

# COREMEDIA CONTENT CLOUD

## Release Notes



Copyright CoreMedia GmbH © 2021

CoreMedia GmbH

Ludwig-Erhard-Straße 18

20459 Hamburg

### **International**

All rights reserved. No part of this manual or the corresponding program may be reproduced or copied in any form (print, photocopy or other process) without the written permission of CoreMedia GmbH.

### **Germany**

Alle Rechte vorbehalten. CoreMedia und weitere im Text erwähnte CoreMedia Produkte sowie die entsprechenden Logos sind Marken oder eingetragene Marken der CoreMedia GmbH in Deutschland. Alle anderen Namen von Produkten sind Marken der jeweiligen Firmen.

Das Handbuch bzw. Teile hiervon sowie die dazugehörigen Programme dürfen in keiner Weise (Druck, Fotokopie oder sonstige Verfahren) ohne schriftliche Genehmigung der CoreMedia GmbH reproduziert oder vervielfältigt werden. Unberührt hiervon bleiben die gesetzlich erlaubten Nutzungsarten nach dem UrhG.

### **Licenses and Trademarks**

All trademarks acknowledged.  
June 09, 2021 (Release 10.2101)

1. Preface .....	1
1.1. Audience .....	2
1.2. Typographic Conventions .....	3
2. Overview .....	4
3. Software License Agreement Changes .....	6
4. Release Information .....	8
4.1. Release 2101.4 .....	9
4.1.1. Breaking Changes .....	10
4.1.2. Changes and Improvements .....	11
4.1.3. Fixed Issues .....	14
4.2. Release 2101.3 .....	21
4.2.1. Breaking Changes .....	23
4.2.2. Changes and Improvements .....	23
4.2.3. Fixed Issues .....	26
4.3. Release 2101.2 .....	34
4.3.1. Breaking Changes .....	35
4.3.2. Changes and Improvements .....	35
4.3.3. Fixed Issues .....	36
4.4. Release 2101.1 .....	38
4.4.1. Breaking Changes .....	42
4.4.2. Changes and Improvements .....	47
4.4.3. Fixed Issues .....	54
4.5. Release 2101.0 .....	62
4.5.1. Breaking Changes .....	66
4.5.2. Changes and Improvements .....	73
4.5.3. Fixed Issues .....	84
4.6. Release 2004.1 .....	94
4.6.1. Breaking Changes .....	99
4.6.2. Changes and Improvements .....	109
4.6.3. Fixed Issues .....	116
4.7. Release 2001.1 .....	126
4.7.1. Breaking Changes .....	130
4.7.2. Changes and Improvements .....	135
4.7.3. Fixed Issues .....	145
4.8. Release 1910.1 .....	152
4.8.1. Breaking Changes .....	158
4.8.2. Changes and Improvements .....	172
4.8.3. Fixed Issues .....	181
4.9. Release 1907.1 .....	196
4.9.1. Breaking Changes .....	204
4.9.2. Changes and Improvements .....	225
4.9.3. Fixed Issues .....	238
5. Upgrade Information .....	250
5.1. Upgrade to 2101.4 .....	251
5.1.1. CoreMedia Core .....	251
5.1.2. CoreMedia Headless Server .....	252
5.2. Upgrade to 2101.3 .....	253
5.2.1. CoreMedia Content Application Engine .....	253
5.2.2. Miscellaneous .....	254

5.3. Upgrade to 2101.2 .....	255
5.3.1. CoreMedia Content Application Engine .....	255
5.4. Upgrade to 2101.1 .....	256
5.4.1. CoreMedia Core .....	256
5.4.2. CoreMedia Content Application Engine .....	261
5.4.3. CoreMedia Studio Client .....	263
5.4.4. CoreMedia Workspace .....	264
5.4.5. CoreMedia Frontend Workspace .....	264
5.4.6. CoreMedia Commerce Hub .....	265
5.4.7. CoreMedia Headless Server .....	265
5.4.8. Miscellaneous .....	266
5.5. Upgrade to 2010.1 .....	268
5.5.1. CoreMedia Core .....	268
5.5.2. CoreMedia Studio .....	271
5.5.3. CoreMedia Studio Client .....	271
5.5.4. CoreMedia Workspace .....	273
5.5.5. CoreMedia Frontend Workspace .....	273
5.5.6. CoreMedia Deployment .....	274
5.5.7. CoreMedia Commerce Hub .....	275
5.5.8. CoreMedia Connector for HCL Commerce .....	275
5.5.9. CoreMedia Connector for SAP Commerce Cloud .....	276
5.5.10. CoreMedia Headless Server .....	276
5.5.11. Miscellaneous .....	278
5.6. Upgrade to 2004.1 .....	281
5.6.1. CoreMedia Core .....	281
5.6.2. CoreMedia Content Application Engine .....	287
5.6.3. CoreMedia Studio .....	292
5.6.4. CoreMedia Studio Server .....	295
5.6.5. CoreMedia Workspace .....	295
5.6.6. CoreMedia Frontend Workspace .....	296
5.6.7. CoreMedia Commerce Hub .....	298
5.6.8. CoreMedia Connector for Salesforce Commerce Cloud .....	299
5.6.9. CoreMedia Headless Server .....	299
5.6.10. Miscellaneous .....	302
5.7. Upgrade to 2001.1 .....	305
5.7.1. CoreMedia Core .....	305
5.7.2. CoreMedia Content Application Engine .....	307
5.7.3. CoreMedia Studio .....	309
5.7.4. CoreMedia Frontend Workspace .....	311
5.7.5. CoreMedia Connector for HCL Commerce .....	312
5.7.6. CoreMedia Connector for SAP Commerce Cloud .....	313
5.7.7. CoreMedia Headless Server .....	313
5.7.8. Miscellaneous .....	314
5.8. Upgrade to 1910.1 .....	317
5.8.1. CoreMedia Core .....	317
5.8.2. CoreMedia Content Application Engine .....	321
5.8.3. CoreMedia Studio .....	323
5.8.4. CoreMedia Studio Client .....	326

- 5.8.5. CoreMedia Workspace ..... 326
- 5.8.6. CoreMedia Frontend Workspace ..... 331
- 5.8.7. CoreMedia Deployment ..... 332
- 5.8.8. CoreMedia Commerce Hub ..... 333
- 5.8.9. CoreMedia Connector for HCL Commerce ..... 335
- 5.8.10. CoreMedia Connector for SAP Commerce Cloud ..... 337
- 5.8.11. CoreMedia Connector for Salesforce Commerce  
Cloud ..... 338
- 5.8.12. CoreMedia Headless Server ..... 338
- 5.8.13. Miscellaneous ..... 339
- 5.9. Upgrade to 1907.1 ..... 344
  - 5.9.1. CoreMedia Core ..... 344
  - 5.9.2. CoreMedia Content Application Engine ..... 356
  - 5.9.3. CoreMedia Studio ..... 359
  - 5.9.4. CoreMedia Elastic Social ..... 364
  - 5.9.5. CoreMedia Workspace ..... 365
  - 5.9.6. CoreMedia Frontend Workspace ..... 369
  - 5.9.7. CoreMedia Deployment ..... 398
  - 5.9.8. CoreMedia Commerce Hub ..... 399
  - 5.9.9. CoreMedia Connector for HCL Commerce ..... 400
  - 5.9.10. CoreMedia Connector for Salesforce Commerce  
Cloud ..... 402
  - 5.9.11. Miscellaneous ..... 402
- 6. Support ..... 408

# 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-10/release-notes>.

# 1.1 Audience

This manual is intended for everyone interested in the detailed changes between *Core-Media 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	<code>cm systeminfo</code>
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	\	<code>cm systeminfo \ -u user</code>

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-10/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 Marketing Cloud:

- 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.

## Software License Agreement Changes |

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 2101.4

The release contains:

- Breaking changes: 2
- Changes and improvements: 10
- Bugfixes: 17

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.

## Breaking Changes

- CMS-19266: [Third-Party Update: Apache Solr 8.8.2](#)
- CMS-19210: [Default Java heap for headless-server reset to 1G in Dockerfile](#)

## Changes and Improvements

- CMS-19502: [Deprecation: ListDiff#elementEqual](#)
- CMS-19498: [Improved Translation Workflow Auto-Merge](#)
- CMS-19378: [Multi-Site: Removed Deprecation for SiteModel's siteIndicatorDepth](#)
- CMS-19049: [Studio Client Now Has Referrer-Policy "same-site"](#)
- CMS-19420: [Added configurable custom attributes to commerce hub commerce beans](#)
- CMS-19346: [Deprecate obsolete base classes in LiveContext test modules](#)
- CMS-19344: [Deprecated Hoverfly extension classes in LiveContext test modules](#)
- CMS-18889: [GraphQL type PageGrid now offers name property for page grid](#)

## Bugfixes

- CMS-19293: [The 'property' column of the 'System' table has now the length 100](#)
- CMS-19063: [Mask password in MongoDB client URI with cluster connection](#)
- CMS-19416: [PageGrid issue on category and product pages fixed](#)
- CMS-19244: [Fixed cache size handling of the DataViewFactory](#)
- CMS-19323: [Fixed Tooltip of Notification Menu Button](#)

- CMS-19280: Embedding a CMHTML document into the richtext editor no longer leads to errors
- CMS-18892: Studio Locale Cookie with SameSite Lax
- CMS-17791: Fixed VisibilityValidator bug that caused NoSuchPropertyDescriptorException
- CMS-19491: Added new config preferredSiteOnly for LinkListPropertyField
- CMS-19219: Studio Client ASDoc Reduced to Actual Public API
- CMS-19158: Fixed some timing problems in FolderChooserList
- CMS-19138: Possible Format-Loss For Richtext in Studio Fixed
- CMS-19050: Studio Client Now Has X-Content-Type-Options "nosniff" Header
- CMS-18549: Fixed timing problem when loading site specific settings
- CMS-18412: Make DifferencesWindow component scrollable
- CMS-16061: Fixed console warnings about deprecated Ext.EventManager
- CMS-19389: Liquibase Update
- CMS-19086: Enhanced Error Handling For Editorial Comments When Connected to Old Server
- CMS-18425: SimpleLinkFormatter link building properties configurable and protocol default to HTTPS
- CMS-18834: File logging can be disabled
- CMS-19324: Fixed a bug regarding `commerce.hub.cache` properties
- CMS-19303: Non default values of configuration property 'caas-rest.jslt-transformations-pattern' were not used properly
- CMS-19046: Headless Server sends HTTP header Strict-Transport-Security by default
- CMS-19045: Slightly improved error message handling
- CMS-19257: Third-Party Update: Netty

## 4.1.1 Breaking Changes

### CoreMedia Core

#### 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" \[251\]](#) for upgrade information.

*[CMS-19266]*

# CoreMedia Headless Server

## Default Java heap for headless-server reset to 1G in Dockerfile

This change only affects customers coming from CoreMedia versions 2101.1, 2101.2 and 2101.3 and 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]*

## 4.1.2 Changes and Improvements

### CoreMedia Core

#### Deprecation: ListDiff#elementEqual

In the Java API, method `elementEqual` of class `com.coremedia.translate.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]*

#### Improved Translation Workflow Auto-Merge

The "Auto-Merge" feature used in translation workflows to copy property values from master to derived content items has a new option for improved merging of translatable properties and link annotations. The new behavior is not enabled by default in this release to avoid unexpected changes. It will become the default in future versions.

By default and just like in previous releases, the "Auto-Merge" feature completely ignores translatable properties and never changes such properties in the derived content. This can however lead to unexpected results, especially for properties nested in structs. Furthermore, the new option has improvements for merging link annotations.

If the new behavior is enabled, then translatable (nested) property values will no longer be excluded from auto-merge, but also 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 the previous behavior, some annotation values could remain, even after the actual link had been removed. This is fixed if the new option is enabled.

To enable the improved merge algorithm, set the following Spring configuration properties for the Workflow Server:

- `workflow.localization.auto-merge.translatable=true`
- `workflow.localization.auto-merge.legacy-list-merge=false`

These properties are documented in the Deployment Manual, section "CoreMedia Properties Overview | Workflow Server Properties".

[CMS-19498]

### Multi-Site: Removed Deprecation for SiteModel's siteIndicatorDepth

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]

## CoreMedia Studio Client

### 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]

## CoreMedia Connector for HCL Commerce

### 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]

### Deprecate obsolete base classes in 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. With CMCC 11, all legacy LiveContext extensions (those, that don't use the commerce adapters) will be removed along with their base test classes, hence they are now deprecated.

[CMS-19346]

### Deprecated Hoverfly extension classes in 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. They will be removed with CMCC 11 and thus are now deprecated.

[CMS-19344]

## CoreMedia Headless Server

GraphQL type PageGrid now offers name property for page grid

GraphQL type PageGrid missed to offer the name of the page grid.

[CMS-18889]

## 4.1.3 Fixed Issues

### CoreMedia Core

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]

Mask password in MongoDB client URI with cluster connection

The password in a MongoDB client URI with cluster connection (`mongodb+srv://...`) is masked in log messages now, alike the password in a default MongoDB client URI (`mongodb://...`).

[CMS-19063]

### CoreMedia Content Application Engine

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]

## CoreMedia Studio

### 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]

### 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]

## CoreMedia Studio Client

### 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]

### Studio Client ASDoc Reduced to Actual Public API

Due to a glitch during internal refactoring, the Studio Client ASDoc API documentation contains several classes that are *not* public API. This has been fixed for this release and will be changed in retrospect for all affected CMCC 10 Studio Client releases.

[CMS-19219]

### Fixed some timing problems in FolderChooserList

The FolderChooserList was not properly initialized if some contents were not yet loaded. The 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]

### 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]

### Make DifferencesWindow component scrollable

With too many differences the differences window did cut off entries outside the window view. This is fixed now.

[CMS-18412]

### 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

### Liquibase Update

Liquibase has been updated to 4.3.5.

[CMS-19389]

### 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]

## CoreMedia Elastic Social

### 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

### 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

### 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

### Non default values of configuration property 'caas-rest.jslt-transformations-pattern' were not used properly

The jslt transformation resources \*.jslt were always loaded from the default location. A configuration value of 'caas-rest.jslt-transformations-pattern' different from the default was not used properly.

[CMS-19303]

### 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]

## Miscellaneous

### Third-Party Update: Netty

Netty has been updated to version 4.1.63.Final to avoid security vulnerabilities of the previous versions.

[CMS-19257]

## 4.2 Release 2101.3

The release contains:

- Breaking changes: 2
- Changes and improvements: 18
- Bugfixes: 17

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.

### Breaking Changes

- CMS-18579: Runlevel based health indicator added to the Spring Boot health actuator
- CMS-19099: Third-Party Update: hibernate-validator

### Changes and Improvements

- CMS-19202: Third-Party Update: Apache Tika and Transitive Dependencies
- CMS-18871: Runlevel based health indicator added to the content-server application
- CMS-18578: Runlevel actuator endpoint added
- CMS-19195: Cache-Control strategy can use full request paths
- CMS-18954: Configure CORS allowed origins with Studio host for preview CAE
- CMS-18550: Display number of folder items in library for folders with less than 50 items

### Bugfixes

- CMS-19197: Third-Party Update: Netty
- CMS-18823: Fixed CAE Feeder Application Start Delay
- CMS-18759: User Changes MongoDB Performance
- CMS-18619: XML Importer
- CMS-18530: Fixed Solr hostname and port disclosure with malicious REST request
- CMS-18230: Replicator state health indicator added to the Replication Servers
- CMS-18988: CapBlobHandlerTest doesn't fail even if mediatransform.xml is populated

- CMS-19079: "Content Creation" settings not always taken into account for "Create New Content" Dialog
- CMS-19037: Fixed Startup Of Studio Packages Proxy App
- CMS-15845: Fixed calculation of cardinality in ContentLinkListWrapper
- CMS-12955: Ordered and unordered list can be both selected in richtext toolbar [overflow menu]
- CMS-19243: Cache Buster is once again only applied for GET requests
- CMS-19133: Fixed type error when aborting a workflow
- CMS-19014: Library no longer creates new folder when changing directories
- CMS-19005: Fixed QuickCreate Dialog Error
- CMS-18945: Embedded Blobs in RichText: Fixed Race-Condition Regarding Lock-Symbol
- CMS-18926: Pagegrid Editor shows no parent although a parent exists
- CMS-18899: Custom RichText Style Classes: Fixed Possible Button-State Problems
- CMS-18793: Fixed Disabled ComboBox And Checkout On Tab Reuse
- CMS-18792: Fixed Non-Disappearing LoadMask on Studio Tab Reuse
- CMS-18785: The Studio Tab Reuse Default Limit Can Now be Overriden in Studio Plugins
- CMS-18673: Columns of the user grid can now be resized
- CMS-17407: Fixed error when trying to republish a withdrawn folder
- CMS-16737: Fixed endless loop bug when opening the Studio library
- CMS-19119: Fix StackoverflowError in Studio Server when starting sync workflow
- CMS-18987: Fixed Taxonomy Renaming
- CMS-19020: Usage of legacy theme descriptor no longer causes error in theme build
- CMS-18840: Replacing deprecated configuration of Spring Boot
- CMS-18789: Fixed suppression of gRPC exceptions and prevented empty cache objects in catalog service
- CMS-19073: SchemaParser ignores type extensions for inherited types
- CMS-18966: Cache eviction problem fixed in PageByPathAdapter
- CMS-19250: Third-Party Update: Jetty
- CMS-19098: Third-Party Update: Spring Security
- CMS-19082: Third-Party Update: Tomcat
- CMS-19077: Update of MongoDB Java Driver
- CMS-18848: Maven Plugin Versions
- CMS-18825: Fixed bug that required exact case in LDAP user name for login

- CMS-18794: [Third-Party Update: Checker Framework](#)

## 4.2.1 Breaking Changes

### CoreMedia Content Application Engine

#### Runlevel based health indicator added to the Spring Boot health actuator

A runlevel based health indicator has been added to all repository clients. The indicator is available at `:8081/actuator/health/uapiconnectionreadiness`. The indicator will be set to:

Follow [Section "Runlevel based health indicator added to the Spring Boot health actuator" \[253\]](#) for upgrade information.

*[CMS-18579]*

## Miscellaneous

#### Third-Party Update: hibernate-validator

`hibernate-validator` library has been updated to version 6.1.7-FINAL to avoid a security vulnerability of the previous used version 5.4.3-FINAL (CVE-2020-10693). The library is mainly used for URL validation in Studio Server but might also be used in project code. Unfortunately, there is no CVE-fix available for the previous 5.4.x release so that we had to upgrade to a newer major version which is considered a small breaking change. Please review your custom code carefully and check if you are still compatible with this version update.

*[CMS-19099]*

## 4.2.2 Changes and Improvements

### CoreMedia Core

#### 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:bcmail-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]

### Runlevel based health indicator added to the content-server application

A runlevel based health indicator has been added to the content-server application. The endpoint is available at `:8081/actuator/health/runlevel`. The indicator will be set to:

- UP if the runlevel is `ONLINE` or `MAINTENANCE`
- DOWN. if the runlevel is `ADMINISTRATION` or `OFFLINE`

To activate/deactivate the healthcheck, set the application property `management.health.runlevel.enabled=true|false`.

[CMS-18871]

### Runlevel actuator endpoint added

The content-server application now has a runlevel endpoint to get the current runlevel or change the runlevel. The endpoint is available at `:8081/actuator/runlevel`

and can be enabled by setting the property `management.endpoint.runlevel.enabled=true`. The endpoint is disabled by default. To change the runlevel you can send a HTTP POST request i.e.

```
/usr/bin/curl -X POST \  
-H "Content-Type: application/json" \  
-d '{"runlevel": "MAINTENANCE", "gracePeriod": 30}' \  
http://localhost:8081/actuator/runlevel
```

The runlevels are:

- ONLINE
- MAINTENANCE
- ADMINISTRATION
- OFFLINE

[CMS-18578]

## CoreMedia Content Application Engine

### 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]

## CoreMedia Studio Client

### Display number of folder items in library for folders with less than 50 items

When selecting a folder in the library the number of items was only shown if there were more than 49. This restriction has been removed so the number of items is now always shown. For this a new resource bundle key `CollectionView_number_of_items_in_selected_folder_singular` has been added.

[CMS-18550]

## 4.2.3 Fixed Issues

### CoreMedia Core

#### Third-Party Update: Netty

Netty has been updated to version 4.1.60.Final to avoid a security vulnerability of the previous version [CVE-2021-21295].

[CMS-19197]

#### Fixed CAE Feeder Application Start Delay

Fixed a bug that caused a long startup phase for the CAE Feeder.

[CMS-18823]

#### User Changes MongoDB Performance

The *User Changes App*, the *Studio Server* and the *Workflow Server* make better use of MongoDB indices when CapList instances like "My Edited Content" are persisted in MongoDB. This improves the performance, and will reduce the MongoDB server load, especially if many such lists are stored in MongoDB.

[CMS-18759]

#### XML Importer

The XmlImporter's `DifferencingTransformer` supports struct properties now.

[CMS-18619]

### 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]

### Replicator state health indicator added to the Replication Servers

The Replication Server has now a health indicator added to reflect the state of the replication process. The indicator is available at `:8081/actuator/replicator`. The indicator will be set to:

- UP if the replication process is working
- DOWN if the replication process is not working

In addition, the indicator can switch to DOWN if the event lag between Master Live Server and the replicator exceeds a threshold. The threshold can be configured using the property `management.health.replicator.uncompleted-events-threshold`. The threshold can be disabled by setting it to `-1`, which is the default.

The indicator itself is disabled by default in the `coremedia/content-server` image as the image is also being used for `content-management-server` and `master-live-server`. In the `docker-compose` development setup the indicator has been enabled using the environment variable `MANAGEMENT_HEALTH_REPLICATOR_ENABLED`.

[CMS-18230]

## CoreMedia Content Application Engine

### 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]

## CoreMedia Studio

### "Content Creation" settings not always taken into account for "Create New Content" Dialog

Due to a race condition the "Content Creation" Settings document wasn't always taken into account when suggesting a folder for the "Create New Content" dialog. This has been fixed now.

[CMS-19079]

### Fixed Startup Of Studio Packages Proxy App

We fixed the issue where the Studio packages proxy app would not continue loading after login.

[CMS-19037]

### Fixed calculation of cardinality in ContentLinkListWrapper

If a struct entry did not exist the cardinality of the property was calculated as "-1". This has been fixed now so. For non existing struct properties the cardinality of link lists is now `int.MAX_INT`.

[CMS-15845]

### Ordered and unordered list can be both selected in richtext toolbar (overflow menu)

Button events in the `RichTextPropertyField` are now passed to the containing toolbar. States between toolbar buttons and corresponding checkboxes in the toolbar overflow menu are now synced correctly.

[CMS-12955]

## CoreMedia Studio Client

### 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 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]

### Library no longer creates new folder when changing directories

The bug happened when changing into a different directory from the list or thumbnail view of the library and immediately double clicking or pressing "return" depending on the number of content items that need to be loaded before the new directory is displayed. This has now been fixed.

[CMS-19014]

### Fixed QuickCreate Dialog Error

Fixed JS error in QuickCreate dialog that occurred when the default name was applied.

[CMS-19005]

### Embedded Blobs in RichText: Fixed Race-Condition Regarding Lock-Symbol

Due to timing issues you may have observed a lock-symbol representing an embedded blob in RichText Property Fields in CoreMedia Studio for blobs which are readable.

This was due to a timing issue, which has been fixed now.

[CMS-18945]

### Pagegrid Editor shows no parent although a parent exists

Deleted parents are now correctly filtered in Studio Client when calculating the parent for a placement. `ChildrenLinkListContentTreeRelation` now uses the first content from the incoming links ("referrers") that `isInProduction() == true`.

[CMS-18926]

### Custom RichText Style Classes: Fixed Possible Button-State Problems

This issue refers to *Adding Custom RichText Style Classes* as described in the Studio Developer Manual: Having configured style-classes which are contained in others, you may have observed invalid button states in the toolbar of the richtext Property Field in CoreMedia Studio.

Example: If you have two classes `color-black` and `background-color-black`, you may have observed the state of `color-black` to be enabled, while only `background-color-black` got selected before.

This has been fixed now.

[CMS-18899]

### Fixed Disabled ComboBox And Checkout On Tab Reuse

We fixed a bug where ComboBoxes were disabled after Studio tab reuse (sometimes even a document checkout happened).

[CMS-18793]

### Fixed Non-Disappearing LoadMask on Studio Tab Reuse

We fixed a bug where a load mask stayed forever over an opened document if this document's name contained HTML-encoded characters.

[CMS-18792]

### The Studio Tab Reuse Default Limit Can Now be Overridden in Studio Plugins

A bug has fixed where the Studio tab reuse default limit (ReusableDocumentFormTab-sPlugin) could not be overridden in Studio plugins following the BlueprintFormsStudioPlugin.

[CMS-18785]

### Columns of the user grid can now be resized

The columns of the user grid found inside the User Manager can now be resized.

[CMS-18673]

### 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]

### 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]

## CoreMedia Studio Server

### 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 Taxonomy Renaming

Fixed problem that taxonomy documents have not been renamed on change according to their *value* property.

[CMS-18987]

## CoreMedia Frontend Workspace

### Usage of legacy theme descriptor no longer causes error in theme build

If you were still using a theme descriptor instead of the new (and recommended) theme configuration a recent upgrade of our third party tools caused the theme build to fail. This has been fixed now.

[CMS-19020]

## CoreMedia Deployment

### Replacing deprecated configuration of Spring Boot

The Spring Boot configuration `server.use-forward-headers=true` was replaced by `server.forward-headers-strategy=native`.

[CMS-18840]

## CoreMedia Commerce Hub

### Fixed suppression of gRPC exceptions and prevented empty cache objects in catalog service

In previous versions, all types of gRPC status exceptions in the catalog service were caught and only logged with *debug* messages. This led to empty catalog objects being cached.

When catalog objects cannot be found now, no empty objects are cached anymore and an *info* message is logged. All other exceptions are not caught.

[CMS-18789]

## CoreMedia Headless Server

### 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]

### Cache eviction problem fixed in PageByPathAdapter

The related cache for the PageByPathAdapter was not evicted correctly, which may have cause memory problem.

[CMS-18966]

## Miscellaneous

### Third-Party Update: Jetty

Jetty has been updated to version 9.4.39.v20210325 to avoid security vulnerabilities of the previous version.

[CMS-19250]

### Third-Party Update: Spring Security

Spring Security has been updated to version 5.2.9.RELEASE to avoid a security vulnerability of the previous version [CVE-2021-22112].

[CMS-19098]

### Third-Party Update: Tomcat

Tomcat has been updated to version 9.0.43 to avoid security vulnerabilities of the previous version [CVE-2020-17527, CVE-2021-25122, CVE-2021-25329].

[CMS-19082]

### 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]

### Maven Plugin Versions

The versions of the maven-install-plugin and the maven-deploy-plugin have been consolidated to 3.0.0-M1 all throughout CMCC.

[CMS-18848]

### Fixed bug that required exact case in LDAP user name for login

Fixed the bug that prevented LDAP users to log in with a user name that differed in case. It's now possible again to log in with a name that differs in case, if the LDAP user provider ignores case when returning a user for some name. Note, that the login for built-in users always requires exact case.

[CMS-18825]

### Third-Party Update: Checker Framework

The Checker Framework has been updated to version 3.7.1.

The Checker Framework can be used to verify usage of personal data during compilation as described in the Blueprint Developer Manual, section "Handling Personal Data". The new version is required for this to work with Java 11 versions above 11.0.6.

[CMS-18794]

## 4.3 Release 2101.2

The release contains:

- Breaking changes: 1
- Changes and improvements: 6
- Bugfixes: 17

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.

### Breaking Changes

- CMS-18869: Fixed default/initial http cache control configuration and documentation

### Changes and Improvements

- CMS-18868: Smooth migration from legacy to current hash generating strategy.

### Bugfixes

- CMS-12430: Fixed Translation Auto Merge for Deleted Content
- CMS-18719: Struct Editor: Blobs can now also be uploaded to Blob(-List)-Properties within Struct Lists
- CMS-17198: Make BindPlugin robust against write errors
- CMS-15167: Fixed Lookup of ViewTypes
- CMS-18570: Made TaxonomyResource Bean a Singleton
- CMS-18159: Fixed Blueprint GuidCookieHandler
- CMS-18852: Underscore in folder name is no longer taken into account for properties files
- CMS-18836: Prefetch Configuration Fix

## 4.3.1 Breaking Changes

### CoreMedia Content Application Engine

#### Fixed default/initial http cache control configuration and documentation

Default/initial HTTP cache control configurations and regarding documentation have been fixed and harmonized.

Follow [Section "Fixed default/initial http cache control configuration and documentation" \[255\]](#) for upgrade information.

[CMS-18869]

## 4.3.2 Changes and Improvements

### CoreMedia Content Application Engine

#### Smooth migration from legacy to current hash generating strategy.

Since the existing `DefaultSecureHashCodeGeneratorStrategy` used for securing blob transformation was considered vulnerable to possible DoS attacks, a new default `MD5SecureHashCodeGeneratorStrategy` was introduced with version 10.2007.

The new `MD5SecureHashCodeGeneratorStrategy` wont match hashes created by the former `DefaultSecureHashCodeGeneratorStrategy`. Cached URLs would cause a HTTP 403 [forbidden] status code. Therefore CoreMedia now provides a smooth migration path by using a strategy which will accept hashes created by both, the `DefaultSecureHashCodeGeneratorStrategy` and the `MD5SecureHashCodeGeneratorStrategy`. New hashes will be created using the new `MD5SecureHashCodeGeneratorStrategy`.

The migration mode can be enabled by setting `cae.hashing.migration-mode=true`.

[CMS-18868]

## 4.3.3 Fixed Issues

### CoreMedia Core

#### Fixed Translation Auto Merge for Deleted Content

Fixed the bug that Studio showed a warning about a merge conflict for a translation workflow, if a content item was deleted and removed from a link list in the master site.

[CMS-12430]

### CoreMedia Studio

#### Struct Editor: Blobs can now also be uploaded to Blob[-List]-Properties within Struct Lists

When using the upload blob dialog of the `Struct Editor` blob (list) properties nested within Struct lists are now properly handled. Before the fix the upload was just ignored.

[CMS-18719]

#### Make BindPlugin robust against write errors

In rare situations when trying to write a value to an invalid struct, the `BindPlugin` received an AS error which was not caught and caused the whole Studio to be unusable. A reload was required. This is fixed now. The `BindPlugin` catches the error and reports it to the console.

[CMS-17198]

#### Fixed Lookup of ViewTypes

Fixed issue with attribute *paths* of the `ViewTypeSelectorForm`. This attribute allows to set fix loop paths for view type but included other folders of the type hierarchy anyway. The type hierarchy and the corresponding folder lookup is ignored now again.

[CMS-15167]

## CoreMedia Studio Server

### Made TaxonomyResource Bean a Singleton

The TaxonomyResource bean was configured to be a prototype. It is now a singleton bean.

[CMS-18570]

## CoreMedia Elastic Social

### Fixed Blueprint GuidCookieHandler

GuidCookieHandler, which is responsible to set a cookie to recognize a returning anonymous customer, reads GUID value from Cookie now instead of ThreadLocal, which led to not recognizing customers in some cases, i.e. after sending a Customer Review, the newly created Customer Review was not shown without multiple reloads.

[CMS-18159]

## CoreMedia Frontend Workspace

### Underscore in folder name is no longer taken into account for properties files

Building the Frontend Workspace has led to problems regarding the file name of resource bundles if one of the folders has contained an underscore. This has been fixed now.

[CMS-18852]

## Miscellaneous

### Prefetch Configuration Fix

A bug in the lookup of content type specific prefetch configuration was fixed. The `PrefetchConfigContentTypeDispatcher` could have wrongly reported no content type specific prefetch configuration due to parallel/unsynchronized access to `PrefetchConfigContentTypeDispatcher#configuredContentTypes`. With the fix, the lookup of prefetch settings now also uses more modern Settings API.

[CMS-18836]

## 4.4 Release 2101.1



### Highlights in this Release

- HCL Commerce 9.1 support
- Content Hub Connectors as Application Plugins
- MySQL 8 and PostgreSQL 13 support
- Bulk abort workflows
- Validation improvements for Start Workflow Window in Studio
- CoreMedia Headless Server
  - Rich text improvements
  - PDE property mapping via metadata
  - Additional doctypes accessible via GraphQL API
  - Improved localization with active site filters
  - Exclusion list for Pagegrid filtering

The release contains:

- Breaking changes: 20
- Changes and improvements: 78
- Bugfixes: 17

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.

### Breaking Changes

- CMS-14300: [cms-tools Extension Point](#)
- CMS-18511: [Fixed: Contents May Have Been Removed from Translation Workflow for No Obvious Reason](#)
- CMS-18214: [Unauthorized Live Rule Removal](#)
- CMS-17549: [Workflow validation now also validates dependent content](#)
- CMS-10328: [Removed SettingsServiceFilter](#)
- CMS-18595: [Made CAE SameSite Cookie strategy configurable](#)

- CMS-18518: `cae.hashing.secret` changed from max length 32 to min length 32
- CMS-18368: Single and bulk resource patterns and TTLs for cache control in live CAE have been fixed
- CMS-16974: Removed the JSP settings `taglib` functions
- CMS-16714: Reworked CORS configuration / replaced `livecontext.crossdomain.whitelist`
- CMS-18485: Studio Client Remote Bean Layer Without ExtJs Dependencies
- CMS-18259: Avoid Proxy Generation for Spring Configuration Classes
- CMS-18733: Updated Frontend Dependencies
- CMS-13621: Enhancement of Commerce Hub configurability
- CMS-18620: Headless Server did not respond with JSON properties and proper HTTP response code when requesting via a non existing site filter
- CMS-18240: GraphQL Extended Scalars Library updated
- CMS-17868: Migrated Commerce Cache Capacities and Timeouts to Spring Boot Cache Configurations
- CMS-14400: No test-jars
- CMS-18778: Image transformation: `sharpen` applied only once but after scaling
- CMS-11868: Sitemap URLs

## Changes and Improvements

- CMS-18720: Third-Party Update: Apache Tika and Transitive Dependencies
- CMS-18408: Extended API for Implementations of `CommandLineClient`
- CMS-17000: Introducing Content-UUID-Migration Tooling
- CMS-17359: Simplified Icon Font Formats in Studio
- CMS-16448: Changed `DateTimePropertyField`
- CMS-14243: Added config option `richTextMode` to `TeaserOverlayPropertyFieldBase`
- CMS-18710: Jangaroo Version Updates
- CMS-18377: Checkin and Revert are now available in the Context Menu of the Translation Tree
- CMS-18354: Support for multi destroy of workflows
- CMS-18340: Fixed accessibility issues for richtext area and taxonomies
- CMS-18420: `StudioPreviewProvider` supports new template variables
- CMS-17976: Added support for Commerce Hub Transport Layer Security
- CMS-13360: Enhancement of Commerce Hub metrics

- CMS-18590: Added CMEExternalLink type to the Headless schema
- CMS-18490: Commerce Headless Schema Deprecation
- CMS-18448: Customization of RichtextTransformerReader
- CMS-18398: Customization of richtext transformation
- CMS-18222: Added "excludeNames" parameter to filter placements
- CMS-18221: Localized variants via site filtered endpoints are configurable
- CMS-18013: Image uriTemplate consists of filename.ext as well
- CMS-18647: Third-Party Update: Docker base image for MySQL
- CMS-18585: Third-Party Update: PostgreSQL Driver
- CMS-18540: rootApp configuration in studio-resources pom.xml now uses project.groupId
- CMS-17660: PostgreSQL 13.0 Support
- CMS-11229: MySQL 8.0 Support

## Bugfixes

- CMS-18751: Third-Party Update: Groovy
- CMS-18724: Multi-Site: Enhance Robustness For Restricted Permission Scenarios
- CMS-18614: Fixed Solr Core Creation in Docker Setup
- CMS-18564: Fixed Local Start for CAE Feeder
- CMS-18523: XLIFF-Export: Fixed Possible CapTranslateltemException for Master without Derived
- CMS-18366: Workaround Solr bug that leads to unhealthy Solr Server after index creation
- CMS-17572: XLIFF-Import: Fixed possible IllegalArgumentException for Struct Lists
- CMS-14695: Fixed CAE Feeder bug that caused missing changes
- CMS-18753: Third-Party Update: Tomcat
- CMS-18711: Ignore actuator paths for CSRF prevention
- CMS-18636: CodeResourceHandler now respects 'cae.single-node' for single Resources
- CMS-18615: Fixed Dataview Initialization for Autowired Dependencies
- CMS-18477: Fixed asset collection download
- CMS-18048: TransformedBlobHandler sends uncacheable response if blob hash does not match
- CMS-16095: Error in CKDialogBase

- CMS-13886: DatePropertyField is now editable by typing
- CMS-18708: Make InternalLinkWindow component more robust
- CMS-18624: Usermanager Enhancement of the 'managerGroups' configuration
- CMS-18457: Fixed missing 0 value in slider tip in position menu of advanced teasers
- CMS-18300: Content Server Flag useStrictWorkflow No Longer Prevents Withdraw Operations In Studio
- CMS-17301: Show image upload errors
- CMS-17215: Fixed type error "Cannot read property 'parentNode' of null"
- CMS-18752: Third-Party Update: Hibernate Core
- CMS-18717: Fixed favicon image file upload error
- CMS-18707: Fixed warning which occurred during Studio Server start
- CMS-18418: Editorial Comments: Support for multiple hibernate data sources
- CMS-18387: Liquibase not executed with every Studio-Server startup anymore
- CMS-18298: Content Hub: details request respects that entity might be null
- CMS-18042: DeadLinkValidator returns multiple issues per content property
- CMS-17311: Fixed RSA key handling of Blueprint Elastic Social GuidCookieHandler
- CMS-15815: Avoid clear text passwords in SAP OAuth2 Calls in commerce adapter
- CMS-18629: CVE-2020-27216: Jetty Updated to 9.4.35
- CMS-18670: CMTeaser interface in schema includes "target" field
- CMS-18521: Metadata for type and interface extensions
- CMS-18520: ArrayStoreException when querying settings fixed
- CMS-18321: Customize Annotation not working in CaasConfig
- CMS-18271: Output or suppression of root tag on richtext content properties is configurable
- CMS-18216: Richtext transformation ignored superscript elements
- CMS-18754: Third-Party Update: Jackson Databind
- CMS-18630: Fixed CVE-2020-15250 for JUnit < 4.13.1
- CMS-18409: Configurable Limit for "My Edited Content"
- CMS-18169: Library catalog tree fixed when categories have multiple parents

## 4.4.1 Breaking Changes

### CoreMedia Core

#### cms-tools Extension Point

The `cms-tools-application` used to depend on the `content-server-extension-dependencies`, mainly in order to receive custom grammars used in additional content types. However, it turned out that in some cases the transitive dependencies of contentserver extensions are not suitable for clients and break the cms tools. Therefore, we provide a separate extension point for the cms tools now.

Follow [Section "cms-tools Extension Point" \[256\]](#) for upgrade information.

*[CMS-14300]*

#### Fixed: Contents May Have Been Removed from Translation Workflow for No Obvious Reason

**Context:** The content property `ignoreUpdates`, which is used for synchronized sites, to block receiving updates from master, accidentally made it to nested derived sites, which, as one possible effect prevented contents in derived sites from receiving any updates via translation. This is true for any workflows using `FilteredDerivedContentsAction`.

Follow [Section "Fixed: Contents May Have Been Removed from Translation Workflow for No Obvious Reason" \[256\]](#) for upgrade information.

*[CMS-18511]*

#### Unauthorized Live Rule Removal

`com.coremedia.cap.content.authorization.AccessControl` provides some methods for rule removal. If you try to remove a rule for a content group without having the SUPERVISE right, the methods fail with an exception. However, for rules of live groups, the methods failed silently. Now, they throw exceptions in this case too. This means that code using these methods will fail upon such errors, where it used to continue before. If you still want your code to continue in case of such errors, wrap these calls in try-catch blocks.

*[CMS-18214]*

#### Workflow validation now also validates dependent content

When starting a new workflow the entire content set including the dependent content is now validated. This will help to prevent most of the issues that can occur before the

the workflow is even started. If the validation takes too long it can be stopped directly in the same window. Some changes were necessary to make that possible.

Follow [Section "Workflow validation now also validates dependent content" \[258\]](#) for upgrade information.

*[CMS-17549]*

# CoreMedia Content Application Engine

## Removed SettingsServiceFilter

Removed class `com.coremedia.blueprint.cae.settings.SettingsServiceFilter`. Either use the settings service Spring bean or use the Freemarker settings functions instead.

*[CMS-10328]*

## Made CAE SameSite Cookie strategy configurable

The config options prefixed `cae.cookie` control the CAE's behavior when sending cookies. It is now possible to configure the value of the `SameSite` attribute and whether or not to force all cookies to `Secure` and `HttpOnly`. By default the same site strategy is `None` and cookies are forced to `Secure` and `HttpOnly`.

*[CMS-18595]*

## cae.hashing.secret changed from max length 32 to min length 32

The secret 'cae.hashing.secret' configured in `CaeSecretConfigurationProperties`, which is used for URL parameter hashing changed from max length 32 to min length 32.

*[CMS-18518]*

## Single and bulk resource patterns and TTLs for cache control in live CAE have been fixed

The single resources pattern for the cache control configuration in live CAE didn't have any effect because of too many escape characters in the pattern. This has now been fixed. Furthermore, the bulk resource pattern has been improved to not mix up with the single resource pattern, and both cache TTL values for these pattern have been increased to 365 days. Please be aware that with this AMP release the cache control TTLs might change, if you use the default settings.

*[CMS-18368]*

## Removed the JSP settings taglib functions

Removed JSP settings functions `bp:setting` and `bp:settingWithDefault`. Use model beans accessing the settings service instead.

*[CMS-16974]*

## Reworked CORS configuration / replaced `livecontext.crossdomain.whitelist`

The configuration of CORS (Cross-Origin Resource Sharing) for the CAE has been reworked. It is now configured using the `cae.cors.*` configuration properties (see public API). The properties `cae.preview.crossdomain-whitelist` and `livecontext.crossdomain.whitelist` have been removed. They are replaced by `cae.cors.allowed-origins-for-url-pattern\{path:.*` .

Follow [Section "Reworked CORS configuration / replaced `livecontext.crossdomain.whitelist`" \[262\]](#) for upgrade information.

*[CMS-16714]*

# CoreMedia Studio Client

## Studio Client Remote Bean Layer Without ExtJs Dependencies

We cleansed the Studio client remote bean layer of all ExtJs dependencies. this affects the modules `client-core`, `client-core-impl`, `client-core-test-helper`, `cap-rest-client`, `cap-rest-client-impl`, `cap-rest-client-test-helper`.

Follow [Section "Studio Client Remote Bean Layer Without ExtJs Dependencies" \[263\]](#) for upgrade information.

*[CMS-18485]*

# CoreMedia Workspace

## Avoid Proxy Generation for Spring Configuration Classes

Spring configuration classes were changed so that the `proxyBeanMethods` attribute is set to `false` . This is breaking only if configuration classes in the Blueprint were adapted in your project in a way that `@Bean` annotated methods are called from project code which should be a very rare case.

*[CMS-18259]*

# CoreMedia Frontend Workspace

## Updated Frontend Dependencies

The `frontend-maven-plugin` used in the frontend workspace has been updated to version 1.11.0 to support Apple Silicon platform. The frontend dependencies have been updated to the latest versions and `node.js` to latest LTS security release 14.15.4.

*[CMS-18733]*

## CoreMedia Commerce Hub

### Enhancement of Commerce Hub configurability

The Commerce Hub client can now be configured on the Spring application level using the configuration options as described on <https://yidongnan.github.io/grpc-spring-boot-starter/en/client/configuration.html>. The Commerce Hub client uses the property 'endpointName' of the 'commerceSettings' struct as configuration service name. If that service is not configured, the settings are inherited from the default service named 'GLOBAL'. If the property 'endpointName' is not set, the 'endpoint' property is used as both service name and address.

*[CMS-13621]*

## CoreMedia Headless Server

### Headless Server did not respond with JSON properties and proper HTTP response code when requesting via a non existing site filter

Headless Server responds now with a real JSON response and the correct content type 'application/json'. As this bugfix changes the behavior, this update is considered potentially breaking. Customers should check their client application whether they rely on the old behavior.

*[CMS-18620]*

### GraphQL Extended Scalars Library updated

The 'graphql-java-extended-scalars' library was updated to version 15.0.0 to be future proof for upcoming updates of graphql-java. Along with this update, the class `com.coremedia.caas.schema.CoercingBigDecimal.java` became redundant and was deleted.

*[CMS-18240]*

## Miscellaneous

### Migrated Commerce Cache Capacities and Timeouts to Spring Boot Cache Configurations

The configuration options `commerce.hub.cache.capacities`, `commerce.hub.cache.timeout-seconds`, `livecontext.ecommerce.cache.*.capacity`, and `livecontext.ecommerce.cache.*.time` are deprecated. Use `cache.capacities.ecommerce` and `cache.timeout-seconds.ecommerce` followed by the respective

commerce feature token instead. This feature token must now be lowercase. Note that `com.coremedia.blueprint.base.livecontext.ecommerce.com.mon.AbstractCommerceCacheKey` internally converts given feature tokens to lowercase so that its `cacheClass` returns the corresponding 'ecommerce.FEATURE' token for cache configuration lookup.

Follow [Section "Migrated Commerce Cache Capacities and Timeouts to Spring Boot Cache Configurations" \[266\]](#) for upgrade information.

*[CMS-17868]*

### No test-jars

Due to shortcomings in Maven's dependency model regarding the test scope, we do not use test-jars any longer. The relevant functionality of test-jars has either been copied or moved to separate test utility artifacts. Some test-jars have even been dropped without replacement, because they were unused meanwhile or had only been created accidentally ever since. In case you miss any features used by your project tests, please contact the CoreMedia support.

*[CMS-14400]*

### Image transformation: sharpen applied only once but after scaling

In some cases images were sharpened twice. This could result in unwanted image artifacts. Now the sharpening of images is only applied once after scaling which results in better quality of images.

Follow [Section "Image transformation: sharpen applied only once but after scaling" \[267\]](#) for upgrade information.

