, an update is strongly recommended.

[CMS-20647]

### UI Enhancement: Contents Draggable from Translation Workflows

Contents, displayed in translation workflows, can now be dragged and dropped to different areas of the Studio.

[CMS-20382]

### Content Hub Import: Show error when import fails

When an import terminates with an exception the import will now be visualized as failed instead of successful.

[CMS-19448]

## CoreMedia Studio Server

### Third-Party Update: Liquibase

Liquibase has been updated to version 4.8.0 to avoid security vulnerability CVE-2022-0839.

[CMS-21282]

### Content-Hub: Images broken

Due to a bug in JVM version 11.0.14.9 the content-hub images (pictures) could not be loaded. The container base image `coremedia/java-application-base` has been updated to JVM version 11.0.14.10.

[CMS-21053]

### Content Hub Import: Class Cast Exception if ContentModel Contains List

To import a ContentHubItem the ContentModel can specify which properties has to be set in the imported Content by setting ContentModel.contentProperties. If the ContentModel.contentProperties contains a list of ContentModelReference the references are resolved and imported as Content too. Unfortunately a for Lists other than ContentModelReference a ClassCastException has been thrown and the import failed. This behavior has been resolved and Lists other than ContentModelReference stay untouched and will be copied as Content property to the imported Content.

[CMS-20744]

### Third-party : h2database Dependency Removed

h2database dependency raised issue in security scans and since this dependency was used only for testing purpose, it has been removed.

[CMS-20650]

### Prevented Wrong Segment Format Validation Issues

The `SegmentFormatValidator` now makes use of `UrlPathFormattingHelper#tidyUrlPath` before the actual validation takes place. This ensures that the validation is based on the same segment formatting that is used in the deliveries and thus prevents false-positive validation issues.

[CMS-20450]

## CoreMedia Workspace

### Third-Party Update: Spring

Spring Boot and Spring Framework have been updated to version 2.5.12 and 5.3.18, respectively. This includes Spring Framework fixes for security vulnerabilities CVE-2022-22965 [Spring4Shell] and CVE-2022-22950. As part of this change, the following related dependencies have been updated to match versions used by Spring Boot.

- Hibernate Validator 6.2.3.Final
- JBoss Logging 3.4.3.Final
- Jetty 9.4.45.v20220203
- Logback 1.2.11
- Maven Jar Plugin 3.2.2
- Micrometer 1.7.10
- Netty 4.1.75.Final
- Spring Boot 2.5.12
- Spring Data Bom 2021.0.10
- Spring Framework 5.3.18
- Spring Security 5.5.5
- Thymeleaf 3.0.15.RELEASE
- Tomcat 9.0.60

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-21369]

## CoreMedia Headless Server

### Handling DataFetcherResult in DataFetchers

When the argument data of a DataFetcher (`environment#getSource()`) is wrapped in a DataFetcherResult, some DataFetchers did not resolve the value properly. This affected the FilteringDataFetcher, ConvertingDataFetcher and CapStructPropertyDataFetcher. The filter predicates InProductionFilterPredicate and ValidityDateFilterPredicate were not applied then, which led to unexpected visibility issues. This is fixed now.

[CMS-21071]

### Improved Exception Handling of Exceptions during Validation Phase

Exceptions during the validation phase of a GraphQL query resulted in a HTTP 500 error for a validation error, e.g. "maximum query depth exceeded". This was caused by an incorrect exception handling in the `PreparedDocumentProvider` of `CaasConfig`. The bugfix now handles all Exceptions, returning a HTTP 200 OK with the correct GraphQL error message.

[CMS-21011]

## Miscellaneous

### Third-Party Update: Jackson

Jackson has been updated to version 2.13.2 and Jackson Databind has been updated to 2.13.2.1 to avoid security vulnerability CVE-2020-36518.

[CMS-21319]

### Third-Party Updates: gRPC-Java 1.44.1 and Netty 4.1.74.Final

In order to benefit from fixes for known bugs and security issues, the gRPC-Java and Netty libraries have been updated to their latest versions:

- `io.grpc:*:1.44.1`
- `io.netty:*:4.1.74.Final`

[CMS-21153]

### Icon Fonts Should now Always be Up-to-date after Upgrading the Studio Client

We added a timestamp to the URL the icon font is loaded from so new versions will always be updated after upgrading the Studio Client.

[CMS-21150]

### Third-Party Update: commons-dbcp2

Apache commons-dbcp2 has been updated to version 2.9.0 to avoid a security issue of the previous version.

[CMS-21148]

### Third-Party Update: PostgreSQL JDBC Driver

The PostgreSQL JDBC driver has been updated to version 42.3.3 to avoid security issues of the previous version [CVE-2022-21724, GHSA-673j-qm5f-xpv8].

[CMS-21140]

### Third-Party Update: ImageIO 3.8.2

In order to benefit from the latest security improvements the third-party library ImageIO was updated to version 3.8.2

[CMS-20627]

## 4.22 Release 2110.2

The release contains:

- Breaking changes: 3
- Changes and improvements: 37
- Bugfixes: 108

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2022-02-09

### Breaking Changes

- CMS-20963: [ToastManager has been changed to toastService](#)
- CMS-20580: [Third-Party Update: CKEditor 4 to 4.17.1](#)
- CMS-20962: [Third-Party Update: mysql-connector-java](#)

### Changes and Improvements

- CMS-20425: [Third-Party Update: Apache Solr](#)
- CMS-20683: [LibraryTree declares drop events](#)
- CMS-20619: [Deprecation: OpenCalais](#)
- CMS-17536: [Unified Uploads](#)
- CMS-20546: [Preloading of child categories in Studio is configurable](#)
- CMS-16745: [New options for page grids](#)
- CMS-20991: [The java-application-base image has been updated](#)
- CMS-21016: [Updated commerce adapters to latest versions](#)
- CMS-20645: [Third-Party Update: log4j-to-slf4j](#)

### Bugfixes

- CMS-20984: [Directory permissions and ownership corrected for management-tools image](#)
- CMS-20615: [Third-Party Update : Netty](#)
- CMS-20302: [Updated documentation of extensions and their dependencies](#)

- CMS-20137: Third-Party Update: NGINX
- CMS-19628: Third-Party Update: JDOM2
- CMS-19354: Fixed Content Feeder for slow content queries
- CMS-17243: "Force" Option for workflowconverter
- CMS-20776: Multi Catalog Preview
- CMS-20663: Fixed support for IE expressions in legacy template Page\_additional-Head.ftl
- CMS-20610: Updated blueprint to support projects with only corporate-cae as extension
- CMS-20447: Fixed resolution of local message resources in developer mode
- CMS-20730: BindReadOnlyPlugin and AbstractBindEditablePlugin are no longer deprecated
- CMS-20611: WorkflowTransition#defaultNextTask is deprecated
- CMS-20595: Fixed Error in Site Selector
- CMS-20446: StringListPropertyField is once again editable
- CMS-20377: Updated Documentation
- CMS-19788: LargeOperationHelper is more robust in non-blueprint-setups
- CMS-20777: Multi Catalog Search
- CMS-20699: Fixed Taxonomy Root Node Resolving
- CMS-20380: ContentHub UrlBlobBuilder and Proxies
- CMS-20318: Fixed User Manager Delete Action
- CMS-20042: Better Login Check
- CMS-20010: Filter destroyed taxonomies when creating a comment
- CMS-19421: Image editor: Prevent crop width to be bigger than the original width.
- CMS-20618: Third-Party Update : Logback
- CMS-20394: Timeout increased for TenantInitializerTest#tenantsRegistered
- CMS-20600: Bugfix: Extending a GraphQL Enum causes a ClassCastException
- CMS-21009: Fixed a bug preventing apps to shutdown properly
- CMS-20961: Third-Party Update: Tomcat
- CMS-20686: Third-Party Update: Spring Boot 2.5.8
- CMS-20685: Updated Protocol Buffers for Java to 3.19.3
- CMS-20646: Third-Party Update : Jackson
- CMS-20592: Shared HCL/WCS Commerce Proxy enhancements

- [CMS-20198: Images: Parameters in MIME types fixed](#)

## 4.22.1 Breaking Changes

### CoreMedia Studio Client

#### ToastManager has been changed to toastService

The access to the *ToastManager* has been changed. It has been replaced by the global service *toastService*.

[CMS-20963]

#### Third-Party Update: CKEditor 4 to 4.17.1

CKEditor 4 has been updated to 4.17.1. It is included in [@jangaroo/ckeditor4](#), version 1.1.0.

Follow [Section "Third-Party Update: CKEditor 4 to 4.17.1" \[550\]](#) for upgrade information.

[CMS-20580]

### Miscellaneous

#### Third-Party Update: mysql-connector-java

The mysql-connector-java Java library has been updated in `shared/common/modules/shared/database-drivers/pom.xml` to version 8.0.28 to avoid security vulnerability CVE-2022-21363 of the previous version. Note, that the updated version of mysql-connector-java also dropped support for deprecated TLSv1 and TLSv1.1 connection protocols and requires using more-secure TLSv1.2 or TLSv1.3 protocols, which have to be supported by the used MySQL server.

Follow [Section "Third-Party Update: mysql-connector-java" \[551\]](#) for upgrade information.

[CMS-20962]



## 4.22.2 Changes and Improvements

### CoreMedia Core

#### Third-Party Update: Apache Solr

Apache Solr has been updated to version 8.11.1. This includes a fix to avoid the Log4J security vulnerability CVE-2021-44228 in Solr.

For detailed changes of Apache Solr have a look at <https://solr.apache.org/news.html> and [https://solr.apache.org/docs/8\\_11\\_1/changes/Changes.html](https://solr.apache.org/docs/8_11_1/changes/Changes.html).

For CMCC 11, a new coremedia/solr-base Docker image was released with tag 8.11.1, which is used in the Blueprint in `apps/solr/blueprint/solr-image/pom.xml`.

[CMS-20425]

### CoreMedia Studio Client

#### LibraryTree declares drop events

Since LibraryTree always adds a ContentTreeViewDragDropPlugin, it now declares the additional events fired by that plugins as its own events. This allows you to attach listeners for these events in a type-safe way. This affects the events `beforedrop` and `drop`. Without the fix, to add listeners for these event, you must use a type assertion (`as any`) or ignore the resulting type error (`//@ts-expect-error`).

[CMS-20683]

#### Deprecation: OpenCalais

The OpenCalais integration for automatic tagging of content has been deprecated and will be removed with the next major release. For now, it has been disabled in the *TaxonomyStudioPlugin.ts*.

[CMS-20619]

#### Unified Uploads

The global or site specific configuration file "Upload Settings" or "UploadSettings" is responsible for timeout configurations now. If not configured, the default timeout of five minutes is used. This value may be overwritten via updating the variable `_UploadSettings.DEFAULT_TIMEOUT_MS_`.

[CMS-17536]

## CoreMedia Studio Server

### Preloading of child categories in Studio is configurable

All child categories are fully preloaded in Studio by default to determine if they are virtual or not. Set the property `"studio.commerce.preload-child-categories"` to `"ALL_EXCEPT_TOP_LEVEL"` if the top level categories shouldn't be preloaded when loading the root category. It can be useful if there is a huge number of top level categories and you are sure about that none of them are virtual. In commerce systems without a physical root category it can't be any other way. Moreover, if you are sure that there is no virtual category at all in the tree you can use the value `"NONE"`. In case a child category is not preloaded its virtual state is always false.

[CMS-20546]

### New options for page grids

The page grid layout can now be configured to change the inheritance behavior.

- Use the `disableInheritance` flag to disable the inheritance.
- Use the `defaultInheritance` flag to change the default inheritance.

See the Blueprint developer Manual for details.

[CMS-16745]

## CoreMedia Deployment

### The java-application-base image has been updated

The base image of all Spring-Boot based services build by the blueprint has been updated to `coremedia/java-application-base:2.4.1-corretto-11`.

This update includes Amazon Corretto 11.0.14.

[CMS-20991]

## CoreMedia Commerce Hub

### Updated commerce adapters to latest versions

Updated the commerce adapters to the latest versions containing bug and security fixes:

- `commerce-adapter-mock` and Commerce Hub Base API: v2.0.6

- `commerce-adapter-hybris` : v2.0.6
- `commerce-adapter-sfcc` : v2.0.9
- `commerce-adapter-commercetools` : v2.0.5
- `commerce-adapter-wcs` : v2.0.7

Please see the release notes of the commerce adapters for more details.

[CMS-21016]

## Miscellaneous

### Third-Party Update: log4j-to-slf4j

The Log4J library `log4j-to-slf4j` has been updated to version 2.17.1.

Note that recent security vulnerabilities for Log4J like CVE-2021-44228 ("Log4Shell"), CVE-2021-45046, CVE-2021-45105, and CVE-2021-44832 do not affect the usage of the Log4J adapter library `log4j-to-slf4j` that is used in CMCC to forward logging via SLF4J to Logback.

[CMS-20645]

## 4.22.3 Fixed Issues

### CoreMedia Core

#### Directory permissions and ownership corrected for management-tools image

With this release, the management-tools image directory ownership for some directories will be fixed and set correctly to `coremedia:coremedia`. Affected directories are:

- `/coremedia`
- `/coremedia/tools`

In addition the following directories have been made volumes and are precreated so the tools can actually write to it, even when they are anonymous volumes.

- `coremedia/export`
- `coremedia/import`

[CMS-20984]

### Third-Party Update : Netty

Netty has been updated to version 4.1.72.Final to avoid security vulnerabilities of the previous version.

[CMS-20615]

### Updated documentation of extensions and their dependencies

The section "Extensions and Their Dependencies" of the Blueprint manual has been updated. Before, the extension es-alx was listed in a wrong context.

[CMS-20302]

### Third-Party Update: NGINX

The NGINX docker image that is used with CMCC has been updated to 1.21.5-alpine to avoid security issues of the previous version.

[CMS-20137]

### Third-Party Update: JDOM2

JDOM2 has been updated to version 2.0.6.1 to avoid a reported security vulnerability of the previous version [CVE-2021-33813].

[CMS-19628]

### Fixed Content Feeder for slow content queries

Fixed a bug in the *Content Feeder* that caused delayed index updates and blocked JMX calls, when it executed a long-running content query for less important changes that should be processed in the background.

[CMS-19354]

### "Force" Option for workflowconverter

As an alternative to `-c`, you can now use `-f` in order to enforce conversion of process definitions. This is useful, if an LDAP group, which is used as role in a process definition, accidentally vanishes, reappears and gets a new CAP ID in the contentserver. The workflowconverter checks only for class incompatibilities but does not detect invalid group ids, and thus would not convert the workflow without the force option.

[CMS-17243]

## CoreMedia Content Application Engine

### Multi Catalog Preview

Commerce categories and products from a non-default catalog are now correctly opened in the preview using the correct catalog. This currently only affects our HCL Commerce integration out of the box, which supports multiple catalogs.

[CMS-20776]

### Fixed support for IE expressions in legacy template `Page._additionalHead.ftl`

Fixed support for IE expressions in legacy template "Page.\_additionalHead.ftl" of "cae-base-lib" causing that no IE specific CSS/JS was loaded at all under certain conditions [e.g. if the "page" brick was not used].

[CMS-20663]

### Updated blueprint to support projects with only corporate-cae as extension

Added the module `ec-cae-lib` as runtime dependency to `corporate-cae` to solve CAE startup failure on projects that ran the blueprint with only the corporate cae extension enabled.

[CMS-20610]

### Fixed resolution of local message resources in developer mode

The loading of message resources from the local workspace [when `delivery.local-resources=true`] has been fixed. Like CSS and JS resources, they are now loaded from the extra resources directories [see configuration of `spring.boot.tomcat.extraResources`].

[CMS-20447]

## CoreMedia Studio Client

### `BindReadOnlyPlugin` and `AbstractBindEditablePlugin` are no longer deprecated

Actually the deprecation was a mistake, the given replacement has never made it into a release.

[CMS-20730]

### `WorkflowTransition#defaultNextTask` is deprecated

`WorkflowTransition#defaultNextTask` is deprecated and will be removed in the future. Please use the new config `defaultNextStep` instead.

[CMS-20611]

### Fixed Error in Site Selector

The old site selector threw an error for special characters. This has been fixed in the new version of the Site Selector.

[CMS-20595]

### `StringListPropertyField` is once again editable

As the title says items added to a `StringListPropertyField` can once again be edited.

[CMS-20446]

### Updated Documentation

Removed documentation about deleted public API method *EditorContext#getEnabled-SearchFilterIds* .

[CMS-20377]

### LargeOperationHelper is more robust in non-blueprint-setups

In non-Blueprint setups, copy/paste operations in the library could fail due to the LargeOperationHelper. This is fixed now.

[CMS-19788]

## CoreMedia Studio Server

### Multi Catalog Search

Search within commerce products from a non-default catalog is now correctly executed. This currently only affects our HCL Commerce integration out of the box, which supports multiple catalogs. The fix requires HCL Commerce Adapter version 2.0.7 or higher.

[CMS-20777]

### Fixed Taxonomy Root Node Resolving

The resolving of taxonomy root nodes is now implemented with a content query. This way, nodes are not skipped because of the SOLR search limit.

[CMS-20699]

### ContentHub UriBlobBuilder and Proxies

The UriBlobBuilder (Studio-Server API for Content Hub) now respects a possibly set authenticator via `java.net.Authenticator#setDefault`. This, for example, provides the opportunity, to enable password authentication, if Studio server runs behind a proxy requiring authentication.

[CMS-20380]

### Fixed User Manager Delete Action

Admin users are no longer able to delete themselves when logged into the Studio.

[CMS-20318]

### Better Login Check

The login now checks the permissions of the given user more detaily.

[CMS-20042]

### Filter destroyed taxonomies when creating a comment

When creating a new comment, an exception occurred, if the linked taxonomy was deleted or destroyed. This is fixed now, the affected taxonomies are filtered out.

[CMS-20010]

### Image editor: Prevent crop width to be bigger than the original width.

When the dimension of a picture were close to match a crop ratio it happened that the image editor calculated a crop width bigger than the original width when resizing the crop.

[CMS-19421]

## CoreMedia Workspace

### Third-Party Update : Logback

Logback has been updated to version 1.2.10 to avoid security vulnerabilities of the previous version.

[CMS-20618]

### Timeout increased for TenantInitializerTest#tenantsRegistered

The timeout for TenantInitializerTest#tenantsRegistered has been increased. Before, the test could fail under high load.

[CMS-20394]

## CoreMedia Headless Server

### Bugfix: Extending a GraphQL Enum causes a ClassCastException

Extending a GraphQL Enum caused a ClassCastException while server start. This bug was fixed.

[CMS-20600]

## Miscellaneous

### Fixed a bug preventing apps to shutdown properly

Apps using the CoreMedia cache sometimes failed to destroy the cache instance leaving a thread named "coremedia-cache-CacheTimer" behind. This thread is now terminated when the spring application context shuts down.

[CMS-21009]

### Third-Party Update: Tomcat

Tomcat has been updated to version 9.0.58 to avoid security vulnerabilities of the previous version.

[CMS-20961]

### Third-Party Update: Spring Boot 2.5.8

In order to benefit from the improvements of the latest version of the Spring framework and to prepare for making use of the new features various 3rd party libraries have been updated.

- Caffeine 2.9.3
- GSON 2.8.9
- Hibernate 5.4.33
- HttpCore 4.4.15
- Micrometer 1.7.7
- Spring Boot 2.5.8
- Spring Data 2021.0.7
- Spring Framework 5.3.14
- Spring Security 5.5.4
- XmlUnit2 2.8.4

[CMS-20686]

### Updated Protocol Buffers for Java to 3.19.3

Updated `com.google.protobuf:protobuf-java` dependencies to version 3.19.3 to fix known security vulnerabilities.

[CMS-20685]

### Third-Party Update : Jackson

Jackson has been updated to version 2.12.6 to avoid security vulnerabilities of the previous version.

[CMS-20646]

### Shared HCL/WCS Commerce Proxy enhancements

The blueprint based `commerce-proxy` in the Docker deployment was enhanced to better support shared HCL/WCS Commerce setups where multiple CMS systems share a single commerce system. Product Asset URLs using the `catalogimage` path are now postprocessed in the `commerce proxy` and the hostname is now correctly



set to the proxied CMS hostname instead of the default `cmsHost` that is configured in the commerce system.

[CMS-20592]

### Images: Parameters in MIME types fixed

During transformation a lookup by MIME type must be done to find MIME type specific implementations. The MIME type was compared with parameters. MIME types are syntactically allowed to have parameters (see RFC 2046) but for images no parameters are specified. Unfortunately if there were parameters no specific implementation could be found even if it was possible to transform the image.

Now the MIME type parameters are ignored for the lookup.

[CMS-20198]

## 4.23 Release 2110.1

### Highlights in this Release

- The Workflow App, which opens fullscreen in a new browser tab, and in the new Studio design.
- New, exciting visual changes, illustrations, and animations, for example a login screen that comes in different variations based on your individual location and preferences.
- The new Preferred Site Selector, which enables an improved and intuitive locale and name sorting.
- Redesigned Toasts and Notifications, that minimize distractions and help focusing on important messages.
- The Content Issue Search, to tidy up your content repository, for example by increasing issue visibility through custom dashboard widgets in Studio.
- CKEditor 5 based Rich Text editing is available as a developer preview.
- Studio client is implemented in TypeScript instead of ActionScript/MXML
- Introduction of new Commerce Hub/Adapter API v2
- Upgrade to Spring Boot 2.5



The release contains:

- Breaking changes: 162
- Changes and improvements: 271
- Bugfixes: 412

Only issues which contain release notes are shown in this document. So, the numbers in the list above can be higher than the number of issues presented in the subsections.

Release date: 2021-12-09

### Breaking Changes

- CMS-20068: [Removal: Deprecated Version of XliffExporter](#)
- CMS-20067: [Removal: Deprecated two-argument constructor of DefaultContentTo-TranslateltemTransformer](#)

- CMS-20066: Removal: Deprecated Interface Method ContentObject-SiteAspect.getIgnoreUpdates
- CMS-20039: Third-Party Update: Apache Tika and Transitive Dependencies
- CMS-20025: Removal: Deprecated BaseCommandLineClient#addOptionValidated Method
- CMS-20003: Removal: Deprecated Site#getManagerGroupName Method
- CMS-19998: Removal: Deprecated Options of Some Commandline Tools
- CMS-19996: Removal: Deprecated AbstractVersionSelector#addOption Method
- CMS-19993: Removal: Deprecated CommandLineParameters#addOptionValidated Method
- CMS-19992: Removal: Deprecated AbstractUAPIClient#enableOutVerbose Method
- CMS-19990: Removal: Deprecated MarkupUtil#isEmptyMarkup Method
- CMS-19768: New Feature: Workflow Final Actions and Archiving of Aborted Workflows
- CMS-19757: MongoDB Update to version 5.0.2
- CMS-19748: MediaStore Changes
- CMS-19606: Issue Search Filter Enabled By Default and Solr Schema Changes
- CMS-19599: Solr Base Image added
- CMS-19302: Changed Solr Terminology: Leader/Follower replaces Master/Slave
- CMS-19266: Third-Party Update: Apache Solr 8.8.2
- CMS-19112: Content Server and Workflow Server do not use corem.home anymore
- CMS-18965: Commerce Validator Issue Feeding
- CMS-17959: Removal: Deprecated Search and Feeder Configuration Properties
- CMS-16722: Improved CAE Feeder Database Usage
- CMS-7318: Removal: Deprecated Watchdog and Probedog infrastructure
- CMS-19187: Improved Translation Workflow Auto-Merge
- CMS-7021: Secure Blob Access
- CMS-2487: blueprint-doctypes-xmlrepo.xml: Available in Blueprint Sources
- CMS-20438: Removal: CAE Module cap-editing-pbe-taglib-component
- CMS-20436: Moved static CAE resources to '/static/'
- CMS-20342: Deprecation of Image Operations
- CMS-20323: Removal: CAE Code Minification
- CMS-20295: Removal: Elastic Social Personalization Extension
- CMS-20143: Deprecation: Property "ieExpression" of CMAbstractCode

- CMS-20048: Removal: Deprecated Sitemap URI Pattern /service/sitemap/{sitemapPath}
- CMS-20001: Removal: Deprecated UriComponentsHelper#addQueryParameters Method
- CMS-19984: Deprecation: ContentBlobHandlerBase
- CMS-19983: Removal: Deprecated ContentBlobHandlerBase#URIVARIABLE\_VERSION Field
- CMS-19958: Removal: BlueprintFreemarkerFacade functions
- CMS-19409: Removal: Deprecated Methods of CMProductList
- CMS-19163: Removal: CAE TokenResolver Class
- CMS-19104: CAE cache-control default behavior changed
- CMS-19089: Removal: LiveContext IBM/WCS implementation
- CMS-18333: Moved internal CAE controllers to management application context
- CMS-15880: Removal: BlueprintFreemarkerFacade functions
- CMS-20501: The preview CAE now runs with standalone mode disabled
- CMS-20471: Static Files of External Preview moved to /static folder
- CMS-19278: Optimize Rendering of embedded content in Richtext
- CMS-19247: Removal: Sitemaps generation for commerce sites
- CMS-18512: Removal: CMHasContextsImpl#getDataViewFactory() method
- CMS-13015: Richtext Pagination
- CMS-19921: Removal: Deprecated TabManager Classes/Interfaces
- CMS-19750: Removal: CommerceConnection#getVendorXXX Methods
- CMS-19698: Removal: Studio Packages Proxy App
- CMS-19669: For contents having a data-property, the links for those blobs are now rendered instead of simple content links
- CMS-19295: Removal: Legacy Search Facets API from Studio
- CMS-18728: Studio Client Resource Bundle Changes
- CMS-18571: Moved: Modules Moved to new Package
- CMS-18021: Deprecation: Configuration hideIssuesButton in Control Room
- CMS-20399: BooleanPropertyField Label Changes
- CMS-19108: ILinkListWrapper Manipulation Methods Are Now Asynchronous By Signature
- CMS-18849: Fixed Inconsistent Usage of ILinkListWrapper#acceptsLinks
- CMS-16977: Simplified Most of the Configuration to [ExtConfig]
- CMS-19563: Redesign of Jobs, Toasts and Notifications

- CMS-19094: Added Search Filters for Library Extension
- CMS-18931: Validators
- CMS-20303: CatalogAlias configuration for single catalog setups
- CMS-19920: Use stable IDs in CAE Fragment Requests, if Possible
- CMS-19418: Optimized Taxonomy Performance
- CMS-20575: SFMC Extensions Extracted from Blueprint
- CMS-19484: Banned Jakarta EE 9 Artifacts
- CMS-19116: Removal: Deprecated Properties
- CMS-18517: Updated to Spring 5.3.12 and Spring Boot 2.5.6
- CMS-17426: Removal: repository.workflow, repository.cplist, and usecaplist Properties
- CMS-20076: Switched to Sencha CMD 7.2.0.84
- CMS-19884: Mongo shell replacement mongosh
- CMS-16969: Renamed groupId com.coremedia.content-hub to com.coremedia.cms
- CMS-20138: Removal: IE11 Support in Themes and Bricks
- CMS-19955: Changed Package Manager in Frontend Workspace from yarn to pnpm
- CMS-19245: Third-Party Update: Node.js 16
- CMS-20063: Update to Latest Commerce Adapter Versions and Adaption of Configurations
- CMS-19923: Enable Readiness and Liveness Health Group Endpoints
- CMS-19249: Enables deployment of SFMC via docker-compose.
- CMS-19157: Removal: Deployment Archive with Chef Deployment
- CMS-18332: Container Image Build Process Changes
- CMS-16416: Traefik update in Docker Setup
- CMS-20308: Removal: Special Commerce Hub API for Preview URLs
- CMS-20130: Updated Multi Catalog Configuration
- CMS-20114: Removal: Deprecated Methods and Implementation
- CMS-19704: Removal: LC3 SearchService
- CMS-19695: Removal: Deprecated Developer Feature Candy Shop URLs
- CMS-19451: CurrentStoreContext and UserStoreContext API change
- CMS-19345: Removal: Obsolete Base Classes from LiveContext Test Modules
- CMS-19343: Removal: Hoverfly Extension Classes from LiveContext Test Modules
- CMS-19290: Removal: Deprecated Legacy Search API from LiveContext Extensions
- CMS-19221: Removal: Deprecations from LiveContext API

- CMS-19215: Removal: Deprecated Ic-extension Related LinkSchemes
- CMS-19214: Removal: com.coremedia.blueprint.base.livecontext.service Package
- CMS-19213: Removal: Deprecated Livecontext Classes and Methods
- CMS-19212: Removal: Deprecated Commerce Cache Invalidation Implementation
- CMS-19124: Removal: The ForVendor-Methods from the CommerceConnection
- CMS-17159: Simplified Registration of Custom Commerce Bean Types
- CMS-15229: Removal: CommerceConnection#getClone Method
- CMS-20151: GraphQL Java Libraries Updated to Version 17.3
- CMS-19836: Swagger Updated to Latest Version
- CMS-19796: Refactoring of Adapters
- CMS-19769: Filter Predicates May Now Access the DataFetchingEnvironment
- CMS-19685: Headless Server Deprecations for CoreMedia CMCC 11
- CMS-19641: New Feature: Plugin Extension Point FilterPredicate
- CMS-19428: AbstractDynamicListAdapter#getItems and SearchServiceAdapter#search now return DataFetcherResults
- CMS-19322: Removal: Deprecated Headless API for Commerce Entities
- CMS-19155: Removal of ViewBySiteDataFetchingEnvironment, Public API Changes of RemoteLinkWiringFactory and RemoteLinkDataFetcher
- CMS-19107: Addition: New RichText Type to Encapsulate the Different Representations of Richtext
- CMS-19076: Changed Configuration Properties
- CMS-19071: Ordered Content Schema
- CMS-18930: Site Query by Root Segment
- CMS-18315: Loading of Persisted Queries from Plugins
- CMS-17298: Content Types in Search are Now Validated
- CMS-20193: CMProductTeaser change in headless
- CMS-20085: Headless Commerce: Remove Autocompletion for Breadcrumb Parameter
- CMS-20014: New field keywordsList
- CMS-19941: JsonPreviewClient was refactored to Spring AutoConfiguration
- CMS-19885: Removal: ViewMapperConfig Class
- CMS-19452: Aligned Behavior of StructAdapter to Same as in SettingsAdapter
- CMS-19210: Default Java heap for Headless Server reset to 1 GB in Dockerfile
- CMS-19096: Headless Server Schema Changes

- CMS-19055: Support ContentBlobLinkComposer in RichText conversion
- CMS-20448: Removed Usage of PowerMock Java Test Library
- CMS-20332: The site-manager container image is now also build with google jib
- CMS-20120: Support for IBM DB2 has been removed
- CMS-20049: Removal: Deprecated Private API BlobHelper Class
- CMS-20047: Removal: Deprecated Editorial Comments cache properties editorial.comments.data.cache.\* Properties
- CMS-19999: Removal: Deprecated SettingsPageResourceBundleFactory Class
- CMS-19995: Removal: Deprecated ThemeImporterImpl#legacyExternalLinkToDocumentName Method
- CMS-19988: Removal: Deprecated UserProvider2 Interface
- CMS-19987: Removal: Deprecated Legacy RuleProviders Classes
- CMS-19986: Removal: Deprecated LdapMember#getOrganizationalUnit Method
- CMS-19962: Removal: management.health.contentRepository.enabled Property
- CMS-19911: Migrated Blueprint Content Hub Adapters to Plugins
- CMS-19867: Dropped supported deprecated databases, servers, and browsers
- CMS-19858: New API For Custom Workflow Extension Point
- CMS-19851: Removal: Corporate Extension Modules for Content Server
- CMS-19850: Removal: Unused class SiteToStoreContextCacheKeyWithTimeout
- CMS-19816: New API for Content Type Localization
- CMS-19396: Removal: Old live context settings struct
- CMS-19254: Removal: Deprecated API of TransformImageService
- CMS-19224: Logging Standardization
- CMS-19060: Removal: Optimizely Extension
- CMS-18934: New Blueprint Parent
- CMS-18795: Replaced deprecated org.junit.Assert.assertThat
- CMS-18659: Replaced Guava Function and co. with JDK counterparts
- CMS-18658: Removal: Deprecated Consumer, Function, Predicate Classes
- CMS-17548: Implementations of Comparable: Added Type Arguments
- CMS-17559: Consolidate Blueprint groupIds and versions

## Changes and Improvements

- CMS-20233: Deprecation: Obsolete classes in Workflow Java API

- CMS-19831: Added parametric HTTP endpoint to re-indexing CAE Feeder
- CMS-19758: Update of MongoDB Java Driver to version 4.3.0
- CMS-19502: Deprecation: ListDiff#elementEqual
- CMS-19378: Removal: Deprecation for SiteModel's siteIndicatorDepth in Multi-Site
- CMS-19202: Third-Party Update: Apache Tika and Transitive Dependencies
- CMS-18880: cm dump: Dump Text Blobs to Console
- CMS-18545: Added endpoint to disable/enable the replicator service
- CMS-17957: Changed Content Feeder Configuration Properties
- CMS-17851: Enhanced Encryption Algorithm For System Passwords
- CMS-16834: Removal: com.coremedia.elastic.core.test.Injection and core-test module
- CMS-16043: New Validator: PossiblyMissingMasterReferenceValidator for Multi-Site
- CMS-11136: validate-multisite Improvement
- CMS-19719: Sitemap: Reduce Downtime by Improving the Recreation Strategy.
- CMS-19195: Cache-Control Strategy can use Full Request Paths
- CMS-18954: Configure CORS Allowed Origins with Studio Host for Preview CAE
- CMS-17119: It is now possible to run the CAE without setting a context path
- CMS-16628: Fixed handling of cyclic navigation structures in CAE
- CMS-11194: Deprecated Header and Footer in CMChannel
- CMS-20293: Fixed Quick Create Dialog Positioning
- CMS-20162: User Manager Full Text Search
- CMS-19887: Site Selector - Sorting by Locale
- CMS-19657: Update to CKEditor 4.16.1
- CMS-19596: Added Support for Empty Quick Create Name
- CMS-19347: Added Support for Multiple External Previews
- CMS-19149: Restored "Open In Tab" Checkbox for Bulk Uploads
- CMS-19049: Studio Client Now Has Referrer-Policy "same-site"
- CMS-18939: Start Publication Workflow Button From ActionsToolbar No Longer Includes "My Edited Contents" By Default
- CMS-19942: Multi-Selection Support for Taxonomy Link Lists
- CMS-19492: iFrame Support for Content Hub Preview
- CMS-19486: Disabling Notifications
- CMS-19039: Multiple Filter Support for Product List Documents



- CMS-18985: Configure Studio Forms
- CMS-18855: Fixed Error thrown for Empty UserManager Properties
- CMS-18055: Filtering Issues Along with Categories in Studio Library
- CMS-16100: Added Thumbnail Support for Content Hub
- CMS-15893: Added metrics to reflect the number of CMS user sessions
- CMS-20026: Update: JUnit 5, Mockito, PowerMock
- CMS-19388: Prevented creation of empty JAR files
- CMS-19886: New Supported File Types for Theme Importer
- CMS-19736: Added Lazy Loading to Images
- CMS-18953: Allow Standalone JavaScripts Files in Themes
- CMS-20127: Enabled Health Checks for Commerce Adapters
- CMS-20125: The wait-for-\* scripts have been replaced with an environment variable controlled mechanism
- CMS-14653: Graceful Shutdown for all Spring Boot based Applications
- CMS-20183: Removal: Deprecated Properties
- CMS-19482: Commerce Hub Invalidation Events Added
- CMS-19420: Added Configurable Custom Attributes to Commerce Hub Commerce Beans
- CMS-19058: Catalog Alias Mapping Accepts Catalog ID
- CMS-20361: New ExtensionPoint PluginRestController
- CMS-20274: Add plugin extension point for custom scalar types
- CMS-19959: New Config Option: `caas.stax.maxAliasesForCollections`
- CMS-19926: New Extension Point for Plugins: WiringFactory
- CMS-19859: Add `fullyQualifiedUrl` field to CMDownload type
- CMS-19832: New Fields for Localized Content
- CMS-19792: New Plugin Extension Point: PluginSchemaAdapterFactory
- CMS-19643: GraphQL Library Updated
- CMS-19572: Adds New Endpoint to Support Filename and Extension in Media URL
- CMS-19480: Provide Generic Field for Retrieving in Linked Contents in Structs or Settings
- CMS-19468: Additional Headless Augmentation Calls without Commerce Connection
- CMS-19193: Query for Taxonomies by path
- CMS-18889: GraphQL Type PageGrid now Offers Name Property for Page Grid

- CMS-18878: MediaController Supports Conversion of Image Formats
- CMS-18844: New Fields Contain Lists of Content Objects Embedded in Richtexts
- CMS-18826: Custom Filter Queries
- CMS-18486: Loading of JSLT and REST Mappings From Plugins
- CMS-17909: Pagination for collections
- CMS-17512: New Plugin Extension Point: CopyToContextParameter
- CMS-20097: Configurable Log Pattern in Solr Base Image
- CMS-19985: Undeprecated CMLinkable#LOCAL\_SETTINGS
- CMS-19953: Tomcat TLD Scanning has been Disabled for all Applications Except CAE
- CMS-19900: Added Headless Rest Mappings for Augmentation Queries
- CMS-19802: Third-Party Update: Apache Solr and Transitive Dependencies
- CMS-19734: Update of Commerce Adapter Versions
- CMS-19524: Third-Party Update: Spring Boot and Related Dependencies
- CMS-19456: Added the possibility to change the commerce reference of an augmented content
- CMS-19408: Query for Documents Tagged by Specific Taxonomies
- CMS-19368: Explode Spring Boot Applications for Commerce Adapters at Startup
- CMS-19166: Reproducible Maven Builds
- CMS-19118: Reworked Commerce search API
- CMS-18876: Removed Classic Studio Components
- CMS-18735: Added EntityController and StudioRestController as ExtensionPoints for Studio-Server Plugins
- CMS-17506: Unify Link Building for Commerce-Led and Content-Led URLs
- CMS-16276: Customization of CMQueryListImpl and SettingsStructToSearchQueryConverter

## Bugfixes

- CMS-20313: Fixed Bug in LocalAndLinkedSettingsFinder
- CMS-19862: Update of coremedia-application-maven-plugin to 3.0.1
- CMS-19702: Third-Party Update: Spring-Security
- CMS-19642: Fixed CAE Feeder deadlock for JMX access
- CMS-19638: Third-Party Update: Apache PDFBox
- CMS-19636: CAE Feeder Performance Improvement

- CMS-19531: Fixed Output for cm encryptpasswordproperty
- CMS-19293: The 'property' column of the 'System' table has now the length 100
- CMS-19275: Verbosity of publishall
- CMS-19272: cm validate-multisite: Enhanced Robustness for Huge Multi-Site Setups
- CMS-19160: Blobs in structs get collected after version or content is destroyed
- CMS-19103: Fix import-user script if no user xml files found
- CMS-18680: Fixed Broken Order of Transformations
- CMS-18530: Fixed Solr hostname and port disclosure with malicious REST request
- CMS-18237: Improve Studio robustness when no WorkflowRepository is available
- CMS-18163: Fixed multi-threading issues in cleanrecyclebin tool
- CMS-16741: Fixed a bug in ObservedPropertyService leading to seemingly missing augmentations
- CMS-11312: Encrypt Initial Passwords
- CMS-9058: Fixed Content Feeder Handling of Destroyed Derived Content
- CMS-19671: Removed com.coremedia.elastic.social.springsecurity from component scan
- CMS-19600: Cache Classes Listing in DataViewFactory MBean fixed
- CMS-19527: Avoid Cache Deadlock for TransformedBlobKey
- CMS-19416: PageGrid Issue on Category and Product Pages Fixed
- CMS-19244: Fixed cache size handling of the DataViewFactory
- CMS-18988: CapBlobHandlerTest doesn't fail even if mediatransform.xml is populated
- CMS-18000: Sanitize user-data before logging it
- CMS-17644: Added hint for TransformedBlobCache usage
- CMS-20517: Image Editor: Broken crops after change fixed
- CMS-20345: Window Skin removal
- CMS-20245: Fix commerce library lazy loading
- CMS-20221: Fixed Error On Closing CMPicture Document
- CMS-19707: FolderChooserListViewBase#getAvailablePathsExpression is now null robust
- CMS-19611: Fixed Link List Suggestions for Site Specific Taxonomies
- CMS-19595: Added "defaultNameValueExpression" Parameter to QuickCreateMenuItem
- CMS-19545: Modification of Issue Filter UI selection
- CMS-19491: Added new config preferredSiteOnly for LinkListPropertyField

- CMS-19382: CategoryDocumentForm Expands when there is an Issue
- CMS-19267: Fixed Caching Issue in ViewTypeUtil
- CMS-19243: Cache Buster is once again only applied for GET requests
- CMS-19158: Fixed some timing problems in FolderChooserList
- CMS-19138: Possible Format-Loss For Richtext in Studio Fixed
- CMS-19133: Fixed type error when aborting a workflow
- CMS-19050: Studio Client Now Has X-Content-Type-Options "nosniff" Header
- CMS-18549: Fixed Timing Problem when Loading Site Specific Settings
- CMS-17407: Fixed error when trying to republish a withdrawn folder
- CMS-16881: Controlroom: Start translation workflow button in toolbar hidden when unusable
- CMS-16737: Fixed endless loop bug when opening the Studio library
- CMS-16061: Fixed console warnings about deprecated Ext.EventManager
- CMS-20021: Fixed Notification Menu Closing Bug
- CMS-19951: Mimetype of uploaded xpi files is now recognized as application/x-xpinstall
- CMS-19905: Improve 'mayPreview' of ConfigureDocumentTypePlugin
- CMS-19902: Fixed Caching Bug for View Types
- CMS-19733: Error for Editing History of Deleted User Fixed
- CMS-19715: Fixed Issue with Tab Expand Plugin
- CMS-19682: Fixed Error in Job Tooltip
- CMS-19589: Reject requests against Studio Server until the application is live and ready
- CMS-19582: Fixed initialization of Studio ObjectMapper
- CMS-19389: Third-Party Update: Liquibase
- CMS-19323: Fixed Tooltip of Notification Menu Button
- CMS-19280: Embedding a CMHTML document into the richtext editor no longer leads to errors
- CMS-19279: Theme Importer
- CMS-19119: Fix StackoverflowError in Studio Server when starting sync workflow
- CMS-19109: Fixed Referrer Invalidations
- CMS-19086: Enhanced Error Handling For Editorial Comments When Connected to Old Server
- CMS-18892: Studio Locale Cookie with SameSite Lax

- CMS-17791: Fixed VisibilityValidator bug that caused NoSuchPropertyDescriptorException
- CMS-16028: BlobUploadXmpDataInterceptor merging existing local settings now
- CMS-15263: Fixed Problem With Vanished Characters in Text Fields / Areas
- CMS-19773: RemoveLikesTask updates counter "author:number\_of\_likes"
- CMS-18425: SimpleLinkFormatter link building properties configurable and protocol default to HTTPS
- CMS-20015: Fix warning about spring.profiles at application startup
- CMS-18834: File logging can be disabled
- CMS-19939: Extend live context environment with fragment connector disabled
- CMS-19675: Fixed propagation of CatalogAlias to CommerceBeans' StoreContexts
- CMS-19453: Fixed delegation to built-in commerce services for custom commerce service implementations
- CMS-19324: Fixed a bug regarding `commerce.hub.cache` properties
- CMS-20408: Refactor PluginConfiguration
- CMS-20315: Fix rendering of richtext in settings
- CMS-20007: Fix behaviour of CMHTML data property
- CMS-19701: Fix various nullability related issues
- CMS-19690: [Headless] Exposing Missing SEO Properties
- CMS-19689: Fix broken handling of arrays in input values for headless persisted queries and rest endpoint
- CMS-19622: Ignore destroyed contents in LinkListAdapter
- CMS-19517: Fix ViewBySiteFilterDataFetcher not checking DataFetcherResults
- CMS-19277: Configuration of custom Solr fields
- CMS-19073: SchemaParser ignores type extensions for inherited types
- CMS-19046: Headless Server sends HTTP header Strict-Transport-Security by default
- CMS-19045: Slightly improved error message handling
- CMS-18874: Spring Boot Endpoint Documentation added
- CMS-20430: Root Category Preview
- CMS-20426: Fix Check for Personal Data Usage
- CMS-20244: Third-Party Update : Tomcat
- CMS-19843: Third-Party Update : Ant
- CMS-19841: Third-Party Update : Tomcat
- CMS-19840: Third-Party Update : Jetty

- CMS-19830: [ContentHub: ContentWriteInterceptors](#) are now correctly applied for subtypes
- CMS-19257: [Third-Party Update: Netty](#)
- CMS-19250: [Third-Party Update: Jetty](#)
- CMS-19077: [Update of MongoDB Java Driver](#)
- CMS-18890: [Fixed OSM Marker Initialization](#)
- CMS-18634: [Calista and Aurora UK site removed](#)

## 4.23.1 Breaking Changes

### CoreMedia Core

#### Removal: Deprecated Version of XliffExporter

The deprecated interface `com.coremedia.translate.xliff.exporter.XliffExporter` [cap-xliff] and its related interfaces and classes have been removed.

Follow [Section “Removal: Deprecated Version of XliffExporter” \[552\]](#) for upgrade information.

[CMS-20068]

#### Removal: Deprecated two-argument constructor of DefaultContentToTranslateItemTransformer

The deprecated two-argument constructor of `com.coremedia.translate.item.DefaultContentToTranslateItemTransformer` [cap-translate-item] has been removed:

Follow [Section “Removal: Deprecated two-argument constructor of DefaultContentToTranslateItemTransformer” \[554\]](#) for upgrade information.

[CMS-20067]

#### Removal: Deprecated Interface Method ContentObjectSiteAspect.getIgnoreUpdates

The deprecated interface method `ContentObjectSiteAspect.getIgnoreUpdates()` has been removed.

Follow [Section “Removal: Deprecated Interface Method ContentObjectSiteAspect.getIgnoreUpdates” \[554\]](#) for upgrade information.

[CMS-20066]

### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to new major version 2.1.0.

Follow [Section “Third-Party Update: Apache Tika and Transitive Dependencies” \[555\]](#) for upgrade information.

[CMS-20039]

### Removal: Deprecated BaseCommandLineClient#addOptionValidated Method

The deprecated method `com.coremedia.cmdline.BaseCommandLineClient#addOptionValidated` has been removed from the Java API. If you still use it in your project code, switch to `options.addOption(option)`, `options` and `option` referring to the arguments of `addOptionValidated`.

[CMS-20025]

### Removal: Deprecated Site#getManagerGroupName Method

The deprecated method `com.coremedia.cap.multisite.Site#getManagerGroupName` has been deleted. If you still use it in your project code, replace it with `getManagerGroupNames().stream().findFirst().orElse("")` -- mind, though, that it is better respecting all group names returned by `getManagerGroupNames()`.

[CMS-20003]

### Removal: Deprecated Options of Some Commandline Tools

The command line tools `publish`, `destroy` and `query` do not support the option `paths` any longer. Use `path` instead (also CSV capable, despite the singular name). `paths` has already been undocumented for a while, so you might not even be aware that it existed.

[CMS-19998]

### Removal: Deprecated AbstractVersionSelector#addOption Method

The deprecated method `com.coremedia.cmdline.management.AbstractVersionSelector#addOption` has been removed from the Java API. If you still use it in your project code, switch to `options.addOption(option)`, `options` and `option` referring to the arguments of `addOption`.

[CMS-19996]

### Removal: Deprecated CommandLineParameters#addOptionValidated Method

The deprecated method `com.coremedia.cmdline.CommandLineParameters#addOptionValidated` has been removed from the Java API. If you still use it in your project code, switch to `options.addOption(option)`, `options` and `option` referring to the first two arguments of `addOptionValidated`.

[CMS-19993]

### Removal: Deprecated AbstractUAPIClient#enableOutVerbose Method

The deprecated method `com.coremedia.cmdline.AbstractUAPIClient#enableOutVerbose` has been deleted from the Java API. If you are still using it in your project code, switch to `com.coremedia.cmdline.BaseCommandLineClient#enableVerboseLogging`.

[CMS-19992]

### Removal: Deprecated MarkupUtil#isEmptyMarkup Method

`com.coremedia.xml.MarkupUtil#isEmptyMarkup` has been deleted. Use `#isEmptyRichtext` (for CoreMedia Richtext only) or `#hasText` (for markup of arbitrary grammars) instead.

[CMS-19990]

### New Feature: Workflow Final Actions and Archiving of Aborted Workflows

Workflows can now declare custom final actions, which are executed after a workflow process has completed successfully or was aborted. To this end, a workflow definition can contain `<FinalAction>` elements with custom classes that implement the interface `com.coremedia.cap.workflow.plugin.FinalAction`.

Follow [Section "New Feature: Workflow Final Actions and Archiving of Aborted Workflows" \[558\]](#) for upgrade information.

[CMS-19768]

### MongoDB Update to version 5.0.2

MongoDB has been updated to version 5.0.2 for the Docker Deployment. Note that an upgrade is only possible from a 4.4.4 version. An upgrade from an earlier version needs to be done successively. Please refer to the official MongoDB documentation on how to upgrade: <https://docs.mongodb.com/v5.0/release-notes/5.0-upgrade-standalone/>

[CMS-19757]

### MediaStore Changes

#### Database

Follow [Section "MediaStore Changes" \[559\]](#) for upgrade information.

[CMS-19748]

### Issue Search Filter Enabled By Default and Solr Schema Changes

The Solr index schema for *Content Feeder* and *CAE Feeder*, and the configuration of the *Content Feeder* was changed to enable the search filter for validation issues by default, and to also support Solr nested documents in the *CAE Feeder*.

Follow [Section "Issue Search Filter Enabled By Default and Solr Schema Changes" \[559\]](#) for upgrade information.



[CMS-19606]

### Solr Base Image added

A new base image has been added for the Solr search engine. The image can be found on DockerHub at [coremedia/solr-base](#). The image adds the scripting layer to setup a leader / follower setup in the standalone Solr mode.

Follow [Section “Solr Base Image added” \[560\]](#) for upgrade information.

[CMS-19599]

### Changed Solr Terminology: Leader/Follower replaces Master/Slave

Apache Solr has replaced the names of their replication setup from Master/Slave to Leader/Follower. These names have now been changed in Solr configuration files ( `solrconfig.xml` ) and CoreMedia documentation. For details of the change in Solr, see [https://solr.apache.org/guide/8\\_8/solr-upgrade-notes.html#solr-8-7](https://solr.apache.org/guide/8_8/solr-upgrade-notes.html#solr-8-7).

Follow [Section “Changed Solr Terminology: Leader/Follower replaces Master/Slave” \[560\]](#) for upgrade information.

[CMS-19302]

### Third-Party Update: Apache Solr 8.8.2

Apache Solr has been updated to version 8.8.2, which fixes some security vulnerabilities of the previous version.

Follow [Section “Third-Party Update: Apache Solr 8.8.2” \[561\]](#) for upgrade information.

[CMS-19266]

### Content Server and Workflow Server do not use `corem.home` anymore

The `corem.home` directory and system property are no longer used by the Content Server and Workflow Server.

Follow [Section “Content Server and Workflow Server do not use `corem.home` anymore” \[562\]](#) for upgrade information.

[CMS-19112]

### Commerce Validator Issue Feeding

Commerce related validator issues defined in `LcStudioValidatorsConfiguration` are now also fed into the Solr index "studio" by default. Therefore the *Content Feeder* now also uses *Commerce Hub* connections to configured *Commerce Adapters*. The legacy (and deprecated) LiveContext Blueprint extension for IBM/HCL B2B is not supported.

Follow [Section “Commerce Validator Issue Feeding” \[563\]](#) for upgrade information.

[CMS-18965]

### Removal: Deprecated Search and Feeder Configuration Properties

Several deprecated configuration properties have been removed for the *Content Feeder*, the *CAE Feeder* and for applications that connect to Solr for searching.

Follow [Section "Removal: Deprecated Search and Feeder Configuration Properties" \[564\]](#) for upgrade information.

[CMS-17959]

### Improved CAE Feeder Database Usage

The *CAE Feeder* was improved to store data more efficiently in the database, which reduces database disk space requirements and improves throughput. To this end, the data type of some database columns was changed from a string type to a binary type. This change also applies to custom applications based on the *Proactive Engine*.

Follow [Section "Improved CAE Feeder Database Usage" \[565\]](#) for upgrade information.

[CMS-16722]

### Removal: Deprecated Watchdog and Probedog infrastructure

The Watchdog and Probedog components have been removed. To implement the same functionality you can use Spring Boot actuators together with an orchestration solution. In addition to the standard actuators of Spring Boot, CoreMedia adds a set of custom endpoints to represent the health state of the applications. You find the documentation in the operations basics handbook.

Follow [Section "Removal: Deprecated Watchdog and Probedog infrastructure" \[565\]](#) for upgrade information.

[CMS-7318]

### Improved Translation Workflow Auto-Merge

The "Auto-Merge" feature used in translation workflows to copy property values from master to derived content items has been improved. In previous releases, it completely ignored translatable properties and never changed such properties in the derived content. This has been changed because it could lead to unexpected results, especially for properties nested in structs. Furthermore, the merge algorithm was improved for link annotations.

Follow [Section "Improved Translation Workflow Auto-Merge" \[566\]](#) for upgrade information.

[CMS-19187]

### Secure Blob Access

Blob access by clients is protected against URL guessing now. If you want to use components from earlier CMCC releases with new content servers, you must set the application property `cap.server.blob-md5-permission-check` to `false` for the new content servers.

[CMS-7021]

### blueprint-doctypes-xmlrepo.xml: Available in Blueprint Sources

The `blueprint-doctypes-xmlrepo.xml` located in so-called Blueprint-Base, unavailable to most customers, now has a copy in the Blueprint module `test-util`.

Follow [Section "blueprint-doctypes-xmlrepo.xml: Available in Blueprint Sources"](#) [567] for upgrade information.

[CMS-2487]

# CoreMedia Content Application Engine

### Removal: CAE Module `cap-editing-pbe-taglib-component`

The unused and deprecated module `cap-editing-pbe-taglib-component` has been removed. It is recommended to use the tags `cm:previewScripts` and `cm:metadata` of the CAE tag library in JSP templates instead of the removed tags `pbe:head` and `pbe:contextinfo`, respectively.