*[CMS-18778]*

### Sitemap URLs

So far, CoreMedia's sitemap URLs started with the prefix `/service/sitemap`. This was a violation of the <https://www.sitemaps.org/protocol.html> standard (section "Sitemap file location"), which requires that sitemap files include only URLs that start with the same path as the sitemap file itself. CoreMedia's sitemaps include URLs like `https://f.q.d.n/resource/blob/.../datasheet.pdf` and `https://f.q.d.n/corporate-en-gb/details/charlotte-may-9802`, which differ in the very first path segment. Thus, the sitemap URLs must not have a path at all, but may consist only of a single segment. Therefore, the paths of sitemap URLs have been flattened from `http://f.q.d.n/service/sitemap/61e75a956d912104971e03ffc6175869/sitemap_index.xml` to `http://f.q.d.n/service-sitemap-61e75a956d912104971e03ffc6175869-sitemap_index.xml`, assuming that the `service-sitemap-<siteId>` prefix is sufficiently specific, so that it will not collide with any vanity URLs or root channel segments.

Follow [Section "Sitemap URLs" \[267\]](#) for upgrade information.

[CMS-11868]

## 4.4.2 Changes and Improvements

### CoreMedia Core

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

Apache Tika has been updated to version 1.25. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika. Some of these updates fix known security vulnerabilities: CVE-2020-28052 [Bouncy Castle], CVE-2020-8908 [Guava], CVE-2020-13956 [Http Client].

#### Updated dependencies:

- com.google.guava:guava: 30.0-jre
- com.rometools:rome: 1.15.0
- commons-codec:commons-codec: 1.15
- commons-io:commons-io: 2.8.0
- jakarta.xml.bind:jakarta.xml.bind-api: 2.3.3
- org.apache.commons:commons-lang3: 3.11
- org.apache.httpcomponents:httpclient: 4.5.13
- org.apache.httpcomponents:httpmime: 4.5.13
- org.apache.pdfbox:pdfbox: 2.0.21
- org.apache.tika:tika-core: 1.25
- org.apache.tika:tika-parsers: 1.25
- org.bouncycastle:bcmail-jdk15on: 1.67
- org.bouncycastle:bcpkix-jdk15on: 1.67
- org.bouncycastle:bcprov-jdk15on: 1.67
- org.glassfish.jaxb:jaxb-runtime: 2.3.3
- org.ow2.asm:asm: 9.0

If you use the 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-18720]

## Extended API for Implementations of CommandLineClient

CoreMedia introduced several extensions to assist implementing custom implementations of `CommandLineClient` and related.

- Some basic tool-handling moved from `CommandLineClient` to new parent class `com.coremedia.cmdline.BaseCommandLineClient`. This base client for example skips adding parameters for login credentials.
- **Automatic Synopsis:** Introduced `isAutoUsage()` (default: `false`) which signals, that any options added will be automatically added to the command synopsis.
- **-?, --help:** Introduced methods for automatically handling usage options (default: `?, --help`), which, when enabled and given, will print usage information and quit the tool immediately:
  - `understandsUsage()` which defaults to return `false`. Override to enable usage options.
  - `addUsageOptions(Options)` which adds usage options.
  - `parseCommandLineHelp(CommandLine)` which parses usage options.
  - `printExplicitUsage(CommandLine)` called when `parseCommandLineHelp` recognized a help-parameter. Defaults to calling `getUsage()` but may be customized to output other or additional information, based on the command line options passed to this method.

[CMS-18408]

## Introducing Content-UUID-Migration Tooling

CoreMedia introduced three command-line tools, which are meant to support customers using multi-environment deployment like development and production, to synchronize UUIDs of documents. While for daily use, `serverexport` and `serverimport` have been extended before supporting export and import of content-UUIDs, these tools are meant to assist those, which had servers since before introducing UUIDs for contents.

The new tools will synchronize UUIDs of contents in two environments which share the same path and type.

### Usage Example:

```
dev$ cm content-uuid-export -u <user> ... --output export.csv
prod$ cm generate-content-uuid-map ... --input export.csv --output merge.csv
prod$ cm content-uuid-import ... --input merge.csv
```

For details see usage information of tools provided with `--help` or have a look at the documentation of Server Utility Programs (Operation) in *Content Server Manual*, section *Content-UUID-Migration*.

[CMS-17000]

## CoreMedia Studio

### Simplified Icon Font Formats in Studio

CoreMedia simplified the delivered font formats of the CoreMedia icon fonts. The Icon font in CoreMedia Studio is now loaded from "woff" or (if supported) "woff2" files. "eot" and "ttf" formats were used as a fallback for much older browser which CoreMedia is not supporting for a long time now.

[CMS-17359]

### Changed DateTimePropertyField

The increment property of the Time Field in `DateTimePropertyField` for `ExtendedTimeField` is configurable via `timeFieldIncrement`. The default is still 15 minutes.

[CMS-16448]

### Added config option `richTextMode` to `TeaserOverlayPropertyFieldBase`

When the new option `richTextMode` is set to `false` (the default) in class `com.coremedia.cms.editor.sdk.premular.fields.teaser.TeaserOverlayPropertyFieldBase` the class works as before, that is no richtext editing is possible when no style is selected in the style chooser. Otherwise richtext editing is always possible and the toolbar buttons are enabled.

[CMS-14243]

## CoreMedia Studio Client

### Jangaroo Version Updates

Jangaroo has been updated to support Studio Client application plugin development. Jangaroo Maven Plugin version 4.0.76 contains two new features:

- A new goal `package-plugin` to use in your Studio Client application plugin POM to produce a plugin zip artifact
- A new `jangaroo:run` option `-DadditionalPackagesDir` to start Studio with a locally developed plugin

Ext AS has been updated to 7.2.0-2 to support dynamic loading of additional packages from Studio Client application plugins.

For details, see the new chapter "Developing with Plugins" of the Blueprint Developer Manual.

[CMS-18710]

### Checkin and Revert are now available in the Context Menu of the Translation Tree

The Context menu of the `TranslationTree` now provides two additional options that allow a `checkin` and `revert` of the selected elements.

[CMS-18377]

### Support for multi destroy of workflows

The workflow panels for translation & publication workflow (Pending & Inbox) now offer a new button (trash icon) within the top toolbar. It enables Editors to destroy (former abort) multiple workflows at once. Select one or more workflow(s) and the button will be enabled, in case you have the rights to abort your selection of workflows. Clicking the button will destroy your selection after a confirmation dialog.

[CMS-18354]

### Fixed accessibility issues for richtext area and taxonomies

To support screen readers like JAWS the following issues have been fixed:

1. The contenteditable attribute of a richtext area always has value true. If the component is read-only, making changes is not possible.
2. Taxonomy tags have an additional aria-label attribute containing the taxonomy path.
3. Taxonomy search only shows tag suggestions which are not already selected.

[CMS-18340]

## CoreMedia Studio Server

### StudioPreviewProvider supports new template variables

All uri template based preview providers are supporting these new template variables:

- `fqdn` : Environment variable FQDN (fully qualified domain name)
- `rootSegment` : Segment of the homepage of the previewed content
- `siteId` : Site id of the previewed content

For details, see the section "Multiple Previews Configuration" of the Studio Developer Manual.

[CMS-18420]

## CoreMedia Commerce Hub

### Added support for Commerce Hub Transport Layer Security

Transport layer security for Commerce Hub can now be configured on the spring application level using the config options as described on <https://yidongnan.github.io/grpc-spring-boot-starter/en/server/security.html> and <https://yidongnan.github.io/grpc-spring-boot-starter/en/client/configuration.html>.

[CMS-17976]

### Enhancement of Commerce Hub metrics

The Commerce Hub now also exposes gRPC client metrics to prometheus.

[CMS-13360]

## CoreMedia Headless Server

### Added CMExternalLink type to the Headless schema

CMExternalLink can now be queried as for example a teaser target. An example query can be found in "External Link Query" section in documentation.

[CMS-18590]

### Commerce Headless Schema Deprecation

The Blueprint contains multiple commerce-related schema extensions to the CoreMedia Headless Server that primarily serve pure ecommerce data like product or category details. The affected schema extensions (entities, queries and fields) are marked as deprecated with 2101.1 and will be removed in a future AEP (probably 2104.1).

The reason for this deprecation is: CoreMedia wants to encourage projects to not use the CoreMedia Headless Server as a GraphQL endpoint for the ecommerce system but rather use the API of the commerce system directly to get details on the commerce objects. The CoreMedia Headless Server should primarily serve content from the content repository and not from other systems. Otherwise latency for remote calls might sum up and delay the response of the Headless Server. Additionally, in a headless integration, the client (e.g. a JavaScript frontend) will need to talk to the commerce system, anyways (e.g. to render category landing pages, product detail pages or shopping cart items, etc). Serving the same entities a second time and through the CoreMedia Headless Server will impede caching and might lead to inconsistent data when the Headless Server has a different cached state than the commerce system.

Nevertheless, CoreMedia will soon provide a CoreMedia labs based version of the commerce data related headless endpoint for demo purposes (e.g. Spark). This roughly will

correspond to the now deprecated schema extensions. Additionally, CoreMedia will add dedicated augmentation query roots to retrieve content augmentation data for commerce objects but without pulling the commerce object detail data from the commerce system.

In order to use CoreMedia Headless Server in ecommerce projects with GraphQL, projects should use a stitching proxy server to combine both schemas (CoreMedia Headless Server and commerce system) to one combined graph. It is also possible to let a client talk to both backends in parallel, depending on the degree of integration needed for the project needs. Apollo Federation would also be an option but needs further adaptations to both schemas and code.

CoreMedia will provide an example Stitching server that works with our demo client Spark in the near future.

[CMS-18490]

### Customization of RichtextTransformerReader

For the `RichtextTransformerReader`, custom output handlers, attribute and element transformers can be configured. Custom implementations can be passed to the `RichtextTransformerReader` in parameter `customTypeDescriptions`.

[CMS-18448]

### Customization of richtext transformation

The richtext transformation can now be replaced by a custom implementation that may use a different grammar. The custom implementation can use the underlying architecture (yaml based configuration, markup parsing and transformation), but does not have to. See the documentation for details.

[CMS-18398]

### Added "excludeNames" parameter to filter placements

In addition to "names" the placement can now also receive "excludeNames" argument and filter out specific placements from the returned list.

[CMS-18222]

### Localized variants via site filtered endpoints are configurable

The concept of a site filtered GraphQL endpoint prevents, that related content objects of a filtered content, not belonging to that site, can be retrieved over that endpoint. This behaviour may become unhandy for some special cases, e.g. localized variants or derived sites.

In order to overcome this limitation, the new configuration property '`caas.site-filter-config-properties.excluded-field-names`' was introduced. The property takes a collection of field names and defaults to "`localizedVariant`", "`localizedVariants`" and "`derivedSites`".

The default configuration now permits, that localized contents belonging to a related site can be retrieved, although a site filter is used. If necessary, additional fields, e.g. 'pictures' can be added, if linked pictures belong to another site.

See the Deployment Manual for details.

[CMS-18221]

### Image uriTemplate consists of filename.ext as well

CMPicture uriTemplate now ends with filename.ext if a blob is present. The old URLs for images without a filename can still be used to retrieve image crops in addition to new URLs including the filename. The added filename is only for SEO purpose.

[CMS-18013]

## Miscellaneous

### Third-Party Update: Docker base image for MySQL

This release introduces official support for MySQL 8. The base image for MySQL in the docker-compose development system has been updated from 5.7.31 to 8.0.22.

[CMS-18647]

### Third-Party Update: PostgreSQL Driver

The PostgreSQL driver has been updated to version 42.2.18.

[CMS-18585]

### rootApp configuration in studio-resources pom.xml now uses project.groupId

The groupId "com.coremedia.blueprint" was hard coded for the rootApp configuration in the pom.xml of studio-resources. The groupId is now set via `$\{project.groupId\}`.

[CMS-18540]

### PostgreSQL 13.0 Support

CMCC now supports PostgreSQL 13.0.

[CMS-17660]

### MySQL 8.0 Support

CMCC now supports MySQL 8.0. The name **System** became a reserved word in MySQL 8. Therefore if you refer to the table **System** you need to use backticks ('System').

[CMS-11229]

## 4.4.3 Fixed Issues

### CoreMedia Core

#### Third-Party Update: Groovy

Groovy has been updated to version 2.4.21 to avoid a security vulnerability of the previous version [CVE-2020-17521].

[CMS-18751]

#### Multi-Site: Enhance Robustness For Restricted Permission Scenarios

In previous releases the CoreMedia Multi-Site feature failed if in a given sites-structure any of the master-sites was unreadable by the current user. Most obvious symptom: In Studio this user with restricted permissions is unable to select a preferred site.

This has been fixed within `Site#getMasterSite()` which will now return `null` for unreadable master sites.

[CMS-18724]

#### Fixed Solr Core Creation in Docker Setup

Fixed a bug in the script for the creation of Solr cores at a Solr Slave server in `apps/solr/docker/solr/src/docker/bin/config.sh`.

[CMS-18614]

#### Fixed Local Start for CAE Feeder

Fixed the bug that the *CAE Feeder* could not be started locally for development from an IntelliJ IDEA run configuration.

[CMS-18564]

#### XLIFF-Export: Fixed Possible CapTranslateItemException for Master without Derived

In previous CMCC releases you may have experienced a `CapTranslateItemException` like:

```
CapTranslateItemException: Master aspect does not have any matching derived target contents
```

As for actions like `FilteredDerivedContentAction` it is a common approach removing derived target contents from a translation process, the behavior got changed in that way, that this state is ignored. Thus, for a given master without derived targets, no translation item, and as a result no XLIFF file will be generated.

[CMS-18523]

### Workaround Solr bug that leads to unhealthy Solr Server after index creation

Added a workaround for Solr bug <https://issues.apache.org/jira/browse/SOLR-14969> . In rare cases, the bug could cause the Solr server to become unhealthy, when Elastic Social search indices were created in Solr, for example when a new Elastic Social tenant was created. Only a restart of the Solr server helped in such a case. The newly introduced workaround avoids this problem.

[CMS-18366]

### XLIFF-Import: Fixed possible `IllegalArgumentException` for Struct Lists

If you had exported Struct entries of type `List<Struct>` with the option `EMPTY_IGNORE` enabled, you may have experienced an `IllegalArgumentException` like *a list of length 1 was entered at position 2, which does not exist* .

This has been fixed.

[CMS-17572]

### Fixed CAE Feeder bug that caused missing changes

Fixed a bug in the *CAE Feeder* that caused some updates to be ignored in rare cases. The workaround for this bug was to restart the *CAE Feeder* application, which caused it to replay these missing updates. With this bug fix, this isn't necessary anymore.

Furthermore, a related bug was fixed that some documents were re-indexed after re-starting the *CAE Feeder* , even though the documents were already up to date. This also happened in rare cases only.

[CMS-14695]

## CoreMedia Content Application Engine

### Third-Party Update: Tomcat

Tomcat has been updated to version 9.0.41 to avoid a security vulnerability of the previous version [CVE-2020-17527].

[CMS-18753]

### Ignore actuator paths for CSRF prevention

The actuator paths (with pattern `/actuator/*` ) are now ignored for CSRF prevention to allow write operations on actuators (like setting log levels).

[CMS-18711]

### CodeResourceHandler now respects 'cae.single-node' for single Resources

`com.coremedia.blueprint.cae.handlers.CodeResourceHandler#contentResource` did not set the `Cache-Control` header correctly. A Blueprint CAE node configured with `cae.single-node=false` which is unable to serve the requested version of a resource now sends `Cache-Control: no-store` along with the outdated version of the resource.

[CMS-18636]

### Fixed Dataview Initialization for Autowired Dependencies

Dataviews did not receive autowired dependencies of the origin class if the original content bean was replaced with an extended content bean class. Only customizations of the Blueprint which both extended `CMQueryListImpl` and replaced the original `"contentBeanFactory:CMQueryList"` content bean were affected by this bug.

[CMS-18615]

### Fixed asset collection download

Added missing `Csrftoken` in the download portal for downloading the asset collection as zip file.

[CMS-18477]

### TransformedBlobHandler sends uncacheable response if blob hash does not match

`TransformedBlobHandler` sends uncacheable response if blob hash does not match. The `TransformedBlobHandler` uses `HandlerBase#isSingleNode` and the external configuration option `cae.single-node` to control this behavior.

[CMS-18048]

## CoreMedia Studio

### Error in CKDialogBase

- Throwing NPE fixed
- Event behavioral change to support validation by typing
- Url field shows validation

[CMS-16095]

### DatePropertyField is now editable by typing

A bug has been fixed where the `DatePropertyField` prevented users from edit the date by typing because the field directly wrote the new value even if the value is invalid. This lead to a bad request and the value was resetted to its original valid value.

[CMS-13886]

## CoreMedia Studio Client

### Make InternalLinkWindow component more robust

The component InternalLinkWindow in Studio was not robust enough to handle missing values for the attribute '\_xlink:show' in richtext. Now the default link type 'replace' is used.

[CMS-18708]

### Usermanager Enhancement of the 'managerGroups' configuration

When the 'managerGroups' for UserManager are configured now the member of the direct subgroups of the specified groups are allowed to use the UserManager as well.

[CMS-18624]

### Fixed missing 0 value in slider tip in position menu of advanced teasers

The vertical slider in the position menu of advanced teasers didn't show a 0 value in its tip, only void . This is fixed now.

[CMS-18457]

### Content Server Flag useStrictWorkflow No Longer Prevents Withdraw Operations In Studio

We fixed a bug where the content server flag useStrictWorkflow prevented place approvals in Studio (e.g. withdraw) whereas it should only prevent version approvals.

[CMS-18300]

### Show image upload errors

An image upload could have failed without showing any error message in the Studio. This is fixed now. A message box appears with an error text.

[CMS-17301]

### Fixed type error "Cannot read property 'parentNode' of null"

When to-dos in a project in Studio are filtered for a selected day and when the 'Show all to-dos' button is clicked, the type error mentioned above appears. This has been fixed now.

[CMS-17215]

# CoreMedia Studio Server

## Third-Party Update: Hibernate Core

Hibernate Core has been updated to version 5.4.27.Final to avoid a security vulnerability of the previous version (CVE-2020-25638).

[CMS-18752]

## Fixed favicon image file upload error

Studio failed to upload favicon image files with mime types image/x-icon and image/vnd.microsoft.icon. This is fixed now.

[CMS-18717]

## Fixed warning which occurred during Studio Server start

A warning (including a Stacktrace) was logged during the Start of Studio Server *Failed to find Liquibase changeSet file for file* . This has been fixed

[CMS-18707]

## Editorial Comments: Support for multiple hibernate data sources

A bug has been fixed which prevented to define a custom hibernate connection next to the editorial comments hibernate connection. All beans of hibernate.jpa and liquibase for editorial comments are now injected by name instead of type.

[CMS-18418]

## Liquibase not executed with every Studio-Server startup anymore

The database migration tool Liquibase was executed with every start of a Studio Server instance. When the start of the Studio Server was interrupted during the execution of Liquibase, it was possible that a lock on the database remained, which had to be removed manually.

Now Liquibase will only be executed when the database needs to be migrated. If the database is up to date, Liquibase will not run.

[CMS-18387]

## Content Hub: details request respects that entity might be null

The request `/details` of the Content Hub rest service assumed that an entity is always available when details are requested. Now the request delivers an error when the entity can't be found.

[CMS-18298]

### DeadLinkValidator returns multiple issues per content property

The DeadLinkValidator returned only the first issue for a given content property to validate. Now the validator has a property `maxIssues` with a default value of 20 for the maximum number of returned issues per content property. So if a content has a `linklist` property with 20 deleted content references, all 20 issues are returned in the default case.

[CMS-18042]

## CoreMedia Elastic Social

### Fixed RSA key handling of Blueprint Elastic Social GuidCookieHandler

Fixed a bug in the code dealing with the private RSA key for the signed GUID served by `com.coremedia.blueprint.elastic.social.cae.guid.GuidCookieHandler` that caused OpenJDK newer than 11.0.6 to reject the configured private key if it wasn't created by the CAE itself.

[CMS-17311]

## CoreMedia Commerce Hub

### Avoid clear text passwords in SAP OAuth2 Calls in commerce adapter

User and userGroup that can be passed to the preview token service are configurable. By default the property `hybris.previewTokenUser` is set to "anonymous". If you do not want any user to be passed for preview tickets, just configure `hybris.previewTokenUser` and leave it blank.

[CMS-15815]

## CoreMedia Connector for HCL Commerce

### CVE-2020-27216: Jetty Updated to 9.4.35

Jetty has been updated to 9.4.35.v20201120 to address [CVE-2020-27216](#) [Creation of Temporary File With Insecure Permissions].

All Jetty artifacts managed by `org.eclipse.jetty:jetty-bom` are affected, including:

- `org.eclipse.jetty.http2.http2-client`
- `org.eclipse.jetty.http2.http2-common`
- `org.eclipse.jetty.jetty-client`

- `org.eclipse.jetty.jetty-server`
- `org.eclipse.jetty.jetty-servlet`
- `org.eclipse.jetty.jetty-util`

[CMS-18629]

## CoreMedia Headless Server

### CMTeaser interface in schema includes "target" field

"target" field was missing from the interface and was only in the type definition. Now interface also has it.

[CMS-18670]

### Metadata for type and interface extensions

Metadata information can now be added for type and interface extensions.

[CMS-18521]

### ArrayStoreException when querying settings fixed

When querying for settings in a content object, an ArrayStoreException occurred, when using the 'paths' query parameter with nested path lists.

[CMS-18520]

### Customize Annotation not working in CaasConfig

The @Customize annotation was not executed. Therefore the the Spring bean "content-SegmentStrategyMap" was not customized correctly and the related map was empty.

[CMS-18321]

### Output or suppression of root tag on richtext content properties is configurable

The surrounding <div> interferes often with client applications, which usually define the structure of the content to be displayed themselves. The surrounding <div> tag is a potentially unwanted tag. The output can now be suppressed by setting the new config property 'caas.stax.suppressRootTag' to 'true'. The config works on all fields originally delivering Markup (rich text) which are serialized to a string, e.g. detailText on teasable content objects.

[CMS-18271]

### Richtext transformation ignored superscript elements

The richtext transformation rule to parse superscript elements <sup> contained a bug which led to the situation, that superscript elements were ignored completely and the contained subelements and characters were ignored also. The rule was fixed.

[CMS-18216]

## Miscellaneous

### Third-Party Update: Jackson Databind

Jackson Databind has been updated to version 2.10.5.1 to avoid a security vulnerability of the previous version (CVE-2020-25649).

[CMS-18754]

### Fixed CVE-2020-15250 for JUnit < 4.13.1

Fixed security issue regarding JUnit Rule `TemporaryFolder` by updating to JUnit 4.13.1.

For details see: [TemporaryFolder on unix-like systems does not limit access to created files · Advisory · junit-team/junit4](#)

[CMS-18630]

### Configurable Limit for "My Edited Content"

The new Spring property "userchanges.max-length" for the *User Changes App* can be used to configure the maximum length of users' "My Edited Content" lists for automatic update by the *User Changes App*. If the maximum has been reached, no further edited contents will be added to the list by the *User Changes App*. The default is unlimited (`Integer#MAX_VALUE`) to keep the existing behavior, for backwards-compatibility.

It is recommended to configure a maximum that can still be handled by editors, and is a lot lower than the maximum number of contents that can be stored in a MongoDB document. The latter depends on the length of stored document IDs but can be estimated to something around 600.000 contents.

Also, the performance of the User Changes App has been improved when it needs to process many repository changes.

[CMS-18409]

### Library catalog tree fixed when categories have multiple parents

In some catalogs it is possible to put a category to multiple places within the catalog tree. That led to a broken tree. The unique parent of the catalog object defines the home of such a category. If there are more occurrences of that category in the tree it is shown as a link.

[CMS-18169]

# 4.5 Release 2010.1



## Highlights in this Release

- Tools to transfer Content UUIDs between different environments
- SAP Commerce Cloud 2005 support
- Integration of commercetools via Commerce Hub Adapter
- Headless Server personalization and other optimizations
- Override default usernames with meaningful display names and emails
- Improved tag selection dialog
- AWS S3 now available as Contentserver media storage
- HTTP/2 now supported in Docker Deployments

The release contains:

- Breaking changes: 30
- Changes and improvements: 79
- Bugfixes: 17

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.

## Breaking Changes

- CMS-18049: [Content Server Database Change](#)
- CMS-17590: [Update of mongo-java-driver](#)
- CMS-17933: [Fix for possible false calculation of Dependent Content for Synchronization-Workflow](#)
- CMS-17723: [Corba over SSL](#)
- CMS-16763: [Publisher monitoring](#)
- CMS-16730: [translate.xliff.export.excludeContentName defaults to true](#)
- CMS-16514: [Localization Workflows: Automatic merge of Annotated LinkLists](#)
- CMS-11155: [cm serverimport: No Suppressed Errors Anymore](#)
- CMS-14533: [Fixed Lazy Loading and Content Hiding in Repository View of the Library](#)

- CMS-18179: Jangaroo Version Updates
- CMS-18057: Moved classes SitesService, Site, SiteModel
- CMS-17575: New method in IAdditionalWorkflowDisplayFieldMixin
- CMS-17911: WorkflowDateTimeField can adapt validation state according to Workflows-issues
- CMS-17843: StartWorkflowFormBase was adapted
- CMS-13480: Activate HTTP2 (h2c) for studio-client container
- CMS-18481: Updated Frontend Dependencies
- CMS-17979: Product availability calculation
- CMS-16139: S3 media store configuration changed
- CMS-18162: Use WCS adapter profiles with version specific configurations in compose file
- CMS-17790: Removed deprecated API concerning product availability
- CMS-17799: SAP Commerce Cloud 2005 Support
- CMS-18188: AssetSearchService in commerce extension now uses a dedicated SearchResultFactory
- CMS-17662: Update of graphql-java
- CMS-18158: Set row limit for AssetSearchService with correct config value
- CMS-18039: Headless now always sends JSON body with JSON properties and proper HTTP response code
- CMS-16842: Spring ConfigurationProperties for UserProvider
- CMS-16800: Removed default image transformations
- CMS-18202: Global image variants will be loaded when no site is available
- CMS-17989: Update Maven-Surefire-/Failsafe-Plugin to 3.0.0-M5 and test libraries

## Changes and Improvements

- CMS-18379: Import blob from generic URL in cm serverimport
- CMS-18355: Third-Party Update: Apache Solr 8.6.3
- CMS-18248: Third-Party Update: Apache Solr 8.6.2
- CMS-17546: UUID Support for dump-/restoreusers
- CMS-17139: cm serverexport/-import: Supporting Content-UUIDs
- CMS-14445: Command line tools support REPOSITORY\_PASSWORD variable
- CMS-11665: Serverexport now also exports timezone id

- CMS-13112: Cache capacities and timeouts can now be configured via common properties
- CMS-12311: CMPProduct ContentStringPropertyIndex Performance
- CMS-17262: New Preview Url Service Public API
- CMS-18195: Added 'taxonomyLinkListWrapper' config parameter for Taxonomy Link Lists
- CMS-17908: Moved components and classes, new deprecations
- CMS-17079: New Warning Dialog for Localization Issues
- CMS-16200: ShowIssuesPlugin: Limit Tooltip Entries
- CMS-17896: Security-Update of google-oauth library from 1.19 to 1.31.1
- CMS-17955: Third-Party Update: copy-webpack-plugin has been updated
- CMS-18149: Default SAP Commerce Cloud Adapter changed to version 1.2.1
- CMS-18148: Default Salesforce Commerce Adapter changed to version 1.2.0
- CMS-18146: Default HCL Commerce Adapter changed to version 1.3.13
- CMS-17962: gRPC timeouts (deadlines) can be configured
- CMS-18277: The Livecontext IBM extension has been deprecated
- CMS-17434: New query root: metadata
- CMS-13122: Retrieve Personalized Content via Headless Server
- CMS-17963: Removed Search Manual Section "CAE Feeder for API Use"
- CMS-18285: Third-Party Update: PostgreSQL Driver
- CMS-18184: The base image for all spring-boot applications has been updated
- CMS-18182: The Docker base image for MySQL has been updated
- CMS-17939: Add ignoredDependencies configuration to ModularOneRepoEnforcerRule
- CMS-17912: CMCC now supports PostgreSQL 9.6 on Azure
- CMS-17899: commerce-adapter-commercetools to Docker deployment
- CMS-16330: Update Traefik to 1.7.26
- CMS-16091: java-application-base container image source published
- CMS-13111: Changed Configuration Properties for Search And Feeder
- CMS-13104: Configuration properties have changed.

## Bugfixes

- CMS-18278: Fixed CAE Feeder to Index Correct Navigation Path
- CMS-18225: cm restoreusers: Exit Code != 0 on Failure

- CMS-17826: Bugfix for possible escalation in translation workflows that have multiple target sites
- CMS-17667: Security problem in CORBA protocol fixed
- CMS-17399: Serverexport now checks if base directory is writable
- CMS-16851: Enhanced "Delete Content Type" description
- CMS-16646: Multisite-validation-tools: Changed Error Code for Translation Settings
- CMS-15090: Fixed a bug which caused an error upon content server start after adding a new observed property
- CMS-17901: Third-Party Update: Tomcat
- CMS-12747: Add substitution model attribute for FTL Spring bind
- CMS-17856: Studio Link Suggestions Exclude Deleted Content
- CMS-17830: Fixed Creation of Taxonomy Root Nodes
- CMS-17804: Fixed Accidental Bookmark Deletion
- CMS-17602: Fixed Library Dragging Issue
- CMS-17404: Fixed TooManySeachResultsException
- CMS-13931: Fixed recursion in ReplaceltemsPlugin
- CMS-18219: StructPropertyField Can Deal With Sub-Structs and Studio Tab Reuse
- CMS-18167: Added error message for misconfigured TaxonomyCondition editors
- CMS-17953: Fixed Taxonomy Name Escaping
- CMS-17889: WorkflowDateTimePropertyField also offers remotelIssuesCallback
- CMS-18345: Prevent duplicate URLs for preview allow list and connect sources
- CMS-18150: 'SiteService' in Documentation is wrong
- CMS-18138: Snakeyaml has been updated to version 1.26
- CMS-17809: Updated Upload Settings Documentation and Mime Type Mapping
- CMS-17784: Studio may leave database lock when interrupted during startup
- CMS-17731: Configuration property studio.security.autoLogout.delay renamed to studio.autoLogout.delay
- CMS-17707: Improve Taxonomy Change Plugin
- CMS-17529: Fixed MIME-type Detection for Calendar Files
- CMS-16807: Fix loadbalancing in Chef deployment with multiple CAEs
- CMS-16408: MySQL Deployment in Chef used deprecated configuration syntax
- CMS-12223: Solr cookbook in Chef deployment fails to update
- CMS-18142: Removed erroneous warning about missing cache capacity for java.lang.Object

- CMS-17978: Commerce adapter connection log is more helpful
- CMS-18313: Adding ID to all PageGrid related Elements
- CMS-18212: Catalog types moved to extension headless-server-catalog
- CMS-18029: Fixed missing dependency when running headless without live context
- CMS-17936: LanguageId deprecated in favor for new properly named property 'locale'
- CMS-17797: Headless supporting queries for localized variants of content objects
- CMS-18365: Third-Party Update: Apache Ant 1.10.9
- CMS-18305: Updated to latest Spring Framework 5.2.9, Spring Boot 2.2.10, and others
- CMS-18265: Resolve dependency on examples-thirdparty-bom
- CMS-18185: Quote parameter in management-tools entrypoint chain
- CMS-17996: UAPI Reconnect
- CMS-17836: Third-Party Update: Jetty
- CMS-17515: Translation Auto-Merge Keeps Order of Link Lists
- CMS-16773: Autofill in browsers now finds correct field types
- CMS-16538: Copy mysql configuration files in Dockerfile using mysql user
- CMS-11314: Sort results in UAPI queries

## 4.5.1 Breaking Changes

### CoreMedia Core

#### Content Server Database Change

When the *Content Server* starts the first time after upgrading from version 2004 or 2007, it will automatically adapt database tables and remove existing unique constraints for the `versionUuid` column of all document type tables. For Microsoft SQL Server and IBM DB2, and when upgrading from 2007.1, wrong unique constraints are also removed from the `uuid` column of tables `CmUsers` and `CmGroups`.

Follow [Section “Content Server Database Change” \[268\]](#) for upgrade information.

*[CMS-18049]*

#### Update of mongo-java-driver

The `mongo-java-driver` 3.11.2 has been updated to `mongodb-driver-legacy` 4.1.0 and `mongodb-driver-core` 4.1.0. This change required breaking changes as several classes and methods have been deprecated.

Follow [Section "Update of mongo-java-driver" \[268\]](#) for upgrade information.

*[CMS-17590]*

### Fix for possible false calculation of Dependent Content for Synchronization-Workflow

When you use the Synchronization workflow from version 2007.1, it is necessary to reupload the `synchronization.xml`, to ensure that dependent content is calculated correctly for synchronization. Also the class `DefaultStartSynchronizationWorkflowFormBase` was adapted to ensure that values of additional workflow fields, implementing the `IAdditionalWorkflowDisplayFieldMixin` are passed to the Synchronization workflow (the Translation workflow is not affected by this).

*[CMS-17933]*

### Corba over SSL

The SSL encryption of CORBA traffic was broken, so that a configured SSL port just served unencrypted data, equivalent to the clear text port. This has been fixed now.

*[CMS-17723]*

### Publisher monitoring

The JMX monitoring interface records failed publications due to an unavailable *Master Live Server* as failed publications now. Previously, such publications were not counted at all.

*[CMS-16763]*

### translate.xliff.export.excludeContentName defaults to true

Because translating content names may harm your system, the default for `translate.xliff.export.excludeContentName` has been changed from `false` to `true`. Having this, content names will by default not be part of your XLIFF anymore.

Follow [Section "translate.xliff.export.excludeContentName defaults to true" \[269\]](#) for upgrade information.

*[CMS-16730]*

### Localization Workflows: Automatic merge of Annotated LinkLists

In translation workflows, annotated LinkLists (`CMTeaser#targets` and `CMCollection#extendedItems`) were not merged automatically in previous releases, which lead to problems in derived content. Reason was, that the properties have been marked as "translatable" in the document type definition (`blueprint-doctypes.xml`). Now the "translatable" attribute has been removed to enable the automatic merge, and the improved merge algorithm for struct lists is configured for translation and synchronization workflows. To enable translation of the property `CMTeaser#targets.links.callToActionCustomText`, it is con-

figured as "translatable expression". Note that the changed merge algorithm implicates a different merge behaviour for synchronization workflows.

[CMS-16514]

### cm serverimport: No Suppressed Errors Anymore

Previously, `cm serverimport` may have ignored errors on import silently unless you set the `--halt` option. Now, you will always get a warning on any error.

Follow [Section "cm serverimport: No Suppressed Errors Anymore" \[270\]](#) for upgrade information.

[CMS-11155]

## CoreMedia Studio

### Fixed Lazy Loading and Content Hiding in Repository View of the Library

The user preference "Show Products and Categories as Content" has been fixed. In addition to this, the lazy loading for the repository tree view has been fixed too.

Follow [Section "Fixed Lazy Loading and Content Hiding in Repository View of the Library" \[271\]](#) for upgrade information.

[CMS-14533]

## CoreMedia Studio Client

### Jangaroo Version Updates

To use the new feature of *lazy singletons*, Studio Client uses a new version of Jangaroo. Support for lazy singletons has been added to the run-time (in `jangaroo-libs` 4.0.52), which is fully compatible. The compiler (in `jangaroo-tools` 4.0.72) supports the new annotation `Lazy`, which is also not a breaking change. For details, see [J00-152](#). Note that the update also contains a number of [fixes and improvements](#) regarding type-checking, which may reveal type errors in ActionScript/MXML code. So in the unlikely case that after the update, you encounter compile errors in Studio Client, please consult the above issues to fix those type errors in your code.

[CMS-18179]

### Moved classes SitesService, Site, SiteModel

The following public API Actionscript classes have been moved into the new module 'studio-client.multi-site-models'. They are now in the package 'com.coremedia.cms.studio.multisite.models.sites'. Otherwise, they kept their signature and behave as before.

Follow [Section “Moved classes SitesService, Site, SiteModel” \[272\]](#) for upgrade information.

*[CMS-18057]*

### New method in IAdditionalWorkflowDisplayFieldMixin

The new `remoteValidationCallback` method must be implemented by all `Fields`, implementing the `IAdditionalWorkflowDisplayFieldMixin`. The method `remoteValidationCallback` will be called after every workflow validation and allows the `Field` to adapt its validation state according to the returned workflow issues.

*[CMS-17575]*

### WorkflowDateTimeField can adapt validation state according to WorkflowIssues

The `WorkflowDateTimeField` has a new property `issueKeysForValidationState`, which can be used to pass issue keys to the field. When a workflow validation produces issues with the severity `warn` or `error` and an issue key matches a value from the `issueKeysForValidationState`, the field will adapt its validation state.

*[CMS-17911]*

### StartWorkflowFormBase was adapted

The `StartWorkflowFormBase` now has a `StartWorkflowFormState` that can be used to pass the initial contents to the `Form`.

*[CMS-17843]*

## CoreMedia Workspace

### Activate HTTP2 (h2c) for studio-client container

With this change, the `nginx` webserver serving the static files of the `studio-client` application, will accept only `http2` requests. In order to accept `HTTP/1.1` you need to set the environment variable `PROTOCOL` to an empty value.

Follow [Section “Activate HTTP2 \(h2c\) for studio-client container” \[273\]](#) for upgrade information.

*[CMS-13480]*

## CoreMedia Frontend Workspace

### Updated Frontend Dependencies

The `frontend-maven-plugin` used in the `frontend` workspace has been updated to version `1.10.3`. The `frontend` dependencies, have been updated to the latest versions and `node.js` to latest LTS version `14.15.0`.

Follow [Section "Updated Frontend Dependencies" \[273\]](#) for upgrade information.

[CMS-18481]

### Product availability calculation

Product availability calculation has been changed in 2007.1 to no longer be based on the [deprecated] `Product#isAvailable`. The logic however did not cover the old default if no availability service was provided for the commerce integration. If this was the case the old implementation did return "true" while the implementation in 2007.1 did return "false". This was not intended, so we changed the logic back to return "true".

[CMS-17979]

## CoreMedia Deployment

### S3 media store configuration changed

The configuration of the media store `S3Store`, which maintains blobs in AWS S3, has changed. If you use a custom `S3Store` media store with an empty value for `storeDir`, no prefix for the blob path in the S3 bucket is applied now. The `S3Store` used to prepend an unnecessary `/` in this case. If you configure the `S3Store` by defining the property `cap.server.blobstore.s3.bucketname`, the default value for `cap.server.blobstore.s3.rootdir` is now an empty string and not `blobstore/file` as before.

Follow [Section "S3 media store configuration changed" \[274\]](#) for upgrade information.

[CMS-16139]

## CoreMedia Commerce Hub

### Use WCS adapter profiles with version specific configurations in compose file

Since version `1.3.14`, the `commerce-adapter-wcs` provides Spring profiles for the WCS/HCL versions that are supported. These profiles configure the suitable URLs that are required to connect to the WCS/HCL Commerce system. The environment variables that are passed to the `commerce-adapter-wcs` application have been changed in the Docker Compose `commerce-adapter-wcs.yml` file to using these version profiles. The variables that are configured by the version profiles have been removed from the `commerce-adapter-wcs.yml`. If desired, it is still possible to set all properties in the `commerce-adapter-wcs.yml`.

[CMS-18162]

## CoreMedia Connector for HCL Commerce

### Removed deprecated API concerning product availability

The following deprecated methods of `com.coremedia.livecontext.ecommerce.catalog.Product` have been removed:

Follow [Section “Removed deprecated API concerning product availability” \[275\]](#) for upgrade information.

*[CMS-17790]*

## CoreMedia Connector for SAP Commerce Cloud

### SAP Commerce Cloud 2005 Support

SAP Commerce Cloud 2005 is supported now.

Follow [Section “SAP Commerce Cloud 2005 Support” \[276\]](#) for upgrade information.

*[CMS-17799]*

## CoreMedia Headless Server

### AssetSearchService in commerce extension now uses a dedicated SearchResultFactory

AssetSearchService in commerce extension now uses a dedicated SearchResultFactory. Furthermore the factory uses a default caching time of 300 seconds (=5 minutes). The caching time is configurable by the config parameter 'caas.commerce.assetsearchservice.cache.seconds'. The change is considered breaking as the caching time was previously set by 'caas.querylist.search.cache.seconds', which may contain a different value than the new default of 300 seconds.

Follow [Section “AssetSearchService in commerce extension now uses a dedicated SearchResultFactory” \[276\]](#) for upgrade information.

*[CMS-18188]*

### Update of graphql-java

The dependency `com.graphql-java.graphql-java` has been updated to version 15.0 and corresponding `com.graphql-java.graphql-java-spring-webmvc` to version 2.0. With the graphql-java update, non-standard scalars need to be defined explicitly now. For more breaking changes that may affect custom code, see release notes of graphql-java.

*[CMS-17662]*

### Set row limit for AssetSearchService with correct config value

Previously the row limit of the commerce AssetSearchService, used for linked objects on commerce objects, was set with a wrong config parameter. This is fixed, introducing a dedicated new config parameter: 'caas.commerce.assetsearchservice.limit'. The default is -1 = unlimited.

Follow [Section "Set row limit for AssetSearchService with correct config value" \[277\]](#) for upgrade information.

*[CMS-18158]*

### Headless now always sends JSON body with JSON properties and proper HTTP response code

Depending on the useragent, Headless Server sends the default Spring mvc white label error page, in case of invalid requests, for example, missing query. Headless Server now makes sure to always send a JSON body with dedicated JSON properties and the proper HTTP response code.

Follow [Section "Headless now always sends JSON body with JSON properties and proper HTTP response code" \[277\]](#) for upgrade information.

*[CMS-18039]*

## Miscellaneous

### Spring ConfigurationProperties for UserProvider

Spring ConfigurationProperties for UserProvider

Follow [Section "Spring ConfigurationProperties for UserProvider" \[278\]](#) for upgrade information.

*[CMS-16842]*

### Removed default image transformations

Since the first release of CoreMedia Content Cloud, `TransformImageService.getTransformations()` adds a fallback configuration (defined in Spring configuration `mediatransform.xml`) to the list of available transformations. If an image transformation is not defined in the `responsiveImageSettings` settings content of the site then the corresponding default is applied. The `mediatransform.xml` included some default image transformations, which were overwritten in the Blueprint Demo sites. However, these defaults apply to new sites too even if these sites use completely different crops. This could lead to undesired results and for this reason we removed the default image transformations in `mediatransform.xml`.

Follow [Section "Removed default image transformations" \[279\]](#) for upgrade information.

[CMS-16800]

#### Global image variants will be loaded when no site is available

The `TransformImageService` didn't find any image variant in the content repository if no site for the given content can be resolved. To resolve the global image variants as a fallback the interface `VariantsStructResolver` has been extended by the method `getGlobalVariants()` which returns the global variants from `"/Settings/Options/Settings/Responsive Image Settings"`.

[CMS-18202]

#### Update Maven-Surefire-/Failsafe-Plugin to 3.0.0-M5 and test libraries

`maven-surefire-plugin` and `maven-failsafe-plugin` have been updated to 3.0.0-M5. This fixed a bug, that tests which failed within the setup phase of a test instance were not marked as failed.

Follow [Section "Update Maven-Surefire-/Failsafe-Plugin to 3.0.0-M5 and test libraries" \[280\]](#) for upgrade information.

[CMS-17989]

## 4.5.2 Changes and Improvements

### CoreMedia Core

#### Import blob from generic URL in cm serverimport

The command line tool `cm serverimport` can import blobs with an arbitrary `href` attribute now. The container URL is retrieved and its content is persisted in the `Content Server`. This makes it easier to generate files for `cm serverimport` that reference preexisting blobs.

[CMS-18379]

#### Third-Party Update: Apache Solr 8.6.3

Apache Solr has been updated to version 8.6.3, which fixes security vulnerability CVE-2020-13957.

For detailed changes of Apache Solr have a look at [https://lucene.apache.org/solr/8\\_6\\_3/changes/Changes.html](https://lucene.apache.org/solr/8_6_3/changes/Changes.html).

[CMS-18355]

### Third-Party Update: Apache Solr 8.6.2

Apache Solr has been updated to version 8.6.2, which fixes security vulnerability CVE-2020-13941.

For detailed changes of Apache Solr have a look at [https://lucene.apache.org/solr/8\\_6\\_2/changes/Changes.html](https://lucene.apache.org/solr/8_6_2/changes/Changes.html).

[CMS-18248]

### UUID Support for `dump-/restoreusers`

The command-line tools `dumpusers` and `restoreusers` are now able to store and restore UUIDs of built-in users and groups. For `dumpusers` you may toggle UUID output via `\-\-include-uuids`. `restoreusers` will automatically respect the UUIDs when creating built-in users, unless `--skip-uuids` is given.

An additional option `\-\-force-uuids` for `restoreusers` will force changing UUIDs of already existing built-in users. Use this option with care.

For details and restrictions see Content Server Manual, Section *Configuration and Operation /\_Server Utility Programs/\_Operation\_*.

[CMS-17546]

### `cm serverexport/-import`: Supporting Content-UUIDs

To be able to transfer new contents between CMS deployments while keeping their Universally Unique Identifiers (UUIDs) synchronized, you may now optionally export contents via `cm serverexport` including their Content-UUIDs. To do so add `--include-uuids` to your command-line.

`cm serverimport` will recognize the UUIDs and will apply the Content-UUIDs to newly created contents. You may opt-out from this behavior by running `cm serverimport` with option `--skip-uuids`.

For details and limitations see Content-Server-Manual, section "Serverimport/Serverexport" in "Configuration and Operation".

**Upgrade Notes:** Unless you opt-in to exporting Content-UUIDs the behaviors of `serverexport` and `serverimport` have not changed.

[CMS-17139]

### Command line tools support `REPOSITORY_PASSWORD` variable

Instead of providing the password to a command line tool using the `-p` option, you can alternatively set the environment variable `REPOSITORY_PASSWORD` now. The command line argument still takes precedence.

This avoids possible leaks of the password through the shell history or the process list. Do not set the password variable globally in an interactive shell, because it might then leak to other processes that are also started in the shell.

[CMS-14445]

### Serverexport now also exports timezone id

Until now serverexport did only export the timezone offset (e.g. +0200) and missed to export the timezone id (e.g. Europe/Berlin). As the timezone id is displayed in Studio forms a serverexport and reimport caused that the date was displayed wrong.

In the exported xml a date field looked like this:

```
<extDisplayedDate format="dd.MM.yyyy HH:mm:ss Z">27.06.2019 00:00:00 -0400</extDisplayedDate>
```

and has changed to:

```
<extDisplayedDate format="dd.MM.yyyy HH:mm:ss Z VV">27.06.2019 00:00:00 -0400 America/New_York</extDisplayedDate>
```

The behavior hasn't changed. Xml content files with dates in old format can still be imported but may cause a wrong displayed date in studio forms.

Affects the fields `extDisplayedDate` as well as `validFrom /{{validTo}}` from the default document type model.

[CMS-11665]

## CoreMedia Content Application Engine

### Cache capacities and timeouts can now be configured via common properties

Cache capacities and timeouts can now be configured via common properties. use

- `cache.capacities.<cacheIdentifier>`
- `cache.timeout-seconds.<cacheIdentifier>`

The following properties have been deprecated in favour of the new approach

- `aspect.cache.capacity`
- `assumesIdentity.cache.capacity`
- `cachekeysize.java.lang.object`
- `cae.viewdispatcher.cache.size`
- `com.coremedia.transform.loadedImageCacheCapacity`
- `contentBeanBackedPageGridPlacement.cache.capacity`
- `searchTermExternalReferenceResolver.cacheCapacity`

- `editorial.comments.data.cache.comments-cache-size`
- `editorial.comments.data.cache.qualifiers-cache-size`
- `editorial.comments.data.cache.threads-cache-size`
- `page.cache.capacity`
- `pageGridImpl.cache.capacity`
- `searchTermExternalReferenceResolver.cacheTime`

[CMS-13112]

### CMProduct ContentStringPropertyIndex Performance

Studio and CAE do not load deleted CMProduct contents anymore during startup for the `productCode` in-memory index (`ContentStringPropertyIndex`). This improves startup performance if there are lots of deleted CMProduct contents.

[CMS-12311]

## CoreMedia Studio

### New Preview Url Service Public API

Version 2007.1 introduced the content based multi preview configuration for Studio. Starting with 2007.2 the underlying implementation is available as a public API. Currently, the API is only used by Studio but the API is not limited to the usage in Studio. The API is available as a dependency and offers the possibility to develop custom so called `PreviewProviders` to be used in Studio or e.g. to implement a specialized external preview URL service as a standalone (micro-)service.

[CMS-17262]

## CoreMedia Studio Client

### Added 'taxonomyLinkListWrapper' config parameter for Taxonomy Link Lists

Added the new optional config parameter `taxonomyLinkListWrapper` for the component `TaxonomyLinkListPropertyField` so that it may be re-used outside Studio formular components.

[CMS-18195]

### Moved components and classes, new deprecations

In preparation for *Studio Apps* some classes which are not part of the Public API have been moved. Public-API classes have been deprecated and can be replaced with the mentioned replacements.

The following classes have been moved to a new module

Class: `CurrentWorkflowTaskInfoLabel.mxml`

- Previous package: `com.coremedia.cms.editor.controlroom.workflow`
- New package: `com.coremedia.cms.studio.workflow.components`
- New maven module: `com.coremedia.cms:studio-client.workflow-ext-components`

Class: `CurrentWorkflowTaskInfoLabelBase.as`

- Previous package: `com.coremedia.cms.editor.controlroom.workflow`
- New package: `com.coremedia.cms.studio.workflow.components`
- New maven module: `com.coremedia.cms:studio-client.workflow-ext-components`

Class: `WorkflowLocalizationUtils.as`

- New Classname: `ProcessDefinitionLocalizationUtils.as`
- Previous package: `com.coremedia.cms.editor.controlroom.workflow`
- New package: `com.coremedia.cms.studio.workflow.components`
- New maven module: `com.coremedia.cms:studio-client.workflow-ext-components`

Class: `UIBehaviour.as`

- Previous package: `com.coremedia.cms.editor.sdk.util`
- New package: `com.coremedia.ui.util`
- New maven module: `com.coremedia.ui.toolkit:ui-components`

Class: `ProcessDefinitions.properties`

- Previous package: `com.coremedia.cms.editor`
- New package: `com.coremedia.cms.studio.workflow.components`
- New maven module: `com.coremedia.cms:studio-client.workflow-ext-components`

### Deprecations

Deprecated: `com.coremedia.cms.editor.sdk.premular.CollapsiblePanel.mxml`

- Replacement: `com.coremedia.ui.components.panel.CollapsiblePanel.mxml`
- Replacement Maven Module: `com.coremedia.ui.toolkit:ui-components`

Deprecated: `com.coremedia.cms.editor.sdk.premular.CollapsiblePanelBase.as`

- Replacement: `com.coremedia.ui.components.panel.CollapsiblePanelBase.as`
- Replacement Maven Module: `com.coremedia.ui.toolkit:ui-components`

Deprecated: `com.coremedia.cms.editor.sdk.premular.CollapsibleFormPanel.mxml`

- Replacement: `com.coremedia.ui.components.panel.CollapsibleFormPanel.mxml`
- Replacement Maven Module: `com.coremedia.ui.toolkit:ui-components`

[CMS-17908]

### New Warning Dialog for Localization Issues

When the user tries to start a localization workflow and there are localization warnings, a warning dialog appears to inform the user of the unresolved issues. The user can choose whether to continue or cancel the workflow. The dialog will not appear anymore when the 'Do not show again' checkbox is selected. In the Studio user preferences on the 'Studio' tab the user can reset the hidden dialogs by pressing on the 'Show dialog messages again' button.

[CMS-17079]

### ShowIssuesPlugin: Limit Tooltip Entries

In tooltips, the `ShowIssuesPlugin` now limits the amount of displayed issues to 5 (per issues type).

[CMS-16200]

## CoreMedia Studio Server

### Security-Update of google-oauth library from 1.19 to 1.31.1

Due to a OWASP security warning the Google OAuth Library `com.google.oauth-client:google-oauth-client` was updated from V1.19 to the suggested version 1.31.1

<http://web.nvd.nist.gov/view/vuln/detail?vulnId=CVE-2020-7692>

The transitive relationships of OAuth also made the update of the google-libraries com.google.api-client:google-api-client (1.19 to 1.30.6) and com.google.http-client:google-http-client (1.19 to 1.36.0) necessary.

This update is considered non-breaking but customers relying on these libraries in potential custom extensions should check the corresponding functionality.

[CMS-17896]

## CoreMedia Frontend Workspace

### Third-Party Update: copy-webpack-plugin has been updated

In the package `theme-utils` the `copy-webpack-plugin` has been updated to version 6.0.3 from 5.1.1 to avoid security issues of previous versions.

If you use a custom `copy-webpack-plugin` in project code, please check the respective release notes for changes and upgrade information. See <https://github.com/webpack-contrib/copy-webpack-plugin/releases>

[CMS-17955]

## CoreMedia Commerce Hub

### Default SAP Commerce Cloud Adapter changed to version 1.2.1

SAP Commerce Cloud 2005 is supported.

[CMS-18149]

### Default Salesforce Commerce Adapter changed to version 1.2.0

- SFCC-33: Product Variation Groups found by search are displayed as variants and not as products.
- Usage of `adapter.base.version` 1.4.5

[CMS-18148]

### Default HCL Commerce Adapter changed to version 1.3.13

There are more options to read the category for a product. The new config property "wcs.alwaysUseMasterCategory" (default is false) can be used to change into a mode where the current catalog does not matter when choosing the category for a product. In this case the category from the master catalog is chosen.

If another new config property "wcs.categoryValidationEnabled" (default is false) is set to "true" each category for a products is being validated before it is returned. Only categories that can be loaded in the context of the current catalog are accepted.

[CMS-18146]

### gRPC timeouts (deadlines) can be configured

A timeout (called deadline in gRPC) for calling the commerce adapter can be set in the gRPC clients (e.g. CAE/Studio). This helps to use the commerce adapter in a productive scenario, e.g. behind a load balancer. The default value is 60 seconds. After this timeout, the client no longer expects an answer and cancels the call.

[CMS-17962]

## CoreMedia Connector for HCL Commerce

### The Livecontext IBM extension has been deprecated

The Livecontext IBM extension was part of the legacy Blueprint commerce integration and has been deprecated in favour of the Commerce Hub integration. Please refer to the deprecation section in the Supported Environments manual for more details. Furthermore the features B2B support, workspaces, push support and commerce cache invalidation are not supported by the Commerce Hub architecture. They will be removed or changed in the future.

[CMS-18277]

## CoreMedia Headless Server

### New query root: metadata

A new query root **metadata** was added to the Headless Server. See the Headless Server manual for details.

[CMS-17434]

### Retrieve Personalized Content via Headless Server

The Headless Server supports retrieval of personalization rules stored in personalized content [CMSSelectionRules] now. See the documentation for details.

[CMS-13122]

## CoreMedia Documentation

### Removed Search Manual Section "CAE Feeder for API Use"

The Search Manual's outdated section "Searching for CAE Content Beans | CAE Feeder for API Use" has been removed. It covered a rare use case where the public API was used to implement a custom application for updating the search engine programmatically. We assume that this functionality is not needed anymore, or could be better solved with Solr API itself. The API is still there and can be used, but the use case is not highlighted in the documentation anymore. Please get in touch with CoreMedia Support, if you are using this functionality and need help during the upgrade.

[CMS-17963]

## Miscellaneous

### Third-Party Update: PostgreSQL Driver

The PostgreSQL driver has been updated to version 42.2.16.

[CMS-18285]

### The base image for all spring-boot applications has been updated

The update to 2.2.1 includes the latest java patch update and a small fix to improve the usability of the entrypoint chains together with the management-tools image.

[CMS-18184]

### The Docker base image for MySQL has been updated

The base image for MySQL in the docker-compose development system has been updated from 5.7.28 to 5.7.31.

[CMS-18182]

### Add ignoredDependencies configuration to ModularOneRepoEnforcerRule

With the update of `coremedia-enforcer-rules` to `1.2.1`, dependencies can now be excluded from the `ModularOneRepoEnforcerRule` by adding an `ignoredDependencies` element to the rule, which works the same way as in the `maven-dependency-plugin`. The filter syntax is: `groupId:artifactId:type:version` where each pattern segment is optional and supports full and partial `*` wildcards. An empty pattern segment is treated as an implicit wildcard.

[CMS-17939]

### CMCC now supports PostgreSQL 9.6 on Azure

PostgreSQL 9.6 on Azure was successfully tested and is now supported for CMCC 10. As Azure adds a postfix to the database username, you need to set a new DB connection property.

- For Content and Workflow Server (as well as the command line tools) you need to additionally set the property `sql.store.login-user-name=<username>@<your domain>`.

**NOTE :** The `<username>` needs to be equal to the name, set in the property `sql.store.user=<username>`.

- For the CAE Feeder and the `cm_resetcaefeeder` command line tool, set the property `jdbc.login-user-name=<username>@<your domain>`, in addition to `jdbc.user=<username>`
- For the Studio Server you need to set the property `editorial.comments.db.username=<username>@<your domain>` and `editorial.comments.db.schema=<schemaname>`

[CMS-17912]

### commerce-adapter-commercetools to Docker deployment

Adds commerce-adapter-commercetools to Docker deployment

[CMS-17899]

### Update Traefik to 1.7.26

Traefik has been updated to 1.7.26.

[CMS-16330]

### java-application-base container image source published

The source to build the `java-application-base` image has been published as a `GitHub repository` at <https://github.com/coremedia-contributions/docker.java-application-base>.

Furthermore, the image build process has been enhanced to build images based on:

- `openjdk (jdkljre)`
- `amazon corretto`
- `adoptopenjdk (jdkljre)`

[CMS-16091]

### Changed Configuration Properties for Search And Feeder

Some configuration properties for the Solr connection and for Feeder applications have been renamed as part of an initiative to use Spring Boot's type-safe `Configuration`

**Properties** . The old property names all 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.

Applications that use Solr to search for editorial content like Studio should specify the name of the 'studio' collection with property `solr.content.collection` instead of `solr.collection.content` .

Applications that use Solr for the web-site search like the CAE should specify the name of the 'preview' or 'live' collection with property `solr.cae.collection` instead of `solr.collection.cae` .

See sections 'Content Feeder Renamed Properties' and 'CAE Feeder Renamed Properties' in the reference chapter of the Search Manual for old and new property names for Feeder applications.

Note, that the old properties `feeder.sendIdleDelay` , `feeder.sendMaxDelay` , `feeder.retrySendIdleDelay` , and `feeder.retrySendMaxDelay` take a value in seconds for the Content Feeder, but a value in milliseconds for the CAE Feeder. This hasn't changed. 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-13111]

### Configuration properties have changed.

The following properties are deprecated. The usage of their replacements is encouraged.

#### Deprecated Property -> Replacement

- `blueprint.sitemap.cae.port` -> `cae.sitemap.cae-port`
- `blueprint.sitemap.period` -> `cae.sitemap.period-minutes`
- `blueprint.sitemap.protocol` -> `cae.sitemap.protocol`
- `blueprint.sitemap.target.root` -> `cae.sitemap.target-root`
- `contentbeans.merge-code-resources` -> `cae.merge-code-resources`
- `coremedia.blueprint.project.directory` -> `themes.project-directory`
- `keep.https.after.logout` -> `elastic.social.keep-https-after-logout`

[CMS-13104]

## 4.5.3 Fixed Issues

### CoreMedia Core

#### Fixed CAE Feeder to Index Correct Navigation Path

Fixed a bug in the *CAE Feeder* that the Solr index field `navigationpath` was not correctly set after withdrawal and re-publication.

[CMS-18278]

#### cm restoreusers: Exit Code != 0 on Failure

If there any error is detected while restoring users, the tool `cm restoreusers` will now exit with an exit code different to 0 (zero).

[CMS-18225]

#### Bugfix for possible escalation in translation workflows that have multiple target sites

The `DerivedContentsResult` was enhanced, so it guarantees only versions of unique content are stored and used in a translation workflow. Before, it was possible that two different version of the same content would be stored in the `masterContentObjects` variable which led to an escalation of the workflow.

This bug could only occur for translation workflows that had `createWorkflowPerTargetSite` set to false.

[CMS-17826]

#### Security problem in CORBA protocol fixed

It used to be possible to guess the object ids of objects remotely accessible through CORBA when the start time of the servers was known or, in the case of the IBM JDK, even without knowing the start time. This allowed the unauthorized access to methods that did not require the session to be passed as an argument. Session objects already used secure ids, so that most methods were not affected.

This has been fixed. Object ids contain a secure random identifier now.

By setting the system property `com.coremedia.corba.server.use-insecure-oids=true` or by setting the environment variable `COM_COREMEDIA_CORBA_SERVER_USE_INSECURE_OIDS=true`, the bugfix can be disabled in case the generation of random numbers leads to a serious performance degradation. These are stop-gap flags, only, and you should fix the configuration of `SecureRandom` eventually.

[CMS-17667]

### Serverexport now checks if base directory is writable

`cm serverexport` now checks if the base directory is writable. If not it will fail early, as no content can be exported.

[CMS-17399]

### Enhanced "Delete Content Type" description

The description of the "Deleting Content Types" section in the Content Server Manual has been enhanced.

[CMS-16851]

### Multisite-validation-tools: Changed Error Code for Translation Settings

On validation of a TranslationSettings document with the multi-site-validation-tools, the error MS\_VALIDATION\_4000 (Invalid property value) was returned, if the translation strategy is invalid. This error has changed to MS\_VALIDATION\_4022 (Invalid translation settings property value).

[CMS-16646]

### Fixed a bug which caused an error upon content server start after adding a new observed property

After adding a new observed property to a doctype (and the restart of the server) and creating a document of the doctype with a value for the new observed property the second restart of the server caused an exception:

```
hox.corem.exceptions.RepositoryError: ERROR: duplicate key value violates unique constraint "pk_observedvalues"
```

The bug is now fixed.

[CMS-15090]

## CoreMedia Content Application Engine

### Third-Party Update: Tomcat

Tomcat has been updated to version 9.0.37 to avoid security issues of the previous version (CVE-2020-13934, CVE-2020-13935).

[CMS-17901]

### Add substitution model attribute for FTL Spring bind

Substitution model attributes can now also be used with the `<@spring.bind />` macro in Freemarker templates.

[CMS-12747]

# CoreMedia Studio

## Studio Link Suggestions Exclude Deleted Content

Fixed a bug that deleted content appeared in the list of suggested contents for a link list field in Studio. Deleted content is excluded now.

[CMS-17856]

## Fixed Creation of Taxonomy Root Nodes

Fixed issue where root nodes of type 'CMLocTaxonomy' have been created as 'CMTaxonomy' documents.

[CMS-17830]

## Fixed Accidental Bookmark Deletion

Fixed issue where bookmarks have been deleted when the Studio tab is closed before they have been loaded.

[CMS-17804]

## Fixed Library Dragging Issue

Fixed the possibility to move the Studio library out of the browser window.

[CMS-17602]

## Fixed TooManySeachResultsException

The given exception has been raised when Studio's user manager is working on a large amount of users or groups. We have introduced the new Spring property *studio.usermanager.minSearchCharacters* which determines the amount of characters to input until a search request against the user provider is triggered. The default value is 0, which means that all users and groups are lazy loaded by the Studio, therefore also requested by the user provider.

[CMS-17404]

## Fixed recursion in ReplaceltemsPlugin

Setting recursive="true" in the ReplaceltemsPlugin was broken and has been fixed. However we do not recommend to use the recursive flag. Instead use the NestedRulesPlugin for deeper replacements.

[CMS-13931]

## CoreMedia Studio Client

### StructPropertyField Can Deal With Sub-Structs and Studio Tab Reuse

We fixed a bug where the StructPropertyField took on wrong values on Studio tab-reuse when the StructPropertyField pointed to a sub-struct of a first-level document property.

[CMS-18219]

### Added error message for misconfigured TaxonomyCondition editors

The *TaxonomyCondition* editor required the config parameter *taxonomyId* . If not set, the taxonomy selection dialog simply remains empty. We have added an exception with a corresponding message in that case.

[CMS-18167]

### Fixed Taxonomy Name Escaping

Fixed issue where taxonomy node names were rendered with escaped characters inside the taxonomy manager.

[CMS-17953]

### WorkflowDateTimePropertyField also offers remotelIssuesCallback

The WorkflowDateTimePropertyField also offers a new property remotelIssuesCallback of type function, that can be used to react to issues produce by the field itself

[CMS-17889]

## CoreMedia Studio Server

### Prevent duplicate URLs for preview allow list and connect sources

Previously the automatically generated connect sources and allowed preview urls may have contained many duplicates, if they were identical in all provider setting documents. This lead to a problem while loading the studio, because the corresponding http header became to large. This fix filters the list for duplicate entries.

[CMS-18345]

### 'SiteService' in Documentation is wrong

Replaced siteService with sitesService .

[CMS-18150]

### Snakeyaml has been updated to version 1.26

The dependency org.yaml:snakeyaml has been updated from 1.13 to 1.26 for the headless-server and from 1.25 to 1.26 for studio (editorial comments). This fixes a security vulnerability which was present in former versions of this library.

[CMS-18138]

### Updated Upload Settings Documentation and Mime Type Mapping

The documentation of the Upload Settings has been updated according to the implementation. Additionally, the usage of the settings `mimeTypeToMarkupPropertyMappings` and `mimeTypeToBlobPropertyMappings` has been updated so that the primary type of a mime-type is sufficient to configure these mappings.

[CMS-17809]

### Studio may leave database lock when interrupted during startup

Should the startup of a Studio-Server instance be interrupted, it is possible that a lock is left on the database schema `cm_editorial_comments`. In this case it is necessary to remove the lock manually, either by performing the following SQL Statement:

```
UPDATE DATABASECHANGELOGLOCK SET LOCKED=0, LOCKGRANTED=null, LOCKEDBY=null
where ID=1;
```

or

use liquibase to do so: "liquibase releaseLocks"

[see: <https://docs.liquibase.com/concepts/basic/databasechangeloglock-table.html>]

It is also possible to disable Liquibase with the configuration `editorial_comments.liquibase.enabled=false`. However this means that it is necessary to apply the database changesets manually after an upgrade. This is possible by activating liquibase for at least one startup of a Studio-Server, or to run liquibase manually [<https://docs.liquibase.com/tools-integrations/cli/home.html>].

Example of liquibase.properties file for command line tool (Mysql-Setup):

```
changeLogFile=db/changelog/db.changelog-editorial-comments.xml
username=cm_editorial_comments
password=cm_editorial_comments
driver=com.mysql.cj.jdbc.Driver
url=jdbc:mysql://localhost:3306/cm_editorial_comments?useUnicode=yes&characterEncoding=UTF-8
classPath=pathToMysqlDriver/mysql-connector-java-8.0.20.jar;pathToEditorialCommentsDataJar;editorial-comments-data-1-SNAPSHOT.jar
```

[CMS-17784]

### Configuration property `studio.security.autoLogout.delay` renamed to `studio.autoLogout.delay`

Due to conflicts with `StudioSecurityConfigurationProperties` the property `studio.security.autoLogout.delay` in `StudioConfigurationProperties` was renamed to `studio.autoLogout.delay`.

[CMS-17731]

### Improve Taxonomy Change Plugin

The mechanism to detect changes of taxonomy properties within in the taxonomy manager has been improved. The *TaxonomyChangePlugin* provides the additional String property *properties* which supports a comma separated value with the names of the taxonomy properties which should be observed. The property is optional and should only be used when property editors of Taxonomy forms are working on Structs.

Additionally, the class *TaxonomyNode.as* has the new boolean field `_AUTO_COMMIT_` now. This allows to disable the "auto-commit" of the taxonomy manager completely. In this case, we recommend to use the Control Room for detecting and publishing changed content.

[CMS-17707]

### Fixed MIME-type Detection for Calendar Files

MIME-type detection for Outlook calendar files (\*.ics) has been fixed to return "text/calendar" instead of "text/html".

[CMS-17529]

## CoreMedia Deployment

### Fix loadbalancing in Chef deployment with multiple CAEs

When the Chef deployment was configured to install multiple CAEs on a single node for loadbalancing purposes, the servlet context was missing in the proxy balancer config.

[CMS-16807]

### MySQL Deployment in Chef used deprecated configuration syntax

Since MySQL 5.7, the correct syntax uses underscores `_` instead of hyphens `-`.

[CMS-16408]

### Solr cookbook in Chef deployment fails to update

The home directory of the solr user can only be changed to the new solr installation directory, when the service is stopped. With Chef you can model this by using the `:before` timing on a stop notification to the service resource.

[CMS-12223]

## CoreMedia Commerce Hub

### Removed erroneous warning about missing cache capacity for java.lang.Object

`DataClientConfiguration` occasionally logged the following warning:

```
Cache configuration seems to be missing. Setting capacity of java.lang.Object to 10 to avoid stack overflow errors due to recomputation.
```

The code issuing this warning was run while initializing beans without considering cache capacity configuration applied by independent beans such as `commonCacheCapacityConfigurer` defined in `bpbase-uapi-cache-services.xml`. Hence, the warning was removed from `DataClientConfiguration`.

[CMS-18142]

### Commerce adapter connection log is more helpful

If a commerce client (Studio or CAE) tries to connect to a commerce adapter the message says "Commerce adapter not available" is more helpful. It names the specific endpoint that cannot be reached.

[CMS-17978]

## CoreMedia Headless Server

### Adding ID to all PageGrid related Elements

These ids are required when trying to cache a PageGrid, a PageGridRow or a PageGrid-Placement using apollo-client.

[CMS-18313]

### Catalog types moved to extension headless-server-catalog

The catalog types [CMProduct, CMProductImpl] have moved to extension headless-server-catalog. Now these types are only available, if extension catalog is activated. Before, the types were always present, what lead to an error, when extension catalog was deactivated.

[CMS-18212]

### Fixed missing dependency when running headless without live context

In case of running headless without the live context extension "lc-asset" a dependency was missing, preventing the headless to start correctly.

[CMS-18029]

### LanguageId deprecated in favor for new properly named property 'locale'

The content schema of Headless Server contained the property 'languageId' but was not mapped properly to a property in content objects, thus delivering always null. The property is now deprecated in favor for the newly introduced property 'locale', which maps to the corresponding property of localized content objects. Additionally the now deprecated property 'languageId' was mapped to 'locale' in order to fix the always null issue.

[CMS-17936]

### Headless supporting queries for localized variants of content objects

Starting with version 2010.1 headless features the ability to query for localized content objects of any localizable content and derived sites of a site object. With the new abilities it is now possible to develop more generic clients, e.g. being able to bootstrap a client for all derived sites or to crosslink to localized contents.

[CMS-17797]

## Miscellaneous

### Third-Party Update: Apache Ant 1.10.9

Apache Ant has been updated to version 1.10.9, which fixes security vulnerability CVE-2020-11979.

[CMS-18365]

### Updated to latest Spring Framework 5.2.9, Spring Boot 2.2.10, and others

The following third party libraries have been updated to fix [CVE-2020-5421](#) :

- Spring Boot 2.2.10.RELEASE
- Spring Framework 5.2.9.RELEASE
- Spring Security 5.2.6.RELEASE
- Apache Tomcat 9.0.38
- Micrometer 1.3.14
- Jetty 9.4.31.v20200723
- Byte Buddy 1.10.14
- Jakarta Servlet 4.0.4
- Netty 4.1.52.Final
- Caffeine 2.8.5
- Jackson 2.10.5

- Hibernate 5.4.21.Final
- Mysql 8.0.21
- Aspectjweaver 1.9.6

[CMS-18305]

### Resolve dependency on examples-thirdparty-bom

Fixed dependencies of module examples.blueprint.

[CMS-18265]

### Quote parameter in management-tools endpoint chain

In order to run the management tools with parameters containing spaces, such as content paths, all scripts part of the chain must quote their parameters on the exec call.

If for example one wants to use the serverexport tool with a path containing a space this works now also as a part of the chain.

```
docker run --rm coremedia/management-tools \
  tools/bin/cm serverexport -u admin -p admin \
  "/Sites/Chef Corp"
```

[CMS-18185]

### UAPI Reconnect

In some cases the UAPI was not able to reconnect after a Content Server restart because of HTTP response caching issues. This has been fixed.

[CMS-17996]

### Third-Party Update: Jetty

Jetty has been updated to version 9.4.30 to avoid a security issue of the previous version [CVE-2019-17638].

[CMS-17836]

### Translation Auto-Merge Keeps Order of Link Lists

Fixed a bug in the auto-merge functionality of translation workflows, which sometimes caused a wrong order of contents when changes from a placement link list were merged to a derived content.

[CMS-17515]

### Autofill in browsers now finds correct field types

Two autofill behaviours have been fixed.

- When the user wanted to input a password in the change password dialog while library was open the search of the library was focused when autofill was used. Now the fields are detected directly and support the autocompletion for `current-password` and `new-password`
- Chrome detected the StatefulDateField as an address field and suggested to put in addresses. Now chrome does not suggest addresses in this field.

[CMS-16773]

### Copy mysql configuration files in Dockerfile using mysql user

To prevent access rights conflicts in some environments, the configuration files should be copied using the mysql user.

[CMS-16538]

### Sort results in UAPI queries

It is possible to sort by parent folder id, place approval date and place approver in UAPI queries now.

[CMS-11314]

# 4.6 Release 2004.1



## Highlights in this Release

- Content Hub - Paging API for improved support of large external repositories
- Preparing for Editorial Comment - Introducing UUIDs and new database schema
- Content Synchronization
  - Synchronize Content to Selected Sites
  - Overwriting Content Synchronization Strategy
- Headless
  - Site Filters for Headless
  - Retrieve Sites by Path
- Documentation of How to Add Studio REST Controllers

The release contains:

- Breaking changes: 51
- Changes and improvements: 76
- Bugfixes: 17

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.

## Breaking Changes

- CMS-16509: [Universally Unique Identifiers \(UUIDs\) for Content and Version](#)
- CMS-16402: [Maturing Translation API: TranslatablePredicate and TranslatablePredicateConfiguration](#)
- CMS-13113: [Elastic-Social and MongoDB properties have changed.](#)
- CMS-17785: [Known Issue: Release cannot be used with DB2 database](#)
- CMS-16568: [CMResourceBundle localizations in Translation Workflows](#)
- CMS-16561: [MongoDB: New TTL index for events\\_ collection](#)
- CMS-10928: [Unified API in Workflow Server](#)

- CMS-10850: Translation Workflow Excludes Translatable Nested Properties From Auto-Merge
- CMS-17169: Configurable P13N Dynamic Include Behavior
- CMS-16571: Removal: BlueprintFreemarkerFacade functions
- CMS-16446: Calista via Commerce Hub
- CMS-15297: Removed OSM CAE Extension
- CMS-12372: Removed deprecated default implementation for code compression in CAE
- CMS-11877: Container#getFlattenedItems is deprecated
- CMS-11112: Removal: ContentBeanPrefetcher
- CMS-8659: Removal: CachingContentBeanFactoryWrapper
- CMS-6450: View Inclusion Cycle Check
- CMS-13551: Added implicit conversion of "true" and "false" to SettingsService
- CMS-16995: New Database schema for upcoming 'Editorial Comments' feature
- CMS-16973: Library: Lazy Loading for Categories
- CMS-16566: Content Hub API: Pagination for improved performance with large external repositories
- CMS-17167: Updated to jQuery 3.5.0
- CMS-16549: Augmented Category and Product Title
- CMS-13229: Uploading any Document below /Assets now always creates asset doc-types
- CMS-8325: Changed binding behavior of ComboBoxLinkPropertyField
- CMS-17047: Fixed encoding problem when using Struct as XML feature
- CMS-16877: Updated third-party libraries with security fixes
- CMS-17712: Updated Frontend Dependencies
- CMS-17050: Updated frontend dependencies
- CMS-14250: Changed the behavior of cm.UNDEFINED on template side
- CMS-17150: Configuration for "titleKey" in brick "preview" changed from "preview\_label\_DEFAULT" to "preview\_label\_default"
- CMS-9886: Removed "includeGutter" parameter from "aspect-ratio-box" utility mixin
- CMS-16965: Fixed non-SEO content links in Salesforce
- CMS-16909: GraphQL REST Mapper non blueprint now
- CMS-16884: Comments in rest request mappings properties files and ignoring empty lines

- CMS-16747: Added new types and fields to the schema
- CMS-16667: An update of graphql-java from version 11 to the current version 14
- CMS-16670: Product lists utilize offset correctly and support paging
- CMS-16987: UAPI and Headless-Server properties have changed.
- CMS-16503: Select Sites for Synchronization Workflow
- CMS-16366: Removed Blueprint Extension nuggad
- CMS-14091: XliffImporter/XliffExport: Provide API with direct Xliff in-/output
- CMS-10984: New Merge Strategy "Overwrite Target Site" for Synchronization Workflows
- CMS-5310: Disabled JMX in 'local' Spring environment

## Changes and Improvements

- CMS-17170: Deprecation: UserProvider2 Interface
- CMS-17096: Third-Party Update: Apache Tika and Transitive Dependencies
- CMS-16654: Third-Party Update: Apache Solr 8.4.1
- CMS-16190: CAE Feeder Partial Re-Indexing
- CMS-13698: Introducing cm jshell
- CMS-16889: Ajax parameter support for salesforce islcinclude tag
- CMS-16388: Deprecation of PreviewUrlHandler#handleId
- CMS-14337: HTTP Response Code in case of failed Blob Transformations
- CMS-16990: Blueprint for Tag Management Integration
- CMS-16592: Added itemId for LinkListPropertyField Context Menu
- CMS-16498: Added wildcard support for ignoring publication validator
- CMS-14995: The Content Hub framework now supports lazy loading in the library.
- CMS-17066: Exclude FreeMarkerAutoConfiguration
- CMS-14090: Added documentation about adding new entity controls to studio server
- CMS-16817: Extensions Tool Updated to Version 4.0.2
- CMS-17063: Commerce Hub Contributions Releases available on Github
- CMS-16866: Custom entity param 'catalogVersion' is set to lowercase (SAP Hybris Commerce)
- CMS-16762: Fixed Refresh of SAP Hybris Access Token
- CMS-17128: Introduce StructAdapter for access to structs
- CMS-16982: Added Content Id to Content-Object of content-schema and commerce-schema

- CMS-16902: Add validity check for request mappings
- CMS-16716: Configurable http header/cookie forwards
- CMS-16601: Introducing Views: Access restriction to one site with views
- CMS-16598: Links in Rich Text
- CMS-16588: New query 'pageByPath' available
- CMS-17116: A validator to check for lower-case keys in maps has been introduced.
- CMS-16596: Editorial Rich Text Properties as Tree
- CMS-16132: Actions toolbar only displayed when needed in new Studio layout

### Bugfixes

- CMS-17136: Updated to latest Spring Framework 5.2.5, Spring Boot 2.2.6, and others
- CMS-16975: cm cleanrecyclebin: Multi-Threading Issue
- CMS-16830: Initialization of MongoDB Docker Container
- CMS-16726: XLIFF-Import: Support mrk-Elements in Content Name
- CMS-13957: CMResourceBundle Localizations in Studio Search Index
- CMS-12443: Fixed search for deleted content
- CMS-16704: Fixed the missing prices in the product teasers of AuroraESite German Site
- CMS-16045: Swatch Images
- CMS-17018: Studio fails to start if TabExpandPlugin.ADVANCED\_TABS\_ENABLED is set to false
- CMS-16739: Wrong initial checkbox state for classical switch in Studio preferences
- CMS-16572: Added documentation on the config option 'ckEditorValueExpression' for RichTextActions.
- CMS-15706: VersionHistory component lookup functions
- CMS-15663: Fixed Faulty 'Empty Publication Set' Issue
- CMS-15415: Added documentation for taxonomy folder rights
- CMS-15246: Fixed unwanted folder creation when pressing ENTER or SPACE in the Studio library
- CMS-14218: forceReadOnlyExpression in ComboBoxLinkPropertyField is optional again
- CMS-13944: Fixed default template for ComboBoxLinkPropertyField
- CMS-13583: Fixed permission updates of users
- CMS-6152: Sites App: Derive Site Permissions From Process Definition

- CMS-17040: Fixed type error 'Cannot read property 'ariaLabel' of null'
- CMS-16827: Fixed automatic setting 'ckeditorValueExpression' for RichTextActions inside RichTextPropertyFieldContextMenu
- CMS-16693: Fixed State Restoring of Process Definition Chooser
- CMS-16556: Disabled parallel uploads
- CMS-16208: ShowIssuesPlugin provides new functionality to set a validation state also to subcomponents
- CMS-15080: Updated Elastic Social Documentation
- CMS-16930: EVENT\_DEVICE\_CHANGED in device-detector brick is no longer fired without any device change
- CMS-16771: Theme build now also handles country codes for resource bundles
- CMS-16696: Changed parameter for Embedding Small Images in CSS
- CMS-16661: Issue with using apostrophes in html metadata fixed for Salesforce
- CMS-16784: View asMicroSite is not necessary anymore for SFCC preview
- CMS-17269: Fix Exception when Struct value is null
- CMS-17266: Headless search result not sorted correctly via site filters
- CMS-17026: Unwrap DataFetcherResult to have access to properties of products
- CMS-16916: Remove reference to deprecated methods and fields
- CMS-16841: Dont process invalid sitelds anymore
- CMS-16782: PageNotFound warnings for several paths in headless-server
- CMS-16334: Inherit directive works now over multiple files and extensions can be properly separated
- CMS-7428: Consistent Public API in JavaDoc Maven Artifacts
- CMS-17461: Unintentional release of parts of the Studio Client Test Framework.
- CMS-16970: Exclude MongoAutoConfiguration
- CMS-16483: Internal Link Window is no longer cut off for smaller Richtext Property Fields
- CMS-16272: Improved resolve of download filenames
- CMS-14882: Modular Public API JavaDoc
- CMS-12876: Dataviews

## 4.6.1 Breaking Changes

### CoreMedia Core

#### Universally Unique Identifiers (UUIDs) for Content and Version

The *Content Management Server* maintains stable and universally unique identifiers (UUIDs) as specified in [RFC 4122](#) for content items and versions. Existing and newly created contents and versions get a random UUID in addition to existing numeric content IDs and version numbers. UUIDs are not meant to replace existing IDs, and IDs can be used for all purposes as before. Note, that UUIDs are currently only available on the Content Management Server, and not on live servers.

Follow [Section “Universally Unique Identifiers \(UUIDs\) for Content and Version” \[281\]](#) for upgrade information.

*[CMS-16509]*

#### Maturing Translation API: TranslatablePredicate and TranslatablePredicateConfiguration

In order to mature our experimental translation API, we had to refactor `com.coremedia.translate.TranslatablePredicate`. Instead of implementing `isTranslatable(CapPropertyDescriptor):boolean` you now need to implement `isTranslatable(List<CapPropertyDescriptor>):boolean`.

Follow [Section “Maturing Translation API: TranslatablePredicate and TranslatablePredicateConfiguration” \[283\]](#) for upgrade information.

*[CMS-16402]*

#### Elastic-Social and MongoDB properties have changed.

The following Elastic-Social properties have changed. Previous versions are still working but have been deprecated and should be migrated:

Follow [Section “Elastic-Social and MongoDB properties have changed.” \[285\]](#) for upgrade information.

*[CMS-13113]*

#### Known Issue: Release cannot be used with DB2 database

The release contains a known issue which makes it impossible to use DB2 as database for the Content Server. Do not try to upgrade to this release, if you are using DB2. A fix will be delivered in one of the next releases.

[CMS-17785]

### CMResourceBundle localizations in Translation Workflows

The property "localizations" of document type "CMResourceBundle" is no longer marked with attribute `extensions:automerge="true"` in the Blueprint document type definition in `modules/server/doctypes/src/main/resources/framework/doctypes/blueprint/blueprint-doctypes.xml`. It was removed to avoid that translation workflows always run into merge conflicts when `CMResourceBundle` value changes are propagated to an existing and already translated derived content.

Follow [Section "CMResourceBundle localizations in Translation Workflows" \[286\]](#) for upgrade information.

[CMS-16568]

### MongoDB: New TTL index for events\_ collection

A new TTL (Time To Live) Index of 5 min is introduced for property "creationDate" in collection `events_` (database: `blueprint_internal_models`). The index is required to reduce network traffic between MongoDB and `ModelService` (e.g. in Studio) due to event handling. The index can be configured via Configuration Property `elastic.core.event-collection-ttl-sec`. Set to 0 to disable the index. Note that the existing index on field "creationDate" must be dropped manually for existing MongoDB deployments, before the new index is created. Otherwise the new index cannot be created.

[CMS-16561]

### Unified API in Workflow Server

The Workflow Server defines the Unified API bean `connection` and all associated repository and service beans in the same way as other applications now. That means that the beans are available for synchronous injection into custom beans. It is no longer necessary to use an `ObjectProvider` for this purpose. You can share bean definitions across the Workflow Server and other applications now.

Follow [Section "Unified API in Workflow Server" \[286\]](#) for upgrade information.

[CMS-10928]

### Translation Workflow Excludes Translatable Nested Properties From Auto-Merge

The "Auto-Merge" feature used in translation workflows to copy non-translatable property values from master to derived contents has been improved to exclude translatable properties nested in struct properties. In previous releases, nested properties that were marked as translatable were both passed to translation, and copied ("auto-merged") from master to derived, which could have led to warnings about merge conflicts in the workflow. One example of such a nested property is the translatable "call to action button text" of the teaser options for a Blueprint's `CMArticle` content, which is now correctly ignored by the "auto-merge" logic.

Follow [Section “Translation Workflow Excludes Translatable Nested Properties From Auto-Merge” \[287\]](#) for upgrade information.

*[CMS-10850]*

## CoreMedia Content Application Engine

### Configurable P13N Dynamic Include Behavior

The behavior of P13N Dynamic Includes is now configurable. You can decide to use the container based approach that declares a whole container which contains any p13n relevant content as uncacheable (default behavior, nothing new) or switch to the new approach which will declare single items inside the containers as uncacheable by adding and enabling a new boolean setting `p13n-dynamic-include-per-item` to the page.

Follow [Section “Configurable P13N Dynamic Include Behavior” \[287\]](#) for upgrade information.

*[CMS-17169]*

### Removal: BlueprintFreemarkerFacade functions

The followings methods of `BlueprintFreemarkerFacade` have been removed.

Follow [Section “Removal: BlueprintFreemarkerFacade functions” \[288\]](#) for upgrade information.

*[CMS-16571]*

### Calista via Commerce Hub

Calista now is integrated via Commerce Hub. In order to switch to the integration via Commerce Hub, you need to configure the commerce adapter endpoint in the LiveContext Settings document of the Calista site. The former HCL specific code in the Blueprint below path “`blueprint/modules/extensions/ecommerce-ibm`” is not used anymore for Calista (IBM/HCL content led integration scenarios).

*[CMS-16446]*

### Removed OSM CAE Extension

The OSM CAE extension is not maintained anymore and has been removed from the product.

*[CMS-15297]*

### Removed deprecated default implementation for code compression in CAE

Our default implementation for JavaScript and CSS compression utilizing the YUI compressor has been removed from the `CAE` as this is now handled in the `Frontend Workspace` during the production build of a theme.

Follow [Section “Removed deprecated default implementation for code compression in CAE” \[289\]](#) for upgrade information.

*[CMS-12372]*

### Container#getFlattenedItems is deprecated

The method `getFlattenedItems` of `com.coremedia.blueprint.common.layout.Container` is now deprecated and will be removed in the next major version.

Follow [Section “Container#getFlattenedItems is deprecated” \[290\]](#) for upgrade information.

*[CMS-11877]*

### Removal: ContentBeanPrefetcher

Class `com.coremedia.objectserver.beans.ContentBeanPrefetcher` was removed. The content bean prefetcher loaded content beans and their dataviews into the CAE cache. However, it is far more common to run warm-up scripts issuing HTTP request against CAE instances.

*[CMS-11112]*

### Removal: CachingContentBeanFactoryWrapper

Class `com.coremedia.objectserver.beans.CachingContentBeanFactoryWrapper` was removed. The content bean caching aspect was moved to `com.coremedia.objectserver.beans.AbstractBasicContentBeanFactory` which is a super class of `com.coremedia.objectserver.beans.SpringContentBeanFactory`.

*[CMS-8659]*

### View Inclusion Cycle Check

Projects frequently encounter stack overflow errors which are caused by cyclic view inclusions due to particular constellations of content and template structures, like self targeting teasers. Now, the CAE checks for such cycles and breaks them with a detailed `ViewException`.

Follow [Section “View Inclusion Cycle Check” \[291\]](#) for upgrade information.

*[CMS-6450]*

### Added implicit conversion of "true" and "false" to SettingsService

When accessing a setting with the expected type `Boolean` the `SettingsService` will now implicitly convert `"true"` and `"false"` to the corresponding `Boolean` value. Other `String` values will still produce a `MismatchingSettingsTypeException`.

*[CMS-13551]*

## CoreMedia Studio

### New Database schema for upcoming 'Editorial Comments' feature

Editorial Comments are the next big feature for the editorial workflow in the CoreMedia Studio. The first release of this feature is nearly completed and we are currently polishing the user experience in the CoreMedia Studio. This AEP includes a number of underlying changes, preparing CoreMedia Content Cloud's foundation, so that we can make the feature generally available as soon as possible.

Follow [Section "New Database schema for upcoming 'Editorial Comments' feature" \[292\]](#) for upgrade information.

*[CMS-16995]*

### Library: Lazy Loading for Categories

The category tree in the library loads its categories lazy. This implies that the categories are not sorted by name anymore in the library. Lazy loading can be enabled/disabled in the **Preferences** in Tab **Product Catalog**. In versions prior to 2004.1 lazy loading is disabled by default. From 2004.1 on lazy loading is the default.

*[CMS-16973]*

### Content Hub API: Pagination for improved performance with large external repositories

The Content Hub now supports pagination between a Content-Hub Adapter and an external system. The pagination is triggered by scrolling in the library. This results in the pages being loaded gradually by scrolling down in the tree or repository view. For this reason some API changes were necessary:

Follow [Section "Content Hub API: Pagination for improved performance with large external repositories" \[293\]](#) for upgrade information.

*[CMS-16566]*

### Updated to jQuery 3.5.0

jQuery 3.5.0 has been released and it includes one security-related bugfix. All usages have been updated.

Follow [Section "Updated to jQuery 3.5.0" \[293\]](#) for upgrade information.

[CMS-17167]

### Augmented Category and Product Title

The title of newly created Augmented Categories and Products now use the name of the e-Commerce object directly without overriding it by the name of the created content name. The name of newly created Augmented Category and Product content objects was also slightly adapted so that a space character delimits name and ID.

[CMS-16549]

### Uploading any Document below /Assets now always creates asset doctypes

The last change in 1807.2 did not avoid that CMDownload documents, e.g. when uploading a PDF, could be created below the /Assets folder. Now every document should be transformed into a corresponding asset doctype.

[CMS-13229]

### Changed binding behavior of ComboBoxLinkPropertyField

The BindPropertyPlugin attached to the inner LocalComboBox has now set its `componentEvent` to "select" (was "change"). If you want to switch back to the old behavior (which is not recommended) please use the newly introduced configuration `bindPropertyComponentEvent` and set it to "change" again.

[CMS-8325]

## CoreMedia Studio Server

### Fixed encoding problem when using Struct as XML feature

When using the `studio.structAsBlobPropertyNames` setting to be able to view and edit struct properties as XML in studio the content retrieved by the REST request was not properly encoded. This has been fixed now.

[CMS-17047]

## CoreMedia Workspace

### Updated third-party libraries with security fixes

The following third party libraries have been updated for security reasons:

Follow [Section "Updated third-party libraries with security fixes" \[295\]](#) for upgrade information.

[CMS-16877]

# CoreMedia Frontend Workspace

## Updated Frontend Dependencies

The frontend dependencies have been updated to the latest versions and Node.js to latest LTS version 12.18.1. Prettier has been updated to version 2 with some changing defaults. See <https://prettier.io/blog/2020/03/21/2.0.0.html> for more details.

Follow [Section "Updated Frontend Dependencies" \[296\]](#) for upgrade information.

*[CMS-17712]*

## Updated frontend dependencies

In the Frontend Workspace the `frontend-maven-plugin` downloads and uses Yarn version 1.22.4 when it is built. The frontend dependencies, have been updated to the latest versions and node.js to latest LTS version 12.16.1.

Follow [Section "Updated frontend dependencies" \[296\]](#) for upgrade information.

*[CMS-17050]*

## Changed the behavior of `cm.UNDEFINED` on template side

The value of `cm.UNDEFINED` (e.g. provided by the corresponding Freemarker macro) is now treated in a special way on template side, so various build-ins like `?has_content` and `?length` now produce a more reasonable result when used in conjunction with `cm.UNDEFINED`.

Follow [Section "Changed the behavior of `cm.UNDEFINED` on template side" \[296\]](#) for upgrade information.

*[CMS-14250]*

## Configuration for "titleKey" in brick "preview" changed from "preview\_label\_DEFAULT" to "preview\_label\_default"

There was a misalignment in the brick "preview" that made the default localization for `titleKey="preview_label_default"` useless (one time lower case "default", one time upper case "DEFAULT").

Follow [Section "Configuration for "titleKey" in brick "preview" changed from "preview\\_label\\_DEFAULT" to "preview\\_label\\_default" \[297\]](#) for upgrade information.