[CMS-20438]

### Moved static CAE resources to `/static/`

Build-in static CAE resources were moved to `/static/`. Although this it is not a hard requirement that static resources be served from the `/static/` path we do recommend to serve static resources using this prefix because it supports a clean separation of static resources from servlet mappings when developing rewrite rules.

[CMS-20436]

### Deprecation of Image Operations

The image operation `gamma` and the parameters of the `unsharpMask` are now deprecated. Both operations couldn't be controlled by editors in the Studio directly for single images. They also haven't been used in the Blueprint by default.

Follow [Section "Deprecation of Image Operations"](#) [568] for upgrade information.

[CMS-20342]

### Removal: CAE Code Minification

The deprecated and unused interface `com.coremedia.blueprint.cae.view.processing.Minifier` has been removed. It is recommended to minify and optimize CSS and JavaScript files during build steps in the frontend workspace. This will be done by the blueprint default webpack configuration. Therefore the property `disableServerSideCompression` has been removed from Theme Configuration and build scripts too.

[CMS-20323]

### Removal: Elastic Social Personalization Extension

The Elastic Social Personalization extension was removed without replacement.

[CMS-20295]

### Deprecation: Property "ieExpression" of CMAbstractCode

The doctype property `ieExpression` of `CMAbstractCode` has been deprecated due to removal of Internet Explorer support. All usages will be removed soon.

[CMS-20143]

### Removal: Deprecated Sitemap URI Pattern `/service/sitemap/{sitemapPath}`

The deprecated Sitemap URI Pattern `/service/sitemap/{sitemapPath}` and the related handler have been removed from `com.coremedia.blueprint.cae.sitemap.SitemapHandler` [ `cae-base-lib` ]. The same applies to private members `ACTION_NAME` and `SITEMAP_PATH` which are now obsolete.

Follow [Section "Removal: Deprecated Sitemap URI Pattern `/service/sitemap/{sitemapPath}`" \[569\]](#) for upgrade information.

[CMS-20048]

### Removal: Deprecated `UriComponentsHelper#addQueryParameters` Method

The deprecated method `com.coremedia.objectserver.web.links.UriComponentsHelper#addQueryParameters` has been deleted. If you still use it in your project code, switch to `UriComponentsBuilder#queryParams (MultiValueMap)`

[CMS-20001]

### Deprecation: `ContentBlobHandlerBase`

`com.coremedia.objectserver.web.ContentBlobHandlerBase` has been deprecated. No handlers use it any longer. If you still need it in your project code, please contact the CoreMedia support.

[CMS-19984]

### Removal: Deprecated `ContentBlobHandlerBase#URIVARIABLE_VERSION` Field

The deprecated field `com.coremedia.objectserver.web.ContentBlobHandlerBase#URIVARIABLE_VERSION` has been deleted from the Java API. The result map of `ContentBlobHandlerBase#buildBlobLink` contains no entry for this key any longer. If you still use it in your project, migrate to `ContentBlobHandlerBase#URIVARIABLE_ETAG`.

[CMS-19983]

### Removal: BlueprintFreemarkerFacade functions

Both deprecated Freemarker functions `getContainerMetadata()` and `getDisplaySize()` have been removed. Please use `Container#getContainerMetadata()` and `getDisplayFileSize()` instead.

[CMS-19958]

### Removal: Deprecated Methods of CMProductList

The deprecated Methods from the CMProductList interface have been removed. The implementation of those methods are still available in 'CMProductListImpl.java' as they are used in 'livecontext-dataviews.xml'.

[CMS-19409]

### Removal: CAE TokenResolver Class

Classes `com.coremedia.objectserver.web.links.TokenResolver` and `com.coremedia.objectserver.web.links.TokenResolverHelper` were removed because token resolving repeatedly caused encoding issues with links. Use Spring utilities to build URI components and their built-in support to replace variables instead.

[CMS-19163]

### CAE cache-control default behavior changed

In CAE responses the "s-maxage" value in Cache-Control header was forced to be set to the same value as for "max-age", regardless of whether there was a separate configuration for "s-maxage". A factor can now be configured for setting the "s-maxage" header value in relation to "max-age" (see new property "cae.cache-control.s-maxage-factor"). Default value is "0.0" which means that no "s-maxage" is set unless it is explicitly configured. The old behavior can be restored by setting the value "1.0".

[CMS-19104]

### Removal: LiveContext IBM/WCS implementation

The deprecated LiveContext HCL/IBM extension in the blueprint has been removed. It is replaced by the Commerce Hub. Connections to an eCommerce system are no longer established directly, but only via Commerce Hub/Adapter. The example Aurora B2B sites have been removed from the demo content. As a result, a few features of the B2B support have also been omitted. Note, there is still no replacement in the Commerce Hub for them. In detail, these are the handling of workspaces and contracts.

[CMS-19089]

### Moved internal CAE controllers to management application context

In CM10 the CAE exposed several endpoints below `'/blueprint/servlet/internal'` which had to be handled separately when setting up URL rewrite rules so that they cannot be accessed from the public internet. In CM11 they are now configured

to be included in the spring boot management context (together with the actuators) and are available on a different port (by default in blueprint deployment port 8081 on the CAE Docker Container and mapped to 40981 for preview and 42181 for live CAE). Affected endpoints are concerned with URL generation ( `/blueprint/servlet/internal/service/url` ), sitemap generation ( `/blueprint/servlet/internal/<siteid>/sitemap-org` ) and test URL generation ( `/blueprint/servlet/internal/<siteid>/testurls` ).

Follow [Section "Moved internal CAE controllers to management application context" \[572\]](#) for upgrade information.

*[CMS-18333]*

### Removal: BlueprintFreemarkerFacade functions

Both deprecated Freemarker functions `createBeanFor()` and `createBeansFor()` have been moved from `BlueprintFreemarkerFacade` to `LivecontextFreemarkerFacade` , because of the remaining usages in livecontext templates. We recommend to not use the functions in projects.

*[CMS-15880]*

### The preview CAE now runs with standalone mode disabled

The property `delivery.standalone` is now disabled by default in the preview CAE. As a result the preview CAE uses the same URLs as the live CAE and the default proxy configuration no longer requires `/blueprint/servlet` to be accessible when running behind a web proxy.

*[CMS-20501]*

### Static Files of External Preview moved to /static folder

In order to simplify proxy rules to split requests to static files and dynamic servlets, the static files of the external preview have been moved to a static folder and are now served at

*[CMS-20471]*

### Optimize Rendering of embedded content in Richtext

When embedding content (esp. images) in richtext, `asRichtextEmbed` templates are likely to break HTML validity by rendering `<div>` blocks inside the richtext's `<p>` context. So far, the Blueprint's `PDivUntanglingFilter` tried to be smart and adjust the HTML accordingly by closing and reopening the `<p>` context around an embedded object. However, this magic never really matched projects' expectations about the result, because it sometimes led to unwanted additional paragraphs or empty links.

Follow [Section "Optimize Rendering of embedded content in Richtext" \[573\]](#) for upgrade information.

*[CMS-19278]*

### Removal: Sitemaps generation for commerce sites

The sitemap generation for commerce sites is removed from the CAE. The implementation was part of the old IBM livecontext extension that was also removed. The feature can be re-implemented by integrating the `com.coremedia.livecontext.ecommerce.ibm.cae.sitemap` package from CMCC 10 blueprint.

[CMS-19247]

### Removal: CMHasContextsImpl#getDataViewFactory() method

CMHasContextsImpl#getDataViewFactory() has been removed, since its usage could lead to cyclic dependencies or uncontrollable cache invalidations.

[CMS-18512]

### Richtext Pagination

ParagraphHelper#createParagraphs( Markup, int ) was supposed to paginate Richtext at headings [ <p> elements with class attributes p-\-heading-1-4 ] ever since. Due to a bug, this feature was broken. Now, it is fixed, so you might observe more pages. This concerns especially CMTeasableImpl#getTextAsParagraphs . If you don't like the fixed pagination, omit the change in StAXBlockElementPaginator.java:81 when you update the Blueprint.

[CMS-13015]

## CoreMedia Studio Client

### Removal: Deprecated TabManager Classes/Interfaces

The following deprecated classes/interfaces have been removed from `editor-components`:

Follow [Section "Removal: Deprecated TabManager Classes/Interfaces" \[575\]](#) for upgrade information.

[CMS-19921]

### Removal: CommerceConnection#getVendorXXX Methods

The following methods of the interface `com.coremedia.livecontext.ecommerce.common.CommerceConnection` were removed without replacement:

Follow [Section "Removal: CommerceConnection#getVendorXXX Methods" \[575\]](#) for upgrade information.

[CMS-19750]

### Removal: Studio Packages Proxy App

The Studio Packages Proxy App has been removed. The new plugin mechanism can be used instead. See documentation for details.

[CMS-19698]

### For contents having a data-property, the links for those blobs are now rendered instead of simple content links

Render links for blobs in the headless richtext instead of the previous content links which weren't optimal for content types like CMDownload or CMPicture where you might just be interested in the link to the data.

[CMS-19669]

### Removal: Legacy Search Facets API from Studio

The support for the legacy commerce search facets had been removed from the Studio client and backend. The facet editor for product lists does only support the multi-facet selection from now on.

Follow [Section "Removal: Legacy Search Facets API from Studio" \[576\]](#) for upgrade information.

[CMS-19295]

### Studio Client Resource Bundle Changes

In the process of pulling features out of the editor-components module in order to make them available for the new Workflow app, many changes to resource bundles had to be made (these changes are in addition to the changes that happened due to the new content type localization mechanism). As the list is too extensive for a release note, we refer to [this link to a Coremedia Help Center article](#).

[CMS-18728]

### Moved: Modules Moved to new Package

The following modules have been moved to the new npm package `@coremedia/studio-client.main.ckeditor4-components`

Follow [Section "Moved: Modules Moved to new Package" \[576\]](#) for upgrade information.

[CMS-18571]

### Deprecation: Configuration `hideIssuesButton` in Control Room

Deprecated configuration `hideIssuesButton` of `com.coremedia.cms.editor.controlroom.workflow.translation.DefaultTranslationWorkflowDetailForm` as it has no effect anymore. The property will be removed in the next major release

[CMS-18021]



### BooleanPropertyField Label Changes

We fixed a bug where BooleanPropertyFields had no tooltip. For this, we changed an internal plugin of the field. To this end, resource bundles need to be adapted to display the correct field labels.

Follow [Section "BooleanPropertyField Label Changes" \[578\]](#) for upgrade information.

*[CMS-20399]*

### ILinkListWrapper Manipulation Methods Are Now Asynchronous By Signature

We needed to change the behaviour of `#setLinks()`, `#addLinks()`, `#addLinksAtIndex()`, `#moveLinks()`, `#moveLinksToIndex()` and `#removeLinksAtIndex()` for some important implementations of `ILinkListWrapper` to be asynchronous. As a consequence, we changed the signature of these methods to return a Promise. In custom implementations where no asynchronicity is needed, the code can simply be changed as in the following example.

Follow [Section "ILinkListWrapper Manipulation Methods Are Now Asynchronous By Signature" \[578\]](#) for upgrade information.

*[CMS-19108]*

### Fixed Inconsistent Usage of ILinkListWrapper#acceptsLinks

The function `ILinkListWrapper#acceptsLinks` had unclear documentation and therefore was neither used nor implemented consistently.

Follow [Section "Fixed Inconsistent Usage of ILinkListWrapper#acceptsLinks" \[579\]](#) for upgrade information.

*[CMS-18849]*

### Simplified Most of the Configuration to [ExtConfig]

We simplified most of our configuration for Ext-Components from `Bindable` to `ExtConfig`. In case you are not working only with our Public API (and not, for example, with native JavaScript in Studio) this has no impact. Otherwise you might need to change access to configuration in your native JavaScript from `"getSomeConfig"` and `"setSomeConfig"` to `"someConfig"`.

*[CMS-16977]*

## CoreMedia Studio Server

### Redesign of Jobs, Toasts and Notifications

The running jobs window has been redesigned and aligned with the new Studio design.

Follow [Section "Redesign of Jobs, Toasts and Notifications" \[580\]](#) for upgrade information.

*[CMS-19563]*

### Added Search Filters for Library Extension

The Studio library does support search filters for extensions now. As a result, search filters can now be added for commerce integration. The existing search filters work as before and saved searches aren't affected by this change.

Follow [Section “Added Search Filters for Library Extension” \[580\]](#) for upgrade information.

[CMS-19094]

### Validators

You can declare validators not only as Spring beans, but alternatively also by JSON configuration files now. This is supported for most core validator classes, except of those which make only sense as singletons and which are provided by default, like the `AvailableLocalesValidator`. Most Blueprint validator classes can easily be enabled for Json configuration in the project, if needed.

Follow [Section “Validators” \[581\]](#) for upgrade information.

[CMS-18931]

### CatalogAlias configuration for single catalog setups

Configured catalogAlias below commerce#catalogConfig#catalogAlias is used to store commerce ids from now on.

Follow [Section “CatalogAlias configuration for single catalog setups” \[582\]](#) for upgrade information.

[CMS-20303]

### Use stable IDs in CAE Fragment Requests, if Possible

So far the id parameter of commerce fragment requests from the CoreMedia fragment connector to the CAE were treated as external technical IDs, whereas all other communication uses stable external IDs for commerce entities. This leads to unnecessary cache misses, commerce communication and memory consumption in the CAE and commerce adapter caches.

Follow [Section “Use stable IDs in CAE Fragment Requests, if Possible” \[582\]](#) for upgrade information.

[CMS-19920]

### Optimized Taxonomy Performance

The performance of the `DefaultTaxonomy` has been improved. This has been achieved through better UAPI caching. In addition, the property `maxDocumentsPerFolder` can be set now. This property will trigger the creation of new taxonomy documents created by the Taxonomy Manager in a new sub-folder named with a UUID once the default folder has reached the configured amount of documents. New sub-folders are created this way every time when the last used one has reached its limit.

Follow [Section “Optimized Taxonomy Performance” \[583\]](#) for upgrade information.

[CMS-19418]

# CoreMedia Workspace

## SFMC Extensions Extracted from Blueprint

The extensions `sfmc`, `sfmc-p13n` and `sfmc-es-p13n` have been removed from Blueprint. The extensions for your version can be requested from the CoreMedia Support Team.

[CMS-20575]

## Banned Jakarta EE 9 Artifacts

There is a mismatch between Maven coordinates and Java packages of Jakarta EE 8/9 artifacts. [ For details see [https://www.eclipse.org/community/eclipse\\_newsletter/2020/november/1.php](https://www.eclipse.org/community/eclipse_newsletter/2020/november/1.php) .] We follow the strategy of Spring Boot 2.5 of how to deal with this problem and ban all Jakarta EE 9 artifacts. If you use Jakarta EE 9 artifacts in your project, please try to replace them with the according Jakarta EE 8 libraries.

[CMS-19484]

## Removal: Deprecated Properties

Properties that were deprecated because they were replaced by Spring Boot configuration properties have now been removed:

Follow [Section “Removal: Deprecated Properties” \[584\]](#) for upgrade information.

[CMS-19116]

## Updated to Spring 5.3.12 and Spring Boot 2.5.6

In order to benefit from the improvements of the latest version of the Spring framework and to prepare for making use of the new features various 3rd party libraries have been updated.

Follow [Section “Updated to Spring 5.3.12 and Spring Boot 2.5.6” \[591\]](#) for upgrade information.

[CMS-18517]

## Removal: repository.workflow, repository.cplist, and usecplist Properties

Removed the properties `repository.workflow`, `repository.cplist` and `usecplist`. Use `repository.workflow.connect` instead of `repository.workflow` and `repository.cplist.connect` instead of `repository.cplist` and `usecplist`.

[CMS-17426]

### Switched to Sencha CMD 7.2.0.84

Please use Sencha CMD 7.2.0.84 to build the studio-client to avoid heap space related problems after switching to the new NPM/TypeScript based tooling.

[CMS-20076]

### Mongo shell replacement mongosh

The mongo shell has been deprecated with MongoDB 5.0. The replacement shell is mongosh. Usages of `mongo` shell have been replaced with `mongosh` in documentation, deployment scripts and the example script `dump-es-user-data.js`.

[CMS-19884]

### Renamed groupId com.coremedia.content-hub to com.coremedia.cms

The groupId of the content-hub core artifacts has been changed from `com.coremedia.content-hub` to `com.coremedia.cms` in order to adjust to naming conventions.

[CMS-16969]

## CoreMedia Frontend Workspace

### Removal: IE11 Support in Themes and Bricks

The example themes and bricks in the frontend workspace do not support Internet Explorer 11 anymore by removing it from the `browserlist` entry in the `package.json`. Also extra polyfills for IE11 in the blueprint bricks and in the tooling have been removed. You can still add polyfills or custom styles for IE11 to themes and bricks in your projects. You may need to adapt the webpack and babel configuration.

[CMS-20138]

### Changed Package Manager in Frontend Workspace from yarn to pnpm

The package manager of the frontend workspace has been changed from `yarn` to `pnpm`. `Yarn` in version 1 is not maintained anymore and `pnpm` is fast, efficient, strict and supports monorepos without additional libraries like `lerna`. Please check <https://pnpm.io/> for more details and installation. Please use the latest 6.x version of `pnpm`. Changes to the tooling should not affect any bricks or themes in your project.

Follow [Section “Changed Package Manager in Frontend Workspace from yarn to pnpm” \[593\]](#) for upgrade information.

[CMS-19955]

### Third-Party Update: Node.js 16

Node.js has been updated to the latest LTS version 16. Please update your local installation to version 16 for local development too. Node.js version 14 is not supported!

*[CMS-19245]*

## CoreMedia Deployment

### Update to Latest Commerce Adapter Versions and Adaption of Configurations

The [default] versions of the commerce adapters have been updated to the latest 2.0.x versions. The new adapter versions require some configuration changes:

Follow [Section "Update to Latest Commerce Adapter Versions and Adaption of Configurations" \[594\]](#) for upgrade information.

*[CMS-20063]*

### Enable Readiness and Liveness Health Group Endpoints

With Spring Boot 2.3 it is possible to define two extra subpaths of the health actuator to be used as the probing endpoints of the liveness and readiness checks in Kubernetes. This change enables those groups and adds the relevant checks to these groups.

Follow [Section "Enable Readiness and Liveness Health Group Endpoints" \[595\]](#) for upgrade information.

*[CMS-19923]*

### Enables deployment of SFMC via docker-compose.

Includes `global/deployment/docker/compose/sfmc.yml` to deploy SFMC via docker-compose.

*[CMS-19249]*

### Removal: Deployment Archive with Chef Deployment

The Deployment Archive has been removed. Please use the container images build by the `*-app` Maven modules to deploy CoreMedia. The Docker compose development setup, shows what images need to be used, what environment variables are mandatory and how ports and volumes need to be mapped.

*[CMS-19157]*

### Container Image Build Process Changes

The `dockerfile-maven-plugin` has been replaced with the `google-jib-plugin` to build OCI conform container images, because the `dockerfile-maven-plugin` is no longer maintained. The `google-jib-plugin` integrates well with Spring-Boot applications and allows to build images securely without Docker being in-

stalled. This allows for a rootless, daemonless build but restricts the image building process to use only adding image layers by adding resources. There is no possibility to execute any `RUN` steps during the build process. Building the images without docker now requires a configured container registry although it is still possible to build images in the local docker daemon, without the need of a registry.

Follow [Section "Container Image Build Process Changes" \[596\]](#) for upgrade information.

*[CMS-18332]*

### Traefik update in Docker Setup

Traefik has been updated to 2.5.

Follow [Section "Traefik update in Docker Setup" \[598\]](#) for upgrade information.

*[CMS-16416]*

## CoreMedia Commerce Hub

### Removal: Special Commerce Hub API for Preview URLs

The special treatment of Studio preview urls has been removed from Commerce Hub API. Now preview urls are generated the same way as the other commerce related links via `LinkTemplates` and dynamic replacement values. Most of the changes took place within the commerce adapter workspaces. On the CMS side the `PreviewUrlService` has been deleted and there are changes in the `CommerceStudioLinks`.

Follow [Section "Removal: Special Commerce Hub API for Preview URLs" \[598\]](#) for upgrade information.

*[CMS-20308]*

### Updated Multi Catalog Configuration

The catalog alias configuration for the multi catalog feature has been updated. The former Studio content configuration setting `"livecontext.catalogAliases"` has been removed and needs to be updated, if you use multiple catalogs for one site. If you do not use the multi catalog feature there is no action required.

Follow [Section "Updated Multi Catalog Configuration" \[599\]](#) for upgrade information.

*[CMS-20130]*

### Removal: Deprecated Methods and Implementation

Removed deprecated methods `getCapacity/getCacheTimesInSeconds` of class `com.coremedia.blueprint.base.livecontext.ecommerce.common.CommerceCache`. Also removed its `isEnabled` method because the commerce cache can no longer be disabled.

Follow [Section "Removal: Deprecated Methods and Implementation" \[599\]](#) for upgrade information.

*[CMS-20114]*

### Removal: LC3 SearchService

Removed the interface `com.coremedia.livecontext.ecommerce.search.SearchService` because commerce hub does not support search suggestions. Search is supported via `com.coremedia.livecontext.ecommerce.catalog.CatalogService#search`.

*[CMS-19704]*

### Removal: Deprecated Developer Feature Candy Shop URLs

The deprecated developer feature "Candy Shop URLs" has been removed from the Blueprint. There is no replacement planned, developers will need to configure their local machine in the shop configuration to retrieve fragments from their localhost. Frontend development is easily possible through the Frontend Developer workflow and uploading of local Themes to the CMS.

*[CMS-19695]*

### CurrentStoreContext and UserStoreContext API change

Deprecated methods have been removed from `com.coremedia.blueprint.base.livecontext.ecommerce.common.CurrentStoreContext` and `com.coremedia.blueprint.base.livecontext.ecommerce.common.CurrentUserContext`.

Follow [Section "CurrentStoreContext and UserStoreContext API change" \[600\]](#) for upgrade information.

*[CMS-19451]*

### Removal: Obsolete Base Classes from LiveContext Test Modules

With the introduction of the Commerce Hub, the connections to commerce systems have been moved away from the central CMS services to the commerce adapters. After all legacy LiveContext extensions (those, that don't use the commerce adapters) have been removed, their base test classes are now obsolete and have also been removed.

*[CMS-19345]*

### Removal: Hoverfly Extension Classes from LiveContext Test Modules

With the introduction of the Commerce Hub, the connections to commerce systems have been moved away from the central CMS services to the commerce adapters. The tests that require commerce connections [whose requests and responses can be recorded and replayed with Hoverfly] have been moved, too, making the Hoverfly extension classes in LiveContext test modules obsolete, hence they have now been removed.

[CMS-19343]

### Removal: Deprecated Legacy Search API from LiveContext Extensions

CMCC11 doesn't support old adapter versions with legacy search API anymore. Legacy commerce client API and implementations have been removed. This includes:

Follow [Section "Removal: Deprecated Legacy Search API from LiveContext Extensions" \[601\]](#) for upgrade information.

[CMS-19290]

### Removal: Deprecations from LiveContext API

The old LiveContext API is used to access the Commerce Hub / generic commerce client from Studio and other clients. Some deprecations have now been deleted that are not needed anymore or that are not supported by the Commerce Hub. They are in detail: the AvailabilityService (not supported by the CommerceHub, should be requested directly from the commerce system), UserServer and UserSessionService (not needed anymore, the whole part of session sync between the CMS and the commerce system is gone, only the login/logout can be done via the commerce adapter), the AssetUrlProvider (is also not needed anymore).

[CMS-19221]

### Removal: Deprecated lc-extension Related LinkSchemes

Obsolete deprecated linkschemes used for commerce integration via lc-extension have been deleted.

[CMS-19215]

### Removal: com.coremedia.blueprint.base.livecontext.service Package

The deprecated `com.coremedia.blueprint.base.livecontext.service` package has been removed without replacement as it was part of the legacy Blueprint commerce integration. The Commerce Hub integration does not yet offer corresponding classes dealing with connections to Storefront services.

Follow [Section "Removal: com.coremedia.blueprint.base.livecontext.service Package" \[602\]](#) for upgrade information.

[CMS-19214]

### Removal: Deprecated Livecontext Classes and Methods

The classes `AbstractCommerceBean` and `SpringCommerceBeanFactory` from package `com.coremedia.blueprint.base.livecontext.ecommerce.common` were removed. Use `com.coremedia.blueprint.base.livecontext.client.beans.ClientCommerceBeanFactoryMethodRegistry` instead.



Follow [Section “Removal: Deprecated Livecontext Classes and Methods” \[603\]](#) for upgrade information.

[CMS-19213]

### Removal: Deprecated Commerce Cache Invalidation Implementation

The deprecated source code for the Commerce Cache Invalidation of the LiveContext 3 extensions has been removed. Customizations based on that implementation have to be updated to work with the commerce cache invalidation implementation of the commerce hub (in commerce adapters and in the commerce hub client implementation).

[CMS-19212]

### Removal: The ForVendor-Methods from the CommerceConnection

Removed methods `com.coremedia.livecontext.ecommerce.common.CommerceConnection#getServiceForVendor` and `com.coremedia.livecontext.ecommerce.common.CommerceConnection#getQualifiedServiceForVendor`. Use class `com.coremedia.blueprint.base.livecontext.ecommerce.common.CommerceServicesForVendor` instead.

[CMS-19124]

### Simplified Registration of Custom Commerce Bean Types

The class `com.coremedia.livecontext.ecommerce.common.CommerceBeanTypeRegistry` was removed and `com.coremedia.livecontext.ecommerce.common.CommerceBeanType` was converted from an interface to an implementation class. Instead of registering enum classes defining custom commerce bean types you may now define custom commerce bean types on demand by calling `com.coremedia.livecontext.ecommerce.common.CommerceBeanType#of (String)`. This solves the issue of class loading order which occasionally lead to missing custom commerce bean types at runtime.

Follow [Section “Simplified Registration of Custom Commerce Bean Types” \[604\]](#) for upgrade information.

[CMS-17159]

### Removal: CommerceConnection#getClone Method

Removed `com.coremedia.livecontext.ecommerce.common.CommerceConnection#getClone`. Commerce Connection instances must not be modified after creation.

[CMS-15229]

# CoreMedia Headless Server

## GraphQL Java Libraries Updated to Version 17.3

These libraries have been updated:

Follow [Section “GraphQL Java Libraries Updated to Version 17.3” \[605\]](#) for upgrade information.

*[CMS-20151]*

## Swagger Updated to Latest Version

Swagger and the related libraries were updated for maintainability reasons. The updates made some refactorings necessary. As a consequence, the previously public api package `com.coremedia.caas.web.rest` has been revoked, as it doesn't contain any classes anymore. The previous public 3rd party package `springfox` has been revoked also, as the CoreMedia classes do not expose the Springfox annotations anymore.

Follow [Section “Swagger Updated to Latest Version” \[605\]](#) for upgrade information.

*[CMS-19836]*

## Refactoring of Adapters

Due to an internal refactoring, some of the adapters used in the content-schema had to be refactored as well. Where possible we tried to be non breaking. Nonetheless some changes lead to breaking changes in the content-schema:

Follow [Section “Refactoring of Adapters” \[606\]](#) for upgrade information.

*[CMS-19796]*

## Filter Predicates May Now Access the DataFetchingEnvironment

Filter predicates were formerly a simple Predicates. They now use a dedicated interface which marks them as ExtensionPoints and they act as a BiPredicate.

*[CMS-19769]*

## Headless Server Deprecations for CoreMedia CMCC 11

These previously announced deprecations were carried out with the major release of CoreMedia CMCC 11:

Follow [Section “Headless Server Deprecations for CoreMedia CMCC 11” \[607\]](#) for upgrade information.

*[CMS-19685]*

### New Feature: Plugin Extension Point FilterPredicate

With the new extension point `FilterPredicate` it is possible to add filter predicate via the means of a plugin. This change is considered breaking, as customers/implementers have to use the new interface `FilterPredicate` instead of the more generic `Predicate<Object>`. `FilterPredicate` is just a marker interface, so the necessary changes are minimal.

[CMS-19641]

### AbstractDynamicListAdapter#getItems and SearchServiceAdapter#search now return DataFetcherResults

`AbstractDynamicListAdapter#getItems` and `SearchServiceAdapter#search` now return a `DataFetcherResult`, which wraps data and error information. This enables a uniform way to transfer information about errors from the backend to the client via the `errors` field in the GraphQL response.

[CMS-19428]

### Removal: Deprecated Headless API for Commerce Entities

The old commerce schema extension of the CoreMedia Headless Server was deprecated in 2101 and is now removed.

Follow [Section "Removal: Deprecated Headless API for Commerce Entities" \[608\]](#) for upgrade information.

[CMS-19322]

### Removal of ViewBySiteDataFetchingEnvironment, Public API Changes of RemoteLinkWiringFactory and RemoteLinkDataFetcher

The class `ViewBySiteDataFetchingEnvironment` has been removed. Use builder of `DataFetchingEnvironmentImpl.newDataFetchingEnvironment()` instead. The `RemoteLinkWiringFactory` and the `RemoteLinkDataFetcher` take a `remoteLinkDataLoader` as constructor argument. The method `CaasWebConfig#getForwardHeaderMap` has been removed. Retrieve the map from the environment context instead.

[CMS-19155]

### Addition: New RichText Type to Encapsulate the Different Representations of RichText

Introduced a new `RichText` type in the schema to encapsulate the different representations of RichTexts, like text as tree and linked contents in `RichText`. The old fields are deprecated and moved into the new type. The field `detailTextLegacy` and `teaserTextLegacy` were introduced to provide easy access to the former behavior of the `detailText` and `teaserText` fields.

[CMS-19107]

### Changed Configuration Properties

The following configuration properties have changed and are now defined in the class `CaasSearchConfigurationProperties` :

Follow [Section “Changed Configuration Properties” \[609\]](#) for upgrade information.

*[CMS-19076]*

### Ordered Content Schema

The content-schema file was ordered alphabetically by types, in order to raise the readability of the schema. Since the changed order does not change the code, this change does not break directly. However, customers who changed the content schema directly in that file (Blueprint), will most likely encounter a merge conflict.

*[CMS-19071]*

### Site Query by Root Segment

Starting with 2104.1, the site query now additionally supports 'rootSegment' as a query parameter as an alternative to 'siteId'. The new feature is considered breaking, if the `pageByPathAdapter` was used! `PageByPathAdapter` was renamed to `ByPathAdapter` and the implementation to fetch a site object was moved there. The old implementation in `ContentRoot` was deprecated.

*[CMS-18930]*

### Loading of Persisted Queries from Plugins

Headless server supports loading resource files containing persisted query definitions from the content of plugins.

Follow [Section “Loading of Persisted Queries from Plugins” \[610\]](#) for upgrade information.

*[CMS-18315]*

### Content Types in Search are Now Validated

While searching, non existent content types were simply ignored, leading to the situation, that the search wasn't restricted to any content type at all. As this behavior led to bigger result set than expected and may hide bugs on the client side, a content type validation was introduced. Whenever an invalid, non existent content type is given, headless will respond with one GraphQL error message per invalid content type.

Follow [Section “Content Types in Search are Now Validated” \[610\]](#) for upgrade information.

*[CMS-17298]*

### CMProductTeaser change in headless

`CMProductTeaser#teaserTarget` and `CMProductTeaser#teaserTargets` always return null since only the `CMProductTeaser#productRef` should only be used. The teaser target can not be set in Studio anyways.

Follow [Section "CMProductTeaser change in headless" \[611\]](#) for upgrade information.

[CMS-20193]

### Headless Commerce: Remove Autocompletion for Breadcrumb Parameter

The breadcrumb parameter is not completed automatically anymore, if the category "`root`" is missing. Make sure that the breadcrumb parameter contains all categories from leaf to root category, including the root category itself.

Follow [Section "Headless Commerce: Remove Autocompletion for Breadcrumb Parameter" \[611\]](#) for upgrade information.

[CMS-20085]

### New field keywordsList

Introduce a new field `keywordsList` which returns a list of keywords

[CMS-20014]

### JsonPreviewClient was refactored to Spring AutoConfiguration

The `JsonPreviewClient` was refactored to use Spring AutoConfiguration. As a consequence class `com.coremedia.blueprint.headlessserver.JsonPreviewClientConfig` was removed from blueprint. The removal is breaking, if `JsonPreviewClientConfig` was adapted by developers. If not, the change is non-breaking, as `JsonPreviewClientConfig` only contained a component scan which was replaced by the new AutoConfiguration.

[CMS-19941]

### Removal: ViewMapperConfig Class

The Spring Configuration class `com.coremedia.caas.web.ViewMapperConfig` was removed from public API. The change didn't affect any configuration properties. The config was meant to expose the existing view mappings during runtime, as the mapping may change during runtime by editing, removing or deleting the homepage of a site. As a configuration class is not meant to expose dynamic runtime data, the class was refactored. The mappings can now be acquired via an actuator at `/actuator/siteRestrictedEndpoints`.

[CMS-19885]

### Aligned Behavior of StructAdapter to Same as in SettingsAdapter

When querying for a settings path via `StructAdapter`, the behavior varied from the one implemented in `SettingsAdapter`. The behavior of the `StructAdapter` was now aligned to the behavior of the `SettingsAdapter`. The documentation was updated accordingly.

[CMS-19452]

### Default Java heap for Headless Server reset to 1 GB in Dockerfile

This change only affects customers coming from CoreMedia versions 2101.1, 2101.2 and 2101.3 who use the Docker deployment. The default Java heap for the Headless Server has been reset from 2048m to 1024m in the Dockerfile of the Headless Server. The Java heap can, but does not have to be increased for performance optimization.

*[CMS-19210]*

### Headless Server Schema Changes

Replace the usage of `Locale::toString` with `Locale::toLanguageTag` for the locale fields. This changes the behavior of the locale-field of the Site and CMLocalized types by changing the format of the locale field. Additionally removing the deprecated "languageId" field from the Headless Server schema.

*[CMS-19096]*

### Support ContentBlobLinkComposer in RichText conversion

Added the `ContentBlobLinkAdapterFactory` to the `EvaluationContext` to be able to use the `ContentBlobLinkComposer` in `RichTextConversion`

*[CMS-19055]*

## Miscellaneous

### Removed Usage of PowerMock Java Test Library

Previous releases used the PowerMock library in a small number of Java unit tests to mock static methods and object construction. These usages have now been replaced with new functionality of the Mockito testing library. PowerMock isn't used anymore.

Follow [Section "Removed Usage of PowerMock Java Test Library" \[613\]](#) for upgrade information.

*[CMS-20448]*

### The site-manager container image is now also build with google jib

Because of this change, the convenience feature, that the zip will be configured at startup has been removed.

*[CMS-20332]*

### Support for IBM DB2 has been removed

Support for IBM DB2 has been removed

*[CMS-20120]*

### Removal: Deprecated Private API BlobHelper Class

The private API class `com.coremedia.cap.transform.undoc.BlobHelper` has been removed.

Follow [Section "Removal: Deprecated Private API BlobHelper Class" \[614\]](#) for upgrade information.

[CMS-20049]

### Removal: Deprecated Editorial Comments cache properties `editorial.comments.data.cache.* Properties`

The deprecated configuration properties `editorial.comments.data.cache.*` have been removed.

Follow [Section "Removal: Deprecated Editorial Comments cache properties `editorial.comments.data.cache.\* Properties`" \[614\]](#) for upgrade information.

[CMS-20047]

### Removal: Deprecated `SettingsPageResourceBundleFactory` Class

The deprecated class `com.coremedia.blueprint.cae.web.i18n.SettingsPageResourceBundleFactory` has been deleted. If you still like it, keep it in your project code. As alternative, it is recommended moving resource bundles to `resourceBundles`, and using `LinklistPageResourceBundleFactory` instead.

[CMS-19999]

### Removal: Deprecated `ThemeImporterImpl#legacyExternalLinkToDocumentName Method`

The deprecated method `com.coremedia.blueprint.themeimporter.ThemeImporterImpl#legacyExternalLinkToDocumentName` has been deleted. If you still like it, keep it in your project code. Otherwise, it is recommended using `stringToDocumentName` instead.

[CMS-19995]

### Removal: Deprecated `UserProvider2` Interface

The interface `UserProvider2` has been deleted. If you are still using it in your project code, simply switch to `UserProvider`.

[CMS-19988]

### Removal: Deprecated Legacy RuleProviders Classes

`com.coremedia.blueprint.base.links.impl.PropertiesRuleProvider` and `com.coremedia.blueprint.base.links.impl.SitesRuleProvider` have been deleted from the Java API, incl. the `bpbase-links-legacy.xml` configuration file. You probably do not use the classes directly in your project code. Instead, check if you still import the legacy configuration file in the

`blueprint-links.xml` file in the `cae-base-lib` module, and eventually migrate to the `AbsoluteUrlPrefixRuleProvider`.

*[CMS-19987]*

### Removal: Deprecated `LdapMember#getOrganizationalUnit` Method

We have finally deleted `LdapMember#getOrganizationalUnit`, which has never been used. If you have implemented the `LdapMember` interface, you can delete the method. You must at least delete the `@Override` annotation.

Follow [Section “Removal: Deprecated `LdapMember#getOrganizationalUnit` Method” \[616\]](#) for upgrade information.

*[CMS-19986]*

### Removal: `management.health.contentRepository.enabled` Property

The deprecated application property `management.health.contentRepository.enabled` has been removed. Please use its replacement `management.health.uapiConnection.enabled`.

*[CMS-19962]*

### Migrated Blueprint Content Hub Adapters to Plugins

The extensions for the Content Hub Adapters

Follow [Section “Migrated Blueprint Content Hub Adapters to Plugins” \[617\]](#) for upgrade information.

*[CMS-19911]*

### Dropped supported deprecated databases, servers, and browsers

With CMCC v11 the following deprecated databases and servers are not supported anymore: IBM DB2, MySQL 5.7, Postgres 9.6, MongoDB 3.6, and Microsoft Windows Server 2016 Standard.

Follow [Section “Dropped supported deprecated databases, servers, and browsers” \[617\]](#) for upgrade information.

*[CMS-19867]*

### New API For Custom Workflow Extension Point

Accompanying the new Workflow app, there is a new API to add custom workflows. The former API was targeted specifically at the Control Room in the main Studio. The new API can be used to customize both the main Studio and the Workflow App.

Follow [Section “New API For Custom Workflow Extension Point” \[618\]](#) for upgrade information.

*[CMS-19858]*



### Removal: Corporate Extension Modules for Content Server

The [content] server modules for the *corporate* extension were empty and have been removed:

Follow [Section "Removal: Corporate Extension Modules for Content Server" \[618\]](#) for upgrade information.

[CMS-19851]

### Removal: Unused class SiteToStoreContextCacheKeyWithTimeout

The deprecated class `com.coremedia.blueprint.base.livecontext.ecommerce.common.SiteToStoreContextCacheKeyWithTimeout` was part of the legacy Blueprint commerce integration and has been removed in favour of the Commerce Hub integration.

[CMS-19850]

### New API for Content Type Localization

To support content type localization in both the Main Studio App and the Workflow App (and further apps in the future), we fundamentally changed the API to localize doctypes. One particular change is the direct support for SVG icons.

Follow [Section "New API for Content Type Localization" \[619\]](#) for upgrade information.

[CMS-19816]

### Removal: Old live context settings struct

The old 'livecontext.store.config' StructProperty was removed for all commerce Hub enabled sites, tests and demo data. Please use only the new struct below the 'commerce' struct. For more details see JavaDoc for CommerceSettings.java. In addition LiveContextCloneSitePostProcessor.java and it's usages were removed completely, the CommerceCloneSitePostProcessor.java is used instead. Please note: the cms catalog is not affected by this refactoring as it's not a commerce hub enabled site.

[CMS-19396]

### Removal: Deprecated API of TransformImageService

The following methods have been deleted from the Java API:

Follow [Section "Removal: Deprecated API of TransformImageService" \[619\]](#) for upgrade information.

[CMS-19254]

### Logging Standardization

The logging setup has changed to implement a more standardized setup. This includes:

Follow [Section "Logging Standardization" \[620\]](#) for upgrade information.

[CMS-19224]

### Removal: Optimizely Extension

The extension `Optimizely` has been removed from applications `CAE` and `Studio-Client`. The settings starting with " `optimizely.` " have no effect anymore and can be removed from custom content. Additionally the helper class `ExtensionAspectUtil.java` has been removed.

[CMS-19060]

### New Blueprint Parent

A new parent POM `cms-blueprint-parent` has been introduced and is used as (transitive) parent for every Blueprint module. It contains basic plugin management, especially for the install- and deploy-plugin for which it is important that all modules use the same versions. If you need a custom parent in your Blueprint, you can simply search and replace our parent element. You could use the `cms-blueprint-parent` as parent of your custom parent, or integrate the `pluginManagement` as necessary.

[CMS-18934]

### Replaced deprecated `org.junit.Assert.assertThat`

All remaining occurrences of the deprecated `org.junit.Assert.assertThat` have been replaced by the equivalent `org.hamcrest.MatcherAssert.assertThat`.

[CMS-18795]

### Replaced Guava Function and co. with JDK counterparts

Guava `Optional`, `Function`, `Predicate`, `Supplier` and most Guava utilities from `com.google.common.collect` have been replaced with their JDK counterparts. Most of these Guava features are available in the JDK by now, so it is unnecessary to bother with a third-party library. Although it is not required, we would recommend that you also refactor these Guava usages in your code for consistency.

[CMS-18659]

### Removal: Deprecated Consumer, Function, Predicate Classes

The classes `com.coremedia.common.util.Consumer`, `com.coremedia.common.util.Function` and `com.coremedia.common.util.Predicate` have been deleted from the Java API. All usages have been replaced with the according JDK classes of package `java.util.function`.

Follow [Section "Removal: Deprecated Consumer, Function, Predicate Classes" \[622\]](#) for upgrade information.

[CMS-18658]

### Implementations of Comparable: Added Type Arguments

For several parts of the public API the implementation of the `Comparable` interface now uses correct generic type arguments. As part of this change, following interfaces/classes have been updated by adding type parameter.

Follow [Section “Implementations of Comparable: Added Type Arguments” \[623\]](#) for upgrade information.

*[CMS-17548]*

### Consolidate Blueprint groupIds and versions

The Blueprint now uses the groupId `com.coremedia.blueprint` for every module and Blueprint modules are now always referenced by using `$(project.version)`. The following groupIds are no longer used:

Follow [Section “Consolidate Blueprint groupIds and versions” \[623\]](#) for upgrade information.

*[CMS-17559]*

## 4.23.2 Changes and Improvements

### CoreMedia Core

#### Deprecation: Obsolete classes in Workflow Java API

The following classes for customizing workflows have been deprecated in the Java API in package `com.coremedia.workflow.common.util`:

- `AbstractExternalManager`
- `LongActionRegistry`
- `RegisteringLongAction`
- `SpringCollectiveLongAction`
- `SpringDelegateAction`
- `SpringDelegateLongAction`

The methods `hasManager` and `getManager` of class `com.coremedia.workflow.WfServer` have also been deprecated.

For details, see the deprecation notices in the API documentation. To summarize, it's recommended to instead use Unified API interfaces to implement custom managers,

and to use `SpringAware*Action` classes for actions that interact with the Spring context.

[CMS-20233]

### Added parametric HTTP endpoint to re-indexing CAE Feeder

The CAE Feeder application now has a specific parametric endpoint to trigger a re-indexing without using JMX. The endpoint is available at `:40781/actuator/reindex` and is enabled by default. To perform a partial re-indexing send a HTTP POST request i.e.

```
curl --request POST \
  --url http://localhost:40781/actuator/reindex \
  --header 'Content-Type: application/json' \
  --data '{
    "ids": "1234,5678",
    "contentTypes": "CMArticle,CMPicture",
    "query": "BELOW PATH '\'/Sites/Calista\'\'\'
  }'
```

See the Search Manual, section "Partial Reindexing of CAE Feeder Indices" for more information.

[CMS-19831]

### Update of MongoDB Java Driver to version 4.3.0

The thirdparty dependencies `org.mongodb:mongodb-driver-legacy`, `org.mongodb:mongodb-driver-core` and `org.mongodb:bson` have been updated from version 4.2.2 to 4.3.0.

[CMS-19758]

### Deprecation: ListDiff#elementEqual

In the Java API, method `elementEqual` of class `com.coremedia.translating.workflow.ListDiff` has been deprecated. Instead of overriding that method in a subclass, you can instead pass a predicate for equality to a constructor of that class.

[CMS-19502]

### Removal: Deprecation for SiteModel's siteIndicatorDepth in Multi-Site

We removed the deprecation notice for `siteIndicatorDepth` as part of the `SiteModel`.

As part of this change `cm validate-multisite` got extended by a new issue code:

- `MS-VALIDATION-4009 - DISCOURAGED_PROPERTY_VALUE`

The new issue-code is reported at level `INFO` and is triggered, when using a `siteIndicatorDepth` different to `0` [zero].

### Motivation

As part of CMS-9521 we deprecated `siteIndicatorDepth` for 2001.1 and changed the default to 0 (zero) rather than 1 (one), as we got aware that many editors struggled with site indicators being hidden in the "depth" of a site – which in the end caused corrupted sites.

Nevertheless, migrating existing content from a depth 1 to depth 0 may raise considerable migration effort, as you have to move all site indicators up one level in one step (while stopping editorial work) and then republish all your sites.

Because of this, we decided to remove the deprecation notice, so that we will support site indicator depths different to 0 also on in the future. The default which ships with CoreMedia Blueprint will stick to the recommended default 0, though.

[CMS-19378]

### Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to version 1.26. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika. These updates fix known security vulnerabilities: CVE-2021-28657 (Tika), CVE-2021-27807 (PDFBox).

#### Updated dependencies:

- com.google.guava:guava: 30.1.1-jre
- org.apache.commons:commons-lang3: 3.12.0
- org.apache.pdfbox:fontbox: 2.0.23
- org.apache.pdfbox:pdfbox: 2.0.23
- org.apache.pdfbox:pdfbox-tools: 2.0.23
- org.apache.pdfbox:preflight: 2.0.23
- org.apache.pdfbox:xmpbox: 2.0.23
- org.apache.tika:tika-core: 1.25
- org.apache.tika:tika-parsers: 1.25
- org.bouncycastle:bcmil-jdk15on: 1.68
- org.bouncycastle:bcpkix-jdk15on: 1.68
- org.bouncycastle:bcprov-jdk15on: 1.68
- org.ow2.asm:asm: 9.1
- org.tukaani:xz: 1.9

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-19202]

### cm dump: Dump Text Blobs to Console

`cm dump` is now able to dump text blob values directly to console. Thus, if your object to dump provides a blob property and it stores some text (or alike) value (such as `application/javascript`), you can trigger to write it to console by using:

```
--blob text
```

The default remains as is, i.e. blobs are just providing some details on MIME type and size. This is the same as calling `cm dump` with:

```
--blob plain
```

[CMS-18880]

### Added endpoint to disable/enable the replicator service

The replication-server application now has a specific endpoint to disable and enable the replicator service without using JMX. The endpoint is available at `:8081/actuator/replicator` and is enabled by default. To disable replication send a HTTP POST request i.e.

```
curl -X POST \  
  -H "Content-Type: application/json" \  
  -d '{"enable": false}' \  
  http://localhost:8081/actuator/replicator
```

[CMS-18545]

### Changed Content Feeder Configuration Properties

Some configuration properties of the *Content Feeder* have been renamed as part of an initiative to use Spring Boot's type-safe `ConfigurationProperties`. The old property names still work as before but some have been deprecated. It's not required to change your configuration now. If possible, we recommend to migrate to the new property names.

The following properties have been renamed

- `feeder.indexDeleted` -> `feeder.content.index-deleted`
- `feeder.indexGroups` -> `feeder.content.index-groups`
- `feeder.indexNameInTextBody` -> `feeder.content.index-name-in-textbody`
- `feeder.indexReferrers` -> `feeder.content.index-referrers`

- `feeder.partialUpdate.aspects` -> `feeder.content.partial-update-aspects`
- `feeder.management.user` -> `feeder.content.management.user`
- `feeder.management.password` -> `feeder.content.management.password`
- `feeder.backgroundFeed.delay` -> `feeder.content.background-feed-delay`
- `feeder.retryConnectToIndexDelay.seconds` -> `feeder.content.retry-connect-to-index-delay` (new property takes milliseconds if not specified otherwise)
- `feeder.updateGroups.immediately` -> `feeder.content.update-groups-immediately`

See also section 'Content Feeder Renamed Properties' in the reference chapter of the Search Manual for all deprecated and new property names.

[CMS-17957]

### Enhanced Encryption Algorithm For System Passwords

The encryption approach used by `cm.encryptpasswordproperty` has been enhanced, so that you may use a more secure `Cipher` transformation to encode passwords than the default `RSA` without padding schema.

To use a better transformation such as `RSA/ECB/OAEPWithSHA-256AndMGF1Padding`, you may now add it as configuration option to your keystore properties file via `CM_CIPHER_TRANSFORMATION`, like:

```
CM KEYSTORE_PASSWORD=<KEYSTORE_PASSWORD>
CM KEY_ALIAS=<KEY_ALIAS>
CM KEY_PASSWORD=<KEY_PASSWORD>
CM_CIPHER_TRANSFORMATION=RSA/ECB/OAEPWithSHA-256AndMGF1Padding
```

For upgrade scenarios, a fallback exists for decoding passwords from old `RSA` transformation, so that you may update your passwords one by one.

To re-encode your passwords, use `cm.encryptpasswordproperty` as described in *Content Server Manual*, section *Password Property Encryption* once you have set `CM_CIPHER_TRANSFORMATION`.

[CMS-17851]

### Removal: `com.coremedia.elastic.core.test.Injection` and `core-test` module

`com.coremedia.elastic.core.test.Injection` and `core-test` module is removed. use `@InjectMocks`, `@Mock` and `@Spy` and if this is not possible `org.springframework.test.util.ReflectionTestUtils`

[CMS-16834]

### New Validator: PossiblyMissingMasterReferenceValidator for Multi-Site

In certain scenarios it may happen, that you have a master content and derived content which miss a corresponding link from derived to master to signal the relationship. This state, if caused by accident, may cause duplicated contents to be created where you don't expect them.

The new validator `PossiblyMissingMasterReferenceValidator` detects such a state and will by default raise a warning in these states.

Depending on the perspective (if this content is regarded as master content or as derived content) you will get slightly different messages:

- For master you may get: *A content in derived site German (Germany) exists, which may miss a link to this content as its master: Orphaned Name.*
- For derived content you may get: *A content in master site English (United States) exists, which should possibly be linked to as master: Orphaned Name. Consider setting an appropriate master version carefully. Most likely the current master version.*

If for any reason, this analysis reports a false-positive, it will vanish as soon as you finished a translation of a given master content.

#### Upgrade Notice

No upgrade steps are required unless you consider these warnings irrelevant in your setup. In this case you may remove the bean `possiblyMissingMasterReferenceValidator` which comes with `com.coremedia.cms.middle.blueprint.validators.ValidatorsConfiguration`.

As an alternative you may customize the severity by setting `possiblyMissingMasterReferenceFromMasterValidator.severity` to `INFO` (it defaults to `WARN`).

#### Extension Points

By default, the match strategy to search for similar contents is done by relative path. If you have different identity tokens (such as product IDs as property values) you may consider replacing the bean. A dedicated section exists in JavaDoc of `com.coremedia.rest.cap.validators.PossiblyMissingMasterReferenceValidator` explaining what possible extension points you may use.

#### validate-multisite

This validator covers issues detected by `cm` tool `validate-multisite`:

- `MS-VALIDATION-6001` – Content not Used in Derived Site but some Content Exists
- `MS-VALIDATION-6003` – Content without Master but some Content Exists



[CMS-16043]

### validate-multisite Improvement

The output data for "MS-VALIDATION-8000 - Link Spanning Sites" has been enhanced with the site IDs of the content's site and the link target's site.

[CMS-11136]

## CoreMedia Content Application Engine

### Sitemap: Reduce Downtime by Improving the Recreation Strategy.

On recreation the sitemap has been removed before creating the new one. This has been changed. The new one will be created to a temporary folder first and afterwards the old one will be replaced.

[CMS-19719]

### Cache-Control Strategy can use Full Request Paths

The `DefaultCacheControlStrategy` can now be configured to use the full request path for pattern matching. When a request contains a semicolon in the path everything after a semicolon is cut in advance of applying the "for-url-pattern". This can be avoided by setting the "cae.cache-control.urlPath.removeSemicolonContent=false" configuration property. Additionally the "cae.cache-control.urlPath.useAlwaysFullPath" and "cae.cache-control.urlPath.urlDecode" configuration properties can be used to adapt the taken request URI path.

[CMS-19195]

### Configure CORS Allowed Origins with Studio Host for Preview CAE

The documentation of the `cae.cors.allowed-origins-for-url-pattern` configuration property has been extended with a suggestion to configure it with the Studio host for preview CAE. Furthermore the default Studio host was added to the `cae.cors.allowed-origins-for-url-pattern` configuration property in the `application-dev.properties` of the preview CAE.

Please note that no similar configuration has been added to the default `application.properties` for the preview CAE, because we cannot anticipate allowed origins for production environments.

[CMS-18954]

### It is now possible to run the CAE without setting a context path

The CAE context path can now be set to the empty path as follows: `server.servlet.context-path=`. The default was not changed and still uses `"/blueprint"`.

[CMS-17119]

### Fixed handling of cyclic navigation structures in CAE

Fixed a bug where the CAE failed to render any page of a site whose root navigation was part of a cyclic navigation structure. For a cycle that contains the root navigation a better to understand error message is now rendered. Cyclic links on other hierarchy levels do not lead to broken previews anymore. A Studio validator and corresponding log messages are available in any case.

[CMS-16628]

### Deprecated Header and Footer in CMChannel

All contents of a page are maintained in the pagegrid meanwhile, therefore the `header` and `footer` properties of the `CMChannel1` contentbean are unused and have been deprecated.

[CMS-11194]

## CoreMedia Studio Client

### Fixed Quick Create Dialog Positioning

Disabled behavior where the quick create dialog always positioned next to the menu item it was invoked from. This lead to problem where the dialog may have been rendered outside the screen for menu items, that were rendered close to the screen border.