*[CMS-17150]*

## Removed "includeGutter" parameter from "aspect-ratio-box" utility mixin

The "includeGutter" parameter got removed from the "aspect-ratio-box" utility mixin. Please handle this otherwise, if you need this.

*[CMS-9886]*

## CoreMedia Commerce Hub

If the commerce adapter wcs is shared between multiple environments (preview/live, for example), the configuration of storefront and asset URLs changed. If the commerce adapter wcs is running in mode for multiple environments, it expects an environment parameter from the connected client.

Follow [Section "Missing title" \[298\]](#) for upgrade information.

*[CMS-17092]*

## CoreMedia Connector for Salesforce Commerce Cloud

### Fixed non-SEO content links in Salesforce

If the SEO-friendly URL scheme was disabled in the Salesforce system and the default one was used (with controller-based URLs like Page-Show?cid=...), then the CMS content URLs didn't work correctly. This is fixed with a newer version of the cartridge. But it is also necessary to use a new Salesforce adapter that supports this fix. Otherwise the fix wouldn't work or would have no effect. Please note, that the controller-based URL format is now changed, at least for the CMS content URLs. If you previously have used the non-SEO format, then all CMS content URLs are going change. If you have used the SEO format, there will be no change.

*[CMS-16965]*

## CoreMedia Headless Server

### GraphQL REST Mapper non blueprint now

The GraphQL via REST Mapper was moved to non public code (headless-server.web). The corresponding controller (GraphQLRestMappingController) can be disabled with the configuration property 'caas.graphql-restmapping-controller.enabled' set to 'false'. All configuration resources were moved to 'blueprint/modules/headless-server/headless-server-base/src/main/resources', maintaing the same filenames and folderstructure.

*[CMS-16909]*

### Comments in rest request mappings properties files and ignoring empty lines

There have been some changes to the way the properties files for the REST Request Mapping are parsed:

Follow [Section “Comments in rest request mappings properties files and ignoring empty lines” \[299\]](#) for upgrade information.

*[CMS-16884]*

### Added new types and fields to the schema

Fields added:

Follow [Section “Added new types and fields to the schema” \[300\]](#) for upgrade information.

*[CMS-16747]*

### An update of graphql-java from version 11 to the current version 14

There were various changes in the GraphQL-Java API, some affected us directly:

Follow [Section “An update of graphql-java from version 11 to the current version 14” \[300\]](#) for upgrade information.

*[CMS-16667]*

For norming reasons some configuration properties have been renamed:

Follow [Section “Missing title” \[301\]](#) for upgrade information.

*[CMS-17141]*

### Product lists utilize offset correctly and support paging

The offset property which can be defined in the content, e.g. in Studio now is only applied to the Products and works as a sort of search filter.

Follow [Section “Product lists utilize offset correctly and support paging” \[301\]](#) for upgrade information.

*[CMS-16670]*

## Miscellaneous

### UAPI and Headless-Server properties have changed.

The following UAPI properties have changed. Previous versions are still working but have been deprecated and should be migrated:

Follow [Section “UAPI and Headless-Server properties have changed.” \[302\]](#) for upgrade information.

*[CMS-16987]*

### Select Sites for Synchronization Workflow

For synchronization workflows there now exists the option to select a sub-tree of all derived sites. It allows you to synchronize your master changes only to a selected set of derived sites while leaving the others untouched.

Follow [Section "Select Sites for Synchronization Workflow" \[302\]](#) for upgrade information.

*[CMS-16503]*

### Removed Blueprint Extension nuggad

The Blueprint Extension `nuggad` has been removed. This service has been discontinued as of 30th September 2019.

*[CMS-16366]*

### XliffImporter/XliffExport: Provide API with direct Xliff in-/output

`XliffImporter` and `XliffExporter` now provide an API to directly hand over objects of type `Xliff`. This provides the option, that you may use custom Xliff parsing. As this extends the corresponding interfaces, you may need to implement the methods now, in case you provided custom implementations for `XliffImporter` and/or `XliffExporter`.

Follow [Section "XliffImporter/XliffExport: Provide API with direct Xliff in-/output" \[303\]](#) for upgrade information.

*[CMS-14091]*

### New Merge Strategy "Overwrite Target Site" for Synchronization Workflows

There is a new merge strategy available for synchronization workflows: "Overwrite Target Site". When this strategy is chosen, mergeable properties in the derived sites are overwritten with the property value from the master site. The update of properties in the derived site is not dependent on the translation state or if there is a new master version, it is executed always.

Follow [Section "New Merge Strategy "Overwrite Target Site" for Synchronization Workflows" \[303\]](#) for upgrade information.

*[CMS-10984]*

### Disabled JMX in 'local' Spring environment

Both Spring Boot's built-in JMX as well as the CoreMedia management-component are disabled in 'local' Spring environment to speedup the startup process of local applications. The management component can be re-enabled by providing the system property 'components.disabled=none'.

*[CMS-5310]*

## 4.6.2 Changes and Improvements

### CoreMedia Core

#### Deprecation: UserProvider2 Interface

The Java interface `com.coremedia.ldap.UserProvider2` has been deprecated. All usages can simply be replaced with its super interface `com.coremedia.ldap.UserProvider`, which is no longer deprecated.

[CMS-17170]

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

Apache Tika has been updated to version 1.24 to avoid security issues of previous versions (CVE-2020-1950, CVE-2020-1951). As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika.

Updated dependencies:

- `com.google.guava:guava:28.2-jre`
- `com.pff:java-libpst:0.9.3`
- `org.apache.httpcomponents:httpclient:4.5.12`
- `org.apache.httpcomponents:httpmime:4.5.12`
- `org.apache.pdfbox:fontbox:2.0.19`
- `org.apache.pdfbox:pdfbox:2.0.19`
- `org.apache.pdfbox:pdfbox-tools:2.0.19`
- `org.apache.poi:poi:4.1.2`
- `org.apache.poi:poi-scratchpad:4.1.2`
- `org.apache.poi:poi-ooxml:4.1.2`
- `org.apache.poi:poi-ooxml-schemas:4.1.2`
- `org.apache.tika:tika-core:1.24`
- `org.apache.tika:tika-parsers:1.24`
- `org.ow2.asm:asm:7.3.1`

If you use the 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-17096]

### Third-Party Update: Apache Solr 8.4.1

Apache Solr has been updated to version 8.4.1

For detailed changes of Apache Solr have a look at [https://lucene.apache.org/solr/8\\_4\\_1/changes/Changes.html](https://lucene.apache.org/solr/8_4_1/changes/Changes.html).

[CMS-16654]

### CAE Feeder Partial Re-Indexing

The *CAE Feeder* has new JMX operations to manually trigger re-indexing of selected contents. For details, see the documentation in the Search Manual, chapter "Search Engine | Reindexing | Partial reindexing of CAE Feeder indices" and chapter "Reference | CAE Feeder JMX Managed Beans".

[CMS-16190]

### Introducing `cm jshell`

A new `cm` tool is available: `cm jshell`. This is an alternative to `cm groovysh`. As of 2004.1 `cm groovysh` is marked as deprecated.

`cm jshell` is described in Content Server Manual in Section *Configuration and Operation / Server Utility Programs / Operation*. The tool provides additional help within JShell using the `coremedia` namespace:

```
$ cm jshell
jshell> coremedia.help()
```

[CMS-13698]

## CoreMedia Content Application Engine

### Ajax parameter support for salesforce islcinclude tag

Instead of calling the CAE to request a fragment a AJAX stub can be written to the page output. This has two advantages. The stub code can be written in no time and therefore does not delay the processing of the whole page. In addition, these fragments are not counted into the quota for external requests. This parameter is optional and the default value is false.

[CMS-16889]

### Deprecation of PreviewUrlHandler#handleId

The method `PreviewUrlHandler#handleId`, which handles requests to `/previewurl` is deprecated. The method `PreviewUrlHandler#handle`, which handles requests to `/internal/preview/previewurl` should be used instead.

[CMS-16388]

### HTTP Response Code in case of failed Blob Transformations

By default, the Blueprint returns a 404 response if a `/resource/image/...` request cannot be served due to a failed blob transformation. Now, you can configure the HTTP response code for this case in `apps/cae/modules/cae/cae-base-lib/src/main/resources/framework/spring/errorhandling.xml`. (Search for "BlobTransformationException".)

[CMS-14337]

## CoreMedia Studio

### Blueprint for Tag Management Integration

The Chef Corp. Blueprint implements a configuration setting to integrate the script fragments of Tag Management Systems like the Google Tag Manager, Signal or Tealium Tag Management in the HTML `<head>`, at end and right after the opening `<body>` tag. There is a new example `brick-tag-management` that can also be used on other themes.

Read the chapter *Tag Management* in the *Blueprint Developer Manual* for more details.

[CMS-16990]

### Added itemId for LinkListPropertyField Context Menu

Added itemId for LinkListPropertyField Context Menu

[CMS-16592]

### Added wildcard support for ignoring publication validator

The path check inside the `IsPartOfNavigationValidator` now supports wildcards. The path is configurable via the property `studio.validators.navigation.ignore-path`. The property has been documented inside the Studio Developer Manual.

[CMS-16498]

## CoreMedia Studio Server

### Exclude FreeMarkerAutoConfiguration

`FreeMarkerAutoConfiguration` was excluded from studio server app configuration.

[CMS-17066]

### Added documentation about adding new entity controls to studio server

We added a new chapter to the studio-developer-manual about adding new entity controllers to the studio server. For this the interface `com.coremedia.rest.controller.EntityController` (previously named `com.coremedia.rest.linking.EntityResource`) is now part of the Public API.

[CMS-14090]

## CoreMedia Workspace

### Extensions Tool Updated to Version 4.0.2

This extensions tool update to 4.0.2 fixes several minor issues, keeping compatibility with 4.0.1 (besides fixing erroneous behavior). Thus, you can use it even without upgrading your Blueprint workspace to this release, just by using 4.0.2 or LATEST as version number when invoking the tool. Following are the fixes and changes in 4.0.2 (after 4.0.1).

#### Fix: Find centralized extension module workspace only when name match is exact

When trying to find the workspace a module of a centralized extension is supposed to belong to, a `startsWith()` check between module path and workspace path was made. If the workspace name is only a prefix of the desired module workspace name, this could lead to an incorrect assignment. For example, a module under `apps/caefoobar` would be assigned to workspace `apps/cae`. Adding a slash to both paths before the `startsWith()` check fixes this issue.

#### Fix: Normalize module path before calculating parent's relativePath

The relative path of a centralized extension's parent is calculated correctly when it is enabled for the first time. However, if the centralized extension is already referenced as a `<module>` from its workspace extension aggregator, but its parent's `<relativePath>` has been removed, the computation goes wrong, because the algorithm is confused by the module path already containing `..` path segments. Using the canonical file before computing the relative path solves the issue.

#### Robustness: Prevent NPE for BOMs without `<dependencyManagement>`

Although BOMs without <dependencyManagement> section do not really make sense, they must not lead to an NPE in tooling. The NPE occurred in `Workspace.java:243`, where the result of `getDependencyManagement()` was not checked to be non-null.

### Change log level to warn if extension module cannot be assigned to workspace

For centralized extensions, the tool applies several heuristics to determine the workspace each top-level extension module is to be assigned to. For details, see release note CMS 15943, "Modularization of Project Extensions". If non of these rules lead to a proper workspace assignment, the extension module is ignored. Since the tool continues its work, this is now no longer logged as an error, but only as a warning.

### Improve sync goal help text: Start with one-sentence summary

Improved the help text you get when invoking

```
mvn extensions:help -Dgoal=sync
```

[CMS-16817]

# CoreMedia Commerce Hub

## Commerce Hub Contributions Releases available on Github

CoreMedia now provides dedicated Commerce Connector Contributions repositories for customers and partners.

These workspaces serve as entry point for adding extensions and customisations for the different Commerce Connectors, like SAP, HCL (former WCS) and Salesforce.

Further information can be found in the README of the dedicated repository on Github.

[CMS-17063]

## Custom entity param 'catalogVersion' is set to lowercase [SAP Hybris Commerce]

To ease the configuration of Applications connecting to the SAP Hybris Commerce Adapter in cloud scenarios, the camel-case style of the custom entity params 'catalogVersion' is set to the lowercase.

[CMS-16866]

## Fixed Refresh of SAP Hybris Access Token

SAP hybris commerce adapter did not refresh access tokens properly up to version 1.1.7.

[CMS-16762]

## CoreMedia Headless Server

### Introduce StructAdapter for access to structs

- StructAdapter handling access to Structs
- SettingsAdapter is just a wrapper for the StructAdapter

[CMS-17128]

### Added Content Id to Content-Object of content-schema and commerce-schema

All content and commerce objects now consist of an 'id' field. For commerce objects, the 'id' field is an alias to the existing field 'externalId'. Also the 'id' field is now declared non-null. These measures should make it easier to implement client side caching, using 'id' as the cache key.

[CMS-16982]

Query argument 'siteId' is optional now. Along with the introduction of the site filter feature, the siteId argument on all commerce queries and the 'site by id' query itself is declared optional. The 'id' argument on 'site by id' queries is declared deprecated in favor for the more specific named argument 'siteId'.

[CMS-16964]

### Add validity check for request mappings

It is logged when a request mapping for REST refers to a non existent persisted query

[CMS-16902]

### Configurable http header/cookie forwards

Headless is now able to forward configurable http headers and cookies of incoming requests to secondary request, like jsonprevie to graphql. The configuration key 'caasserver.endpoint' is deprecated as of this version and replaced by 'previewclient.caasserver-endpoint'.

[CMS-16716]

### Introducing Views: Access restriction to one site with views

The new release introduces 'views' to the headless server. A view is a pathprefix to the standard endpoints, like '/graphql'. Using a view like '/calista/graphql', headless server automatically restricts the access to content objects of the mapped site id of the pathprefix, the 'view'.

[CMS-16601]

### Links in Rich Text

For Rich Text several links with attributes can be added: internal links, external links and links to images. Internal and external links are provided together with a link behaviour attribute (`data-show`).

Internal links are generated with an example link composer, that may be customized. See *Headless-Server* manual for details.

Internal links:

- `data-href`: Link generated with an example link composer `contentUriLinkComposer`, that is configured in `CaasConfig.java`
- `data-show`: Link behaviour
- Example: `<a data-href="coremedia:///cap/content/596" data-show="embed">Link</a>`

External links:

- `href`: Configured external link
- `data-show`: Link behaviour
- `data-role`: target frame identifier
- Example: `<a href="http://www.coremedia.com" data-show="new">Link</a>`

Image links:

- `data-src`: Link generated with an example link composer `contentUriLinkComposer`, that is configured in `CaasConfig.java`
- `data-uritemplate`: generated uri template
- `alt`: content property

[CMS-16598]

### New query 'pageByPath' available

Starting with 20.04 release, coremedia headless server features the new 'pageByPath' query. The query offers the ability to query for page using the segment path instead of the content id.

[CMS-16588]

## Miscellaneous

### A validator to check for lower-case keys in maps has been introduced.

The annotation `@LowerCaseKeys` has been introduced to attach a validator to maps which checks if the keys of the annotated map are lower case. If they are not, an exception is thrown upon encounter of the first violation.

[CMS-17116]

### Editorial Rich Text Properties as Tree

The properties `CMTeasable.teaserText`, `CMTeasable.detailText` and `CMMedia.caption` are available as Rich Text Tree in the GraphQL schema now (`teaserTextAsTree`, `detailTextAsTree`, `captionAsTree`).

[CMS-16596]

### Actions toolbar only displayed when needed in new Studio layout

You can switch from classic Studio view to new Studio layout in the user preferences. In the preferences window under the Studio tab you can find a checkbox labeled 'Show Classic Studio'. When unchecked the Studio reloads and shows a new layout where the actions toolbar on the right is visible only when the current tab shows a content item, a Product or a Category. The toolbar is hidden for projects, the Tags app, the Moderation app and the Studio start screen.

[CMS-16132]

## 4.6.3 Fixed Issues

### CoreMedia Core

#### Updated to latest Spring Framework 5.2.5, Spring Boot 2.2.6, and others

Along with the Spring Framework and Spring Boot the following libraries have been updated:

- Spring Boot 2.2.6.RELEASE
- Spring Framework 5.2.5.RELEASE
- Spring Security 5.2.3.RELEASE
- Tomcat 9.0.33
- Micrometer 1.3.6

- Jetty 9.4.27.v20200227
- Junit Jupiter 5.6.1
- Freemarker 2.3.30
- Postgres Driver 42.2.11
- Jackson 2.10.3
- Xmlunit 2.6.4
- Netty 4.1.48.Final
- Janino 3.1.2
- Jakarta Mail 1.6.5
- Byte-Buddy 1.10.8
- Powermock 2.0.5
- Caffeine 2.8.1
- Jakarta Activation 1.2.2
- Okhttp3 3.14.7
- maven-shade-plugin 3.2.2
- dockerfile-maven-plugin 1.4.13

[CMS-17136]

### cm cleanrecyclebin: Multi-Threading Issue

`cm cleanrecyclebin` may have failed due to concurrent directory creations, when used in multi-threaded mode. This has been fixed now.

[CMS-16975]

### Initialization of MongoDB Docker Container

The initialization of the MongoDB Docker container has moved from Docker compose file default.yml to the Dockerfile of the MongoDB image.

[CMS-16830]

### XLIFF-Import: Support mrk-Elements in Content Name

XLIFF import now supports segmentation via `<mrk>` elements in content names, too. These elements are typically used by translators to structure content to translate.

[CMS-16726]

### CMResourceBundle Localizations in Studio Search Index

The struct property "localizations" was added to the default configuration of the Blueprint `StructFeedablePopulator` in `component-content-feeder-`

`blueprint.xml` so that the *Content Feeder* also feeds texts from `CMResourceBundle` localizations. This makes it possible to search for localizations in the Studio library.

Note that the change only affects newly indexed contents. Texts from updated or newly created `CMResourceBundle` documents will be indexed automatically. You can trigger re-indexing of all existing `CMResourceBundle` documents with JMX as described in the Search Manual in section "Re-indexing | Partial reindexing of Content Feeder indices".

[CMS-13957]

### Fixed search for deleted content

Fixed a bug that certain user groups could not find deleted content in Studio, if the group was created or gained read rights after the content was deleted.

[CMS-12443]

## CoreMedia Content Application Engine

### Fixed the missing prices in the product teasers of AuroraESite German Site

Fixed the missing prices in the product teasers of AuroraESite German Homepage, by adding cm prices in the search result of CoreMedia product search profile

[CMS-16704]

### Swatch Images

A small workaround for wrongly escaped product swatch image paths in WCS 9.0.1.4 (and potentially other minor versions) has been added to the workspace. `workspace/crs-web/WebContent/Widgets_801/com.ibm.commerce.store.widgets.PDP_DefiningAttributes/ext/DefiningAttributes_UI.jspf` replaces `%2F` with `/` in swatch image URLs. Otherwise they are not rendered correctly. This might not be needed in custom WCS9 projects.

[CMS-16045]

## CoreMedia Studio

### Studio fails to start if `TabExpandPlugin.ADVANCED_TABS_ENABLED` is set to false

If `TabExpandPlugin.ADVANCED_TABS_ENABLED` was set to false, the Studio app fails to start and a type error thrown in class `TabExpandPluginBase` was displayed in the browser console. This is fixed now.

[CMS-17018]

### Wrong initial checkbox state for classical switch in Studio preferences

The boolean property `view/showClassicStudio` in the `EditorPreferences` indicates the current Studio view. A value of `true` means classic view, and a value of `false` means non-classic view. If the `view-struct` was missing completely, the checkbox for the Studio switch was unchecked (`false`) in classic view. This is fixed now. The checkbox is initially checked.

[CMS-16739]

### Added documentation on the config option '`ckEditorValueExpression`' for `RichTextActions`.

We added documentation on the config option '`ckEditorValueExpression`' for `RichTextActions`.

[CMS-16572]

### `VersionHistory` component lookup functions

Fix predefined functions to lookup version history components

[CMS-15706]

### Fixed Faulty 'Empty Publication Set' Issue

We fixed a bug where the error issue 'Empty Publication Set' was shown for a publication workflow although the publication set was clearly not empty.

[CMS-15663]

### Added documentation for taxonomy folder rights

The default taxonomy implementation required folder rights for taxonomy folders. This point has been added to the documentation.

[CMS-15415]

### Fixed unwanted folder creation when pressing ENTER or SPACE in the Studio library

Fixed a bug in the Studio library which creates a new folder when the user presses ENTER or SPACE in the library list.

[CMS-15246]

### `forceReadOnlyExpression` in `ComboBoxLinkPropertyField` is optional again

Due to a bug the `forceReadOnlyExpression` configuration of the `ComboBoxLinkPropertyField` could not be left empty. This has now been fixed.

[CMS-14218]

### Fixed default template for `ComboBoxLinkPropertyField`

The template lacked a CSS class required by ExtJS which prevented that items could be selected. The class is now added to all items.

[CMS-13944]

### Fixed permission updates of users

When permission have been changed through the sitemanager, these permission have not been updated until another user has logged in before.

The issue is fixed with the new Studio usermanager where the updated user can immediately re-login with updated rights.

[CMS-13583]

### Sites App: Derive Site Permissions From Process Definition

The permission to derive a site in CoreMedia Studio is now directly derived from the process definition `derive-site.xml`. Most notable result is, that administrators can now start the derivation process. In addition to the change in CoreMedia Studio the grant options in `derive-site.xml` have been extended to group `administratoren`. Prior to this change, only user `admin` was configured in the process definition.

#### Upgrade:

In order to benefit from the change of group `administratoren` having permissions to derive a site, you need to re-upload the process definition:

```
cm upload -n /com/coremedia/translate/workflow/derive-site.xml
```

This is not required, if it is sufficient, that administrative user `admin` has derive-site permissions only.

[CMS-6152]

## CoreMedia Studio Client

### Fixed type error 'Cannot read property 'ariaLabel' of null'

When trying to undock a side panel like the Studio Library, the type error "Cannot read property 'ariaLabel' of null" in `SidePanelFloatingWindowBase.js` may occur which prevents further undocking of the side panel. Only a browser reload can fix the problem. This is fixed now.

[CMS-17040]

### Fixed automatic setting 'ckEditorValueExpression' for RichTextActions inside RichTextPropertyFieldContextMenu

We fixed a bug where the automatic setting of the 'ckEditorValueExpression' default option was not set for RichTextActions inside RichTextPropertyFieldContextMenus.

[CMS-16827]

### Fixed State Restoring of Process Definition Chooser

We fixed a bug where the `ProcessDefinitionChooser` did not correctly remember the last chosen process definition for `StartWorkflowWindows`.

[CMS-16693]

### Disabled parallel uploads

Because the image transformation can consume a lot of memory, the bulk upload is now executed sequentially.

[CMS-16556]

### ShowIssuesPlugin provides new functionality to set a validation state also to subcomponents

ShowIssuesPlugin now provides `statefulSubComponentsFunction` to also set a validation state to stateful SubComponents of the component where the Plugin was defined on.

[CMS-16208]

## CoreMedia Elastic Social

### Updated Elastic Social Documentation

Removed outdated versions in performance section.

[CMS-15080]

## CoreMedia Frontend Workspace

### EVENT\_DEVICE\_CHANGED in device-detector brick is no longer fired without any device change

In certain browsers the check for touch devices was causing the event to be fired even if the device has not changed.

[CMS-16930]

### Theme build now also handles country codes for resource bundles

Build themes with country codes for resource bundles in bricks to use proper localization (not only language, but also country).

[CMS-16771]

### Changed parameter for Embedding Small Images in CSS

After updating `webpack/url-loader` to the latest version 3.0.0 the parameter `limit` changed from `-1` to `false` and `0` to `true` to enable or disable transform files into base64. See <https://github.com/webpack-contrib/url-loader#boolean> for more details.

[CMS-16696]

### Issue with using apostrophes in html metadata fixed for Salesforce

There was an encoding problem with apostrophes in HTML meta attributes (title, description and keywords) in Salesforce. The velocity interpreter in Salesforce got confused if these chars have not been escaped. The `metadata.ftl` templates on the CoreMedia side (SiteGenesis and SFRA) take care of this.

[CMS-16661]

## CoreMedia Connector for Salesforce Commerce Cloud

### View asMicroSite is not necessary anymore for SFCC preview

In the past the view asMicroSite was used to preview channels in Salesforce. This is no longer necessary. The usage of the view is removed in the `sfcc` adapter (when the adapter generates a preview url for a channel).

[CMS-16784]

## CoreMedia Headless Server

### Fix Exception when Struct value is null

When retrieving a value from a struct which is null, there is no longer an Exception thrown, but instead the value returned

[CMS-17269]

### Headless search result not sorted correctly via site filters

When issuing a search query with a sort order over a site filter graphql endpoint, the result was not sorted correctly.

[CMS-17266]

### Unwrap DataFetcherResult to have access to properties of products

Since introducing the `DataFetchingResult` to the `ContentRoot` and the `CommerceFacade` it is necessary to unwrap those when trying to access properties from e.g. a `Product` in

a schema. Additionally the inherited values from the products won't be transformed, since they use a different grammar than the CoreMedia Markup Grammar.

[CMS-17026]

### Remove reference to deprecated methods and fields

- GraphQLController: change produces APPLICATION\_JSON\_UTF8\_VALUE to APPLICATION\_JSON\_VALUE, since browsers like Chrome support it now
- some changes in the ImageTransformation service
- Remove reference to unused Swagger property in MediaController

[CMS-16916]

### Dont process invalid sitelds anymore

Ignore invalid sitelds and dont pass them to the commerce connection

[CMS-16841]

### PageNotFound warnings for several paths in headless-server

Change log level of PageNotFound logger from warn to error

[CMS-16782]

### Inherit directive works now over multiple files and extensions can be properly separated

- All references to shared commerce objects have moved from the content-schema to the commerce-schema
- Extensions can define their own types in a separate file and the Inherit directive works now over multiple files

[CMS-16334]

## CoreMedia Documentation

### Consistent Public API in Javadoc Maven Artifacts

Starting with version 2004.1, you can rely on CoreMedia Maven `javadoc` artifacts containing exactly those packages that are official public API. In releases before version 2004, only JavaDoc on the documentation site is the authoritative source for public API. Maven `javadoc` artefacts are also available, but unfortunately, you cannot rely on them being consistent with the public API. They may contain classes that are not public API as well as lack classes that are public API.

[CMS-7428]

## Miscellaneous

### Unintentional release of parts of the Studio Client Test Framework.

Unintentional release of parts of the [Studio Client Test Framework](#) . Please **do not use** any of the contents and **do not depend** on this directory. The **directory** will be removed with [2004.2](#) .

[CMS-17461]

### Exclude MongoAutoConfiguration

MongoAutoConfiguration is excluded for all apps that have a potential MongoDB connection.

[CMS-16970]

### Internal Link Window is no longer cut off for smaller Richtext Property Fields

If the `RichtextPropertyField` did not provide enough height/width (e.g. by using the resizer) the `InternalLinkWindow` was cut off. This has been fixed for `RichtextPropertyFields` inside of `DocumentForms` .

[CMS-16483]

### Improved resolve of download filenames

`CMDownload` resolves the complete context hierarchy when searching for a filename now, not only the immediate context.

[CMS-16272]

### Modular Public API JavaDoc

Since CMCC 10, the project workspace is structured into modular workspaces, representing applications and shared code. Before version 2004, the public API JavaDoc reflected this by an overview page with one group for each modular workspace. As soon as you navigated to a package or class, you would lose track of which modular workspace this API belongs to.

Starting with 2004, each modular workspace now has its own public API JavaDoc. The JavaDoc link on the documentation site has been replaced by a list of links to all modular workspace JavaDocs, grouped by "Apps" and "Shared". Each workspace JavaDoc has its own overview, index, and local search. That means when consulting for example Studio Server's JavaDoc, you won't find any CAE API classes. Note that you won't find any shared API (common, middle) either, as these are documented in their corresponding workspaces. Two features help you navigating the modular API:

1. Links between modular workspaces work. For example, a Studio Server API using shared/common API links to Common workspace's JavaDoc. Such "cross-workspace"

links are indicated by a north-east-pointing, single arrow. External references like Java SDK or Spring API are indicated by a double arrow.

2. Each modular workspace JavaDoc has a header that contains its name and version number. Thus, you always know which application or shared workspace the API you see belongs to.

The URLs of API classes have changed accordingly: they are complemented by the modular workspace name. For example in 2001, the public API for class `MaxBlobSizeValidator` could be found at <https://documentation.coremedia.com/cmcc-10/articles/2001/javado.com/coremedia/test/cap/validators/MaxBlobSizeValidator.html>

The new URL can be derived by replacing `2001.1` by `2004.1` and , because this class belongs to Studio Server, inserting `studio-server/` before the package path : <https://documentation.coremedia.com/cmcc-10/articles/2004/javado.studio-server.com/coremedia/test/cap/validators/MaxBlobSizeValidator.html>

On the documentation site, "Advanced Search" has been adapted accordingly. When searching the API in version 2004 and up, all modular workspaces are now offered as subcategories. Note that not selecting any subcategory will search all JavaDoc, but also Studio ASDoc. For versions below 2004, nothing changed: There are just two subcategories, "CMCC Javadoc" and "Studio ASDoc".

[CMS-14882]

### Dataviews

The Blueprint dataviews have been enhanced with a new a new dataview for `CMGALLERYImpl`.

[CMS-12876]

## 4.7 Release 2001.1



### Highlights in this Release

- HCL Commerce v9 via Commerce Hub is now active by default
- HCL e-Marketing Spots are now supported by Commerce Hub
- Managing users and groups is now available in Studio
- Content Hub is now robust against temporary unavailability of external services
- Content Hub content can now be dragged directly to CoreMedia link lists
- CoreMedia Headless Server Monitoring
- CoreMedia Headless Server Remote Link Building

The release contains:

- Breaking changes: 29
- Changes and improvements: 73
- Bugfixes: 17

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.

### Breaking Changes

- CMS-16619: [Feeding of CMExternalProduct](#)
- CMS-16583: [Third-Party Update: Apache Solr 8.4.0](#)
- CMS-9521: [Deprecated Support for Site Indicator Depth != 0](#)
- CMS-15245: [Blob store configuration](#)
- CMS-16533: [Deleted class `com.coremedia.objectserver.web.HandlerMappingTracker`](#)
- CMS-16168: [Garbage Collector changed to UseParallelGC, Image Transformation: default permits reduced to 1/4 of heap size](#)
- CMS-14007: [CAE Spring Boot Actuators can now be started on separate port](#)
- CMS-16548: [Rewritten TabExpandPlugin](#)
- CMS-15936: [Content Hub: Improvements](#)
- CMS-15110: [Content Hub: Removed UAPI references](#)

- CMS-14579: Content Hub: Preview
- CMS-16376: Studio remote beans consider themselves empty when load raises internal server error
- CMS-16630: Updated frontend dependencies
- CMS-15904: Removed Freemarker macro bp.responsivelmage
- CMS-16625: Calista Cart with HCL Commerce v9
- CMS-16641: Marketing Spot Support via Commerce Adapter
- CMS-14573: Parameter 'siteld' was removed from MappedCatalogsProvider's methods
- CMS-16731: Preview URLs for Augmented Categories and Products
- CMS-16674: SAP Commerce 1905: language fallback for SKUs with missing attribute values
- CMS-16476: JSLT enabled by default
- CMS-16233: REST query mapping now configurable
- CMS-16590: Property 'disallow.spring.bean.overrides' no longer supported.
- CMS-16529: HCL Commerce v9
- CMS-16385: Minor UserProvider Changes
- CMS-16383: Update of mongo-java-driver to 3.11.2
- CMS-15861: Deprecation: LdapMember#getOrganizationalUnit
- CMS-929: MongoDB deployment with authentication
- CMS-16305: Update to the Installed Packages for Salesforce Marketing Cloud

## Changes and Improvements

- CMS-16322: Third-Party Update: Apache Tika and Transitive Dependencies
- CMS-15592: Content Server Manual: Symptoms For Multi-Site Issues
- CMS-15590: Multi-Site: Deal With Multiple Derived of One Master in Site
- CMS-15589: Documentation: cm-validate-multisite
- CMS-16672: Deprecation: ContentBeanPrefetcher
- CMS-16671: Deprecation: CachingContentBeanFactoryWrapper
- CMS-16562: Navigation contexts selection can be switched to legacy mode
- CMS-14239: Made class TransformationLinks public
- CMS-16251: Salesforce Marketing Cloud Integration
- CMS-16143: TaxonomyConditionEditor
- CMS-16127: Usermanager for Studio

- CMS-16079: EsAnalyticsChartPanel can be used for other DocTypes
- CMS-15719: Content Hub content can now be dragged directly to CoreMedia link lists
- CMS-14730: Updated CKEditor to 4.13.1
- CMS-14165: Improved Merging Struct Changes in Translation Workflows
- CMS-16400: Swapped order for Studio REST URI prefix probes
- CMS-15903: MongoDB Properties changed
- CMS-16664: Updated to latest Spring Framework 5.2.3, Spring Boot 2.2.3, and others
- CMS-15031: Updated version of twelvemonkeys image library
- CMS-14071: Update: Checker Framework
- CMS-16121: Changed Freemarker macro optionalLink in brick-utils
- CMS-15873: Deprecation: CssClassFor and BlueprintFreemarkerFacade functions
- CMS-14385: Image Link Building
- CMS-13901: Added custom navigation to sfra-theme
- CMS-16454: Added health checks to commerce adapter services
- CMS-16565: Page Cache TTL for Fragments
- CMS-16150: Calculation of links to CAE content objects
- CMS-13715: Remote Links
- CMS-16469: Fragment payload can be written in a page variable
- CMS-16380: Update: PowerMock
- CMS-16369: Broader support for E-Commerce Augmentation
- CMS-16128: Favorites toolbar functionality moved to header toolbar in new Studio layout
- CMS-15502: Workspace for custom Projects

## Bugfixes

- CMS-16655: Locked By Workflow vs. Users With Low Permissions: Issues Fixed
- CMS-16474: Improved Publication Performance for Unchanged Blobs Values
- CMS-16422: CORBA communication
- CMS-16022: Exception Messages
- CMS-15594: Replicator lifecycle
- CMS-14820: JDBC 2.0 required
- CMS-16662: Deprecated class `com.coremedia.security.web.csrf.CsrfPreventionManagement`

- CMS-16622: Avoid NullPointerException in CommunityUserServiceImpl
- CMS-16058: Deprecated UriComponentsBuilder as @Link and @LinkPostProcessor method argument
- CMS-13722: Filter deleted/destroyed content in Annotated LinkLists
- CMS-16179: Slider show value when using keyboard keys
- CMS-16178: Accessibility for image editor button menus
- CMS-15296: TeaserOverlayStyleSelector was added to manifest.xml
- CMS-15120: Fixed validation in PersonalizedContent Segment Editor
- CMS-14640: Create from template now initializes all contents after creation
- CMS-12962: Reusable tabs: Wrong scroll position
- CMS-16637: BoundRadioGroup Does No Longer Take on Multiple Values At Once
- CMS-16526: Fixed sporadic tab jumping in Studio
- CMS-16428: Taxonomies in Studio: Increased Robustness for New Taxonomies
- CMS-16403: Blob data is no longer loaded if the "expandOnValues" feature is used
- CMS-16001: Maven Profile "in-memory" not available
- CMS-16393: Changed Freemarker macros optionalAttributes and renderAttr in brick-utils
- CMS-10569: Changed bricks media and mediaelement
- CMS-16466: Reload SystemD unit file before restarting the service
- CMS-15918: SFCC Configuration Documentation for Content Pages
- CMS-14598: Generic parameter is also supported for Salesforce isclinclude
- CMS-13694: Documentation for Migration of AnnotatedLinkLists
- CMS-16490: Changed docker command in readme file
- CMS-16049: Fixed type error while rendering a translation detail form.
- CMS-15875: Fixed 404 errors for CMDownload URLs
- CMS-13211: New helper method to construct an Annotated LinkList
- CMS-13009: Dataview Adjustment

## 4.7.1 Breaking Changes

### CoreMedia Core

#### Feeding of CMExternalProduct

Fixed feeding of `CMExternalProduct` ("Augmented Product") documents in the *CAE Feeder*. Properties inherited from `CMTeasable` will now be indexed. Before this fix, fields were only set for generic content bean properties like `documenttype` and `creationdate`. To this end, the configuration was changed in the Blueprint's `component-livecontext-caefeeder.xml`.

Follow [Section "Feeding of CMExternalProduct" \[305\]](#) for upgrade information.

*[CMS-16619]*

#### Third-Party Update: Apache Solr 8.4.0

Apache Solr has been updated to version 8.4.0

Follow [Section "Third-Party Update: Apache Solr 8.4.0" \[305\]](#) for upgrade information.

*[CMS-16583]*

#### Deprecated Support for Site Indicator Depth != 0

Motivation:

Follow [Section "Deprecated Support for Site Indicator Depth != 0" \[305\]](#) for upgrade information.

*[CMS-9521]*

#### Blob store configuration

When configuring Content Server blob stores, you can add a match condition that only activates the blob store when the blob is uploaded for documents of a certain type. This type condition was interpreted inconsistently depending on the client uploading the blob. While the Unified API and the publisher would check the condition versus the type in which the property is defined, the Site Manager and the replicator would use the exact type of the document instead.

Follow [Section "Blob store configuration" \[307\]](#) for upgrade information.

*[CMS-15245]*

## CoreMedia Content Application Engine

### Deleted class `com.coremedia.objectserver.web.HandlerMappingTracker`

Deleted class `com.coremedia.objectserver.web.HandlerMappingTracker`. Use the spring boot mappings actuator to inspect your application's spring MVC mappings.

*[CMS-16533]*

### Garbage Collector changed to UseParallelGC, Image Transformation: default permits reduced to 1/4 of heap size

We observed Out Of Memory exceptions in CAEs with small heap configurations (around 1.2 GB). We presume this is due to some bugs in the new garbage collector called G1 (Garbage First) which is the default algorithm for server configurations since JDK 9, e.g. [https://bugs.java.com/bugdatabase/view\\_bug.do?bug\\_id=8192647](https://bugs.java.com/bugdatabase/view_bug.do?bug_id=8192647).

Follow [Section "Garbage Collector changed to UseParallelGC, Image Transformation: default permits reduced to 1/4 of heap size" \[307\]](#) for upgrade information.

*[CMS-16168]*

### CAE Spring Boot Actuators can now be started on separate port

Spring Boot Actuators reuse the central part of the Spring MVC infrastructure. The CAE 'viewResolver' bean was type-incompatible with the Spring MVC 'viewResolver' bean. Hence the CAE 'viewResolver' bean was renamed to 'modelAwareViewResolver' so that the Spring Boot Actuators can now be run on a separate port for CAEs.

*[CMS-14007]*

## CoreMedia Studio

### Rewritten TabExpandPlugin

The TabExpandPlugin was rewritten. The unused 'tabs' config property was removed which breaks the Public API. Just remove the 'tabs' property when using the plugin. Use the autoHide property in panel tabs to specify the auto hidden tabs.

*[CMS-16548]*

### Content Hub: Improvements

The `BlobCache` has been revoked from the public API, in particular from `ContentHubAdapterFactory#createAdapter`. The Content Hub framework takes care for blob caching now, so the ContentHub adapters do not need to bother any longer, but may simply return their original blobs.

*[CMS-15936]*

### Content Hub: Removed UAPI references

Some changes were necessary to remove references to the *Unified API* and to apply naming conventions. In detail the changes are:

Follow [Section "Content Hub: Removed UAPI references" \[309\]](#) for upgrade information.

*[CMS-15110]*

### Content Hub: Preview

The Content Hub shows a detail view of the selected item in the library. For details, see the Content Hub sections in the Studio User Manual and the Studio Developer Manual.

Follow [Section "Content Hub: Preview" \[310\]](#) for upgrade information.

*[CMS-14579]*

### Studio remote beans consider themselves empty when load raises internal server error

When receiving an internal server error as response to a load request studio remote beans propagate the loaded event but do not hold any properties. This change breaks any code that relied on the remote bean remaining in its initial state as if it was never loaded.

*[CMS-16376]*

## CoreMedia Frontend Workspace

### Updated frontend dependencies

The `frontend-maven-plugin` used in the frontend workspace has been updated to version 1.9.1 and will now download and use Yarn version 1.21.1 when it is built. The frontend dependencies, have been updated to the latest versions and node.js to latest LTS version 10.18.1.

Follow [Section "Updated frontend dependencies" \[311\]](#) for upgrade information.

*[CMS-16630]*

### Removed Freemarker macro `bp.responsivelImage`

The deprecated macro `bp.responsivelImage` and the last usages in the example bricks have been removed. Please use the view "media" of `@coremedia/brick-media` instead.

Follow [Section "Removed Freemarker macro `bp.responsivelImage`" \[311\]](#) for upgrade information.

*[CMS-15904]*

## Calista Cart with HCL Commerce v9

HCL Commerce v9 compatible JavaScript code for refreshing the Cart icon after add/remove of products is now part of the Calista Theme instead of inline JavaScript in the Commerce workspace.

*[CMS-16625]*

# CoreMedia Connector for HCL Commerce

## Marketing Spot Support via Commerce Adapter

Marketing Spots are now supported via Commerce Hub

Follow [Section "Marketing Spot Support via Commerce Adapter" \[312\]](#) for upgrade information.

*[CMS-16641]*

## Parameter 'siteId' was removed from MappedCatalogsProvider's methods

The parameter `siteId` was removed from the methods of `com.coremedia.blueprint.base.livecontext.ecommerce.common.MappedCatalogsProvider` as the site ID is a mandatory field of the `com.coremedia.livecontext.ecommerce.common.StoreContext`.

*[CMS-14573]*

## Preview URLs for Augmented Categories and Products

Preview URLs for Augmented Categories and Products have been fixed so that preview parameters such as `timetravel` data or `personas` are correctly transformed into preview URLs, e.g. by encoding into preview tokens. The `PreviewUrlService` methods `getCategoryUrl` and `getProductUrl` have been changed so that the `StoreContext` is added as parameter like in the other `getXYZUrl` methods.

*[CMS-16731]*

# CoreMedia Connector for SAP Commerce Cloud

## SAP Commerce 1905: language fallback for SKUs with missing attribute values

Affects SAP Commerce 1905, only. This fix activates the language fallback for REST controller for SKUs. If a SKU does not provide attribute values for the current language, the values of the master language are returned

*[CMS-16674]*

## CoreMedia Headless Server

### JSLT enabled by default

As of version 2001, JSLT for the REST layer of headless server, is enabled by default.

*[CMS-16476]*

### REST query mapping now configurable

The resource file containing the rest query mapping is now configurable by the application property 'caas-rest.query-mapping-pattern'. The default resource file was moved from resources/query-mappings.properties to resources/graphql/rest-mapping/simple-mapping.properties. By default, all properties files in that folder are considered to contain query mappings.

*[CMS-16233]*

## Miscellaneous

### Property 'disallow.spring.bean.overrides' no longer supported.

Property `disallow.spring.bean.overrides` is no longer supported. Use spring boot property `spring.main.allow-bean-definition-overriding` instead.

*[CMS-16590]*

### HCL Commerce v9

HCL Commerce v9 is now the primary version. While v8 is still supported, the demo data (e.g. segment IDs) but also URL patterns/paths are adapted to v9 by default.

*[CMS-16529]*

### Minor UserProvider Changes

Bulk requests like `LdapMember#getLdapGroups` led to many members with the same expiration, which in turn caused LDAP roundtrip peaks when they expired. Now, the `LdapUserProvider` (esp. the `SimpleActiveDirectoryUserProvider` and the `ActiveDirectoryUserProvider`) deskew their members' expirations by a random factor up to 10% of the configured `com.coremedia.ldap.expiration` in order to equalize invalidations over time. I.e. if you configure an expiration of 3600s (one hour, default), a member may not be refreshed up to 3960s. If the exact maximum expiration is important in your project, you should lower your `com.coremedia.ldap.expiration` value accordingly.

Follow [Section "Minor UserProvider Changes" \[314\]](#) for upgrade information.

*[CMS-16385]*

### Update of mongo-java-driver to 3.11.2

The mongo-java-driver has been updated to 3.11.2.

*[CMS-16383]*

### Deprecation: LdapMember#getOrganizationalUnit

`LdapMember#getOrganizationalUnit` has been unused for a long time, therefore it is deprecated now. There is a No-Op-default method, so you do not need to implement it in your `LdapMember` implementations any longer. In the unlikely case that you **use** the method in your project code, please let us know, describe your usecase, and we will find a way to preserve the necessary functionality without using it ourselves.

*[CMS-15861]*

### MongoDB deployment with authentication

In Chef and Docker Deployment, MongoDB is deployed now with authentication enabled. The user `coremedia/coremedia` is created by default. In Docker deployment, the user `root/root` is created additionally. These credentials need to be changed for Live Deployments.

Follow [Section "MongoDB deployment with authentication" \[315\]](#) for upgrade information.

*[CMS-929]*

### Update to the Installed Packages for Salesforce Marketing Cloud

As of August 1, 2019, Marketing Cloud has removed the ability to create legacy packages. See [Legacy Packages](#). Our SFMC integration works now for the **Installed Packages** using [Access Token for Server-to-Server Integrations](#). You don't support anymore **Legacy Packages** which required legacy authentication. See [requestToken Reference for Legacy Packages](#)

*[CMS-16305]*

## 4.7.2 Changes and Improvements

### CoreMedia Core

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

Apache Tika has been updated to version 1.23. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika.

### Updated dependencies:

- `com.github.virtuald:curvesapi:1.06`
- `com.google.guava:guava:28.1-jre`
- `com.rometools:rome:1.12.2`
- `com.rometools:rome-utils:1.12.2`
- `commons-codec:commons-codec:1.13`
- `org.apache.commons:commons-collections4:4.4`
- `org.apache.pdfbox:fontbox:2.0.17`
- `org.apache.pdfbox:pdfbox:2.0.17`
- `org.apache.pdfbox:pdfbox-tools:2.0.17`
- `org.apache.poi:poi:4.1.1`
- `org.apache.poi:poi-scratchpad:4.1.1`
- `org.apache.poi:poi-ooxml:4.1.1`
- `org.apache.poi:poi-ooxml-schemas:4.1.1`
- `org.apache.xmlbeans:xmlbeans:3.1.0`
- `org.bouncycastle:bcmail-jdk15on:1.64`
- `org.bouncycastle:bcpkix-jdk15on:1.64`
- `org.bouncycastle:bcprov-jdk15on:1.64`

If you use the 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-16322]

### Content Server Manual: Symptoms For Multi-Site Issues

The section *Validate Multi-Site* referring to `cm tool validate-multisite` now contains symptoms you may observe in localization processes for corresponding issue codes. This shall provide an additional hint on the severity of the issue.

[CMS-15592]

### Multi-Site: Deal With Multiple Derived of One Master in Site

On copy & paste and other scenarios it may happen, that you have two derived contents in one site, which both refer to the very same master content. The multi-site code has been enhanced to deal with these situations.

Foremost the implementation of `ContentSiteAspect` logs warnings for the following methods in such conflicting situations:

- `getVariantsByLocale`
- `getDirectlyDerivedByLocale`
- `getDirectlyDerived`

All warning messages suggest running `cm validate-multisite` in order to further analyze the problems. Issues like this will be reported with issue code `MS-VALIDATION-6006`.

While `ByLocale` methods will choose arbitrary contents on conflict, `getDirectlyDerived` will prefer derived contents with the exact same relative path (within site) over an arbitrary content. Still, such situations should be prevented.

### Changes for 2001+:

- **Interface `ContentSiteAspect`** : Extended by a new method `getDirectlyDerivedContents (otherSite:Site) :Collection<Content>`.
- **New Validators:** `ValidatorsStudioConfiguration` provides a new validator to identify states where several contents in one site link to the same master content:
  - `SameMasterLinkValidator` (for derived contents),
  - `DuplicateDerivedInSiteValidator` (for master contents)

### Informational Note:

During a standard Studio editing session master and master version property are cleared on copy (controlled by a `ContentWritePostProcessor` in REST backend). Nevertheless, clients other than CoreMedia Studio may create such problematic states.

[CMS-15590]

### Documentation: `cm-validate-multisite`

The documentation of `cm-validate-multisite` [MS-VALIDATION-3006] in the ContentServer Manual now links to the section describing how to change the link type.

[CMS-15589]

## CoreMedia Content Application Engine

### Deprecation: `ContentBeanPrefetcher`

Class `com.coremedia.objectserver.beans.ContentBeanPrefetcher` is deprecated. The prefetcher bean may still be used as long as it exists but the prefetching logic will be moved to spring boot actuators in future releases.

[CMS-16672]

### Deprecation: CachingContentBeanFactoryWrapper

Class `com.coremedia.objectserver.beans.CachingContentBeanFactoryWrapper` is deprecated. The caching aspect of the content beans factory will be moved in future releases.

[CMS-16671]

### Navigation contexts selection can be switched to legacy mode

In 1904 the navigation context selection algorithm was changed to improve the support of a multi-language scenario. This means a "locale variant" of a new navigation context (a content with almost the same path in another site except the root node) is preferred to all other decision options. The old behavior (where the target locale was not considered) can be reestablished by setting a configuration property "cae.navigation.context.consider-target-locale" to false.

[CMS-16562]

### Made class TransformationLinks public

The class `TransformationLinks` is visible as return type of `BlueprintFreeMarkerFacade#responsiveImageLinksData` and has been declared as Public AP therefore.

[CMS-14239]

## CoreMedia Studio

### Salesforce Marketing Cloud Integration

Salesforce Marketing Cloud (SFMC) is a great tool to create marketing newsletters, define user journeys and manage email lists, among other things. CoreMedia enables you to create your content within CoreMedia Studio, crop your pictures, create your texts, translate them in all configured languages, and then push all of them into SFMC, where you can use your content to create marketing newsletters.

Once you have created your content and published it in CoreMedia Studio, you can push it into SFMC. Just press the Salesforce Marketing Cloud button in the document form toolbar on the right to push your texts and pictures into SFMC. You can push your texts in the master language only, or you can push them in the master language and all of its translations, at the same time. The property `sfmc-push-translations` true or false enables you to push the content in its master language and all translations into SFMC. It is a matter of configuration, which content types and which properties can be pushed into the SFMC, such as articles, teasers, pictures. See Blueprint Development Manual, section "Uploading content to Salesforce Marketing Cloud" on how to configure CoreMedia document types and properties for SFMC.

CoreMedia Studio allows you to push content into SFMC not only from the document form, but also from the library, or from the projects panel. In the Library or in a project select all content items which you want to push into SFMC, then press the SFMC button in the toolbar above. A standard Studio notification to the top right will notify you about the progress of your content push into SFMC.

[CMS-16251]

### TaxonomyConditionEditor

TaxonomyConditionEditor can be used now for other Taxonomy than "Subject"

[CMS-16143]

### Usermanager for Studio

The Studio comes with an integrated user management now. The administration UI is visible for administrative users by default.

[CMS-16127]

### EsAnalyticsChartPanel can be used for other DocTypes

EsAnalyticsChartPanel was restricted to be configured for CMArticle only. This panel can be configured for other document types now.

[CMS-16079]

### Updated CKEditor to 4.13.1

CKEditor has been updated from 4.11.1 to 4.13.1. CKEditor for CoreMedia CMS is part of jangaroo-libs which got updated from 4.0.48 to 4.0.49.

[CMS-14730]

### Improved Merging Struct Changes in Translation Workflows

The merge algorithm to apply changes from a master content's page grid to a derived content has been improved.

Note, that you must re-upload the translation workflow definition using `cm upload` for this to become effective.

The improved merge algorithm has been enabled in the Blueprint for page grid properties in list bean `defaultAutoMergeStructListKeys`, defined in `com.coremedia.blueprint.workflow.boot.BlueprintWorkflowServerAutoConfiguration`.

The new algorithm is applicable to struct lists, where each entry's value has a unique identity, like the section key in placement structs. If you happen to have similar struct list in your projects, you may extend the `defaultAutoMergeStructListKeys` list bean by additional entries.

More details can be found in the API documentation of `com.coremedia.translate.workflow.AutoMergeStructListMapKeyFactory` and the description of the `AutoMergeTranslationAction` in the Blueprint Developer Manual.

[CMS-14165]

## CoreMedia Studio Client

### Swapped order for Studio REST URI prefix probes

The order for Studio REST URI prefix probes has been swapped. This avoids an annoying `NOT_FOUND` request in the default deployment.

[CMS-16400]

## CoreMedia Elastic Social

### MongoDb Properties changed

The Following MongoDb Properties have changed. Due to known issues this should only be used with versions `>= 2001.2`. Previous versions are still working but have been deprecated and should be migrated:

- `mongoDb.clientURI` -> `mongodb.client-uri` (considering Elastic Social)
- `mongoDb.clientURI` -> `repository.caplist.mongo-db-client-uri` (considering Cap List)
- `mongoDb.prefix` -> `mongodb.prefix`
- `models.createIndexes` -> `mongodb.models.create-indexes`
- `mongoDb.monotonicReadConsistency.*` -> `mongodb.monotonic-read-consistency.*`
- `taskQueues.*` -> `taskqueues.*`

[CMS-15903]

## CoreMedia Workspace

### Updated to latest Spring Framework 5.2.3, Spring Boot 2.2.3, and others

Along with the Spring Framework and Spring Boot the following libraries have been updated:

- Spring Boot 2.2.3.RELEASE
- Spring Framework 5.2.3.RELEASE

- Micrometer 1.3.2
- SLF4J 1.7.30
- Postgresql 42.2.9
- Jetty 9.4.25.v20191220
- Httpcore 4.4.13
- Byte Buddy 1.10.6
- Mysql 8.0.19
- Netty 4.1.45.Final
- Okhttp3 3.14.6
- Jakarta Annotation API 1.3.5
- Jackson 2.10.1
- Tomcat 9.0.30
- Aspectj 1.9.4

[CMS-16664]

### Updated version of twelvemonkeys image library

Updated com.twelvemonkeys.imageio from 3.4 to 3.4.2

[CMS-15031]

### Update: Checker Framework

The Checker Framework has been updated to version 3.0.0.

The Checker Framework can be used to verify usage of personal data during compilation as described in the Blueprint Developer Manual, section "Handling Personal Data".

[CMS-14071]

## CoreMedia Frontend Workspace

### Changed Freemarker macro optionalLink in brick-utils

The Freemarker macro `optionalLink` in `@coremedia/brick-utils` has a boolean parameter "openInNewTab", which adds the attributes `target="_blank"` and `rel="noopener"`. For security reasons in Internet Explorer 11 the `rel` attribute includes the additional value " `noreferrer` ".

[CMS-16121]

### Deprecation: `CssClassFor` and `BlueprintFreemarkerFacade` functions

The class `CssClassFor` and the followings methods of `BlueprintFreemarkerFacade` have been deprecated.

- `cssClassFor`
- `cssClassForFirstLast`
- `cssClassForOddEven`
- `cssClassAppendNavigationActive`

The methods are slated for removal. Please use Freemarker built-ins as replacement.

[CMS-15873]

### Image Link Building

The Blueprint Freemarker Facade API in `image.ftl` provides a new function `transformedImageUrl()` to build a link for a transformed image with a particular size and aspect ratio.

Usage:

```
<#-- @ftlvariable name="self"
type="com.coremedia.blueprint.common.contentbeans.CMPicture" -->
<#assign ratio="landscape_ratio16x9"/>

```

[CMS-14385]

### Added custom navigation to `sfra-theme`

Use the newly added custom navigation for the `sfra-theme` to control what you want to see in the navigation menu, e.g. products, categories or articles.

[CMS-13901]

## CoreMedia Commerce Hub

### Added health checks to commerce adapter services

Commerce adapters expose health indicators if `StoreRepository` or `CatalogRepository` are available. `BaseConnectorAutoConfiguration` provides the default health indicator beans as well as constants for the indicator names and the bean names if custom health indicator beans should be used instead.

[CMS-16454]

# CoreMedia Connector for Salesforce Commerce Cloud

## Page Cache TTL for Fragments

With Cartridge version 3.2.29 two new custom site preferences have been introduced:

- Page Cache TTL Default (The default time in seconds when a CMS fragment expires in Salesforce Page Cache)
- Page Cache TTL in case of CMS Fragment errors (The time in seconds that a page expires if an error is occurred during fragment loading)

The default is off so that the behavior is like before. But when the values are set  $\geq 1$  the FragmentConnector will set `Response.setExpires(...)` accordingly so that SFCC page cache is invalidated after the specified TTL. This can be distinguished for successful and failed fragments so that you can e.g. specify a lower page cache TTL in case of fragment errors, so that these errors are not cached for too long. Please note that you have to import the updated `system-objecttype-extensions.xml` as well as the cartridge code.

[CMS-16565]

# CoreMedia Headless Server

## Calculation of links to CAE content objects

The headless server now features the ability to resolve links to CAE content objects. The feature may become useful, whenever you want to breakout of the headless server context of content objects to "real" web pages.

[CMS-16150]

## Remote Links

The Headless Server can be queried to retrieve links that are generated by a configurable remote system, e.g. a CAE. These links can be used by a client to link that remote content. A new `UrlHandler` is introduced at CAE, that handles requests to `/internal/service/url`. See documentation of `headless-server` for details.

[CMS-13715]

## Miscellaneous

### Fragment payload can be written in a page variable

For Salesforce cartridge it is possible to write the fragment payload into a page variable instead of printing it directly to the output. This makes it possible to do things that depend on the result of the previous fragment call (eg. navigation that can be managed by the CMS if this feature is enabled there).

[CMS-16469]

### Update: PowerMock

The testing library PowerMock has been updated to version 2.0.4.

[CMS-16380]

### Broader support for E-Commerce Augmentation

It is now possible to retrieve the augmenting content object for categories and products with the new fields `externalChannel` and `externalProduct`, respectively.

Moreover, all page grid placements for a product variant, product or category, including placements inherited from the navigation context, can now be retrieved with the new fields `grid` and `placements`.

Please consult the corresponding section about e-commerce augmentation within the headless server manual for more details.

[CMS-16369]

### Favorites toolbar functionality moved to header toolbar in new Studio layout

You can switch from classic Studio view to new Studio layout in the user preferences. In the preferences window under the Studio tab you can find a checkbox labeled 'Show Classic Studio'. When unchecked the Studio reloads and shows a new layout where the favorites toolbar on the left is gone and the functionality is moved to the Studio header.

[CMS-16128]

### Workspace for custom Projects

The workspace for custom projects can be accessed at <https://github.com/coremedia-contributions/cmcc-10-pws>.

[CMS-15502]

## 4.7.3 Fixed Issues

### CoreMedia Core

#### Locked By Workflow vs. Users With Low Permissions: Issues Fixed

The *Locked by Workflow* feature, used especially for publication workflow, did not work for users who are not allowed to access the corresponding workflow. As a side effect of the underlying issue, such users with low permissions were unable to perform some operations on linklist of contents which are currently in translation.

These problems have been fixed now.

[CMS-16655]

#### Improved Publication Performance for Unchanged Blobs Values

Fixed a bug that caused unnecessary re-transfer of unchanged blob values when content is published to the Master Live Server.

[CMS-16474]

#### CORBA communication

A workaround for an ORB bug has been included. The bug could potentially stop CORBA communication of a Content Server or a Workflow Server entirely. Upgrading to the current release is strongly recommended.

[CMS-16422]

#### Exception Messages

Some (justified) `NullPointerException` related to inconsistent multisite content have messages now.

[CMS-16022]

#### Replicator lifecycle

The replicator process in the *Replication Live Server* can be shut down, while it is trying to connect to the *Master Live Server*. This makes it possible to stop the replicator in case of problems with the *Master Live Server* with less danger of reactivating it accidentally while the *Master Live Server* has not yet fully recovered.

[CMS-15594]

#### JDBC 2.0 required

In previous releases, the property `sql.store.driver-jdbc` had to be set to choose support for JDBC versions other than 1.0. This property has been removed. Support

for JDBC 3.0 is required for JDBC drivers. All supported databases provide drivers with at least this JDBC version.

[CMS-14820]

## CoreMedia Content Application Engine

### Deprecated class `com.coremedia.security.web.csrf.CsrfPreventionManagement`

Class `com.coremedia.security.web.csrf.CsrfPreventionManagement` is deprecated. Use spring security CSRF protection instead.

[CMS-16662]

### Avoid `NullPointerException` in `CommunityUserServiceImpl`

Avoid `NullPointerException` when using `null` as password in `CommunityUserServiceImpl.java`. This e.g. happened in case of `LiveContextUserSessionSynchronizerImpl` where only a dummy user is created without password.

[CMS-16622]

### Deprecated `UriComponentsBuilder` as `@Link` and `@LinkPostProcessor` method argument

The `UriComponentsBuilder` is subtle concerning URL encoding, and if you retrieve an existing one of uncertain state, you cannot determine how to handle it appropriately. This frequently leads to surprising results of the CAE's link building. Therefore, we deprecated `UriComponentsBuilder` as argument and return type for `@Link` and `@LinkPostProcessor` methods. Use `UriComponents`, and use `UriTemplate` as argument type in `@Link` methods, instead. When you change the signatures of your methods, use the following type conversions in your methods to match your code and achieve a backward compatible behavior. (This is how the link building framework casts between the types.)

For arguments:

- `@Link`, `UriTemplate` → `UriComponentsBuilder`: `UriComponentsBuilder.fromPath(uriTemplate.toString())`
- `@LinkPostProcessor`, `UriComponents` → `UriComponentsBuilder`: `UriComponentsBuilder.fromUri(uriComponents.toUri())`

For return values:

- `UriComponentsBuilder` → `UriComponents`: `uriComponentsBuilder.build()`

`UriComponentsBuilder` is deprecated only as argument and return type, but may safely be used internally. It is still a useful class, if you can control its complete lifecycle, from creation to `build()`.

[CMS-16058]

### Filter deleted/destroyed content in Annotated LinkLists

Deleted and destroyed content is filtered from Annotated LinkLists now. **CAE** : Filtering is performed in `CMLinkableBase` **Headless-Server** : Filtering is performed in `ExtendedLinkListAdapter`. Additionally, a filter was introduced, that filters deleted/destroyed content generally (`InProductionFilterPredicate`).

[CMS-13722]

## CoreMedia Studio

### Slider show value when using keyboard keys

The slider components in the image editor in the rotation and color transformation menus now show values when changed with keyboard keys like the arrow down key.

[CMS-16179]

### Accessibility for image editor button menus

There was a bug which prevents keyboard navigation through the image editor menus for the rotation button and the color transformation button. This is fixed now. You can use the Tab-key to navigation in the two menus.

[CMS-16178]

### TeaserOverlayStyleSelector was added to manifest.xml

`TeaserOverlayStyleSelector` is public API but was missing in the manifest.xml of editor-components. This is fixed now.

[CMS-15296]

### Fixed validation in PersonalizedContent Segment Editor

When a segment condition is added to a personalized content document with a valid segment and Studio is reloaded, a validation error was displayed at the segment condition value. This is fixed now.

[CMS-15120]

### Create from template now initializes all contents after creation

When an editor wants to create a content from the template all created contents will be initialized with the configured studio initializers.

[CMS-14640]

### Reusable tabs: Wrong scroll position

`DocumentForm` now remembers scrollbar position after tabs have been changed.

[CMS-12962]

## CoreMedia Studio Client

### BoundRadioGroup Does No Longer Take on Multiple Values At Once

We fixed a bug where a BoundRadioGroup could take on multiple values at once.

[CMS-16637]

### Fixed sporadic tab jumping in Studio

If you have opened an Article in Studio and changed immediately from the 'Content' tab to another tab, it may have happened that the 'Content' tab was automatically selected again.

[CMS-16526]

### Taxonomies in Studio: Increased Robustness for New Taxonomies

Taxonomies in Studio may not show up. This is especially true, if you start the Studio server without any contents available in repository. In logs, you will find a report of an internal server error [500] in these cases, when accessing the taxonomies resource.

To fix this issue, the `TaxonomyResolver` has been changed in that way, that it now uses a `CacheKey` with automated invalidation. Thus, the `reload` in `TaxonomyResolver` interface is obsolete now, and even discouraged, as `reload` is only triggered by administration interface. As a result `reload` is deprecated now.

#### Upgrade:

If you happen to have modified taxonomy handling, you may run into merge conflicts on upgrade. Although it is recommended to use the new `CacheKey` based approach, you may safely skip the updates in modules `taxonomies` and `taxonomy-studio-lib`, if you haven't observed any issues yet.

[CMS-16428]

### Blob data is no longer loaded if the "expandOnValues" feature is used

The "expandOnValues" feature automatically expands panels in a document form if there is a value set for certain document properties. Before the change blob properties were loaded in order to determine if they are empty. This is no longer necessary.

[CMS-16403]

## CoreMedia Workspace

### Maven Profile "in-memory" not available

updated documentation for inmemory profile

[CMS-16001]

## CoreMedia Frontend Workspace

### Changed Freemarker macros optionalAttributes and renderAttr in brick-utils

The Freemarker macros `optionalAttributes` and `renderAttr` in `@core media/brick-utils` did remove attributes with empty values. This has been changed to support empty values. If you need to hide empty attributes, set the value to `cm.UNDEFINED`. These macros are used for example by the macros `optionalLink` and `optionalTag`.

#### Examples:

```
<@utils.optionalLink href=link attr={"class":"example", "download": "",
"hideAttribute": cm.UNDEFINED}>Example</@utils.optionalLink>
```

Result:

```
<a href="link" class="example" download="">Example</a>
```

[CMS-16393]

### Changed bricks media and mediaelement

The bricks "media" and "mediaelement" used the scss macro `stretch-absolute()` for the CSS selectors `.cm-media--responsive` and `.cm-mediaelementwrapper iframe`. This is only working, if the outer box set an `aspect-ratio-box()`, which is not part of the bricks. So we moved usage of `stretch-absolute()` to the example-bricks and example-themes.

#### Upgrade steps:

If you rely on our responsive image concept, please check your themes and bricks for `aspect-ratio-box()` usages and add `stretch-absolute()` for the inner box elements. Alternatively read the removed CSS definition to your theme:

```

.#{ $cm-media-prefix } {
  &--responsive {
    stretch-absolute();
  }
}

.cm-mediaelementwrapper {
```

```
> iframe {  
  @include stretch-absolute();  
}  
}
```

[CMS-10569]

## CoreMedia Deployment

### Reload SystemD unit file before restarting the service

If the SystemD unit file changes, i.e. when the memory settings changes, the file needs to be reloaded by SystemD before restarting the service. This is done by calling `/bin/systemctl daemon-reload`.

[CMS-16466]

## CoreMedia Connector for Salesforce Commerce Cloud

### SFCC Configuration Documentation for Content Pages

The configuration of SEO enhanced URLs for content pages has been added to the CoreMedia LiveContext for Salesforce Commerce Cloud manual within the cartridge workspace version 3.2.29.

[CMS-15918]

### Generic parameter is also supported for Salesforce islcinclude

The islcinclude tag in the Salesforce cartridge haven't supported the generic "parameter" param so far as all other platforms do. Now it is possible to use this parameter and pass custom json to the CAE.

[CMS-14598]

## CoreMedia Documentation

### Documentation for Migration of AnnotatedLinkLists

The documentation how to migrate LinkLists to AnnotatedLinkLists is extended and enriched with examples.

[CMS-13694]

## Miscellaneous

### Changed docker command in readme file

Changed wrong docker-compose command in README.md file.

[CMS-16490]

### Fixed type error while rendering a translation detail form.

Sometimes a type error may appear in the browser console while rendering a translation detail form. The error text says: 'Cannot read property 'scope' of undefined'. This is fixed now.

[CMS-16049]

### Fixed 404 errors for CMDownload URLs

CMDownload urls can be built with using an edited filename property as part of the URL instead of generating the download filename by taking the document name plus a guessed file extension. This feature has to be enabled via a content setting "useCMDownloadFilename". Now such urls can be loaded without producing an "404" error.

[CMS-15875]

### New helper method to construct an Annotated LinkList

A new helper method is introduced to create an Annotated LinkList. `LegacyToAnnotatedLinkListAdapter#createAnnotatedLinkListStruct`. This method can be called for any class extending the `LegacyToAnnotatedLinkListAdapter`, e.g. `TeaserTargetAdapter`, `QueryListExtendedItemsAdapter` or any custom adapter. Custom logic implemented in `LegacyToAnnotatedLinkListAdapter#populateTargetStruct` to populate the target struct will be applied automatically.

Any UAPI-Client using this functionality needs a dependency on module `bpbase-studio-rest`.

The package

```
com.coremedia.blueprint.base.rest.convert
```

of module `bpbase-studio-rest` is public API now.

[CMS-13211]

### Dataview Adjustment

The `CMChannelImpl#vanityUrlMapper` dataview has been replaced by a simple cache key, because the dataview led to an illegal cycle for typical content structures.

[CMS-13009]

# 4.8 Release 1910.1



## Highlights in this Release

- Content Navigation for SAP Commerce Cloud
- Content Hub Improvements
- SAP Commerce 1905 support
- Category Search in e-Commerce library
- REST layer for CoreMedia Headless GraphQL
- Introduced counter measures against DoS attacks for the CoreMedia Headless Server

The release contains:

- Breaking changes: 74
- Changes and improvements: 90
- Bugfixes: 17

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.

## Breaking Changes

- CMS-15688: Removal: [Deprecated methods and parameters in MediaStore](#)
- CMS-15687: Removal: [Deprecated BlobStore classes](#)
- CMS-15591: New issue code for [validate-multisite](#) for deleted master link
- CMS-15548: New issue code for [validate-multisite](#) if master version is not set
- CMS-12338: [Content Server BlobStore Configuration](#)
- CMS-16151: [API Change in PostgreSQLBlobStore](#)
- CMS-15620: [Commerce Cache Invalidation](#)
- CMS-15510: [CAE Feeder limits feeding of blobs by size](#)
- CMS-14984: ['LiveContextCloneSitePostProcessor' loaded via spring boot autoconfiguration](#)
- CMS-12913: [Domains in ActiveDirectoryUserProvider](#)

- CMS-15910: Converted `component-livecontext.xml` to spring boot autoconfiguration
- CMS-16217: security-services.xml
- CMS-16146: HTTP Strict-Transport-Security response header is not set by Apache anymore
- CMS-15957: Prevent double escaping of some image links provided by BlueprintFree-markerFacade
- CMS-15909: Blueprint's `ErrorAndExceptionMappingResolver` now autowires list of `ErrorAndExceptionHandler` beans
- CMS-15623: Hybris Vendor ID
- CMS-15583: Studio Validates Content Locale to Match Site Locale
- CMS-15100: ContentHubAdapterBinding removed from ContentHub API
- CMS-14581: ContentHub
- CMS-10339: The resource type lookup is now considering class hierarchy.
- CMS-15839: YouTube Content Hub Adapter
- CMS-15721: ContentHub API changes
- CMS-15199: The ContentStateValidator now requires a CapConnection as constructor parameter.
- CMS-14589: Removed redundant property contextMenuItems of LinkListPropertyField
- CMS-14295: Changed access modifier of some methods in AbstractItemsPluginBase from internal to protected
- CMS-16175: Category Search in Studio
- CMS-15943: Modularization of Project Extensions
- CMS-15886: Updated to latest Spring Framework 5.2.1, Spring Boot 2.2.1, Spring Security 5.2.1, and others
- CMS-15572: Removed Maven property workspace.configuration.dir
- CMS-14211: Changed CMLinkable#getLocalSettings
- CMS-16083: Upgraded Netty Libraries
- CMS-16088: Updated frontend dependencies
- CMS-14672: Glyphicon-Brick removed
- CMS-15506: Removed legacy example bricks
- CMS-15337: Theme Build: Fixed SASS Variable Load Order
- CMS-15557: Removed 'commerce.adapter.\*.endpoint' properties
- CMS-15953: Update chef-sugar cookbook
- CMS-15606: Websphere Commerce proxy hosts renamed

- CMS-15040: Sitemanager deployment with Webswing removed
- CMS-15864: Support for SAP Commerce 1905
- CMS-15812: link.storefront-url property renamed to sfcc.link.storefront-url
- CMS-15551: PreviewUrlService API changes
- CMS-15543: Site ID parameter removed from CatalogAliasTranslationService methods
- CMS-15503: e-Marketing Spots Aurora Augmentation
- CMS-15628: `CurrentCommerceConnection` has been removed
- CMS-15627: CommerceConnection#setStoreContext renamed
- CMS-15626: User context removed from commerce connection
- CMS-15625: `UserContextHelper` methods removed
- CMS-15624: `UserContextProvider` methods removed
- CMS-15228: `CurrentStoreContext` replaces `CurrentCommerceConnection`
- CMS-15214: Refactored Spring Configuration Files of Artifact bpbases-common
- CMS-15180: Removed SAP Hybris Commerce Integration modules from blueprint
- CMS-15179: Removed Salesforce Commerce Cloud Integration modules from blueprint
- CMS-14489: Add support for Product Lists and some schema changes
- CMS-14500: Names of rich text views in GraphQL have changed
- CMS-16351: Run confd when workflowconverter is run before workflow-server startup
- CMS-15580: Docker network dependent entrypoint chain scripts have been removed from Dockerfile default command chain
- CMS-15426: Removal: Deprecated methods from Blueprint module search-api
- CMS-14968: Standardize Spring-Boot applications
- CMS-14840: Development licenses
- CMS-14135: maven-surefire-plugin et al. updated to 3.0.0-M3
- CMS-16308: Ignore missing content or user files when use-remote-content-archive is used
- CMS-15529: Spring-Boot / Docker integration for livecontext name changes
- CMS-14836: Taxonomies: Skip empty folders in taxonomy type lookup
- CMS-13667: Empty Translation Units in XLIFF Export

## Changes and Improvements

- CMS-15588: Serverimport
- CMS-15395: Third-Party Update: Apache Tika and Transitive Dependencies

- CMS-13909: Update Freemarker Library to 2.3.29
- CMS-15560: New Input Chips Component introduced.
- CMS-15261: Changed Taxonomy Selection
- CMS-15101: Content Hub Caching
- CMS-14375: Collapsed state of form view and preview in Studio persisted
- CMS-14297: Studio applies last collapse state of content tab when initially started.
- CMS-11332: Tabs of Studio Blueprint Document Forms have now itemIds
- CMS-16303: Blueprint Workspace Upgrade from 1904 to 1907
- CMS-15922: Extensions Tool Update
- CMS-15871: Added parameters to items view in slickCarousel
- CMS-15965: Update Tomcat to 9.0.26
- CMS-15859: Deprecated `CommerceConnection#getClone`
- CMS-15143: Removed various LC spring XML files
- CMS-16191: Behavior for SKU parents changed for SAP Commerce
- CMS-13570: Managed SAP Hybris Navigation
- CMS-15851: Persisted Query Support and REST Mapping Layer added
- CMS-13586: Add Server side 360° picture spinner support
- CMS-15585: New Studio Configuration Reference chapter in Studio Manual
- CMS-16355: Mongodb base image updated to 4.0.13
- CMS-16354: Mysql base image has been updated to 5.7.28
- CMS-16350: Update of java-application-base image
- CMS-16235: Fix for possible NPE during price conversion in the hcl-commerce-adapter
- CMS-15526: Update Traefik to 1.7.14

## Bugfixes

- CMS-16165: Fixed Server Database Connection Checking
- CMS-15947: Deprecation: CompoundMediaStoreSelector methods
- CMS-15702: Third-Party Update: commons-compress 1.19
- CMS-15643: validate-multisite Refinement
- CMS-15578: Translation state "ignore-updates" is handled correctly by content-server tools
- CMS-15568: Fixed high server load for large completed workflows
- CMS-14733: Search field in Studio library with different behaviour regarding suggestions

- CMS-14641: Use confd to configure management-tools against multiple environments
- CMS-16244: Personalization does not work in CAE
- CMS-15803: Behavioural Change in CAEFreemarkerFacade#getLink
- CMS-15295: Deprecation: Freemarker function bp.getDisplaySize()
- CMS-15185: Changing validity date in Studio documents now always triggers preview reload
- CMS-12448: Deprecation: createBeansFor() and createBeanFor() from BlueprintFreemarkerFacade have been deprecated
- CMS-16338: WCS Category tree is broken
- CMS-16012: Fixed type error 'Cannot read property 'apply' of null'
- CMS-15986: Fixed type error 'Cannot read property 'el' of null'
- CMS-15982: Fixed type error 'Cannot read property 'saveTabbableState' of null'
- CMS-15971: Fixed type error 'Value cannot be cast to com.coremedia.cap.content.Content'
- CMS-15969: Fixed type error 'Cannot read property '0' of undefined'
- CMS-15963: Server-Side Studio Validators Hardened
- CMS-15961: Fixed Handling for ClientAbortException Broken Pipe
- CMS-15952: Fixed logger output in class RemoteBeanImpl
- CMS-15924: Fixed type error in DateTimePropertyField
- CMS-15908: Sites may not be available in Studio
- CMS-15866: Expanding and Collapsing All Rules of All Conditions of a Personalized Content is No Longer Slow
- CMS-15800: Derive Site: Progress State Propagated to All Studio Clients
- CMS-15738: Category Augmentation Problem
- CMS-15732: Fixed type error when clicking in the empty project panel
- CMS-15725: Fixed type error when modifying content list in Studio projects
- CMS-15684: Fixed harmless invalid server request in Studio moderation
- CMS-15611: Fixed Studio Link Suggestions
- CMS-15586: Removed properties with default values from application.properties of studio server
- CMS-15570: Studio says there are errors or warnings when only info exists
- CMS-15456: ASDoc: Package com.coremedia.cms.editor.sdk missing in Public API
- CMS-15335: Fixed "Cannot read property 'getFocusArea' of null" in Studio
- CMS-15328: Improved accessibility for Active Jobs Button and Window

- CMS-15281: CoreMedia Studio Robustness for Network Outages
- CMS-15257: Fixed QuickCreate Dialog Destruction Issues
- CMS-15172: Added UploadSettings as callback value of load method
- CMS-15066: Add org.springframework.http.converter.ResourceHttpMessageConverter by default
- CMS-15007: Fixed type error 'Cannot read property 'getName' of null'
- CMS-14884: Saving Preferences No Longer Duplicates Document Form Sub Tabs
- CMS-14835: Fixed type error 'Unable to get property 'setValue' of undefined or null'
- CMS-14833: Elastic Social: Email Window fixed
- CMS-14808: Fixed type error 'Cannot read property 'getBoundingClientRect' of null'
- CMS-14426: Fixed error in taxonomy selection dialog for site specific taxonomies
- CMS-14294: Fixed Seemingly Frozen Dashboard
- CMS-14072: Missing xtype for SimpleSuggestionsComboBox added.
- CMS-13920: Transforming certain png-formats into icons does not work
- CMS-13679: Fixed type error getSite[] of null
- CMS-13283: Fixed Taxonomy Check-Out Exception
- CMS-12924: Fixed pasting text during folder rename in library tree also copies a sub-folder in Studio
- CMS-12568: Fixed opening an image content in Studio can produce a console error sometimes
- CMS-15972: Elastic Worker: Added missing component scan to module es-worker-component
- CMS-14113: Added missing runtime dependency to module content-services
- CMS-15899: Workspace path prefix removed from content blobs archive
- CMS-15892: Build Error After Disabling E-Commerce Extensions
- CMS-13654: Webpack TransformFreemarkerLoader now ignores includes/imports in comments
- CMS-16053: Deployment Archive did not contain content-users and frontend archives
- CMS-15523: Set repository.blobCachePath to named volume in cae-feeder docker image
- CMS-16286: Security Fix: Access Token Logging
- CMS-16125: Fixed Commerce Hub Reconnect
- CMS-15525: SAP Commerce Preview Links
- CMS-15432: IBM CacheInvalidationHandler takes to long

- CMS-15093: Retry fetching the LanguageMapping from the ibm commerce system on failure
- CMS-16149: Fix for scrambled fragment output in sfcc livecontext integration
- CMS-16118: SFCC API version 19.10
- CMS-15520: Robustness: Handling of seo url redirects
- CMS-15856: Fix logging configuration for headless-server
- CMS-15709: Headless-Server: Tag context condition in dynamic query lists
- CMS-15883: CoreMedia Richtext DTD et al. part of JavaDoc
- CMS-16407: Fix MySQL innodb\_buffer\_pool\_size in docker development setup
- CMS-16167: Fix groupId of blueprint root pom
- CMS-15966: Third-Party Update: Jackson Databind 2.9.10
- CMS-15945: Missing Extension tool Download Configuration
- CMS-15857: Fix default ORB ports in docker development setup
- CMS-15497: Fixed Traefik rules to access robots.txt
- CMS-15325: Third-Party Update: Jackson Databind 2.9.9.2

## 4.8.1 Breaking Changes

### CoreMedia Core

#### Removal: Deprecated methods and parameters in MediaStore

The deprecated and unused methods `getIds()` and `canUsePredecessorHints()` have been removed from the interface `hox.corem.server.media.MediaStore` and its public API implementation `hox.corem.server.media.S3Store`. Furthermore, the unused parameter `predecessorHints` has been removed from `MediaStore`'s `upload` method and its implementations.

Follow [Section "Removal: Deprecated methods and parameters in MediaStore" \[317\]](#) for upgrade information.

*[CMS-15688]*

#### Removal: Deprecated BlobStore classes

The deprecated classes from package `hox.corem.server.media` have been removed: `BlobStore`, `ChunkingBlobStore` and `PostgreSQLBlobStore`.

Follow [Section "Removal: Deprecated BlobStore classes" \[317\]](#) for upgrade information.

*[CMS-15687]*

### New issue code for validate-multisite for deleted master link

The `cm validate-multisite` command line tool now reports a warning with newly introduced issue code `MS-VALIDATION-8003` for derived content whose master property links to a deleted content. Issue code `MS-VALIDATION-8002` which previously included such issues, is from now on only used for contents with links to deleted content in properties other than the master property. Furthermore, the severity for `MS-VALIDATION-8002` was reduced from `WARN` to `INFO` for link properties that are declared as "weak links".

Follow [Section "New issue code for validate-multisite for deleted master link" \[318\]](#) for upgrade information.

*[CMS-15591]*

### New issue code for validate-multisite if master version is not set

The `cm validate-multisite` command line tool now reports a warning with newly introduced issue code `MS-VALIDATION-7004` for derived content whose master version is not set.

Follow [Section "New issue code for validate-multisite if master version is not set" \[318\]](#) for upgrade information.

*[CMS-15548]*

### Content Server BlobStore Configuration

The Content Server does not create a separate internal Spring application context anymore to load its blob store configuration. Instead, custom media stores and media store selectors must be configured at the Content Server's Spring application context in the same way as Spring beans for other CoreMedia applications are configured. This change also makes it possible to use standard Spring Boot features to set configuration properties, for example to specify blob store paths from environment variables.

Follow [Section "Content Server BlobStore Configuration" \[319\]](#) for upgrade information.

*[CMS-12338]*

### API Change in PostgreSQLBlobStore

Class `hox.server.media.jdbc.PostgreSQLBlobStore` does not implement `org.springframework.beans.factory.InitializingBean` anymore and its method `afterPropertiesSet()` has been removed.

*[CMS-16151]*

### Commerce Cache Invalidation

The default value for `livecontext.cache.invalidation.enabled` has been changed to `false`. If you want to use cache invalidation for your commerce integration, you have to enable it in your application (e.g. Studio or CAE). Please note that cache invalidation is not yet supported via Commerce Hub adapters.

*[CMS-15620]*

### CAE Feeder limits feeding of blobs by size

In its default configuration, the *CAE Feeder* does not feed binary values (blobs) larger than 5 MB anymore. You must adapt your configuration if you need to index the text from larger blobs.

Follow [Section "CAE Feeder limits feeding of blobs by size" \[320\]](#) for upgrade information.

*[CMS-15510]*

### 'LiveContextCloneSitePostProcessor' loaded via spring boot autoconfiguration

The resource file `config/workflowserver/spring/applicationContext-lc.xml` was deleted. Artifact `com.coremedia.blueprint.base:bp-base-lc-workflow` provides a `META-INF/spring.factories` resource for spring boot autoconfiguration loading instead.

*[CMS-14984]*

### Domains in ActiveDirectoryUserProvider

In Active Directory, domains are case insensitive. In CMCC they are case sensitive. An AD domain indeed occurs in different cases in CMCC, depending on how it has been obtained or configured. This led to some failing comparisons of logically equal domain values. Now, the `ActiveDirectoryUserProviders` normalize the domains to lowercase, so that they appear consistently in CMCC.

Follow [Section "Domains in ActiveDirectoryUserProvider" \[321\]](#) for upgrade information.

*[CMS-12913]*

## CoreMedia Content Application Engine

### Converted `component-livecontext.xml` to spring boot autoconfiguration

The classpath resource `/META-INF/coremedia/component-livecontext.xml` provided by blueprint module `lc-cae` was removed. The replacement is the spring boot autoconfiguration `com.coremedia.livecontext.cae.LcCaeAutoConfiguration`

*[CMS-15910]*

### security-services.xml

The security settings in `apps/cae/core/cms-core/cae/cae-spring-security/src/main/resources/com/coremedia/cae/security-services.xml` have been changed to also allow double encoded slashes and periods in URLs. This fixes e.g. the redirect after a successful login in Calista demo site.

*[CMS-16217]*

### HTTP Strict-Transport-Security response header is not set by Apache anymore

The Apache that is deployed and configured by the provided Chef deployment was always setting the `HTTP Strict-Transport-Security` response header for HTTP and HTTPS requests. The `HTTP Strict-Transport-Security` header is not needed for HTTP requests and for HTTPS requests it was set twice, with different values, which leads to undefined behavior. As the CAE always sets the `HTTP Strict-Transport-Security` header (only) when it's actually required, it has been disabled in the Apache configuration.

*[CMS-16146]*

### Prevent double escaping of some image links provided by BlueprintFreemarkerFacade

To prevent double escaping links provided by `getImageLinksForAspectRatios` and `getImageLinksForAspectRatios` in the `BlueprintFreemarkerFacade` are no longer escaped. Escaping is already handled by Freemarker when the link is rendered inside a template.

*[CMS-15957]*

### Blueprint's `ErrorAndExceptionMappingResolver` now autowires list of `ErrorAndExceptionHandler` beans

`com.coremedia.blueprint.cae.exception.resolver.ErrorAndExceptionMappingResolver` was changed so that it autowires the list of `com.coremedia.blueprint.cae.exception.handler.ErrorAndExceptionHandler` beans as constructor argument. The corresponding setter was removed.

Follow [Section "Blueprint's `ErrorAndExceptionMappingResolver` now autowires list of `ErrorAndExceptionHandler` beans" \[322\]](#) for upgrade information.

*[CMS-15909]*

### Hybris Vendor ID

The Vendor ID for the Hybris connection via Commerce Hub is now "hybris" instead of "SAP Hybris". The only using code in `com.coremedia.livecontext.as.set.ProductCatalogPictureHandler` was adapted accordingly.

*[CMS-15623]*

# CoreMedia Studio

## Studio Validates Content Locale to Match Site Locale

Studio displays a warning [version 1910] or an informational issue [version 1904 and 1907] now if the locale of a `CMLocalized` content differs from the locale of its site. Such locale differences can lead to inconsistencies and problems in a multi-site setup and should generally be avoided.

Follow [Section "Studio Validates Content Locale to Match Site Locale" \[323\]](#) for upgrade information.

*[CMS-15583]*

## ContentHubAdapterBinding removed from ContentHub API

A Content Hub Adapter does not get the entire `ContentHubAdapterBinding` anymore, but only the "settings" within that binding. The determination of the `MimeType` of an external item is by default carried out by the `MimeTypeService`. This can be overridden, if necessary to provide a custom `MimeTypeMapping`. The Mapping from `MimeType` to `CoreMedia ContentType` is by default read from a linked settings document. This can also be overridden, in order to provide a custom `MimeType` to `CoreMedia ContentType` mapping.

*[CMS-15100]*

## ContentHub

ContentHub framework now provides the ability to search in an external system. Therefore the optional `ContentHubSearchService` is introduced in the `ContentHubAdapter`. If a `ContentHubSearchService` is returned the search in the `CollectionView/Library` is enabled. As some external systems only provide the ability to search globally and not in a folder, the `ContentHubSearchService#supportsSearchBelowFolder` makes this configurable in every Adapter instance.

Follow [Section "ContentHub" \[324\]](#) for upgrade information.

*[CMS-14581]*

## The resource type lookup is now considering class hierarchy.

The resource type lookup in `InTypeBasedResourceClassFinder` for building links to studio resources is now considering the class hierarchy. More specific subclasses are now considered before their super classes so that links are always created for the most specific type.

*[CMS-10339]*

### YouTube Content Hub Adapter

The thumbnail picture contents derived from YouTube Content Hub adapter items used to have meaningless names like "maxresdefault [1]". Now they are named after the videos themselves, with suffix "(Thumbnail)".

*[CMS-15839]*

### ContentHub API changes

All getters in `com.coremedia.contenthub.api.ContentModelReference` and `com.coremedia.contenthub.api.ContentModel` have been changed from `@Nullable` to `@NonNull`. Derived classes must adjust their declarations and implementations.

*[CMS-15721]*

### The ContentStateValidator now requires a CapConnection as constructor parameter.

The ContentStateValidator now requires a CapConnection as constructor parameter. The validators that are passed to the ContentStateValidator will run their validation, using the capConnectionSession of the given CapConnection

*[CMS-15199]*

### Removed redundant property contextMenuItems of LinkListPropertyField

The property contextMenuItems of LinkListPropertyField has no functionality and therefore is removed.

*[CMS-14589]*

### Changed access modifier of some methods in AbstractItemsPluginBase from internal to protected

The class AbstractItemsPluginBase is public API but it's not possible for customers to write subclasses which use the methods because they have access modifier internal. This has been changed and the methods are protected now.

*[CMS-14295]*

## CoreMedia Studio Client

### Category Search in Studio

In Commerce sites you can now search for categories in Studio library. For Salesforce Commerce Cloud B2C it is fully implemented as fulltext search within the id and name field. To support these new REST call it is necessary to extend the Open Commerce API Settings (Data API) in you sandbox by adding the new line: `{"resource_id": "/category_search", "methods": "post", "read_attributes": "[*]", "write_attributes": "[*]"}`.

Follow [Section "Category Search in Studio" \[326\]](#) for upgrade information.

[CMS-16175]

## CoreMedia Workspace

### Modularization of Project Extensions

With modularization of the CoreMedia Blueprint workspace, project extensions have undergone a structural change, too.

Follow [Section “Modularization of Project Extensions” \[326\]](#) for upgrade information.

[CMS-15943]

### Updated to latest Spring Framework 5.2.1, Spring Boot 2.2.1, Spring Security 5.2.1, and others

Along with the Spring Framework and Spring Boot the following libraries have been updated:

Follow [Section “Updated to latest Spring Framework 5.2.1, Spring Boot 2.2.1, Spring Security 5.2.1, and others” \[328\]](#) for upgrade information.

[CMS-15886]

### Removed Maven property `workspace.configuration.dir`

The Maven property `workspace.configuration.dir` was defined in many aggregator POMs and was needed to find the global workspace configuration directory. With the new modular workspace structure, this property is obsolete and has been removed from all POMs, together with the derived properties `development-properties.dir` and `logging-properties.dir`.

[CMS-15572]

### Changed `CMLinkable#getLocalSettings`

On popular demand, we revoked the deprecation state of `CMLinkable#getLocalSettings`. We also removed the overriding of `getLocalSettings` in `CMLinkableImpl`, because it turned out to be confusing. The overriding method is still available as `getLocalAndLinkedSettings` now. `CMTeaserImpl` still overrides `getLocalSettings` such that the teaser target's settings are considered. However, only the local settings of teaser and target are considered now, not the linked settings.

[CMS-14211]

### Upgraded Netty Libraries

Upgraded netty libraries to `io.netty:netty-bom:4.1.42.Final`.

[CMS-16083]

## CoreMedia Frontend Workspace

### Updated frontend dependencies

The frontend-maven-plugin used in the frontend workspace has been updated to version 1.8.0 and will now download and use Yarn version 1.19.1 when it is built. The frontend dependencies, have been updated to the latest versions and node.js to latest LTS version 10.17.0.

Follow [Section "Updated frontend dependencies" \[331\]](#) for upgrade information.

*[CMS-16088]*

### Glyphicon-Brick removed

The glyphicon-brick and all occurrences of its icons were removed from the frontend workspace and replaced with svg graphics. If your code relies on the glyphicon font it can be included manually in your theme.

*[CMS-14672]*

### Removed legacy example bricks

As announced in the release notes of 1907 the following legacy bricks have been removed:

Follow [Section "Removed legacy example bricks" \[331\]](#) for upgrade information.

*[CMS-15506]*

### Theme Build: Fixed SASS Variable Load Order

The load order in which SASS variables files were picked up during theme build was not always correct. This has sometimes caused variable overrides if they were not made directly in the theme to not have an effect. You can now rely on the fact that a variable is always overridden if a package has a dependency on the package which contains the SASS variable which is meant to be overridden.