[CMS-20293]

### User Manager Full Text Search

The user manager user and group search does not search for prefixes only anymore. Instead, the term is matched against the whole name. The prefix search can be re-enabled via `_userManagerBase.PREFIX_SEARCH=true_`.

[CMS-20162]

### Site Selector - Sorting by Locale

The new site selector supports sorting by locale.

[CMS-19887]

### Update to CKEditor 4.16.1

With the update to the `jangaroo-libs` release 4.1.0, the CKEditor was updated to version 4.16.1. Among others, this release of the CKEditor includes some security-related changes. For more details see:

- <https://ckeditor.com/cke4/release/CKEditor-4.16.1>
- <https://ckeditor.com/cke4/release/CKEditor-4.16.0>
- <https://ckeditor.com/cke4/release/CKEditor-4.15.1>

- <https://ckeditor.com/cke4/release/CKEditor-4.15.0>

[CMS-19657]

### Added Support for Empty Quick Create Name

The default name of the content created by the QuickCreateDialog is now read from the *QuickCreateSettings.properties*. To support empty names, the key `_default_newDocumentName_text_` can be overwritten with an empty value. This way, the editor is forced to set a custom name.

[CMS-19596]

### Added Support for Multiple External Previews

*IPreviewUrlTransformer* functions can be applied to the external preview URL now too. Only the protocol, host and port of the transformed URL will be applied to the external preview URL, since the context path will remain the same for all preview CAEs and parameters are not relevant here.

This feature is disabled by default so that only the default preview CAE will be used for the external preview. To enable the *IPreviewUrlTransformer* execution for the external preview URL, change the following flag to *true* :

```
ExternalPreviewImpl.ENABLE_PREVIEW_URL_TRANSFORMATION = true;
```

[CMS-19347]

### Restored "Open In Tab" Checkbox for Bulk Uploads

The "Open In Tab" checkbox had been removed when the Jobs framework was introduced. The checkbox has been restored now so that documents are opened after a successful upload. The state of the flag is stored in the local storage of the browser.

[CMS-19149]

### Studio Client Now Has Referrer-Policy "same-site"

We added the Referrer-Policy "same-site" to the Studio Client. If needed, this configuration can be changed in the studio-base-app module's index.html.

[CMS-19049]

### Start Publication Workflow Button From ActionsToolbar No Longer Includes "My Edited Contents" By Default

Previously, the "Start Publication Workflow" button in the Actions Toolbar included all content items from "My Edited Contents". Now, it only includes the currently displayed content item. If desired, you can go back to the previous behavior via a "Content > Actions Toolbar" user preferences setting.

[CMS-18939]

# CoreMedia Studio Server

## Multi-Selection Support for Taxonomy Link Lists

The *TaxonomySearchField* supports the flag *multiSelect* now. It can be set to *true* in *TaxonomyLinkListPropertyFields* . As a result, the suggestion picker remains open until ESC is pressed and allows to select multiple tags at once.

[CMS-19942]

## iFrame Support for Content Hub Preview

Preview data generated by Content Hub Adapters can be marked as 'html' now. This way, it is possible to embed iframes into the Content Hub Preview, e.g. to embed YouTube videos.

[CMS-19492]

## Disabling Notifications

The user can disable notifications in the user settings.

[CMS-19486]

## Multiple Filter Support for Product List Documents

Product lists support multiple filters now. Existing product list documents are still compatible with the old format and API. If the commerce API supports multi filter facets, a button is shown within the editor to migrate the existing data to the new multi-facet format. After migration, the new multi facet editor will be shown where the editor can select multiple facets, depending on the category that has been linked for the product list document. It is recommended to convert existing product list contents to the new format. Also note that product lists must be checked in the Studio after being translated because not all configured search facets may be translatable.

Additionally, a new product list validator has been introduced. This validator checks if the persisted queries within the documents are still compatible to the search API of the commerce system. The Studio library can be used to search for these issues.

[CMS-19039]

## Configure Studio Forms

An editor can now configure the content forms so that they show only parts the editor is interested in. See the chapter "Hiding Studio Form Components" in the Studio User Manual. See the chapter "Hiding Components on Content Forms" in the Studio Developer Manual to prepare your Studio code for the feature.

[CMS-18985]

### Fixed Error thrown for Empty UserManager Properties

Fixed a `NullPointerException` that was thrown when the settings for the user manager were missing in the `application.properties`.

[CMS-18855]

### Filtering Issues Along with Categories in Studio Library

In the search view of the Studio library, you can now filter content issues not only by severity but also by a category, like localization issues. Note, that the issues filter is only visible, if the *Content Feeder* indexes issues in Solr. Section "Searching for Content | Content Issues" in the Search Manual describes how to enable issue indexing.

[CMS-18055]

### Added Thumbnail Support for Content Hub

The content hub thumbnail view now supports an image preview the asset, if the asset supports one. The optional method `getThumbnailBlob()` has been added to the Content Hub API for Content Hub Items for this.

[CMS-16100]

### Added metrics to reflect the number of CMS user sessions

Added metrics starting with `cap.session` representing the number of sessions currently known to the application. The following gauges are available:

- `open` the number of distinct users being logged in
- `idle` the number of distinct users who are currently logged in but for whom the application is not currently serving a request
- `busy` the number of distinct users who are currently logged-in and for whom the application is currently serving a request
- `dirty` the number of distinct users whose sessions are about to be closed

[CMS-15893]

## CoreMedia Workspace

### Update: JUnit 5, Mockito, PowerMock

We updated the following test libraries:

- JUnit BOM to 5.8.1 including:
  - JUnit 5 [Jupiter] to 5.8.1
  - JUnit Platform to 1.8.1
- Mockito to 3.12.4

- PowerMock to 2.0.9

[CMS-20026]

### Prevented creation of empty JAR files

The *maven-jar-plugin* is now configured with `skipIfEmpty=true` in all parent POMs. This prevents build failures or the need to add dummy resources for modules that don't contain any runtime sources or resources - e.g. those that only contain tests. **Please note** that installation and deployment must be skipped individually in its *pom.xml* when such a module is added:

```
<properties>
  <maven.deploy.skip>true</maven.deploy.skip>
  <maven.install.skip>true</maven.install.skip>
</properties>
```

[CMS-19388]

## CoreMedia Frontend Workspace

### New Supported File Types for Theme Importer

The ThemeImporter in the blueprint supports additionally file types. `webp` and `avif` as images and `wasm` and `json` as static resources. If the files are located inside the preconfigured folders like `img/`, `images/` or `vendor/`, they will be copied into the theme zip file automatically. Otherwise add them to your webpack configuration according to the documentation in the Frontend Manual.

[CMS-19886]

### Added Lazy Loading to Images

All images in the frontend blueprint, rendered by Freemarker, got an extra attribute `loading="lazy"` by default. All modern browsers support this lazy loading mechanism, which will increase the render time of websites in the browser.

[CMS-19736]

### Allow Standalone JavaScripts Files in Themes

Added a new feature that allows building standalone JavaScript files with Webpack in our themes. More information can be found in the Frontend Developer Manual.

[CMS-18953]

## CoreMedia Deployment

### Enabled Health Checks for Commerce Adapters

After the replacement of the `dockerfile-maven-plugin` with the `google-jib-plugin` to build the Docker images for the commerce adapters, the images don't contain any health checks directive any more. The health check are now configured in the Docker Compose files.

[CMS-20127]

### The wait-for-\* scripts have been replaced with an environment variable controlled mechanism

Instead of changing the entrypoint chain to call a wait script, the new `coremedia/java-application-base:2.4.0-*` images include a tool that can be configured using environment variables. The tool `docker-compose-wait` is configured by `WAIT_HOSTS` and `WAIT_PATHS` to be set to either a comma separated list of `host:port` pairs or file paths.

The old `wait-for-*` scripts will still be available but usages should be migrated.

[CMS-20125]

### Graceful Shutdown for all Spring Boot based Applications

Graceful shutdown as described in the Spring Boot documentation [here](#) has been activated.

[CMS-14653]

## CoreMedia Commerce Hub

### Removal: Deprecated Properties

Properties that were deprecated have now been removed

- `commerce.hub.cache.capacities.*` and `livecontext.ecommerce.cache.*` use `cache.capacities.ecommerce.*` instead
- `commerce.hub.cache.timeout-seconds.*` and `livecontext.ecommerce.cache.*` use `cache.timeout-seconds.ecommerce.*` instead.

[CMS-20183]

### Commerce Hub Invalidation Events Added

CMS applications with commerce client integration can now receive cache invalidation events. With this, commerce items are invalidated in the cache of the client applications if the commerce adapter sends an invalidation event, which may be triggered automatically due to change detection (if applicable) or manually using the commerce adapter's `invalidate` actuator endpoint. This feature only works when the client applications are connected to supporting (new) commerce adapter versions. Please see the release notes of the commerce adapters for further information.

[CMS-19482]

### Added Configurable Custom Attributes to Commerce Hub Commerce Beans

Commerce Hub Commerce Beans now expose custom attributes if they are added to the entities on the commerce adapter side. This is currently only supported by the Salesforce Commerce Cloud adapter. JSON attributes can be obtained from the commerce bean via `ClientCommerceBean#getCustomAttributes()` as nested map, or via `ClientCommerceBean#getCustomAttributes(Class<T>)` and `ClientCommerceBean#getCustomAttribute(String, Class<T>)` as an object. Deserialization is performed internally using an `com.fasterxml.jackson.databind.ObjectMapper` if the commerce adapter configures `metadata.custom-attributes-format=JSON`.

[CMS-19420]

### Catalog Alias Mapping Accepts Catalog ID

In a multi-catalog scenario the catalogs to be displayed are configured in LiveContext settings. All references to catalog items (products, categories) are using an alias name of the catalog. The alias mapping to concrete catalog names are also configured via LiveContext settings. Alternatively to the catalog name also the external catalog id can be used. In some environments this is a better approach because the name is localized and can change more frequently.

[CMS-19058]

## CoreMedia Headless Server

### New ExtensionPoint PluginRestController

Starting with CM11, plugins may implement a Spring rest controller by implementing the new extension point `PluginRestController`. Controllers will be accessible via the url prefix pattern `'/plugins/plugin-id/request-mapping'`

[CMS-20361]



### Add plugin extension point for custom scalar types

Add a new extension point for scalar types. This enables headless server plugins to introduce custom scalar types.

[CMS-20274]

### New Config Option: `caas.stax.maxAliasesForCollections`

The maximum number of allowed aliases in a YAML file to define a rich text view was statically bound to 50. When the actual number of aliases exceeded 50, an error while startup of headless was thrown: `Number of aliases for non-scalar nodes exceeds the specified max=50`

The number of allowed aliases can now be configured using the new config option, e.g. `caas.stax.maxAliasesForCollections=100`

Along with the change, the `sakeyaml` library was updated to the latest version `org.yaml:sakeyaml:1.29` [was 1.26]

[CMS-19959]

### New Extension Point for Plugins: `WiringFactory`

The `CaasWiringFactory` is a new extension point for custom `WiringFactory` implementations in plugins. See documentation for details.

[CMS-19926]

### Add `fullyQualifiedUrl` field to `CMDownload` type

Add the `fullyQualifiedUrl`-field to the `CMDownload` type in the content schema.

[CMS-19859]

### New Fields for Localized Content

The GraphQL interface `CMLocalized` in the content schema now contains these two additional fields to ease up the handling of localized variants of a content object:

- `master`: The direct master content object from which the current object was derived from.
- `localizationRoot`: The topmost content object of the localization hierarchy.

[CMS-19832]

### New Plugin Extension Point: `PluginSchemaAdapterFactory`

The new ExtensionPoint `PluginSchemaAdapterFactory` enables developers to provide their own schema adapters to be used in a GraphQL schema extension via a plugin. Please see the headless manual for details.

[CMS-19792]

### GraphQL Library Updated

GraphQL Java Library updated from 16.1 to Version 16.2

[CMS-19643]

### Adds New Endpoint to Support Filename and Extension in Media URL

Extend the Headless Server schema to provide a new URL for Blobs including the filename and extension and provide a new endpoint for those URLs.

[CMS-19572]

### Provide Generic Field for Retrieving in Linked Contents in Structs or Settings

Add the option to the SettingsAdapter and the StructAdapter to retrieve multiple values at ones, without wrapping them in their Structure. This supports using the GraphQL schema to build up the structure of the Setting or Struct. Furthermore it enables a generic field to retrieve contents which are linked in Structs or Settings

[CMS-19480]

### Additional Headless Augmentation Calls without Commerce Connection

Augmentation data for products and categories can now be retrieved from the Headless Server without an underlying commerce connection. The former augmentation queries still exist, but the new ones are preferable since there is less risk of performance issues due to a slow commerce connection. In order to get inherited augmentation data along the commerce hierarchy, the new Augmentation API requires the caller to pass in the hierarchy/breadcrumb.

The new Augmentation API can be found below the ContentRoot:

- ContentRoot.categoryAugmentationBySite
- ContentRoot.categoryAugmentationBySegment
- ContentRoot.productAugmentationBySite
- ContentRoot.productAugmentationBySegment

If you want to use the new API, make sure your Livecontext Settings contain the following information: commerce.storeConfig.id commerce.catalogConfig.id commerce.vendor

In case of multi catalog projects a fallback commerce connection may still be necessary since catalog alias mapping needs to be resolved by the connected commerce system.

[CMS-19468]

### Query for Taxonomies by path

It is now possible to query for taxonomies by path. More details can be found in the Headless Server Manual.

[CMS-19193]

### GraphQL Type PageGrid now Offers Name Property for Page Grid

GraphQL type PageGrid missed to offer the name of the page grid.

[CMS-18889]

### MediaController Supports Conversion of Image Formats

The MediaController supports the conversion of images into supported image formats (jpeg, png and gif) by specifying the corresponding file extension with the file name. The conversion is also reflected in the content-schema. It is now possible, to specify an optional image format when querying for uri templates.

[CMS-18878]

### New Fields Contain Lists of Content Objects Embedded in Richtexts

Starting with version 2104.1, the content schema offers complementing fields for all rich text fields. For GraphQL type CMTeasable

- detailTextReferencedContent
- teaserTextReferencedContent

For GraphQL type CMMedia

- captionReferencedContent

[CMS-18844]

### Custom Filter Queries

Custom Filter Queries are available for Search and Dynamic Query Lists now. Consult the Headless Server Manual for details.

[CMS-18826]

### Loading of JSLT and REST Mappings From Plugins

Headless Server supports loading resource files containing JSLT and REST mapping definitions from the content of plugins.

By loading these kind of resources from plugins rather than from within the Headless Server Docker image, the build, deployment and release management of the core application is decoupled from the development of these resource files.

Loading from plugins is optional. The deployment within the Headless Server App remains unchanged.

[CMS-18486]

### Pagination for collections

Pagination for collections has been introduced for a set of fields, that return a collection. The new fields with pagination support are:

- Banner: mediaPaged, picturesPaged
- CMChannel: headerPaged, footerPaged
- CMCollection: itemsPaged, teasableItemsPaged
- CMGallery: mediaItemsPaged
- CMLinkable: contentInSettingPaged, contentInStructPaged, subjectTaxonomyPaged, locationTaxonomyPaged
- CMLocTaxonomy: locChildrenPaged
- CMNavigation: childrenPaged
- CMTaxonomy: childrenPaged
- CMTeasable: authorsPaged, relatedPaged, teaserTargetsPaged, videosPaged, spinnersPaged

See documentation for details.

Some fields, for which pagination was already implemented, have been deprecated in favor of the new mechanism: `CMQueryList#pagedItems`, `CMQueryList#filteredPagedItems`. Also some methods of `QueryListAdapterFactory` and `QueryListAdapter` have been deprecated for that reason, see javadoc for details.

[CMS-17909]

### New Plugin Extension Point: `CopyToContextParameter`

With the new extension point `CopyToContextParameter` it is possible to declare additional parameters (http request parameters and headers) to be copied in the graphql context programmatically.

[CMS-17512]

## Miscellaneous

### Configurable Log Pattern in Solr Base Image

The Solr base image has been enhanced to make the Solr logging pattern configurable. Use `SOLR_LOG_PATTERN_CONSOLE` and `SOLR_LOG_PATTERN_FILE` to configure the logging.

This fix is contained in `coremedia/solr-base:8.8.2-3` and higher.

[CMS-20097]

### Undeprecated `CMLinkable#LOCAL_SETTINGS`

On popular demand, we have undeprecated `com.coremedia.blueprint.common.contentbeans.CMLinkable#LOCAL_SETTINGS`. Nonetheless, we recommend to use the `SettingsService` to access the settings.

[CMS-19985]

### Tomcat TLD Scanning has been Disabled for all Applications Except CAE

Since the CAE is the only application using taglibs, the tomcat scanning mechanism has been disabled for all Spring Boot applications except for the CAE.

For the CAE an exclude pattern has been defined, excluding problematic jars. The list includes:

- `xmpcore*.jar`
- `grpc-netty-shaded*.jar`
- `listenablefuture*.jar`
- `jsr305*.jar`
- `checker-compat-qual*.jar`
- `j2objc-annotations*.jar`

Please make sure that you are not already setting:

- the property `server.tomcat.additional-tld-skip-patterns`
- the environment variable `SERVER_TOMCAT_ADDITIONALTLDSKIPPATTERNS`
- the environment variable `SERVER_TOMCAT_ADDITIONAL_TLD_SKIP_PATTERNS`

If you set one of these properties outside of the CAEs `application.properties`, make sure to remove those and merge your additions into the CAEs `application.proeprties`.

[CMS-19953]

### Added Headless Rest Mappings for Augmentation Queries

The headless server now provides an augmentation Rest API. Refer the documentation for more details.

[CMS-19900]

### Third-Party Update: Apache Solr and Transitive Dependencies

Apache Solr has been updated to version 8.10.1.

For detailed changes of Apache Solr have a look at [https://lucene.apache.org/solr/8\\_10\\_1/changes/Changes.html](https://lucene.apache.org/solr/8_10_1/changes/Changes.html).

In previous releases, the Solr configuration contained a workaround for a bug in Solr 8.8.2, that has been fixed with the new version [SOLR-15192 / SOLR-13034]. The workaround has been removed again in file `apps/solr/modules/search/solr-con`

`fig/src/main/app/configsets/content/conf/solrconfig.xml`  
. For best performance, it's recommended to apply this change to custom copies of that file, by setting the `enableLazyFieldLoading` option back to `true`.

As part of this change, the following transitive dependencies have also been updated in CoreMedia applications to match versions used by SolrJ:

- HttpComponents HttpCore: 4.4.14
- Jetty: 9.4.44.v20210927

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-19802]

### Update of Commerce Adapter Versions

The following commerce adapter versions are set:

- Commerce adapter base to v1.6.9
- Commerce adapter sfcc to v1.4.6
- Commerce adapter hybris to v1.4.3
- Commerce adapter wcs to v1.6.3
- Commerce adapter commercetools to v1.2.3

[CMS-19734]

### Third-Party Update: Spring Boot and Related Dependencies

Spring Boot has been updated to version 2.3.11.RELEASE. As part of this change, the following dependencies have been updated to match versions used by Spring Boot. This also fixes a security vulnerability in Spring Security: CVE-2021-22112

- Spring Boot 2.3.11.RELEASE
- Spring Framework 5.2.15.RELEASE
- Spring Security 5.3.9.RELEASE
- Byte Buddy 1.10.22
- Glassfish JAXB 2.3.4
- Hibernate 5.4.30.Final
- Hsqldb 2.5.2
- Jakarta Mail 1.6.7
- Janino 3.1.4
- Jetty 9.4.41.v20210516

- Micrometer 1.5.14
- MySQL 8.0.25
- Netty 4.1.65.Final
- PostgreSQL driver 42.2.20
- Tomcat 9.0.46

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-19524]

### Added the possibility to change the commerce reference of an augmented content

In the case that IDs of categories or products changes in the commerce system, augmentations can now be adapted from the old ID to the new ID directly in CoreMedia Studio. To that end the system tab of augmented contents now provides an editable commerce reference field and a new `change reference` button. By clicking on it, the editor has the possibility to replace the current commerce reference with a new one from the commerce library. Folder path and name of the augmented content is getting updated after the change.

Additionally, the preference " *Show Products and Categories as Content* " also toggles the display of the repository path on the `System` tab of augmented categories and products.

[CMS-19456]

### Query for Documents Tagged by Specific Taxonomies

It is now possible to query for documents tagged by specific taxonomies. More details can be found in the Headless Server Manual.

[CMS-19408]

### Explode Spring Boot Applications for Commerce Adapters at Startup

The Docker images of the commerce adapters now also make use of the `SPRING_BOOT_EXPLODED_APP` toggle was added to the `java-application-base` image. By setting `SPRING_BOOT_EXPLODED_APP: true` [which now is the default], the `application` entrypoint will extract the `application.jar` to `/coremedia/exploded` and start it from there. If that directory already exists, it will start the application from there.

This process speeds up the starting process by factor 2-3 and is the recommended way by Spring.

[CMS-19368]

### Reproducible Maven Builds

With this release the Maven build produces the same artifacts on two consecutive builds, when there are no changes. This is implemented following the Maven guidelines described [here](#).

There are some minor behavioral changes in the editorial UIs:

- The Studio won't show a build date in the about dialog if the version is a `-SNAPSHOT`.
- The Editor won't show a build date in the about dialog

The `coremedia-application-maven-plugin` has been updated with this commit to the version `3.0.0`. This version does not add any new configuration options but removes some unused functionality including:

- support for Webstart
- support for RPM building
- support for application building with embedded Tomcat installation

If you need any of these features, you can switch back to version `2.8.3` and build without the reproducible build feature.

[CMS-19166]

### Reworked Commerce search API

The Commerce search API as defined in class `com.coremedia.livecontext.ecommerce.catalog.CatalogService` was changed. The methods accepting search parameters as a map are deprecated. A single method accepting parameters of type `com.coremedia.livecontext.ecommerce.search.SearchQuery` and `com.coremedia.livecontext.ecommerce.common.StoreContext` replaces them all: `CatalogService#search(SearchQuery sq, StoreContext sc)`

The paging parameters have been consolidated. The new `SearchQuery` parameter object does neither support `pageSize` nor `pageNumber` because this information is redundant to `limit` and `offset`.

The new `SearchQuery#offset` is 0-based whereas `CatalogService#SEARCH_PARAM_OFFSET` was 1-based. In order not to confuse the editors the offset in the `ProductList` Studio form is still 1-based. The required offset conversion is implemented in all places, where the settings of product list contents are read. Custom implementations will have to be changed from `searchParams.put(SEARCH_PARAM_OFFSET, Integer.toString(myOffset))` to `searchQueryBuilder.setOffset(myOffset - 1)`.

The method `MarketingSpotService#searchMarketingSpots(String s, Map<String,String> m, StoreContext sc)` has been deprecated



in favor of `MarketingSpotService#searchMarketingSpots(SearchQuery q, StoreContext sc)`.

The methods `DataSearchService#searchCategories(String s, Map<String,String> m, StoreContext sc)`, `DataSearchService#searchProducts(String s, Map<String,String> m, BaseCommerceBeanType b, StoreContext sc)` and `DataSearchService#searchMarketingSpots(String s, StoreContext sc)` have been deprecated in favor of `DataSearchService#search(SearchQuery q, StoreContext sc)`.

Multi-facet support is included only for commerce adapter services based on base adapter 1.5. The new search implementation is backward-compatible in the sense that it works with older commerce adapter services (using base adapter older than 1.5) but then just the first facet is taken into account. Also note that the deprecated `SearchResult#getFacets` is only filled when connected to an old commerce adapter because the returned facet format is incompatible with the new facet format returned in `SearchResult#getResultFacets`.

For the backward compatibility of the commerce adapter used in your project, please consult the release notes of the commerce adapter.

[CMS-19118]

### Removed Classic Studio Components

Removed Components in `apps/studio-client/apps/main/core/editor-components/src/sdk/desktop/`:

- `ExtensionsMenu/ExtensionsMenuToolbar` replaced by the new `Apps Menu`
- `FavoritesToolbar/FavoritesToolbarUserItemsArea` is no longer a toolbar, but a menu: `FavoritesButtonMenu`, `FavoritesUserItem`

[CMS-18876]

### Added `EntityController` and `StudioRestController` as `ExtensionPoints` for Studio-Server Plugins

See JavaDoc of `EntityController` and `StudioRestController` in package `com.coremedia.rest.controller` and section "Using the Entity-Controller" in Studio Developer Manual and section "Plugins for Java Applications" in Blueprint Developer Manual.

[CMS-18735]

## Unify Link Building for Commerce-Led and Content-Led URLs

The generic client receives links for commerce-led and content-led link building as link template. The template usually contains placeholders, which are replaced in the generic client.

The class `com.coremedia.livecontext.ecommerce.link.CommerceLinkTemplateTypes` represents the list of well-known link templates. As all link templates are transferred in a map from the adapter to the client, additional links can be added on the adapter and client side easily without API changes.

Make sure the commerce adapter instance and the commerce-adapter-base library in your client application do have at least version 2.0.0.

There is no further action needed, if you did not customize link building in your project so far.

[CMS-17506]

## Customization of `CMQueryListImpl` and `SettingsStructToSearchQueryConverter`

The Blueprint classes `CMQueryListImpl` and `SettingsStructToSearchQueryConverter` can be customized easier now by overriding protected methods, that were private before. The `SettingsStructToSearchQueryConverter` was enhanced by a method `applyCustomFilter` that can be overridden to add custom filters to the query. Additionally a custom `SettingsStructToSearchQueryConverter` can be provided via a new factory bean `SettingsStructToSearchQueryConverterFactory`.

[CMS-16276]

# 4.23.3 Fixed Issues

## CoreMedia Core

### Fixed Bug in `LocalAndLinkedSettingsFinder`

Class `com.coremedia.blueprint.base.settings.impl.LocalAndLinkedSettingsFinder` handles cyclic navigation structures and does no longer propagate `com.coremedia.blueprint.base.tree.CycleInTreeRelationException` to clients of `com.coremedia.blueprint.base.settings.SettingsService`.

[CMS-20313]

### Update of coremedia-application-maven-plugin to 3.0.1

This update fixes an issue, where the plugin did not set the executable flags correctly for the `cm` executable in the `target` directory.

[CMS-19862]

### Third-Party Update: Spring-Security

Due to a security issue [ <https://nvd.nist.gov/vuln/detail/CVE-2021-22119> ] we updated spring-security from 5.3.9.RELEASE to 5.3.10.RELEASE. We are not aware of any incompatibilities.

[CMS-19702]

### Fixed CAE Feeder deadlock for JMX access

Fixed a bug in the *CAE Feeder* that could lead to a deadlock when reading attribute `InvalidationQueueSize` of `MBean ContentDependencyInvalidator` via JMX.

[CMS-19642]

### Third-Party Update: Apache PDFBox

Apache PDFBox has been updated to version 2.0.24 to avoid a security vulnerability of the previous version [CVE-2021-31812].

[CMS-19638]

### CAE Feeder Performance Improvement

Fixed a bug in the *CAE Feeder* that led to reduced throughput, especially for larger indexes.

[CMS-19636]

### Fixed Output for `cm.encryptpasswordproperty`

`cm.encryptpasswordproperty` failed to output more details especially in case of failures while encrypting or decrypting passwords.

This has been fixed.

#### Upgrade:

Unless you defined a custom `EncryptionService`, no upgrade steps are required.

For custom implementations of `EncryptionService` it is strongly recommended to override the default method `EncryptionService.usingLogger(logger:Logger):EncryptionService`, so that tools such as `cm.encryptpasswordproperty` benefit from log messages provided by your custom service. Ensure to read the implementation specification carefully.

As alternative, you may want to adjust the tools-logging-configuration, so that your custom service is able to log to stdout.

[CMS-19531]

### The 'property' column of the 'System' table has now the length 100

When a string property of a document type is observed it is registered in the 'System' table. To handle long document type and property names the 'property' column of the table has now the length of 100 instead of 50.

[CMS-19293]

### Verbosity of publishall

Failures of the `publishall` tool are logged to a file, but have not been obvious for the user on stdout. Now, a concluding failure message is written to stdout.

[CMS-19275]

### cm validate-multisite: Enhanced Robustness for Huge Multi-Site Setups

`cm validate-multisite` got enhanced for robustness in huge multi-site setups.

Instead of buffering issues in memory before they are stored to stdout and/or file, the output is now done immediately after an issue has been found.

Due to the change, the output to stdout has changed slightly, so that reported issues are mixed with status messages. For a better overview of actual issues found, it is recommended to dump the results into a tab-separated file using the `--file` CLI option.

[CMS-19272]

### Blobs in structs get collected after version or content is destroyed

Previously, blobs that were referenced in a struct did not get garbage collected when the version containing the struct that was destroyed. This has been fixed.

[CMS-19160]

### Fix import-user script if no user xml files found

The `import-user` script in the management-tools container now ignores an empty users dir in the import directory.

[CMS-19103]

### Fixed Broken Order of Transformations

The list of image transformation variants is now returned sorted by name. This may lead to a different order of variants inside the Studio's Image Editor. To customize the order, change the struct list of variants in the settings document *Responsive Image Settings*.

[CMS-18680]

### Fixed Solr hostname and port disclosure with malicious REST request

It was possible to create a manipulated bad Studio search request which produces an internal server error with an error message text produced by Solr containing the hostname and port. This error is caught now.

[CMS-18530]

### Improve Studio robustness when no WorkflowRepository is available

When no `WorkflowRepository` was available in Studio some errors occurred. Now all accesses to the `WorkflowRepository` have been guarded by a `null` check to prevent errors.

[CMS-18237]

### Fixed multi-threading issues in cleanrecyclebin tool

An issue has been fixed regarding the concurrent creation of directories.

[CMS-18163]

### Fixed a bug in ObservedPropertyService leading to seemingly missing augmentations

Fixed a bug in the implementation of `com.coremedia.cap.content.observe.ObservedPropertyService` that lead to wrong cache entries of observed property values. If the cache key was evaluated in a request associated with a user session with limited rights, then the cache entry contained only the contents readable by that user. Because the Augmentation Service is using observed property values to find augmented content for a commerce ID, this could have lead to seemingly missing augmentations in the past.

[CMS-16741]

### Encrypt Initial Passwords

The properties `cap.server.initialPassword.*` can be encrypted using the `cm encryptpasswordproperty` tool now.

[CMS-11312]

### Fixed Content Feeder Handling of Destroyed Derived Content

Fixed a bug in the Content Feeder that could lead to an error while feeding a content item, if a derived content item was destroyed in the meantime. Exceptions about destroyed derived content items are now caught and do not cause problems for feeding.

[CMS-9058]

## CoreMedia Content Application Engine

### Removed com.coremedia.elastic.social.springsecurity from component scan

The package `com.coremedia.elastic.social.springsecurity` has been removed from Spring component scan to avoid conflicts with auto configuration and unwanted instantiation of `SocialWebSecurityConfigurerAdapter` when a custom `WebSecurityConfigurerAdapter` is in place.

[CMS-19671]

### Cache Classes Listing in DataViewFactory MBean fixed

Fixed displayed cache classes in `DataViewFactory#getCacheSizes` MBean

[CMS-19600]

### Avoid Cache Deadlock for TransformedBlobKey

Avoided calling equals on the original blob as that results in a deadlock within the cache. `CapBlobRefImpl` is dereferenced while calling `com.coremedia.transform.impl.CachedTransformedBlob#getETag` which results in avoiding cache deadlock

[CMS-19527]

### PageGrid Issue on Category and Product Pages Fixed

In rare cases it could happen that wrong content was delivered from the cache. The reason was a problem with the identity of the `PageGridCacheKey`.

[CMS-19416]

### Fixed cache size handling of the DataViewFactory

The default `com.coremedia.objectserver.dataviews.DataViewFactory` bean now respects cache sizes that have already been configured on the cache. If a cache size for a dataview class is defined inside the dataviews XML file as well as by a `cache.capacities` spring property, then the Spring property wins.

[CMS-19244]

### CapBlobHandlerTest doesn't fail even if mediatransform.xml is populated

There has been some refactoring since 2101.2 and the bug is not reproducible since 2101.3.

[CMS-18988]

### Sanitize user-data before logging it

User data provided is now sanitized before logging the entry to the log files, thus avoiding log injection.

[CMS-18000]

### Added hint for TransformedBlobCache usage

Added hint to CAE Developer Manual, that the transformed blob cache can only be used by one CAE.

[CMS-17644]

## CoreMedia Studio Client

### Image Editor: Broken crops after change fixed

In some cases resizing crops were broken by a recent bug fix. Now all crops can be resized again.

[CMS-20517]

### Window Skin removal

- The Window Skin GRID\_200\_LIGHT is removed.

Use the Skin GRID\_200 instead.

[CMS-20345]

### Fix commerce library lazy loading

Reimplemented how is checked whether a category inside the library is a linked one. The new way is more performant and does not load all the category children from the parent.

[CMS-20245]

### Fixed Error On Closing CMPicture Document

We fixed an error that occurred when closing a CMPicture document (with tab-reuse disabled).

[CMS-20221]

### FolderChooserListViewBase#getAvailablePathsExpression is now null robust

`FolderChooserListViewBase#getAvailablePathsExpression` threw a `TypeError` because of an unallowed `null` access when no preferred site was selected. This occurred while importing an item from the content hub.

[CMS-19707]

### Fixed Link List Suggestions for Site Specific Taxonomies

Fixed an issue where only global taxonomy nodes were suggested in the link list, even for site specific ones. The issue happened for the link list suggestions and for the taxonomy chooser dialog chooser.

[CMS-19611]

### Added "defaultNameValueExpression" Parameter to QuickCreateMenuItem

This parameter was missing here and is now passed via the *QuickCreateAction* to the *QuickCreateDialog*.

[CMS-19595]

### Modification of Issue Filter UI selection

When choosing an issue category, with no severity selected before, all the severity checkboxes are now checked automatically.

[CMS-19545]

### Added new config preferredSiteOnly for LinkListPropertyField

The config delegates the config to the *LinkListPropertyFieldGridPanel*. If true its link suggester only suggest content of the preferred site.

[CMS-19491]

### CategoryDocumentForm Expands when there is an Issue

The subpanels for `subjectTaxonomy`, `locationTaxonomy`, `keywords` will be expanded when there are issues for the properties.

[CMS-19382]

### Fixed Caching Issue in ViewTypeUtil

Fixed caching issue in *ViewTypeUtil.as* when working the custom base paths.

[CMS-19267]

### Cache Buster is once again only applied for GET requests

When changing the used underlying API for our Studio REST Requests we accidentally added the cache buster (that prevents caching a requests) not only to "GET" requests but to all requests. This is fixed now, so the old behavior applies.

[CMS-19243]

### Fixed some timing problems in FolderChooserList

The *FolderChooserList* was not properly initialized if some contents were not yet loaded. This has been fixed now.

[CMS-19158]



### Possible Format-Loss For Richtext in Studio Fixed

For CoreMedia Richtext created outside CoreMedia Studio you may have experienced losing formatting when loading these into CoreMedia Studio.

The root-cause, which required all CoreMedia Richtext documents to come with a xlink namespace declaration, got fixed.

[CMS-19138]

### Fixed type error when aborting a workflow

Fixed a type error when a workflow was aborted in Studio.

```
Uncaught TypeError: this$.backToListHandler$2G1D is not a function
```

[CMS-19133]

### Studio Client Now Has X-Content-Type-Options "nosniff" Header

The Studio Client now has the X-Content-Type-Options "nosniff" header set for all client requests. The Studio Server already added this header previously.

[CMS-19050]

### Fixed Timing Problem when Loading Site Specific Settings

If global settings were loaded before the site specific settings the global settings sometimes did take precedence. This has been fixed now.

[CMS-18549]

### Fixed error when trying to republish a withdrawn folder

A published and then withdrawn folder could not be republished again. An error message appeared indicating that the folder is already published. This is fixed now.

[CMS-17407]

### Controlroom: Start translation workflow button in toolbar hidden when unusable

A bug has been fixed which shows the button to start a translation even if it is not possible to start a translation. Now the button is hidden in the case a translation can't be started.

[CMS-16881]

### Fixed endless loop bug when opening the Studio library

When a new site was created which only contains two contents of type Site Indicator and CMChannel with the latter being the home page of the former, then it could happen that opening the library results in an endless JavaScript execution loop and a type error being displayed in the browser console which starts with the following error text:

```
AS3: [ERROR] Ext.ComponentManager.register(): Duplicate component id  
"librarytree"  
Error: Duplicate component id "librarytree"
```

[CMS-16737]

### Fixed console warnings about deprecated Ext.EventManager

The EventManager is outdated causing a lot of warnings when opening e.g. an CMArticle form due to still being used. Replaced all usages in the code with corresponding alternatives.

[CMS-16061]

## CoreMedia Studio Server

### Fixed Notification Menu Closing Bug

Fixed an issue where the notification menu was closed when clicking on it's scrollbar.

[CMS-20021]

### Mimetype of uploaded xpi files is now recognized as application/x-xpinstall

Prior to the fix they have been recognized as application/zip.

[CMS-19951]

### Improve 'mayPreview' of ConfigureDocumentTypePlugin

The *mayPreview* check is now executed for the complete hierarchy of a document type. The check was previously only executed for the first function that matches any type of the given content type.

[CMS-19905]

### Fixed Caching Bug for View Types

Fixed a bug in the view type selector where wrong variants have shown or none at all for different document types.

[CMS-19902]

### Error for Editing History of Deleted User Fixed

We fixed an error that occurred when you view the editing history of a document where some versions were created by a user that was deleted in the meantime.

[CMS-19733]

### Fixed Issue with Tab Expand Plugin

Fixed possible *null* error in the *TabExpandPlugin* which is responsible for the "Advanced Tab" setting in the user preferences.

[CMS-19715]

### Fixed Error in Job Tooltip

Fixed a *null* error inside the running job panel.

[CMS-19682]

### Reject requests against Studio Server until the application is live and ready

Depending on the deployment circumstances, Studio Server may have accepted requests before the application was live and ready. This lead to broken JSON responses and broken studio client sessions. This bug has been fixed by adding a filter that rejects requests during Studio startup and permits requests when Studio is live and ready.

[CMS-19589]

### Fixed initialization of Studio ObjectMapper

Fixed a bug that caused the Studio ObjectMapper to get initialized without the JsonSerializer required by the Studio Client under rare conditions.

[CMS-19582]

### Third-Party Update: Liquibase

Liquibase has been updated to 4.3.5.

[CMS-19389]

### Fixed Tooltip of Notification Menu Button

The tooltip of the Notification menu button wasn't showing the proper amount of unread notifications. This has been fixed now.

[CMS-19323]

### Embedding a CMHTML document into the richtext editor no longer leads to errors

There was a bug when embedding a CMHTML document to the richtext editor causing JavaScript errors and breaking Studio. This has been fixed now.

[CMS-19280]

### Theme Importer

The Theme Importer did not recognize changes of the `defer` flag for Javascript resources from `true` to `false` when reimporting a theme. This is fixed now.

[CMS-19279]

### Fix StackoverflowError in Studio Server when starting sync workflow

Fixed a bug that caused a StackoverflowError in the Studio Server when a synchronization workflow was started for content with illegal cyclic master link structures.

[CMS-19119]

### Fixed Referrer Invalidations

In some situations the order of invalidations regarding referrers of a content was not deterministic. This led to stale cache entries that still contained outdated referrers. The order of referrer invalidations is now fixed in the U-API client. This especially solves an error that shows "Cycle detected in tree relation" in the log or a Studio validator message regarding a cycle in the navigation, although the cyclic link was already removed from the content repository.

[CMS-19109]

### Enhanced Error Handling For Editorial Comments When Connected to Old Server

Due to missing support for User-UUID support in old content management servers, you may have observed occurrences of `EditorialCommentsPersistenceException` with rather vague errors on column `CREATOR_ID`.

The error handling has been enhanced in that way, that you will get a clear error message for this state: *The Content Server does not provide a UUID for user. This may happen if Content Server version is before 2007.1* [message of a corresponding `NullPointerException`].

[CMS-19086]

### Studio Locale Cookie with SameSite Lax

Firefox was complaining about the Studio locale cookie having `sameSite=none` and at the same time not being secure. Firefox also threatens to disregard the cookie in the near future which will result in Studio not loading anymore whenever a locale different from the default locale is stored in a user's `EditorPreferences`.

The cookie now has `sameSite=Lax` from 2101.4 and 2104.1 on. For older versions there is a workaround applicable to the `config-init.js` in Blueprint.

Replace the function `loadScripts()` with this:

```
function loadScripts() {
  // create and append script elements
  function loadScript(attributes) {
    var script = document.createElement('script');
    script.async = false;
    script.type = 'text/javascript';
    Object.keys(attributes).forEach(function (a) {
      script[a] = attributes[a];
    });
    document.body.appendChild(script);
  }

  var attributeList = [
    {src: window.coremediaRemoteServiceUri + 'supported-locales.js'},
    {src: window.coremediaRemoteServiceUri + 'accept-language-header.js'},
    {src: 'resources/before-ext-load.js'},
    {id: 'microloader', 'data-app': '906bf4bf-9a7d-42cc-b7a5-6ef30df325e9',
    src: 'bootstrap.js'}
  ];

  patchJooLocaleSupportWhenReady();
}
```

```
    attributeList.forEach(loadScript)
}
```

and add:

```
function patchJooLocaleSupportWhenReady() {
  joo.___localeSupport = joo.localeSupport;
  Object.defineProperty(joo, "localeSupport", {
    get: function () {
      return joo.___localeSupport;
    },
    set: function (ls) {
      joo.___localeSupport = ls;

      ls.setLocale = function (newLocale/*:String*//*:String*/ {
        ls.locale = ls.findSupportedLocale(newLocale);
        // either create, update or remove (if locale===null) the Cookie:
        setLaxCookie(ls.localeCookieName, ls.locale, ls.localeCookiePath,
          ls.locale ? getLocaleCookieExpiry() : new Date(0),
          ls.localeCookieDomain);
        return ls.getLocale(); // use getter to re-compute fallback logic
      } for locale===null and cache the result
    )

    return ls.getLocale();
  })
}

function setLaxCookie(name, value, path, expires, domain) {
  //noinspection FallThroughInSwitchStatementJS
  document.cookie =
    name + "=" + encodeURIComponent(value || "") +
    ((expires === null) ? "" : ("; expires=" + expires.toGMTString()))
+
    ((path === null) ? "" : ("; path=" + path)) +
    ((domain === null) ? "" : ("; domain=" + domain)) + ";
  SameSite=Lax"
}

function getLocaleCookieExpiry()/*:Date*/ {
  var date/*:Date*/ = new Date();
  var DAYS_TILL_LOCALE_COOKIE_EXPIRY = 10*356;
  date.setTime(date.getTime() + (DAYS_TILL_LOCALE_COOKIE_EXPIRY * 24 * 60
    * 60 * 1000));
  return date;
}
```

[CMS-18892]

### Fixed VisibilityValidator bug that caused NoSuchPropertyDescriptorException

Fixed a bug in the Studio VisibilityValidator that could lead to an exception of type `NoSuchPropertyDescriptorException` when issues were computed for a page, and if a link was missing in the page grid structure.

[CMS-17791]

### BlobUploadXmpDataInterceptor merging existing local settings now

If local settings are already existing when calling `BlobUploadXmpDataInterceptor`, they will now be merged and won't be overwritten anymore.

[CMS-16028]

### Fixed Problem With Vanished Characters in Text Fields / Areas

We fixed a bug where characters vanished in text fields and text areas when one was typing fast.

[CMS-15263]

## CoreMedia Elastic Social

### RemoveLikesTask updates counter "author:number\_of\_likes"

The RemoveLikesTask updates the counter "author:number\_of\_likes" now. Before, the counter was not updated by the task.

[CMS-19773]

### SimpleLinkFormatter link building properties configurable and protocol default to HTTPS

ElasticSocialLinkBuildingProperties are introduced to make link building properties [protocol, context path and servlet path] configurable. Default protocol is now set to HTTPS.

[CMS-18425]

## CoreMedia Deployment

### Fix warning about spring.profiles at application startup

The `coremedia/java-application-base` image accepts a `SPRING_PROFILES` environment variable to enable Spring profiles. With newer versions of Spring Boot, `SPRING_PROFILES` is interpreted as the `spring.profiles` systemproperty which cannot be set as it is a node in the property tree and not a leaf.

With the update to `coremedia/java-application-base:2.4.0-*`, the `SPRING_PROFILES` environment variable will be unset before the application is started. The value of the environment variable is however passed to the start of the application to enable all requested profiles.

[CMS-20015]

### File logging can be disabled

File logging could not be disabled for container based environments. This behavior was fixed with a conditional log back configuration. To disable file logging, set environment variable "LOGGING\_FILE\_NAME" to an empty value.

[CMS-18834]

## CoreMedia Commerce Hub

### Extend live context environment with fragment connector disabled

The `com.coremedia.fragmentConnector.disabled` property now can be configured via properties files such as `project.properties` or `lc-connector.properties`, besides via Standard Environment variable or JVM argument.

[CMS-19939]

### Fixed propagation of CatalogAlias to CommerceBeans' StoreContexts

Commerce beans now propagate the catalog alias which is encoded in their commerce ID to derived commerce beans such as subcategories or assigned products. This fix ensures that the catalog alias is also set to the store context held by the commerce beans.

[CMS-19675]

### Fixed delegation to built-in commerce services for custom commerce service implementations

Introduced `com.coremedia.blueprint.base.livecontext.client.common.RequiresServiceDelegate` as callback interface if a custom commerce service implementation requires the built-in service instance as delegate.

[CMS-19453]

### Fixed a bug regarding `commerce.hub.cache` properties

The deprecated commerce cache properties prefixed `commerce.hub.cache` caused application startup to fail. This bug has been fixed so that these properties can be used again. But still remember to convert them to `cache.<capabilities|timeout-seconds>.ecommerce` properties soon.

[CMS-19324]

## CoreMedia Headless Server

### Refactor PluginConfiguration

Remove usage of superfluous "name" attribute in Bean Annotation and introduce constant for bean name for custom `SchemaAdapterBeanResolver`.

[CMS-20408]

### Fix rendering of richtext in settings

Properly invoke the `RichTextAdapter` in the Converter for the settings-JSON so `RichText` gets displayed properly in settings.

[CMS-20315]

### Fix behaviour of CMHTML data property

CMHTML data property now gets properly resolved. It is possible to retrieve a URL for a markup and download it in a separate request.

[CMS-20007]

### Fix various nullability related issues

Cleared interfaces and implementing classes to properly deal with nullability annotations in Headless Server.

[CMS-19701]

### [Headless] Exposing Missing SEO Properties

The missing properties for CMLinkable "htmlTitle", "keywords" and "htmlDescription" were added to the content schema.

[CMS-19690]

### Fix broken handling of arrays in input values for headless persisted queries and rest endpoint

Arrays passed as input values for the persisted queries and the rest endpoint are now converted correctly and work as intended. With this it is also possible to pass arrays as parameters of queries.

[CMS-19689]

### Ignore destroyed contents in LinkListAdapter

Ignore destroyed contents in LinkListAdapter to avoid returning them.

[CMS-19622]

### Fix ViewBySiteFilterDataFetcher not checking DataFetcherResults

The ViewBySiteFilterDataFetcher now also properly can deal with DataFetcherResults and not just accepts them.

[CMS-19517]

### Configuration of custom Solr fields

Custom Solr fields can be configured for the Headless-Server to be used in Search or QueryLists. See documentation for details.

[CMS-19277]

### SchemaParser ignores type extensions for inherited types

The SchemaParser is responsible to apply the @inherit custom directive, thus apply all inherited fields throughout a type hierarchy. The inheritance did not took fields of type extensions into account. This misbehaviour was fixed.



[CMS-19073]

### Headless Server sends HTTP header Strict-Transport-Security by default

Headless Server now sends by default a Strict-Transport-Security HTTP header with the default value of "max-age= 63072000; includeSubdomains". The content of the header can be configured by application properties. Please see the deployment manual for details.

[CMS-19046]

### Slightly improved error message handling

For security reasons, Headless Server does not expose any textual error messages anymore, when running in live mode. This prevents any unwanted, accidental exposure of server side error messages which might leak information potentially useful for attackers. In preview mode, error messages are still part of the JSON error response.

[CMS-19045]

## CoreMedia Documentation

### Spring Boot Endpoint Documentation added

A description of custom Spring Boot actuator endpoints has been added to the Operations Basics handbook.

[CMS-18874]

## Miscellaneous

### Root Category Preview

We fixed the preview for the virtual root categories that do not have a corresponding shop URL. Instead of the previously rendered error, we now render its placements as a content page through the storefront. The layout is not accurate but it should give editorial users enough preview possibilities to create placement content that is used for inheritance to other subcategories.

[CMS-20430]

### Fix Check for Personal Data Usage

The check for usage of personal data has been fixed to work with OpenJDK 11.0.12+ by including Guava's third-party library `com.google.errorprone:error_prone_annotations`, so that annotations used by Guava are available on the classpath.

[CMS-20426]

### Third-Party Update : Tomcat

Tomcat has been updated to version 9.0.54 to avoid security vulnerabilities of the previous version.

[CMS-20244]

### Third-Party Update : Ant

Ant has been updated to version 1.10.11 to avoid security vulnerabilities of the previous version.

[CMS-19843]

### Third-Party Update : Tomcat

Tomcat has been updated to version 9.0.48 to avoid security vulnerabilities of the previous version.

[CMS-19841]

### Third-Party Update : Jetty

Jetty has been updated to version 9.4.43.v20210629 to avoid security vulnerabilities of the previous version.

[CMS-19840]

### ContentHub: ContentWriteInterceptors are now correctly applied for subtypes

ContentWriteInterceptors are now correctly applied for subtypes when content is created via ContentHub.

[CMS-19830]

### Third-Party Update: Netty

Netty has been updated to version 4.1.63.Final to avoid security vulnerabilities of the previous versions.

[CMS-19257]

### Third-Party Update: Jetty

Jetty has been updated to version 9.4.39.v20210325 to avoid security vulnerabilities of the previous version.

[CMS-19250]

### Update of MongoDB Java Driver

The thirdparty dependencies org.mongodb:mongodb-driver-legacy, org.mongodb:mongodb-driver-core and org.mongodb:bson have been updated from version 4.1.0 to 4.2.2.

[CMS-19077]

### Fixed OSM Marker Initialization

Fixed issue with the OSM integration where the map marker would not appear.

[CMS-18890]

### Calista and Aurora UK site removed

The English / United Kingdom ("en\_UK") demo content for Calista and Aurora Augmentation has been removed. The reason is that a default HCL Commerce system does not provide "en\_UK" out of the box. When using the UK sites in Studio, the preview always showed the "en\_US" storefront and pulled fragments from the "en\_US" site. Any content changes made in the "en\_UK" site were not reflected in the preview and this confused editorial users in a demo or testing scenario. This removal only affects demo content.

[CMS-18634]

## 5. Upgrade Information

This chapter contains all information relevant for an upgrade to the specific release.

## 5.1 Upgrade to 2307.3

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.1.1 CoreMedia Content Application Engine

#### The `disableInheritance` and `defaultInheritance` flags for pagegrid of non augmented categories and products work now as intended

In the pagegrid layout document the `disableInheritance` flag is used to disable the inheritance and the `defaultInheritance` flag to change the default inheritance. This feature works now also for the non-augmented commercial categories and products. This is fixed for studio, headless server and cae. To that end `com.coremedia.blueprint.base.pagegrid.ContentBackedPageGridService` is extended by following public API methods:

- `ContentBackedPageGrid getContentBackedPageGrid(Content content, boolean virtual);`
- `ContentBackedPageGrid getContentBackedPageGrid(Content content, String pageGridName, boolean virtual);`
- `ContentBackedPageGrid getContentBackedPageGrid(Content content, String pageGridName, TreeRelation<Content> treeRelation, boolean virtual);`

[CMS-21988]

## 5.1.2 CoreMedia Headless Server

### Media hash calculation relies on configurable properties for image transformation

Previously the media hash calculation for the media endpoint included all properties from site or global image transformation settings. This led to an unexpected change of the media hash, when changing non-relevant transformation properties, e.g. `minWidth`. This change introduces the application property `caas.media.hash-property-names`, which defaults to the list of these values: `"width", "height", "widthRatio", "heightRatio"`.

This change is considered breaking, because all media urls will change regarding the media hash. The expected impact is not high because wrong hashes issue a HTTP redirect (301) to the correct URL.

[CMS-23635]

## 5.2 Upgrade to 2307.2

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.2.1 CoreMedia Studio Client

#### CKEditor 5: Simplify License Management

The license management for CKEditor 5 has been simplified by extracting the `licenseKey` configuration into an extra sidecar file `ckeditor5License.ts`.

The existing CKEditor 5 instance factories (`ckeditorDefault.ts`, `ckeditorHtmlViewer` and `ckeditorSlim.ts`) have been adapted to use this key via deconstruction pattern:

```
return ClassicEditor.create(domElement, {
  ...ckeditor5License, // new, was licenseKey: "" before
  placeholder: localize('Type your text here...', language),
```

In addition to this change, the default license key is now an OEM license key, shipped with `@coremedia/ckeditor5-coremedia-oem-activation`, rather than an empty one.

This OEM key must not be used outside CMCC, but may be reused for your custom CKEditor 5 instance factories. To enable premium CKEditor 5 features, you must purchase your own license.

[CMS-23472]

#### CKEditor 5 and CoreMedia CKEditor 5 Plugins Updated

CKEditor 5 has been updated to version 39.0.2 and CoreMedia's CKEditor 5 Plugins have been updated to version 16.0.0.

##### CKEditor 5 Update

The integration that ships with CoreMedia Blueprint is not affected by any of the recent changes introduced with CKEditor 5 38.x and CKEditor 5 39.x. You should review [release](#)

**notes of CKEditor 5** , though, if you are affected, like changes to the CKEditor 5 GHS plugin [about `html*Attributes` ] and color picker changes.

### License Handling

CoreMedia Blueprint now also ships with an CKEditor 5 CoreMedia OEM License Key. Find more details in release notes for CMS\23472.