*[CMS-15337]*

## CoreMedia Deployment

### Removed 'commerce.adapter.\*.endpoint' properties

The 'commerce.adapter.\*.endpoint' properties were renamed to 'commerce.hub.data.endpoints.\*'.

*[CMS-15557]*

### Update chef-sugar cookbook

Because the author of the open source software `chef-sugar`, yanked his gem releases, an update to the cookbook and the gem is necessary. For CoreMedia releases prior to `1907`, this also requires an update of chef from `12.8.1` to `12.22.1`.

*[CMS-15953]*

### Websphere Commerce proxy hosts renamed

The proxy hostnames for the development proxy hosts for the Websphere Commerce Shop have been renamed:

Follow [Section "Websphere Commerce proxy hosts renamed" \[333\]](#) for upgrade information.

*[CMS-15606]*

### SiteManager deployment with Webswing removed

Due to licensing issue, the CoreMedia Site-Manager docker image no longer uses the Webswing framework. As a replacement, the Site-Manager can now be downloaded as a preconfigured zip archive from the docker container at `<container>:80/site-manager.zip`.

*[CMS-15040]*

## CoreMedia Commerce Hub

### Support for SAP Commerce 1905

Formerly CoreMedia used the Platform Web Services REST API to integrate with SAP Commerce. Since SAP deprecated and removed the Platform Web Services API in version 1811, CoreMedia now integrates with SAP Commerce 1905 via the OCC Web Services.

Follow [Section "Support for SAP Commerce 1905" \[333\]](#) for upgrade information.

*[CMS-15864]*

### link.storefront-url property renamed to sfcc.link.storefront-url

The `link.storefront-url` property is renamed for the SFCC commerce adapter. Its now prefixed with "sfcc." as any other Salesforce properties. If your salesforce adapter is already deployed change the deployment a set the "SFCC\_LINK\_STOREFRONT\_URL" property instead of "LINK\_STOREFRONT\_URL".

*[CMS-15812]*

### PreviewUrlService API changes

`LiveContext PreviewUrlService#getExternalPageNonSeoUrl` no longer has a default implementation. The return type changed from `Optional<UriComponents>` to `UriComponents`.

*[CMS-15551]*

### Site ID parameter removed from CatalogAliasTranslationService methods

Those methods of `com.coremedia.blueprint.base.livecontext.ecommerce.common.CatalogAliasTranslationService` that took both the store context and the site ID parameters were simplified so that only the store context parameter remains. The site ID is derived from the store context internally.

*[CMS-15543]*

### e-Marketing Spots Aurora Augmentation

All e-Marketing spots in Aurora Augmentation demo content have been removed as the site is now using Commerce Hub by default, which does not support e-Marketing spots. If you need e-Marketing spots to work like in earlier releases, have a look at Aurora B2B or Calista. They are still using the legacy, non-Commerce-Hub integration which still supports e-Marketing spots.

*[CMS-15503]*

## CoreMedia Connector for HCL Commerce

### `CurrentCommerceConnection` has been removed

The preferred way to obtain a commerce connection is to ask the store context for it via `StoreContext#getConnection()` if the store context is available in the current scope.

Follow [Section "`CurrentCommerceConnection` has been removed" \[335\]](#) for upgrade information.

*[CMS-15628]*

### CommerceConnection#setStoreContext renamed

The `CommerceConnection` method `setStoreContext` has been renamed to `setInitialStoreContext`.

Follow [Section "CommerceConnection#setStoreContext renamed" \[335\]](#) for upgrade information.

*[CMS-15627]*

### User context removed from commerce connection

As the user context is more specific than the commerce connection, the current user context was moved to its own thread-local and can be obtained via `CurrentUserContext` .

Follow [Section “User context removed from commerce connection” \[335\]](#) for upgrade information.

*[CMS-15626]*

### `UserControllerHelper` methods removed

`CurrentUserContext` has been introduced to obtain the current user context from a thread-local.

Follow [Section “UserControllerHelper methods removed” \[336\]](#) for upgrade information.

*[CMS-15625]*

### `UserContextProvider` methods removed

The `UserContextProvider` role is to offer a way to create a `UserContext` object, but not to keep one around. Thus, the methods `getCurrentContext` , `setCurrentContext` , and `clearCurrentContext` have been removed.

Follow [Section “UserContextProvider methods removed” \[336\]](#) for upgrade information.

*[CMS-15624]*

### `CurrentStoreContext` replaces `CurrentCommerceConnection`

The preferred way to obtain a commerce connection is to ask the store context for it via `StoreContext#getConnection()` if the store context is available in the current scope. If a site object or a content object is available in the current scope, `CommerceConnectionInitializer` or `CommerceConnectionSupplier` can be used to obtain a commerce connection instance.

Follow [Section “CurrentStoreContext replaces CurrentCommerceConnection” \[336\]](#) for upgrade information.

*[CMS-15228]*

### Refactored Spring Configuration Files of Artifact `bpbase-lc-common`

The XML configuration files provided by artifact `bpbase-lc-common` were removed. Use the new java configuration class `com.coremedia.blueprint.base.livecontext.LcEcommerceServiceConfiguration` instead.

*[CMS-15214]*

## CoreMedia Connector for SAP Commerce Cloud

### Removed SAP Hybris Commerce Integration modules from blueprint

With the new integration of different commerce systems via the Commerce Hub, vendor specific implementations were moved into the vendor specific Commerce Adapter workspaces.

Follow [Section “Removed SAP Hybris Commerce Integration modules from blueprint” \[337\]](#) for upgrade information.

*[CMS-15180]*

## CoreMedia Connector for Salesforce Commerce Cloud

### Removed Salesforce Commerce Cloud Integration modules from blueprint

With the new integration of different commerce systems via the Commerce Hub, vendor specific implementations were moved into the vendor specific Commerce Adapter workspaces.

Follow [Section “Removed Salesforce Commerce Cloud Integration modules from blueprint” \[338\]](#) for upgrade information.

*[CMS-15179]*

## CoreMedia Headless Server

### Add support for Product Lists and some schema changes

Support for Product Lists has been added. During this effort, several changes have been made to the GraphQL schema:

Follow [Section “Add support for Product Lists and some schema changes” \[338\]](#) for upgrade information.

*[CMS-14489]*

### Names of rich text views in GraphQL have changed

The names of the rich text views used in GraphQL have changed in order to better reflect their intention.

Follow [Section “Names of rich text views in GraphQL have changed” \[339\]](#) for upgrade information.

[CMS-14500]

## Miscellaneous

### Run `confd` when `workflowconverter` is run `ibefore workflow-server startup`

If the entrypoint chain for the `workflow-server` contains the `workflowconverter` step, run `confd` before to configure the UAPI and role mappings.

Follow [Section “Run `confd` when `workflowconverter` is run `ibefore workflow-server startup`” \[339\]](#) for upgrade information.

[CMS-16351]

### Docker network dependent entrypoint chain scripts have been removed from Dockerfile default command chain

All Spring-Boot application based docker images that use the `coremedia/java-application-base` base image, now don't use the `wait-for*` entrypoint chain scripts in their default any more. The scripts depend on a software defined network making the service names available. In addition to this, services like `cae-feeder-preview` and `cae-feeder-live` are now based on the same image and can't use the same entrypoint chain. In order to setup the development docker-compose setup robustly, the `wait-for*` scripts are now only added by the docker-compose service definitions.

[CMS-15580]

### Removal: Deprecated methods from Blueprint module `search-api`

Some deprecated methods have been removed from package `com.coremedia.blueprint.cae.search` of Blueprint module `search-api`.

Follow [Section “Removal: Deprecated methods from Blueprint module `search-api`” \[340\]](#) for upgrade information.

[CMS-15426]

### Standardize Spring-Boot applications

To simplify future deployments and cluster deployment automation, the CoreMedia Spring-Boot applications have been standardized in regards to ports, servlet contexts and management interfaces. The changes include:

Follow [Section “Standardize Spring-Boot applications” \[341\]](#) for upgrade information.

[CMS-14968]

### Development licenses

The directory in which development licenses are placed for locally starting *Content Servers* from the Blueprint workspace has been moved from `workspace-config`

`uration/development-licenses` to `apps/content-server/spring-boot/content-server-app/development-licenses`

*[CMS-14840]*

### maven-surefire-plugin et al. updated to 3.0.0-M3

maven-surefire-plugin, maven-failsafe-plugin and maven-surefire-report-plugin have been updated from 2.22.2 to 3.0.0-M3. This fixes several issues especially regarding Java 11.

Follow [Section "maven-surefire-plugin et al. updated to 3.0.0-M3" \[342\]](#) for upgrade information.

*[CMS-14135]*

### Ignore missing content or user files when use-remote-content-archive is used

When the management-tools container uses the `use-remote-content-archive` endpoint, it should ignore missing content or user files when moving them to the import dir. Otherwise it is not possible to import only content from a remote archive.

*[CMS-16308]*

### Spring-Boot / Docker integration for livecontext name changes

In the Spring-Boot application and Docker setup, Spring profiles and docker-compose configurations have been changed to remove the `lc3` prefix.

Follow [Section "Spring-Boot / Docker integration for livecontext name changes" \[342\]](#) for upgrade information.

*[CMS-15529]*

### Taxonomies: Skip empty folders in taxonomy type lookup

The method `TaxonomyUtil#findFirstTaxonomy(Content folder, String contentType)` was used to lookup a taxonomy recursively to convert the String to a ContentType. This method has been removed and `ContentRepository#getContentType` is used instead.

*[CMS-14836]*

### Empty Translation Units in XLIFF Export

The XLIFF exporter considers the `EMPTY_IGNORE` option (`com.coremedia.cap.translate.xliff.XliffExportOptions.EmptyOption.EMPTY_IGNORE`, set by default for XLIFF Export) for String properties in Structs now, and omits empty values in the export if the option is configured.

*[CMS-13667]*

## 4.8.2 Changes and Improvements

### CoreMedia Core

#### Serverimport

The log message "Master of content '{}' not in import set. Skipping versioned master link handling. Might break versioned master link consistency." has been promoted from INFO to WARN.

(CMS-15588)

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

Apache Tika has been updated to version 1.22. As part of this change, the following transitive dependencies of Apache Tika have been updated to match versions used by Tika. This includes security updates for some libraries, for example in PDFBox (CVE-2019-0228) and Tika itself (CVE-2019-10088, CVE-2019-10093, CVE-2019-10094).

Updated dependencies:

- `com.github.openjson:openjson:1.0.11`
- `com.google.guava:guava:28.0-jre`
- `com.rometools:rome:1.12.1`
- `com.rometools:rome-utils:1.12.1`
- `commons-codec:commons-codec:1.12`
- `org.apache.commons:commons-lang3:3.9`
- `org.apache.httpcomponents:httpclient:4.5.9`
- `org.apache.httpcomponents:httpcore:4.4.11`
- `org.apache.httpcomponents:httpmime:4.5.9`
- `org.apache.james:apache-mime4j-core:0.8.3`
- `org.apache.james:apache-mime4j-dom:0.8.3`
- `org.apache.pdfbox:fontbox:2.0.16`
- `org.apache.pdfbox:pdfbox:2.0.16`
- `org.apache.pdfbox:pdfbox-tools:2.0.16`
- `org.apache.tika:tika-core:1.22`
- `org.apache.tika:tika-parsers:1.22`
- `org.bouncycastle:bcmail-jdk15on:1.62`

- `org.bouncycastle:bcpkix-jdk15on:1.62`
- `org.bouncycastle:bcprov-jdk15on:1.62`
- `org.ow2.asm:asm:7.2-beta`

If you use the 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-15395]

## CoreMedia Content Application Engine

### Update Freemarker Library to 2.3.29

The Freemarker Library was updated to patch version 2.3.29. See Changelog for more informations: [https://freemarker.apache.org/docs/versions\\_2\\_3\\_29.html](https://freemarker.apache.org/docs/versions_2_3_29.html)

[CMS-13909]

## CoreMedia Studio

### New Input Chips Component introduced.

The Input Chips component group compact elements that represent an input. The default comma delimiter separates values.

[CMS-15560]

### Changed Taxonomy Selection

New taxonomy node selections are now appended, not prepended anymore.

[CMS-15261]

### Content Hub Caching

The Content Hub Framework caches the results of the adapters now. Thus, you do not need to take for caching in your adapter implementation, but can straightforward access the external system.

#### Moved `ObjectCacheKey` and `PairCacheKey`

`ObjectCacheKey` and `PairCacheKey` in package `com.coremedia.cap.util` have been deprecated in favor of their substitutes in `com.coremedia.cache.util` in the `coremedia-cache` artifact.

[CMS-15101]

### Collapsed state of form view and preview in Studio persisted

When a Studio user has opened a content tab he can hide the form view to see only the preview or he can hide the preview to see only the form view. These two states are persisted and applied to newly opened content tabs or when initially opening the Studio. So when the user has closed the preview he will only see the form view when opening a new content tab.

[CMS-14375]

### Studio applies last collapse state of content tab when initially started.

When a Studio user has opened a content tab and closes the preview, the content tab does not show the preview after browser reload.

[CMS-14297]

### Tabs of Studio Blueprint Document Forms have now itemIds

For the better support of the extension of Studio Blueprint Document Forms the tabs have now itemIds.

[CMS-11332]

## CoreMedia Workspace

### Blueprint Workspace Upgrade from 1904 to 1907

Because of the new modular workspace structure, almost every single file has been moved to a new location between 1904 [LC3, CMS9] and 1907 [CMCC 10], and the four product flavors [three LC3 variants plus "plain" CMS] have been merged into one workspace. The migration process to 1907 is best done by using the Blueprint Workspaces Git repository provided by CoreMedia on GitHub. Additionally, because Git's rename detection results in too many false positives in this case, CoreMedia provides a script that moves all files to their 1907 locations when applicable. Prepared like this, you should be able to merge in cmcc-10-1907.3 and only see "real" conflicts, which you must resolve. After that, take care of upgrading your custom extensions, as described in CMS - 15943, "Modularization of Project Extensions".

Here are step-by-step instructions how to upgrade your Blueprint workspace to CMCC 10 1907.3. You will find the commits which are mentioned below at <https://github.com/coremedia-contributions/coremedia-blueprints-workspace/commits/cmcc-10-1907.3>. Be aware that during the intermediate steps the workspace might not be buildable.

1. Change your groupId and version back to "com.coremedia.blueprint" and "1-SNAPSHOT" to prevent unnecessary conflicts
2. Update to 1904.3. Depending on the product you started from, the corresponding tag in the Blueprint Git repository is "cms-9-1904.3", "livecontext-3-for-sap-hybris-1904.3",

"livecontext-3-for-salesforce-commerce-cloud-1904.3", or "livecontext-3-for-ibm-wcs-1904.3".

3. Merge the "Merge all 1904 products" commit (which is the parent of the "move files to 1907 locations" commit below)

```
git merge bc09b1afd8b2c850fbaeffb444763f6857911665
```

4. Apply move script

4.1. Get the script:

```
curl -o /tmp/move-1904.3-to-1907.3.groovy  
https://releases.coremedia.com/cmcc-10/artifacts/1907.3/move-1904.3-to-1907.3.groovy
```

4.2. Execute the script:

```
mvn org.codehaus.gmaven:groovy-maven-plugin:2.1:execute  
-Dsource="/tmp/move-1904.3-to-1907.3.groovy" -Ddir=$(pwd) --non-recursive
```

4.3. Commit the changes

```
git add .  
git commit -m "move 1904 to 1907 structure via script"
```

5. Ignore the "move files to 1907 locations" commit (you have already moved everything using the script)

```
git merge -s ours 9f0faa2a776294db4b614483287b370370185632
```

6. Disable Git rename detection Change your diff & merge sections in ~/.gitconfig as follows:

```
[diff]  
  renames = false  
  ...  
[merge]  
  renames = false  
  ...
```

7. Merge the 1907.3 "automatic update commit"

```
git merge cmcc-10-1907.3
```

8. Resolve conflicts and commit
9. Enable Git rename detection again
10. Change back to your groupId and version

### Upgrade Integration

When you continue development on 1904.3 on a separate branch while performing the upgrade to 1907.3, you probably want to integrate the upgraded branch with your development branch eventually. To do this you have to perform basically the same steps as for the original upgrade but instead of merging from the CoreMedia upstream you will merge from your upgrade branch. These are the steps that change:

3. Instead of merging commit "Merge all 1904 products" from the CoreMedia upstream, merge the commit that you created during the upgrade, which merges commit "Merge all 1904 products".
5. This step can be skipped, as the original move-commit has been ignored already.
7. Instead of merging tag "cmcc-10-1907.3", merge the commit that you created during the upgrade, which merges tag "cmcc-10-1907.3".
11. It should now be possible to merge all the changes you made after the upgrade onto your development branch normally.

### Known Issues

Modules that no longer exist in 1907, like `modules/extensions/ecommerce-sfcc/lc-ecommerce-sfcc-cae-lib`, may be moved by the `move-script` to locations that do not make sense (for the example: although a CAE module, it ends up under `content/!`). However, this does not matter, because by merging the "automatic update to 1907" commit, these modules will be deleted. You will only get conflicts (theirs: deleted, yours: modified) if you made changes to these modules, but then you will have to invest special efforts into keeping your adapted version of LC implementations that officially no longer exist in 1907, anyway.

[CMS-16303]

### Extensions Tool Update

The CoreMedia Extensions Tool has been updated from version 3.0.0 to version 4.0.1. This version can and should also be used for 1907.1 by manually updating the version number in `workspace-configuration/extensions/pom.xml` and then running the extension tool's `sync` command:

```
mvn -f workspace-configuration/extensions extensions:sync
```

The structure of the Blueprint workspace in 1907.2 has been adapted slightly, but the tool "migrates" a 1907.1 workspace to the new structure automatically, so this is not a breaking change.

The tool has been fixed and its usage has been simplified. The Blueprint Developer Manual has been updated accordingly, see sections 4.1.5, "Project Extensions" and 4.4.2, "Developing with Extensions".

Here are the new features and fixed bugs:

- There are new configurations for the path where extensions and extension points are located in any workspace or globally, called `extensionsPath` and `extensionPointsPath`. This was the basis to simplify and fix the tool.
- The tool now handles extension modules in shared workspaces.
- It also now manages test-jars, ignoring which led to problems when disabling certain extensions [see CMS\_15892].
- Adding, enabling, disabling and removing extensions has been simplified. There no longer is a distinction between disabled and removed extensions. To add a new extension, it just has to be placed at the right locations and enabled [see Blueprint Developer Manual, updated sub-section "Implementing a Custom Extension"]. Thus, the option `addProjects` is obsolete and has been removed. When disabling an extension, all references to it are removed from extension point dependencies, extensions aggregators, and the extensions BOMs. The `remove` goal has been re-interpreted to delete all files of the given extensions even without the `prune` flag. The `prune` flag still exists, but only matters in combination with a given `extensionsFile`.
- Centralized extensions are now also added to the corresponding workspace extensions aggregators. Previously, centralized extensions prevented modular building of separate Blueprint workspaces, because they caused circular dependencies between the extension aggregator (affecting multiple workspaces) and the affected workspaces (depending on parts of the extension). Now, centralized extension are only placed at a central location, but still their parts are added to the workspace they extend. Thus, the modular workspaces can still be built in their dependency order (shared/\* first, then any apps/\* workspace), as described in the Blueprint Developer Manual.
- Extensions BOMs are now one-per-workspace, not one-per-extension-point. This makes more sense, since one workspace only has one common dependency management, which is now split up into a manually maintained part [ `workspace-blueprint-bom` ] and a part managed by the extensions tool [ `workspace-extensions-bom` ]. This obsoletes the two additional extension point BOMs `preview-cae-extensions-bom` and `studio-client-dynamic-`

`extensions-bom` . When the tool migrates a 1907.1 workspace, it will empty those two BOMs, but not delete them. When you merge with the 1907.2 Blueprint workspace files, these two BOMs will be deleted by CoreMedia, which you can accept, unless you referenced them in your own customizations.

- Extension dependencies are now checked by the tool to prevent inconsistent states in the first place, before you run into build or run-time issues.
- The verbose output of the `list` command has been improved to print the modular workspaces structure of each extension, and can now also list details about one specific extension given as `-Dextension=...` .

[CMS-15922]

## CoreMedia Frontend Workspace

### Added parameters to items view in slickCarousel

The macro `render` of the `slickCarousel` of the brick `@coremedia/brick-slick-carousel` includes the items with a given view. Inside this view it is not possible to access properties of the list, like `index` or `length`. The following parameters has been added and are available in the items view template:

- boolean `cm.localParameters().item.first`
- boolean `cm.localParameters().item.last`
- int `cm.localParameters().item.index`
- int `cm.localParameters().item.length`

[CMS-15871]

## CoreMedia Deployment

### Update Tomcat to 9.0.26

The version of the embedded Tomcat has been updated to 9.0.26. Please see [Tomcat Changelog](#) for more details.

[CMS-15965]

## CoreMedia Connector for HCL Commerce

### Deprecated `CommerceConnection#getClone`

`CommerceConnection#getClone` has been deprecated as it should only be called from internal code.

The method is slated for removal.

[CMS-15859]

### Removed various LC spring XML files

The various LC spring XML files provided by artifact `com.coremedia.blueprint.base:bpbase-lc-common` were converted to spring java config. In general there should be no need to import any LC base configuration explicitly because the artifact provides spring boot autoconfiguration class `com.coremedia.blueprint.base.livecontext.ecommerce.common.BaseCommerceServicesAutoConfiguration`.

[CMS-15143]

## CoreMedia Connector for SAP Commerce Cloud

### Behavior for SKU parents changed for SAP Commerce

Since 1910 in SAP Commerce all SKUs of a product share the base product as parent.

Before 1910 the parent of a SKU was always the direct parent. Therefore second level SKU would have first level SKU as parent/base product

[CMS-16191]

### Managed SAP Hybris Navigation

The navigation of the SAP Hybris commerce stores can now be edited and rendered via CoreMedia Content Cloud. To activate this feature, the property `livecontext.manageNavigation` must be set to `true` in the settings of the Site. On the SAP Hybris side the following JSP files have been customized to enable the management of the navigation by CoreMedia:

- `tags/responsive/common/header/header.tag`
- `views/responsive/cms/categorynavigationcomponent.jsp`

There is a fallback mechanism in the JSP files that render the standard SAP Hybris navigation in case the CMS side is either not updated before or the above mentioned setting is set to `false`. On the CoreMedia side the brick `example-navigation` in the Hybris theme has been added and customized.

[CMS-13570]

## CoreMedia Headless Server

### Persisted Query Support and REST Mapping Layer added

The Headless Server now supports Persisted Queries (including Automated Persisted Queries) and query whitelisting.

All persisted queries may be called alternatively via an automatically deployed REST endpoint for each persisted query. The response of the REST endpoints can optionally be transformed using JSLT.

To protect the headless server against malicious attacks or costly queries, the queries on the graphql endpoint may be monitored by a configurable timeout and query metrics like query depth, query complexity and a search limit.

[CMS-15851]

### Add Server side 360° picture spinner support

Add spinner interface and type to the GraphQL Schema.

[CMS-13586]

## CoreMedia Documentation

### New Studio Configuration Reference chapter in Studio Manual

The Studio Manual has a new configuration reference chapter which lists the Studio configuration properties.

[CMS-15585]

## Miscellaneous

### Mongodb base image updated to 4.0.13

The mongodb image for the development docker setup has been updated to 4.0.13

[CMS-16355]

### Update of java-application-base image

The update to `2.1.4` includes:

- an update of OpenJDK to `11.0.5`

- `confd` has been added together with a `confd` endpoint chain script to configure arbitrary files using arbitrary k/v backends.

[CMS-16350]

### Fix for possible NPE during price conversion in the hcl-commerce-adapter

The following new fix versions of the hcl-commerce-adapter are released. They include a fix for a possible NPE during price conversion.

- `>= v1.0.11`
- `>= v1.1.2`

[CMS-16235]

### Update Traefik to 1.7.14

Traefik has been updated to `1.7.14` fixing some security issues.

- [CVE-2019-9512](#)
- [CVE-2019-9514](#)

[CMS-15526]

## 4.8.3 Fixed Issues

### CoreMedia Core

#### Fixed Server Database Connection Checking

Fixed a bug in the database connection checking of Content Server and Workflow Server, that led to SQL errors with DB2.

[CMS-16165]

#### Deprecation: CompoundMediaStoreSelector methods

The no-args constructor and methods `setSelectors`, `addSelector` of `hox.corem.server.media.CompoundMediaStoreSelector` have been deprecated and will be removed in a future release.

If needed, create an instance with the constructor that takes a list of selectors and do not mutate the object afterwards.

[CMS-15947]

### Third-Party Update: commons-compress 1.19

Apache commons-compress has been updated to version 1.19.

[CMS-15702]

### validate-multisite Refinement

The `--thorough` flag applies to multiple base folders now. All folders are validated even in case of errors, so you might observe more issues than before.

[CMS-15643]

### Translation state "ignore-updates" is handled correctly by content-server tools

The translation state "ignore-updates" is handled correctly by content-server tools "serverimport", "serverexport" and "validate-multisite" now and does not produce misleading warnings in the logs anymore. Note that during a content import, a content with translation state "ignore-updates" is imported into a new system in the very same way as content which is marked as not being up to date, i. e. master version is set to 0.

[CMS-15578]

### Fixed high server load for large completed workflows

Fixed a bug that caused high load on the Content Management Server and/or Studio Server when completed workflows with very large change sets were displayed in the Studio Control Room.

[CMS-15568]

### Search field in Studio library with different behaviour regarding suggestions

When you start a search in the Studio library you will see a list of suggestions. In the past the first list item was preselected, so when Enter was pressed the suggested items were shown in the search result. This has changed. Now no list item is selected in first place and when Enter is pressed the result for the query text in the text field of the combobox is returned. To select an item from the suggestions use the Arrow-Down-Key or Arrow-Up-Key or the mouse.

[CMS-14733]

### Use confd to configure management-tools against multiple environments

With confd we can use environment variables to configure the command-line tools from the management-tools container. By defining a key prefix for confd, we can also use the same configuration backend to define configurations for multiple target environments and servers and switch the environment or server easily.

The change is not breaking within the 1907 releases. The change is only breaking to the local development setup, when `DEVELOPMENT` is set to true. In this case the tools worked out of the box against the content-management-server. In order to restore the basic features, three development prefixes are provided by default. Set `CONFD_PRE`

FIX to either `dev/management`, `dev/master` or `dev/replication` to provide out of the box configurations for the development setup.

[CMS-14641]

## CoreMedia Content Application Engine

### Personalization does not work in CAE

Personalization based on e.g. customer segments from a commerce system now work properly, again.

[CMS-16244]

### Behavioural Change in CAEFreemarkerFacade#getLink

Since exception handling in Freemarker templates is inconvenient, our implementation of `CAEFreemarkerFacade#getLink` does not throw exceptions in the preview CAE anymore, but behaves now like the live CAE ever since and returns an empty String in case of link building errors. So, the preview does not look completely broken only because an outgoing link cannot be built. However, as a drawback, link building errors are not that obvious in the preview any longer.

[CMS-15803]

### Deprecation: Freemarker function `bp.getDisplaySize()`

The Freemarker function `bp.getDisplaySize(size)` has been deprecated and replaced by a new function `getDisplayFileSize(size, locale)`. The new function supports a different format of the file size, depending on the locale. If no locale is given, the locale of the page context or the spring Requestcontext is used.

#### Upgrade Steps:

Please search and replace `bp.getDisplaySize` by `bp.getDisplayFileSize` in your Freemarker templates.

[CMS-15295]

### Changing validity date in Studio documents now always triggers preview reload

When opening a document in Studio and changing the validity range to the future, the preview showed an expected 'Invalid content' message. When switching back the date, the message was still displayed although valid again. Pressing the preview reload button helped to solve the issue. This has been fixed. The preview always reloads.

[CMS-15185]

### Deprecation: `createBeansFor()` and `createBeanFor()` from `BlueprintFreemarkerFacade` have been deprecated

The following methods from `BlueprintFreemarkerFacade` has been deprecated:

- `createBeanFor (Content)`
- `createBeansFor (Iterable)`

The methods are slated for removal.

[CMS-12448]

## CoreMedia Studio

### WCS Category tree is broken

E-Commerce catalog objects with special characters (e.g., /, +, or %) in their ID are now working again in Studio.

[CMS-16338]

### Fixed type error 'Cannot read property 'apply' of null'

When the Studio is closed a type error 'Cannot read property 'apply' of null' may be thrown in method `EventUtil#executeQueueEntry`. This is fixed now.

[CMS-16012]

### Fixed type error 'Cannot read property 'el' of null'

If the Studio is closed the type error 'Cannot read property 'el' of null' may occur in class `AnimatedNotificationBase` while rendering a notification popup.

[CMS-15986]

### Fixed type error 'Cannot read property 'saveTabbableState' of null'

When the Studio is closed, the type error 'Cannot read property 'saveTabbableState' of null' may occur originating from class `BeanRecord`. This is fixed now.

[CMS-15982]

### Fixed type error 'Value cannot be cast to com.coremedia.cap.content.Content'

When closing the Studio the type error 'Value cannot be cast to com.coremedia.cap.content.Content' thrown in method `CatalogStudioPluginBase#getCatalogRootForStore` may occur. This is fixed now.

[CMS-15971]

### Fixed type error 'Cannot read property '0' of undefined'

If the Studio is closed the type error 'Cannot read property '0' of undefined' thrown in method `AnnotatedLinkListHelper#rowWidgetsAnnotatedBasedOnType` may appear. This is fixed now.

[CMS-15969]

### Server-Side Studio Validators Hardened

Server-Side Studio validators have been hardened, so that they do not fail anymore, if the `CapObject /{{Content}}` to analyze is destroyed meanwhile.

[CMS-15963]

### Fixed Handling for ClientAbortException Broken Pipe

Studio clients may abort communication to server, which may cause exceptions on server side. The previous handling caused two exceptions to be logged in a row to Studio server log, containing keywords `ClientAbortException` (Tomcat exception) and `Broken Pipe`.

The error handling has been hardened, so that the server stops trying to contact clients which already triggered the `ClientAbortException`. These exceptions are still logged – but at debug level only.

[CMS-15961]

### Fixed logger output in class RemoteBeanImpl

If a communication error appears during a remote bean request, an error is written to the log. Instead of writing 'RemoteBeanImpl' the constructor function is written:

```
function constructor() {return this.constructor.apply(this, arguments) || null}
```

This is fixed now. Also fixed for QueuedRemoteBean.

[CMS-15952]

### Fixed type error in DateTimePropertyField

Fixed a type error in component DateTimePropertyField when it is used in annotated linklists in Studio.

[CMS-15924]

### Sites may not be available in Studio

If core elements of a site [especially the site indicator document] are manipulated it may happen, that several features relying on sites misbehave. Examples: Empty Sites App, no proposed target folders for newly created contents, no sites selectable in user preferences.

The implementation is now robust with regards to these problems.

[CMS-15908]

### Expanding and Collapsing All Rules of All Conditions of a Personalized Content is No Longer Slow

Expanding and Collapsing All Rules of All Conditions of a Personalized Content is No Longer Slow.

[CMS-15866]

### Derive Site: Progress State Propagated to All Studio Clients

If you derived a site you got a progress indicator in your Sites App. This indicator was only visible for initiators of the derive process. Now the progress state is propagated to all Studio Clients. Same applies to the progress indicator now being robust regarding Studio reload.

Note, that the communication between Studio Client and Studio Server has been adapted. The protocol has been extended, so that an old Studio Client can still communicate with the Studio Server, but not the other way round.

[CMS-15800]

### Category Augmentation Problem

Due to name conflicts with existing documents, when augmenting categories or products, the external id is now also part of the documents name. This ensures, that the name of a newly created augmenting document also changes, if the external id (which has to be unique) of the commerce item changes.

[CMS-15738]

### Fixed type error when clicking in the empty project panel

When a user opens the control room in Studio and clicks on the empty space in the projects panel a type error appeared in the browser console. This is fixed now.

[CMS-15732]

### Fixed type error when modifying content list in Studio projects

When you have created a project in Studio and set the content view to thumbnail view, then a type error appears in the browser console when you have dragged content to the project list. This is fixed now.

[CMS-15725]

### Fixed harmless invalid server request in Studio moderation

When opening the elastic social Studio moderation, a console error is displayed in the browser which results from an invalid server request and produces a http response 404. Apart from the error message in the console this error does not cause any misbehaviour in the Studio. The error is fixed now.

[CMS-15684]

### Fixed Studio Link Suggestions

Fixed a bug in Studio that content from a different site or from no site was suggested for addition to a content's link list. The suggestions will now always show content from the same site *before* content from outside the site.

[CMS-15611]

### Removed properties with default values from application.properties of studio server

The application.properties file for the studio-server contained some properties with default values. These have been removed.

[CMS-15586]

### Studio says there are errors or warnings when only info exists

Content Related Issues with Infotype Validity will now be displayed in the Issues- and Warnings Dialog, or in the Feedback Hub.

[CMS-15570]

### ASDoc: Package com.coremedia.cms.editor.sdk missing in Public API

Due to a documentation syntax error in one Studio public API class, the whole package com.coremedia.cms.editor.sdk was missing in the Studio ASDoc public API documentation.

[CMS-15456]

### Fixed "Cannot read property 'getFocusArea' of null" in Studio

When switching between picture documents in Studio the console error "Cannot read property 'getFocusArea' of null" appears. This is fixed now.

[CMS-15335]

### Improved accessibility for Active Jobs Button and Window

1.) The button to open the Active Jobs Window in Studio had two tab stops when it shows the progress bar. Removed one tab stop. 2.) When tabbing into the Active Jobs Window it was not possible to close the window using the ESC-key. This has been fixed.

[CMS-15328]

### CoreMedia Studio Robustness for Network Outages

The robustness of CoreMedia Studio on write requests to server has been increased regarding network outages.

[CMS-15281]

### Fixed QuickCreate Dialog Destruction Issues

Fixed an error inside the QuickCreateDialogBase.as where values have been accessed after the dialog destruction.

[CMS-15257]

### Added UploadSettings as callback value of load method

UploadSettings inherits from BeanImpl. The load-method can be referred via callback. As soon as the bean is loaded the callback gets called. The callback does now refer the UploadSettings.

[CMS-15172]

### Add org.springframework.http.converter.ResourceHttpMessageConverter by default

The `org.springframework.http.converter.ResourceHttpMessageConverter` is now added by default to the CAE and the Studio. This fixes the `logfile` actuator, if enabled.

[CMS-15066]

### Fixed type error 'Cannot read property 'getName' of null'

Fixed the type error 'Cannot read property 'getName' of null' thrown in method `LivecontentStudioPluginBase#isContentLedValueExpression` when accessing a site which is null.

[CMS-15007]

### Saving Preferences No Longer Duplicates Document Form Sub Tabs

We fixed a bug were saving preferences duplicates the sub-tabs of a document form.

[CMS-14884]

### Fixed type error 'Unable to get property 'setValue' of undefined or null'

When the Studio is closed, the type error 'Unable to get property 'setValue' of undefined or null' is thrown in class `WorkflowSetPanelBase` in several code lines. This is fixed now.

[CMS-14835]

### Elastic Social: Email Window fixed

When rejecting contributions or editing users, an E-mail template for the E-mail that is sent to the respective user can be edited. These templates were not updated correctly and even lead to an error in the "All contributions" view. This is fixed now.

[CMS-14833]

### Fixed type error 'Cannot read property 'getBoundingClientRect' of null'

If the Studio is closed, the type error 'Cannot read property 'getBoundingClientRect' of null' may occur in class `AnimatedNotificationBase`. This is fixed now.

[CMS-14808]

### Fixed error in taxonomy selection dialog for site specific taxonomies

Fixing an issue where the taxonomy chooser dialog did not pass the site id value to calculate the path of a node.

[CMS-14426]

### Fixed Seemingly Frozen Dashboard

We fixed a bug where the Studio Dashboard seemed to be frozen on Studio reload because a lot of contents were loaded in the background.

[CMS-14294]

### Missing xtype for SimpleSuggestionsComboBox added.

The Studio component SimpleSuggestionsComboBox now has the xtype `com.core.media.ui.config.simpleSuggestionsComboBox`.

[CMS-14072]

### Transforming certain png-formats into icons does not work

Rendering the icon for the view type of collections failed for some PNG files. These PNG files contained metadata which confuses the JDK PNG image writer.

We now remove the metadata when rendering the icon in ViewtypeRenderer.as. This is recommended for any images rendered in Studio anyway since these are not needed and just increase image size.

[CMS-13920]

### Fixed type error getSite() of null

When a component is already destroyed a type error 'getSite() of null' may appear which does not harm the Studio. This is fixed now.

[CMS-13679]

### Fixed Taxonomy Check-Out Exception

Fixed taxonomy error caused by automatic renaming of nodes.

[CMS-13283]

### Fixed pasting text during folder rename in library tree also copies a subfolder in Studio

The following bug is fixed: When a Studio user opens the library in tree view and selects a node to rename it and then pastes a text with Ctrl-V, then not only does it paste the new name but also copies a subfolder into the renamed folder.

[CMS-12924]

### Fixed opening an image content in Studio can produce a console error sometimes

The following console error could appear sometimes when opening image content in Studio:

```
TypeError: this.imageAreaBoundsValueExpression is null ImageAreaBase.js:261:8
at isInsideBorder ImageAreaBase.js:261:8
```

```
at getImageAreaFromClickEvent ImageEditorStageBase.js:511:29
at findBy AbstractMixedCollection.js:391:16
at getImageAreaFromClickEvent ImageEditorStageBase.js:509:67
at handleImageAreaMouseMove ImageEditorStageBase.js:379:110
...
```

Besides the console output there is no negative impact on the Studio application. The error has been fixed now.

[CMS-12568]

## CoreMedia Elastic Social

### Elastic Worker: Added missing component scan to module es-worker-component

Before, the bean ElasticSocialPlugin was only defined in module bpbases-es-alx-common, which is part of the ALX extension. This led to problems, when the ALX extension was removed. Now the bean ElasticSocialPlugin is additionally created in module es-worker-component via component scan.

[CMS-15972]

### Added missing runtime dependency to module content-services

In module content-services, the resource bpbases-urlpathformatting.xml from module bpbases-links-impl is imported. Therefore a runtime dependency to bpbases-links-impl is required. This dependency is included transitively from other modules, so the issue only occurs when removing dependencies, e.g. extensions.

[CMS-14113]

## CoreMedia Workspace

### Workspace path prefix removed from content blobs archive

The "workspace" path prefix has been removed from the content-blobs archive. To add the blobs to the Blueprint workspace, extract the archive above the cloned workspace.

[CMS-15899]

### Build Error After Disabling E-Commerce Extensions

After disabling all E-Commerce extensions as described in the Blueprint Developer Manual, the Maven build failed with an Enforcer error:

```
[WARNING] Rule 1: com.coremedia.maven.enforcer.ModularOneRepoEnforcerRule
failed with message:
    Dependencies into another workspace should use the respective workspace
```

```
bom to manage the versions: lc-ecommerce-ibm-cae in
C:\coredining-migration\workspace\apps\cae\cae-blueprint-bom\pom.xml
  Dependencies into another workspace should use the respective workspace
bom to manage the versions: lc-contentbeans-api in
C:\coredining-migration\workspace\apps\cae\cae-blueprint-bom\pom.xml
  Dependencies into another workspace should use the respective workspace
bom to manage the versions: lc-contentbeans-impl in
C:\coredining-migration\workspace\apps\cae\cae-blueprint-bom\pom.xml

...
[ERROR] Failed to execute goal
org.apache.maven.plugins:maven-enforcer-plugin:3.0.0-M2:enforce
(enforce-onerepo-rules) on project cae-blueprint-bom: Some Enforcer rules
have failed. Look above for specific messages explaining why the rule failed.
-> [Help 1]
```

This was caused by Headless Server still having a dependency on some module of a Commerce extension, which was then no longer managed (actually, not even available). The issue has been fixed by introducing an extension point for `headless-server` and moving the Headless Server module that needs Commerce into the `lc-asset` extension. Now, disabling `lc-asset` also disables Commerce support in Headless Server.

[CMS-15892]

## CoreMedia Frontend Workspace

### Webpack TransformFreemarkerLoader now ignores includes/imports in comments

When a Freemarker include or import is inside a comment it will not be resolved anymore to prevent an error if its path is incorrect.

[CMS-13654]

## CoreMedia Deployment

### Deployment Archive did not contain content-users and frontend archives

With this change, the deployment-archive.zip will contain the content-users.zip and the frontend.zip. If the frontend workspace is separated from the blueprint workspace, you only need to remove the frontend module from the blueprint workspace. The maven assembly for the deployment archive won't fail if it is missing.

[CMS-16053]

### Set repository.blobCachePath to named volume in cae-feeder docker image

Set `repository.blobCachePath` to `/coremedia/cache/uapi-blobcache` in `caefeeder-preview` and `caefeeder-live` docker images to prevent the containers to write to its container file system which is slow and unmonitored.

[CMS-15523]

## CoreMedia Commerce Hub

### Security Fix: Access Token Logging

Access token retrieved from either SAP Commerce or Salesforce Commerce Cloud are not logged, anymore. Needs Commerce Adapter for SAP >= 1.1.7 and SFCC >= 1.1.5

[CMS-16286]

### Fixed Commerce Hub Reconnect

The commerce connection now reconnects to commerce adapter services. Server apps will silently recover the connection. The studio client may still have to be reloaded, if commerce items were loaded while the adapter service was unavailable.

[CMS-16125]

### SAP Commerce Preview Links

Links rendered as follow up links by the commerce adapter do not contain the parameter cmsTicketId, anymore. This avoids breaking the layout of follow-up pages. Only the initial preview URL still has and needs the cmsTicketId.

[CMS-15525]

## CoreMedia Connector for HCL Commerce

### IBM CacheInvalidationHandler takes to long

The CacheInvalidationHandler in WCS now only considers changes within the last 1 day to avoid large table scans and delays. You need to update to WCS workspace version 3.3.9 if you want to use it.

[CMS-15432]

### Retry fetching the LanguageMapping from the ibm commerce system on failure

In case the LanguageMapping can not be received from the ibm commerce system (e.g. due to a connection failure), the call to the commerce system will be retried after a configured delay. While the fetching of the LanguageMapping is unsuccessful, the default will be used. The delay can be controlled via the `livecontext.ibm.languageMapping.delay-OnError` property and defaults to 30 seconds.

[CMS-15093]

# CoreMedia Connector for Salesforce Commerce Cloud

## Fix for scrambled fragment output in sfcc livecontext integration

Use isprint in the coremedia cartridge to write fragment payload into response. This avoids circumstances where the fragment output was written at a wrong position. Needs cartridge version  $\geq 3.2.16$

[CMS-16149]

## SFCC API version 19.10

The CoreMedia cartridge needs to be updated to support the Salesforce API version 19.10. The usage of the deprecated ServiceRegistry has been replaced by the newer LocalServiceRegistry.

[CMS-16118]

## Robustness: Handling of seo url redirects

The pageid parameter in url redirects may be missing. This causes problems in followup fragment requests due to an incomplete fragment context. This fix avoids problems with a missing pageid parameter.

[CMS-15520]

# CoreMedia Headless Server

## Fix logging configuration for headless-server

Due to an erroneous `logback.xml` in the classpath, the logging configuration for headless-server was not working.

[CMS-15856]

## Headless-Server: Tag context condition in dynamic query lists

The tag context condition is now supported in dynamic query lists.

[CMS-15709]

## CoreMedia Documentation

### CoreMedia Richtext DTD et al. part of JavaDoc

The CoreMedia Richtext DTD along with other schema and DTDs has been added to JavaDoc. You will find corresponding JavaDoc in package `com.coremedia.dtd` (module: `cap-schema-bundle`).

A reference to JavaDoc has been added to the Content Server Manual in chapter *Developing a Content Type Model*.

[CMS-15883]

## Miscellaneous

### Fix MySQL innodb\_buffer\_pool\_size in docker development setup

In the development setup, the MySQL image was built with `innodb_buffer_pool_size` set to 512 but without unit, resulting in the minimal size of 5M. This fix will increase the buffer size to 512M.

[CMS-16407]

### Fix groupId of blueprint root pom

The groupId of the blueprint root pom has accidentally been changed to `com.coremedia.cms` and has now been changed back to `com.coremedia.blueprint`. The pom is only an aggregator and is not referenced anywhere, but if you used the `set-blueprint-groupId.sh` script you might need to change the groupId to your custom groupId manually.

[CMS-16167]

### Third-Party Update: Jackson Databind 2.9.10

Jackson-Databind has been updated to version 2.9.10

[CMS-15966]

### Missing Extension tool Download Configuration

The Blueprint Developer Manual tells you to run the extension tool like this:

```
mvn -f workspace-configuration/extensions extensions:sync
```

This fails with the following error:

```
[ERROR] No plugin found for prefix 'extensions' in the current project and
in the plugin groups [com.coremedia.maven, org.sonatype.plugins,
org.apache.maven.plugins, org.codehaus.mojo] available from the repositories
[local (<userhome>\.m2\repository), central
(https://repo.maven.apache.org/maven2)] -> [Help 1]
```

This error is caused by a missing `<pluginRepository>` configuration in `workspace-configuration/extensions/pom.xml`. As a workaround, you can add this configuration manually:

```
<pluginRepositories>
  <pluginRepository>
    <id>coremedia.external.releases</id>
    <name>CoreMedia CMS</name>
    <url>https://repository.coremedia.com/nexus/content/groups/cms/</url>
    <layout>default</layout>
    <snapshots>
      <enabled>false</enabled>
    </snapshots>
  </pluginRepository>
</pluginRepositories>
```

[CMS-15945]

### Fix default ORB ports in docker development setup

Port mapping and ORB cleartext port were not identical for content-management-server, master-live-server and workflow-server in the docker-compose development setup.

[CMS-15857]

### Fixed Traefik rules to access robots.txt

The traefik rules to access the `<site>/robots.txt` were broken for calista, corporate, corporate-de and helios [aurora].

[CMS-15497]

### Third-Party Update: Jackson Databind 2.9.9.2

Jackson-Databind has been updated to version 2.9.9.2

[CMS-15325]

# 4.9 Release 1907.1



## Highlights in this Release

- Commerce Hub
- Spring Boot Apps
- Packaging and Deployment: Docker or Chef Deployment Archive
- Solr 8 and Solr Cloud Support
- Java 11 Support
- New ChefCorp Theme
- Content Hub
- Experience Feedback Hub
- Various Studio enhancements: Colorful Studio, Configurable New Content Menu, Configurable Folder Sorting
- CoreMedia Headless Server
- Theme for Sales Force Reference Architecture

The release contains:

- Breaking changes: 114
- Changes and improvements: 262
- Bugfixes: 17

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.

## Breaking Changes

- CMS-15227: [Merged Module bpbase-uapi-util into cap-unified-api-util](#)
- CMS-14794: [Changed Names of Some Spring Boot Apps, Docker Images and Extension Points](#)
- CMS-14785: [Merged Live and Preview CAE Feeder](#)
- CMS-14782: [Merged Content Server flavors](#)
- CMS-14147: [Removal: Class 'com.coremedia.workflow.common.util.MapRole'](#)

- [CMS-13794: Solr Docker Image](#)
- [CMS-13761: Defining custom translation workflow validators](#)
- [CMS-13291: Solr 8 and SolrCloud](#)
- [CMS-12425: Removal: Workflow Server's Internal Spring Context](#)
- [CMS-12300: Changed Default Value of checkUniqueDbAccess](#)
- [CMS-12067: ORB configuration](#)
- [CMS-3030: ConfigurationProperties for Servers](#)
- [CMS-378: Changed Login Services and System Users](#)
- [CMS-15198: Changed Site Manager LookAndFeel for Windows](#)
- [CMS-14166: Made Serverimport More Deterministic](#)
- [CMS-13307: Content Types must restrict master links to same type](#)
- [CMS-12635: Replication Live Server startup](#)
- [CMS-15673: New Module bpbase-querylist-impl for common Businesslogic of Querylists](#)
- [CMS-14383: Alignment of default Image Crops](#)
- [CMS-14112: Removal: Untyped ContentBeanFactory#createBean\(s\)For and Abstract-ContentBean#createBean\(s\)For methods](#)
- [CMS-13758: Removal: bp.message macros](#)
- [CMS-13379: Deprecation: Aspects have been deprecated](#)
- [CMS-9327: Removal: cae-legacy.ftl](#)
- [CMS-14846: New default value for cae.is.standalone](#)
- [CMS-15069: Third-Party Update: Spring Boot 2.1.6, Spring Framework 5.1.8 and other third party libraries](#)
- [CMS-14983: Removal: External Library Extension](#)
- [CMS-14838: Removal: Navigation Tree CollectionView Extension](#)
- [CMS-14684: Extracted Remote Dynamic Packages from studio-client](#)
- [CMS-14584: Enhanced tool bar buttons functionality for workflows](#)
- [CMS-14483: Quick Create has been moved to editor-sdk](#)
- [CMS-12077: Studio REST Service now runs on Spring MVC Instead of Jersey](#)
- [CMS-7863: Increased Studio performance for reusable tabs](#)
- [CMS-3081: Document Type Selection for Preferred New Content](#)
- [CMS-15148: Default folder selection in New Content dialogs is back to normal](#)
- [CMS-15103: Shoppable Video supports multiple banners at the same start time](#)

- CMS-14260: Custom validation for translation workflows
- CMS-14063: Removal: Studio IOC mechanism
- CMS-13219: Quick Create configured by Setting content
- CMS-14578: Removal: Module social-spring-social
- CMS-14747: Modular Application Workspaces
- CMS-14639: EE4J Dependencies
- CMS-14538: Java 11 Support
- CMS-13495: Maven Compiler Settings for Java 11
- CMS-12347: Third-Party Update: Groovy updated to 2.4.16
- CMS-5938: Third-Party Update: Apache Tomcat embedded in Spring Boot to version 9.0.21
- CMS-15046: Changed helper magnific-popup to brick
- CMS-15045: Changed helper Node-Decoration-Service to brick
- CMS-15044: Changed helper device-detector to brick
- CMS-15043: Unified Javascript, Sass and Freemarker utilities into new brick Utils
- CMS-14952: Renamed video brick to mediaelement brick
- CMS-14900: Removal: Deprecated "html5" views for CMVideo and CMAudio
- CMS-14837: Freemarker Code Completion in Frontend Workspace
- CMS-14766: Removal: Deprecated Legacy Responsive Media Format
- CMS-14714: Removal: Freemarker function bp.getPlacementByName()
- CMS-14710: Removal: Freemarker function bp.uncroppedImageLink()
- CMS-14697: Third-Party Update: jQuery to 3.4.1
- CMS-14577: Introducing the new API Brick Concept and new Example Bricks
- CMS-14524: Changed Video Behaviour for Example-Bricks
- CMS-14471: Removal: Freemarker Function lc.getSecureScheme()
- CMS-14363: Introduced new theme "ChefCorp"
- CMS-14333: Rendering for 360-Spinner now takes "Pictures and Other Media" into account
- CMS-13942: Removal: Brick "cta"
- CMS-13938: Removal: Brick "responsive-images"
- CMS-13899: Added new favicon handling
- CMS-13813: Removal: Deprecated bootstrap carousel code
- CMS-13635: CMPicture.media.ftl will no longer render a title attribute

- CMS-13127: Introduced Theme Configuration
- CMS-13119: Removal: Cycle2 Plugin
- CMS-13040: Removal: Dimmer configuration from templates
- CMS-12602: Removal: Optional parameter "limitAspectRatios"
- CMS-12199: Added Themes Inheritance
- CMS-11711: Third-Party Update: Webpack 4 and Babel 7
- CMS-7986: Introduced new example brick "popup"
- CMS-15082: Removal: elevateZoom Plugin
- CMS-14612: Dependency check for bricks is now active again
- CMS-14562: Moved theme-importer to studio-server
- CMS-14522: Maven Proxy Settings will now only be passed for "yarn install"
- CMS-13926: Unified Search Input Fields
- CMS-13581: Removal: Layout variants "superhero" and "squarelist" from Hybris
- CMS-13016: Render macro of cta.ftl will no longer render an empty div tag
- CMS-10457: Removal: Freemarker Function lc.fragmentHighlightingMetaData[]
- CMS-9553: Removal: Brick "livecontext"
- CMS-14469: Deployment archive and Chef deployment updates
- CMS-14140: Use Spring-Boot application artifacts in deployment archive
- CMS-14940: Migration of commerce cache configuration
- CMS-14963: Removal: Methods 'CommerceBean#getCatalog' and 'Catalog#isMaster-Catalog'
- CMS-14574: Removal: Method AbstractCatalogResource#getConnection
- CMS-14529: 'CommerceConnection' returns optional services wrapped in 'Optional' instead of as 'null's
- CMS-14386: Removal: PriceService
- CMS-14338: 'PreviewUrlService#getExternalPageUrl' split
- CMS-14195: Removal: StoreContextBuilderImpl#from(String)
- CMS-13860: Replaced Betamax with Hoverfly in LC-ECommerce Rest Tests
- CMS-10394: 'StoreContext#getConnection()' added
- CMS-14696: List and offer prices retrieval fixed
- CMS-15576: Update docker java-application-base image
- CMS-15096: Refined CommerceBeanInvalidator
- CMS-15030: Removed: Optionals

- CMS-14396: XliffImporter allows importing into checked out content
- CMS-14134: Third-Party Update: JUnit Jupiter, Mockito, and Maven Surefire
- CMS-14121: Multi-Site API change in ContentObjectSiteAspect
- CMS-14102: XLIFF Validation Enabled
- CMS-14055: New XliffImportResultCode INVALID\_PROPERTY\_TYPE
- CMS-13649: JVM Options
- CMS-13115: Added Time Unit to Property `sql.store.sgml-cache-interval`
- CMS-12965: CoreMedia Bricks and Themes no longer rely on bootstrap
- CMS-15133: Dissolved module bpbase-multisite-api
- CMS-14661: Improved Image transformation API
- CMS-14068: Removal: Class BeanWrappingBeanCustomizer

## Changes and Improvements

- CMS-14441: Deprecation: Site Manager is deprecated for editorial work
- CMS-14388: Improved ActiveDirectoryUserProvider
- CMS-14220: Updated AWS SDK for Java
- CMS-14738: API to pass data to SFMC Data Extensions
- CMS-14737: CoreMedia Personalization for Salesforce Marketing Cloud (SFMC)
- CMS-14442: Deprecation: Support for JSPs is deprecated
- CMS-14360: Allow default view fragments to be pre-fetched
- CMS-14185: Removal: Module cae-performance-test
- CMS-13491: Improved SettingsService Dynamic Proxies
- CMS-9147: Enabled loading of web resources from blueprint workspace in local Spring Boot apps
- CMS-3877: Weakened type of list parameter of ContentBeanFactory#createBeansFor and AbstractContentBean#createBeansFor methods
- CMS-14958: Refresh an external source via the "Refresh Button" that is shown in the library
- CMS-14863: Feedback Hub: Connect external systems that provide keywords for CoreMedia Content.
- CMS-14763: Content Hub offers two default adapters for Youtube and RSS connections
- CMS-14736: Upload Content to Salesforce Marketing Cloud
- CMS-14643: Fixed single choice configuration for ViewTypeSelectorForm

- CMS-14615: Introduced Feedback Hub
- CMS-14607: Content Hub offers the possibility to browse external sources and create Content
- CMS-14580: Content Hub
- CMS-14495: Added Document Type Name to Workarea Tab Tooltip
- CMS-14475: Added 'autoCheckin' Option for Upload Settings
- CMS-14368: Colorful Content Type Representation in Studio
- CMS-14208: Added new Jobs-API for Uploads
- CMS-14100: Flexible sorting of folders in Studio library
- CMS-13842: Make recursion depth to complete publication change set configurable in Studio
- CMS-13522: Support for Studio Client Error Tracking
- CMS-13427: Jobs Framework
- CMS-13413: TextFieldContainer with new config parameters to modify text field value
- CMS-12406: Richtext Editor: Default Address for External Link Dialog can now be customized
- CMS-14541: Third-Party Update: Updated Spring Framework 5.1.6 and Spring Boot 2.1.4
- CMS-14531: Renamed BlueprintBootApps to reflect their service
- CMS-14671: Moved Responsive Images Settings to Themes
- CMS-14596: De-/activate CTAs for Banners
- CMS-14590: Added support for display orientation in scss mixin aspect-ratio-box-by-breakpoint
- CMS-14535: Removal: Frontend dependency "js-to-markdown"
- CMS-14349: Updated frontend dependencies
- CMS-14228: Changed default teaser layout
- CMS-13916: Changed property "cssClass" of Pagegrids
- CMS-13847: Adjustments to preview related CSS and JS
- CMS-12047: Fixed issue: node-sass build warning about undefined breakpoint
- CMS-9648: Introduced Theme specific settings
- CMS-14796: Update traefik in docker deployment to 1.7.12
- CMS-14770: Java 11 host restriction for remote debugging has been removed
- CMS-14450: Kill Solr container if it runs out of memory
- CMS-11089: Add service\_start attribute to blueprint-solr cookbook
- CMS-13885: Extensibility of Commerce Hub Generic Client

- CMS-13261: Added Livecontext Link Service API
- CMS-14194: Deprecation: `StoreContextBuilderImpl#from(String)` has been deprecated
- CMS-13032: Reduced demand for guava version in WCS workspace
- CMS-14659: CoreMedia Headless Server - Content as a Service
- CMS-14384: Enhanced TransformImageService
- CMS-12863: Introduced Spring Customizer API

## Bugfixes

- CMS-14965: SitesService.getSites(): Increased Robustness For Concurrent Changes
- CMS-14722: Updated Jetty
- CMS-14698: Updated Database Driver for MySQL
- CMS-14280: Fixed NotAuthorizedException if content is destroyed
- CMS-13861: XLIFF-Import: Possible NullPointerException For RichText-Import
- CMS-13359: Database connection checks
- CMS-13102: Fixed file handle leak
- CMS-9047: Fix auto merge for not yet translated contents
- CMS-14498: Optimized encoding of animated GIFs
- CMS-14392: Hide error messages for Live-CAE
- CMS-14118: CAE character encoding is forced to UTF-8
- CMS-13523: Improved Theme Resource Bundle Fallback Mechanism
- CMS-14844: Fixed moving imagemap hot zone can disable scrolling in the Studio preview
- CMS-14732: Changed 'disableSuggestions' Flag to Boolean
- CMS-14720: "AddDefaultFolderComboEntry" plugin now passes correct content type to lookup function
- CMS-14678: TeaserRichTextFieldDelegatePlugin No Longer Shows Wrong Value On Tab Reuse
- CMS-14614: Fixed image request with height=0 in image editor in Studio
- CMS-14530: Fixed too small image in image editor in Studio
- CMS-14459: Fixed Busy Mode for Taxonomy Manager
- CMS-14425: Fixed default behavior for BoundRadioGroup
- CMS-14394: Chrome: Problems with double-quote-comma in names (Pictures, XLIFF-Download) fixed

- CMS-14284: Fixed focus management of struct property fields in Studio
- CMS-14213: Fixed rendering error in upload dialog
- CMS-14207: Added UploadSettings as callback value of load method
- CMS-14190: Fixed Studio Plugin Load Order
- CMS-14115: Fixed upload problems caused by whitespaces in the filename
- CMS-14074: Taxonomies: Permission Check for Loading
- CMS-14035: Fixed Studio Shortcuts Overriding
- CMS-14011: WorkflowDateTimeField has now "allowBlank" and "readOnly" properties
- CMS-13878: Content state is now shown in TranslationTree component
- CMS-13553: Studio loads faster when there are many sites
- CMS-13547: DateTimePropertyField updates content not only after loosing its focus
- CMS-13538: DateTimePropertyField resets date after deleting the time
- CMS-13537: Blob equality
- CMS-13530: Search results in taxonomy search fields in Studio are shown in correct order
- CMS-13506: Fixed: No tab navigation in Studio login screen after auto logout
- CMS-13490: Taxonomy suggestions are now always updated on Studio tab switch.
- CMS-13474: Fixed Bookmark Menu in Studio
- CMS-13467: Fixed 409 Conflict Error On Publication
- CMS-13464: Fixed External Preview
- CMS-13398: Content items are no longer accidentally checked out when using form fields for struct properties (e.g. CTA teaser options).
- CMS-13351: Studio no longer randomly stops working when using differencing view.
- CMS-13168: Content with string lists in structs no longer accidentally checked out on tab reuse.
- CMS-13161: Fixed with language differencing when using reusable tabs
- CMS-12907: Fixed Studio Documentation
- CMS-12802: No more duplicate tooltips in tree views in Studio
- CMS-12544: Fixed: New content window jumps to center screen on first drag
- CMS-12472: Fixed documentation of ViewTypeSelectorForm in Blueprint Developer Manual
- CMS-11845: Fixed: Scrolling in My Edited Contents panel in Studio produces gaps with empty space
- CMS-11111: Changed save behaviour for TextBlobPropertyField

- CMS-16287: Theme Importer now always uses UTF-8 encoding for JS/CSS
- CMS-14620: Fixed Elastic Social Reindexing Task for invalid Target References
- CMS-14399: Fixed Elastic bson serializer for nested objects
- CMS-14742: Updated Jackson
- CMS-14727: Updated Apache Ant
- CMS-14293: Enhanced "@coremedia/slick-carousel" helper brick scss
- CMS-13784: Allow catalog extension to be disabled in LC apps
- CMS-14080: Fixed SAP Hybris Product Search
- CMS-13334: Fixed wrong path in section about user changes webapp in content server manual
- CMS-14658: cm destroy: Enhanced Robustness
- CMS-14585: Fixed remote control feature in Studio docker deployment
- CMS-14402: Prometheus agent not running in solr image
- CMS-14119: Replaced hardcoded groupId for dependency in p13n-cae
- CMS-12957: Unified API Reconnect

## 4.9.1 Breaking Changes

### CoreMedia Core

#### Merged Module `bpbases-uapi-util` into `cap-unified-api-util`

Since `bpbases-uapi-util` is actually not specific to `bpbases` features, there is no use keeping the UAPI utilities in two separate modules. Therefore, we merged the two modules, so that the features from `bpbases-uapi-util` are also available in the core layer now. If you use `bpbases-uapi-util` features in your project, you must change the package from `com.coremedia.blueprint.base.util` to `com.coremedia.cap.util`, and the Maven dependency from

Follow Section "Merged Module `bpbases-uapi-util` into `cap-unified-api-util`" [344] for upgrade information.

*(CMS-15227)*

#### Changed Names of Some Spring Boot Apps, Docker Images and Extension Points

With the integration of Spring Boot and Docker into the Blueprint workspace (they used to be separate workspaces in CM9/LC3) and the introduction of modular (sub-)workspaces, the Maven artifactIds and workspace names have been consolidated. Also, CAE

Feeder and Content Server "flavors" (live/preview, management/master/replication) have been unified into one Spring Boot App / Docker image. Furthermore, studio-rest-service has been renamed to studio-server, and studio has been changed to studio-client where appropriate. The following artifactId changes have to be considered:

Follow [Section "Changed Names of Some Spring Boot Apps, Docker Images and Extension Points" \[344\]](#) for upgrade information.

*[CMS-14794]*

### Merged Live and Preview CAE Feeder

CAE Feeder comes in two flavors: live and preview. Although the only difference is configuration, these used to be two separate components, Spring Boot applications, and Docker containers. Now, there is only one component, one Spring Boot application and one Docker container. Docker compose takes care of configuring two CAE Feeders, one for preview and one for live. For development, there are separate Spring and Maven profiles provided to start the CAE Feeder in the desired flavor.

*[CMS-14785]*

### Merged Content Server flavors

The Content Server comes in three flavors: management, master-live and replication-live. Previously these used to be different components, Spring Boot applications and Docker images. Now, there is only one component, one Spring Boot application and one Docker container. The main difference between the flavors is the usage of the Search-Service in the content-management-server, which now has to be enabled explicitly using the property `cap.server.search.enable`. Docker compose takes care of configuring three Content Servers, one as content-management-server, one as master-live-server and one as replication-live-server. For development, there are separate Spring and Maven profiles provided to start the Content-Server in the desired flavor.

*[CMS-14782]*

### Removal: Class 'com.coremedia.workflow.common.util.MapRole'

Removed class 'com.coremedia.workflow.common.util.MapRole'.

Follow [Section "Removal: Class 'com.coremedia.workflow.common.util.MapRole'" \[346\]](#) for upgrade information.

*[CMS-14147]*

### Defining custom translation workflow validators

The workflow validation was made public API. It is now possible to define custom translation workflow validators. This is documented within the Studio Manual in section "Customizing Workflow Validation".

*[CMS-13761]*

### Solr 8 and SolrCloud

Apache Solr has been updated to version 8.1.1. Furthermore, Solr may also run as Solr-Cloud cluster for CMCC now.

Follow [Section "Solr 8 and SolrCloud" \[347\]](#) for upgrade information.

*[CMS-13291]*

### Removal: Workflow Server's Internal Spring Context

The Workflow server no longer manages an internal Spring application context.

Follow [Section "Removal: Workflow Server's Internal Spring Context" \[349\]](#) for upgrade information.

*[CMS-12425]*

### Changed Default Value of checkUniqueDbAccess

Changed default of `cap.server.checkUniqueDbAccess` to true; has been false for backwards compatibility only.

*[CMS-12300]*

### ORB configuration

Since Java 11 does not contain a Corba ORB any longer, we switched to the Glassfish ORB. The Glassfish ORB originates from the same code base and is mostly compatible with the ORB included in Java 8. However, some things have changed (esp. property names), and since we could not avoid some breaking changes anyway, we seized the opportunity for some renovation of our Corba features:

Follow [Section "ORB configuration" \[349\]](#) for upgrade information.

*[CMS-12067]*

### ConfigurationProperties for Servers

For the Content and Workflow Server ConfigurationProperties classes have been introduced that replace the different properties files used in the servers:

Follow [Section "ConfigurationProperties for Servers" \[350\]](#) for upgrade information.

*[CMS-3030]*

### Changed Login Services and System Users

The login service and user for the connection to the *Content Server* have changed for *Studio Server*, *CAE Feeder* and *User Changes App*. In previous releases, all of these applications logged in as user "webserver" and with login service "webserver", which gave them rights to read and write all content, and to log in as different users without a password, for example to write content in the name of another user. This has been changed in order to give applications only the rights required for their operation. The *Studio Server* and the *User Changes App* now log in with the newly introduced login

service "studio" and user "studio". The *CAE Feeder* now logs in with the existing login service "feeder" and user "feeder". The *CAE* and the *Elastic Worker* still use the login service "webserver" and user "webserver" but the rights of this account have been restricted.

Follow [Section "Changed Login Services and System Users" \[353\]](#) for upgrade information.

*[CMS-378]*

### Changed Site Manager LookAndFeel for Windows

The `WindowsLookAndFeel` has vanished in Java 11 (was not public API, anyway). The `CoreMediaLookAndFeel` was derived from the `WindowsLookAndFeel` and brings no benefits for the LookAndFeel flavors available in Java 11. Therefore, we do not explicitly configure a LookAndFeel any longer in our default `editor.xml`, but simply stick to the Swing default. The `CoreMediaLookAndFeel` is still available and extends the `NimbusLookAndFeel` now. If you favor this over the Swing default LookAndFeel, you can keep on using it. Of course, you can still use your own custom LookAndFeel or the "system" LookAndFeel.

Follow [Section "Changed Site Manager LookAndFeel for Windows" \[354\]](#) for upgrade information.

*[CMS-15198]*

### Made Serverimport More Deterministic

Serverexport is somewhat error prone due to the subtle behaviour of the cut feature. Hence, it easily happens that links in serverexport files are inconsistent wrt. their path and href values. The behaviour of serverimport in such cases depended on the order in which link source and target were imported, which in turn cannot be controlled, esp. if you import concurrently with the threads option. Sometimes the import succeeded, and sometimes it failed, and the serverimport deleted the apparently broken link.

Follow [Section "Made Serverimport More Deterministic" \[355\]](#) for upgrade information.

*[CMS-14166]*

### Content Types must restrict master links to same type

The link type of link list property `master` is now restricted to link to the same type for content types `AMTaxonomy`, `CMImageMap`, `CMLocTaxonomy`, `CMP13NSearch`, `CMTaxonomy`, `CMViewtype` and `ESDynamicList`, instead of allowing super types. This should match values of existing content, because the property was always intended to link to the same type only. This change fixes some violations that were reported by the `cm validate-multisite` tool.

Follow [Section "Content Types must restrict master links to same type" \[355\]](#) for upgrade information.

*[CMS-13307]*

## Replication Live Server startup

The configuration option `replicator.preventOnlineSwitch` and the associated JMX property have been removed. As a replacement, the property `replicator.force-online-switch` has been added. If `false` (the default), the *Replication Live Server* waits for the replication process to catch up with the *Master Live Server* before going into online runlevel. If `true`, the server will go online immediately.

Follow [Section “Replication Live Server startup” \[356\]](#) for upgrade information.

[CMS-12635]

# CoreMedia Content Application Engine

## New Module `bpbase-querylist-impl` for common Businesslogic of Querylists

A new module `bpbase-querylist-impl` is added, that contains helper functionality to handle businesslogic of Querylists.

Follow [Section “New Module `bpbase-querylist-impl` for common Businesslogic of Querylists ” \[356\]](#) for upgrade information.

[CMS-15673]

## Alignment of default Image Crops

While Studio aligns new image crops automatically with the focus point, the CAE used to align default crops with the center of the image. This has been changed now, and the CAE also considers the focus point for default croppings. If you prefer the old behaviour, refrain from calculating the focus point in `CMPictureImpl#getTransformMap`, and simply leave it at `null`.

[CMS-14383]

## Removal: `UntypedContentBeanFactory#createBean(s)For` and `AbstractContentBean#createBean(s)For` methods

Four methods have been removed.

Follow [Section “Removal: `UntypedContentBeanFactory#createBean\(s\)For` and `AbstractContentBean#createBean\(s\)For` methods” \[357\]](#) for upgrade information.

[CMS-14112]

## Removal: `bp.message` macros

The Freemarker Macros and Functions `bp.message`, `bp.getMessage()` and `bp.hasMessage()` are removed, because they are moved to the `cm` taglib.

Follow [Section “Removal: `bp.message` macros” \[357\]](#) for upgrade information.

[CMS-13758]

### Deprecation: Aspects have been deprecated

The package `com.coremedia.cae.aspect` has been deprecated. Since nowadays the contentbeans are delivered as source code and can be changed directly, there is no need for the complexity of Aspects any longer.

Follow [Section “Deprecation: Aspects have been deprecated” \[358\]](#) for upgrade information.

*[CMS-13379]*

### Removal: cae-legacy.ftl

The deprecated Freemarker Macros of `cae-legacy.ftl` and the `CAELegacyFreemarkerFacade` are removed.

Follow [Section “Removal: cae-legacy.ftl” \[358\]](#) for upgrade information.

*[CMS-9327]*

### New default value for cae.is.standalone

The application.properties for the CAE Preview app now set `cae.is.standalone=false` by default. This adds the `/blueprint/servlet` prefix to generated URLs. Otherwise they will not be routed correctly by Traefik.

*[CMS-14846]*

## CoreMedia Studio

### Third-Party Update: Spring Boot 2.1.6, Spring Framework 5.1.8 and other third party libraries

The following third party libraries were updated:

Follow [Section “Third-Party Update: Spring Boot 2.1.6, Spring Framework 5.1.8 and other third party libraries” \[359\]](#) for upgrade information.

*[CMS-15069]*

### Removal: External Library Extension

The external library has been removed from the Blueprint. This feature is replaced by the Content Hub.

*[CMS-14983]*

### Removal: Navigation Tree CollectionView Extension

The library extension for displaying the navigation tree has been removed (it was disabled by default). The functionality can be implemented with the Content Hub now.

*[CMS-14838]*

### Extracted Remote Dynamic Packages from studio-client

The Remote Dynamic Packages feature has been extracted from the studio-client into a separate optional application called studio-packages-proxy. The studio-client now only serves static resources and no Java code. If enabled, the studio-packages-proxy can be deployed in front of the studio-client and will then proxy all requests to the studio-client, redirecting the requests to remote packages.

*[CMS-14684]*

### Enhanced tool bar buttons functionality for workflows

Within the ControlRoomStudioPlugin.mxml the property "listToolBarButtons" was changed to "listToolBarButtonsFunction". Now it is possible to show buttons in the workflowPanelToolBar, depending from the chosen workflow and the current panel.

Follow [Section "Enhanced tool bar buttons functionality for workflows" \[360\]](#) for upgrade information.

*[CMS-14584]*

### Quick Create has been moved to editor-sdk

In order to use the quick create functionality for core components, the quick create has been moved to the editor-sdk. Note that corresponding namespaces in MXML and imports have been changed accordingly.

*[CMS-14483]*

### Studio REST Service now runs on Spring MVC Instead of Jersey

As part of our efforts for supporting Java 11, the Studio REST service now runs on Spring MVC instead of Jersey 1 (JAX-RS). Jersey dependencies are now banned throughout the workspace to avoid any mixture.

Follow [Section "Studio REST Service now runs on Spring MVC Instead of Jersey" \[360\]](#) for upgrade information.

*[CMS-12077]*

### Increased Studio performance for reusable tabs

To increase Studio performance, we offer the possibility to reuse tabs for multiple working items instead of creating new tabs over and over again. Currently, this possibility is just implemented for document form tabs that display content items (Premulurs). Consult the section "Re-Using Studio Tabs For Better Performance" of the Studio Manual.

*[CMS-7863]*

### Document Type Selection for Preferred New Content

As an editor, I can now select the preferred document types that should appear on the top of the new content drop down menu (of the library toolbar) and on top of the "New

Content" menu (of the favorites toolbar). Open the Content tab in the user preferences to select the preferred types.

[CMS-3081]

### Default folder selection in New Content dialogs is back to normal

While replacing the textual selection of the target folder with a more sophisticated folder chooser, the default folder selection accidentally changed. The selection of the default folder is now back to normal so that custom lookup methods again take precedence over the built-in suggestions.

[CMS-15148]

### Shoppable Video supports multiple banners at the same start time

The default behavior of the Studio validator used for the *Shoppable Video* has changed. It is now possible to define multiple content items with the same start time in the timeline, so that custom shoppable videos can support this use case per default.

Follow [Section "Shoppable Video supports multiple banners at the same start time" \[362\]](#) for upgrade information.

[CMS-15103]

### Custom validation for translation workflows

As described in the Studio Developer Manual in section "Customizing Workflow Validation", you can define your own validators for a translation workflow. Within your custom validator you need to regularly call the runnable "isAbortRequestedRunnable" which will be provided by the parameters handed to the validator. The runnable will throw an exception if the validation was aborted. The exception will be handled by the validation framework.

[CMS-14260]

### Removal: Studio IOC mechanism

The Studio IOC mechanism from the Studio core has been removed. Usages of the *ComponentContextManager* and the ActionScript annotations *ProvideToExtChildren* and *InjectFromExtParent* need to be refactored into using ValueExpressions with plain ExtJs component configurations.

Follow [Section "Removal: Studio IOC mechanism" \[363\]](#) for upgrade information.

[CMS-14063]

### Quick Create configured by Setting content

The quick create dialogs consistently use the so-called **Content Creation** setting to enable setting the target paths for new content per content type. The possibility to use the deployment properties by setting `CMArticle_home_folder=` was removed.

Follow [Section "Quick Create configured by Setting content" \[363\]](#) for upgrade information.

*[CMS-13219]*

## CoreMedia Elastic Social

### Removal: Module `social-spring-social`

The Spring Library `spring-social` is not maintained anymore. Therefore, the CoreMedia module `social-spring-social`, which uses `spring-social`, is removed.

Follow [Section “Removal: Module `social-spring-social`” \[364\]](#) for upgrade information.

*[CMS-14578]*

## CoreMedia Workspace

### Modular Application Workspaces

With CMCC major version 10 [1907], the Blueprint workspace has been restructured in order to support independent development of each CoreMedia application.

Follow [Section “Modular Application Workspaces” \[365\]](#) for upgrade information.

*[CMS-14747]*

### EE4J Dependencies

Several Java Enterprise dependencies are now maintained by the Eclipse EE4J project and are available under different Maven coordinates. Some of these dependencies were part of the JDK in Java 8, but are no longer bundled with Java 11.

Follow [Section “EE4J Dependencies” \[366\]](#) for upgrade information.

*[CMS-14639]*

### Java 11 Support

CMCC runs with Java 11. Many third party libraries have been updated to Java 11 capable versions.

Follow [Section “Java 11 Support” \[367\]](#) for upgrade information.

*[CMS-14538]*

### Maven Compiler Settings for Java 11

The `maven-compiler-plugin` is now configured to compile Java 11 classes. To this end, the Maven property `<maven.compiler.release>11</maven.compiler.release>` has been set.

*[CMS-13495]*

### Third-Party Update: Groovy updated to 2.4.16

Groovy updated to 2.4.16

*[CMS-12347]*

### Third-Party Update: Apache Tomcat embedded in Spring Boot to version 9.0.21

Along with the update to the Spring Boot release 2.1.6, the CoreMedia applications now run with embedded *Apache Tomcat 9.0.21* per default. This also includes the update to the *Servlet Spec 4.0*.

Follow [Section "Third-Party Update: Apache Tomcat embedded in Spring Boot to version 9.0.21" \[368\]](#) for upgrade information.

*[CMS-5938]*

## CoreMedia Frontend Workspace

### Changed helper magnificent-popup to brick

The Javascript helper magnificent-popup has been moved to bricks since its only purpose is to provide the Magnific Popup functionality.

Follow [Section "Changed helper magnificent-popup to brick" \[369\]](#) for upgrade information.

*[CMS-15046]*

### Changed helper Node-Decoration-Service to brick

The Javascript helper node-decoration-service has been moved to bricks since its only purpose is to provide event based DOM manipulations.

Follow [Section "Changed helper Node-Decoration-Service to brick" \[369\]](#) for upgrade information.

*[CMS-15045]*

### Changed helper device-detector to brick

The Javascript helper device-detector has been moved to bricks since its only purpose is to provide device detection functionality.

Follow [Section "Changed helper device-detector to brick" \[370\]](#) for upgrade information.

*[CMS-15044]*

### Unified Javascript, Sass and Freemarker utilities into new brick Utils

All utilities for Javascript, Sass and Freemarker have been moved from the `/lib` folder to the new API brick called "Utils". Therefore the dependencies in your themes and bricks and the includes in your templates need to be updated.

Follow [Section "Unified Javascript, Sass and Freemarker utilities into new brick Utils" \[370\]](#) for upgrade information.

*[CMS-15043]*

### Renamed video brick to mediaelement brick

The video brick has been renamed to mediaelement brick since its only purpose is to provide the mediaelement functionality.

Follow [Section "Renamed video brick to mediaelement brick" \[371\]](#) for upgrade information.

*[CMS-14952]*

### Removal: Deprecated "html5" views for CMVideo and CMAudio

The deprecated views `CMVideo.html5.ftl` and `CMAudio.html5.ftl` have been removed. Please use `CMVideo.media.ftl` and `CMAudio.media.ftl` instead.

*[CMS-14900]*

### Freemarker Code Completion in Frontend Workspace

To activate code completion for Java Classes in Freemarker Templates of the Frontend Workspace you now need to explicitly enable the Maven profile `code-completion`. Before the change the profile was enabled by default. The property `skipFrontendCodeCompletion` (which used to disable the dependencies required for code completion) does no longer exist.

*[CMS-14837]*

### Removal: Deprecated Legacy Responsive Media Format

The legacy responsive image format which is deprecated since CoreMedia 7 is no longer supported by the responsive images JavaScript of the Frontend Workspace. In case you did not make any customizations to the responsive images format and use the function `responsiveImageLinksData` of the `BlueprintFreemarkerFacade` there is nothing to do.

Follow [Section "Removal: Deprecated Legacy Responsive Media Format" \[372\]](#) for upgrade information.

*[CMS-14766]*

### Removal: Freemarker function `bp.getPlacementByName()`

The deprecated Freemarker function `bp.getPlacementByName(name, pagegrid)` has been removed. Use the default implementation `pagegrid.getPlacementForName(name)` instead.

*[CMS-14714]*

### Removal: Freemarker function `bp.uncroppedImageLink()`

The deprecated Freemarker function `bp.uncroppedImageLink(picture)` has been removed. Use the default implementation `cm.getLink(picture.data)` instead.

*[CMS-14710]*

### Third-Party Update: jQuery to 3.4.1

Updated jQuery from 3.3.1 to 3.4.1 in the blueprint and in the frontend workspace. If you are using jQuery in your themes, please update the dependency in the `package.json` of the theme too to avoid importing both jquery versions.

Follow [Section "Third-Party Update: jQuery to 3.4.1" \[373\]](#) for upgrade information.

*[CMS-14697]*

### Introducing the new API Brick Concept and new Example Bricks

The Bricks have been split up into two categories. We now distinct between API Bricks and example bricks to showcase the use of API Bricks.

Follow [Section "Introducing the new API Brick Concept and new Example Bricks" \[374\]](#) for upgrade information.

*[CMS-14577]*

### Changed Video Behaviour for Example-Bricks

The `renderMedia` macro in `defaultTeaser.ftl` accepts an additional `mediaView` parameter that can be used to change the default configuration for media in a certain view.

Follow [Section "Changed Video Behaviour for Example-Bricks" \[378\]](#) for upgrade information.

*[CMS-14524]*

### Removal: Freemarker Function `lc.getSecureScheme()`

The deprecated and unused Freemarker function `lc.getSecureScheme()` has been removed. Since HTTPS is the default nowadays, all requests should be secured and this function is not needed anymore.

Follow [Section "Removal: Freemarker Function `lc.getSecureScheme\(\)`" \[378\]](#) for upgrade information.

[CMS-14471]

### Introduced new theme "ChefCorp"

Two new themes are added to the Frontend Workspace. One new theme called "ChefCorp" is introduced to replace the discontinued "Corporate" Theme. The Chef Corp website uses the same, just slightly altered content, but with a modern and iconic design. Additionally, a second theme called Shared-Example is added. This theme is the shared base for the Blueprint themes "Calista" and "Chef Corp". They use the new Theme Inheritance mechanism, which has been introduced in this release too.

[CMS-14363]

### Rendering for 360-Spinner now takes "Pictures and Other Media" into account

The rendering for the 360-Spinner was streamlined with the rendering for other media variants. This means it now takes media linked to "Pictures and Other Media" into account and can be used inside "Pictures and Other Media" of other CMTeasables as well.

[CMS-14333]

### Removal: Brick "cta"

The brick "`@coremedia/brick-cta`" has been removed from the frontend workspace. Please use the freemarker library `cta.ftl` contained in `@coremedia/ftl-utils` instead.

[CMS-13942]

### Removal: Brick "responsive-images"

In 1807.1 the brick "`@coremedia/brick-media`" was introduced as a replacement for the brick "`responsive-images`". The latter brick has now been removed from the frontend workspace. Please check the upgrade notes of 1807.1 for further information.

[CMS-13938]

### Added new favicon handling

The implementation of the favicon functionality has been changed

Follow [Section "Added new favicon handling" \[379\]](#) for upgrade information.

[CMS-13899]

### Removal: Deprecated bootstrap carousel code

The bootstrap carousel implementation has been replaced with the slick carousel in all packages of the frontend workspace since CoreMedia 1904. The slick carousel provides a state of the art carousel / slideshow implementation that is highly customizable [see <http://kenwheeler.github.io/slick/>]. It was already in use for the brick `@coremedia/brick-responsive-carousel` for a couple of releases.

Follow [Section “Removal: Deprecated bootstrap carousel code” \[380\]](#) for upgrade information.

*[CMS-13813]*

### CMPicture.media.ftl will no longer render a title attribute

The `CMPicture.media.ftl` template contained in the `@coremedia/brick-media` brick will no longer add the content name or the copyright property to the title attribute of the `img` html tag.

*[CMS-13635]*

### Introduced Theme Configuration

A theme is now configured via a `theme.config.json` (or `theme.config.json5`) instead of having a hard coded configuration in the build process.

Follow [Section “Introduced Theme Configuration” \[381\]](#) for upgrade information.

*[CMS-13127]*

### Removal: Cycle2 Plugin

We removed the Cycle2 plugin and replaced the remaining usages with the `Slick Carousel` (<http://kenwheeler.github.io/slick/>).

Follow [Section “Removal: Cycle2 Plugin” \[384\]](#) for upgrade information.

*[CMS-13119]*

### Removal: Dimmer configuration from templates

All configuration regarding for dimmer rendering has been removed from templates. Please use the dimmer mixin which is part of the `@coremedia/sass-utils` package as a replacement.

Follow [Section “Removal: Dimmer configuration from templates” \[385\]](#) for upgrade information.

*[CMS-13040]*

### Removal: Optional parameter "limitAspectRatios"

The parameter `limitAspectRatios`, used in Freemarker templates, has been removed. It was used to limit the aspect ratios for the responsive images, but was mostly never set and caused some confusion. If you are using it in your themes, you can still use it, but our bricks do not support the parameter anymore.

*[CMS-12602]*

### Added Themes Inheritance

The Frontend Workspace supports themes depending on another theme in its `package.json`. So it will include all Freemarker templates, JavaScript, SCSS files, localizations, images and brick dependencies, inherited from its parent.

Follow [Section "Added Themes Inheritance" \[385\]](#) for upgrade information.

*[CMS-12199]*

### Third-Party Update: Webpack 4 and Babel 7

Webpack and Babel has been updated to version 4 and 7 respectively.

Follow [Section "Third-Party Update: Webpack 4 and Babel 7" \[386\]](#) for upgrade information.

*[CMS-11711]*

### Introduced new example brick "popup"

The brick "quickinfo" has been removed and is replaced by the new example brick "popup", which is based on the library `magnific-popup`. The template view for this layout is named `*.asPopup.ftl`.

Follow [Section "Introduced new example brick "popup" \[388\]](#) for upgrade information.

*[CMS-7986]*

### Removal: elevateZoom Plugin

Removed the "elevateZoom" plugin used in "product-assets" example brick. The functionality is now handled by a more up-to-date custom implementation.

*[CMS-15082]*

### Dependency check for bricks is now active again

Due to a bug the dependency check that makes sure that all used dependencies are declared in the corresponding package's `package.json` was not active for bricks. This was unintentional and has been fixed now. In case you have created custom bricks or made adjustments to existing ones it may happen that after the upgrade the theme build will fail stating that you need to add some dependencies to your bricks.

*[CMS-14612]*

### Moved theme-importer to studio-server

The frontend workspace now produces a `frontend.zip` via `yarn (frontend/target/frontend.zip)`. The `content-users.zip` does not contain the themes anymore and the content workspace has no dependency on the frontend workspace anymore.

Follow [Section "Moved theme-importer to studio-server" \[389\]](#) for upgrade information.

*[CMS-14562]*

### Maven Proxy Settings will now only be passed for "yarn install"

When passing proxy settings to other yarn scripts lerna will complain about unknown parameters. As lerna is not in place for `yarn install` (and that's where the proxy settings come into play) the maven proxy settings should now be working as expected.

*[CMS-14522]*

### Unified Search Input Fields

All search input fields now share the same HTML markup and CSS classes, following the BEM model.

Follow [Section "Unified Search Input Fields" \[390\]](#) for upgrade information.

*[CMS-13926]*

### Removal: Layout variants "superhero" and "squarelist" from Hybris

View variants `superhero` and `squarelist` have been removed from test content because no corresponding templates exist for LiveContext for SAP Hybris.

*[CMS-13581]*

### Render macro of cta.ftl will no longer render an empty div tag

If no Call-To-Action button is configured the `render` macro of the `cta.ftl` contained in `@coremedia/ftl-utils` will no longer render an empty div.

*[CMS-13016]*

### Removal: Freemarker Function `lc.fragmentHighlightingMetaData()`

The deprecated Freemarker function `lc.fragmentHighlightingMetaData()` has been removed. It was the same as `bp.getPlacementHighlightingMetaData()`.

Follow [Section "Removal: Freemarker Function `lc.fragmentHighlightingMetaData\(\)`" \[391\]](#) for upgrade information.

*[CMS-10457]*

### Removal: Brick "livecontext"

The `livecontext` brick has been removed. All functionality has been spread over different bricks (enhancing their functionality to support commerce objects out of the box), moved into new bricks or has been removed if it was considered dead code. We strongly suggest to check each of the changes to decide about the impact on your existing themes.

Follow [Section "Removal: Brick "livecontext"" \[391\]](#) for upgrade information.

*[CMS-9553]*

## CoreMedia Deployment

### Deployment archive and Chef deployment updates

The Chef requirement for the deployment archive is now 14.x.x. With this update, some cookbooks had to be updated as well. The most relevant change was the update of the `apache2` cookbook to `7.1.0`. With this update, the `apache2::web_app` definition is no longer available, which made the `coremedia-proxy::webapp` wrapper definition and the whole cookbook obsolete. Rendering a new virtual host configuration has now become less complex. Please visit the [apache2 cookbooks documentation](#) for more details.

Follow [Section “Deployment archive and Chef deployment updates” \[398\]](#) for upgrade information.

*[CMS-14469]*

### Use Spring-Boot application artifacts in deployment archive

With this change, the deployment archive will no longer use the tomcat deployment with war webapp artifacts but Spring-Boot application jar artifacts. The `blueprint-tomcat` cookbook has been replaced with the `blueprint-spring-boot` cookbook. Please see the cookbooks documentation `README.md` within the cookbook and the `global/deployment/chef/MIGRATION.md` in the workspace for more details.

*[CMS-14140]*

## CoreMedia Commerce Hub

### Migration of commerce cache configuration

The former commerce cache configuration for in the vendor specific commerce extension needs to be migrated to the new cache configuration used for commerce hub. There are two in memory caching layer. The commerce adapter itself comes with a default cache configuration to reduce the load on the connected commerce systems. The configuration is described in the Commerce Adapter documentation. The commerce api which communicates via gRPC with the Commerce Adapter comes also with its own caching layer. You should adapt existing cache sizes and timeouts to the new commerce hub property keys. See `com.coremedia.blueprint.base.livecontext.client.config.CommerceAdapterClientConfigurationProperties.CacheConfiguration` for details. The default configuration can be found in `com.coremedia.blueprint.base.livecontext.client.cache.CachingDataClientFactory`. If you want to customize the defaults you can use the following property pattern: `commerce.hub.capacities.* commerce.hub.timeout-Seconds.*`

Follow [Section "Migration of commerce cache configuration" \[399\]](#) for upgrade information.

*[CMS-14940]*

## CoreMedia Connector for HCL Commerce

### Removal: Methods 'CommerceBean#getCatalog' and 'Catalog#isMasterCatalog'

Use the newly introduced utility method `AbstractCommerceBean#getCatalog(CommerceBean)` to obtain a commerce bean's catalog. The replacement for `Catalog#isMasterCatalog` is to use custom commerce bean attributes (`CommerceBean#getCustomAttributes()`) instead.

*[CMS-14963]*

### Removal: Method `AbstractCatalogResource#getConnection`

The method `com.coremedia.ecommerce.studio.rest.AbstractCatalogResource#getConnection` was removed. Use the commerce connection provided by the commerce entity's store context instead.

*[CMS-14574]*

### 'CommerceConnection' returns optional services wrapped in 'Optional' instead of as 'null's

The `CommerceConnection` interface has been changed to no longer return optional services as `null` if they are not available, but as `{Optional}s` instead.

Follow [Section "'CommerceConnection' returns optional services wrapped in 'Optional' instead of as 'null's" \[400\]](#) for upgrade information.

*[CMS-14529]*

### Removal: PriceService

The deprecated `PriceService` interface has been removed.

Follow [Section "Removal: PriceService" \[400\]](#) for upgrade information.

*[CMS-14386]*

### 'PreviewUrlService#getExternalPageUrl' split

The interface method `PreviewUrlService#getExternalPageUrl` has been split into two separate methods, `getExternalPageSeoUrl` and `getExternalPageNonSeoUrl`. The former is required to be implemented in custom commerce adapters, the latter is optional.

*[CMS-14338]*

### Removal: StoreContextBuilderImpl#from(String)

Deprecated method `StoreContextBuilderImpl#from(String)` has been removed.

Follow [Section "Removal: StoreContextBuilderImpl#from\(String\)" \[401\]](#) for upgrade information.

*[CMS-14195]*

### Replaced Betamax with Hoverfly in LC-ECommerce Rest Tests

Get ready for Java 11. Get rid of Betamax and its transitive deprecated Jetty dependency

Follow [Section "Replaced Betamax with Hoverfly in LC-ECommerce Rest Tests" \[401\]](#) for upgrade information.

*[CMS-13860]*

### `StoreContext#getConnection()` added

`StoreContext#getConnection()` has been introduced to make the commerce connection available via the store context.

Follow [Section "`StoreContext#getConnection\(\)` added" \[402\]](#) for upgrade information.

*[CMS-10394]*

## CoreMedia Connector for Salesforce Commerce Cloud

### List and offer prices retrieval fixed

The retrieval of the list and offer prices has been changed. Both are looked up again in the prices map and for the specified currency. If the list price can not be obtained, nothing is returned, but if the offer price cannot be found, the (minimum) sales price is returned as a fallback.