### CKEditor 5 CoreMedia Plugins Enhancements

- **Handle Artificial `xlink:role` :**

`@coremedia/ckeditor5-coremedia-richtext` now comes with a factory method for adapting your data-processing, to handle so-called *artificial `xlink:role`* attributes: `mapArtificialXLinkRole` . This will help if you stored data in `xlink:role` that are not meant to become part of the `target` attribute of a link. For details, see *Studio Developer Manual* , namely section *Link Editing* in the *CKEditor 5 Customization* section.

- **Fix Link Balloon on Document Tab Change:**

In previous versions, when, for example, triggering "Open in Tab" for an embedded video in Rich Text, the link balloon did not close on the triggered document tab change. This has been fixed.

- **Configure Default Target:**

For the `LinkTarget` plugin you can now configure default targets to apply, when creating corresponding links. The plugin is able to configure different defaults for external and content links:

```
link: {
  defaultProtocol: "https://",
  defaultTargets: [
    {
      type: "externalLink",
      target: "_blank",
    },
    {
      type: "contentLink",
      target: "_embed",
    },
  ],
  // ...
}
```

and for more fine-grained control based on protocol, for example:

```
link: {
  defaultProtocol: "https://",
  defaultTargets: [
    {
      filter: (url: string): boolean => url.startsWith("http"),
      target: "_blank",
    },
  ],
}
```



```
} // ...
```

Note, that the artificial protocol for content-links is `content:`.

### Upgrade Notes

While there were no changes towards the public API used from within CoreMedia Blueprint, CKEditor 5 comes with internal API changes. Having this, this update cannot be applied to previous CMCC releases. It is required to update Studio Client dependencies also, especially `@coremedia/studio-client.ext.ckeditor5-components`, as `CKEditor5RichTextArea` had to be adapted to this private API change.

Ensure, to also validate your customizations towards CKEditor 5, like custom plugins you may have developed.

[CMS-23320]

## 5.3 Upgrade to 2307.1

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.3.1 CoreMedia Core

#### CAE Feeder Database Locking Changes

The *CAE Feeder* stores information in the database table `pclocks` to detect configuration errors, where another application unexpectedly uses the same database schema. The implementation of this check and the database table definition has changed with the new release. The database table is automatically adapted. No additional action is required. However please note, that it is not possible to start a CAE Feeder of a previous release on the database after the new CAE Feeder has adapted the database tables.

[CMS-23131]

## Upgrade to Solr 9

The search engine was updated from Solr 8.11.2 to Solr 9.2.1. Alongside, a new *core-media/solr-base* Docker image with tag 2.0-cm-9.2.1 was released.

It is strongly recommended to fully reindex all documents and Elastic Social data. Refer to section *3.5 Reindexing* in the *Search Manual* for details on how to do that. For CAE Feeders re-indexation, the previous Solr indexes should be deleted altogether after triggering the feeder reset.

Note that re-indexing may take quite some time for large repositories. To avoid long downtime, you can set up a new Content Feeder, new CAE Feeders, and new Solr instance(s) in parallel to your existing installation, connect them to your existing Content Management Server and Master Live Server, and let them feed the indexes of the newly set up Solr instance. During that time, existing Studio and delivery instances will still use the old Solr 8 indexes. When initial feeding is complete, you can update Content Servers, Studio, CAEs, and Headless Servers. They must be configured to use the new Solr instance(s) for search, but will already find an initialized index, so that search is working immediately. Old Content and CAE Feeders as well as old Solr instances can then be shut down. Connecting new Content and CAE Feeders to older Content Servers

most likely works, but this needs to be tested individually. Refer to section 3.5.4 *Reindexing Content Feeder and CAE Feeder Indices from Scratch / Setup for Reindexing in New Solr* in the *Search Manual* for more information.

During internal tests, upgrading from Solr 8.11.2 without reindexing worked without issues. Solr 8.11.2 was introduced with CoreMedia release 2207.1. Mind, though, that this might not work, if the Solr index had initially been set up using a version prior to Solr 8. If your Solr indexes originate from a Solr version prior to 8, you most likely must start a re-indexation.

Any upgrade scenario must be thoroughly tested for functionality and performance in advance to applying it to a production system. These tests should ideally be performed with a full copy of production data and with real-life usage scenarios, especially with respect to CAE and/or Headless Server delivery.

For details on update planning in custom setups, see <https://solr.apache.org/guide/solr/latest/upgrade-notes/major-changes-in-solr-9.html>.

Solr 9 introduces "modules" (formerly known as contribs) which have to be enabled to be used [see <https://solr.apache.org/guide/solr/latest/upgrade-notes/major-changes-in-solr-9.html> and <https://solr.apache.org/guide/solr/latest/configuration-guide/solr-modules.html>]. By default, modules *analysis-extras* and *langid* are activated in the CoreMedia Blueprints workspace. If you are using custom configurations that require additional modules, you need to make sure those two are still active.

Please mind that proxy settings for communication of CMS components with Solr 9 are currently not supported.

[CMS-22658]

## New Recommended Final Action For Localization Workflows: CleanInTranslationFinalAction

For all localization workflows, we offer a new `FinalAction` for cleaning up the *in-translation* state for involved contents early, thus, earlier than done by `CleanInTranslation` scheduled task.

The usage within your workflows looks like follows:

```
<FinalAction  
class="com.coremedia.translate.workflow.CleanInTranslationFinalAction"
```

```
derivedContentsVariable="derivedContents"  
masterContentObjectsVariable="masterContentObjects"/>
```

Note, as stated below, that it is highly recommended adapting the configuration of `RollbackTranslationAction` and `CompleteTranslationAction` to prevent false-negative *in-translation* states.

The scheduled task `CleanInTranslation` will remain as is and still offers a kind of garbage collection for more irregular states to clean-up.

Find more details in Blueprint Developer Manual, also regarding the new parameter for `RollbackTranslationAction` and `CompleteTranslationAction`, in section *Predefined Translation Workflow Actions* within section *Translation Workflow*.

### Motivation

`CleanInTranslationFinalAction` provides more robust and earlier handling of the *in-translation* state as implicit processing within `RollbackTranslationAction` and `CompleteTranslationAction`. It will clear the state even for escalated workflows and handles irregular content states much more robust (such as derived contents meanwhile deleted during the execution of a translation workflow).

Having this, the default mode (explicitly triggered by `skipCleanInTranslation="false"`) of `RollbackTranslationAction` and `CompleteTranslationAction` is considered deprecated, and you are encouraged to switch to `skipCleanInTranslation="true"` and enabling the `CleanInTranslationFinalAction`.

### Upgrade Notes

Upgrade steps are optional but highly recommended, to benefit from enhancements provided by the new `CleanInTranslationFinalAction`.

`translation.xml` and `synchronization.xml` use the new `CleanInTranslationFinalAction`.

**synchronization.xml:** To benefit from the new behavior during synchronization workflows, you have to re-upload `synchronization.xml` as described in Blueprint Developer Manual:

```
cm upload -n /com/coremedia/translate/workflow/synchronization.xml
```

**translation.xml:** The template workflow `translation.xml` within CoreMedia Blueprint got adapted according to the recommended configuration. To benefit from this adaptations, ensure to re-upload `translation.xml` in case you use it without modifications.

**Custom Translation Workflows:** To adapt your custom translation workflows, ensure adding `CleanInTranslationFinalAction` as final action and disable the internal cleanup of the *in translation* state of `RollbackTranslationAction` and `CompleteTranslationAction` by adding a parameter `skipCleanInTranslation` as here, for example:

```
<Action class="com.coremedia.translate.workflow.CompleteTranslationAction"
        derivedContentsVariable="derivedContents"
        masterContentObjectsVariable="masterContentObjects"
        performerVariable="performer"
        skipCleanInTranslation="true"/>

<!-- derivedContents/masterContentObjects: Not required anymore
      iff. skipCleanInTranslation="true".
-->
<Action class="com.coremedia.translate.workflow.RollbackTranslationAction"
        contentsVariable="createdContents"
        skipCleanInTranslation="true"/>

<!-- This action will instead take over the clean-up. -->
<FinalAction
class="com.coremedia.translate.workflow.CleanInTranslationFinalAction"
    derivedContentsVariable="derivedContents"
    masterContentObjectsVariable="masterContentObjects"/>
```

Not disabling the internal *clean-in-translation* behavior of these actions may result in false-negative *in translation* states represented to editors. Disabling it, but not adding `CleanInTranslationFinalAction` on the other hand will cause false-positive *in translation* states, that are only cleared by `CleanInTranslation` scheduled task each 15 minutes by default.

Regarding `RollbackTranslationAction`, there is no need of setting `derivedContentsVariable` or `masterContentObjectsVariable`, as they are unused, if `skipCleanInTranslation` is set to `true`.

[CMS-20035]

## Public API Changes in LdapUserProvider

The internal caching of the `LdapUserProvider` had a major design issue and has therefore been reimplemented. It is now based on Caffeine Cache. The reimplementation implied some changes of the public API:

The following methods do not declare (and throw) checked exceptions any longer, but throw wrapping `RuntimeExceptions` instead. If you have overridden these methods in a custom `UserProvider`, please change the signatures accordingly.

- `LdapUserProvider#makeUser (LdapUserProvider.Extended SearchResult)`
- `LdapUserProvider#makeGroup (LdapUserProvider.Extended SearchResult)`

- `LdapUserProvider#getUserFromLdap`
- `LdapUserProvider#getGroupFromLdap`

The following methods have no `invalidate` argument any longer, because the `LdapUserProvider` does no longer cache at this level. If you use these methods in a custom `UserProvider`, delete the argument from the invocation. If you have overridden these methods, assume that `invalidate` is always `true`, and adjust the signature and implementation accordingly.

- `LdapUserProvider#getAttributes(String, String[])`
- `LdapUserProvider#getMemberFromLdap`
- `LdapUserProvider#getMembersFromLdap(String, String[])`
- `LdapUserProvider#retrieveUserFromLdap`
- `LdapUserProvider#retrieveGroupFromLdap`

[CMS-17737]

## 5.3.2 CoreMedia Studio Client

### Enhanced JooUnit Tests

In all JooUnit tests, the following two refactorings have been applied to improve readability:

- An update to the JooUnit framework allows defining asynchronous tests in simpler syntax. A test method may now return a `Promise<void>` to signal that it is waiting for asynchronous calls to finish. For that, the convenient `async / await` syntax may be used. This replaces the cumbersome JooUnit `TestCase.addAsync()` method and makes test code much more readable.
- Instead of inheriting from `AbstractCapRestTest`, tests that mock REST calls now use the new, more consistent and comprehensive utility functions from `@coremedia/studio-client.client-core-test-helper` and `@coremedia/studio-client.cap-rest-client-test-helper`.

Please have a look at `AbstractCatalogTest` and its subclasses for examples of these two changes.

[CMS-22955]

## 5.3.3 CoreMedia Studio Server

### Studio Spring Security Configuration Rework

The Spring Security configuration in the studio server has been simplified and improved for easier customization. The module `editing-rest-security-component` has been merged into the module `editing-rest-security`. The Configuration classes `EditingRestSecurityBaseConfiguration` and `EditingRestSecurityAutoConfiguration` have been moved from package `com.coremedia.springframework.component.security` to `com.coremedia.rest.security.config`. The unused classes `SimpleLogoutAccessDeniedHandler` and `SimpleUrlAccessDeniedHandler.java` have been removed. The section "Single Sign On Integration" in the Studio Developer Manual has been adjusted.

If you did not customize the Studio authentication process, nothing has to be done.

[CMS-17400]

## 5.3.4 CoreMedia Commerce Hub

### Livecontext Services API Changes

Blueprint used private API in a few places related to Livecontext implementation. To fix this situation, the new public API packages `com.coremedia.blueprint.base.livecontext.augmentation.config` and `com.coremedia.blueprint.base.livecontext.augmentation.tree` have been introduced while `META-INF/coremedia/lc-services.xml` of module `lc-services-lib` has been deleted.

The `tree` package provides the `ExternalChannelContentTreeRelation` interface used to compute the augmentation content tree relation for commerce objects. The `config` package provides spring configurations of augmentation related services. The beans formerly provided by `META-INF/coremedia/lc-services.xml` are now defined in `com.coremedia.blueprint.base.livecontext.augmentation.config.AugmentationTreeServicesConfiguration`.

The CAE bean `extCategoryContentBackedPageGridService` has been removed in favor of the new `categoryContentBackedPageGridService` bean defined in `AugmentationPageGridServiceConfiguration`.

Class `com.coremedia.livecontext.tree.ExternalChannelContentTreeRelation` was moved to `com.coremedia.blueprint.base.livecontext.augmentation.tree.ExternalChannelContentTreeRelation`.

[CMS-6760]

## Cleanup Up Package `com.coremedia.blueprint.base.livecontext.util`

The formerly private API package `com.coremedia.blueprint.base.livecontext.util` was added to public API. In that course, class `com.coremedia.blueprint.base.livecontext.util.LocaleHelper` was moved to package `com.coremedia.livecontext.asset` of module `lc-asset-cae-component` and class `com.coremedia.blueprint.base.livecontext.util.CommerceSettingsCatalogConfigListCacheKey` has been removed.

[CMS-6742]

## 5.3.5 CoreMedia Headless Server

### Security fix: Refactor instantiation of Snakeyaml and prepare update to Snakeyaml 2.0

This is a change in order to be prepared for upcoming updates in SpringBoot, which will use Snakeyaml version 2.0!

The code, using the default constructor of Snakeyaml was changed, so the it conforms with CVE-2022-1471. The library `org.yaml:snakeyaml:jar:1.33` though was **not** updated to the latest version, as this might cause problems with SpringBoot and its ability to read application properties also in YAML format. SpringBoot currently still uses the version 1.33 of Snakeyaml.

Nonetheless, this update includes a breaking change regarding the authoring of the YAML files used to define rich text transformations in headless.



The YAML standard does not allow global tags anymore. Thus, the transformation definitions coming with `HeadlessServer` in file `classes.yml` had to be changed, e.g. the usage of `java.util.ArrayList` in a global tag is not allowed anymore and was changed to the standard (java agnostic) name `seq`. Starting with Snakeyaml version 2.0 this will be enforced.

[CMS-22895]

## 5.3.6 Miscellaneous

### Update of maven-surefire-plugin, maven-failsafe-plugin and junit-bom

The following dependencies have been updated:

- maven-surefire-plugin and maven-failsafe-plugin: Update to version 3.1.2. This includes a breaking change in version 3.0.0-M8:

Remove deprecated parameter 'forkMode' and use only 'forkCount'  
See <https://issues.apache.org/jira/browse/SUREFIRE-1654> ,  
<https://github.com/apache/maven-surefire/releases> for more information. \* org.junit:junit-bom: Update to version 5.9.3.

[CMS-23163]

### Migration of Component XML and Properties Files to Spring Boot AutoConfigurations

In our efforts to reduce technical debt, former `component-\*.xml` and `component-\*.properties` files were renamed and are now being imported in Spring Boot AutoConfigurations in the same module instead.

For the *Studio-Server* and the *Content-Server* , the bean definitions were fully migrated from `component-\*.xml` to Spring Boot AutoConfigurations. In case you made customizations to these XML files, you need to move those to Java configuration in the AutoConfiguration as well.

The following blueprint XML and properties files were renamed and imported in the listed AutoConfigurations.

CAE-Feeder

- `component-am-cafeeder.xml` → `am-cafeeder.xml` [AssetCaeFeederAutoConfiguration]
- `component-corporate-cafeeder.xml` → `corporate-cafeeder.xml` [CorporateCaeFeederAutoConfiguration]
- `component-livecontext-cafeeder.xml` → `livecontext-cafeeder.xml` [LiveContextCaeFeederAutoConfiguration]
- `component-cafeeder-blueprint.properties` → `cafeeder-blueprint.properties` [CaeFeederBlueprintAutoConfiguration]
- `component-cafeeder-blueprint.xml` → `cafeeder-blueprint.xml` [CaeFeederBlueprintAutoConfiguration]

### Content-Feeder

- `component-am-contentfeeder` → `am-contentfeeder.xml` [AssetContentFeederAutoConfiguration]
- `component-corporate-contentfeeder.xml` → `corporate-contentfeeder.xml` [CorporateContentFeederAutoConfiguration]
- `component-livecontext-contentfeeder.xml` → `livecontext-contentfeeder.xml` [LiveContextContentFeederAutoConfiguration]
- `component-content-feeder-blueprint.xml` → `content-feeder-blueprint.xml` [BlueprintContentFeederAutoConfiguration]

### User-Changes

- `component-user-changes-blueprint.xml` → `user-changes-blueprint.xml` [UserChangesBlueprintAutoConfiguration]

### Elastic-Worker

- `component-elastic-worker.xml` → `elastic-worker.xml` [ElasticWorkerAutoConfiguration]
- `component-es-alx-retrieval.xml` → `es-alx-retrieval.xml` [EsAlxRetrievalAutoConfiguration]
- `component-es-alx-retrieval.properties` → `es-alx-retrieval.properties` [EsAlxRetrievalAutoConfiguration]
- `component-lc-es-worker.xml` → `lc-es-worker.xml` [LiveContextElasticSocialWorkerAutoConfiguration]

- `component-es-worker.xml` → `es-worker.xml` [ `ElasticSocialWorkerAutoConfiguration` ]

#### Studio-Server

- `component-lc-es-studio-lib.xml` → `LivecontextElasticSocialStudioLibAutoConfiguration`
- `component-studio-blueprint.xml` → `StudioInMemoryAutoConfiguration`
- `component-elastic-social-rest-extension.properties` → `elastic-social-rest-extension.properties` [ `ESBlueprintStudioAutoConfiguration` ]

Additionally, the `Configuration StudioInMemoryConfiguration` was transformed to the `StudioInMemoryAutoConfiguration AutoConfiguration`.

#### Content-Server

- `component-am-server.xml` → `AMServerAutoConfiguration`
- `component-contentserver-blueprint.xml` → `ContentServerBlueprintAutoConfiguration`

[CMS-16541]

## Feedback Hub Compatibility Issue

For Feedback Hub plugins that used the non-public API class `BindingLookup`, an update is required since the constructor of the class has changed.

[CMS-23344]

## 5.4 Upgrade to 2304.2

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.4.1 CoreMedia Studio Client

#### CKEditor 5: Simplify License Management

The license management for CKEditor 5 has been simplified by extracting the `licenseKey` configuration into an extra sidecar file `ckeditor5License.ts`.

The existing CKEditor 5 instance factories (`ckeditorDefault.ts`, `ckeditorHtmlViewer` and `ckeditorSlim.ts`) have been adapted to use this key via deconstruction pattern:

```
return ClassicEditor.create(domElement, {
  ...ckeditor5License, // new, was licenseKey: "" before
  placeholder: localize('Type your text here...', language),
```

In addition to this change, the default license key is now an OEM license key, shipped with `@coremedia/ckeditor5-coremedia-oem-activation`, rather than an empty one.

This OEM key must not be used outside CMCC, but may be reused for your custom CKEditor 5 instance factories. To enable premium CKEditor 5 features, you must purchase your own license.

[CMS-23472]

#### CKEditor 5 and CoreMedia CKEditor 5 Plugins Updated

CKEditor 5 has been updated to version 39.0.2 and CoreMedia's CKEditor 5 Plugins have been updated to version 16.0.0.

##### CKEditor 5 Update

The integration that ships with CoreMedia Blueprint is not affected by any of the recent changes introduced with CKEditor 5 38.x and CKEditor 5 39.x. You should review [release](#)

**notes of CKEditor 5** , though, if you are affected, like changes to the CKEditor 5 GHS plugin [about `html*Attributes` ] and color picker changes.

### License Handling

CoreMedia Blueprint now also ships with an CKEditor 5 CoreMedia OEM License Key. Find more details in release notes for CMS\23472.

### CKEditor 5 CoreMedia Plugins Enhancements

- **Handle Artificial `xlink:role` :**

`@coremedia/ckeditor5-coremedia-richtext` now comes with a factory method for adapting your data-processing, to handle so-called *artificial `xlink:role`* attributes: `mapArtificialXLinkRole` . This will help if you stored data in `xlink:role` that are not meant to become part of the `target` attribute of a link. For details, see *Studio Developer Manual* , namely section *Link Editing* in the *CKEditor 5 Customization* section.

- **Fix Link Balloon on Document Tab Change:**

In previous versions, when, for example, triggering "Open in Tab" for an embedded video in Rich Text, the link balloon did not close on the triggered document tab change. This has been fixed.

- **Configure Default Target:**

For the `LinkTarget` plugin you can now configure default targets to apply, when creating corresponding links. The plugin is able to configure different defaults for external and content links:

```
link: {
  defaultProtocol: "https://",
  defaultTargets: [
    {
      type: "externalLink",
      target: "_blank",
    },
    {
      type: "contentLink",
      target: "_embed",
    },
  ],
  // ...
}
```

and for more fine-grained control based on protocol, for example:

```
link: {
  defaultProtocol: "https://",
  defaultTargets: [
    {
      filter: (url: string): boolean => url.startsWith("http"),
      target: "_blank",
    },
  ],
}
```

```
} // ...
```

Note, that the artificial protocol for content-links is `content:`.

### Upgrade Notes

While there were no changes towards the public API used from within CoreMedia Blueprint, CKEditor 5 comes with internal API changes. Having this, this update cannot be applied to previous CMCC releases. It is required to update Studio Client dependencies also, especially `@coremedia/studio-client.ext.ckeditor5-components`, as `CKEditor5RichTextArea` had to be adapted to this private API change.

Ensure, to also validate your customizations towards CKEditor 5, like custom plugins you may have developed.

[CMS-23320]

## 5.5 Upgrade to 2304.1

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.5.1 CoreMedia Core

#### Enhanced Output of cm download

The workflow-server tool `cm download` now outputs the absolute paths of created artifacts, instead of just a relative path.

Note, that if you parsed output of the tool before, corresponding parsing needs to be adapted.

Previous output:

```
Downloading 'StudioSimplePublication'  
Wrote 'StudioSimplePublication.xml' (4992 bytes)  
Successfully downloaded 'StudioSimplePublication' to  
'StudioSimplePublication.xml'
```

New output:

```
Downloading StudioSimplePublication  
(id: coremedia:///cap/processdefinition/1)  
Successfully downloaded StudioSimplePublication  
(id: coremedia:///cap/processdefinition/1) to:  
XML: <absolute path>/processdefinition-StudioSimplePublication-1.xml
```

More details (like number of downloaded bytes) available on `--verbose` output (like the previously reported bytes written).

Also note, that default output names got aligned and now always match the pattern `processdefinition-<name>-<numeric id>.xml|jar`.

[CMS-22561]

## MongoDB update to version 6.0.5

MongoDB has been updated to version 6.0.5 for the Docker Deployment. Note that an upgrade is only possible from a 5.0.x version. An upgrade from an earlier version needs

to be done successively. Please refer to the official MongoDB documentation on how to upgrade : <https://www.mongodb.com/docs/manual/release-notes/6.0-upgrade-standalone/> The compatibility changes are described here : <https://www.mongodb.com/docs/manual/release-notes/6.0-compatibility/> The mongo shell is removed from MongoDB 6.0, the replacement is mongosh.

[CMS-22072]

## XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs

XLIFF support for Markup in Structs has been enhanced in that way, that Markup nodes can now be restored from XLIFF regarding their corresponding grammar settings.

In previous versions, creating a possibly not existing Markup node from XLIFF may have failed or may have created a structure slightly different to the master regarding the locations grammars got set to [at node, i.e., as so-called *required grammar*, or at value, i.e., as so-called *grammar* ].

Now XLIFF is exported containing respective grammar hints in new attributes `cmxliff:required-grammar` and `cmxliff:grammar` . Having this, XLIFF import is able to restore a possibly not existing Markup node structure from XLIFF.

## Upgrade Information

There is no intermediate action required for importing XLIFF from previous releases into the new system. Nevertheless, note, that a fallback to guessing correct Markup grammar may be applied, if required.

It is not possible to import newly created XLIFF into old CMCC versions, though, as validation of XLIFF will fail for unknown attributes `cmxliff:required-grammar` and `cmxliff:grammar` . If this is required, remove corresponding attributes from XLIFF.

[CMS-22569]

## 5.5.2 CoreMedia Studio Client

### CoreMedia CKEditor plugins updated to 15.0.1

The CoreMedia CKEditor Plugins have been updated from 14.1.1 to 15.0.1.



The update contains the update to CKEditor 37.1.0.

As starting with CKEditor 5 37.x, CKEditor 5 ships with its own type information, some relevant changes had to be applied to the Blueprint workspace integration:

- `@coremedia-blueprint/studio-client.ckeditor5` :
  - No dependencies on DefinitelyTyped artifacts.

As CKEditor 5 comes with its own type information, typing information shipped via DefinitelyTyped are not required anymore (and may even collide with CKEditor 5 typing information).

- New `esbuild-loader` dependency required.
- New `ckeditor5` dependency required.
- `webpack.config.js` : Remove deprecated usage of `CKEditorWebpackPlugin`.

Instead, now requires:

- `CKEditorTranslationsPlugin` provided by `@ckeditor/ckeditor5-dev-translations` and
- `loaders` provided by `@ckeditor/ckeditor5-dev-utils`.
- Prefer imports from `index.ts` over path imports.

Required for the new module augmentation approach that ships with CKEditor 5 and which has been adapted to CoreMedia CKEditor 5 Plugins.

- `src/` path arc required for imports via full path.

This aligns the package structure with that known from CKEditor 5.

- Several `@ts-expect-error` can be removed.

Due to better typing information that ship with CKEditor 5 compared to those from DefinitelyTyped, some corresponding ignores can be removed.

For more information on the plugins release, see [Release v15.0.1 · CoreMedia/ckeditor-plugins](#).

[CMS-22911]

## Upgraded pnpm to 8.1.0

All packages in studio-client now require at least pnpm 8.1.0.

As pnpm now has (opinionated) behavior if the "publishConfig"->"directory" flag is set all custom packages utilizing the aforementioned flag need an adjustment as otherwise code navigation does no longer work as expected inside the IDE and some non-jangaroo packages (e.g. custom ckeditor5 plugins) can no longer be build:

Before:

```
{
  ...
  "publishConfig": {
    "directory": "dist",
    ...
  }
}
```

After:

```
{
  ...
  "publishConfig": {
    "directory": "dist",
    "linkDirectory": false,
    ...
  }
}
```

This prevents that packages are linked by pnpm in a way that they are basically treated as published packages preventing any code navigation to the original sources.

Please also check the release notes for 8.0.0 and beyond for more details:  
<https://github.com/pnpm/pnpm/releases/tag/v8.0.0>

[CMS-22883]

## Studio Client Thumbnail Resolving Mechanism Deprecated In Favor of New Studio Server Mechanism

On the Studio Client side, the `ThumbnailService` and the `EditorContext` allow to register `ThumbnailResolvers`. This mechanism has been deprecated. It has been replaced by a new mechanism for resolving default pictures for entities (content items, commerce items, projects, workflows, etc.) on the Studio Server. This new mechanism is customizable on different levels. For details, see the Studio developer reference documentation under "Thumbnails" > "Default Pictures".

The Studio Client logic for retrieving thumbnails (with or without transformation operations) is still in place: `ThumbnailService/EditorContext#getThumbnail()` and `ThumbnailService/EditorContext#getThumbnailUri()`.

Though deprecated, the old mechanism will stay in place. But note that only picture resolving customizations done with the new mechanism will take effect in all apps (Content App, Workflow App, Campaign App) while the old mechanism only takes effect in the Content App.

[CMS-22744]

## Third-Party Update: Upgraded Node.js to 18 LTS

Since October 2022 the new LTS of Node.js is v18. All workspaces were adjusted accordingly.

[CMS-22246]

## CoreMedia CKEditor 5 Plugins Updated

The CKEditor 5 Plugins provided by CoreMedia have been updated to 14.1.1.

This release addresses an issue that may occur while editing links within CKEditor 5: Having a link like:

```
<a xlink:href="https://e.org/" xlink:show="new">Link</a>
```

you may end up with mouse interaction or cursor movement, having a trailing (or leading) corrupted link like:

```
<a xlink:href="https://e.org/" xlink:show="new">Link</a><a xlink:href=""  
xlink:show="new"></a>
```

An update is recommended, as well as updating `ckeditorDefault.ts` to incorporate the required configuration (details below).

### Details

The new release ships with a new plugin `LinkAttributes`, that allows to register attributes as "belonging to a link". Having this, such attributes share the same behavior as the "href" attribute, for example, like: Removed when "unlink" is invoked, share so-called two-step-caret-movement at the beginning and end of a link (decides, if newly typed text still belongs to the link or shall not be part of the link) and aligned focus management on mouse-click at end or beginning of link, which assumes to be "outside" of the link.

As part of this update, attributes that previously may have caused "links without or empty href" by the actions described above have been registered to be valid only in context of links. This applies to:

- `xlink:type`: a fixed attribute, registered by the Rich Text Plugin.
- `xlink:actuate`: represented as `data-xlink-actuate` in data view and editing view. Configured in `ckeditorDefault.ts` (see Upgrade Information below)
- `xlink:title` represented as `title` in data view and editing view. Configured in `ckeditorDefault.ts` (see Upgrade Information below)

### Upgrade Information

In `@coremedia-blueprint/studio-client.ckeditor5.ckeditorDefault.ts` has been adapted, so that `xlink:title` and `xlink:actuate` and its view representations `title` and `data-xlink-actuate` are considered valid only in context of links.

A constant `linkAttributesConfig.ts` defined in an extra file is included and the CKEditor 5 instance adapted in that way, that it uses `LinkAttributes` plugin and the provided configuration as part of the `link` feature configuration:

```
link: {
  defaultProtocol: 'https://',
  ...linkAttributesConfig,
},
```

If you provide editing support for `xlink:title` (view: `title`) and/or `xlink:actuate` (view: `data-xlink-actuate`) it is recommended to adapt `linkAttributesConfig.ts` by removing the corresponding attribute and integrate the configuration of `LinkAttributes` for this attribute to your plugin initialization.

Find more details in a new section in Studio Developer Manual *CKEditor 5 Customization* /Link Editing.

(CMS-22761)

## 5.5.3 CoreMedia Studio Server

### Studio Server Now Uses PathPatternParser for URL Matching

`PathPatternParser` has been the Spring Boot default path matching strategy since version 2.6. Studio server had explicitly overridden this by default by setting the property `spring.mvc.pathmatch.matching-strategy` to `ant_path_matcher`. Studio server now uses the Spring Boot default.

For the most part applications don't need to worry about this and the pattern syntax is largely the same so it should work just the same.

The only problem encountered on the studio server side was a more lenient handling of faulty usages of `@MatrixVariable` with the old matching strategy. After switching to the `PathPatternParser` strategy, extensions and plugins need to strictly adhere to the patterns described in the Spring documentation: <https://docs.spring.io/spring-framework/docs/5.3.25/reference/html/web.html#mvc-ann-matrix-variables>

[CMS-22887]

## Removed Migration of Legacy Content Sets to Projects

When Studio Projects were introduced many years ago in CMS 8 (7.1.10) and DXP 8 (7.5.34), they replaced a feature called Content Sets. The Content Sets feature was removed at that time, and data was automatically migrated to Projects. This automatic migration has been removed with this release.

If you still need to migrate ancient Content Set data, then you have to upgrade to a previous release first, and start the Studio Server once to migrate the data. The Studio Server of previous releases logs this data migration during startup with INFO message "Converted ... content sets to projects".

[CMS-7389]

## Changed multipart request handling from Commons Fileupload to Servlet API

The runtime dependency `commons-fileupload:commons-fileupload` has been removed in order to prevent vulnerability [CVE-2023-24998](#). By removing the application property `spring.servlet.multipart.enabled=true`, the Studio server configuration has been changed from using *Commons Fileupload* for handling multipart requests to using the *Servlet API*.

To retain the defaults of the former *Commons Fileupload* implementation, the following default configurations for the *Servlet API* implementation have been changed:

```
spring.servlet.multipart.max-file-size=-1
spring.servlet.multipart.max-request-size=-1
```

Furthermore, the file size threshold has been set to prevent out-of-memory problems in the Studio server:

```
spring.servlet.multipart.file-size-threshold=100MB
```

For further information see the Spring documentation:

- [Spring Web: Multipart Resolver](#)
- [Common Application Properties: spring.servlet.multipart.\\*](#)

[CMS-22731]

## 5.5.4 CoreMedia Frontend Workspace

### Upgraded pnpm to 8.1.0

All packages in frontend workspace now require at least pnpm 8.1.0.

Please also check the release notes for 8.0.0 and beyond for more details:  
<https://github.com/pnpm/pnpm/releases/tag/v8.0.0>

[CMS-23074]

### Third-Party Update: Upgraded Node.js to 18 LTS

Since October 2022 the new LTS of Node.js is v18. All workspaces were adjusted accordingly.

As the frontend workspace still utilizes Webpack 4 it requires a small adjustment to be able to run on Node 18. Please run `pnpm add -D cross-env` in all your custom themes and adjust the following entry of the `package.json` files from:

```
"scripts": {  
  ...  
  "build": "webpack",  
  ...  
}
```

to

```
"scripts": {  
  ...  
  "build": "cross-env NODE_OPTIONS=--openssl-legacy-provider webpack",  
  ...  
}
```

The dependency `node-sass` has been updated to version 8 accordingly.

[CMS-23072]

## 5.5.5 CoreMedia Commerce Hub

### Moved

**com.coremedia.cms:metadata-serialization  
to com.coremedia.cms:cae-core-bom**

Moved artefact `com.coremedia.cms:metadata-serialization` from `com.core-media.cms:middle-core-bom` to `com.coremedia.cms:cae-core-bom`.

[CMS-6805]

## 5.5.6 CoreMedia Headless Server

### Security: GraphQL Schema Introspection disabled by default

The GraphQL schema introspection is now **disabled by default**. In preview mode however, introspection is still enabled.

This change is considered breaking, as formerly the introspection was enabled by default. A config setting to disable did not exist. For security reasons, introspection now has to be enabled by the explicit config setting `caas.graphql.introspection-enabled`.

Client applications which were depending on the inspection will break in live environments, unless the flag is set to 'true'. If not, this change may be considered as non-breaking.

Note, that also stitching scenarios will most likely break as they usually depend on schema introspection.

[CMS-22496]

## 5.5.7 Miscellaneous

### Updated project dependencies

Updated several project dependencies:

- Commerce Adapter Mock (and commerce client API) from 2.1.2 to 2.1.4
- Commerce Adapter SFCC from 2.1.3 to 2.1.4
- Commerce Adapter HCL/WCS from 2.1.2 to 2.1.3
- Commerce Adapter SAP/Hybris from 2.1.2 to 2.1.3
- Spring Boot from 2.7.7 to 2.7.10 - see [Spring Boot Releases](#)
- Spring Security from 5.8.1 to 5.8.3 - see [Spring Security Releases](#)
- Spring Framework from 5.3.26 to 5.3.27 - see [Spring Framework Releases](#)
- Spring Data BOM from 2021.2.7 to 2021.2.11 - see [Spring Data BOM Releases](#)
- Spring GraphQL from 1.0.3 to 1.0.4 - see [Spring for GraphQL Releases](#)
- ByteBuddy from 1.12.22 to 1.12.23 - see [Byte Buddy Releases](#)
- FasterXML Jackson from 2.14.1 to 2.14.2 - see [Jackson Releases](#)
- gRPC-Java from 1.52.1 to 1.54.1 - see [gRPC-Java Releases](#)
- Hibernate from 5.6.14.Final to 5.6.15.Final - see [Hibernate ORM 5.6 Releases](#)
- JAXB Runtime from 2.3.7 to 2.3.8 - see [Jakarta XML Binding 2.3.x Release Notes](#)
- Jetty from 9.4.50 to 9.4.51 - see [Eclipse Jetty Release](#)
- JSON-Java from 20220320 to 20230227 - see [JSON-Java Releases](#)
- Liquibase from 4.19.0 to 4.19.1 - see [Liquibase Release Notes](#)
- MariaDB Driver from 3.1.0 to 3.1.3 - see [List of MariaDB Connector/J Releases](#)
- Micrometer from 1.10.3 to 1.10.6 - see [Micrometer Releases](#)
- Mockito from 5.2.0 to 5.3.0 - see [Mockito Releases](#)
- Netty from 4.1.87.Final to 4.1.91.Final - see [Netty Project News](#)
- Java Protocol Buffers from 3.21.12 to 3.22.3 - see [Java Protocol Buffers Releases](#)
- PostgreSQL Connector from 42.5.1 to 42.5.4 - see [PostgreSQL JDBC Driver Changelogs](#)
- Tomcat from 9.0.71 to 9.0.74 - see [Tomcat 9 Changelog](#)

Furthermore, the dependency management for XmlUnit has been removed from third-party BOMs.



[CMS-22945]

## Mockito dependency update from 4.11 to 5.2.

The testing library Mockito has been updated from 4.11 to 5.2. The respective Mockito Release Notes can be found here: <https://github.com/mockito/mockito/releases> A major change of the version 5 release is the switch of the default mockmaker to `mockito-inline`.

[CMS-22752]

## XmlContentConnector Validates Content IDs

XmlContentConnector is active in XML-repository-based tests. It did not validate content IDs up to now which lead to ignored content. It now validates that the content IDs assigned in the XML source match the expectations of `com.coremedia.cap.com.mon.IdHelper` which expects folder content IDs to be odd and document content IDs to be even. Correct the content IDs in your XML, if your tests fail due to this validation.

[CMS-22669]

## Removed unused dependency management for Selenium and OkHttp

The dependency management for Selenium and its transitive dependency OkHttp have been removed from the BOMs that are imported by the `blueprint-parent` POMs, because they're never used. Projects using these frameworks should manage these dependencies themselves.

[CMS-22589]

## Update of Google Analytics Connector to Google Analytics 4

As Google Universal Analytics will be discontinued from 1. July 2023 on, the CoreMedia Google Analytics Connector is updated to use the Google Analytics 4 API, see [GA4 Documentation](#).

Some features have changed or are not supported by Google Analytics 4 anymore and therefore have changed in the CoreMedia integration:

### Studio :

- A fix drilldown Url from content to the analytics report for the specific content is not available anymore. The link points to the reports overview now.

### Tracking/CAE :

- The metric "unique pageviews" is not available anymore. A custom client side solution can be implemented as a workaround but is not provided by the CoreMedia extension. See [GA4 documentation](#) .
- The advertising feature plugin is now controlled by configuring Google Signals, either via Google UI or via setting "disableAdvertisingFeaturesPlugin". See [GA4 documentation](#) .
- Custom tracker names are not supported anymore. If the data should be tracked to multiple properties, this can be configured for the tracking call. See [GA4 documentation](#) .

### Retrieval/Elastic Worker, Studio

- Reports are only available after 24 hours, see [GA4 documentation](#) .

### Required update steps

- A Google Analytics 4 property with read permission for the Google service account.
- The authentication mechanism for data retrieval has changed. A json auth file must be downloaded from the Google service account and configured in the content.
- Property names and values for tracking and retrieval have changed and need to be adapted in the content.
- Configuration of custom event properties in the Google Analytics UI.

Please consult the CoreMedia Analytics Connectors manual and the Google Analytics 4 documentation for details.

[CMS-21423]

## Consolidated "BELOW folder" Query Condition

The documentation of the UAPI QueryService states that a "BELOW folder" condition also matches the folder itself. However, due to a bug this was only true for some corner cases. This has been fixed, a "BELOW folder" condition always matches the folder itself now.

If this leads to unwanted results in project features, you can achieve backward compatibility by setting the environment variable `CMCC_QUERY_BELOW_INCLUDES_SELF` for the content servers and for UAPI clients to `false` .

[CMS-12436]

## 5.6 Upgrade to 2301.4

Release 2301.4 requires no upgrade steps.

## 5.7 Upgrade to 2301.3

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.7.1 Miscellaneous

## Update of Google Analytics Connector to Google Analytics 4

As Google Universal Analytics will be discontinued from 1. July 2023 on, the CoreMedia Google Analytics Connector is updated to use the Google Analytics 4 API, see [GA4 Documentation](#).

Some features have changed or are not supported by Google Analytics 4 anymore and therefore have changed in the CoreMedia integration:

Studio :

- A fix drilldown Url from content to the analytics report for the specific content is not available anymore. The link points to the reports overview now.

Tracking/CAE :

- The metric "unique pageviews" is not available anymore. A custom client side solution can be implemented as a workaround but is not provided by the CoreMedia extension. See [GA4 documentation](#).
- The advertising feature plugin is now controlled by configuring Google Signals, either via Google UI or via setting "disableAdvertisingFeaturesPlugin". See [GA4 documentation](#).
- Custom tracker names are not supported anymore. If the data should be tracked to multiple properties, this can be configured for the tracking call. See [GA4 documentation](#).

Retrieval/Elastic Worker, Studio

- Reports are only available after 24 hours, see [GA4 documentation](#).

Required update steps

- A Google Analytics 4 property with read permission for the Google service account.
- The authentication mechanism for data retrieval has changed. A json auth file must be downloaded from the Google service account and configured in the content.
- Property names and values for tracking and retrieval have changed and need to be adapted in the content.
- Configuration of custom event properties in the Google Analytics UI.

Please consult the CoreMedia Analytics Connectors manual and the Google Analytics 4 documentation for details.

[CMS-21423]

## 5.8 Upgrade to 2301.2

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.8.1 CoreMedia Core

#### XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs

XLIFF support for Markup in Structs has been enhanced in that way, that Markup nodes can now be restored from XLIFF regarding their corresponding grammar settings.

In previous versions, creating a possibly not existing Markup node from XLIFF may have failed or may have created a structure slightly different to the master regarding the locations grammars got set to (at node, i.e., as so-called *required grammar*, or at value, i.e., as so-called *grammar*).

Now XLIFF is exported containing respective grammar hints in new attributes `cmxliiff:required-grammar` and `cmxliiff:grammar`. Having this, XLIFF import is able to restore a possibly not existing Markup node structure from XLIFF.

#### Upgrade Information

There is no intermediate action required for importing XLIFF from previous releases into the new system. Nevertheless, note, that a fallback to guessing correct Markup grammar may be applied, if required.

It is not possible to import newly created XLIFF into old CMCC versions, though, as validation of XLIFF will fail for unknown attributes `cmxliiff:required-grammar` and `cmxliiff:grammar`. If this is required, remove corresponding attributes from XLIFF.

[CMS-22757]

## 5.8.2 CoreMedia Studio Client

### CoreMedia CKEditor 5 Plugins Updated

The CKEditor 5 Plugins provided by CoreMedia have been updated to 14.1.1.

This release addresses an issue that may occur while editing links within CKEditor 5: Having a link like:

```
<a xlink:href="https://e.org/" xlink:show="new">Link</a>
```

you may end up with mouse interaction or cursor movement, having a trailing (or leading) corrupted link like:

```
<a xlink:href="https://e.org/" xlink:show="new">Link</a><a xlink:href=""  
xlink:show="new"></a>
```

An update is recommended, as well as updating `ckeditorDefault.ts` to incorporate the required configuration (details below).

#### Details

The new release ships with a new plugin `LinkAttributes`, that allows to register attributes as "belonging to a link". Having this, such attributes share the same behavior as the "href" attribute, for example, like: Removed when "unlink" is invoked, share so-called two-step-caret-movement at the beginning and end of a link (decides, if newly typed text still belongs to the link or shall not be part of the link) and aligned focus management on mouse-click at end or beginning of link, which assumes to be "outside" of the link.

As part of this update, attributes that previously may have caused "links without or empty href" by the actions described above have been registered to be valid only in context of links. This applies to:

- `xlink:type`: a fixed attribute, registered by the Rich Text Plugin.
- `xlink:actuate`: represented as `data-xlink-actuate` in data view and editing view. Configured in `ckeditorDefault.ts` (see Upgrade Information below)
- `xlink:title` represented as `title` in data view and editing view. Configured in `ckeditorDefault.ts` (see Upgrade Information below)

#### Upgrade Information



In `@coremedia-blueprint/studio-client.ckeditor5 ckeditor Default.ts` has been adapted, so that `xlink:title` and `xlink:actuate` and its view representations `title` and `data-xlink-actuate` are considered valid only in context of links.

A constant `linkAttributesConfig.ts` defined in an extra file is included and the CKEditor 5 instance adapted in that way, that it uses `LinkAttributes` plugin and the provided configuration as part of the `link` feature configuration:

```
link: {
  defaultProtocol: 'https://',
  ...linkAttributesConfig,
},
```

If you provide editing support for `xlink:title` (view: `title`) and/or `xlink:actuate` (view: `data-xlink-actuate`) it is recommended to adapt `linkAttributesConfig.ts` by removing the corresponding attribute and integrate the configuration of `LinkAttributes` for this attribute to your plugin initialization.

Find more details in a new section in Studio Developer Manual *CKEditor 5 Customization* /Link Editing.

[CMS-22761]

## 5.8.3 CoreMedia Studio Server

### Changed multipart request handling from Commons Fileupload to Servlet API

The runtime dependency `commons-fileupload:commons-fileupload` has been removed in order to prevent vulnerability [CVE-2023-24998](#). By removing the application property `spring.servlet.multipart.enabled=true`, the Studio server configuration has been changed from using *Commons Fileupload* for handling multipart requests to using the *Servlet API*.

To retain the defaults of the former *Commons Fileupload* implementation, the following default configurations for the *Servlet API* implementation have been changed:

```
spring.servlet.multipart.max-file-size=-1
spring.servlet.multipart.max-request-size=-1
```

Furthermore, the file size threshold has been set to prevent out-of-memory problems in the Studio server:

```
spring.servlet.multipart.file-size-threshold=100MB
```

For further information see the Spring documentation:

- [Spring Web: Multipart Resolver](#)
- [Common Application Properties: spring.servlet.multipart.\\*](#)

[CMS-22731]

## 5.9 Upgrade to 2301.1

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.9.1 CoreMedia Core

#### SQL Server: Content Server Database Schema Change

For Microsoft SQL Server, the *Content Server* will automatically change a database index definition, when it starts the first time after upgrading. Other databases are not affected. This change improves the performance when the *Content Server* deletes unused markup in a SQL Server database.

The update will replace the existing database index "targettextIndex" on column "target" of table "Texts" with a new index "targetSegmentIndex" on columns "target" and "segment" of the same table. This creation of the new index may take a few seconds when the *Content Server* is started after the upgrade.

[CMS-12050]

### 5.9.2 CoreMedia Content Application Engine

#### Replaced invocations of deprecated and breaking Spring Security code

With the update to Spring Security 5.8, there're a number of deprecations whose invocations have been replaced:

- Instead of extending the deprecated `org.springframework.security.web.context.SaveContextOnUpdateOrErrorResponseWrapper`, the `com.coremedia.livecontext.hybrid.CookieLevelerFilter` class now extends its superclass `org.springframework.security.web.util.OnCommit`

`tedResponseWrapper` . The overrides of the abstract methods have been applied to reflect the same implementation.

- Usages of the deprecated `org.springframework.security.config.annotation.web.configurers.CsrfConfigurer#ignoringAntMatchers` security builder

methods have been replaced with `org.springframework.security.config.annotation.web.configurers.CsrfConfigurer#ignoringRequestMatchers` and `org.springframework.security.web.util.matcher.AntPathRequestMatcher#antMatcher(String)` .

- Usages of the deprecated `org.springframework.security.config.annotation.web.builders.HttpSecurity#authorizeRequests` security builder

methods have been replaced with `org.springframework.security.config.annotation.web.builders.HttpSecurity#authorizeHttpRequests` (including chained access method calls).

- Usages of the deprecated `org.springframework.security.config.annotation.web.builders.HttpSecurity#requestMatcher` security builder

methods have been replaced with `org.springframework.security.config.annotation.web.builders.HttpSecurity#securityMatcher` .

- Usages of the deprecated `org.springframework.security.config.annotation.web.AbstractRequestMatcherRegistry#antMatchers` security builder

methods have been replaced with `org.springframework.security.config.annotation.web.AbstractRequestMatcherRegistry#requestMatchers` and `org.springframework.security.web.util.matcher.AntPathRequestMatcher#antMatcher(String)` .

Please note that the `*requestMatcher(String)` methods (that replace the deprecated `antMatcher(String)` , `mvcMatcher(String)` and `regexMatcher(String)` methods) create `org.springframework.security.web.util.matcher.AntPathRequestMatcher` or `org.springframework.security.web.servlet.util.matcher.MvcRequestMatcher` objects under the hood, depending on the existence of `spring-webmvc` in the application classpath. As the CoreMedia applications contain `spring-webmvc` , each string pattern is wrapped in `org.springframework`

`work.security.web.servlet.util.matcher.MvcRequestMatcher`. If this is not intended and/or leads to errors, consider wrapping the patterns using `org.springframework.security.web.util.matcher.AntPathRequestMatcher#antMatcher(String)` manually.

For further information how to apply customizations to the new Spring Security version see the [Spring Security 5.8 Migration Guide](#).

[CMS-22524]

## Replaced deprecated WebSecurityConfigurerAdapter

For the default CAE:

With the update to Spring Boot 2.7 and Spring Security 5.8, the `org.springframework.security.config.annotation.web.configuration.WebSecurityConfigurerAdapter` is now deprecated. Hence, the `com.coremedia.cae.security.CaeWebSecurityConfigurerAdapter` has been migrated regarding to the Spring Boot 2.7 migration documentation. The migrated configuration is now done in the `com.coremedia.cae.security.CaeWebSecurityAutoConfiguration`. It now creates the `AuthenticationManager`, the `SecurityFilterChain` and further configuration beans that are required by them. To allow HTTP web security customizations, a new class `com.coremedia.cae.security.CaeHttpSecurityConfigurer` has been added. It is provided as a bean that can be replaced with a custom implementation and provides the the HTTP web security related `configure` methods that were formally provided by the `com.coremedia.cae.security.CaeWebSecurityConfigurerAdapter`. To migrate customizations to the new configuration, move the HTTP web security related `configure` methods from the custom `com.coremedia.cae.security.CaeWebSecurityConfigurerAdapter` implementation to a new `com.coremedia.cae.security.CaeHttpSecurityConfigurer` implementation and provide it as a bean that replaces the `com.coremedia.cae.security.CaeWebSecurityAutoConfiguration.caeHttpSecurityConfigurer` bean.

For the CAE with Elastic Social extension:

With the update to Spring Boot 2.7 and Spring Security 5.8, the `org.springframework.security.config.annotation.web.configuration.WebSecurityConfigurerAdapter` is now deprecated. Hence, the `com.coremedia.elastic.social.springsecurity.SocialWebSecurityConfigurerAdapter` has been migrated regarding to the Spring Boot 2.7 migration documentation. The migrated configuration is now done in the `com.coremedia.elastic.social.springsecurity.SocialWebSecur`

`ityAutoConfiguration`. It now creates the `AuthenticationManager`, the `SecurityFilterChain` and further configuration beans that are required by them. To allow HTTP web security customizations, a new class `com.coremedia.elastic.social.springsecurity.SocialHttpSecurityConfigurer` has been added. It is provided as a bean that can be replaced with a custom implementation and provides the HTTP web security related `configure` methods that were formally provided by the `com.coremedia.elastic.social.springsecurity.SocialWebSecurityConfigurerAdapter`. To migrate customizations to the new configuration, move the HTTP web security related `configure` methods from the custom `com.coremedia.elastic.social.springsecurity.SocialWebSecurityConfigurerAdapter` implementation to a new `com.coremedia.elastic.social.springsecurity.SocialHttpSecurityConfigurer` implementation and provide it as a bean that replaces the `com.coremedia.elastic.social.springsecurity.SocialWebSecurityAutoConfiguration.caeHttpSecurityConfigurer` bean.

For further information see the provided migration guidelines and documentation:

- [Spring Boot 2.7 Release Notes: Migrating From WebSecurityConfigurerAdapter to SecurityFilterChain](#)
- [Spring Blog: Spring Security without the WebSecurityConfigurerAdapter](#)
- [Content Application Developer Manual: Spring Security](#)
- [Elastic Social Manual: Authentication and Authorization](#)
- [API documentation for the package com.coremedia.cae.security](#)
- [API documentation for the package com.coremedia.elastic.social.springsecurity](#)

[CMS-22461]

## P2TagFilter Deprecated and Replaced by ReservedClassToElementFilter

Class `P2TagFilter` had a bug with additional attributes (except `class`). With this change, processing of CoreMedia Rich Text to generate XHTML is no longer performed by `P2TagFilter` but `ReservedClassToElementFilter`. Blueprint's default rich text filter configuration has been adjusted accordingly. Class `P2TagFilter` is now deprecated.

If customization of rich text filtering is required and `P2TagFilter` had previously been used for this, consider adapting configuration of bean `reservedClassToElementFilter` in `BlueprintRichTextFiltersConfiguration` accordingly.

For example, `P2TagFilter` may have been used for a mapping like this:

- Rich Text

```
<p class="p--address">Some Address</p>
```

- HTML

```
<address>Some Address</address>
```

The corresponding configuration of `P2TagFilter` would have been:

```
@Bean
P2TagFilter p2TagFilter() {
    P2TagFilter filter = new P2TagFilter();
    filter.setMapping(Map.of(
        // ...
        "p--address", "address"
    ));
    return filter;
}
```

An equivalent configuration using `ReservedClassToElementFilter` can then look like this:

```
@Bean
ReservedClassToElementFilter reservedClassToElementFilter() {
    return new ReservedClassToElementFilter(List.of(
        /* ... */
        // <p class="p--address"> -> < address >
        ReservedClassToElementConfig.of("p", "p--address", "address"))
    ));
}
```

[CMS-22251]

## Removed UnknownMimetypeCharacterEncodingFilter

Removed class `com.coremedia.blueprint.cae.filter.UnknownMimetypeCharacterEncodingFilter` as it is not used with embedded tomcat.

[CMS-14235]

## Updated Tomcat version to 9.0.71 and changed property names

Tomcat has been updated to version 9.0.71 [see [Changelog Tomcat 9.0.71](#)] to prevent known vulnerabilities.

Please be aware that Tomcat  $\geq 9.0.69$  serves cookies with dates formatted as required by RFC 6265 [see [Changelog Tomcat 9.0.69](#)]. This may have to be respected in HTTP client implementations. When e.g. the *Apache HttpClient* is used and cookies are retrieved via the [CookieStore](#), the cookie specification must be set to `standard` - see [Request-Config.Builder#setCookieSpec](#) and [CookieSpecs](#).

Furthermore, the properties for the Tomcat versions have been consolidated. There's no need to use different properties for Tomcat and Embedded Tomcat dependencies, hence the `tomcat.embed.version` properties have been dropped and Tomcat versions are now uniquely configured with the `tomcat.version` property.

[CMS-22521]

## Guess mime-type from extension for local development resources in the CAE

For the local code resources it is assumed that guessing the mime-type based on the file extension is more robust than guessing based on file content.

Example: a file with extension `.css` containing the string `"*! jQuery "` has previously been recognized not as `text/css`, but as `application/javascript`.

[CMS-22433]

### 5.9.3 CoreMedia Studio Client

## Changed Configuration for Headings in CKEditor 5

The configuration for Headings in the default CKEditor 5 in the Blueprint was changed to match the configuration for CKEditor 4. After switching to CKEditor 5 in CoreMedia Studio, we kept the default configuration for Headings in CKEditor 5, which maps



`Heading 1` to `<h2>` and so on. We changed this to match the mapping we had for CKEditor 4. [`Heading 1` maps to `<h1>` etc.]

[CMS-22455]

## Load Internal Member in User Manager [again]

If the user groups are built-in, the user manager should show again all groups and users by default. We cleared the list mainly because of external groups and members, so that large number are not automatically imported into the content repository. For internal members, this cannot happen. So we show all members now again in the list view, if an internal domain is selected. The previous workaround by setting the max search character count to "0" now only applies to external domains.

[CMS-22306]

## Updated Taxonomy/Topic Pages Administration Access

Since the 2110 release, the access to topic pages and the taxonomy manager is not configurable via content anymore. Instead, user groups must be added to the *jangaroo.config.js* file of the corresponding studio-client module. These files and the documentation have been updated with default groups and the removed from the demo content.

[CMS-21494]

## 5.9.4 CoreMedia Studio Server

### Home Directories of inactive Users

When an external (LDAP) user was deactivated, his home folder remained untouched. When a new user with the same name and domain appeared, he took over the existing home folder by name match, including any content of the deactivated user. This is not appropriate with respect to data privacy. Moreover, it is awkward if system documents like `EditorPreferences` are still checked-out by the deactivated user and thus cannot be modified by the new user.

Now, when an external user is deactivated, his home folder is renamed to `&#95;&#95;&lt;userId>&#95;&#95;`, possibly shortened or with a trailing sequential number if needed due to folder naming constraints. A new external user always gets a new empty home folder with the name determined by the `UserProvider`.

[CMS-22471]

## Replaced deprecated WebSecurityConfigurerAdapter

With the update to Spring Boot 2.7 and Spring Security 5.8, the `org.springframework.security.config.annotation.web.configuration.WebSecurityConfigurerAdapter` is now deprecated. Hence, the `com.coremedia.springframework.component.security.EditingRestSecurityAutoConfiguration` has been migrated regarding to the Spring Boot 2.7 migration documentation. The migrated configuration now:

- is a standard auto-configuration class that doesn't extend the `WebSecurityConfigurerAdapter` anymore.
- creates the `AuthenticationManager` bean.
- creates the `SecurityFilterChain` bean.

For further information see the provided migration guidelines:

- [Spring Boot 2.7 Release Notes: Migrating From WebSecurityConfigurerAdapter to SecurityFilterChain](#)
- [Spring Blog: Spring Security without the WebSecurityConfigurerAdapter](#)

[CMS-22460]

## 5.9.5 CoreMedia Workspace

### Updated Spring Boot, Spring Security and transitive dependencies

Updated Spring Boot, Spring Security and their transitive dependencies to the latest baseline versions.

### Spring Boot:

- Update to version 2.7.7 - see:
  - [Spring Boot 2.7 Release Notes - Upgrading from Spring Boot 2.6](#)
  - [Spring Boot Releases](#)
- Consolidated version properties to unify updates of Spring Boot dependencies and Spring Boot Maven Plugin:
  - replaced `spring-boot-maven-plugin.version` with `spring-boot.version`
  - replaced `spring.boot.version` with `spring-boot.version`
- Removed obsolete dependency and plugin management
- Enable new info actuator contributors
- Updated auto configurations - see release note *Updated auto configurations* for more details

### Spring Security:

- Update to version 5.8.1 - see:
  - [Spring Security 5.8 Migration Guide](#)
  - [Spring Security Releases](#)
- Renamed version properties to `spring-security.version`
- Replaced deprecated `WebSecurityConfigurerAdapter` - see release notes *Replaced deprecated WebSecurityConfigurerAdapter [ Studio Server ]* and *Replaced deprecated WebSecurityConfigurerAdapter [ CAE ]* for more details
- Replaced further deprecated API calls - see release note *Replaced invocations of deprecated and breaking Spring Security code* for more details

### Further Spring dependencies:

- Spring Framework to 5.3.25 - see [Spring Framework Releases](#)
  - Renamed version properties to `spring-framework.version`
- Spring Data BOM 2021.2.7 - see [Spring Data BOM Releases](#)
- Spring for GraphQL 1.0.3 - see [Spring for GraphQL Releases](#)

### Transitive dependencies:

- Apache HTTP Client 4.5.14 - see [HttpClient 4.5 Release Notes](#)
- Apache HTTP Core 4.4.16 - see [HttpCore 4.4 Release Notes](#)
- AspectJ 1.9.19 - see [AspectJ Releases](#)

- AssertJ 3.24.2 - see [Release Notes AssertJ Core 3.24.2](#)
- Byte Buddy 1.12.22 - see [Byte Buddy Releases](#)
- FasterXML Jackson 2.14.1 - see [Jackson Releases](#)
- FreeMarker 2.3.32 - see [FreeMarker Version history](#)
- Gson 2.10.1 - see [Gson Change Log](#)
- Hibernate 5.6.14.Final - see [Hibernate ORM 5.6 Releases](#)
- Hibernate Validator 6.2.5.Final - see [Hibernate Validator 6.2 Releases](#)
- JAXB Runtime 2.3.7 - see [Jakarta XML Binding 2.3.x Release Notes](#)
- JBoss Logging 3.4.3.Final - see [JBoss Logging Releases](#)
- Janino 3.1.9 - see [Janino Change Log](#)
- Jetty 9.4.50.v20221201 - see [Eclipse Jetty Release](#)
- Jolokia 1.7.2 - see [Jolokia Releases](#)
- JUnit Jupiter 5.9.2 [JUnit 5 Release Notes](#)
- Liquibase 4.19.0 - see [Liquibase Release Notes](#)
- Log4j 2.19.0 - see [Apache Log4j 2 Release Changelog](#)
- MariaDB Driver 3.1.0 - see [List of MariaDB Connector/J Releases](#)
- Micrometer 1.10.3 - see [Micrometer Releases](#)
- Mockito 4.11.0 - see [Mockito Releases](#)
- MongoDB Driver 4.8.2 - see [MongoDB Java Driver Releases](#)
- MySQL Connector 8.0.32 - [MySQL Connector/J 8.0 Release Notes](#)
- PostgreSQL Connector 42.5.0 - see [PostgreSQL JDBC Driver Changelogs](#)
- Reactive Streams API 1.0.4 - see
  - [Reactive Streams 1.0.3 Announcement](#)
  - [Reactive Streams 1.0.4 Announcement](#)
- XMLUnit 2.9.0 - see [XMLUnit Release Notes](#)

Further changes:

- Removed obsolete dependency management for JSONassert
- Removed dependency management for Embedded MongoDB and Embedded Process from thirdparty BOMs

[CMS-21715]

## JMX Beans use Spring Application Name as Application Key

The value of the JMX bean name key "application" was formerly derived from the web application path within the servlet container. Now the value of the spring boot property `spring.application.name` is used. The fallback is still the value `coremedia`.

In case you reference the the mbean via its application names in any external monitoring or the like, please be aware that you need to update these references accordingly.

[CMS-22241]

## 5.9.6 CoreMedia Commerce Hub

### Updated gRPC Spring Boot Starter

Updated gRPC Spring Boot Starter to 2.14.0.

This change is considered breaking because classes from package `net.devh.boot.grpc.client.metric` (artifact `net.devh:grpc-client-spring-boot-autoconfigure`) have been deleted. They have been copied to `io.micrometer:micrometer-core` with release 1.7.0 to package `io.micrometer.core.instrument.binder.grpc`.

For further details see <https://github.com/yidongnan/grpc-spring-boot-starter/releases/tag/v2.14.0.RELEASE>

[CMS-22516]

## 5.9.7 Miscellaneous

### CoreMedia CKEditor plugins updated to 11.0.0

The CoreMedia CKEditor Plugins have been updated from 10.5.0 to 11.0.0.

This includes a new data processing with improved API.

For more information, see <https://github.com/CoreMedia/ckeditor-plugins/releases>.

### Upgrade Note

If you provided custom rules in version 10 and before of CoreMedia CKEditor 5 Plugins, you have to add a compatibility flag to the configuration, to still support the old configuration mode:

```
"coremedia:richtext": {  
  // Trigger old configuration parsing  
  compatibility: "v10",  
  rules: {  
    elements: {  
      mark: replaceByElementAndClassBackAndForth("mark", "span", "mark"),  
    },  
  },  
},
```

Note, though, that the most recent adaptations to data-processing provide a more flexible and more secure way to map from data to data view and vice versa. It also supports adaptations to rules invoked from plugins and has a better performance than the old data-processing.

To change to the new data-processing configuration, the example above would look like this:

```
"coremedia:richtext": {  
  // "latest" is the default, so you may skip it.  
  compatibility: "latest",  
  rules: [  
    replaceElementByElementAndClass({  
      viewLocalName: "mark",  
      dataLocalName: "span",  
      dataReservedClass: "mark",  
    })  
  ],  
},
```

[CMS-22616]

## Removed Usage of Deprecated Spring Annotations and Classes

The following spring classes are deprecated and will be removed with Spring 6:

- `org.springframework.beans.factory.annotation.Required`
- `org.springframework.web.servlet.handler.HandlerInterceptorAdapter`

Classes which formerly implemented `org.springframework.web.servlet.handler.HandlerInterceptorAdapter` now implement `org.springframework.web.servlet.HandlerInterceptor`. Classes

which formerly used `org.springframework.beans.factory.annotation.Required` on setters now provide an initialization method to check if the required members are non-null.

Along with that the following methods were removed without replacement:

- `com.coremedia.blueprint.cae.contentbeans.CMHasContextsImpl#setDataViewFactory`
- `com.coremedia.blueprint.personalization.include.Pl3NContainerHandler#setContentRepository`
- `com.coremedia.blueprint.personalization.include.Pl3NFragmentHandler#setContentRepository`

`spring/test/dummy-views.xml` has been deleted without replacement.

[CMS-22568]

## Removed maven-shade-plugin

`org.apache.maven.plugins:maven-shade-plugin` has been removed because it wasn't used anymore and is no longer managed.

[CMS-22508]

## Updated auto configurations

With the update to Spring Boot 2.7, there have been changes to auto configurations and management context configurations:

- The registration of auto configurations have been moved from `spring.factories` (under the `org.springframework.boot.autoconfigure.EnableAutoConfiguration` key) to a new file named `META-INF/spring/org.springframework.boot.autoconfigure.AutoConfiguration.imports`, where each line contains the fully qualified name of an auto configuration class.
- The registration of management context configurations have been moved from `spring.factories` (under the `org.springframework.boot.actuate.autoconfigure.web.ManagementContextConfiguration` key) to a new file named `META-INF/spring/org.springframework.boot.actuate.autoconfigure.web.ManagementContextConfiguration.imports`, where each line contains the fully qualified name of a management context configuration class.

- The `@Configuration` annotations of the auto configuration classes (that are listed in the new `META-INF/spring/org.springframework.work.boot.autoconfigure.AutoConfiguration.imports` files, see above) have been replaced with the new `@AutoConfiguration` annotation.

For further information see [Spring Boot 2.7 Release Notes: Changes to Auto-configuration](#)

[CMS-22462]

## CKEditor 5 Updated to 34.0.0 and CoreMedia's Plugins to 10.4.0

The CoreMedia CKEditor Plugins have been updated from 10.3.0 to 10.4.0.

This includes a fix for drag and drop of third-party content (e.g., from commerce systems or content-hub) to the editing view or link balloon. 10.4.0 requires at least Studio-Client CMCC 2210.2.

For more information, see <https://github.com/CoreMedia/ckeditor-plugins/releases>.

[CMS-22542]



## 5.10 Upgrade to 2210.3

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.10.1 CoreMedia Core

#### XLIFF-Export and -Import: Enhance Grammar Handling for Markup in Structs

XLIFF support for Markup in Structs has been enhanced in that way, that Markup nodes can now be restored from XLIFF regarding their corresponding grammar settings.

In previous versions, creating a possibly not existing Markup node from XLIFF may have failed or may have created a structure slightly different to the master regarding the locations grammars got set to (at node, i.e., as so-called *required grammar*, or at value, i.e., as so-called *grammar*).

Now XLIFF is exported containing respective grammar hints in new attributes `cmxliff:required-grammar` and `cmxliff:grammar`. Having this, XLIFF import is able to restore a possibly not existing Markup node structure from XLIFF.

#### Upgrade Information

There is no intermediate action required for importing XLIFF from previous releases into the new system. Nevertheless, note, that a fallback to guessing correct Markup grammar may be applied, if required.

It is not possible to import newly created XLIFF into old CMCC versions, though, as validation of XLIFF will fail for unknown attributes `cmxliff:required-grammar` and `cmxliff:grammar`. If this is required, remove corresponding attributes from XLIFF.

[CMS-22757]

## 5.10.2 CoreMedia Studio Client

### CoreMedia CKEditor 5 Plugins Updated

The CKEditor 5 Plugins provided by CoreMedia have been updated to 14.1.1.

This release addresses an issue that may occur while editing links within CKEditor 5: Having a link like:

```
<a xlink:href="https://e.org/" xlink:show="new">Link</a>
```

you may end up with mouse interaction or cursor movement, having a trailing (or leading) corrupted link like:

```
<a xlink:href="https://e.org/" xlink:show="new">Link</a><a xlink:href=""  
xlink:show="new"></a>
```

An update is recommended, as well as updating `ckeditorDefault.ts` to incorporate the required configuration (details below).

#### Details

The new release ships with a new plugin `LinkAttributes`, that allows to register attributes as "belonging to a link". Having this, such attributes share the same behavior as the "href" attribute, for example, like: Removed when "unlink" is invoked, share so-called two-step-caret-movement at the beginning and end of a link (decides, if newly typed text still belongs to the link or shall not be part of the link) and aligned focus management on mouse-click at end or beginning of link, which assumes to be "outside" of the link.

As part of this update, attributes that previously may have caused "links without or empty href" by the actions described above have been registered to be valid only in context of links. This applies to:

- `xlink:type`: a fixed attribute, registered by the Rich Text Plugin.
- `xlink:actuate`: represented as `data-xlink-actuate` in data view and editing view. Configured in `ckeditorDefault.ts` (see Upgrade Information below)
- `xlink:title` represented as `title` in data view and editing view. Configured in `ckeditorDefault.ts` (see Upgrade Information below)

#### Upgrade Information

In `@coremedia-blueprint/studio-client.ckeditor5 ckeditor Default.ts` has been adapted, so that `xlink:title` and `xlink:actuate` and its view representations `title` and `data-xlink-actuate` are considered valid only in context of links.

A constant `linkAttributesConfig.ts` defined in an extra file is included and the CKEditor 5 instance adapted in that way, that it uses `LinkAttributes` plugin and the provided configuration as part of the `link` feature configuration:

```
link: {
  defaultProtocol: 'https://',
  ...linkAttributesConfig,
},
```

If you provide editing support for `xlink:title` (view: `title`) and/or `xlink:actuate` (view: `data-xlink-actuate`) it is recommended to adapt `linkAttributesConfig.ts` by removing the corresponding attribute and integrate the configuration of `LinkAttributes` for this attribute to your plugin initialization.

Find more details in a new section in Studio Developer Manual *CKEditor 5 Customization* /Link Editing.

[CMS-22761]

## Updated Taxonomy/Topic Pages Administration Access

Since the 2110 release, the access to topic pages and the taxonomy manager is not configurable via content anymore. Instead, user groups must be added to the `jangaroo.config.js` file of the corresponding studio-client module. These files and the documentation have been updated with default groups and the removed from the demo content.

[CMS-21494]

## 5.10.3 CoreMedia Studio Server

### Changed multipart request handling from Commons Fileupload to Servlet API

The runtime dependency `commons-fileupload:commons-fileupload` has been removed in order to prevent vulnerability [CVE-2023-24998](#). By removing the application property `spring.servlet.multipart.enabled=true`, the Studio server configuration has been changed from using *Commons Fileupload* for handling multipart requests to using the *Servlet API*.

To retain the defaults of the former *Commons Fileupload* implementation, the following default configurations for the *Servlet API* implementation have been changed:

```
spring.servlet.multipart.max-file-size=-1
spring.servlet.multipart.max-request-size=-1
```

Furthermore, the file size threshold has been set to prevent out-of-memory problems in the Studio server:

```
spring.servlet.multipart.file-size-threshold=100MB
```

For further information see the Spring documentation:

- [Spring Web: Multipart Resolver](#)
- [Common Application Properties: spring.servlet.multipart.\\*](#)

[CMS-22731]

## 5.10.4 Miscellaneous

### CoreMedia CKEditor plugins updated to 11.0.0

The CoreMedia CKEditor Plugins have been updated from 10.5.0 to 11.0.0.

This includes a new data processing with improved API.

For more information, see <https://github.com/CoreMedia/ckeditor-plugins/releases>.

Upgrade Note

If you provided custom rules in version 10 and before of CoreMedia CKEditor 5 Plugins, you have to add a compatibility flag to the configuration, to still support the old configuration mode:

```
"coremedia:richtext": {  
  // Trigger old configuration parsing  
  compatibility: "v10",  
  rules: {  
    elements: {  
      mark: replaceByElementAndClassBackAndForth("mark", "span", "mark"),  
    },  
  },  
},
```

Note, though, that the most recent adaptations to data-processing provide a more flexible and more secure way to map from data to data view and vice versa. It also supports adaptations to rules invoked from plugins and has a better performance than the old data-processing.

To change to the new data-processing configuration, the example above would look like this:

```
"coremedia:richtext": {  
  // "latest" is the default, so you may skip it.  
  compatibility: "latest",  
  rules: [  
    replaceElementByElementAndClass({  
      viewLocalName: "mark",  
      dataLocalName: "span",  
      dataReservedClass: "mark",  
    })  
  ],  
},
```

[CMS-22616]

## 5.11 Upgrade to 2210.2

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.11.1 CoreMedia Studio Client

#### Changed Configuration for Headings in CKEditor 5

The configuration for Headings in the default CKEditor 5 in the Blueprint was changed to match the configuration for CKEditor 4. After switching to CKEditor 5 in CoreMedia Studio, we kept the default configuration for Headings in CKEditor 5, which maps `Heading 1` to `<h2>` and so on. We changed this to match the mapping we had for CKEditor 4. (`Heading 1` maps to `<h1>` etc.)

[CMS-22455]

### 5.11.2 Miscellaneous

#### CKEditor 5 Updated to 34.0.0 and CoreMedia's Plugins to 10.4.0

The CoreMedia CKEditor Plugins have been updated from 10.3.0 to 10.4.0.

This includes a fix for drag and drop of third-party content (e.g., from commerce systems or content-hub) to the editing view or link balloon. 10.4.0 requires at least Studio-Client CMCC 2210.2.

For more information, see <https://github.com/CoreMedia/ckeditor-plugins/releases>.

[CMS-22542]

## 5.12 Upgrade to 2210.1

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.12.1 CoreMedia Core

#### Cli Tool Argument Checks are Improved

Especially the `cm bulkpublish` command and other tools have not checked their parameter and arguments. In this specific case, a folder was passed to the `bulkpublish` command without the necessary `-f` option (because other tools do it that way). However, the tool did not complain about the unknown argument and simply assumed a default value for the folder. This is now checked more closely for all tools that don't need further arguments and a usage message is printed. This change is only breaking if you have used the tools with wrong parameters. If you used them correctly, the behavior does not change.

[CMS-21210]

### 5.12.2 CoreMedia Content Application Engine

#### cae-base-lib: Introducing ReservedClassToElementFilter and Aligned with Headless-Server and CKEditor 5

The `cae-base-lib` ships with a new filter for CoreMedia RichText 1.0, that covers typical mappings of HTML elements to rich text and vice versa.

The new `ReservedClassToElementFilter` allows configuring mappings like:

- Rich Text:

```
<span class="mark">Lorem</span>
```

- **HTML:**

```
<mark>Lorem</mark>
```

as follows:

```
@Bean
ReservedClassToElementFilter reservedClassToElementFilter() {
    return new ReservedClassToElementFilter(List.of(
        // <span class="mark"> -> <mark>
        ReservedClassToElementConfig.of("span", "mark"),
        // more verbose: rich text element + class => HTML element
        ReservedClassToElementConfig.of("span", "mark", "mark"),
        /* ... */
    ));
}
```

This is similar to the new configuration options as we provide for CKEditor 5 integration into CoreMedia Studio and helps to integrate custom plugins to CKEditor 5, which in the end should be represented in CAE accordingly.

#### Align with Headless-Server (and CKEditor 5)

`BlueprintRichtextFiltersConfiguration` now makes use of these mappings to align with mappings, which ship with Headless Server (see `headless-server-base/src/main/resources/richtext/default.yml`):

From:

```
<span class="strike">Lorem</span>
```

To:

```
<s>Lorem</s>
```

From:

```
<span class="underline">Lorem</span>
```

To:

```
<u>Lorem</u>
```

The corresponding `_coremedia-richtext-1.0.scss` for Frontend workspace got adapted accordingly, providing the same styles for `<s>` and `<u>` as they did before for `.strike` and `.underline`.

Align with CKEditor 5 – also for Headless Server



To align with CKEditor 5 capabilities and data-processing, these mappings have also been applied:

**From:**

```
<span class="code">Lorem</span>
```

**To:**

```
<code>Lorem</code>
```

**From:**

```
<td class="td--header">Lorem</td>
```

**To:**

```
<th>Lorem</th>
```

The latter two have also been applied to Headless Server.

**Upgrade Notice:**

If the mappings collide with your expectations, please consider adapting configuration of bean `reservedClassToElementFilter` in `BlueprintRichtextFiltersConfiguration` or `headless-server-base/src/main/resources/richtext/default.yml` accordingly.

[CMS-22226]

## Spring Bean Type Refinement

The Spring bean `throttlingBlobTransformer` in `BlobTransformerConfiguration#BlobTransformerInternalConfiguration` is now exposed by its concrete type `ThrottlingBlobTransformer` for technical reasons. This makes injections of type `BlobTransformer` possibly ambiguous in project code. For backward compatible behaviour, use the concrete type `ThrottlingBlobTransformer` or the exact name `throttlingBlobTransformer` to inject this bean.

[CMS-22070]

## BlueprintLinkServicesConfiguration#contentLinkBuilder now Correctly uses sitesService as Bean Name

Adding a second bean of type `com.coremedia.cap.multisite.SitesService` prevented the CAE from starting because `BlueprintLinkServicesConfiguration#contentLinkBuilder` used a wrong bean name for the `SitesService` bean. It now uses the correct bean name `sitesService`.

[CMS-22194]

## Fix and Deprecate Method TransformImageService#getTransformationString

The method `com.coremedia.cap.transform.TransformImageService#getTransformationString(...)` has been changed to return null for non-existing blobs instead of throwing a `NullPointerException`. Further the method has been marked as deprecated for removal because it was not intended to be public API.

[CMS-21919]

## 5.12.3 CoreMedia Studio Client

### Docker: Renamed Flag SKIP\_GENERATE\_LOCK\_FILE to FROZEN\_GENERATED\_FILES

The Docker build in the studio-client workspaces provides an option to avoid a build failure if the `pnpm-lock.yaml` is outdated. As the check was extended to also cover outdated `tsconfig.json` files in the workspace and it did not make sense to introduce a second dedicated flag renamed the existing `SKIP_GENERATE_LOCK_FILE` flag to `FROZEN_GENERATED_FILES`. As before the flag is enabled by default. Only disable the flag if you have good reasons to ignore a consistent state of the aforementioned files in the workspace.

[CMS-22032]

## "Open In Tab" Settings is Read from EditorPreferences

The initial value for the "Open In Tab" checkbox of the upload dialog is now read from the EditorPreferences of the user.

[CMS-22020]

## Removed Preference to Hide all Toast Messages

The preference option "Show Toasts" has been removed from the preferences dialog, as this feature seemed superfluous to us.

[CMS-21771]

## Dashboard Improvements

The dashboard button has been removed from the header toolbar and is available now as non-closeable first workarea tab panel. Additionally, a welcome widget and a bookmark widget have been introduced. Including with the "My Edited Contents" widgets, these widgets are used as the new default dashboard configuration for new users or users that haven't adapted the dashboard yet.

[CMS-21422]

## Delegate Feature Removed in Teaser Fields

The `DelegatePlugin` was removed from `TeaserOverlayTitle` and `TeaserOverlayText` fields. This means, there is no fallback to the Article Title and Text visible and/or editable anymore. This straightens the behavior in that way, that whether a fallback text is used or not is rather up to the delivery component and not influenced directly by editors.

[CMS-19865]

## Third-Party Update: TypeScript to 4.8.2

Fixed a problem when building the studio-client workspace in Windows if a certain path length was exceeded by upgrading to TypeScript 4.8.2.

Although we do not expect any problems with this upgrade please consult <https://devblogs.microsoft.com/typescript/announcing-typescript-4-8/> for further information.

[CMS-21997]

## Fixed Validation State of InputChipsField

The issue was caused by a mixed usage of the editor: it is used as a property editor and in other contexts as a "regular" editor. To solve this problem the new property editor *InputChipsPropertyField* has been introduced for regular content property editing. This new property editor is used e.g. for the free keyword selection on *CMTeasables*. While the existing *InputChipField* still exists, the package name has been refactored and does not accept the *bindTo ValueExpression* anymore. For these reasons the issue has been marked as breaking.

[CMS-19300]

## Changed Home Folder Assignment

The link list field for assigning home folders is not longer available in the user manager. Instead, the home folder is renamed if the user is renamed too. Additional validators have been added to the "Edit User" dialog for this.

[CMS-16753]

## 5.12.4 CoreMedia Studio Server

### Fixed DST Issue for Struct Date Property Editor

Fixed an issue where the hour value was switching between DST dates. This issue was introduced on purpose 6 years ago. In order to unify the behavior of both date time property editors (struct and regular date properties), this change has been reverted.

[CMS-19273]

## 5.12.5 CoreMedia Frontend Workspace

### Removal: Freemarker function `bp.getBlobLink()` has been removed

The Freemarker function `bp.getBlobLink()` has been removed. Use the default link function `cm.getLink()` instead.

Example:

Before:

```
${bp.getBlobLink(bp.setting(self, "testBlob")!=cm.UNDEFINED, "test.pdf")}
```

After:

```
 ${cm.getLink(bp.setting(self, "testBlob")!=cm.UNDEFINED, cm.UNDEFINED, \
  \{"filename": "test.pdf"})}
```

[CMS-18419]

## 5.12.6 CoreMedia Headless Server

### Third-Party Update: GraphQL-Java to 19.2

The library `com.graphql-java:graphql-java` was updated from 18.1 to 19.2. It contains several bugfixes and some security relevant improvements.

The library update is potentially breaking, in case custom code implements its own `ChainedInstrumentation`. For details about the breaking change please see <https://github.com/graphql-java/graphql-java/releases/tag/v19.0> and additionally <https://github.com/graphql-java/graphql-java/releases> Otherwise, the update is considered **non-breaking**.

[CMS-22091]

## Configured a Cache Control max-age Default for Headless Server GET Requests

Configured a default of 5 minutes for the Headless Server's Cache-Control max-age value to prevent that REST responses including properties of a content which is erroneously configured to be valid for a long time will be cached for a long time.

[CMS-21585]

## Control Surrounding Root Tag of Richtext by Query Parameter

Richtext property fields, which deliver string based content, now support the new optional Boolean parameter `suppressRootTag`. The parameter defaults to the value of the server config parameter `caas.stax.suppressRootTag`. If `true`, the surrounding root tag of a richtext will be parsed out. This is the new default!

Example query with the new parameter `suppressRootTag`

```
query getTransformedRichtext($aid: String!) {
  content {
    article(id: $aid) {
      id
      detailText {
        text(suppressRootTag: false)
      }
    }
  }
}
```

### Update Steps

This change is considered breaking for those, who have customized the `content-schema.graphql` at the same property fields or who rely on the surrounding root `div` tag. In this case change the default of `caas.stax.suppressRootTag` back to false or add `suppressRootTag: false` to your queries as described in the example.

[CMS-21962]

## Change getName Method in PluginSchemaAdapterFactory to NonNull

The method was changed to be NonNull, since semantically it should be NonNull and it does not make sense to allow null as an identifier for adapters. This change is only

considered breaking, if the interface is implemented and the implemented method returns null for the name. If this is not the case, it is not considered breaking.

[CMS-21901]

## Headless Server now Offers Full Configurable CORS Support

The former basic CORS support which implemented an "allow all origins" policy in CaasConfig was replaced by a fully configurable implementation. See the deployment manual about how to configure CORS on headless (properties `caas.cors.*`).

The default CORS configuration now sets its own installation host as the only allowed origin. As a consequence, existing client applications might break and require additional configuration.

[CMS-21831]

## 5.12.7 CoreMedia Documentation

### Rich Text Editing Switched to CKEditor 5 in CoreMedia Studio

Rich Text Editing in CoreMedia Studio now defaults to CKEditor 5.

CKEditor 4 support in CoreMedia Studio is deprecated just as CKEditor 4 reaches end-of-life in 2023.

As switching from CKEditor 4 to CKEditor 5 may trigger considerable efforts (due to custom plugins, for example), CKEditor 4 is still supported and maintained for CMCC 2210. A documentation exists how to enable CKEditor 4 within the new Blueprint, which ships with CKEditor 5 by default.

The Studio Developer Manual got a new section "Rich Text Editing" that not only explains CKEditor 5 integration and its rich configuration options exposed in CoreMedia Blueprint, it also contains descriptions dedicated to CKEditor 4:

- How to enable CKEditor 4?
- How to customize CKEditor 4? (migrated from original places in Studio Developer Manual)
- Recommended Upgrade Development Setup for migrating to CKEditor 5.

- And how to enable CKEditor 5 again during development or to enable it for production use.

[CMS-19191]

## Lower Limit for "My Edited Content"

The default value of the Spring property "userchanges.max-length" for the *User Changes App* is now set to 1000 .

Note that this is only breaking if your project does not set this property to a positive value yet. Negative values aren't allowed and an unconfigured value was interpreted as unlimited.

[CMS-18701]

## 5.12.8 Miscellaneous

### Changed CMS Version Compatibility Check For Plugins

- The plugin property `plugin.requires` and the programmatic version check for Java Plugins in the CMS has been removed to fix a bug with the required cms version and to prevent further confusion.
- A new Plugin Schema has been released: <https://releases.coremedia.com/plugins/plugin-schema-3.0.0.json> .

The schema now requires a `minimum-cms-version` . The property is not verified automatically, but is used for documentation purposes and enables clients to implement such a check in their deployment processes.

- The only breaking change is that the management for the dependency `com.github.zafarkhaja:java-semver:0.9.0` has been removed.

[CMS-22022]



## Switching to Rolling Tags for Docker Base Images

CoreMedia base images are based on official Docker Hub images. These official images are regularly affected by security vulnerabilities - some more, some less. This is one reason why we are publishing our images independently from the Blueprint on Docker Hub. You can upgrade to a new version without having to wait for a new CMCC release.

Because creating a secure product is a high priority for us, we will go one step further. We increase the update frequency of the CoreMedia Base Images and we switch to rolling tags with the CMCC 11.2210.1 AEP release. Rolling Tags are a common strategy in Open Source and commercial products to deal with the moving target of security vulnerabilities in operating systems and the included 3rd party libraries.

As such the following images are now referenced in the Blueprint by means of their rolling tags:

- [Java application base image](#)
- [NGINX base image](#)
- [Solr base image](#)

The rolling tags include the updated versions:

- Release 11.0.16 of the respective JDKs
- NGINX 1.23.1-alpine

Among others, the updates fix: CVE-2022-34169 CVE-2022-32207 CVE-2022-28391 CVE-2022-27404 CVE-2022-28391 CVE-2022-1586 CVE-2022-1587

For more information on the rolling tags read [this article](#) in the Security section of our Knowledge Base.

[CMS-21849]

## SolrCloud Configuration Disabled /sql Request Handler

The Solr configuration in all `solrconfig.xml` files has been changed for security reasons, and now disables the `/sql` request handler. This handler was never used but it was enabled implicitly in SolrCloud installations. You can ignore this release note, if you don't use SolrCloud.

The Solr `/sql` handler is now disabled with the following line in all `solrconfig.xml` files:

```
<requestHandler name="/sql" class="solr.NotFoundRequestHandler"/>
```

Please make sure to add this line and upload the changed configuration to Zookeeper, if you are using SolrCloud. This avoids an XXE security vulnerability (CVE-2022-39135) that could be exploited if an attacker can send requests directly to Solr. Note, that Solr should never be directly accessible from the public internet.

[CMS-22172]

## 5.13 Upgrade to 2207.2

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.13.1 CoreMedia Core

#### Cli Tool Argument Checks are Improved

Especially the `cm bulkpublish` command and other tools have not checked their parameter and arguments. In this specific case, a folder was passed to the `bulkpublish` command without the necessary `-f` option (because other tools do it that way). However, the tool did not complain about the unknown argument and simply assumed a default value for the folder. This is now checked more closely for all tools that don't need further arguments and a usage message is printed. This change is only breaking if you have used the tools with wrong parameters. If you used them correctly, the behavior does not change.

[CMS-21210]

### 5.13.2 CoreMedia Content Application Engine

#### BlueprintLinkServicesConfiguration#contentLinkBuilder now Correctly uses sitesService as Bean Name

Adding a second bean of type `com.coremedia.cap.multisite.SitesService` prevented the CAE from starting because `BlueprintLinkServicesConfiguration#contentLinkBuilder` used a wrong bean name for the `SitesService` bean. It now uses the correct bean name `sitesService`.

[CMS-22194]

## 5.13.3 CoreMedia Studio Client

### Third-Party Update: TypeScript to 4.8.2

Fixed a problem when building the studio-client workspace in Windows if a certain path length was exceeded by upgrading to TypeScript 4.8.2.

Although we do not expect any problems with this upgrade please consult <https://devblogs.microsoft.com/typescript/announcing-typescript-4-8/> for further information.

[CMS-21997]

### Fixed Validation State of InputChipsField

The issue was caused by a mixed usage of the editor: it is used as a property editor and in other contexts as a "regular" editor. To solve this problem the new property editor *InputChipsPropertyField* has been introduced for regular content property editing. This new property editor is used e.g. for the free keyword selection on *CMTeasables*. While the existing *InputChipField* still exists, the package name has been refactored and does not accept the *bindTo ValueExpression* anymore. For these reasons the issue has been marked as breaking.

[CMS-19300]

## 5.13.4 CoreMedia Headless Server

### Third-Party Update: GraphQL-Java to 19.2

The library `com.graphql-java:graphql-java` was updated from 18.1 to 19.2. It contains several bugfixes and some security relevant improvements.

The library update is potentially breaking, in case custom code implements its own `ChainedInstrumentation`. For details about the breaking change please see <https://github.com/graphql-java/graphql-java/releases/tag/v19.0> and additionally <https://github.com/graphql-java/graphql-java/releases> Otherwise, the update is considered **non-breaking**.

[CMS-22091]

## 5.13.5 Miscellaneous

### SolrCloud Configuration Disabled /sql Request Handler

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```
<requestHandler name="/sql" class="solr.NotFoundRequestHandler"/>
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Please make sure to add this line and upload the changed configuration to Zookeeper, if you are using SolrCloud. This avoids an XXE security vulnerability (CVE-2022-39135) that could be exploited if an attacker can send requests directly to Solr. Note, that Solr should never be directly accessible from the public internet.

[CMS-22172]

## 5.14 Upgrade to 2207.1

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.14.1 CoreMedia Core

#### Database Improvement

Our PostgreSQL database schema utilizes PostgreSQL's "Large Objects" and references them by the `content` column of the `pgblobstore` table. Since this was only an `integer` column, PostgreSQL's `vacuumlo` tool deemed the Large Objects orphaned and deleted them. Now, we have changed the column type to `oid` to save our Large Objects from `vacuumlo`.

Note, that it is not possible to start a Content Server of a previous release on the database after the new Content Server has adapted the database tables. You should always make a backup of the Content Server database before upgrading. Due to our overall database versioning schema, this applies to Content Servers with any database, even though the actual change affects only PostgreSQL!

[CMS-21879]

#### Log Level Change for Publication Failure

Publication failures were logged with level *WARN* in *Content Management Server*. This wrongly indicated an operational issue that would require action by the operational team, while it actually is a content issue that has to be handled by editorial staff. The log level has thus been changed to *INFO*. Feedback on publication failures in *Studio* and in command line tools remains unchanged.

If a monitoring of publication failures was established that is based on log level *WARN* in *Content Management Server* log files, this needs to be changed to filter for log level *INFO* and message text contents "*Result of publication*" and "*\_Cannot\_execute\_*".

So, while the log message previously read

```
2022-05-20 17:52:56 [WARN] (Publication#820 on target) cap.server.publisher
[] - Result of publication '820': PublishContent[1602:3]:Cannot_execute:16
(LinkFailed)
```

it will now show as

```
2022-05-20 17:52:56 [INFO] (Publication#820 on target) cap.server.publisher
[] - Result of publication '820': PublishContent[1602:3]:Cannot_execute:16
(LinkFailed)
```

(CMS-21688)

## Auto-Merge Robustness for Ambiguous and Deleted Links enhanced

Prior to addressing this issue, you may have observed auto-merge conflicts, for example, when a still linked content in the derived site got deleted, or when there are two derived contents (one of them linked) in the same site, which reference the same master. While auto-merge issues in these scenarios may still happen, a prediction mechanism tries to resolve these conflicts at best effort now.

### New API

To support additional behavior for deleted contents in auto-merge scenarios, new methods have been introduced, related to `Content.getLastPath()`, which is the path of a deleted content it had prior to its deletion. In the similar way, you can now access the *last site* of a deleted content:

- `com.coremedia.cap.multisite.ContentObject SiteAspect#getLastSite(): Site | null`
- `com.coremedia.cap.multisite.ContentObject SiteAspect#findLastSite(): Optional<Site>`

### Enhanced API Behavior

For a deleted content wrapped in a `ContentSiteAspect` the method `getDirectlyDerived` is now able using the "best match" approach for ambiguous scenarios, such as, that a given master content has two derived contents in a given site. While this state should be prevented (validators will warn editors), the "best match" API prefers the derived content having the same relative path. This is now also applicable for master contents which got deleted.

Note, that in such ambiguous states, a warning will be filed (as before, but method name changed from `getDirectlyDerived` to `findBest`), like:

```
`findBest(Site:derived-site-id)`: Multiple directly derived contents  
for master coremedia:///cap/content/24. Consider  
running cm validate-multisite. Random content  
chosen from candidates: coremedia:///cap/con  
tent/42. All directly derived in given site [#2]: core  
media:///cap/content/42, core  
media:///cap/content/44
```

### Upgrade

Unless, you provided custom implementations (or mocks in test context) of `ContentObjectSiteAspect` and related interfaces, **no upgrade steps are required**.

For custom implementations and mocks in test context, you may require implementing the `getLastSite()` method.

[CMS-19909]

## 5.14.2 CoreMedia Content Application Engine

### Deprecation Removal: UrlProvider Leftovers from lc-cae

Since link building for commerce URLs has already been moved to the commerce adapters, the `UrlProviders` in the `lc-cae` extension for commerce urls shouldn't be used anymore and were deprecated previously.

If you do not have any customizations in `LiveContextUrlProvider` or `CommerceSearchRedirectUrlProvider`, you do not need to do anything. If your code is customized, please try to adapt your adapter configuration accordingly.

[CMS-21736]

### Fix and Deprecate Method `TransformImageService#getTransformationString`

The method `com.coremedia.cap.transform.TransformImageService#getTransformationString(...)` has been changed to return null



for non-existing blobs instead of throwing a `NullPointerException`. Further the method has been marked as deprecated for removal because it was not intended to be public API.

[CMS-21919]

## Freemarker Macro `{{<@cm.message />}}` Escapes Output by Default

While the output of the Freemarker function `${ cm.getMessage () }` is escaped by Freemarker, the same functionality as Freemarker macro `<@cm.message />` was not. For security reasons we changed it, so both are escaped now by default. This is important if you add unchecked user input values into the message strings, like for example in search result headers.

### Upgrade Steps:

Only if you have translation messages including HTML in your properties files and using the macro, you need to add the parameter `escaping=false`, in all other cases you have nothing to do.

Example: Before: `<@cm.message key="message_with_html"/>` After:  
`<@cm.message key="message_with_html" escaping=false/>`

[CMS-21409]

## 5.14.3 CoreMedia Studio Client

### Maximum Pending Amount of Parallel Requests from studio-client to studio-server Adapted

Until now the maximum amount of pending requests from studio-client to studio-server was set to six. This limit was given by the use of HTTP/1.1. Nowadays HTTP/2 is used and with HTTP/2 the limit has increased significantly. By default the maximum amount of pending requests is now set to 50 and can be adapted by setting the property `rest.network.maxRequests` in the studio-server.

[CMS-21867]

## Added Promises-based Alternatives for Callback-based Studio Client API

In Studio Client's remote API, all callback-based API methods now support an alternative signature: When called without the `callback` argument, they return a `Promise` instead of `void`. For example, `Content#rename()` now has the following overloaded signatures:

```
rename(newName: string, callback: () => void): void;
rename(newName: string): Promise<void>;
```

You can still use the API with a callback, but also without, and then use the returned `Promise` to react on the result.

This means this change is backwards-compatible, save in two special cases:

1. There are a few callback-based methods whose `callback` parameter has been optional before. When used without `callback`, they used to return `void`, but now return a `Promise`. If code "hands through" the `void` result (bad practice!), this now results in a TypeScript type error during build. The typical usage where this error occurs is when calling the changed method from an arrow function in short-hand form. To fix the error, simply add curly braces to the function body. The most prominent methods of this kind are `RemoteBean#load()`, `invalidate()` and `flush()`.
2. When your code does not only *use* the API, but actually *extends* Studio Client API (typically a custom `RemoteBean`) and implements/overrides any of the complemented methods (usually not necessary, since `RemoteBeanImpl` does that for you), your implementing method must also be complemented by the new overloaded method signature (TypeScript will tell you so). For the Promise-based version to work, your implementation must also regard the new case, usually by delegating to `super`, returning the `super` call's optional result, the `Promise`.

[CMS-21750]

## TypeScript Source Code Simplifications

In the 2207 Blueprint workspace, certain TypeScript source patterns have been simplified. The changes described below can be applied automatically by a tool CoreMedia provides. To do so, make sure your CoreMedia Blueprint workspace is in a clean VCS state. Then start by enabling all extensions:

```
cd workspace-configuration/extensions
mvn extensions:list -DextensionsFile=extensions.txt
mvn extensions:sync "-Denable=*"
```

Now invoke the new source code update tool:

```
cd ../../
cd apps/studio-client
pnpm install
pnpm dlx @coremedia/studio-client.tools.update-ts-source-code@~1.0.0
```

Restore the state of any previously disabled extensions:

```
cd ../../
cd workspace-configuration/extensions
mvn extensions:sync -DextensionsFile=extensions.txt
rm extensions.txt
```

Add and commit all resulting changes with an appropriate commit message. Now, the number of possible conflicts in Studio Client TypeScript code when merging with CoreMedia Blueprint AEP 2207 is reduced drastically.

The following sections describe the improved TypeScript syntax that the tool applies and that should be used when you write Studio TypeScript code from now on.

## New class static block syntax

Since version 4.7, TypeScript fully supports ECMAScript class static blocks, so the workaround syntax using a private static field with an "immediately evaluated function" (IEF) can now be simplified.

Before:

```
class Foo {
  static #static = (() => {
    console.log("Foo is being initialized!");
  })();
}
```

After:

```
class Foo {
  static {
    console.log("Foo is being initialized!");
  }
}
```

## Simplify `this` access before `super()` call

In Ext JS, it is often required to use `this` in the constructor before calling `super()`. According to ECMAScript and thus TypeScript class semantics, this is not allowed and

results in an error. To still be able to use TypeScript classes for Ext JS development, we found a workaround described in the following. Assume there is a class `Bar` with a constructor that takes a string and a boolean, an Ext JS subclass could look like so:

```
class Foo extends Bar {
  #field: string;
  constructor(a: string) {
    super(...() => {
      /* all code accessing 'this' before 'super()': */
      this.#field = a;
      // super args must be returned and spread ('...'):
      return [a + "!", this.#compute()];
    }());
    /* code after super call: */
    console.log(this.#field);
  }
  #compute(): boolean { ... }
}
```

The pattern is slightly simpler when there is just one super call parameter, but is still hardly comprehensible and cumbersome to write.

The new workaround that reads and writes simpler is to define an alias for `this` and use `@ts-expect-error` to ignore the resulting error exactly in that line. The new syntax for the code above looks like so:

```
class Foo extends Bar {
  #field: string;
  constructor(a: string) {
    // @ts-expect-error Ext JS semantics
    const this$ = this;
    // same code as inside the IEF with every 'this' is replaced by 'this$':

    this$.#field = a;
    // normal super call:
    super(a + "!", this$.#compute());
    /* code after super call: */
    console.log(this.#field);
  }
  #compute(): boolean { ... }
}
```

[CMS-21747]

## Third-Party Update: pnpm to version 7

You now need at least pnpm 7.1.5 to build the frontend workspace and the studio-client. Please take note of the list of changes here <https://github.com/pnpm/pnpm/releases/tag/v7.0.0>

In order to upgrade pnpm to 7.x use the following command:

```
npm install -g pnpm@7
```

A notable mention is the removal of double dashes when passing parameters to scripts. This has some implications to the order arguments like "--filter" which now needs to be passed before the actual script name that is to be executed, e.g. :

```
pnpm -r run watch --filter "@coremedia-blueprint/studio-client.studio" --  
--recursive --skipInitialBuild
```

now needs to be:

```
pnpm -r --filter "@coremedia-blueprint/studio-client.studio" run watch  
--recursive --skipInitialBuild
```

The documentation was adjusted accordingly.

[CMS-21584]

## Library Commerce Toolbar and Context Enhancement

The *commerce toolbar* and *context menu* have been cleaned up from not applicable actions and the functionalities available on augmented commerce objects, together with the user interface, have been aligned between *repository list* and *search mode* .

The following not applicable actions have been removed:

- Create new folder
- Create new content
- Upload files to the selected folder

The following actions have been added in search mode:

- Add bookmark
- Publish
- Approve
- Withdraw Augmentation
- Delete Augmentation

[CMS-21566]

## Updated Upload Components Layout

The layout of dropareas for HTML5 uploads has been updated. The bulk upload dialog, image editor and blob property field give a visual feedback now, when files are dragged into the Studio. Additionally, the drop area size for blob property fields has been increased and some labels have been changed.

[CMS-19271]

## 5.14.4 CoreMedia Studio Server

### Fixed Incorrect Defer Flag During Theme Import

As described in <https://documentation.coremedia.com/cmcc-11/artifacts/2201/webhelp/frontend-en/content/ThemeConfigReference.html> you can set the "defer" flag in your theme configuration to defer the execution of a JavaScript file. Due to a bug all CMJavaScript documents generated by the theme importer that were not meant to be deferred were configured in a way that caused the following HTML output:

```
<script .... defer="false"></script>
```

This can cause problems with other flags just like "async". To avoid any problems with other flags the "defer" flag is now once again omitted if not set to "true".

[CMS-21476]

## 5.14.5 CoreMedia Workspace

### Third-Party Update: Spring Boot and Related Dependencies

Spring Boot has been updated to version 2.6.8. Related dependencies have been updated to at least the versions used by Spring Boot. This includes updates to fix reported security issues in Spring Security and Tomcat [CVE-2022-22976, CVE-2022-22978, CVE-2022-29885]. The new version of Spring Security contains a bug fix for certain configurations of password hashing [CVE-2022-22976], which may require additional upgrade steps if

you have changed the configuration for password hashing in the *Content Server* or *Elastic Social* .

By default, passwords of *Content Server* builtin users and of *Elastic Social* users are stored using the BCrypt password hashing algorithm from Spring Security with a work factor of 10. Previous versions of Spring Security contained a security vulnerability (CVE-2022-22976) that made hashes less secure, if you had changed the default configuration to use work factor 31 with configuration property `cap.server.login.password-hash-algorithm` for the *Content Server* or property `elastic.social.password-hash-algorithm` for *Elastic Social* . You don't need to take action, if you are using the default configuration or a BCrypt work factor less than 31.

With this release, the configuration of work factor of 31 is not accepted anymore. *Content Server* and *Elastic Social* applications will fail to start, if such a work factor is configured. Note, that it would be an unreasonable choice anyway, because it would require multiple days to compute a single hash. If you had configured work factor 31, then you must change the configuration in the mentioned configuration properties, for example to the default work factor of 10, or a slightly higher one. The passwords of all users that were stored with work factor 31 are still working but should be changed to store them more securely. For details, see also the description of the CVE at <https://tanzu.vmware.com/security/cve-2022-22976> .

The following libraries have been updated:

- Hibernate 5.6.9.Final
- Jackson 2.13.3
- Micrometer 1.8.6
- MySQL 8.0.29
- PostgreSQL 42.3.6
- Spring Boot 2.6.8
- Spring Security 5.6.5
- Tomcat 9.0.64

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-21777]

## 5.14.6 CoreMedia Frontend Workspace

### Removal: Flag "enableDuplicateSassImportsFix"

The compability flag "enableDuplicateSassImportsFix" has been removed from the theme configuration causing the fix to be enabled by default. If you have utilized the flag in your theme configuration and set it to "true" you can safely remove it. if you have not utilized the flag or set it to "false" please be aware that every SASS files is now again only included once in a theme build (as intended).

[CMS-21703]

### Fixed a Bug That in Some Cases SASS Files Could be Included Multiple Times

A bug in the theme tool chain caused that the SCSS files of a brick were included multiple times in some cases. As the files were loaded in a way that these duplicates might also have been overriding other styling rules and this will no longer happen after fixing the bug this is considered a potentially breaking change.

[CMS-21705]

## 5.14.7 CoreMedia Headless Server

### Configured a Cache Control max-age Default for Headless Server GET Requests

Configured a default of 5 minutes for the Headless Server's Cache-Control max-age value to prevent that REST responses including properties of a content which is erroneously configured to be valid for a long time will be cached for a long time.

[CMS-21585]



## Change getName Method in PluginSchemaAdapterFactory to NonNull

The method was changed to be NonNull, since semantically it should be NonNull and it does not make sense to allow null as an identifier for adapters. This change is only considered breaking, if the interface is implemented and the implemented method returns null for the name. If this is not the case, it is not considered breaking.

[CMS-21901]

## Picture Local Setting 'disableCropping' now Supported by Link Building

The flag `disableCropping` in the local settings of a picture was not respected by the link building for the GraphQL property `uriTemplate`. This misbehaviour was fixed. Also, the delivery will now validate this flag. This means that uri with disabled cropping won't work when request the image with a cropName and width. As a consequence, this bugfix is considered breaking, as the validation may break previously working delivery image URLs!

For version 2107 and 2201 the validation for the delivery can be disabled. For version 2204 validation cannot be disabled!

[CMS-21765]

## 5.14.8 Miscellaneous

### Updated cms-blueprint-parent to 2.0.0

The plugins managed in the parent have been updated to the recent versions. The following updates might require small adjustments in your project:

- `maven-antrun-plugin` [1.8 to 3.1.0]: major breaking change: `target` must be used instead of `tasks`

(see <https://maven.apache.org/plugins/maven-antrun-plugin/>,  
<https://blogs.apache.org/maven/entry/apache-maven-antrun-plugin-version> )

- `maven-dependency-plugin` [3.1.2 to 3.3.0]: reporting of missing test-scope changed and might create warnings

[see <https://blogs.apache.org/maven/entry/apache-maven-dependency-plugin-version3>]

[CMS-21728]

## Fixed Prometheus Cache Metrics

Spring Boot actuator endpoint `/metrics` provides several metrics on CoreMedia components [see *Operations Basics Manual*, section *Basics of Operation | Actuator Endpoints | Metrics Endpoint*]. In addition to that, actuator endpoint `/prometheus` publishes this data for scraping by monitoring application *Prometheus*. However, cache metrics were incomplete for some CoreMedia components when using this endpoint. With this fix, the complete set of cache information can now be retrieved from it.

CoreMedia cache meter names in Spring Boot actuator endpoints `/metrics` or `/prometheus` have been changed:

- `cache.capacity` -> `coremedia.cache.capacity`
- `cache.evaluation.duration` -> `coremedia.cache.evaluation.duration`
- `cache.eviction.duration` -> `coremedia.cache.eviction.duration`
- `cache.evictions` -> `coremedia.cache.evictions`
- `cache.gets` -> `coremedia.cache.gets`
- `cache.level` -> `coremedia.cache.level`
- `cache.puts` -> `coremedia.cache.puts`
- `cache.removals` -> `coremedia.cache.removals`
- `cache.size` -> `coremedia.cache.size`
- `cache.updates` -> `coremedia.cache.updates`

Tag `cache` is not used on these meters any longer.

Meter names `cache.gets`, `cache.puts`, `cache.size`, and `cache.evictions` may still be present for other caches (depending on the component).

If you used cache metrics before, you may need to adjust your monitoring application's configuration according to the list above to comply with the new meter names for CoreMedia caches. See *Operations Basics Manual*, section *Basics of Operation | Actuator Endpoints | Metrics Endpoint* for details on metrics parameters.

[CMS-21612]

## Removed Generic Type Argument of Blueprint SearchPreprocessor Interface

Removed the generic type argument of `com.coremedia.blueprint.cae.search.solr.SearchPreprocessor` as it is intended to preprocess beans of type `com.coremedia.blueprint.cae.search.SearchQueryBean` only.

[CMS-10266]

## 5.15 Upgrade to 2204.3

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.15.1 CoreMedia Core

#### Cli Tool Argument Checks are Improved

Especially the `cm bulkpublish` command and other tools have not checked their parameter and arguments. In this specific case, a folder was passed to the `bulkpublish` command without the necessary `-f` option (because other tools do it that way). However, the tool did not complain about the unknown argument and simply assumed a default value for the folder. This is now checked more closely for all tools that don't need further arguments and a usage message is printed. This change is only breaking if you have used the tools with wrong parameters. If you used them correctly, the behavior does not change.

[CMS-21210]

### 5.15.2 CoreMedia Content Application Engine

#### Fix and Deprecate Method `TransformImageService#getTransformationString`

The method `com.coremedia.cap.transform.TransformImageService#getTransformationString(...)` has been changed to return null for non-existing blobs instead of throwing a `NullPointerException`. Further the method has been marked as deprecated for removal because it was not intended to be public API.

[CMS-21919]

## 5.15.3 CoreMedia Headless Server

### Third-Party Update: GraphQL-Java to 19.2

The library `com.graphql-java:graphql-java` was updated from 18.1 to 19.2. It contains several bugfixes and some security relevant improvements.

The library update is potentially breaking, in case custom code implements its own `ChainedInstrumentation`. For details about the breaking change please see <https://github.com/graphql-java/graphql-java/releases/tag/v19.0> and additionally <https://github.com/graphql-java/graphql-java/releases> Otherwise, the update is considered non-breaking.

[CMS-22091]

## 5.16 Upgrade to 2204.2

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.16.1 CoreMedia Core

#### Log Level Change for Publication Failure

Publication failures were logged with level *WARN* in *Content Management Server* . This wrongly indicated an operational issue that would require action by the operational team, while it actually is a content issue that has to be handled by editorial staff. The log level has thus been changed to *INFO* . Feedback on publication failures in *Studio* and in command line tools remains unchanged.

If a monitoring of publication failures was established that is based on log level *WARN* in *Content Management Server* log files, this needs to be changed to filter for log level *INFO* and message text contents "*Result of publication*" and "*\_Cannot\_execute\_*".

So, while the log message previously read

```
2022-05-20 17:52:56 [WARN] (Publication#820 on target) cap.server.publisher
[] - Result of publication '820': PublishContent[1602:3]:Cannot_execute:16
(LinkFailed)
```

it will now show as

```
2022-05-20 17:52:56 [INFO] (Publication#820 on target) cap.server.publisher
[] - Result of publication '820': PublishContent[1602:3]:Cannot_execute:16
(LinkFailed)
```

[CMS-21688]

## 5.16.2 CoreMedia Studio Server

### Fixed Incorrect Defer Flag During Theme Import

As described in <https://documentation.coremedia.com/cmcc-11/artifacts/220/webhelp/ frontend-en/content/ThemeConfigReference.html>, you can set the "defer" flag in your theme configuration to defer the execution of a JavaScript file. Due to a bug all CMJavaScript documents generated by the theme importer that were not meant to be deferred were configured in a way that caused the following HTML output:

```
<script .... defer="false"></script>
```

This can cause problems with other flags just like "async". To avoid any problems with other flags the "defer" flag is now once again omitted if not set to "true".

[CMS-21476]

## 5.16.3 CoreMedia Workspace

### Third-Party Update: Spring Boot and Related Dependencies

Spring Boot has been updated to version 2.6.8. Related dependencies have been updated to at least the versions used by Spring Boot. This includes updates to fix reported security issues in Spring Security and Tomcat [CVE-2022-22976, CVE-2022-22978, CVE-2022-29885]. The new version of Spring Security contains a bug fix for certain configurations of password hashing [CVE-2022-22976], which may require additional upgrade steps if you have changed the configuration for password hashing in the *Content Server* or *Elastic Social*.

By default, passwords of *Content Server* builtin users and of *Elastic Social* users are stored using the BCrypt password hashing algorithm from Spring Security with a work factor of 10. Previous versions of Spring Security contained a security vulnerability [CVE-2022-22976] that made hashes less secure, if you had changed the default configuration to use work factor 31 with configuration property `cap.server.login.password-hash-algorithm` for the *Content Server* or property `elastic.social.pass`

`word-hash-algorithm` for *Elastic Social* . You don't need to take action, if you are using the default configuration or a BCrypt work factor less than 31.

With this release, the configuration of work factor of 31 is not accepted anymore. *Content Server* and *Elastic Social* applications will fail to start, if such a work factor is configured. Note, that it would be an unreasonable choice anyway, because it would require multiple days to compute a single hash. If you had configured work factor 31, then you must change the configuration in the mentioned configuration properties, for example to the default work factor of 10, or a slightly higher one. The passwords of all users that were stored with work factor 31 are still working but should be changed to store them more securely. For details, see also the description of the CVE at <https://tanzu.vmware.com/security/cve-2022-22976> .

The following libraries have been updated:

- Hibernate 5.6.9.Final
- Jackson 2.13.3
- Micrometer 1.8.6
- MySQL 8.0.29
- PostgreSQL 42.3.6
- Spring Boot 2.6.8
- Spring Security 5.6.5
- Tomcat 9.0.64

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-21777]

## 5.16.4 CoreMedia Headless Server

### Picture Local Setting 'disableCropping' now Supported by Link Building

The flag `disableCropping` in the local settings of a picture was not respected by the link building for the GraphQL property `uriTemplate` . This misbehaviour was fixed. Also, the delivery will now validate this flag. This means that uri with disabled cropping won't work when request the image with a cropName and width. As a con-



sequence, this bugfix is considered breaking, as the validation may break previously working delivery image URLs!

For version 2107 and 2201 the validation for the delivery can be disabled. For version 2204 validation cannot be disabled!

[CMS-21765]

## 5.16.5 Miscellaneous

### Fixed Prometheus Cache Metrics

Spring Boot actuator endpoint `/metrics` provides several metrics on CoreMedia components [see *Operations Basics Manual* , section *Basics of Operation | Actuator Endpoints | Metrics Endpoint* ]. In addition to that, actuator endpoint `/prometheus` publishes this data for scraping by monitoring application *Prometheus* . However, cache metrics were incomplete for some CoreMedia components when using this endpoint. With this fix, the complete set of cache information can now be retrieved from it.

CoreMedia cache meter names in Spring Boot actuator endpoints `/metrics` or `/prometheus` have been changed:

- `cache.capacity` -> `coremedia.cache.capacity`
- `cache.evaluation.duration` -> `coremedia.cache.evaluation.duration`
- `cache.eviction.duration` -> `coremedia.cache.eviction.duration`
- `cache.evictions` -> `coremedia.cache.evictions`
- `cache.gets` -> `coremedia.cache.gets`
- `cache.level` -> `coremedia.cache.level`
- `cache.puts` -> `coremedia.cache.puts`
- `cache.removals` -> `coremedia.cache.removals`
- `cache.size` -> `coremedia.cache.size`
- `cache.updates` -> `coremedia.cache.updates`

Tag `cache` is not used on these meters any longer.

Meter names `cache.gets` , `cache.puts` , `cache.size` , and `cache.evictions` may still be present for other caches (depending on the component).

If you used cache metrics before, you may need to adjust your monitoring application's configuration according to the list above to comply with the new meter names for CoreMedia caches. See *Operations Basics Manual* , section *Basics of Operation | Actuator Endpoints | Metrics Endpoint* for details on metrics parameters.

[CMS-21612]

## 5.17 Upgrade to 2204.1

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.17.1 CoreMedia Core

#### Class "TransformationService" Cleaned Up

Class `TransformationService` has been refactored to delegate image transformations to a new method in `TransformImageService`. As a consequence, obsoleted references to `BlobTransformer` and `NamedTransformBeanBlobTransformer` have been removed. `TransformationService`'s constructor as well as the corresponding Spring bean configuration in `TransformationServiceConfiguration` have been adjusted accordingly.

[CMS-21491]

#### New Method to Transform Image by "Image Transformation String" Directly

A new method `transformWithDimensions(Content content, String property, String operations):Optional<Blob>` was added to interface `TransformImageService` and its implementing class. With this new method, an image transformation can be requested via an Image Transformation String directly (see <https://documentation.coremedia.com/cmcc-11/artifacts/220/webhelp/cas-developer-en/content/imageTransformationAPI.html>).

Existing transformation methods remain unchanged.

[CMS-21481]

## Unified API: `ContentRepository.createContentBuilder()` Available

A new way of creating contents within the Unified API is available:

- `ContentRepository.createContentBuilder()`

It combines several aspects of content creation such as `ContentRepository.createChild(...)` and `ContentType.createByTemplate(...)`.

The most simple approach of creating a content is:

```
repository.createContentBuilder()  
    .type("CMArticle")  
    .name("My Article")  
    .create();
```

which will create an article directly at root-folder.

For more details, consult the corresponding JavaDoc in Common API of

- `com.coremedia.cap.content.create.ContentBuilder`

### Upgrade Notes:

The pattern has been introduced to some production and test files in CoreMedia Blueprint. While, generally, no upgrade steps are required, you may experience merge conflicts, when you adapted corresponding code sections.

If any conflicts arise, it is safe keeping your changes in favor over the changes introduced with this update. All former methods will work in the same way.

Affected production files:

- `DefaultTaxonomy.java` in `apps/studio-server/blueprint/modules/shared/taxonomies/src/main/java/com/coremedia/blueprint/taxonomies/strategy`
- `SettingsUploadInterceptor.java` in `apps/studio-server/blueprint/modules/extensions/validators/validators-studio-lib/src/main/java/com/coremedia/blueprint/studio/rest/intercept`
- `TopicPagesResource.java` in `modules/extensions/custom-topic-pages/custom-topic-pages-rest-extend`

```
sion/src/main/java/com/coremedia/blueprint/studio/top  
icpages/rest
```

- `UpdateAssetMetadataWriteInterceptorTest.java` in `modules/extensions/am/am-studio-component/src/test/java/com/coremedia/blueprint/assets/studio/intercept`
- `WordUploadInterceptor.java` in `apps/studio-server/blueprint/modules/extensions/validators/validators-studio-lib/src/main/java/com/coremedia/blueprint/studio/rest/intercept`

Affected test files:

- `CMQueryListImplPaginationTest.java` in `shared/middle/blueprint/modules/cae/contentbeans/src/test/java/com/coremedia/blueprint/cae/contentbeans`
- `LocalizationServiceTest.java` in `shared/middle/blueprint/modules/shared/content-services/src/test/java/com/coremedia/blueprint/localization`

(CMS-18001)

## Runlevel Health Indicator Signals Wrong State in Runlevel MAINTENANCE

When the Content Server is switched to runlevel MAINTENANCE either during startup or manually, the `health/runlevel` endpoint signals the server is UP. This makes it impossible to use the indicator for a readiness probe in Kubernetes, because the pod will be added to the services endpoint too early and UAPI clients that listen on a services availability would fail during the creation of the repository connection.

This change fixes the health state in the MAINTENANCE runlevel to down and includes the indicator in the `health/readiness` endpoint.

The content-server can therefore be in one of the following states:

- `runlevel=OFFLINE`, `Liveness State=BROKEN`, `Readiness State=REFUSING_TRAFFIC`
- `runlevel=MAINTENANCE`, `Liveness State=CORRECT`, `Readiness State=REFUSING_TRAFFIC`
- `runlevel=ADMINISTRATION`, `Liveness State=CORRECT`, `Readiness State=REFUSING_TRAFFIC`

- runlevel=ONLINE, Liveness State=CORRECT, Readiness State=ACCEPTING\_TRAFFIC

If your health check logic depended on MAINTENANCE level being a 200 HTTP result, disable the runlevel endpoint by setting

```
management.health.runlevel.enabled=false  
management.endpoint.health.group.readiness.include=readinessState
```

Please be reminded, that using the health actuator to automatically trigger a redeployment of a pod / container is not advised and can be dangerous due to health indicator that monitor connections to remote systems. This can cause chain reactions taking multiple services down. Instead use the `host:8081/actuator/health/liveness` endpoint instead.

[CMS-21355]

## Changed SitesService Setup in cmd Tools

The `sitesService` bean is injected from `commandline-tools-context.xml` now instead of being registered programmatically. Now obsolete methods `registerSitesService` and `hasSingletonBeanOfType` in `com.coremedia.cmdline.SpringHelper` have been removed.

[CMS-21279]

## Changed User Manager Search

The user manager does not load all users or group on initialization anymore. Instead an empty state panel is shown and a load is only triggered when more than `n` characters are inputted into the search field. The amount of characters can be configured via the Spring property `studio.usermanager.minSearchCharacters` and defaults to '3'. The previous behavior can be restored by setting the property to '0'.

[CMS-20760]

## 5.17.2 CoreMedia Studio Client

### Moved thumbnailService and Helper Classes to cap-base-models

This note covers changes to private API. Although private API is not subject to release notes and it can be changed without further notice we detected that this API was leaked in the blueprint so the code might have been copied or customized that is why we declared this change as possibly breaking.

The following non-Public API modules (which were used in the blueprint) are now deprecated:

- @coremedia/studio-client.ext.cap-base-components/thumbnails/IThumbnailService
- @coremedia/studio-client.ext.cap-base-components/thumbnails/ThumbnailResolver
- @coremedia/studio-client.ext.cap-base-components/thumbnails/ThumbnailResolverFactory
- @coremedia/studio-client.ext.cap-base-components/thumbnails/ThumbnailResolverImpl

Please make sure to read the deprecation notes and adjust your usages before the modules are removed.

For the sake of completeness: The following non-Public modules (not used in the blueprint) were moved:

- @coremedia/studio-client.ext.cap-base-components/thumbnails/RemoteImageTransformationConfig -> @coremedia/studio-client.cap-base-models/thumbnails/RemoteImageTransformationConfig
- @coremedia/studio-client.ext.cap-base-components/thumbnails/Thumbnail -> @coremedia/studio-client.cap-base-models/thumbnails/Thumbnail
- @coremedia/studio-client.ext.cap-base-components/thumbnails/ThumbnailRenderer -> @coremedia/studio-client.cap-base-models/thumbnails/ThumbnailRenderer
- @coremedia/studio-client.ext.cap-base-components/thumbnails/ThumbnailRendererBase -> @coremedia/studio-client.cap-base-models/thumbnails/ThumbnailRendererBase
- @coremedia/studio-client.ext.cap-base-components/thumbnails/thumbnailService -> @coremedia/studio-client.cap-base-models/thumbnails/thumbnailService

- @coremedia/studio-client.ext.cap-base-components/thumbnails/ThumbnailServiceImpl -> @coremedia/studio-client.cap-base-models/thumbnails/ThumbnailServiceImpl
- @coremedia/studio-client.ext.cap-base-components/thumbnails/ThumbnailUriServiceImpl -> @coremedia/studio-client.cap-base-models/thumbnails/ThumbnailUriServiceImpl

In case you made use of this private API please adjust your imports accordingly.

[CMS-22223]

## Third-Party Update: rxjs from 6.x to 7.x

We now use the latest major version of rxjs in the studio-client workspace. In case you made any use of it in one of your packages make sure to upgrade rxjs as well. The changes can be seen here: <https://rxjs.dev/deprecations/breaking-changes>

[CMS-22220]

## Added Support for Multiple Bookmarks

Inside the library, multiple content items can be bookmarked now. Additional properties have been added to \_Editor\_properties.ts\_ for this:

```
Bookmark_button_add_multi_text: "Add Bookmarks",  
Bookmark_button_add_multi_tooltip: "Bookmark the selected content items",  
Bookmark_button_remove_multi_tooltip: "Remove bookmarks",  
Bookmark_button_remove_multi_text: "Remove Bookmarks",
```

[CMS-21454]

## Studio Client Unified API: Improved TypeScript Types

The part of Studio Client API that corresponds to CMCC's Unified API in Java (content, workflow, users) has been overhauled to provide more precise TypeScript types. Studio Client TypeScript code has been migrated from ActionScript, where it was not possible to describe callback function signatures and certain complex types (unions, intersections, generic types / type parameters). With TypeScript, now it is. To provide an improved formal description of the API, all vague types like `AnyFunction` or `any` have been replaced by more specific types, mostly already given in the textual documentation. This affects the packages `@coremedia/studio-client.client-core`



and `@coremedia/studio-client.cap-rest-client`. Formally, changing the API to be more specific is a breaking change. But the required callback signatures, array element types and union types have already been documented as text, so if your code adheres these constraints, it is not going to break. Otherwise, only the TypeScript types of your code might have to be adapted, or the new, more precise types may even find hidden bugs in client code that need to be fixed.

[CMS-21089]

## Fixed babel Configuration in studio-client

We fixed our internal babel configuration for the studio-client so code is no longer transpiled using the so called "loose" mode. This will cause that the resulting JavaScript code is now more precise regarding ES6 standards than before.

While in most cases this should not lead to any problems when upgrading to the new version in some corner cases the fixed behavior might interfere with some workarounds you might have introduced to circumvent the fact that the code was not exactly transpiled down before the change. For code migrated from ActionScript that was not adjusted in any way we do not expect any problems at all.

An addition to this it is now possible to use new ES6 language features like "optional chaining" and the "nullish coalescing operator" without Sencha CMD complaining about syntax errors.

[CMS-21144]

## 5.17.3 CoreMedia Studio Server

### Enhancement: Custom Validation for Built-In Workflows

Custom start validators for built-in workflows (translation, synchronization, simple publication, and two-step publication) can now be configured via properties.

Each workflow receives a property on its own. In case you modified start validators of any of the built-in workflows, it is recommended you adapt to the new customization approach as described in *Studio Developer Manual*, section *Customizing Validation of Built-In Workflows*.

Bean `defaultPublicationValidators`, defined in `PublicationWorkflowValidationConfiguration` does not exist any longer. This change is

necessary to support the new customization approach. In case this bean is modified in your project, the new customization approach must be applied as described in *Studio Developer Manual*, section *Customizing Validation of Built-In Workflows*. You must then apply your change in properties for both simple publication and two-step publication workflows. If the bean has previously been used in validation of custom workflows, the list of product-wise defined publication validators can be retrieved through method `getWorkflowStartValidators()` of bean `simplePublicationWorkflowValidators`.

[CMS-19126]

## 5.17.4 CoreMedia Workspace

### Third-Party Update: Spring Boot and Related Dependencies

In order to benefit from the improvements of the latest version of Spring Boot and the Spring framework and to prepare for making use of the new features various 3rd party libraries have been updated.

- AspectJ 1.9.8
- AssertJ 3.21.0
- Byte Buddy 1.11.22
- Hibernate 5.6.8.Final
- Hibernate Validator 6.2.3.Final
- Jackson 2.13.2.1
- Janino 3.1.7
- JBoss Logging 3.4.3.Final
- Jetty 9.4.46.v20220331
- JUnit 5.8.2
- Logback 1.2.11
- Maven Jar Plugin 3.2.2
- Micrometer 1.8.5
- Mockito 4.0.0
- Netty 4.1.76.Final
- Postgres Driver 42.3.4

- Protobuf 3.19.4
- Spring Boot 2.6.7
- Spring Data 2021.1.4
- Spring Framework 5.3.20
- Spring Security 5.6.3
- Thymeleaf 3.0.15.RELEASE
- Tomcat 9.0.62

For more details on the changes in the Spring Boot 2.6 release, see <https://github.com/spring-projects/spring-boot/wiki/Spring-Boot-2.6-Release-Notes>.

### Upgrade Steps

- With Mockito 4.0.0 all deprecated API was removed. Usages of the API in custom tests have to be replaced by its more recent counterparts.
- With Spring Boot 2.6.x the application automatically checks for circular bean references. We resolved all circular references mostly by using `@Lazy` to break the cycle.
- With Spring Boot 2.6.x the path matching strategy was changed from the `Ant Path Matcher` to the `Path Pattern Parser`. You can change the default by setting the configuration to `"spring.mvc.pathmatch.matching-strategy=ant_path_matcher"` in custom applications.
- Studio Server Spring Security Customization: Due to migration to Java Configuration the abstract bean `abstractSpringSecurityCapUserFinder` has been removed. See section "Single Sign On Integration" in the Studio Developer Manual for details.
- There might be more changes that affect your application. Refer to the official release notes mentioned above if you encounter any issues.

[CMS-20445]

## 5.17.5 CoreMedia Deployment

### Refactorings of the Traefik Configuration for the Developer docker-compose Setup

The Traefik configuration for the docker-compose developer setup has been refactored.

- Replace static file config with environment variables. This refactoring has been done to allow other docker-compose files to alter the static traefik configuration without duplicating the whole static configuration file. In our internal setup, we use this to enable access logging.
- Refactor the traefik dashboard routing from docker config to file. This was the last router configured by docker labels. Therefore the docker configuration provider could be removed from the setup. Also all the `traefik.enabled: true` labels have been removed as they were obsolete.
- The endpoints for http/https had to be renamed to names without hyphens to conform to a naming convention, that allows the endpoints to be configured using environment variables.
- Traefik has been updated to `2.6.3`.
- Traefik Pilot integration in the dashboard has been disabled.

The change is breaking only in the sense of the docker-compose development setup now uses endpoints with different names and added services with ingress need to change the configuration accordingly. The endpoints were renamed:

- `web-access-insecure` to `webaccessinsecure`
- `web-access-secure` to `webaccesssecure`

With the previous setup a customer could also have added services using docker labels for the traefik configuration, this also no longer works and should be refactored using config files.

[CMS-21441]

## Fixed Directory Ownership in Container Images

The ownership of the `/coremedia` directory was root but should be coremedia.

[CMS-21079]

## 5.17.6 CoreMedia Connector for SAP Commerce Cloud

### Deleted Demo Content Site Apparel US

Demo content for site Apparel US was deleted because SAP Commerce does not provide a US site by default. The Apparel UK and Apparel DE still remain in demo content as example sites for the SAP Commerce integration.

[CMS-21432]

## 5.17.7 CoreMedia Headless Server

### New Search Adapter with ExtensionPoint

The former `SearchServiceAdapter` and corresponding classes were replaced by the new `SearchAdapter`, featuring a SPI architecture and offering `SearchServiceProvider` as an `ExtensionPoint`. The default implementation in `DefaultSearchServiceProvider` implements the same behaviour as the former `SearchServiceAdapter`.

This change is **considered breaking**, because the new `SearchAdapter` is now used in the `search-schema` (implementing the former behaviour). If the now outdated `SearchServiceAdapter` was not extended or changed, this change behaves as **nonbreaking**.

In case, `SearchServiceAdapter` was extended or changed, `SearchServiceAdapter` is just deprecated and still part of HeadlessServer. If necessary, the old adapter may still be used the same way as before simply by changing the search-schema:

```
// from
search(
    ...
): SearchResult @fetch(from: "@searchServiceAdapter.to().search(#query,
#offset, #limit, #docTypes, #sortFields, #siteId, #includeSubTypes,
#customFilterQueries)")

// to
search(
    ...
): SearchResult @fetch(from: "@legacySearchServiceAdapter.to().search(#query,
```

```
#offset, #limit, #docTypes, #sortFields, #siteId, #includeSubTypes,  
#customFilterQueries) ")
```

[CMS-21256]

## FilterQueryArg now Part of Plugin Support Library

In order to enable customizations of the search via plugin extension points, it was necessary to move input type mode `FilterQueryArg` to plugin support. As a consequence the package has changed. Otherwise this change in nonbreaking.

[CMS-21076]

## Expose SolrQueryBuilders as Beans for Plugins

In order to enable customizations of the search via plugin extension points, it was necessary to expose the so called `SolrQueryBuilders` as beans for plugins. As a consequence, `SolrQueryBuilder` had to be refactored to prevent circular bean dependencies with other search related extension points.

Customizations which extend or use instances of `SolrQueryBuilder` must be adapted, as one constructor parameter and one getter was removed. The 'filterQueryDefinitionMap', previously provided by the now removed getter, is now provided as a regular SpringBean. In case the 'filterQueryDefinitionMap' was consumed, it has to be provided via Spring injection instead.

If neither `SolrQueryBuilder` was adapted, nor its getter `getFilterQueryDefinitionMap()` was used, this change is considered **nonbreaking** !

For details about the new exposed 'beans for plugins', please see the Headless Manual.

[CMS-21063]

## MediaController Validates URL Parameters

The `MediaController` now validates the URL parameters 'id', 'propertyName', 'hash', 'cropName', 'width' and 'filename'. The missing validation was added for security reasons to prevent DOS attacks.

This change is considered breaking due to the validation, which now might deny requests which previously worked.

Valid URLs for media objects delivered by the `MediaController` are 'published' via the GraphQL schema in the properties 'uriTemplate' and 'fullyQualifiedUri'

[CMS-21317]

## 5.17.8 Miscellaneous

### Blob Upload Robustness

Sometimes, CMCC client threads got stuck due to broken BLOB upload HTTP connections.

Now the upload is controlled by the same timeout as the upload operation on the server side (plus a little overhead), and the threads are released if the upload exceeds the timeout. Both, Content Servers and clients, must be restarted to make the fix effective.

[CMS-19390]

## 5.18 Upgrade to 2201.3

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.18.1 CoreMedia Core

#### Runlevel Health Indicator Signals Wrong State in Runlevel MAINTENANCE

When the Content Server is switched to runlevel MAINTENANCE either during startup or manually, the `health/runlevel` endpoint signals the server is UP. This makes it impossible to use the indicator for a readiness probe in Kubernetes, because the pod will be added to the services endpoint too early and UAPI clients that listen on a services availability would fail during the creation of the repository connection.

This change fixes the health state in the MAINTENANCE runlevel to down and includes the indicator in the `health/readiness` endpoint.

The content-server can therefore be in one of the following states:

- runlevel=OFFLINE, Liveness State=BROKEN, Readiness State=REFUSING\_TRAFFIC
- runlevel=MAINTENANCE, Liveness State=CORRECT, Readiness State=REFUSING\_TRAFFIC
- runlevel=ADMINISTRATION, Liveness State=CORRECT, Readiness State=REFUSING\_TRAFFIC
- runlevel=ONLINE, Liveness State=CORRECT, Readiness State=ACCEPTING\_TRAFFIC

If your health check logic depended on MAINTENANCE level being a 200 HTTP result, disable the runlevel endpoint by setting

```
management.health.runlevel.enabled=false  
management.endpoint.health.group.readiness.include=readinessState
```

Please be reminded, that using the health actuator to automatically trigger a redeployment of a pod / container is not advised and can be dangerous due to health indicator that monitor connections to remote systems. This can cause chain reactions taking multiple services down. Instead use the `host:8081/actuator/health/liveness` endpoint instead.



[CMS-21355]

## 5.18.2 CoreMedia Studio Server

### Fixed Incorrect Defer Flag During Theme Import

As described in <https://documentation.coremedia.com/cmcc-11/artifacts/220/webhelp/frontend-en/content/ThemeConfigReference.html> you can set the "defer" flag in your theme configuration to defer the execution of a JavaScript file. Due to a bug all CMJavaScript documents generated by the theme importer that were not meant to be deferred were configured in a way that caused the following HTML output:

```
<script .... defer="false"></script>
```

This can cause problems with other flags just like "async". To avoid any problems with other flags the "defer" flag is now once again omitted if not set to "true".

[CMS-21476]

## 5.18.3 CoreMedia Workspace

### Third-Party Update: Spring Boot and Related Dependencies

Spring Boot has been updated to version 2.5.14. Related dependencies have been updated to at least the versions used by Spring Boot. This includes updates to fix reported security issues in Spring Security and Tomcat (CVE-2022-22976, CVE-2022-22978, CVE-2022-29885). The new version of Spring Security contains a bug fix for certain configurations of password hashing (CVE-2022-22976), which may require additional upgrade steps if you have changed the configuration for password hashing in the *Content Server* or *Elastic Social*.

By default, passwords of *Content Server* builtin users and of *Elastic Social* users are stored using the BCrypt password hashing algorithm from Spring Security with a work factor of 10. Previous versions of Spring Security contained a security vulnerability (CVE-2022-22976) that made hashes less secure, if you had changed the default configuration to use work factor 31 with configuration property `cap.server.login.password-`

`hash-algorithm` for the *Content Server* or property `elastic.social.password-hash-algorithm` for *Elastic Social* . You don't need to take action, if you are using the default configuration or a BCrypt work factor less than 31.

With this release, the configuration of work factor of 31 is not accepted anymore. *Content Server* and *Elastic Social* applications will fail to start, if such a work factor is configured. Note, that it would be an unreasonable choice anyway, because it would require multiple days to compute a single hash. If you had configured work factor 31, then you must change the configuration in the mentioned configuration properties, for example to the default work factor of 10, or a slightly higher one. The passwords of all users that were stored with work factor 31 are still working but should be changed to store them more securely. For details, see also the description of the CVE at <https://tanzen.vmware.com/security/cve-2022-22976> .

The following libraries have been updated:

- Janino 3.1.7
- Jetty 9.4.46.v20220331
- Micrometer 1.7.12
- MySQL 8.0.29
- Spring Boot 2.5.14
- Spring Data 2021.0.11
- Spring Security 5.5.8
- Tomcat 9.0.64

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

[CMS-21780]

## 5.18.4 CoreMedia Connector for SAP Commerce Cloud

### Deleted Demo Content Site Apparel US

Demo content for site Apparel US was deleted because SAP Commerce does not provide a US site by default. The Apparel UK and Apparel DE still remain in demo content as example sites for the SAP Commerce integration.

[CMS-21432]

## 5.18.5 CoreMedia Headless Server

### Picture Local Setting 'disableCropping' now Supported by Link Building

The flag `disableCropping` in the local settings of a picture was not respected by the link building for the GraphQL property `uriTemplate`. This misbehaviour was fixed. Also, the delivery will now validate this flag. This means that uri with disabled cropping won't work when request the image with a `cropName` and `width`. As a consequence, this bugfix is considered breaking, as the validation may break previously working delivery image URLs!

For version 2107 and 2201 the validation for the delivery can be disabled. For version 2204 validation cannot be disabled!

[CMS-21765]

## MediaController with Parameter Validation

The `MediaController` now validates the URL parameters 'id', 'propertyName', 'hash', 'cropName', 'width' and 'filename'. The missing validation was added for security reasons to prevent DoS attacks.

This change is considered breaking due to the validation, which now might deny requests which previously worked.

There is however a flag available to provide [non-breaking] backward compatibility. Using the config property `caas.mediaControllerDisableValidation=true`, the validation can be disabled. For security reasons, the default value ist `false`. If you need backward compatibility, validation can be disabled with the risk of potential DoS attacks.

[CMS-21382]

## 5.18.6 Miscellaneous

### Fixed Prometheus Cache Metrics

Spring Boot actuator endpoint `/metrics` provides several metrics on CoreMedia components [see *Operations Basics Manual* , section *Basics of Operation | Actuator Endpoints | Metrics Endpoint* ]. In addition to that, actuator endpoint `/prometheus` publishes this data for scraping by monitoring application *Prometheus* . However, cache metrics were incomplete for some CoreMedia components when using this endpoint. With this fix, the complete set of cache information can now be retrieved from it.

CoreMedia cache meter names in Spring Boot actuator endpoints `/metrics` or `/prometheus` have been changed:

- `cache.capacity` -> `coremedia.cache.capacity`
- `cache.evaluation.duration` -> `coremedia.cache.evaluation.duration`
- `cache.eviction.duration` -> `coremedia.cache.eviction.duration`
- `cache.evictions` -> `coremedia.cache.evictions`
- `cache.gets` -> `coremedia.cache.gets`
- `cache.level` -> `coremedia.cache.level`
- `cache.puts` -> `coremedia.cache.puts`
- `cache.removals` -> `coremedia.cache.removals`
- `cache.size` -> `coremedia.cache.size`
- `cache.updates` -> `coremedia.cache.updates`

Tag `cache` is not used on these meters any longer.

Meter names `cache.gets` , `cache.puts` , `cache.size` , and `cache.evictions` may still be present for other caches (depending on the component).

If you used cache metrics before, you may need to adjust your monitoring application's configuration according to the list above to comply with the new meter names for CoreMedia caches. See *Operations Basics Manual* , section *Basics of Operation | Actuator Endpoints | Metrics Endpoint* for details on metrics parameters.

[CMS-21612]

## 5.19 Upgrade to 2201.2

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.19.1 CoreMedia Core

#### Changed User Manager Search

The user manager does not load all users or group on initialization anymore. Instead an empty state panel is shown and a load is only triggered when more than `n` characters are inputted into the search field. The amount of characters can be configured via the Spring property `studio.usermanager.minSearchCharacters` and defaults to '3'. The previous behavior can be restored by setting the property to '0'.

[CMS-20760]

### 5.19.2 CoreMedia Headless Server

#### New Search Adapter with ExtensionPoint

The former `SearchServiceAdapter` and corresponding classes were replaced by the new `SearchAdapter`, featuring a SPI architecture and offering `SearchServiceProvider` as an `ExtensionPoint`. The default implementation in `DefaultSearchServiceProvider` implements the same behaviour as the former `SearchServiceAdapter`.

This change is **considered breaking**, because the new `SearchAdapter` is now used in the `search-schema` (implementing the former behaviour). If the now outdated `SearchServiceAdapter` was not extended or changed, this change behaves as **nonbreaking**.

In case, `SearchServiceAdapter` was extended or changed, `SearchServiceAdapter` is just deprecated and still part of HeadlessServer. If necessary, the old adapter may still be used the same way as before simply by changing the search-schema:

```
// from
search(
    ...
): SearchResult @fetch(from: "@searchServiceAdapter.to().search(#query,
#offset, #limit, #docTypes, #sortFields, #siteId, #includeSubTypes,
#customFilterQueries)")

// to
search(
    ...
): SearchResult @fetch(from: "@legacySearchServiceAdapter.to().search(#query,
#offset, #limit, #docTypes, #sortFields, #siteId, #includeSubTypes,
#customFilterQueries)")
```

[CMS-21256]

## 5.19.3 Miscellaneous

### Blob Upload Robustness

Sometimes, CMCC client threads got stuck due to broken BLOB upload HTTP connections.

Now the upload is controlled by the same timeout as the upload operation on the server side [plus a little overhead], and the threads are released if the upload exceeds the timeout. Both, Content Servers and clients, must be restarted to make the fix effective.

[CMS-19390]

## 5.20 Upgrade to 2201.1

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.20.1 CoreMedia Core

#### Reduced Overhead for Background Task CleanInTranslation

You may experience the Workflow Server's Background Task `CleanInTranslation` to cause considerable load on your CPU. We have addressed this issue with several adaptations. Some of them might be applied manually to existing systems already (for details see the end of this section). In addition to the updates below, `CleanInTranslation` got updated internally, providing an additional performance gain.

##### DB Index for `Resources (nMergeVersions\_)`

On update, a new index will be created for the Content Management Server:

```
create index nmergeversionsIndex on Resources (nMergeVersions_);
```

There's no problem for the update, if you have created the exact same index manually before.

##### Configure Scheduling

`BlueprintWorkflowServerAutoConfiguration` got extended by properties to control the scheduling behavior of `CleanInTranslation`. The following shows an example configuration using the defaults:

```
workflow.blueprint.clean-in-translation.initial-delay=10s  
workflow.blueprint.clean-in-translation.fixed-delay=15m
```

Thus, the initial delay is 10 seconds (same as before), and the task is repeated every 15 minutes (before: every 5 seconds).

Note, that while you may provide the delays without units (which defaults to milliseconds then), it is recommended to clearly state the desired unit. For details on configuring duration properties, see [Converting Durations](#) in Spring Boot Reference Guide.

For more details, see *Blueprint Developer Manual* in the subsection *Configuration and Customization* of the section *Translation Workflow* .

At workflow server startup, you will see a message similar to this to inform you about scheduling:

```
Scheduling CleanInTranslation: startTime: 2021-12-01T08:00:00Z, initialDelay: PT10S, fixedDelay: PT15M
```

### Optimize Scheduling

Optimizing scheduling means to deal with the trade-off of having more correct reporting of *in-translation* state for abnormally ended workflows (aborted or escalated) versus lowering load on the workflow-server.

If you enable `INFO` logging for `com.coremedia.translate.workflow.CleanInTranslation` , the following status messages may provide some guidance for tuning scheduling:

```
CleanInTranslation - Merge-Version Cleanup: Done within 2.655 s, cleaned up merge versions: 1.
```

Note, that cleaning up 0 (zero) merge versions should be the normal state on a system, where all translation workflows end normally.

### Workaround for Previous Versions

- Add the index to the content management server's database, as stated above.
- Update the `@Scheduled` parameters especially for `fixedDelay` in Blueprint class `BlueprintWorkflowServerAutoConfiguration`

[CMS-20366]

## Fixing Possibly False-Negative In-Translation State

The scheduled job `com.coremedia.translate.workflow.CleanInTranslation` is, roughly speaking, responsible for garbage collecting meanwhile invalid "in-translation" states of contents due to aborted or escalated translation workflows.

Prior to this fix, it may have made false-positive detection of states (so-called merge-versions) to clean up. As a result, you may have observed inconsistencies in translation state widget, for example.



The fix extends `CleanInTranslation` by an addition parameter `confidenceThreshold`. Simply speaking, it tells `CleanInTranslation` how often a state should be reported as possibly dirty, before it is going to clean up.

A threshold of 0 [zero] triggers the old behavior, which is immediate clean-up. The recommended threshold is 1 [one]. This is also the default which comes with Blueprint configuration now.

### Upgrade Notes:

Unless you modified classes in Workflow Server App (`BlueprintWorkflowServerConfigurationProperties` and/or `BlueprintWorkflowServerAutoConfiguration`), changes should be automatically merged.

In `BlueprintWorkflowServerConfigurationProperties` a new property `workflow.blueprint.clean-in-translation.confidence-threshold` has been introduced, which, as stated above, defaults to 1.

The corresponding `CleanInTranslation` bean is instantiated with this new threshold.

For details, see section *Configuration and Customization* in Blueprint Developer Manual's description of the Translation Workflow.

[CMS-16439]

## 5.20.2 CoreMedia Content Application Engine

### New method

#### `TransformImageService#getTransformationString`

`com.coremedia.cap.transform.TransformImageService` has been extended by a new method: `getTransformationString(...)` The method was introduced to enable future use cases of this class. You can use it to compute the transformation string for a given content, property, variant name, breakpoint width and height, and extension. If you have implemented this interface in a custom class, please make sure to implement this method as well. It is not used by default in the Blueprint, so you can theoretically leave the implementation empty.

[CMS-20410]

## The preview CAE now runs with standalone mode disabled

The property `delivery.standalone` is now disabled by default in the preview CAE. As a result the preview CAE uses the same URLs as the live CAE and the default proxy configuration no longer requires `/blueprint/servlet` to be accessible when running behind a web proxy.

[CMS-20501]

## Static Files of External Preview moved to /static folder

In order to simplify proxy rules to split requests to static files and dynamic servlets, the static files of the external preview have been moved to a static folder and are now served at

```
<context root>/static/externalpreview
```

[CMS-20471]

## Freemarker function `bp.truncateText` always returns un-encoded text

The Freemarker function `bp.truncateText()` lead to double encoded text, when used with markup, because the markup is first encoded by the function and secondly by Freemarker itself. Now, the encoding is left to do by Freemarker and the function returns un-encoded text for markup input as well as for strings. An implemented work-around with `"?no_esc"` is no longer needed and should be removed.

[CMS-20431]

## 5.20.3 CoreMedia Studio Client

### Studio Client Unified API: Improved TypeScript Types

The part of Studio Client API that corresponds to CMCC's Unified API in Java (content, workflow, users) has been overhauled to provide more precise TypeScript types. Studio Client TypeScript code has been migrated from ActionScript, where it was not possible to describe callback function signatures and certain complex types (unions, intersections, generic types / type parameters). With TypeScript, now it is. To provide an improved formal description of the API, all vague types like `AnyFunction` or `any` have been replaced by more specific types, mostly already given in the textual documentation. This affects the packages `@coremedia/studio-client.client-core` and `@coremedia/studio-client.cap-rest-client`. Formally, changing the API to be more specific is a breaking change. But the required callback signatures, array element types and union types have already been documented as text, so if your code adheres these constraints, it is not going to break. Otherwise, only the TypeScript types of your code might have to be adapted, or the new, more precise types may even find hidden bugs in client code that need to be fixed.

[CMS-21089]

### ToastManager has been changed to toastService

The access to the *ToastManager* has been changed. It has been replaced by the global service *toastService*.

[CMS-20963]

### New Rule REST API

With the introduction of the dialog "Folder Properties" a new REST API has been introduced for managing group and content permission via rules. `Content.ts` and `Group.ts` support the method *getRules* now. It returns a remote bean which contains a list of rule remote beans. These ones are displayed either in the Folder Properties dialog or on the rule tab of a user managers group tab.

The former implementation of rule customization based on plain JSON is gone. Therefore this ticket has been marked as breaking change.

[CMS-20732]

## Strict Signature of Content Initializers

The Content Initializer API has been stated more formally precise by specifying the initializer function signature as a TypeScript type `(content: Content) => void`. This concerns the following methods in `IEditorContext [ @coremedia/studio-client.main.editor-components/sdk/IEditorContext ]` and `IContentTypeContext [ @coremedia/studio-client.cap-base-models/content/IContentTypeContext ]`:

- `registerContentInitializer()`
- `extendContentInitializer()`
- `getContentInitializer()`
- `lookupContentInitializer()`

If adhering to the documentation of these methods, your client code should already have the required function signature. If not, it should be easy to adapt by changing your function signature accordingly or by using an adapter arrow function like this:

```
(content: Content) => { this.myContentInitializer(content) }
```

[CMS-20652]

## Third-Party Update: CKEditor 4 to 4.17.1

CKEditor 4 has been updated to 4.17.1. It is included in `@jangaroo/ckeditor4`, version 1.1.0.

For details, see recent release notes:

- [ckeditor.com/cke4/release/CKEditor-4.16.2](https://ckeditor.com/cke4/release/CKEditor-4.16.2)
- [ckeditor.com/cke4/release/CKEditor-4.17.0](https://ckeditor.com/cke4/release/CKEditor-4.17.0)
- [ckeditor.com/cke4/release/CKEditor-4.17.1](https://ckeditor.com/cke4/release/CKEditor-4.17.1)

This update comes with XSS vulnerability fixes rated as important by CKEditor.

While in CoreMedia Blueprint, no adaptations had to be applied using the new CKEditor 4 version, CKEditor did some API changes with release of version 4.17.0 which may affect your adaptations.

Note, that as of 4.17.0 the Flash Plugin [ [ckeditor.com/cke4/addon/flash](https://ckeditor.com/cke4/addon/flash) ] has been removed from CKEditor 4. If you depend on this plugin, consider carefully, if you may skip the update of [@jangaroo/ckeditor4](https://github.com/jangaroo/ckeditor4) .

[CMS-20580]

## Studio Client Resource Bundle Changes

In the process of pulling features out of the editor-components module in order to make them available for the new Workflow app, many changes to resource bundles had to be made (these changes are in addition to the changes that happened due to the new content type localization mechanism). As the list is too extensive for a release note, we refer to [this link to a Coremedia Help Center article](#) .

[CMS-18728]

## Fixed babel Configuration in studio-client

We fixed our internal babel configuration for the studio-client so code is no longer transpiled using the so called "loose" mode. This will cause that the resulting JavaScript code is now more precise regarding ES6 standards than before.

While in most cases this should not lead to any problems when upgrading to the new version in some corner cases the fixed behavior might interfere with some workarounds you might have introduced to circumvent the fact that the code was not exactly transpiled down before the change. For code migrated from ActionScript that was not adjusted in any way we do not expect any problems at all.

An addition to this it is now possible to use new ES6 language features like "optional chaining" and the "nullish coalescing operator" without Sencha CMD complaining about syntax errors.

[CMS-21144]

## Master Version Texts Improved

The description texts above the master version property field have been improved. Existing texts have been removed from the *Editor.properties* resource bundle. For this reason, the ticket is marked as breaking.

[CMS-20989]

## 5.20.4 CoreMedia Workspace

### Use new Maven Plugin to Handle CoreMedia Plugins

CoreMedia plugins are now synchronized by means of the `coremedia-plugins-maven-plugin` which handles adding, removing and downloading the respective plugins. The Groovy scripts in the `<workspace>-app/pom.xml` files (e.g. `cae/spring-boot/cae-live-app/pom.xml`) have been replaced with the `coremedia-plugins-maven-plugin` which supports caching of downloaded artifacts and respects Maven's proxy settings.

[CMS-20775]

## SFMC Extensions Extracted from Blueprint

The extensions `sfmc`, `sfmc-p13n` and `sfmc-es-p13n` have been removed from Blueprint. The extensions for your version can be requested from the CoreMedia Support Team.

[CMS-20575]

## 5.20.5 CoreMedia Deployment

### Fixed Directory Ownership in Container Images

The ownership of the `/coremedia` directory was root but should be coremedia.

[CMS-21079]

## 5.20.6 CoreMedia Connector for Salesforce Commerce Cloud

### Link Building for Augmented Pages [commerce-led]

For Augmented Pages (CMExternalPage) the external page ID and the external URI path can be set. If configured both, both values will now be rendered into the Json/VTL include template of the fragment response. Make sure your link rendering template on the commerce side can handle both parameters.

[CMS-19581]

## 5.20.7 CoreMedia Headless Server

### Refactored Scalar FilterQueryArg to input type CustomFilterQuery

The former scalar `FilterQueryArg`, which was used to define the custom filter queries in a search query, was refactored to a GraphQL input type of the same name. In contrast to complex scalars, input types offer full support of auto completion and documentation while formulating a GraphQL query.

The refactoring to the GraphQL input type is **non-breaking**, so that client applications don't have to change their code.

This change took advantage of CMS-20327 in the manner, that a Spring `GenericConverter` was used to convert the `FilterQueryArg` into the same semantics as the previous GraphQL Scalar. It was however necessary, to change the Java interface `PagingAware` slightly and in turn also the `QueryListAdapter`, which implements that interface. That's why this change is considered **breaking**. In the case, that the `QueryListAdapter` was adapted or the interface `PagingAware` was used, the code has to be slightly changed.

[CMS-20620]

## Added CacheControl support to Headless Server

Headless Server now supports sending CacheControl headers for GET requests. Defaults can be configured using the `caas.cache-control.*` properties. The value of the the max-age directive is the minimum of the configured max-age value for the given request URL and the values of the validFrom/validTo properties of the requested contents. If no cache control configuration exists and the content does not contain a value for validFrom/validTo then no CacheControl header is sent. A negative max-age value indicates that no CacheControl header should be sent even in the presence of configured validFrom/validTo dates.

Headless Server can be configured to expose the upcoming change dates of contents (according to validFrom/validTo settings) as part of the JSON response in addition to the CacheControl header. The upcoming change dates are added to the JSON response as `changeDates` list to the `extensions` property if `caas.expose-extensions=true`.

[CMS-19110]

## 5.20.8 Miscellaneous

### Removed Usage of PowerMock Java Test Library

Previous releases used the PowerMock library in a small number of Java unit tests to mock static methods and object construction. These usages have now been replaced with new functionality of the Mockito testing library. PowerMock isn't used anymore.

This was changed to prevent future incompatibilities between Mockito and PowerMock. We recommend to replace custom usages of PowerMock as well, if possible.

If you still want to use PowerMock in custom classes, you have to manage the Maven dependency and version yourself. PowerMock is now also listed as banned dependency by default. See the "Blueprint Developer Manual", section "Blueprint Workspace for Developers | Concepts and Architecture | Structure of the Workspace | Enforcer" for information how to customize banned dependencies.

[CMS-20448]



## New ExtensionPoint CustomFilterQuery

The new release offers the new `ExtensionPoint CustomFilterQuery` in order to provide custom filter queries by a plugin.

The introduction of this new extension point made it necessary to move the existing code base for the search into Blueprint Base. Thus, this is considered a breaking change!

However, if search related code in Blueprint was not adapted in any way, this change does not affect an update.

If the former search extension was adapted, the code changes should be moved into an own extension or a plugin depending on the grade of customization. Changes in the `search-schema` and custom filter queries can easily be moved into a plugin. This has the advantage, that future changes within headless-server should have lesser impact regarding changes in the public API, because ExtensionPoints are considered more stable and version independent.

Extensions which depend on the former search extension must now depend on `headless-server` instead.

Self implemented custom filter queries using the former `HeadlessSearchConfiguration` must be provided now as a Spring bean, using the new `ExtensionPoint CustomFilterQuery`. Examples can be found in the updated headless manual.

If the former `search-schema` was changed, the now provided `search-schema` can be disabled, setting configuration parameter `'caas.search.loadSearchSchema=false'`. Instead provide your own schema using the plugin mechanism for resource files or provide the schema file using an extension.

If Java code of the former search extension was replaced, e.g. SpringBeans, you have to use Spring annotations like `@Customize` to override the provided SpringBeans. Alternatively it is possible to disable the headless-search completely and provide an own implementation of the search as an extension.

[CMS-20367]

## Third-Party Update: mysql-connector-java

The mysql-connector-java Java library has been updated in `shared/common/modules/shared/database-drivers/pom.xml` to version 8.0.28 to avoid security vulnerability CVE-2022-21363 of the previous version. Note, that the updated version of mysql-connector-java also dropped support for deprecated TLSv1 and TLSv1.1 connec-

tion protocols and requires using more-secure TLSv1.2 or TLSv1.3 protocols, which have to be supported by the used MySQL server.

For details, see the release notes of the mysql-connector-java driver in <https://dev.mysql.com/doc/relnotes/connector-j/8.0/en/news-8-0-28.html> .

[CMS-20962]

## 5.21 Upgrade to 2110.3

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.21.1 CoreMedia Studio Client

#### Fixed babel Configuration in studio-client

We fixed our internal babel configuration for the studio-client so code is no longer transpiled using the so called "loose" mode. This will cause that the resulting JavaScript code is now more precise regarding ES6 standards than before.

While in most cases this should not lead to any problems when upgrading to the new version in some corner cases the fixed behavior might interfere with some workarounds you might have introduced to circumvent the fact that the code was not exactly transpiled down before the change. For code migrated from ActionScript that was not adjusted in any way we do not expect any problems at all.

An addition to this it is now possible to use new ES6 language features like "optional chaining" and the "nullish coalescing operator" without Sencha CMD complaining about syntax errors.

[CMS-21144]

### 5.21.2 CoreMedia Workspace

#### Use new Maven Plugin to Handle CoreMedia Plugins

CoreMedia plugins are now synchronized by means of the `coremedia-plugins-maven-plugin` which handles adding, removing and downloading the respective plugins. The Groovy scripts in the `<workspace>-app/pom.xml` files (e.g. `cae/spring-boot/cae-live-app/pom.xml`) have been replaced with the

`coremedia-plugins-maven-plugin` which supports caching of downloaded artifacts and respects Maven's proxy settings.

[CMS-20775]

## 5.21.3 CoreMedia Deployment

### Fixed Directory Ownership in Container Images

The ownership of the `/coremedia` directory was root but should be coremedia.

[CMS-21079]

## 5.21.4 CoreMedia Headless Server

### Added CacheControl support to Headless Server

Headless Server now supports sending CacheControl headers for GET requests. Defaults can be configured using the `caas.cache-control.*` properties. The value of the `max-age` directive is the minimum of the configured `max-age` value for the given request URL and the values of the `validFrom/validTo` properties of the requested contents. If no cache control configuration exists and the content does not contain a value for `validFrom/validTo` then no CacheControl header is sent. A negative `max-age` value indicates that no CacheControl header should be sent even in the presence of configured `validFrom/validTo` dates.

Headless Server can be configured to expose the upcoming change dates of contents (according to `validFrom/validTo` settings) as part of the JSON response in addition to the CacheControl header. The upcoming change dates are added to the JSON response as `changeDates` list to the `extensions` property if `caas.expose-extensions=true`.

[CMS-19110]

## 5.22 Upgrade to 2110.2

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.22.1 CoreMedia Studio Client

#### ToastManager has been changed to toastService

The access to the *ToastManager* has been changed. It has been replaced by the global service *toastService* .

[CMS-20963]

#### Third-Party Update: CKEditor 4 to 4.17.1

CKEditor 4 has been updated to 4.17.1. It is included in `@jangaroo/ckeditor4` , version 1.1.0.

For details, see recent release notes:

- [ckeditor.com/cke4/release/CKEditor-4.16.2](https://ckeditor.com/cke4/release/CKEditor-4.16.2)
- [ckeditor.com/cke4/release/CKEditor-4.17.0](https://ckeditor.com/cke4/release/CKEditor-4.17.0)
- [ckeditor.com/cke4/release/CKEditor-4.17.1](https://ckeditor.com/cke4/release/CKEditor-4.17.1)

This update comes with XSS vulnerability fixes rated as important by CKEditor.

While in CoreMedia Blueprint, no adaptations had to be applied using the new CKEditor 4 version, CKEditor did some API changes with release of version 4.17.0 which may affect your adaptations.

Note, that as of 4.17.0 the Flash Plugin [ [ckeditor.com/cke4/addon/flash](https://ckeditor.com/cke4/addon/flash) ] has been removed from CKEditor 4. If you depend on this plugin, consider carefully, if you may skip the update of `@jangaroo/ckeditor4` .

[CMS-20580]

## 5.22.2 Miscellaneous

### Third-Party Update: mysql-connector-java

The mysql-connector-java Java library has been updated in `shared/common/modules/shared/database-drivers/pom.xml` to version 8.0.28 to avoid security vulnerability CVE-2022-21363 of the previous version. Note, that the updated version of mysql-connector-java also dropped support for deprecated TLSv1 and TLSv1.1 connection protocols and requires using more-secure TLSv1.2 or TLSv1.3 protocols, which have to be supported by the used MySQL server.

For details, see the release notes of the mysql-connector-java driver in <https://dev.mysql.com/doc/relnotes/connector-j/8.0/en/news-8-0-28.html>.

[CMS-20962]

## 5.23 Upgrade to 2110.1

This section describes the necessary upgrade steps for an upgrade from the previous release. Also read [Chapter 4, Release Information \[8\]](#) to get an overview of the new features that require no immediate action on your site.

### 5.23.1 CoreMedia Core

#### Removal: Deprecated Version of XliffExporter

The deprecated interface `com.coremedia.translate.xliff.exporter.XliffExporter` (cap-xliff) and its related interfaces and classes have been removed.

Use the refactored, more flexible `com.coremedia.cap.translate.xliff.XliffExporter` instead.

Changes in detail:

The following classes/interfaces have been removed:

- `com.coremedia.translate.xliff.exporter.XliffExporter`

Use `com.coremedia.cap.translate.xliff.XliffExporter` instead.

- Replaced by `com.coremedia.translate.item.TranslateItem`:
  - `com.coremedia.translate.xliff.exporter.XliffExportElementCollectionBuilder`
  - `com.coremedia.translate.xliff.exporter.XliffExportElementBuilder`
  - `com.coremedia.translate.xliff.exporter.XliffExportElement`
- now unused `com.coremedia.translate.xliff.exporter.CapXliffExportException`
- now unused `com.coremedia.translate.xliff.CapXliffException`

Ease Upgrade

Some classes and interfaces have been extended, to provide the same behavior as the now removed, previously deprecated `XliffExporter`.

The interface `ContentToTranslateItemTransformer`, which is required as intermediate step to transform contents (master and derived) to translate-items accepted by the current `XliffExporter`, has been extended by using a default locale mapper, by introducing the following default methods:

- `getDefaultLocaleMapper()`, and
- `transform(masterSources, derivedTargets, strategy)`

This default is the same as it has been used by the removed `XliffExporter`.

The `XliffExportOptions` have been extended to provide a way to specify a default comment to apply to all translate items, which don't have a comment yet (added to XLIFF as `<note>`). See `XliffExportOptions.DefaultCommentOption` and its usages for details. This simulates the same behavior as the removed `XliffExporter`, where you could hand over a comment on XLIFF export – and which also got applied to all translate items, and thus to all XLIFF `<file>` entries.

And to ease, having a base set of options to modify for example by a new default comment, `XliffExportOptions` now provides a method `builder()` to create a derived set of options from the original one.

### Typical Replacement

A typical replacement for the old `XliffExporter` is similar to this:

```
XliffExportOptions xliiffExportOptions = XliffExportOptions.xliffExportOptions()
    .option(XliffExportOptions.TargetOption.TARGET_EMPTY)
    .option(XliffExportOptions.DefaultCommentOption.of("default
comment"))
    .build();
List<TranslateItem> items = contentToTranslateItemTransformer
    .transform(masterContentObjects, derivedContents,
    TransformStrategy.ITEM_PER_TARGET)
    .collect(toList());

Xliff xliiff = xliiffExporter.exportXliff(items, xliiffExportOptions);
```

For details, see section *XLIFF Integration in Blueprint Developer Manual* and corresponding JavaDoc.

### Replacing setXliffExportElementFilter

The former `XliffExporter` provided a method for filtering contents, which shall not be added to the XLIFF: `setXliffExportElementFilter`.

In general, such filtering should happen when creating the `TranslateItem` instances (this is a so-called pre-processing stage). For details, see *XLIFF Export in Blueprint Developer Manual* (subsection of *XLIFF Integration*).



Nevertheless, in contexts, where you cannot directly influence the creation of translate items, a fallback exists for the new `XliffExporter : setTranslateItemFilter`. This applies for example to the default XLIFF download as provided in CoreMedia Studio. If you require more details about the involved contents, you may want to replace the `ContentToTranslateItemTransformer` instead, which defaults to `DefaultContentToTranslateItemTransformer`.

If it is about not repeating translation for unchanged properties, you may want to set `translate.item.include-unchanged-properties` to `false`, which will be taken into account when generating the translate-items.

[CMS-20068]

## Removal: Deprecated two-argument constructor of `DefaultContentToTranslateItemTransformer`

The deprecated two-argument constructor of `com.coremedia.translate.item.DefaultContentToTranslateItemTransformer` (cap-`translate-item`) has been removed:

- `DefaultContentToTranslateItemTransformer (Function, Collection)`

Instead, use the three-argument constructor:

- `DefaultContentToTranslateItemTransformer (Function, Collection, boolean)`

where the third parameter is `includeUnchangedProperties`. To get the same behavior as the old two-argument constructor, set `includeUnchangedProperties` to `true`.

[CMS-20067]

## Removal: Deprecated Interface Method `ContentObjectSiteAspect.getIgnoreUpdates`

The deprecated interface method `ContentObjectSiteAspect.getIgnoreUpdates()` has been removed.

Use `ContentObjectSiteAspect.isIgnoreUpdates()`, which provides an easier to understand contract, instead.

Special note for custom interface implementations and mocking:

The default implementation of `ContentObjectSiteAspect.isIgnoreUpdates()` still exists to ease implementation and mocking in tests, but the default implementation changed to always return `false` instead of forwarding to `ContentObjectSiteAspect.getIgnoreUpdates()`.

[CMS-20066]

## Third-Party Update: Apache Tika and Transitive Dependencies

Apache Tika has been updated to new major version 2.1.0.

As part of this change, the following transitive dependencies of Apache Tika have also been updated to match versions used by Tika:

- `com.adobe.xmp:xmpcore: 6.1.11`
- `com.drewnoakes:metadata-extractor: 2.16.0`
- `com.rometools:rome: 1.16.0`
- `commons-io:commons-io: 2.10.0`
- `org.apache.james:apache-mime4j-core: 0.8.4`
- `org.apache.james:apache-mime4j-dom: 0.8.4`
- `org.bouncycastle:bcmail-jdk15on: 1.69`
- `org.bouncycastle:bcprov-jdk15on: 1.69`
- `org.ow2.asm:asm: 9.2`

If you use these libraries in project code, please check their respective release notes for changes and upgrade information. No changes were necessary in the CoreMedia Blueprint for these updates.

Apache Tika restructured its Maven artifacts and split up the `tika-parsers` artifact from previous versions into separate artifacts. If you use Tika in project code, you may have to adapt Maven dependencies accordingly.

Apache Tika also removed some deprecated metadata keys [TIKA-1974]. If you have configured the *Content Feeder* or *CAE Feeder* to extract metadata values with configuration properties `feeder.tika.append-metadata` or `feeder.tika.copy-metadata`, then make sure that the configured metadata keys are still supported by Tika. You can find metadata keys supported by Tika in its API documentation, for example in interface `org.apache.tika.metadata.TikaCoreProperties`.

[CMS-20039]

## Removal: Deprecated BaseCommandLineClient#addOptionValidated Method

The deprecated method `com.coremedia.cmdline.BaseCommandLineClient#addOptionValidated` has been removed from the Java API. If you still use it in your project code, switch to `options.addOption(option)`, `options` and `option` referring to the arguments of `addOptionValidated`.

[CMS-20025]

## Removal: Deprecated Site#getManagerGroupName Method

The deprecated method `com.coremedia.cap.multisite.Site#getManagerGroupName` has been deleted. If you still use it in your project code, replace it with `getManagerGroupNames().stream().findFirst().orElse("")` -- mind, though, that it is better respecting all group names returned by `getManagerGroupNames()`.

[CMS-20003]

## Removal: Deprecated Options of Some Commandline Tools

The command line tools `publish`, `destroy` and `query` do not support the option `paths` any longer. Use `path` instead (also CSV capable, despite the singular name). `paths` has already been undocumented for a while, so you might not even be aware that it existed.

[CMS-19998]

## Removal: Deprecated AbstractVersionSelector#addOption Method

The deprecated method `com.coremedia.cmdline.management.AbstractVersionSelector#addOption` has been removed from the Java API.

If you still use it in your project code, switch to `options.addOption(option)`, `options` and `option` referring to the arguments of `addOption`.

[CMS-19996]

## Removal: Deprecated CommandLineParameters#addOptionValidated Method

The deprecated method `com.coremedia.cmdline.CommandLineParameters#addOptionValidated` has been removed from the Java API. If you still use it in your project code, switch to `options.addOption(option)`, `options` and `option` referring to the first two arguments of `addOptionValidated`.

[CMS-19993]

## Removal: Deprecated AbstractUAPIClient#enableOutVerbose Method

The deprecated method `com.coremedia.cmdline.AbstractUAPIClient#enableOutVerbose` has been deleted from the Java API. If you are still using it in your project code, switch to `com.coremedia.cmdline.BaseCommandLineClient#enableVerboseLogging`.

[CMS-19992]

## Removal: Deprecated MarkupUtil#isEmptyMarkup Method

`com.coremedia.xml.MarkupUtil#isEmptyMarkup` has been deleted. Use `#isEmptyRichText` (for CoreMedia RichText only) or `#hasText` (for markup of arbitrary grammars) instead.

[CMS-19990]

## New Feature: Workflow Final Actions and Archiving of Aborted Workflows

Workflows can now declare custom final actions, which are executed after a workflow process has completed successfully or was aborted. To this end, a workflow definition can contain `<FinalAction>` elements with custom classes that implement the interface `com.coremedia.cap.workflow.plugin.FinalAction`.

Workflow definitions for publication, translation, and synchronization workflows have been adapted to use the new predefined final action `ArchiveProcessFinalAction` instead of the old `ArchiveProcess` task action. With this change, aborted workflow processes are archived in the same way as completed processes. Users can see their archived processes as finished workflows in Studio.

You have to re-upload these changed predefined workflow definitions using the "cm upload" tool to make use of the new functionality. The standard workflows `studio-simple-publication.xml`, `studio-two-step-publication.xml`, and `/com/coremedia/translate/workflow/synchronization.xml` can be uploaded by passing their name to the `-n` option of the `cm upload` tool. The workflow definition `translation.xml` from Blueprint directory `apps/workflow-server/modules/cmd-tools/wfs-tools-application/src/main/app/properties/corem/workflows` can be uploaded by passing the file name to the `-f` option of the `cm upload` tool.

The old `ArchiveProcess` action from package `com.coremedia.workflow.common.actions` has been deprecated. It's recommended to replace usages in custom workflow definitions with the `ArchiveProcessFinalAction` in the same way as in predefined workflow definitions.

For more details, have a look at section "Final Actions" in the *Unified API Developer Manual* and section "Customize Workflow Definitions" in the *Workflow Manual*.

[CMS-19768]

## MongoDB Update to version 5.0.2

MongoDB has been updated to version 5.0.2 for the Docker Deployment. Note that an upgrade is only possible from a 4.4.4 version. An upgrade from an earlier version needs to be done successively. Please refer to the official MongoDB documentation on how to upgrade: <https://docs.mongodb.com/v5.0/release-notes/5.0-upgrade-standalone/>

[CMS-19757]

## MediaStore Changes

### Database

The database table `BlobData` has been enhanced with a `uuid` column. The UUID of a blob is optionally assigned and consumed internally by the `contentserver`.

Note, that it is not possible to start a Content Server of a previous release on the database after the new Content Server has adapted the database tables. You should always make a backup of the Content Server database before upgrading.

[CMS-19748]

## Issue Search Filter Enabled By Default and Solr Schema Changes

The Solr index schema for *Content Feeder* and *CAE Feeder*, and the configuration of the *Content Feeder* was changed to enable the search filter for validation issues by default, and to also support Solr nested documents in the *CAE Feeder*.

See also the updated section "Searching for Content | Content Issues" in the Search Manual.

### Solr Configuration Changes

The Solr index fields `\_root\_` and `\_nest_path\_` were added in the index schema for both *Content Feeder* and *CAE Feeder* indexes in `content/conf/schema.xml` and `cae/conf/schema.xml`. These files are located in the Blueprint below `apps/solr/modules/search/solr-config/src/main/app/configsets`.

The fields were optional since version 2104 but not defined by default. Adding them requires recreation of indexes from scratch. If you create new indexes with this version, or if you have already created new indexes with previous versions and these fields defined, then you should add/keep the fields in the schema. For the *Content Feeder* index, these fields are required if indexing of validation issues is enabled. It's important that you don't change the definition of these fields, if you keep an existing index.

### Content Feeder Configuration

The configuration of the *Content Feeder* was changed to index issues, by default. You can disable issue indexing with configuration property `feeder.content.issues.index=false`, for example if you have decided to not add the fields to the Solr schema to avoid reindexing, or if you are not using the default Solr integration but a custom `Indexer` that does not support indexing issues as nested documents.

[CMS-19606]

## Solr Base Image added

A new base image has been added for the Solr search engine. The image can be found on DockerHub at [coremedia/solr-base](#). The image adds the scripting layer to setup a leader / follower setup in the standalone Solr mode.

The image also incorporates the change from the old master / slave terminology to the new leader / follower.

For the start the old environment variables will work as usually but they are deprecated and should be replaced with their new pendants.

The image also uses the default Solr image as its base as it is recommended by Solr.

The source repository for this image can be found at GitHub in our [coremedia-contributions](#) organisation in the [docker.solr-base](#) and access is granted on request to our support.

[CMS-19599]

## Changed Solr Terminology: Leader/Follower replaces Master/Slave

Apache Solr has replaced the names of their replication setup from Master/Slave to Leader/Follower. These names have now been changed in Solr configuration files ( `solrconfig.xml` ) and CoreMedia documentation. For details of the change in Solr, see [https://solr.apache.org/guide/8\\_8/solr-upgrade-notes.html#solr-8-7](https://solr.apache.org/guide/8_8/solr-upgrade-notes.html#solr-8-7).

The following system properties used to configure Solr replication have been renamed. If you are using the old names in your project, you must update them accordingly:

- `solr.master.url` -> `solr.leader.url`
- `solr.master` -> `solr.leader`
- `solr.slave` -> `solr.follower`

Environment variables for the Docker image have also changed. The old environment variables still work, but are deprecated:

- `SOLR_MASTER` -> `SOLR_LEADER`
- `SOLR_MASTER_URL` -> `SOLR_LEADER_URL`
- `SOLR_SLAVE` -> `SOLR_FOLLOWER`

- SOLR\_SLAVE\_AUTOCREATE\_CORES -> SOLR\_FOLLOWER\_AUTOCREATE\_CORES
- SOLR\_SLAVE\_AUTOCREATE\_CORES\_LIST -> SOLR\_FOLLOWER\_AUTOCREATE\_CORES\_LIST
- SOLR\_SLAVE\_AUTOCREATE\_THRESHOLD -> SOLR\_FOLLOWER\_AUTOCREATE\_THRESHOLD

The Maven commands to start and stop a Solr follower node for local development in `apps/solr/modules/search/solr-config/pom.xml` have also changed to use "follower" instead of "slave". For details, see the comments in that `pom.xml` file.

In addition to the system properties and environment variables, the following changes have been applied:

- The default log-location for Solr followers changed: `slave-logs/` -> `follower-logs/`
- To start a Solr follower locally, you now need to call `mvn exec:exec@start-solr-follower` (instead of `mvn exec:exec@start-solr-slave`).

[CMS-19302]

## Third-Party Update: Apache Solr 8.8.2

Apache Solr has been updated to version 8.8.2, which fixes some security vulnerabilities of the previous version.

### Solr Configuration

Solr configuration files in `apps/solr/modules/search/solr-config/src/main/app/configsets` have been adapted for the new version. If you've customized these files, make sure to apply the change in `content/conf/solrconfig.xml` that sets `enableLazyFieldLoading` to false. This change is necessary to work around Solr bug SOLR-15192.

### Solr Master/Slave Setup

For the Solr Master/Slave setup, the new Solr version now requires the configuration of hostname and port of the Solr master instance in the `solr.shardsWhitelist` system property of Solr slave instances (SOLR-15217). The Docker image build has been adapted accordingly in `apps/solr/docker/solr/src/docker/bin/config.sh`. See section "Master/Slave Index Replication" in the Search Manual or the Solr Reference Guide for more information.

For detailed changes of Apache Solr have a look at [https://lucene.apache.org/solr/8\\_8\\_2/changes/Changes.html](https://lucene.apache.org/solr/8_8_2/changes/Changes.html) and [https://solr.apache.org/guide/8\\_8/solr-upgrade-notes.html](https://solr.apache.org/guide/8_8/solr-upgrade-notes.html).

[CMS-19266]



## Content Server and Workflow Server do not use `corem.home` anymore

The `corem.home` directory and system property are no longer used by the Content Server and Workflow Server.

For the Content Server a new Spring property `cap.server.base-dir` has been introduced to control the base directory for other configuration properties when using relative paths. By default, the property is set to the value of the `user.dir` system property. For the Blueprint Docker images this is the `/coremedia` directory. The following properties have been adapted and support relative file paths (some defaults have changed):

- `cap.server.license` (file / url, default: `license.zip`)
- `cap.server.document-types` (file / url patterns, default: `classpath*:framework/doctypes/**/*.xml`)
- `cap.server.login.authentication` (file / url, default: `classpath:coremedia-jaas.conf` resp. `classpath:blueprint-jaas.conf`)
- `cap.server.login.bouncers` (file, default: empty)
- `cap.server.encrypt-passwords-key-file` (file, default: `etc/keys/DATABASE_NAME.DATABASE_USER.rijndael`)
- `replicator.tmp-dir` (directory, default: `var/tmp`)

The Workflow Server has only one new property which has not been configurable before, that allows a relative file-path, which is now relative to the value of the `user.dir` system property:

- `workflow.working-dir` (directory, default: `var/tmp`)

The Workflow Server does not use `cap.client.server.ior.url` anymore, you have to use `workflow.ior-url` instead.

The command-line-tools still use `corem.home`, and as the Docker image for the Workflow Server also contains the workflow converter tool, it still sets `corem.home` but it is not used in the server itself.

The deprecated method `CapSystemInfo#getInstallationPath` has been removed (see CMS-19437).

The following modules that were used to create a `corem-home` directory structure for the servers have been removed:

- `content-server-config`

- `content-server-blueprint-config`
- `workflow-server-config`
- `workflowserver-blueprint-config`

[CMS-19112]

## Commerce Validator Issue Feeding

Commerce related validator issues defined in `LcStudioValidatorsConfiguration` are now also feeded into the Solr index "studio" by default. Therefore the *Content Feeder* now also uses *Commerce Hub* connections to configured *Commerce Adapters*. The legacy [and deprecated] LiveContext Blueprint extension for IBM/HCL B2B is **not** supported.

### General Problems reported as INFO

Additionally, the `ContentLinkValidator` and its subclasses do not report Commerce Connection issues ["StoreContextNotFound"] as *warning*, anymore, but as *info*. This was changed because otherwise lots of issues with level *warning* are persisted for each and every commerce related content item, although the problem is more generic and is not caused by the single content items. As a rule of thumb, issues that are fixable on the content itself are *warning* or *error* and more global issues, like commerce connection problems, are *info* level.

### Performance Advise

Please be aware that for repositories with huge amounts of commerce-related content (for example, Augmented Pages, Augmented Categories, Augmented Products or Product Teasers), feeding might take much longer, especially if the commerce adapter cache is empty and remote calls to the commerce system need to be made.

You might want to consider to limit the duration of calls to the commerce adapter(s) by setting the application property `commerce.hub.data.deadline` to a lower value (default is 20s). If this deadline/timeout is reached, the validator will get an exception and reports an issue on level *INFO* with the code `<ContentType>_catalogError` [e.g. `CMProductTeaser_catalogError`].

[CMS-18965]

## Removal: Deprecated Search and Feeder Configuration Properties

Several deprecated configuration properties have been removed for the *Content Feeder*, the *CAE Feeder* and for applications that connect to Solr for searching.

If you still use any of these properties, you have to replace them with the property that is listed right next to it in the following list (sorted alphabetically):

- `feeder.backgroundFeed.delay` -> `feeder.content.background-feed-delay`
- `feeder.executorQueueCapacity` -> `feeder.core.executor-queue-capacity`
- `feeder.executorRetryDelay` -> `feeder.core.executor-retry-delay`
- `feeder.indexDeleted` -> `feeder.content.index-deleted`
- `feeder.indexGroups` -> `feeder.content.index-groups`
- `feeder.indexNameInTextBody` -> `feeder.content.index-name-in-textbody`
- `feeder.indexReferrers` -> `feeder.content.index-referrers`
- `feeder.management.password` -> `feeder.content.management.password`
- `feeder.management.user` -> `feeder.content.management.user`
- `feeder.maxBatchBytes` -> `feeder.batch.max-bytes`
- `feeder.maxBatchByteSize` -> `feeder.batch.max-bytes`
- `feeder.maxBatchSize` -> `feeder.batch.max-size`
- `feeder.maxOpenBatches` -> `feeder.batch.max-open`
- `feeder.maxProcessedBatches` -> `feeder.batch.max-processed`
- `feeder.partialUpdate.aspects` -> `feeder.content.partial-update-aspects`
- `feeder.retryConnectToIndexDelay.seconds` -> `feeder.content.retry-connect-to-index-delay`
- `feeder.retrySendIdleDelay` -> `feeder.batch.retry-send-idle-delay` (*see note below*)
- `feeder.retrySendMaxDelay` -> `feeder.batch.retry-send-max-delay` (*see note below*)
- `feeder.sendIdleDelay` -> `feeder.batch.send-idle-delay` (*see note below*)
- `feeder.sendMaxDelay` -> `feeder.batch.send-max-delay` (*see note below*)
- `feeder.tika.timeout.milliseconds` -> `feeder.tika.timeout`
- `feeder.tika.warn.milliseconds` -> `feeder.tika.warn-time-threshold`
- `feeder.updateGroups.background.delay` -> `feeder.content.background-feed-delay`
- `feeder.updateGroups.immediately` -> `feeder.content.update-groups-immediately`

- `solr.collection.cae` -> `solr.cae.collection`
- `solr.collection.content` -> `solr.content.collection`
- `solr.configSet` -> `solr.cae.config-set` (for the *CAE Feeder*), `solr.content.config-set` (for the *Content Feeder*)
- `solr.partialUpdates` -> `feeder.solr.partial-updates.enabled`
- `solr.partialUpdatesSkipIndexCheck` -> `feeder.solr.partial-updates.skip-index-check`

Note, that the old properties `feeder.sendIdleDelay`, `feeder.sendMaxDelay`, `feeder.retrySendIdleDelay`, and `feeder.retrySendMaxDelay` took a value in seconds for the *Content Feeder*, but a value in milliseconds for the *CAE Feeder*. The new properties `feeder.batch.send-idle-delay`, `feeder.batch.send-max-delay`, `feeder.batch.retry-send-idle-delay`, and `feeder.batch.retry-send-max-delay` take milliseconds for both *Content Feeder* and *CAE Feeder* (if the value does not specify a different Spring Boot duration unit like 's').

[CMS-17959]

## Improved CAE Feeder Database Usage

The *CAE Feeder* was improved to store data more efficiently in the database, which reduces database disk space requirements and improves throughput. To this end, the data type of some database columns was changed from a string type to a binary type. This change also applies to custom applications based on the *Proactive Engine*.

When the *CAE Feeder* is started with an empty database to feed everything from scratch, it will automatically create tables with improved definitions. If started with existing database tables from a previous release, then the *CAE Feeder* will work as before without improved database usage. Existing database tables are not upgraded. For best performance, it is recommended to start feeding with an empty database.

[CMS-16722]

## Removal: Deprecated Watchdog and Probedog infrastructure

The Watchdog and Probedog components have been removed. To implement the same functionality you can use Spring Boot actuators together with an orchestration solution. In addition to the standard actuators of Spring Boot, CoreMedia adds a set of custom endpoints to represent the health state of the applications. You find the documentation in the operations basics handbook.

This update also removes the default access restrictions for the formerly inbuilt `watchdog` user. In case of an update it is recommended to remove this user manually to prevent security breaches.

[CMS-7318]

## Improved Translation Workflow Auto-Merge

The "Auto-Merge" feature used in translation workflows to copy property values from master to derived content items has been improved. In previous releases, it completely ignored translatable properties and never changed such properties in the derived content. This has been changed because it could lead to unexpected results, especially for properties nested in structs. Furthermore, the merge algorithm was improved for link annotations.

Translatable (nested) property values are no longer excluded from auto-merge, but will be copied from the master to the derived content in the same way as other values. However, opposed to non-translatable properties, if the derived content already contains a different value for a translatable property, for example some translated text, then the value of the derived content will be kept and no warning about a merge conflict will be shown. Furthermore, for annotated links like teaser targets with "call-to-action" texts or channel page grid links with validity dates: if a link is removed or replaced in the master content, then the auto-merge feature will also remove or replace the link correctly in the derived content, even if some annotation properties of that link were changed in the derived content. With previous releases some annotation values could remain, even if the actual link had been removed. This has been fixed.

The previous behavior can still be restored by setting the following Spring configuration properties for the Workflow Server as follows:

- `workflow.localization.auto-merge.translatable=false`
- `workflow.localization.auto-merge.legacy-list-merge=true`

These properties are documented in the Deployment Manual, section "CoreMedia Properties Overview | Workflow Server Properties".

[CMS-19187]

## Secure Blob Access

Blob access by clients is protected against URL guessing now. If you want to use components from earlier CMCC releases with new content servers, you must set the application property `cap.server.blob-md5-permission-check` to `false` for the new content servers.

[CMS-7021]

## blueprint-doctypes-xmlrepo.xml: Available in Blueprint Sources

The `blueprint-doctypes-xmlrepo.xml` located in so-called Blueprint-Base, unavailable to most customers, now has a copy in the Blueprint module `test-util`.

All tests in Blueprint have been adapted to use this new location for the content-type definitions.

### Old coordinates:

- Reference:

```
classpath:com/coremedia/blueprint/base/testing/blueprint-doctypes-xmlrepo.xml
```

- Dependency:

```
<dependency>
  <groupId>com.coremedia.blueprint.base</groupId>
  <artifactId>bpbse-test-util</artifactId>
  <scope>test</scope>
</dependency>
```

### New coordinates:

- Reference:

```
classpath:com/coremedia/testing/blueprint-doctypes-xmlrepo.xml
```

- Dependency:

```
<dependency>
  <groupId>com.coremedia.blueprint</groupId>
  <artifactId>test-util</artifactId>
  <scope>test</scope>
</dependency>
```

### Deprecation Notice:

The artifact `com.coremedia.blueprint.base:bpbse-test-util` is herewith deprecated for use in CoreMedia Blueprint. For the lifecycle of 2110 it no incompatible changes will be introduced to this deprecated artifact.

It is strongly recommended migrating your own tests to the new copy within `com.coremedia.blueprint:test-util`.

[CMS-2487]

## 5.23.2 CoreMedia Content Application Engine

### Removal: CAE Module `cap-editing-pbe-taglib-component`

The unused and deprecated module `cap-editing-pbe-taglib-component` has been removed. It is recommended to use the tags `cm:previewScripts` and `cm:metadata` of the CAE tag library in JSP templates instead of the removed tags `pbe:head` and `pbe:contextinfo`, respectively.

[CMS-20438]

### Moved static CAE resources to `'/static/'`

Build-in static CAE resources were moved to `'/static'`. Although this it is not a hard requirement that static resources be served from the `'/static'` path we do recommend to serve static resources using this prefix because it supports a clean separation of static resources from servlet mappings when developing rewrite rules.

[CMS-20436]

## Deprecation of Image Operations

The image operation `gamma` and the parameters of the `unsharpMask` are now deprecated. Both operations couldn't be controlled by editors in the Studio directly for single images. They also haven't been used in the Blueprint by default.

While scaled images generally benefit from mild sharpening by means of `unsharpMask` and its default values, the parameters leak implementation details that are likely to change. `unsharpMask` as a non-parameterized part of the transformation string will remain available.

`gamma` will be removed in the future. If you are using this operation in your project, please let us know.

[CMS-20342]

## Removal: CAE Code Minification

The deprecated and unused interface `com.coremedia.blueprint.cae.view.processing.Minifier` has been removed. It is recommended to minify and optimize `CSS` and `JavaScript` files during build steps in the frontend workspace. This will be done by the blueprint default webpack configuration. Therefore the property `disableServerSideCompression` has been removed from Theme Configuration and build scripts too.

[CMS-20323]

## Removal: Elastic Social Personalization Extension

The Elastic Social Personalization extension was removed without replacement.

[CMS-20295]

## Deprecation: Property "ieExpression" of `CMAbstractCode`

The doctype property `ieExpression` of `CMAbstractCode` has been deprecated due to removal of Internet Explorer support. All usages will be removed soon.

[CMS-20143]

## Removal: Deprecated Sitemap URI Pattern `/service/sitemap/{sitemapPath}`

The deprecated Sitemap URI Pattern `/service/sitemap/{sitemapPath}` and the related handler have been removed from `com.coremedia.blueprint.cae.sitemap.SitemapHandler` [ `cae-base-lib` ]. The same applies to private members `ACTION_NAME` and `SITEMAP_PATH` which are now obsolete.



Use `{{/service-sitemap-\\{siteld\\}-\\{sitemapFile\\}}}` instead. It is defined by `SitemapHandler.URI_PATTERN_SITEMAP`.

If you still require the old mapping or members, ensure to keep your existing `SitemapHandler` in CoreMedia Blueprint.

[CMS-20048]

## Removal: Deprecated UriComponentsHelper#addQueryParameters Method

The deprecated method `com.coremedia.objectserver.web.links.UriComponentsHelper#addQueryParameters` has been deleted. If you still use it in your project code, switch to `UriComponentsBuilder#queryParams (MultiValueMap)`

[CMS-20001]

## Deprecation: ContentBlobHandlerBase

`com.coremedia.objectserver.web.ContentBlobHandlerBase` has been deprecated. No handlers use it any longer. If you still need it in your project code, please contact the CoreMedia support.

[CMS-19984]

## Removal: Deprecated ContentBlobHandlerBase#URIVARIABLE\_VERSION Field

The deprecated field `com.coremedia.objectserver.web.ContentBlobHandlerBase#URIVARIABLE_VERSION` has been deleted from the Java API. The result map of `ContentBlobHandlerBase#buildBlobLink` contains no entry for this key any longer. If you still use it in your project, migrate to `ContentBlobHandlerBase#URIVARIABLE_ETAG`.

[CMS-19983]

## Removal: BlueprintFreemarkerFacade functions

Both deprecated Freemarker functions `getContainerMetadata()` and `getDisplaySize()` have been removed. Please use `Container#getContainerMetadata()` and `getDisplayFileSize()` instead.

[CMS-19958]

## Removal: Deprecated Methods of CMProductList

The deprecated Methods from the `CMProductList` interface have been removed. The implementation of those methods are still available in '`CMProductListImpl.java`' as they are used in '`livecontext-dataviews.xml`'.

[CMS-19409]

## Removal: CAE TokenResolver Class

Classes `com.coremedia.objectserver.web.links.TokenResolver` and `com.coremedia.objectserver.web.links.TokenResolverHelper` were removed because token resolving repeatedly caused encoding issues with links. Use Spring utilities to build URI components and their built-in support to replace variables instead.

[CMS-19163]

## CAE cache-control default behavior changed

In CAE responses the "s-maxage" value in Cache-Control header was forced to be set to the same value as for "max-age", regardless of whether there was a separate configuration for "s-maxage". A factor can now be configured for setting the "s-maxage" header value in relation to "max-age" (see new property "`cae.cache-control.s-maxage-factor`"). Default value is "0.0" which means that no "s-maxage" is set unless it is explicitly configured. The old behavior can be restored by setting the value "1.0".

[CMS-19104]

## Removal: LiveContext IBM/WCS implementation

The deprecated LiveContext HCL/IBM extension in the blueprint has been removed. It is replaced by the Commerce Hub. Connections to an eCommerce system are no longer established directly, but only via Commerce Hub/Adapter. The example Aurora B2B sites have been removed from the demo content. As a result, a few features of the B2B support have also been omitted. Note, there is still no replacement in the Commerce Hub for them. In detail, these are the handling of workspaces and contracts.

[CMS-19089]

## Moved internal CAE controllers to management application context

In CM10 the CAE exposed several endpoints below ' `/blueprint/servlet/internal` ' which had to be handled separately when setting up URL rewrite rules so that they cannot be accessed from the public internet. In CM11 they are now configured to be included in the spring boot management context (together with the actuators) and are available on a different port (by default in blueprint deployment port 8081 on the CAE Docker Container and mapped to 40981 for preview and 42181 for live CAE). Affected endpoints are concerned with URL generation ( `/blueprint/servlet/internal/service/url` ), sitemap generation ( `/blueprint/servlet/internal/<siteid>/sitemap-org` ) and test URL generation ( `/blueprint/servlet/internal/<siteid>/testurls` ).

If use them in your project, please make sure to access them from your internal network using the new port and path without "`/blueprint/servlet`" prefix. For example: `http://<hostname>:42181/internal/service/url` for accessing the URL generation on the Live CAE

[CMS-18333]

## Removal: BlueprintFreemarkerFacade functions

Both deprecated Freemarker functions `createBeanFor()` and `createBeansFor()` have been moved from `BlueprintFreemarkerFacade` to `LivecontextFreemarkerFacade` , because of the remaining usages in livecontext templates. We recommend to not use the functions in projects.

[CMS-15880]

## The preview CAE now runs with standalone mode disabled

The property `delivery.standalone` is now disabled by default in the preview CAE. As a result the preview CAE uses the same URLs as the live CAE and the default proxy configuration no longer requires `/blueprint/servlet` to be accessible when running behind a web proxy.

[CMS-20501]

## Static Files of External Preview moved to /static folder

In order to simplify proxy rules to split requests to static files and dynamic servlets, the static files of the external preview have been moved to a static folder and are now served at

```
<context root>/static/externalpreview
```

[CMS-20471]

## Optimize Rendering of embedded content in Richtext

When embedding content (esp. images) in richtext, `asRichtextEmbed` templates are likely to break HTML validity by rendering `<div>` blocks inside the richtext's `<p>` context. So far, the Blueprint's `PDivUntanglingFilter` tried to be smart and adjust the HTML accordingly by closing and reopening the `<p>` context around an embedded object. However, this magic never really matched projects' expectations about the result, because it sometimes led to unwanted additional paragraphs or empty links.

Therefore, we removed the p/div adjusting features from the `PDivUntanglingFilter` and leave it to the `asRichtextEmbed` templates to provide HTML fragments that are suitable to be used within a `<p>` context. Consequently, we renamed the `PDivUntanglingFilter` to `EmbeddingFilter`.

If the old `PDivUntanglingFilter` is useful for you, you can keep it in your project code, and also preserve the `LinkEmbedFilter` and `ImageFilter` classes in their old versions.

The following templates in the example bricks and themes are changed:

- `CMTeasable.asRichtextEmbed.ftl` closes and opens the `<p>` elements before and after the include manually.
- `CMPicture.asRichtextEmbed.ftl` changed from `<div>` to `<span>`.
- `CMPicture.media.ftl` uses the `<picture>` element for the responsive container instead of a `<div>`.

[CMS-19278]

## Removal: Sitemaps generation for commerce sites

The sitemap generation for commerce sites is removed from the CAE. The implementation was part of the old IBM livecontext extension that was also removed. The feature can be re-implemented by integrating the `com.coremedia.livecontext.ecommerce.ibm.cae.sitemap` package from CMCC 10 blueprint.

[CMS-19247]

## Removal: CMHasContextsImpl#getDataViewFactory() method

`CMHasContextsImpl#getDataViewFactory()` has been removed, since its usage could lead to cyclic dependencies or uncontrollable cache invalidations.

[CMS-18512]

## Richtext Pagination

`ParagraphHelper#createParagraphs(Markup, int)` was supposed to paginate Richtext at headings [ `<p>` elements with class attributes `p-\-heading-1-4` ] ever since. Due to a bug, this feature was broken. Now, it is fixed, so you might observe more pages. This concerns especially `CMTeasableImpl#getTextAsParagraphs`. If you don't like the fixed pagination, omit the change in `StAXBlockElementPaginator.java:81` when you update the Blueprint.

[CMS-13015]

## 5.23.3 CoreMedia Studio Client

### Removal: Deprecated TabManager Classes/Interfaces

The following deprecated classes/interfaces have been removed from `editor-components`:

- TabManager
- TabManagerImpl

The corresponding `getTabManager` in `IEditorContext` and `EditorContextImpl` has also been removed.

[CMS-19921]

### Removal: CommerceConnection#getVendorXXX Methods

The following methods of the interface `com.coremedia.livecontext.ecommerce.common.CommerceConnection` were removed without replacement:

- `getVendorProperties`
- `getVendorVersion`
- `getVendorUrl`

[CMS-19750]

### Removal: Studio Packages Proxy App

The Studio Packages Proxy App has been removed. The new plugin mechanism can be used instead. See documentation for details.

[CMS-19698]

## For contents having a data-property, the links for those blobs are now rendered instead of simple content links

Render links for blobs in the headless richtext instead of the previous content links which weren't optimal for content types like CMDownload or CMPicture where you might just be interested in the link to the data.

[CMS-19669]

## Removal: Legacy Search Facets API from Studio

The support for the legacy commerce search facets had been removed from the Studio client and backend. The facet editor for product lists does only support the multi-facet selection from now on.

Old documents that still contain the legacy single-facet format must be migrated manually. When migrating from CMCC10 you can use the migrate button in CMCC10 2104+ to migrate your legacy values before migrating to CMCC11. If you still have legacy single facet values stored, a validator message is shown which gives the user a hint which value to select again.

[CMS-19295]

## Studio Client Resource Bundle Changes

In the process of pulling features out of the editor-components module in order to make them available for the new Workflow app, many changes to resource bundles had to be made [these changes are in addition to the changes that happened due to the new content type localization mechanism]. As the list is too extensive for a release note, we refer to [this link to a Coremedia Help Center article](#) .

[CMS-18728]

## Moved: Modules Moved to new Package

The following modules have been moved to the new npm package `@coremedia/studio-client.main.ckeditor4-components`

- LinkAction.ts

- LinkActionBase.ts
- PasteContentAction.ts
- PasteContentActionBase.ts
- AddCKEditorPluginsPlugin.ts
- AddCKEditorPluginsPluginBase.ts
- CoreMediaRichTextArea.ts
- CoreMediaRichTextAreaBase.ts
- CustomizeCKEditorPlugin.ts
- RemoveCKEditorPluginsPlugin.ts
- RemoveCKEditorPluginsPluginBase.ts
- CKEditor\_properties.ts
- PropertiesAction.ts
- PropertiesActionBase.ts
- RichTextAction.ts
- RichTextActionBase.ts
- RichTextActionToggleButton.ts
- RichTextMenuCheckItem.ts
- RichTextMenuCheckItemBase.ts
- RichTextMenuItem.ts
- TableAction.ts
- TableActionBase.ts
- TeaserOverlayPropertyField.ts
- TeaserOverlayPropertyFieldBase.ts
- TeaserOverlayStyleSelectorBase.ts
- RichTextPropertyField.ts
- RichTextPropertyFieldBase.ts
- RichTextArea.ts

[CMS-18571]



## Deprecation: Configuration `hideIssuesButton` in Control Room

Deprecated configuration `hideIssuesButton` of `com.coremedia.cms.editor.controlroom.workflow.translation.DefaultTranslationWorkflowDetailForm` as it has no effect anymore. The property will be removed in the next major release

[CMS-18021]

## BooleanPropertyField Label Changes

We fixed a bug where `BooleanPropertyFields` had no tooltip. For this, we changed an internal plugin of the field. To this end, resource bundles need to be adapted to display the correct field labels.

Example:

`CMPicture_localSettings.disableCropping_true_text` needs to be: `CMPicture_localSettings.disableCropping_text`

[CMS-20399]

## ILinkListWrapper Manipulation Methods Are Now Asynchronous By Signature

We needed to change the behaviour of `#setLinks()`, `#addLinks()`, `#addLinksAtIndex()`, `#moveLinks()`, `#moveLinksToIndex()` and `#removeLinksAtIndex()` for some important implementations of `ILinkListWrapper` to be asynchronous. As a consequence, we changed the signature of these methods to return a `Promise`. In custom implementations where no asynchronicity is needed, the code can simply be changed as in the following example.

Before:

```
override public function setLinks(links:Array):void {  
    getVE().setValue(links);  
}
```

After:

```
override public function setLinks(links:Array):Promise {  
    return new Promise(function (resolve:Function):void {  
        getVE().setValue(links);  
        resolve(links);  
    });  
}
```

```
    });  
}
```

Code that uses the methods does not necessarily need to be changed. Just note that the result is not immediately present after method invocation. Also, if you want to catch errors that happen during the method execution, you can no longer use a try/catch block but you have to use `Promise#_catch()` instead.

[CMS-19108]

## Fixed Inconsistent Usage of `ILinkListWrapper#acceptsLinks`

The function `ILinkListWrapper#acceptsLinks` had unclear documentation and therefore was neither used nor implemented consistently.

1. The most common use case was to only pass the links to be added to the link list like the first sentence of the documentation applied.
2. Some usages also prepended the existing links of the link list to the links to add before passing the array to the function. This has implied that all links are meant to be replaced.

CoreMedia adopted all implementations to the most common use case [see 1] and added an optional second parameter named `replaceLinks` that can be used if the other usage was meant.

### Upgrade Notes

1. In case you make use of the method `acceptsLinks` please check if you need to set the parameter `replaceLinks`.
2. In case you have implemented an own implementation of `ILinkListWrapper` please adjust your implementation of the `acceptsLinks` method accordingly to consider the `replaceLinks` flag. It is also expected that a check against `getFreeCapacity` (or if `replaceLinks` is set to `true` against `getTotalCapacity`) is made to make sure the links to be added fit into the link list.

[CMS-18849]

## Simplified Most of the Configuration to [ExtConfig]

We simplified most of our configuration for Ext-Components from [Bindable](#) to [ExtConfig](#). In case you are not working only with our Public API (and not, for example, with native JavaScript in Studio) this has no impact. Otherwise you might need to change access to configuration in your native JavaScript from "getSomeConfig" and "setSomeConfig" to "someConfig".

[CMS-16977]

## 5.23.4 CoreMedia Studio Server

### Redesign of Jobs, Toasts and Notifications

- The running jobs window has been redesigned and aligned with the new Studio design.
- Former toast messages, that have popped up at button as green balloons are gone now. They have been replaced with a new toast API. These new toast appear at the lower left of the Studio and have a title, description and a severity.
- Notifications and the notifications menu have been redesigned and aligned with the new Studio design. Multiple notifications can be shown now and will be stacked. Additionally, they can be marked as unread now again.
- User settings have been added to hide toast and notifications.
- The redesign of the notification may require additional redesign for customized notifications.

[CMS-19563]

### Added Search Filters for Library Extension

The Studio library does support search filters for extensions now. As a result, search filters can now be added for commerce integration. The existing search filters work as before and saved searches aren't affected by this change.

If custom search filters have been added to the library, the plugin rule declaration for adding this filter may have to change, depending on where the filter should be added. The library now has a separate search filter panel for every extension.

These are:

- *com.coremedia.cms.editor.sdk.collectionview.search.SearchFilters* for regular content
- *com.coremedia.catalog.studio.collectionview.search.CatalogSearchFilters* for the content based product catalog
- *com.coremedia.cms.editor.sdk.collectionview.search.CatalogSearchFilters* for commerce integrations
- *com.coremedia.cms.editor.sdk.collectionview.search.AssetSearchFilters* for the asset management

To add a custom filter, the usual *AddItemsPlugin* can be used on one of these panels. For example:

```
<editor:SearchFilters>
  <editor:plugins exml:mode="append">
    <ui:AddItemsPlugin>
      <ui:items>
        <ns:CustomFilter/>
      </ui:items>
    </ui:AddItemsPlugin>
  </editor:plugins>
</editor:SearchFilters>
```

Adding this code to a Studio plugin rules declaration will add the *CustomFilter* to the list of content filters. Also, the method *editorContext.getEnabledSearchFilterIds()* has been removed since simply adding a filter this way is sufficient now.

Removing existing filters works the same way: by using the *RemoveItemsPlugin* with the *itemId* of the corresponding filter.

[CMS-19094]

## Validators

You can declare validators not only as Spring beans, but alternatively also by JSON configuration files now. This is supported for most core validator classes, except of those which make only sense as singletons and which are provided by default, like the *AvailableLocalesValidator*. Most Blueprint validator classes can easily be enabled for JSON configuration in the project, if needed.

See Studio Developer manual / Customizing CoreMedia Studio / Server-Side Content Processing / Validators / Implementation and Activation of Validators for details.

Unfortunately, the option of JSON configuration required some API changes. The validator classes have been widely stripped off their Spring features, esp. *@Autowired* and *InitializingBean*. Not expecting validators to be Spring beans, but just simple POJOs, makes it much easier to instantiate them from JSON configuration files. And the Spring features that were actually used could easily be replaced by other means, like

non-null constructor arguments in favor of `@Autowired`, setters and `afterPropertiesSet` checks.

The abstract base classes `PropertyValidatorBase` and `ContentTypeValidatorBase` have been replaced by the Spring-free `AbstractPropertyValidator` and `AbstractContentTypeValidator`, respectively. This affects the constructor signatures and setters of their subclasses, since mandatory configuration is required as constructor arguments now, in favor of setters. The changes are most obvious in the `ValidatorsConfiguration` class in the Blueprint.

If you want to use JSON configuration also for custom validators, the validator classes should refrain from using Spring features like `@Autowired` or `InitializingBean`. Otherwise, you must implement more complex validator factories.

[CMS-18931]

## CatalogAlias configuration for single catalog setups

Configured `catalogAlias` below `commerce#catalogConfig#catalogAlias` is used to store commerce ids from now on.

Nothing needs to be changed,

- if you had nothing configured for `commerce#catalogConfig#catalogAlias` earlier or
- if `commerce#catalogConfig#catalogAlias` was configured as "catalog".

If you had configured something else, the alias was not used for your existing augmentations. Simply consider to remove the `catalogAlias` configuration then from `commerce#catalogConfig`.

[CMS-20303]

## Use stable IDs in CAE Fragment Requests, if Possible

So far the id parameter of commerce fragment requests from the CoreMedia fragment connector to the CAE were treated as external technical IDs, whereas all other communication uses stable external IDs for commerce entities. This leads to unnecessary cache misses, commerce communication and memory consumption in the CAE and commerce adapter caches.

If possible the external ID should be used in fragment requests and also should be treated as external ID on the CAE side from now on. If the commerce system cannot

pass the external ID into the fragment parameters, because only the technical ID is available, then this behavior must be configured on the commerce adapter side.

The property "metadata.additional-metadata.allow-tech-ids=true" has to be set for the commerce adapter, if you want to continue using the external technical ID for commerce entities in the fragment connector. For customer running a HCL setup the configuration "metadata.additional-metadata.allow-tech-ids=true" is set by default in the commerce adapter wcs, since the fragment parameters passed from the fragment connector contain technical entity IDs by default.

[CMS-19920]

## Optimized Taxonomy Performance

The performance of the *DefaultTaxonomy* has been improved. This has been achieved through better UAPI caching. In addition, the property *maxDocumentsPerFolder* can be set now. This property will trigger the creation of new taxonomy documents created by the Taxonomy Manager in a new sub-folder named with a UUID once the default folder has reached the configured amount of documents. New sub-folders are created this way every time when the last used one has reached its limit.

Since the Spring configuration and some method signatures have changed for the class *DefaultTaxonomy.java*, custom integrations that extend from this class must be adapted.

[CMS-19418]

## 5.23.5 CoreMedia Workspace

### SFMC Extensions Extracted from Blueprint

The extensions `sfmc`, `sfmc-p13n` and `sfmc-es-p13n` have been removed from Blueprint. The extensions for your version can be requested from the CoreMedia Support Team.

[CMS-20575]

## Banned Jakarta EE 9 Artifacts

There is a mismatch between Maven coordinates and Java packages of Jakarta EE 8/9 artifacts. [ For details see

[https://www.eclipse.org/community/eclipse\\_newsletter/2020/november/1.php](https://www.eclipse.org/community/eclipse_newsletter/2020/november/1.php) .] We follow the strategy of Spring Boot 2.5 of how to deal with this problem and ban all Jakarta EE 9 artifacts. If you use Jakarta EE 9 artifacts in your project, please try to replace them with the according Jakarta EE 8 libraries.

[CMS-19484]

## Removal: Deprecated Properties

Properties that were deprecated because they were replaced by Spring Boot configuration properties have now been removed:

- `aspect.cache.capacity` use `cache.capacities.com.coremedia.cae.aspect.Aspect` instead
- `assumesIdentity.cache.capacity` use `cache.capacities.com.coremedia.objectserver.dataviews.AssumesIdentity` instead
- `{{blueprint.sitemap.\}}*` use `{{cae.sitemap.\}}*` instead
- `caas.cache-capacities` use `cache.capacities.com.coremedia.caas.search.solr.SolrQueryCacheKey` instead
- `caas.context.trace.enabled` use `caas.stax.context-trace-enabled` instead
- `caas.persisted-queries.query-resources-exclude-pattern` use `caas.persisted-queries.exclude-file-name-pattern` instead
- `caas.persisted-queries.query-resources-map-pattern.apollo` use `caas.persisted-queries.apollo-query-map-resources-pattern` instead
- `caas.persisted-queries.query-resources-map-pattern.relay` use `caas.persisted-queries.relay-query-map-resources-pattern` instead
- `caas.querylist.search.cache.seconds` use `caas.querylist-search-cache-for-seconds` instead
- `cachekeysize.java.lang.object` use `cache.capacities.java.lang.Object` instead
- `cae.coderesources-max-age` use `{{cae.cache-control.\}}*` instead
- `cae.coderesources.maxAge` use `cae.coderesources-max-age` instead

- `cae.crossdomain.whitelist` use `{{cae.cors.allowed-origins-for-url-pattern\\{path:.\\}\\}}*` instead
- `cae.developer.mode` use `delivery.developer-mode` instead
- `cae.is.preview` use `delivery.preview-mode` instead
- `cae.is.standalone` use `delivery.standalone` instead
- `cae.preview.crossdomain.whitelist` use `{{cae.cors.allowed-origins-for-url-pattern\\{path:.\\}\\}}*` instead
- `cae.use.local.resources` use `delivery.local-resources` instead
- `cae.view.cycle-check` use `cycle-check` instead
- `cae.viewdispatcher.cache.size` use `cache.capacities.com.coremedia.objectserver.view.ViewLookup` instead
- `cap.procmon.enable` use `cap.server.enable-procmon` instead
- `cap.server.ORBServerHost` use `com.coremedia.corba.server.host` instead
- `cap.server.ORBServerPort` use `com.coremedia.corba.server.port` instead
- `cap.server.ORBServerSSLPort` use `com.coremedia.corba.server.ssl.ssl-port` instead
- `cap.server.blob.channel.timeout` use `cap.server.blob-channel-timeout` instead
- `cap.server.encryptpasswords.keyfile` use `cap.server.encrypt-passwords-key-file` instead
- `cap.server.groupcache.size` use `cap.server.cache.group-cache-size` instead
- `cap.server.groupcache.status.interval` use `cap.server.cache.group-cache-status-interval` instead
- `cap.server.http.port` use `cap.server.http-port` instead
- `cap.server.init.runlevel` use `cap.server.init-runlevel` instead
- `cap.server.memberfolderrightscache.size` use `cap.server.cache.member-folder-rights-cache-size` instead
- `cap.server.namingpolicy.allowat` use `cap.server.naming-policy-allow-at` instead
- `cap.server.repository.home` use `cap.server.repository-home` instead



- `cap.server.repository.system` use `cap.server.repository-system` instead
- `cap.server.resourcecache.size` use `cap.server.cache.resource-cache-size` instead
- `cap.server.resourcecache.status.interval` use `cap.server.cache.resource-cache-status-interval` instead
- `cap.server.rightscache.size` use `cap.server.cache.rights-cache-size` instead
- `cap.server.rightscache.status.interval` use `cap.server.cache.rights-cache-status-interval` instead
- `cap.server.session.ping.interval` use `cap.server.session-ping-interval` instead
- `cap.server.session.transient.threshold` use `cap.server.session-transient-threshold` instead
- `cap.server.termination.timeout.seconds` use `cap.server.termination-timeout-seconds` instead
- `cap.server.usercache.size` use `cap.server.cache.user-cache-size` instead
- `cap.server.usercache.status.interval` use `cap.server.cache.user-cache-status-interval` instead
- `cap.sysmon.enable` use `cap.server.enable-sysmon` instead
- `com.coremedia.corba.ORBRedirector.original.host` use `com.coremedia.corba.client.redirect.original-host` instead
- `com.coremedia.corba.ORBRedirector.original.port` use `com.coremedia.corba.client.redirect.original-port` instead
- `com.coremedia.corba.ORBRedirector.redirect.host` use `com.coremedia.corba.client.redirect.redirect-host` instead
- `com.coremedia.corba.ORBRedirector.redirect.port` use `com.coremedia.corba.client.redirect.redirect-port` instead
- `com.coremedia.corba.SSLClientSocketFactory.clearTextPort` use `com.coremedia.corba.client.ssl.clear-text-ports` instead
- `com.coremedia.corba.SSLClientSocketFactory.keystore` use `com.coremedia.corba.client.ssl.keystore` instead
- `com.coremedia.corba.SSLClientSocketFactory.passphrase` use `com.coremedia.corba.client.ssl.passphrase` instead
- `com.coremedia.corba.SSLClientSocketFactory.sslPort` use `com.coremedia.corba.client.ssl.ssl-ports` instead

- `com.coremedia.corba.SSLServerSocketFactory.keystore` use `com.coremedia.corba.server.ssl.keystore` instead
- `com.coremedia.corba.SSLServerSocketFactory.passphrase` use `com.coremedia.corba.server.ssl.passphrase` instead
- `com.coremedia.corba.SingleIpSocketFactory.ip` use `com.coremedia.corba.server.single-ip` instead
- `com.coremedia.orb.jndiName` use `repository.orb-jndi-name` instead
- `com.coremedia.transform.loadedImageCacheCapacity` use `cache.capacities.com.coremedia.transform.image.java2d.LoadedImageCacheKey` instead
- `contentBeanBackedPageGridPlacement.cache.capacity` use `cache.capacities.com.coremedia.blueprint.cae.layout.ContentBeanBackedPageGridPlacement` instead
- `counters.aggregationInterval.daily` use `counters.aggregation-interval-milliseconds.daily` instead
- `counters.aggregationInterval.daily` use `counters.aggregation-interval-milliseconds.daily` instead
- `counters.aggregationInterval.monthly` use `counters.aggregation-interval-milliseconds.monthly` instead
- `counters.aggregationInterval.monthly` use `counters.aggregation-interval-milliseconds.monthly` instead
- `counters.aggregationInterval.weekly` use `counters.aggregation-interval-milliseconds.weekly` instead
- `counters.aggregationInterval.weekly` use `counters.aggregation-interval-milliseconds.weekly` instead
- `counters.aggregationInterval.yearly` use `counters.aggregation-interval-milliseconds.yearly` instead
- `counters.aggregationInterval.yearly` use `counters.aggregation-interval-milliseconds.yearly` instead
- `counters.aggregationInterval` use `counters.aggregation-interval-milliseconds.for-all` instead
- `counters.aggregationInterval` use `counters.aggregation-interval-milliseconds.for-all` instead
- `db.assume.tables.exist` use `db.assume-tables-exist` instead
- `db.blob.tableoptions` use `db.blob-table-options` instead
- `db.constants.escapeBackslash` use `db.escape-backslash` instead

- `db.function.max.ignoresIndex` use `db.function.max-ignores-index` instead
- `db.function.modulo.infix` use `db.function.modulo-infix` instead
- `db.modules.textEngine` use `db.text-engine` instead
- `db.schema.memberName.length` use `db.schema.member-name-length` instead
- `db.schema.name.length` use `db.schema.name-length` instead
- `db.schema.resourceName.length` use `db.schema.resource-name-length` instead
- `db.schema.schema.name.uppercase` use `db.schema.name-uppercase` instead
- `db.select.fromSubselectNamed` use `db.from-subselect-named` instead
- `db.sgml.buffer.length` use `db.sgml-buffer-length` instead
- `db.type.bit.convert` use `db.type.bit-convert` instead
- `db.type.bit.false` use `db.type.bit-false` instead
- `db.type.bit.true` use `db.type.bit-true` instead
- `db.type.varchar.lengthInCharacters` use `db.type.varchar-length-in-characters` instead
- `db.update.supportsNamedTable` use `db.update-supports-named-table` instead
- `editorial.comments.data.cache.comments-cache-size` use `cache.capacities.com.coremedia.editorial.comments.data.editorial.comments` instead
- `editorial.comments.data.cache.qualifiers-cache-size` use `cache.capacities.com.coremedia.editorial.comments.data.qualifiers` instead
- `editorial.comments.data.cache.threads-cache-size` use `cache.capacities.com.coremedia.editorial.comments.data.commentThreads` instead
- `filter.viewlookup.by.predicate` use `cae.view.filter-lookup-by-predicate` instead
- `livecontext.crossdomain.whitelist` use `{{cae.cors.allowed-origins-for-url-pattern\\{path:.\\}\\}}*` instead
- `metadata.enabled` use `cae.preview.metadata-enabled` instead

- `models.createIndexes` use `mongodb.models.create-indexes` instead
- `mongoDb.clientURI` use `mongodb.client-uri` instead
- `mongoDb.host` use `mongodb.host` instead
- `mongoDb.prefix` use `mongodb.prefix` instead
- `page.cache.capacity` use `cache.capacities.com.coremedia.blueprint.common.contentbeans.Page` instead
- `pageGridImpl.cache.capacity` use `cache.capacities.com.coremedia.blueprint.cae.layout.PageGridImpl` instead
- `pbe.studioUrlWhitelist` use `cae.preview.pbe.studio-url-whitelist` instead
- `publisher.connection.timeoutSeconds` use `publisher.connection-timeout-seconds` instead
- `publisher.linkValidator.class` use `publisher.link-validator-class` instead
- `publisher.status.interval` use `publisher.status-interval` instead
- `replicator.Packager.flushSize` use `replicator.packager-flush-size` instead
- `repository.connect.retry.delay.seconds` use `repository.connect-retry-delay-seconds` instead
- `searchTermExternalReferenceResolver.cacheCapacity` use `cache.capacities.com.coremedia.livecontext.fragment.resolver.SearchTermExternalReferenceResolver` instead
- `searchTermExternalReferenceResolver.cacheTime` use `cache.timeout-seconds.com.coremedia.livecontext.fragment.resolver.SearchTermExternalReferenceResolver` instead
- `sql.modules.textEngine` use `sql.modules-text-engine` instead
- `sql.store.collector.blob.preservationperiod` use `sql.store.collector.blob-preservation-period` instead
- `sql.store.convert.correct-preferences` use `sql.store.convert-correct-preferences` instead
- `sql.store.convert.correctRichText` use `sql.store.convert-correct-rich-text` instead
- `sql.store.convert.defaultHoxImageProperty` use `sql.store.convert-default-hox-image-property` instead

- `sql.store.convert.filterXmlChars` use `sql.store.convert-filter-xml-chars` instead
- `sql.store.sgmlcache.interval` use `sql.store.sgml-cache-interval-seconds` instead
- `sql.store.sgmlcache.sizeBytes` use `sql.store.sgml-cache-size-bytes` instead
- `sql.store.sgmlcache.size` use `sql.store.sgml-cache-size-bytes` instead
- `studio.security.autoLogout.delay` use `studio.auto-logout.delay` instead
- `taskQueues.executionTimeout` use `taskqueues.execution-timeout-milli-seconds` instead
- `taskQueues.executionWarningTimeout` use `taskqueues.execution-warning-timeout-milli-seconds` instead
- `taskQueues.numberOfRetries` use `taskqueues.number-of-retries` instead
- `taskQueues.pollingInterval` use `taskqueues.polling-interval-milli-seconds` instead
- `taskQueues.recoveryInterval` use `taskqueues.recovery-interval-milli-seconds` instead
- `taskQueues.retryInterval` use `taskqueues.retry-interval-milli-seconds` instead
- `taskQueues.workerNode` use `taskqueues.worker-node` instead
- `view.debug.enabled` use `cae.view.debug-enabled` instead
- `view.errorhandler.enabled` use `cae.view.errorhandler.enabled` instead
- `view.errorhandler.output` use `cae.view.errorhandler.output` instead
- `view.maxdepth` use `cae.view.max-depth` instead
- `viewdispatcher.cache.enabled` use `cae.viewdispatcher.cache.enabled` instead
- `viewdispatcher.cache.size` use `cae.viewdispatcher.cache.size` instead
- `viewdispatcher.expose-spring-macro-helpers` use `cae.viewdispatcher.expose-spring-macro-helpers` instead
- `viewdispatcher.fallback-to-default-view` use `cae.viewdispatcher.fallback-to-default-view` instead

[CMS-19116]

## Updated to Spring 5.3.12 and Spring Boot 2.5.6

In order to benefit from the improvements of the latest version of the Spring framework and to prepare for making use of the new features various 3rd party libraries have been updated.

- Spring Boot 2.5.6
- Spring Data 2021.0.6
- Spring Framework 5.3.12
- Spring Security 5.5.3
- AssertJ 3.19.0
- AspectJ 1.9.7
- Caffeine 2.9.2
- Classmate 1.5.1
- Commons dbcp2 2.8.0
- Esapi 2.2.3.1
- Gson 2.8.8
- Hibernate 5.4.32.Final
- Hibernate Validators 6.2.0.Final
- Jackson 2.12.5
- Janino 3.1.6
- Logback 1.2.6
- Micrometer 1.7.5
- MySQL 8.0.27
- Netty 4.1.69.Final
- Postgres 42.2.24
- Slf4j 1.7.32
- Tomcat 9.0.54
- XMLUnit 2.8.3

For more details on the changes in the Spring Boot 2.5 and 2.4 releases, see <https://github.com/spring-projects/spring-boot/wiki/Spring-Boot-2.5-Release-Notes> and <https://github.com/spring-projects/spring-boot/wiki/Spring-Boot-2.4-Release-Notes>

. Also see the Spring 5.3 GA announcement <https://spring.io/blog/2020/10/27/spring-framework-5-3-goes-ga> and the Spring Security 5.5 GA announcement <https://spring.io/blog/2021/05/18/spring-security-5-5-goes-ga>

Spring Web MVC now treats `null` arguments as missing, see <https://github.com/spring-projects/spring-framework/wiki/Upgrading-to-Spring-Framework-5.x#web-applications> and adapt your handlers accordingly.

Due to changes in the esapi library some unused methods of its `SecurityConfiguration` class had to be removed. You will most likely not recognize this change because the usage of this methods was not supported.

[CMS-18517]

## Removal: repository.workflow, repository.caplist, and usecaplist Properties

Removed the properties `repository.workflow`, `repository.caplist`, and `usecaplist`. Use `repository.workflow.connect` instead of `repository.workflow` and `repository.caplist.connect` instead of `repository.caplist` and `usecaplist`.

[CMS-17426]

## Switched to Sencha CMD 7.2.0.84

Please use Sencha CMD 7.2.0.84 to build the studio-client to avoid heap space related problems after switching to the new NPM/TypeScript based tooling.

[CMS-20076]

## Mongo shell replacement mongosh

The mongo shell has been deprecated with MongoDB 5.0. The replacement shell is mongosh. Usages of `mongo` shell have been replaced with `mongosh` in documentation, deployment scripts and the example script `dump-es-user-data.js`.

[CMS-19884]

## Renamed groupId com.coremedia.content-hub to com.coremedia.cms

The groupId of the content-hub core artifacts has been changed from `com.coremedia.content-hub` to `com.coremedia.cms` in order to adjust to naming conventions.

[CMS-16969]

## 5.23.6 CoreMedia Frontend Workspace

### Removal: IE11 Support in Themes and Bricks

The example themes and bricks in the frontend workspace do not support Internet Explorer 11 anymore by removing it from the `browserlist` entry in the `package.json`. Also extra polyfills for IE11 in the blueprint bricks and in the tooling have been removed. You can still add polyfills or custom styles for IE11 to themes and bricks in your projects. You may need to adapt the webpack and babel configuration.

[CMS-20138]

### Changed Package Manager in Frontend Workspace from yarn to pnpm

The package manager of the frontend workspace has been changed from `yarn` to `pnpm`. `Yarn` in version 1 is not maintained anymore and `pnpm` is fast, efficient, strict and supports monorepos without additional libraries like `lerna`. Please check <https://pnpm.io/> for more details and installation. Please use the latest 6.x version of `pnpm`. Changes to the tooling should not affect any bricks or themes in your project.

Changes:

- Support for building the frontend workspace with `maven` or other package manager has been removed.
- The lock file for pinned versions changed from `yarn.lock` to `pnpm-lock.yaml`
- A new file for the workspace structure has been introduced: `pnpm-workspace.yaml`



- All workspace commands work like before, but just with `pnpm`. Examples:
  - `yarn install => pnpm install`
  - `yarn start => pnpm start`
  - `yarn build => pnpm build`

**Upgrade steps:** Since `pnpm` uses a non-flat `node_modules` structure, it is important to check for missing dependencies in custom themes and bricks. Please remove all `node_modules` in your project workspace. If a build fails, add the missing dependency to your theme or brick according to the error message.

*Optionally:* `Pnpm` uses a different versioning for local dependencies (it adds a prefix `workspace:` before the version). You can run `pnpm up -r` to change the entries in the `package.json` files. All local dependencies in the blueprint themes and bricks have been changed to an even more generic way, because versions inside the workspace are not important. Example: `"@coremedia/theme-utils": "^3.0.0" => "@coremedia/theme-utils": "workspace:*"`.

[CMS-19955]

## Third-Party Update: Node.js 16

Node.js has been updated to the latest LTS version 16. Please update your local installation to version 16 for local development too. Node.js version 14 is not supported!

[CMS-19245]

## 5.23.7 CoreMedia Deployment

### Update to Latest Commerce Adapter Versions and Adaption of Configurations

The [default] versions of the commerce adapters have been updated to the latest 2.0.x versions. The new adapter versions require some configuration changes:

*Commerce Adapter Salesforce Commerce Cloud :*

- The replacement tokens `sfra.host` and `sitegenesis.host` are not configured in the adapters default configuration anymore, because they are specific to the demo data that is shipped with the Blueprint. As a result, the `METADATA_REPLACEMENTTOKENS_SFRA_HOST` and `METADATA_REPLACEMENT`

`TOKENS_SITEGENESIS_HOST` must now be configured in the `commerce-adapter-sfcc.yml` in the Blueprint. The `SFCC_LINK_STOREFRONT_HOST` is not needed by the adapter anymore and has been removed.

### Commerce Adapter SAP Commerce Cloud :

- The replacement token `hybris.host` is not configured in the adapters default configuration anymore, because it is specific to the demo data that is shipped with the Blueprint. As a result, the `METADATA_REPLACEMENTTOKENS_HYBRIS_HOST` must now be configured in the `commerce-adapter-hybris.yml` in the Blueprint. The `HYBRIS_LINK_STOREFRONTHOST` is not needed by the adapter anymore and has been removed.
- The default values for the OAuth credentials have been from the adapter configuration, hence the `HYBRIS_OAUTH_CLIENTID` and `HYBRIS_OAUTH_CLIENT_SECRET` must now be explicitly set in the deployment configuration.

### Commerce Adapter HCL Commerce

- The replacement token `aurora.host` is not configured in the adapters default configuration anymore, because it is specific to the demo data that is shipped with the Blueprint. As a result, the `METADATA_REPLACEMENTTOKENS_AURORA_HOST` must now be configured in the `commerce-adapter-wcs.yml` in the Blueprint. The `WCS_LINK_STOREFRONT_HOST` is not needed by the adapter anymore and has been removed.

[CMS-20063]

## Enable Readiness and Liveness Health Group Endpoints

With Spring Boot 2.3 it is possible to define two extra subpaths of the health actuator to be used as the probing endpoints of the liveness and readiness checks in Kubernetes. This change enables those groups and adds the relevant checks to these groups.

For the cae and the headless-server, this change adds the `uapiConnectionReadiness` health check to the readiness health group. The health check is responsible to switch its state, whenever the UAPI connection is and **will** become unavailable.

This allows for an automation to remove the clients from its ingress loadbalancing before its repository becomes unavailable but allows him to process all outstanding request during a grace period given to the repository on a runlevel switch to maintenance.

To disable this new behaviour, remove the following two properties from the `application.properties` in the cae-live-app, cae-preview-app and the headless-server-app:

- `management.health.uapiConnectionReadiness.enabled`
- `management.endpoint.health.group.readiness.include`

[CMS-19923]

## Enables deployment of SFMC via docker-compose.

Includes `global/deployment/docker/compose/sfmc.yml` to deploy SFMC via docker-compose.

[CMS-19249]

## Removal: Deployment Archive with Chef Deployment

The Deployment Archive has been removed. Please use the container images build by the `*-app` Maven modules to deploy CoreMedia. The Docker compose development setup, shows what images need to be used, what environment variables are mandatory and how ports and volumes need to be mapped.

[CMS-19157]

## Container Image Build Process Changes

The `dockerfile-maven-plugin` has been replaced with the `google-jib-plugin` to build OCI conform container images, because the `dockerfile-maven-plugin` is no longer maintained. The `google-jib-plugin` integrates well with Spring-Boot applications and allows to build images securely without Docker being installed. This allows for a rootless, daemonless build but restricts the image building process to use only adding image layers by adding resources. There is no possibility to execute any `RUN` steps during the build process. Building the images without docker now requires a configured container registry although it is still possible to build images in the local docker daemon, without the need of a registry.

The switch to the new image build process is tightly coupled to the recent change to build all artifacts in a reproducible manner, resulting in identical image digests when no the source has not changed. With Spring Boot layered applications, this results in a faster build and smaller upload size to your container registry. Because file and image creation date affect the resulting image digest, jib sets the date to Unix epoch [00:00:00, January 1st, 1970 in UTC]. If you do not like this, you can enable the current timestamp

in the `jib-maven-plugin`, but this sacrifices reproducibility since the timestamp will change with every build.

```
<container>
  <useCurrentTimestamp>true</useCurrentTimestamp>
</container>
```

As a result of this change, the image build process moved to the application modules and the `docker` directory hierarchy has been removed.

All Spring-Boot application images are still based on the `coremedia/java-application-base` images will run with only some small breaking changes to the previous images. The breaking changes include:

- the application root directory `/coremedia` is now write protected as it is intended by the `google-jib-plugin`.
- The log files are now written to `/coremedia/log/application.log` if the `dev` profile is activated.

To build the images, the properties and Maven profiles have changed:

- the Maven profile to build the image is now named `default-image` with the property `jib.goal` to be either set to `build` or `dockerBuild`, depending on whether you want to use the Docker daemon or the registry as a build target.
- the property to define the registry has been renamed from `docker.repository.prefix` to `application.image-prefix`
- the property to define the image tag has been renamed from `docker.image.tag` to `application.image-tag`
- the property to define the base image has been renamed from `docker.java-application-base-image.repo` to `application.image-base`
- the property to define the image name has been renamed from `docker.repository.suffix` to `application.image-suffix`

The new images do not contain any health checks directive any more, if you rely on the docker health checks, please define them either on the command line or in your `docker-compose` file.

```
services:
  foo:
    test: [ "CMD", "curl", "-Lf", "http://localhost:8081/actuator/health" ]
    interval: 30s
    timeout: 10s
    retries: 3
    start_period: 40s
```

```
docker run --health-cmd='curl -Lf http://localhost:8081/actuator/health ||
exit 1' \
  --health-interval=30s \
  --health-timeout=10s \
```

```
--health-start-period=40s \  
--health-retries=3 <image>
```

[CMS-18332]

## Traefik update in Docker Setup

Traefik has been updated to 2.5.

With this update, we changed the configuration provider from Docker to File. This change has the benefit that:

- the Docker compose files become more readable and less complex.
- Traefik can be installed on a separate machine and only the service endpoints need to be reconfigured to point to the nodes, where the services are running.

The CAE rules have been changed from a whitelist pattern to only allow a specific set of servlets to a match-all style. This is possible, since the `internal` servlet has been moved to the server running on the maintenance port.

[CMS-16416]

## 5.23.8 CoreMedia Commerce Hub

### Removal: Special Commerce Hub API for Preview URLs

The special treatment of Studio preview urls has been removed from Commerce Hub API. Now preview urls are generated the same way as the other commerce related links via LinkTemplates and dynamic replacement values. Most of the changes took place within the commerce adapter workspaces. On the CMS side the PreviewUrlService has been deleted and there are changes in the CommerceStudioLinks.

If you didn't do any customization regarding Studio Preview Urls for commerce items, nothing needs to be changed on your side.

[CMS-20308]

## Updated Multi Catalog Configuration

The catalog alias configuration for the multi catalog feature has been updated. The former Studio content configuration setting "livecontext.catalogAliases" has been removed and needs to be updated, if you use multiple catalogs for one site. If you do not use the multi catalog feature there is no action required.

If you use multiple catalogs for one site, the catalog aliases are configured via the #additionalCatalogConfigs struct list below the commerce struct instead.

Old format:

```
<StructProperty Name="livecontext.catalogAliases">
  <Struct>
    <StringProperty Name="master">Extended Sites Catalog Asset
Store</StringProperty>
  </Struct>
</StructProperty>
```

New format:

```
<StructProperty Name="commerce">
...
  <StructListProperty Name="additionalCatalogConfigs">
    <Struct>
      <StringProperty Name="alias">master</StringProperty>
      <StringProperty Name="name">Extended Sites Catalog Asset
Store</StringProperty>
      <StringProperty Name="id">12345</StringProperty>
    </Struct>
  </StructListProperty>
...
</Struct>
```

Please consult the migration guide or the commerce adapter documentation for more details.

[CMS-20130]

## Removal: Deprecated Methods and Implementation

Removed deprecated methods `getCapacity/getCacheTimesInSeconds` of class `com.coremedia.blueprint.base.livecontext.ecommerce.common.CommerceCache`. Also removed its `isEnabled` method because the commerce cache can no longer be disabled.

Removed the legacy augmentation implementation and property `livecontext.augmentation.backward-compatibility`. Augmentation now requires observed content properties.

[CMS-20114]

## Removal: LC3 SearchService

Removed the interface `com.coremedia.livecontext.ecommerce.search.SearchService` because commerce hub does not support search suggestions. Search is supported via `com.coremedia.livecontext.ecommerce.catalog.CatalogService#search`.

[CMS-19704]

## Removal: Deprecated Developer Feature Candy Shop URLs

The deprecated developer feature "Candy Shop URLs" has been removed from the Blueprint. There is no replacement planned, developers will need to configure their local machine in the shop configuration to retrieve fragments from their localhost. Frontend development is easily possible through the Frontend Developer workflow and uploading of local Themes to the CMS.

[CMS-19695]

## CurrentStoreContext and UserStoreContext API change

Deprecated methods have been removed from `com.coremedia.blueprint.base.livecontext.ecommerce.common.CurrentStoreContext` and `com.coremedia.blueprint.base.livecontext.ecommerce.common.CurrentUserContext`.

`get`, `set` and `find` APIs need explicitly the `ServletRequest` as a parameter.

`UserContext` and `StoreContext` dependent implementations have been modified with the following breaking changes

- `com.coremedia.livecontext.ecommerce.order.CartService` methods accept a `UserContext` as an argument.
- `com.coremedia.livecontext.ecommerce.pl3n.SegmentService#findSegmentsForCurrentUser` accept a `UserContext` as an argument.

- The methods `withUserContext` and `getUserContext` have been removed from `com.coremedia.blueprint.base.livecontext.client.common.GenericStoreContextBuilder`.
- Deprecated `getCatalogPicture`, `findPictures` and `findVisuals` methods have been removed from `com.coremedia.livecontext.ecommerce.asset.AssetService`

[CMS-19451]

## Removal: Obsolete Base Classes from LiveContext Test Modules

With the introduction of the Commerce Hub, the connections to commerce systems have been moved away from the central CMS services to the commerce adapters. After all legacy LiveContext extensions (those, that don't use the commerce adapters) have been removed, their base test classes are now obsolete and have also been removed.

[CMS-19345]

## Removal: Hoverfly Extension Classes from LiveContext Test Modules

With the introduction of the Commerce Hub, the connections to commerce systems have been moved away from the central CMS services to the commerce adapters. The tests that require commerce connections [whose requests and responses can be recorded and replayed with Hoverfly] have been moved, too, making the Hoverfly extension classes in LiveContext test modules obsolete, hence they have now been removed.

[CMS-19343]

## Removal: Deprecated Legacy Search API from LiveContext Extensions

CMCC11 doesn't support old adapter versions with legacy search API anymore. Legacy commerce client API and implementations have been removed. This includes:

- support for product search API V1 (replaced by API V2 since CMS 2104.1)
- map-based search params (replaced by `com.coremedia.livecontext.ecommerce.search.SearchQuery` since CMS 2104.1)



[CMS-19290]

## Removal: Deprecations from LiveContext API

The old LiveContext API is used to access the Commerce Hub / generic commerce client from Studio and other clients. Some deprecations have now been deleted that are not needed anymore or that are not supported by the Commerce Hub. They are in detail: the AvailabilityService (not supported by the CommerceHub, should be requested directly from the commerce system), UserServer and UserSessionService (not needed anymore, the whole part of session sync between the CMS and the commerce system is gone, only the login/logout can be done via the commerce adapter), the AssetUrlProvider (is also not needed anymore).

[CMS-19221]

## Removal: Deprecated lc-extension Related LinkSchemes

Obsolete deprecated linkschemes used for commerce integration via lc-extension have been deleted.

[CMS-19215]

## Removal: `com.coremedia.blueprint.base.livecontext.service` Package

The deprecated `com.coremedia.blueprint.base.livecontext.service` package has been removed without replacement as it was part of the legacy Blueprint commerce integration. The Commerce Hub integration does not yet offer corresponding classes dealing with connections to Storefront services.

Class `com.coremedia.blueprint.base.livecontext.ecommerce.common.HttpClientFactory` has also been removed. Use one of the various 3rd party http clients instead.

[CMS-19214]

## Removal: Deprecated Livecontext Classes and Methods

The classes `AbstractCommerceBean` and `SpringCommerceBeanFactory` from package `com.coremedia.blueprint.base.livecontext.ecommerce.common` were removed. Use `com.coremedia.blueprint.base.livecontext.client.beans.ClientCommerceBeanFactoryMethodRegistry` instead.

The method `com.coremedia.livecontext.ecommerce.common.CommerceConnection#getStoreContext` was removed, use `com.coremedia.livecontext.ecommerce.common.CommerceConnection#getInitialStoreContext` instead.

The class `com.coremedia.blueprint.base.livecontext.ecommerce.common.CommerceConnectionInitializer` was removed, use `com.coremedia.blueprint.base.livecontext.ecommerce.common.CommerceConnectionSupplier` instead.

The class `com.coremedia.blueprint.base.livecontext.ecommerce.common.StoreContextHelper` was removed, use `com.coremedia.blueprint.base.livecontext.ecommerce.common.CurrentStoreContext#get(javax.servlet.ServletRequest)` and its other convenience methods instead.

[CMS-19213]

## Removal: Deprecated Commerce Cache Invalidation Implementation

The deprecated source code for the Commerce Cache Invalidation of the LiveContext 3 extensions has been removed. Customizations based on that implementation have to be updated to work with the commerce cache invalidation implementation of the commerce hub (in commerce adapters and in the commerce hub client implementation).

[CMS-19212]

## Removal: The ForVendor-Methods from the CommerceConnection

Removed methods `com.coremedia.livecontext.ecommerce.common.CommerceConnection#getServiceForVendor` and `com.coremedia.livecontext.ecommerce.common.CommerceConnection#getQualifiedServiceForVendor` . Use class `com.coremedia.blueprint.base.livecontext.ecommerce.common.CommerceServicesForVendor` instead.

[CMS-19124]

## Simplified Registration of Custom Commerce Bean Types

The class `com.coremedia.livecontext.ecommerce.common.CommerceBeanTypeRegistry` was removed and `com.coremedia.livecontext.ecommerce.common.CommerceBeanType` was converted from an interface to an implementation class. Instead of registering enum classes defining custom commerce bean types you may now define custom commerce bean types on demand by calling `com.coremedia.livecontext.ecommerce.common.CommerceBeanType#of (String)` . This solves the issue of class loading order which occasionally lead to missing custom commerce bean types at runtime.

The class `com.coremedia.blueprint.base.livecontext.client.beans.ClientCommerceBeanFactoryMethodRegistry` was removed from public API. Use `com.coremedia.blueprint.base.livecontext.client.beans.ClientCommerceBeanFactory#register` instead to register a custom commerce bean class.

[CMS-17159]

## Removal: CommerceConnection#getClone Method

Removed `com.coremedia.livecontext.ecommerce.common.CommerceConnection#getClone` . Commerce Connection instances must not be modified after creation.

[CMS-15229]

## 5.23.9 CoreMedia Headless Server

### GraphQL Java Libraries Updated to Version 17.3

These libraries have been updated:

- `com.graphql-java:graphql-java` from 16.2 to 17.3
- `com.graphql-java:graphql-java-extended-scalars` from 15.0.0 to 17.0
- `com.graphql-java:java-dataloader` from 2.1.1 to 3.1.1

The public API CoreMedia class `CacheMapWrapper`, used for the dataloader cache was revoked due to breaking changes in the dataloader API. The dataloader cache is now created using the updated dataloader API only. (see `CaasConfig`)

Since version 17.0, GraphQL Java checks the syntax of the schema more strictly. Types implementing from 2 or more interfaces, now have to use an "&" character (instead of a comma) to enumerate interfaces. If the schema was customized, the schema should be checked for potential breaking changes in the used syntax.

For details see the original release notes:

- <https://github.com/graphql-java/graphql-java/releases>
- <https://github.com/graphql-java/java-dataloader/releases>
- <https://github.com/graphql-java/graphql-java-extended-scalars/releases>

(CMS-20151)

### Swagger Updated to Latest Version

Swagger and the related libraries were updated for maintainability reasons. The updates made some refactorings necessary. As a consequence, the previously public api package `com.coremedia.caas.web.rest` has been revoked, as it doesn't contain any classes anymore. The previous public 3rd party package `springfox` has been revoked also, as the CoreMedia classes do not expose the Springfox annotations anymore.

As the swagger default page address has changed from `/swagger-ui.html` to `/swagger-ui/index.html`, we've marked this change breaking.

The new libraries for swagger/open api are:

- `io.swagger.core.v3:swagger-annotations:jar:2.1.10`
- `io.swagger:swagger-annotations:jar:1.6.2`

The new library versions for the swagger ui are:

- `io.springfox:springfox-boot-starter:jar:3.0.0`
- `io.springfox:springfox-core:jar:3.0.0`
- `io.springfox:springfox-spi:jar:3.0.0`
- `io.springfox:springfox-spring-web:jar:3.0.0`

[CMS-19836]

## Refactoring of Adapters

Due to an internal refactoring, some of the adapters used in the content-schema had to be refactored as well. Where possible we tried to be non breaking. Nonetheless some changes lead to breaking changes in the content-schema:

- `byPathAdapter`
- `pageGridAdapter`
- commerce extension: `productPageGridAdapter`
- commerce extension: `categoryPageGridAdapter`

Also affected by the refactoring is the class `SearchQueryHelper`: These methods were dropped:

- `public static String validFromPastToValueQuery(String fieldName)`
- `public static String validFromValueToFutureQuery(String fieldName)`

Please use the full signature methods with the additional call parameter `ZonedDateTime actualTime`.

This public API class was removed without a replacement, as the refactoring made it redundant: `ExecutionResultHandlerHelper`

[CMS-19796]

## Filter Predicates May Now Access the DataFetchingEnvironment

Filter predicates were formerly a simple Predicates. They now use a dedicated interface which marks them as ExtensionPoints and they act as a BiPredicate.

[CMS-19769]

## Headless Server Deprecations for CoreMedia CMCC 11

These previously announced deprecations were carried out with the major release of CoreMedia CMCC 11:

- Site Query: The deprecated parameter 'id' was removed from content-schema in favor of the new parameter 'siteId'
- JsonPreviewUrlController / Preview Url Endpoint (/previewUrl) was removed. JsonPreviewUrlController calculated the url for the json preview in studio. The url calculation was moved to studio server, where it is now part of the multi preview configuration.
- Method removed from SolrQueryBuilder: getSortFieldMapping() was removed
- Method removed from SearchQueryHelper: validFromQuery() was removed and replaced by validFromPastToValueQuery()
- Method removed from SearchQueryHelper: validToQuery() was removed and replaced by validFromValueToFutureQuery()
- Method removed from ContentRoot: getSite(DataFetchingEnvironment environment) was removed and replaced by ByPathAdapter.getSite(@Nullable String siteId, @Nullable String rootSegment)
- Config Property Removed: 'caas.cacheCapacities' - Cache capacities can be configured instead via com.coremedia.cache.config.CacheConfigurationProperties

[CMS-19685]

## New Feature: Plugin Extension Point FilterPredicate

With the new extension point FilterPredicate it is possible to add filter predicate via the means of a plugin. This change is considered breaking, as customers/implementers

have to use the new interface `FilterPredicate` instead of the more generic `Predicate<Object>`. `FilterPredicate` is just a marker interface, so the necessary changes are minimal.

[CMS-19641]

## AbstractDynamicListAdapter#getItems and SearchServiceAdapter#search now return DataFetcherResults

`AbstractDynamicListAdapter#getItems` and `SearchServiceAdapter#search` now return a `DataFetcherResult`, which wraps data and error information. This enables a uniform way to transfer information about errors from the backend to the client via the `errors` field in the GraphQL response.

[CMS-19428]

## Removal: Deprecated Headless API for Commerce Entities

The old commerce schema extension of the CoreMedia Headless Server was deprecated in 2101 and is now removed.

It is replaced by a new augmentation extension. Pure commerce data are no longer mixed with content in a single GraphQL schema. The CoreMedia Headless Server provides only content and augmentation data now. For more details, read the Release Notes "New Headless Commerce Schema" in Release 2104.1 [CMS-19117].

[CMS-19322]

## Removal of ViewBySiteDataFetchingEnvironment, Public API Changes of RemoteLinkWiringFactory and RemoteLinkDataFetcher

The class `ViewBySiteDataFetchingEnvironment` has been removed. Use builder of `DataFetchingEnvironmentImpl.newDataFetchingEnvironment()` instead. The `RemoteLinkWiringFactory` and the `RemoteLinkDataFetcher` take a `remoteLinkDataLoader` as constructor argument. The method `CaasWebConfig#getForwardHeaderMap` has been removed. Retrieve the map from the environment context instead.

[CMS-19155]

## Addition: New RichText Type to Encapsulate the Different Representations of Richtext

Introduced a new RichText type in the schema to encapsulate the different representations of RichTexts, like text as tree and linked contents in RichText. The old fields are deprecated and moved into the new type. The field `detailTextLegacy` and `teaserTextLegacy` were introduced to provide easy access to the former behavior of the `detailText` and `teaserText` fields.

[CMS-19107]

## Changed Configuration Properties

The following configuration properties have changed and are now defined in the class `CaasSearchConfigurationProperties` :

- `caas.graphql.max-search-limit` changed to `caas.search.max-search-limit`
- `caas.querylist-search-cache-for-seconds` changed to `caas.search.cache.querylist-search-cache-for-seconds`
- `caas.solr.collection` changed to `caas.search.solr.collection`

Additionally the class `RemoteServiceConfiguration` was renamed to `RemoteServiceConfigurationProperties`.

[CMS-19076]

## Ordered Content Schema

The content-schema file was ordered alphabetically by types, in order to raise the readability of the schema. Since the changed order does not change the code, this change does not break directly. However, customers who changed the content schema directly in that file (Blueprint), will most likely encounter a merge conflict.

[CMS-19071]



## Site Query by Root Segment

Starting with 2104.1, the site query now additionally supports 'rootSegment' as a query parameter as an alternative to 'siteId'. The new feature is considered breaking, if the pageByPathAdapter was used! PageByPathAdapter was renamed to ByPathAdapter and the implementation to fetch a site object was moved there. The old implementation in ContentRoot was deprecated.

[CMS-18930]

## Loading of Persisted Queries from Plugins

Headless server supports loading resource files containing persisted query definitions from the content of plugins.

By loading persisted queries from plugins rather than from within the Headless Server Docker image, the build, deployment and release management of the core application is decoupled from the development of persisted query resource files.

Loading persisted queries from plugins is optional. The deployment within the Headless Server App remains unchanged.

With CM11 the configuration prefix of 'caas-rest' was refactored to 'caas.rest' in order to meet standard naming conventions.

[CMS-18315]

## Content Types in Search are Now Validated

While searching, non existent content types were simply ignored, leading to the situation, that the search wasn't restricted to any content type at all. As this behavior led to bigger result set than expected and may hide bugs on the client side, a content type validation was introduced. Whenever an invalid, non existent content type is given, headless will respond with one GraphQL error message per invalid content type.

This change is classified 'breaking', as a client might have used invalid content types without recognizing them as errors. If this is this case, the new behavior will break the client!

[CMS-17298]

## CMPProductTeaser change in headless

CMPProductTeaser#teaserTarget and CMPProductTeaser#teaserTargets always return null since only the CMPProductTeaser#productRef should only be used. The teaser target can not be set in Studio anyways.

No action should be required.

[CMS-20193]

## Headless Commerce: Remove Autocompletion for Breadcrumb Parameter

The breadcrumb parameter is not completed automatically anymore, if the category "root " is missing. Make sure that the breadcrumb parameter contains all categories from leaf to root category, including the root category itself.

Please review usages of content#

- categoryAugmentationBySite
- categoryAugmentationBySegment
- productAugmentationBySite
- productAugmentationBySegment

[CMS-20085]

## New field keywordsList

Introduce a new field keywordsList which returns a list of keywords

[CMS-20014]

## JsonPreviewClient was refactored to Spring AutoConfiguration

The JsonPreviewClient was refactored to use Spring AutoConfiguration. As a consequence class `com.coremedia.blueprint.headlessserver.JsonPreviewClientConfig` was removed from blueprint. The removal is breaking, if `JsonPreviewClientConfig` was adapted by developers. If not, the change is non-breaking,

as `JsonPreviewClientConfig` only contained a component scan which was replaced by the new `AutoConfiguration`.

[CMS-19941]

## Removal: ViewMapperConfig Class

The Spring Configuration class `com.coremedia.caas.web.ViewMapperConfig` was removed from from public API. The change didn't affect any configuration properties. The config was meant to expose the existing view mappings during runtime, as the mapping may change during runtime by editing, removing or deleting the homepage of a site. As a configuration class is not meant to expose dynamic runtime data, the class was refactored. The mappings can now be acquired via an actuator at `/actuator/siteRestrictedEndpoints`.

[CMS-19885]

## Aligned Behavior of StructAdapter to Same as in SettingsAdapter

When querying for a settings path via `StructAdapter`, the behavior varied from the one implemented in `SettingsAdapter`. The behavior of the `StructAdapter` was now aligned to the behavior of the `SettingsAdapter`. The documentation was updated accordingly.

[CMS-19452]

## Default Java heap for Headless Server reset to 1 GB in Dockerfile

This change only affects customers coming from CoreMedia versions 2101.1, 2101.2 and 2101.3 who use the Docker deployment. The default Java heap for the Headless Server has been reset from 2048m to 1024m in the Dockerfile of the Headless Server. The Java heap can, but does not have to be increased for performance optimization.

[CMS-19210]

## Headless Server Schema Changes

Replace the usage of `Locale::toString` with `Locale::toLanguageTag` for the locale fields. This changes the behavior of the locale-field of the Site and CMLoc-

alized types by changing the format of the locale field. Additionally removing the deprecated "languageId" field from the Headless Server schema.

[CMS-19096]

## Support ContentBlobLinkComposer in RichText conversion

Added the `ContentBlobLinkAdapterFactory` to the `EvaluationContext` to be able to use the `ContentBlobLinkComposer` in `RichTextConversion`

[CMS-19055]

## 5.23.10 Miscellaneous

### Removed Usage of PowerMock Java Test Library

Previous releases used the PowerMock library in a small number of Java unit tests to mock static methods and object construction. These usages have now been replaced with new functionality of the Mockito testing library. PowerMock isn't used anymore.

This was changed to prevent future incompatibilities between Mockito and PowerMock. We recommend to replace custom usages of PowerMock as well, if possible.

If you still want to use PowerMock in custom classes, you have to manage the Maven dependency and version yourself. PowerMock is now also listed as banned dependency by default. See the "Blueprint Developer Manual", section "Blueprint Workspace for Developers | Concepts and Architecture | Structure of the Workspace | Enforcer" for information how to customize banned dependencies.

[CMS-20448]

### The site-manager container image is now also build with google jib

Because of this change, the convenience feature, that the zip will be configured at startup has been removed.

[CMS-20332]

## Support for IBM DB2 has been removed

Support for IBM DB2 has been removed

[CMS-20120]

## Removal: Deprecated Private API BlobHelper Class

The private API class `com.coremedia.cap.transform.undoc.BlobHelper` has been removed.

You may be affected, if you didn't incorporate changes to Blueprint which came with 1907.1 in these classes:

- `com.coremedia.blueprint.cae.handlers.CapBlobHandler`
- `com.coremedia.blueprint.cae.handlers.TransformedBlobHandler`
- `com.coremedia.blueprint.assets.cae.DownloadCollectionZipCacheKey`

They made use of this private API prior to 1907.1.

For a replacement, see the new implementations as they ship with CoreMedia Blueprint.

[CMS-20049]

## Removal: Deprecated Editorial Comments cache properties `editorial.comments.data.cache.*` Properties

The deprecated configuration properties `editorial.comments.data.cache.*` have been removed.

- `editorial.comments.data.cache.comments-cache-size` is now `cache.capacities.com.coremedia.editorial.comments.data.editorial.comments`
- `editorial.comments.data.cache.qualifiers-cache-size` is now `cache.capacities.com.coremedia.editorial.comments.data.editorial.comments.qualifiers`

- `editorial.comments.data.cache.threads-cache-size` is now `cache.capacities.com.coremedia.editorial.comments.data.editorial.comments.commentThreads`

[CMS-20047]

## Removal: Deprecated SettingsPageResourceBundleFactory Class

The deprecated class `com.coremedia.blueprint.cae.web.i18n.SettingsPageResourceBundleFactory` has been deleted. If you still like it, keep it in your project code. As alternative, it is recommended moving resource bundles to `resourceBundles`, and using `LinklistPageResourceBundleFactory` instead.

[CMS-19999]

## Removal: Deprecated ThemeImporterImpl#legacyExternalLinkToDocumentName Method

The deprecated method `com.coremedia.blueprint.themeimporter.ThemeImporterImpl#legacyExternalLinkToDocumentName` has been deleted. If you still like it, keep it in your project code. Otherwise, it is recommended using `stringToDocumentName` instead.

[CMS-19995]

## Removal: Deprecated UserProvider2 Interface

The interface `UserProvider2` has been deleted. If you are still using it in your project code, simply switch to `UserProvider`.

[CMS-19988]

## Removal: Deprecated Legacy RuleProviders Classes

`com.coremedia.blueprint.base.links.impl.PropertiesRuleProvider` and `com.coremedia.blueprint.base.links.impl.SitesRuleProvider` have been deleted from the Java API, incl. the `bpbase-links-legacy.xml` configuration file. You probably do not use the classes directly in your project code. Instead, check if you still import the legacy configuration file in the `blueprint-links.xml` file in the `cae-base-lib` module, and eventually migrate to the `AbsoluteUrlPrefixRuleProvider`.

[CMS-19987]

## Removal: Deprecated `LdapMember#getOrganizationalUnit` Method

We have finally deleted `LdapMember#getOrganizationalUnit`, which has never been used. If you have implemented the `LdapMember` interface, you can delete the method. You must at least delete the `@Override` annotation.

We also deleted `LdapUserProviderConfigurationProperties#supportMemberous`, which was used to activate `LdapMember#getOrganizationalUnit` (and which was `false` by default).

With the deletion of `LdapMember#getOrganizationalUnit`, the interface `OrganizationalUnit` became obsolete and has therefore been deprecated.

[CMS-19986]

## Removal: `management.health.contentRepository.enabled` Property

The deprecated application property `management.health.contentRepository.enabled` has been removed. Please use its replacement `management.health.uapiConnection.enabled`.

[CMS-19962]

## Migrated Blueprint Content Hub Adapters to Plugins

The extensions for the Content Hub Adapters

- `content-hub-adapter-rss`
- `content-hub-adapter-youtube`

have been removed from the Blueprint.

These adapters are now released as separate plugins which are available on GitHub.

- <https://github.com/CoreMedia/content-hub-adapter-rss>
- <https://github.com/CoreMedia/content-hub-adapter-youtube>

By default, the plugins are bundled with the blueprint.

For details on bundled plugins see `workspace-configuration/plugins/README.md` in the Blueprint workspace and section "Plugin Descriptors and Bundled Plugins" in the Blueprint Developer Manual.

To remove these bundled plugins, go to `workspace-configuration/plugins/` remove the entries from the file `plugin-descriptors.json` and run `mvn generate-resources`.

If you have customized the adapters, you can keep your customized extensions, but must remove the bundled plugins as described above. Nevertheless, in the long run, you should consider migrating your extensions to plugins as well.

[CMS-19911]

## Dropped supported deprecated databases, servers, and browsers

With CMCC v11 the following deprecated databases and servers are not supported anymore: IBM DB2, MySQL 5.7, Postgres 9.6, MongoDB 3.6, and Microsoft Windows Server 2016 Standard.

Microsoft Internet Explorer 11 is also not supported in CoreMedia Studio anymore.

[CMS-19867]



## New API For Custom Workflow Extension Point

Accompanying the new Workflow app, there is a new API to add custom workflows. The former API was targeted specifically at the Control Room in the main Studio. The new API can be used to customize both the main Studio and the Workflow App.

Note that the old API is still in place. As workflows continue to be started in the Control Room, the old API can still be used to customize the start-workflow windows.

The new API is designed to be more declarative and independent from ExtJs. For more details, consult the chapter "Customizing Workflow UI" in the Studio Developer Manual.

[CMS-19858]

## Removal: Corporate Extension Modules for Content Server

The [content] server modules for the *corporate* extension were empty and have been removed:

- `com.coremedia.blueprint:corporate-server`
- `com.coremedia.blueprint:content-server.corporate`

See [Blueprint Developer Manual - Project Extensions](#) if You need to re-add the modules for customization purposes.

[CMS-19851]

## Removal: Unused class SiteToStoreContextCacheKeyWithTimeout

The deprecated class `com.coremedia.blueprint.base.livecontext.ecommerce.common.SiteToStoreContextCacheKeyWithTimeout` was part of the legacy Blueprint commerce integration and has been removed in favour of the Commerce Hub integration.

[CMS-19850]

## New API for Content Type Localization

To support content type localization in both the Main Studio App and the Workflow App (and further apps in the future), we fundamentally changed the API to localize doctypes. One particular change is the direct support for SVG icons.

For details on the new API, we refer to the section "Content Type Model" of the Studio Developer Manual.

For details on how to migrate existing content type localizations to the new API, we refer to the section XY of the CoreMedia Content Cloud v11 Upgrade Guide.

[CMS-19816]

## Removal: Old live context settings struct

The old 'livecontext.store.config' StructProperty was removed for all commerce Hub enabled sites, tests and demo data. Please use only the new struct below the 'commerce' struct. For more details see JavaDoc for CommerceSettings.java. In addition LiveContextCloneSitePostProcessor.java and it's usages were removed completely, the CommerceCloneSitePostProcessor.java is used instead. Please note: the cms catalog is not affected by this refactoring as it's not a commerce hub enabled site.

[CMS-19396]

## Removal: Deprecated API of TransformImageService

The following methods have been deleted from the Java API:

- `com.coremedia.cap.transform.TransformImageService#transformWithDimensions(Content content, Blob data, TransformedBlob operationsForTransformation, String variantName, String extension, Integer width, Integer height)` - Use `{com.coremedia.cap.transform.TransformImageService#transformWithDimensions[Content, String, String, Integer, Integer]}` instead.
- `com.coremedia.cap.transform.TransformImageService#getTransformationOperations(Content picture, String property, Map<String,String> transformations)` - Replace with `com.coremedia.cap.transform.TransformImageService#getTransformationOperations(Content, String)`, which

also resolves the given transformation with the help of `ContentOperationsResolver`.

[CMS-19254]

# Logging Standardization

The logging setup has changed to implement a more standardized setup. This includes:

- the removal of any thirdparty logback appenders to push logs to a log aggregation like elasticsearch.
- the removal of the Spring-Boot `elk` profile to activate elastic log aggregation
- the removal of the `com.coremedia.blueprint:logging-config` maven module
- the removal of any `logback-spring.xml` in favor of Spring-Boot standard setup
- the removal of the Studio Console logfile endpoint
- a simpler default logging pattern

## removal of logback appenders

Instead of using this approach please use one of the many log shippers available to send logfiles to an elastic stack.

## removal of logback-spring.xml files

If you need to customize your logging you can read `logback-spring.xml` files to the `*-app/src/main/resources` folder and follow the standard customization steps described in the Spring Boot documentation.

## removal of Studio Console endpoint

The endpoint was intended to be used similar to the logfile endpoint of the standard Spring Boot actuators. To view the `studio-console` logger, please use standard log queries in your log aggregation stack of your choice to separate the `studio-console` logger from the studio-server logs.

## standard console logging pattern

For an easier integration with log shippers, the logging pattern has been changed:

- any coloring has been removed for console and file logging except for `local` profiles, when the application is started using the IDE or the `spring-boot-maven-plugin`.
- the timestamp has been removed for standard console logging. The container logging always contains the timestamp and the shippers parse this timestamp anyway.
- the pattern has been reordered so that the message is the last entry. This simplifies the handling of multiline strings.

The new logging pattern for the file logger will be:

```
%d{yyyy-MM-dd HH:mm:ss} %-7([%level]) \\(%thread\\) %logger [%X{tenant}] - %message%n
```

The new logging pattern for the console logger will be:

```
%-7([%level]) \\(%thread\\) %logger [%X{tenant}] - %message%n
```

If you want to keep the old pattern, set the following property respectively environment variable `logging.pattern.file`, `LOGGING_PATTERN_FILE` to

```
%d{yyyy-MM-dd HH:mm:ss} %-7([%level]) %logger [%X{tenant}] - %message \\(%thread\\)%n
```

For the console logger set `logging.pattern.console` or `LOGGING_PATTERN_CONSOLE` to

```
%clr(%d{yyyy-MM-dd HH:mm:ss} -){faint} %clr(%7([%level])) %clr(%logger){cyan} [%X{tenant}] %clr(-){faint} %message \\(%thread\\)%n
```

[CMS-19224]

## Removal: Optimizely Extension

The extension `Optimizely` has been removed from applications `CAE` and `Studio-Client`. The settings starting with "`optimizely.`" have no effect anymore and can be removed from custom content. Additionally the helper class `ExtensionAspectsUtil.java` has been removed.

[CMS-19060]

## New Blueprint Parent

A new parent POM `cms-blueprint-parent` has been introduced and is used as (transitive) parent for every Blueprint module. It contains basic plugin management, especially for the install- and deploy-plugin for which it is important that all modules

use the same versions. If you need a custom parent in your Blueprint, you can simply search and replace our parent element. You could use the `cms-blueprint-parent` as parent of your custom parent, or integrate the `pluginManagement` as necessary.

[CMS-18934]

## Replaced deprecated `org.junit.Assert.assertThat`

All remaining occurrences of the deprecated `org.junit.Assert.assertThat` have been replaced by the equivalent `org.hamcrest.MatcherAssert.assertThat`.

[CMS-18795]

## Replaced Guava Function and co. with JDK counterparts

Guava `Optional`, `Function`, `Predicate`, `Supplier` and most Guava utilities from `com.google.common.collect` have been replaced with their JDK counterparts. Most of these Guava features are available in the JDK by now, so it is unnecessary to bother with a third-party library. Although it is not required, we would recommend that you also refactor these Guava usages in your code for consistency.

[CMS-18659]

## Removal: Deprecated Consumer, Function, Predicate Classes

The classes `com.coremedia.common.util.Consumer`, `com.coremedia.common.util.Function` and `com.coremedia.common.util.Predicate` have been deleted from the Java API. All usages have been replaced with the according JDK classes of package `java.util.function`.

The APIs of the `Consumer` and the `Function` classes are identical. If you have implemented own consumers or functions, you only have to change the `implements` clauses from `com.coremedia.common.util.Consumer` to `java.util.function.Consumer`. If you have own predicates, you must change the `implements` clause and rename the `include` method to `test`.

The `Functions` and `Consumers` utility classes from the same package have also been deleted, since they make no sense without the actual classes, and were trivial

anyway. The `Predicates` class still exists, but has been deprecated and usages can be replaced as described in its API documentation.

[CMS-18658]

## Implementations of Comparable: Added Type Arguments

For several parts of the public API the implementation of the `Comparable` interface now uses correct generic type arguments. As part of this change, following interfaces/classes have been updated by adding type parameter.

- `com.coremedia.cap.user.Group`
- `com.coremedia.cap.user.User`
- `com.coremedia.cap.workflow.Process`
- `com.coremedia.cap.workflow.ProcessDefinition`
- `com.coremedia.cap.workflow.Task`
- `com.coremedia.cap.workflow.TaskDefinition`
- `com.coremedia.workflow.WfValue`
- `com.coremedia.workflow.common.expressions.Aggregate`

[CMS-17548]

## Consolidate Blueprint groupIds and versions

The Blueprint now uses the groupId `com.coremedia.blueprint` for every module and Blueprint modules are now always referenced by using `$(project.version)`. The following groupIds are no longer used:

- `com.coremedia.blueprint.boot`
- `com.coremedia.blueprint.docker`
- `com.coremedia.blueprint.content-hub`

The following properties have been removed:

- `blueprint.groupId`
- `blueprint.version`
- `blueprint.boot.groupId`
- `blueprint.boot.version`

This makes it easier to replace the coremedia groupId with a custom one and allows for setting the version via maven-release-plugin or versions-maven-plugin which should also make it easier to create releases of your blueprint.

[CMS-17559]

## 6. Support

*Support, Newsgroups*

### Online Support

Use our Online Support to submit a support ticket, track your submitted tickets or receive access to our forums. You can access our Online Support at:

<http://support.coremedia.com>

### Access to online services

Partners and Support customers will need to register an account with CoreMedia in order to access the Online Support. Just send us an email and we will send you your login details:

[support@coremedia.com](mailto:support@coremedia.com)

If you have any other questions or comments, please contact:

CoreMedia GmbH

Altes Klöpperhaus, 5. OG

Rödingsmarkt 9

20459 Hamburg

Phone: +49 .40 .32 55 87 .777 Fax: .999

[www.coremedia.com](http://www.coremedia.com)

Our Support employees are available to take your support call weekdays between 9 a.m. and 6 p.m.

Our manuals are continuously reviewed and revised in order to reflect new developments and insights gained from the day-to-day use of CoreMedia systems.

*Documentation*

If you have comments or questions about our manuals,

- please email your inquiry to [documentation@coremedia.com](mailto:documentation@coremedia.com)
- or fax it to 040-325587 999.

Please provide all necessary information in your support request to ensure that our Support team can efficiently help you with your issue.



CoreMedia systems are distributed systems that have a rather complex structure. This includes databases, hardware, operating systems, drivers, virtual machines, class libraries, customized code etc. in many different combinations. That's why CoreMedia needs detailed information about the environment for a support case. In order to track down your problem, provide the following information:

- Which CoreMedia component(s) did the problem occur with (incl. release number)?
- Which database is in use (version, drivers)?
- Which operating system(s) is/are in use?
- Which Java environment is in use?
- Which customizations have been implemented?
- a full description of the problem (as detailed as possible)
- Can the error be reproduced? If yes, give a description please.
- How are the security settings (firewall)?

In addition, log files are the most valuable source of information.

To put it in a nutshell, CoreMedia needs:

1. a person in charge (ideally, the CoreMedia system administrator)
2. extensive and sufficient system specifications
3. detailed error description
4. log files for the affected component(s)
5. if required, system files

An essential feature for the CoreMedia system administration is the output log of Java processes and CoreMedia components. They're often the only source of information for error tracking and solving. All protocolling services should run at the highest log level that is possible in the system context. For a fast breakdown, you should be logging at debug level. The location where component log output is written is specified in its `<appName>-logback.xml` file.

### Which Log File?

Mostly at least two CoreMedia components are involved in errors. In most cases, the *Content Server* log files together with the log file from the client. If you are able locate the problem exactly, solving the problem becomes much easier.

### Where do I Find the Log Files?

By default, log files can be found in the CoreMedia component's installation directory in `/var/logs` or for web applications in the `logs/` directory of the servlet container. See the CoreMedia Deployment Manual, "Service and Logfiles Names" chapter for the default names of the logfiles and the Operations Basics Manual, "Logging" chapter for more details.

*Support request*

*Support checklist*

*Log files*