*[CMS-14696]*

## Miscellaneous

### Update docker java-application-base image

The docker base image `coremedia/java-application-base` has been updated to `2.1.3`. This major update includes the following changes:

Follow [Section "Update docker java-application-base image" \[402\]](#) for upgrade information.

*[CMS-15576]*

### Refined CommerceBeanInvalidator

The `ContentStringValueChangeEvent` has been enhanced with the property descriptor which the value belongs to. The `CommerceBeanInvalidator` checks the property descriptor and handles only values of properties named "externalId". If your content model contains other observed properties that contain commerce IDs to be handled by the `CommerceBeanInvalidator`, you must adjust `CommerceBeanInvalidator#isApplicable`.

*[CMS-15096]*

### Removed: Optionals

The class `com.coremedia.common.util.Optionals` with its sole, deprecated method `streamOfOptional(Optional)` has been removed.

Follow [Section "Removed: Optionals" \[403\]](#) for upgrade information.

*[CMS-15030]*

### XliffImporter allows importing into checked out content

The Studio upload dialog and the `com.coremedia.cap.translate.xliff.XliffImporter` API now allow importing XLIFF with translations into documents that are checked out by the current user. In previous releases an error was raised (`XliffImportResultCode#ALREADY_CHECKED_OUT`) and users had to check in content manually before importing XLIFF. This change removes the need for this manual step.

Follow [Section "XliffImporter allows importing into checked out content" \[403\]](#) for upgrade information.

*[CMS-14396]*

### Third-Party Update: JUnit Jupiter, Mockito, and Maven Surefire

JUnit Jupiter has been updated to 5.5.1 and related JUnit Platform to 1.5.1. Dependency Management is now done via JUnit 5 BOM `org.junit:junit-bom`.

Follow [Section "Third-Party Update: JUnit Jupiter, Mockito, and Maven Surefire" \[404\]](#) for upgrade information.

*[CMS-14134]*

### Multi-Site API change in ContentObjectSiteAspect

The behaviour of methods `#getMasterVersionNumber` and `#getMasterVersion` in `com.coremedia.cap.multisite.ContentObjectSiteAspect` was changed to return correct values for derived contents that haven't been translated yet.

Follow [Section "Multi-Site API change in ContentObjectSiteAspect" \[404\]](#) for upgrade information.

*[CMS-14121]*

### XLIFF Validation Enabled

XLIFF is now validated on import by default.

Follow [Section "XLIFF Validation Enabled" \[405\]](#) for upgrade information.

*[CMS-14102]*

### New XliffImportResultCode INVALID\_PROPERTY\_TYPE

The enum `com.coremedia.cap.translate.xliff.XliffImportResultCode` got the new value `INVALID_PROPERTY_TYPE` that represents errors while importing XLIFF that are caused by a wrong type of target property.

Follow [Section "New XliffImportResultCode INVALID\\_PROPERTY\\_TYPE" \[405\]](#) for upgrade information.

*[CMS-14055]*

### JVM Options

With Java 11, many JVM options have changed. This concerns especially (but not only) garbage collection, mainly because the default garbage collector has been switched from parallel GC to G1 with Java 10. We have reworked all JVM options throughout deployment, examples and documentation, so that they are now suitable for Java 11.

*[CMS-13649]*

### Added Time Unit to Property `sql.store.sgml-cache-interval`

Property `sql.store.sgml-cache-interval` was renamed to `sql.store.sgml-cache-interval-seconds`.

*[CMS-13115]*

### CoreMedia Bricks and Themes no longer rely on bootstrap

With the general restructuring of our bricks and themes we removed the dependency to the bootstrap framework. This means that the framework is no longer integrated by default when loading any of our bricks.

Follow [Section "CoreMedia Bricks and Themes no longer rely on bootstrap" \[406\]](#) for upgrade information.

*[CMS-12965]*

### Dissolved module `bpbases-multisite-api`

The module `bpbases-multisite-api` has been resolved.

Follow [Section "Dissolved module bpbase-multisite-api" \[407\]](#) for upgrade information.

[CMS-15133]

### Improved Image transformation API

The image transformation API has been improved.

Follow [Section "Improved Image transformation API" \[407\]](#) for upgrade information.

[CMS-14661]

### Removal: Class BeanWrappingBeanCustomizer

Class `com.coremedia.springframework.customizer.BeanWrappingBeanCustomizer` was deleted. Use XML customizer `customize:wrap` instead

[CMS-14068]

## 4.9.2 Changes and Improvements

### CoreMedia Core

#### Deprecation: Site Manager is deprecated for editorial work

The Site Manager is deprecated for editorial work. Please use CoreMedia Studio instead.

[CMS-14441]

#### Improved ActiveDirectoryUserProvider

There is a new UserProvider for Active Directory, the SimpleActiveDirectoryUserProvider. It is based on the sAMAccountName, rather than on the userPrincipleName. This has been a frequent project requirement recently, and it is also suitable for Azure Domain Services. The old ActiveDirectoryUserProvider is still available, so there are no migration efforts. The configuration template (jndi-ad.properties) is the same for both UserProviders. It has been cleaned up by replacing rarely changed properties with according default values (some of which differ for the two UserProviders). However, all configuration options are still available, and if you stick to the ActiveDirectoryUserProvider, you don't need to change your configuration. To the best of our knowledge, the UserProviders are compatible for default Active Directory setups, but Active Directory is complex, and there may be some nasty details.

For details see Content Server Manual, section ActiveDirectoryUserProvider.

[CMS-14388]

### Updated AWS SDK for Java

Our AWS SDK based features have been ported from v1.11 to v2.0. For details see <https://aws.amazon.com/sdk-for-java/> . More precisely, we switched from 1.11.335 to 2.5.33. To the best of our knowledge, everything works as before, even though AWS SDK for Java v2.0 is a major rewrite and comes with a completely changed API.

If you use AWS SDK for Java v1.11 in your project, it should still work side by side with v2.0. Since Amazon changed esp. artifact and package names, there are no conflicts between v1.11 and v2.0.

[CMS-14220]

## CoreMedia Content Application Engine

### API to pass data to SFMC Data Extensions

We provide an API to pass data to SFMC Data Extensions. See the CoreMedia Documentation for more information.

[CMS-14738]

### CoreMedia Personalization for Salesforce Marketing Cloud (SFMC)

There are new CoreMedia Personalization rules depending on SFMC journeys. Consult the studio user manual and the blueprint manual.

[CMS-14737]

### Deprecation: Support for JSPs is deprecated

Support for JavaServer Pages (JSPs) is deprecated for rendering with the CAE and will be removed in future releases. Use Freemarker for templates.

[CMS-14442]

### Allow default view fragments to be pre-fetched

In the commerce-led scenario, it is now possible to use the `DEFAULT` identifier to define the default view as additional view of a pre-fetch fragments call.

[CMS-14360]

### Removal: Module `cae-performance-test`

The CAE module `cae-performance-test` based on jmeter has been removed. We recommend to use [Gatling](#) for load tests.

[CMS-14185]

### Improved SettingsService Dynamic Proxies

The capabilities of the `com.coremedia.blueprint.base.settings.SettingsProxy` annotation have been enhanced with control over the target beans for nested proxies. For details see Javadoc.

[CMS-13491]

### Enabled loading of web resources from blueprint workspace in local Spring Boot apps

For the *cae-live* and *cae-preview* Spring Boot applications, the property `spring.boot.tomcat.extraResources` is now preconfigured with the paths to the blueprint workspace folders where web resources (Freemarker templates etc.) are located. This allows short development round trips, as these resources are loaded directly from the workspace at runtime, hence [template] changes are instantly available in the running Spring Boot applications. To avoid this behaviour for production environments, the applications must be started with the *local* profile. The configuration works for the applications started whether as Spring Boot application in IntelliJ or via the *spring-boot-maven-plugin*.

[CMS-9147]

### Weakened type of list parameter of ContentBeanFactory#createBeansFor and AbstractContentBean#createBeansFor methods

The type of the list parameter has been weakened from `List<Content>` to `Iterable<? extends Content>` for the following methods

- `ContentBeanFactory#createBeansFor(Iterable<? extends Content>, Class)`
- `AbstractContentBean#createBeansFor(Iterable<? extends Content>, Class)`

[CMS-3877]

## CoreMedia Studio

### Refresh an external source via the "Refresh Button" that is shown in the library

Within the toolbar in the library, you can find a refresh button that will refresh the external Content Hub source on click.

[CMS-14958]

### Feedback Hub: Connect external systems that provide keywords for CoreMedia Content.

With FeedbackHub, CoreMedia offers the possibility to provide feedback for CoreMedia content. Currently, the Feedback Hub supports Validators and the Keywords Integration. The Keywords integration allows to connect external systems to Feedback Hub that provide keywords.

Also the Jobs framework was extended. It now offers the possibility to perform nonblocking asynchronous execution and can therefore handle `CompletableFuture` as a response Object. Should the return value of a job be of type `CompletableFuture`, the jobs framework will return the result as job result to the client when it became available.

[CMS-14863]

### Content Hub offers two default adapters for Youtube and RSS connections

The Content Hub adapters for Youtube and RSS are defined within the blueprint-extension of the studio-server app. They can be used as reference implementations for further adapters with other external systems.

[CMS-14763]

### Upload Content to Salesforce Marketing Cloud

The editorial user can push content to Salesforce Marketing Cloud. Initially we support the push of string, richtext (as plaintext) and image blob content property.

Consult the studio user manual in section "Upload Content to Salesforce Marketing Cloud" how to use the feature as editor user.

Consult the blueprint manual in section "Upload Content to Salesforce Marketing Cloud" how to enable and configure the feature.

[CMS-14736]

### Fixed single choice configuration for ViewTypeSelectorForm

Fixed 'hideForSingleChoice' flag which was always 'true'.

[CMS-14643]

### Introduced Feedback Hub

Errors and warnings are displayed in the introduced Feedback Hub window.

[CMS-14615]

### Content Hub offers the possibility to browse external sources and create Content

The Content Hub offers the possibility to browse external systems like Youtube or RSS within the CoreMedia library. Also it is possible to create CoreMedia Content from an external system. You may also define your own adapters for other external systems. An instruction how to use the new Content Hub and how to define new Adapters for it, can be found in the "Studio Manual" in section "Content Hub"

[CMS-14607]

### Content Hub

Contents derived from external objects need a reference to their origin. Therefore, we introduced a new observed property `foreignId` to `CMObject`. The content server can handle this change automatically, so there are no migration efforts. If you do not use

the content hub in your project, you can spare the `foreignId` property. Simply delete the file `foreignid-doctypes.xml` in the Blueprint.

[CMS-14580]

### Added Document Type Name to Workarea Tab Tooltip

To provide a better quick-info of opened tabs, the tooltip of a workarea tab shows the content type now too.

[CMS-14495]

### Added 'autoCheckin' Option for Upload Settings

The automatic checkin of uploads is now configurable via settings, setting the boolean property 'autoCheckin' in the UploadSettings document.

[CMS-14475]

### Colorful Content Type Representation in Studio

A more colorful representation of various Studio components can be enabled to make it easier to distinguish between different content types. If enabled, different contents in tabs, lists, menus and in the library will be displayed in color groups. This feature can be enabled in the preferences window.

[CMS-14368]

### Added new Jobs-API for Uploads

The upload progress dialog has been replaced by the new jobs window. Since all jobs provide custom success handles, the existing 'openInTab' checkbox has been removed from the upload dialog, since created documents can now be opened via the job result window.

[CMS-14208]

### Flexible sorting of folders in Studio library

Studio users can now choose between keeping the folders always on top in the Studio library or sorting them in the same way as any other content type. Go to the user preferences to configure this behavior.

[CMS-14100]

### Make recursion depth to complete publication change set configurable in Studio

If the Studio server log contains the error 'Maximum number of iterations to extend the publication set exceeded', you can now configure a maximum number bigger than the default value 10 using the property `studio.rest.max.iterations.complete.changeset` in the Studio REST server.

[CMS-13842]

### Support for Studio Client Error Tracking

Studio client errors (JavaScript errors) are now logged to the server. The preconfigured log level is 'ERROR' and can be changed in the user preferences. Additionally, the user can enable a button with a issue counter and provides a dialog that contains the last log messages that have been sent to the server.

[CMS-13522]

### Jobs Framework

The Jobs Framework provides means of registering processes to a central job service instance. These processes can then provide information about their status and progress to be collected in one defined place in Studio. This can give the editor feedback about what is going on in the background while continuing working in Studio as usual.

Please consult the [Studio Developer Manual](#) for further information.

[CMS-13427]

### TextFieldContainer with new config parameters to modify text field value

The two config options `propertyVETransformer` and `propertyVEReverseTransformer` were added to the class `com.coremedia.ui.components.TextFieldContainer` to allow property value manipulation, e.g. to replace a character like a soft hyphen (`[\u00ad]`) with another character like a tilde (`['~']`). The two options are used by the `BindPropertyPlugin` configured for the text field inside the container class.

[CMS-13413]

### Richtext Editor: Default Address for External Link Dialog can now be customized

The default value for the address field in "Create an External Link" dialog (`Dialog_cmLink`) of the `RichtextPropertyField` can now be customized by overriding the `cmLink_defaultUrlPrefix` key of the resource bundle `CKEditor.properties`. Before the change it was hard coded to "http://".

[CMS-12406]

## CoreMedia Workspace

### Third-Party Update: Updated Spring Framework 5.1.6 and Spring Boot 2.1.4

The following third party libraries were updated:

- Spring Boot 2.1.4.RELEASE
- Spring Framework 5.1.6.RELEASE
- Spring Security 5.1.5.RELEASE
- Slf4j 1.7.26

- byte-buddy 1.9.12

The update of slf4j fixes CVE-2018-8080 which did not affect the product. If your implementation uses of Slf4j's extension module then you should update to this release.

[CMS-14541]

### Renamed BlueprintBootApps to reflect their service

Starting SpringBoots apps from your IDE now gives you a developer friendly overview.

[CMS-14531]

## CoreMedia Frontend Workspace

### Moved Responsive Images Settings to Themes

We removed the settings for Responsive Images from all our demo sites as they are now provided by the themes. You can find them in the corresponding themes in `src/settings/Responsive Images.settings.json`. If you don't want to utilize the settings you do not need to make any changes as responsive images settings declared in specific sites take precedence over those declared in themes.

[CMS-14671]

### De-/activate CTAs for Banners

CTAs in the caption of CMTeasable and LiveContextProductTeasable from the default-teaser brick can be de-/activated via `cm.localParameters()` (defaults to `true`). This overrides the "Show Call-to-Action Button" setting in the teaserDocumentForm.

[CMS-14596]

### Added support for display orientation in scss mixin aspect-ratio-box-by-breakpoint

The scss mixin `aspect-ratio-box-by-breakpoint` supports optional parameter `display orientation` for breakpoints.

**Example:** `@include aspect-ratio-box-by-breakpoint(("xs", "portrait") (4, 3), ("xs", "landscape") (1, 1), "sm-and-up" (16, 9))`

[CMS-14590]

### Removal: Frontend dependency "js-to-markdown"

The thirdparty dependency "js-to-markdown" and the according script `yarn run apidoc` have been removed since it didn't generate any helpful markdown documentation. Please read the documentation in the javascript files instead.

[CMS-14535]

### Updated frontend dependencies

The `frontend-maven-plugin` used in the frontend workspace has been updated to version `1.7.6` and will now download and use Yarn version `1.17.3` when it is built. The frontend dependencies, e.g. `webpack`, `prettier`, have been updated to the latest versions and `node.js` to latest LTS version `10.16.0`.

#### Update steps:

If you are working with the Frontend Workspace we suggest to also upgrade your local installation of Yarn to `1.17.3` and `node.js` to `10.16.0`.

[CMS-14349]

### Changed default teaser layout

The `default` layout in placements has been changed to use the layout of the brick `@coremedia-examples/brick-left-right-banner` in the themes "shared-example", "calista" and "chefcorp" as default.

[CMS-14228]

### Changed property "cssClass" of Pagegrids

Pagegrids had an optional property `cssClass`. It was renamed to `cssClassName` accordingly to the getter of the Pagegrid interface, but the old name is still supported.

The default `cssClassName` `cm-grid--default` and the prefix `cm-grid--` have been removed. Please add the entire css class name to the pagegrids. Empty or missing property will not return the default anymore.

[CMS-13916]

### Adjustments to preview related CSS and JS

Preview related CSS and JS documents from the theme [ `css/preview.css` and `js/preview.js` ] no longer need to be added manually via the `previewCss` and `previewJs` settings described in the chapter "Client Code Delivery" of the `Blueprint Developer Manual`. This is now automatically handled by the theme.

As a side effect the `Remote Frontend Developer Workflow` will now also work with preview related CSS and JS. In previous versions changing these resources did not have any effect until the theme was redeployed.

Make sure to unlink the aforementioned documents from all sites to benefit from the changes.

[CMS-13847]

### Fixed issue: node-sass build warning about undefined breakpoint

This issue will no longer occur when using our API bricks as API bricks do not provide hard coded breakpoint styling anymore. For example bricks the warning might still occur

but as using an example brick requires creating a copy of the brick you can adjust the SASS [e.g. by removing the breakpoint styling or changing to a breakpoint defined in your theme].

[CMS-12047]

### Introduced Theme specific settings

Themes and bricks can now provide theme specific settings, which will automatically taken into account when using the `bp.setting` function of the `Blueprint Freemarker Facade`. Please have a look at the chapter "Settings" in the `Frontend Developer Manual` to learn more about theme specific settings.

[CMS-9648]

## CoreMedia Deployment

### Java 11 host restriction for remote debugging has been removed

With Java 9+, remote debugging (with JDWP) is restricted to local connections by default. For the CoreMedia applications that are started in development mode (with JDWP activated), this host restriction has been removed by setting the address for the transport mechanism to `*:PORT`.

[CMS-14770]

### Kill Solr container if it runs out of memory

In order to let the container management restart solr when it ran out of memory, we need to kill the process. To disable adding the default JVM switch to the `SOLR_OPTS`, you can set the environment variable `EXIT_ON_OOM=false`. Make sure to set this variable to `false`, if you already have set `-XX:+ExitOnOutOfMemoryError` in your container management or `Dockerfile` or remove your config after the update.

For AMP releases this flag will be set to false.

[CMS-14450]

### Add `service_start` attribute to `blueprint-solr` cookbook

The newly added attribute toggle `\{{node 'blueprint' 'solr' 'start_service' }}` will, when set to false prevent the solr from being started. This is similar to the feature within the `blueprint-tomcat` or `blueprint-spring-boot` cookbook

[CMS-11089]

## CoreMedia Commerce Hub

### Extensibility of Commerce Hub Generic Client

The generic client can be extended by custom commerce beans, custom commerce services or a custom commerce connection implementation itself. For custom commerce beans, both a custom commerce bean type must be registered using `com.coremedia.livecontext.ecommerce.common.CommerceBeanTypeRegistry` and the custom commerce bean implementation class must be registered using `com.coremedia.blueprint.base.livecontext.client.beans.ClientCommerceBeanFactoryMethodRegistry`.

For custom commerce services and custom commerce connection implementations, the `com.coremedia.livecontext.ecommerce.common.ForVendor` is employed.

Tests demonstrating the extensibility reside in the blueprint module `lc.ecommerce-api-tests`.

[CMS-13885]

### Added Livecontext Link Service API

The package `com.coremedia.livecontext.ecommerce.link` was added to the release artifact `com.coremedia.livecontext:lc-ecommerce-api`. It provides service interfaces `LinkService` and `PreviewUrlService` which are both obtained from the current `CommerceConnection` instance. These services are used by the Blueprint classes `com.coremedia.livecontext.fragment.links.CommerceLinkScheme` and `com.coremedia.livecontext.fragment.links.transformers.resolvers.CommerceLinkResolver`. They take precedence over the link building mechanism provided by the vendor-specific Livecontext CAE implementations.

[CMS-13261]

## CoreMedia Connector for HCL Commerce

### Deprecation: `StoreContextBuilderImpl#from(String)` has been deprecated

`StoreContextBuilderImpl#from(String)` has been deprecated. Use `StoreContextBuilderImpl#from(CommerceConnection, String)` instead.

[CMS-14194]

### Reduced demand for guava version in WCS workspace

Some code in `IBMwcsLiveContextEnvironment` class required a guava version which was not available everywhere. The code has been changed to allow for more flexibility to support a broader range of guava version.

[CMS-13032]

## CoreMedia Headless Server

### CoreMedia Headless Server - Content as a Service

CoreMedia Headless Server is a framework which allows you to access your CoreMedia content as JSON through a GraphQL endpoint. Please consult the Headless Server Manual for Details.

## New Features

The following new features are available now:

- Search
- Dynamic Query Lists
- JSON Preview Client
- E-commerce integration

## Search

For using Search together with the Headless Server, an existing Solr with index created by a CAE Feeder needs to be provided. The following functionality is supported:

- Full text search
- Paging
- Filter by content type
- Predefined sort fields with order
- Limitation to a site
- Limit

Search configuration is read from CMS content using settings, see the general search configuration for details.

Configuration properties:

- `solr.url`: Url pointing to the Solr host
- `caas.solr.collection`: Name of the solr collection. Should be created by a CAE Feeder.
- `caas.search.cache.seconds`: Number of seconds to cache the search query (only for `headless-server-live`)
- `caas.querylist.search.cache.seconds`: Number of seconds to cache the query list search query (only for `headless-server-live`)

## Dynamic Query Lists

Dynamic Query Lists require Search to be already set up.

The following functionality is supported:

- Paging
- Filter by content type, modification date, context, authors, subject taxonomy, location taxonomy, validity
- Predefined sort fields
- Limiting the result size

Note: Product Lists are not integrated into the Headless Server yet.

## Deployment

The CoreMedia Headless Server is be deployed as a Spring Boot application with Docker or Chef.

Configuration options for the `headless-server-app`:

- `caas.preview`: true if preview mode is enabled
- `graphiql.enabled`: true if graphiql tool should be deployed
- `caas.swagger.enabled`: true if swagger tool should be deployed

## JSON Preview Client

The JSON Preview Client is deployed together with the `headless-server-preview` and can be used as a preview in CoreMedia Studio. If you do not need this application, you may remove the dependency to `preview-client` in the `headless-server-app` module.

## E-commerce Integration

Catalogs (by Site), Categories, Products and Product Variants are supported.

Moreover, some augmentation use cases are supported:

- Fetching the corresponding Category from `CMExternalChannel`
- Fetching the Product from a `CMProductTeaser`
- Fetching associated `CMVisual` content (e.g. `CMPicture`) from augmented Categories and Products
- Catalog image URLs for Categories and Products

For E-commerce, a running Commerce Hub is required with a proper configuration of at least one commerce adapter in the headless server app.

Depending on your system setup, this may be any combination of

- `commerce.adapter.sfcc.endpoint`
- `commerce.adapter.hybris.endpoint`
- `commerce.adapter.wcs.endpoint`

For catalog image URLs, a site mapping has to be configured in the same way as for the CAE, e.g.

- for local development:

```
blueprint.site.mapping.calista=http://localhost:49080
```

- for Docker deployment:

```
BLUEPRINT_SITE_MAPPING_CALISTA: //preview.${ENVIRONMENT_FQDN:-docker.localhost}
```

A running CAE instance is then required for the actual delivery of catalog images.

[CMS-14659]

## Miscellaneous

### Enhanced TransformImageService

The `TransformImageService.getTransformations()` has been changed to add default transformations (defined in Spring configuration `mediatransform.xml`) to the list of available transformations, if it is not existing in the content

defined transformations (defined in struct `responsiveImageSettings`). Also added two defaults for the LiveContext Asset Management (`lc-asset-cae-component`).

**Update Steps:** If you don't need the default transformations, remove them from `media-transform.xml`.

[CMS-14384]

### Introduced Spring Customizer API

The annotation `com.coremedia.springframework.customizer.Customize` was introduced to support transitioning from spring XML configuration to spring java configuration. The annotation is inspected by a bean factory post processor configured via `com.coremedia.springframework.customizer.CustomizerConfiguration` or `com/coremedia/springframework/customizer/customizer-services.xml`.

[CMS-12863]

## 4.9.3 Fixed Issues

### CoreMedia Core

#### SitesService.getSites(): Increased Robustness For Concurrent Changes

`SitesService.getSites()` may have failed while during the process of retrieving sites, sites were either destroyed or changed permissions did not allow to read a site anymore.

The implementation is now more robust for these scenarios and behaves as if the site does not exist which caused the problem during evaluation. On debug log you will still be informed about these incidents.

[CMS-14965]

#### Updated Jetty

Jetty has been updated to version 9.4.18.v20190429.

[CMS-14722]

#### Updated Database Driver for MySQL

The database driver for MySQL has been updated to 8.0.16.

[CMS-14698]

### Fixed `NotAuthorizedException` if content is destroyed

A destroyed home page of a site can cause a `NotAuthorizedException` on the server which is propagated to the Elastic Social Moderation in the Studio client. This is fixed now.

[CMS-14280]

### XLIFF-Import: Possible `NullPointerException` For RichText-Import

This has been fixed: If you happen to have an empty paragraph at the start of CoreMedia RichText, the XLIFF-Importer will failed to import the resulting XLIFF with a `NullPointerException`.

[CMS-13861]

### Database connection checks

Content Server and Workflow Server use a modifying statement for checking their database connectivity now. This allows the server to detect connections to database nodes that have been demoted from writer to reader and which are no longer suitable for use with the servers.

[CMS-13359]

### Fixed file handle leak

Content Server and Workflow Server no longer leak file handles on configuration files.

[CMS-13102]

### Fix auto merge for not yet translated contents

Fixed a bug in the translation workflow, which caused property changes to be ignored when "auto merging" changes into derived contents, that haven't been translated before. Because of this bug, derived contents could miss some changes of master contents that were made after deriving a new site and before performing the initial translation for that site.

[CMS-9047]

## CoreMedia Content Application Engine

### Optimized encoding of animated GIFs

The encoding of animated GIF images has been improved. Now each consecutive frame is analyzed and compared with the previous frame, and only a minimal rectangle containing all changes is encoded subsequently.

This means that, for many animated GIFs, less image information needs to be encoded, resulting in smaller file sizes. In general, this effect also outweighs the additional computation cost for frame comparison, resulting in faster encoding.

[CMS-14498]

### Hide error messages for Live-CAE

Error messages in templates are displayed in Preview-CAE only.

[CMS-14392]

### CAE character encoding is forced to UTF-8

The recommended way to configure character encoding for request and response of the CAE is to use `org.springframework.boot.autoconfigure.web.servlet.HttpEncodingAutoConfiguration`. Hence, the default deployment configures `spring.http.encoding.force=true` to force character encoding of requests and responses to UTF-8.

If the autoconfiguration cannot be used, the property `cae.set-unknown-mime-type` can be used to control whether or not an instance of `com.coremedia.blueprint.cae.filter.UnknownMimetypeCharacterEncodingFilter` is registered. The default is `false`.

[CMS-14118]

### Improved Theme Resource Bundle Fallback Mechanism

The fallback mechanism used for theme builds will now also fallback to the master language if there is no explicit resource bundle for the locale of the site the theme is used in.

Before the change an empty resource bundle needed to be added with the "master" link property set to the master resource bundle. This can now be removed.

[CMS-13523]

## CoreMedia Studio

### Fixed moving imagemap hot zone can disable scrolling in the Studio preview

When you move a hot zone of an imagemap in Studio the preview is reloaded to reveal the change. When you move the hot zone and scroll in the preview before the preview is reloaded then scrolling is disabled after the reload. It's enabled again after clicking in the preview. This is fixed now. No disabled scrolling anymore.

[CMS-14844]

### Changed 'disableSuggestions' Flag to Boolean

Changed the 'disableSuggestions' flag of the `TaxonomyPropertyField` to type 'Boolean'.

[CMS-14732]

### "AddDefaultFolderComboEntry" plugin now passes correct content type to lookup function

The `addDefaultFolderComboEntry` plugin now passes the correct content type to the lookup function. Before it was always set to `_Folder`. Should, contrary to expectations, your plugin rely on this behavior, please change it accordingly.

[CMS-14720]

### TeaserRichTextPropertyFieldDelegatePlugin No Longer Shows Wrong Value On Tab Reuse

A bug has been fixed where the `TeaserRichTextPropertyFieldDelegatePlugin` showed a wrong value for the delegation field.

[CMS-14678]

### Fixed image request with height=0 in image editor in Studio

Sometimes the image editor in Studio wants to load an image with `height=0` which produces an error message on the studio server (`java.lang.IllegalArgumentException: box height (0) must be positive`). This has been fixed.

[CMS-14614]

### Fixed too small image in image editor in Studio

When an image fails to load in the image editor due to a server error for some reason, any following successful image load requests in the same image editor show too small images. Only a browser reload could solve the issue. This has been fixed now.

[CMS-14530]

### Fixed Busy Mode for Taxonomy Manager

Fixed error for the taxonomy manager when the document form for taxonomy documents has been customized.

[CMS-14459]

### Fixed default behavior for BoundRadioGroup

We fixed issues with `BoundRadioGroup`'s handling of default values, leading to unwanted document checkouts.

[CMS-14425]

### Chrome: Problems with double-quote-comma in names [Pictures, XLIFF-Download] fixed

If you name a picture document `This", Is it` and upload an image blob, a broken image was shown in image editor. A similar use-case: If you created a translation workflow and named the workflow `Translate", This` Google Chrome refused to download the corresponding XLIFF from workflow.

Reason was an escape problem in `Content-Disposition` header. The behavior has been changed not to use the `filename` attribute of the `Content-Disposition` header, but the `filename*` attribute, which also defines the character set to use and correctly escapes the filename.

Firefox and IE11 were unaffected by this problem.

[CMS-14394]

### Fixed focus management of struct property fields in Studio

When the issues window in Studio shows an issue with a link pointing to the local settings struct property field and when clicking on the link then the System tab was opened but the struct property field was not expanded. This is fixed now. The field also expands.

[CMS-14284]

### Fixed rendering error in upload dialog

Fixed issue where the preview image of a selected image wasn't rendered in CoreMedia Studio.

[CMS-14213]

### Added UploadSettings as callback value of load method

UploadSettings inherits from BeanImpl. The load-method can be referred via callback. As soon as the bean is loaded the callback gets called. The callback does now refer the UploadSettings.

[CMS-14207]

### Fixed Studio Plugin Load Order

Since 1810, with the introduction of dynamic Studio modules, the load order of Studio plugins may have been incorrect. This has been fixed with an update of Jangaroo Ext AS to version 6.5.3-9. If you relied on the incorrect Studio plugin load order, this fix might break your extension. To ensure a specific plugin load order, you might have to add additional Maven dependencies.

[CMS-14190]

### Fixed upload problems caused by whitespaces in the filename

Uploads failed when there was a whitespace in the filename. The error has been fixed together with the introduction of the new jobs API the new upload is build on.

[CMS-14115]

### Taxonomies: Permission Check for Loading

During the loading of a taxonomy tree, the permission are now checked for the current user if the given taxonomy is writeable.

[CMS-14074]

### Fixed Studio Shortcuts Overriding

Changed documentation of how to implement custom keyboard shortcuts for the Studio.

[CMS-14035]

### WorkflowDateTimeField has now "allowBlank" and "readOnly" properties

The WorkflowDateTimeField now provides the following properties: \* *allowBlank* \* *readOnly* \* default TimeZone can be set via the *defaultTimeZoneValueExpression*

[CMS-14011]

### Content state is now shown in TranslationTree component

Content state is now shown in TranslationTree component

[CMS-13878]

### Studio loads faster when there are many sites

CoreMedia Studio used to load very slowly when there was a large amount of sites (hundreds). This is fixed by retrieving the information for all sites in bulk.

[CMS-13553]

### DateTimePropertyField updates content not only after losing its focus

DateTimePropertyField now tries to update content on every key press and saves the value to the content every time it is valid. If a user clicks somewhere else and the Component loses its focus, the field is validated and, if its value is invalid, the last saved valid value is reloaded.

[CMS-13547]

### DateTimePropertyField resets date after deleting the time

DateTimeProperty field now updates and validates its property values on every key press. After the field is blurred the last valid value is reset.

[CMS-13538]

### Blob equality

When comparing Unified API blobs stored on the Content Server, the `equals ()` check will in many cases return much faster now, if the blobs are indeed equal. This is achieved by using the internal blob ids and the etag values in a preliminary check.

[CMS-13537]

### Search results in taxonomy search fields in Studio are shown in correct order

With every new character entered in a taxonomy search field, a new search request is triggered. When the responses arrive in a different order due to server or network latency an old result was shown in Studio. This is fixed now. A new search request aborts the previous pending request. Only the latest result is shown in Studio.

[CMS-13530]

### **Fixed: No tab navigation in Studio login screen after auto logout**

After some time of inactivity the Studio automatically logs out the user. A popup windows informs the user. After closing the window, the user cannot tab to the user name and password fields. This is fixed now. Instead of a popup window the text with auto logout information appears on a new panel in the login screen allowing tab navigation as usual. The new panel also informs the user about a failed login.

[CMS-13506]

### **Taxonomy suggestions are now always updated on Studio tab switch.**

A bug has been fixed where taxonomy suggestions where not correctly updated on Studio tab switch with tab reuse enabled.

[CMS-13490]

### **Fixed Bookmark Menu in Studio**

The bookmark menu does not freeze anymore after removing a bookmark.

[CMS-13474]

### **Fixed 409 Conflict Error On Publication**

A 409 conflict error has been fixed, that occurred when changing a richtext property of a content item and publishing it very shortly afterwards.

[CMS-13467]

### **Fixed External Preview**

Fixed broken external preview.

[CMS-13464]

### **Content items are no longer accidentally checked out when using form fields for struct properties [e.g. CTA teaser options].**

A bug has been fixed. where content items were accidentally checked out when using form fields for struct properties [e.g. CTA teaser options].

[CMS-13398]

### **Studio no longer randomly stops working when using differencing view.**

A bug has been fixed related to Studio tab reuse and the differencing view of document forms that caused the Studio to stop working.

[CMS-13351]

### **Content with string lists in structs no longer accidentally checked out on tab reuse.**

We fixed a bug where content items with string lists in structs where accidentally checked out in tab switch with Studio tab reuse.

[CMS-13168]

### Fixed with language differencing when using reusable tabs

We fixed a bug where sometimes the wrong read-only content was shown for language differencing when using reusable Studio tabs.

[CMS-13161]

### Fixed Studio Documentation

In the Studio Developer Manual the example for "Adding table cell merge and split commands" has been fixed.

[CMS-12907]

### No more duplicate tooltips in tree views in Studio

When hovering over folders in the library tree view in Studio, a tooltip pops up duplicating the folder name. This was fixed. No tooltips appear anymore.

[CMS-12802]

### Fixed: New content window jumps to center screen on first drag

When you click on the New-button in the favourites toolbar in Studio to create a new content item, a dialog window appears on the top left side to enter content name and target folder. When you start to drag the window for the first time, its ghost window suddenly jumps to the center of the screen. This has been fixed with an override of `Ext.window.Window`.

[CMS-12544]

### Fixed documentation of ViewTypeSelectorForm in Blueprint Developer Manual

The Blueprint Developer Manual still contained a very old and wrong description of view type selector forms. This has been fixed.

[CMS-12472]

### Fixed: Scrolling in My Edited Contents panel in Studio produces gaps with empty space

When the My Edited Contents panel contains many contents and some content is selected and focused and the user scrolls down in the panel to force loading of additional contents, large gaps with empty space may appear in the panel. This has been fixed by overriding `Ext.panel.Table#beforeRender` to not use the internal `BufferedRenderer` together with the `BindListPlugin` from `CoreMedia`.

[CMS-11845]

### Changed save behaviour for TextBlobPropertyField

The saving behavior changed from "change" event to "blur" event in `TextBlobPropertyField.mxml` to avoid cursor jumping to the end of the text.

[CMS-11111]

## CoreMedia Studio Server

### Theme Importer now always uses UTF-8 encoding for JS/CSS

Before the change it was based on the default platform encoding. If the platform had an encoding different from UTF-8 corresponding characters were delivered incorrectly as the tool chain of the frontend workspace always produces UTF-8 encoded CSS and JS.

[CMS-16287]

## CoreMedia Elastic Social

### Fixed Elastic Social Reindexing Task for invalid Target References

The Elastic Social Reindex Task stopped in case of destroyed comment target references. This is fixed now.

[CMS-14620]

### Fixed Elastic bson serializer for nested objects

The elastic bson serializer did not serialize nested objects correctly, a CodecException was thrown when trying to serialize a nested Object that has no specific TypeConverter. For example, an Object with a SubObject that contains a SubSubObject was not serialized correctly regarding the SubSubObject. Now a recursive call was added to serialize all SubObjects without specific TypeConverters correctly.

[CMS-14399]

## CoreMedia Workspace

### Updated Jackson

Jackson2 (com.fasterxml.jackson) has been updated to version 2.9.9.

[CMS-14742]

### Updated Apache Ant

Apache Ant has been updated to version 1.10.6.

[CMS-14727]

## CoreMedia Frontend Workspace

### Enhanced "@coremedia/slick-carousel" helper brick scss

- The `$$slick-dot-character` variable is no longer hard coded to an empty String so it can be overridden in other bricks or themes
- The `$$slick-prev-character` and `$$slick-next-character` can now also be overridden again (even with `$cm-slick-carousel-custom-arrows-enabled` set to `true`).

[CMS-14293]

## CoreMedia Connector for HCL Commerce

### Allow catalog extension to be disabled in LC apps

Moved some dependencies and bean definitions between extensions to more reasonable places to allow the catalog extension to be disabled without causing errors in LC Studio and CAE apps

[CMS-13784]

## CoreMedia Connector for SAP Commerce Cloud

### Fixed SAP Hybris Product Search

Fixed SAP Hybris Product Search in Studio Library. Allows search for Products below "Brands".

[CMS-14080]

## CoreMedia Documentation

### Fixed wrong path in section about user changes webapp in content server manual

Replaced wrong path `modules/studio/studio-webapp` with `modules/server/user-changes-blueprint-component` in section 'LDAP User and User Changes Webapp' in the content server manual.

[CMS-13334]

## Miscellaneous

### cm destroy: Enhanced Robustness

`cm destroy` failed to destroy contents and/or versions which contained corrupted data (observed for corrupted Struct data). The robustness of the command-line-tool has been enhanced, so that it is now also possible to get rid of such corrupted content objects.

Note, that `cm destroy` will only destroy such content objects if you specify the `--force` flag. This provides the option, that you may want to fix the corrupted content in another way or you may want to analyze how the corrupted content made it into the database prior to destroying it.

The tool's output will provide the hint, that you may use the `--force` flag in these situations.

[CMS-14658]

### Fixed remote control feature in Studio docker deployment

The docker image `studio-client` was missing the static files for the remote control feature

[CMS-14585]

### Prometheus agent not running in solr image

In the solr docker image, the prometheus agent could not be activated due to a wrong path in the initialization script.

[CMS-14402]

### Replaced hardcoded groupId for dependency in p13n-cae

In the *pom.xml* of the *p13n-cae*, the hardcoded *groupId* of the dependency *com.core-media.blueprint:content-services* has been set to

```
${project.groupId}
```

[CMS-14119]

### Unified API Reconnect

The ability of the Unified API to reconnect to the servers after a communication failure or a server downtime has been improved. To this end, the Unified API takes care of detecting and cleaning up stale TCP connections at the CORBA level. This feature is effective for the ORB shipped with the Oracle JDK (1904.3) and for the GlassFish ORB shipped with 1907.1.

The advanced reconnect feature may be disabled by setting the system property `com.coremedia.corba.orb.reconnect=false`.

(CMS-12957)

## 5. Upgrade Information

This chapter contains all information relevant for an upgrade to the specific release.

# 5.1 Upgrade to 2101.4

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 Core

### 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]

## 5.1.2 CoreMedia Headless Server

### Default Java heap for headless-server reset to 1G in Dockerfile

This change only affects customers coming from CoreMedia versions 2101.1, 2101.2 and 2101.3 and 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)

## 5.2 Upgrade to 2101.3

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.

### 5.2.1 CoreMedia Content Application Engine

#### Runlevel based health indicator added to the Spring Boot health actuator

A runlevel based health indicator has been added to all repository clients. The indicator is available at `:8081/actuator/health/uapiconnectionreadiness`. The indicator will be set to:

- UP if the connection is available
- DOWN if the connection is disrupted
- DOWN if the connection will be unavailable
- DOWN if the connection is unavailable

Because the indicator will be DOWN if the connection is unavailable because of a runlevel change with a grace period, this endpoint can be used in a Kubernetes environment as a readiness probe to make sure a repository client such as the CAE or the Headless-Server will be removed from the Service endpoints and won't receive traffic.

For CMCC-2101 projects this change will introduce a the following breaking changes:

- The `repositoryConnection` health indicator has been renamed to `uapiConnection`. Please use this name for custom health indicator groups and health check enablement.
- The existing `:8081/actuator/health/repositoryhealth` check has been renamed to `:8081/actuator/health/uapiconnectionhealth`.

[CMS-18579]

## 5.2.2 Miscellaneous

### Third-Party Update: hibernate-validator

`hibernate-validator` library has been updated to version 6.1.7-FINAL to avoid a security vulnerability of the previous used version 5.4.3-FINAL (CVE-2020-10693). The library is mainly used for URL validation in Studio Server but might also be used in project code. Unfortunately, there is no CVE-fix available for the previous 5.4.x release so that we had to upgrade to a newer major version which is considered a small breaking change. Please review your custom code carefully and check if you are still compatible with this version update.

[CMS-19099]

## 5.3 Upgrade to 2101.2

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.

### 5.3.1 CoreMedia Content Application Engine

#### Fixed default/initial http cache control configuration and documentation

Default/initial HTTP cache control configurations and regarding documentation have been fixed and harmonized.

```
cae.cache-control.for-type.cmlinkable.max-age=1m  
cae.cache-control.for-type.object.max-age=1m
```

Since CMS-17307 default cache control TTLs were set to 1 day which was inconsistent to the documentation and JavaDoc. Also, 1 day was much too high as a default.

Please review carefully to avoid unwanted side effects.

[CMS-18869]

## 5.4 Upgrade to 2101.1

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.

### 5.4.1 CoreMedia Core

#### cms-tools Extension Point

The `cms-tools-application` used to depend on the `content-server-extension-dependencies`, mainly in order to receive custom grammars used in additional content types. However, it turned out that in some cases the transitive dependencies of contentserver extensions are not suitable for clients and break the cms tools. Therefore, we provide a separate extension point for the cms tools now.

If your contentserver extension contains additional grammars or other code or resources that are needed by the cms tools, you must add a new application extension module with the according resources and dependencies as an extension for `cms-tools`. Have a look at `pl3n-cms-tools` as an example.

In case of migration problems, you can recover backward compatibility by rolling the `cms-tools-extension-dependencies` dependency in the `cms-tools-application` back to `content-server-extension-dependencies`.

[CMS-14300]

#### Fixed: Contents May Have Been Removed from Translation Workflow for No Obvious Reason

**Context:** The content property `ignoreUpdates`, which is used for synchronized sites, to block receiving updates from master, accidentally made it to nested derived sites, which, as one possible effect prevented contents in derived sites from receiving any updates via translation. This is true for any workflows using `FilteredDerivedContentsAction`.

**Main Change:**

**Translation Workflow:** Introduced option `ignoreContentStateIgnoreUpdates` to `translation.xml`, configured for `FilterDerivedContentsAction` and `AutoMergeTranslationAction`. If set, and set to true, it will trigger ignoring a state `ignoreUpdates` which may have accidentally propagated from synchronized parent sites.

### Additional Changes:

**ContentObjectSiteAspect (cap-multisite):** Introduced new method `isIgnoreUpdates()`. This should be used in favor of `getIgnoreUpdates()`. `getIgnoreUpdates()` will be deprecated as of 2101.1.

**Ignore Updates from Master (Property: `ignoreUpdates`) not propagated anymore to derived sites:** Along with this update, the property `ignoreUpdates` is not propagated anymore to derived sites. Thus, if you set to ignore updates from master for a synchronized site S, a site S' derived from Site S will not automatically ignore updates from S, as it did before.

This straightens the behavior, that auto-merge strategies already ignored this property before, thus changing the property value in Site S and applying it to already existing Site S' never made it to S'.

### Upgrade Notes:

- If you are not using synchronized sites, no upgrade steps are required.
- If you don't use the `ignoreUpdates` flag for synchronized contents, no upgrade steps are required.
- If you have a setup like a synchronized master site with derived sites, which shall receive translations, it is strongly recommended, updating your **translation** workflow definitions (thus, not synchronization workflow) adding `ignoreContentStateIgnoreUpdates` as follows:

```
<AutomatedTask name="GetDerivedContents" ...>
  <!-- ... -->
  <Action
    class="com.coremedia.translate.workflow.FilterDerivedContentsAction"
    masterContentObjectsVariable="masterContentObjects"
    derivedContentsVariable="derivedContents"
    ignoreContentStateIgnoreUpdates="true"
  />
  <!-- ... -->
</AutomatedTask>

<!--
  You may need to update several occurrences of
  AutoMergeTranslationAction in your workflow.
-->
<UserTask name="Translate..." ...>
  <!-- ... -->
  <EntryAction
    class="com.coremedia.translate.workflow.AutoMergeTranslationAction"
    derivedContentsVariable="derivedContents"
    ...
  />
</UserTask>
```

```
ignoreContentStateIgnoreUpdates="true"  
  />  
<!-- ... -->  
</UserTask>
```

If not applying these upgrade steps, you may experience contents in synchronized sites, which you will never be able to translate to any nested derived sites. They will be removed as target documents without notice.

### Alternative Upgrade Notes:

As alternative to updating the translation workflow definition, you may set `ignoreUpdates` to false for any contents especially in sites which shall receive translations. A UAPI client is required, as the default Blueprint UI does not provide access to this property in translation sites, yet.

### Additional Upgrade Notes for Nested Synchronized Sites

If you happen to have synchronized sites, which are (direct or indirect) childs of a synchronized master site, you may want to check if the state of any `ignoreUpdates` flags, which are set to values different to 0 (thus: interpreted as boolean `true`). You may experience contents, where this flag accidentally ignores updates from master.

[CMS-18511]

## Unauthorized Live Rule Removal

`com.coremedia.cap.content.authorization.AccessControl` provides some methods for rule removal. If you try to remove a rule for a content group without having the SUPERVISE right, the methods fail with an exception. However, for rules of live groups, the methods failed silently. Now, they throw exceptions in this case too. This means that code using these methods will fail upon such errors, where it used to continue before. If you still want your code to continue in case of such errors, wrap these calls in try-catch blocks.

[CMS-18214]

## Workflow validation now also validates dependent content

When starting a new workflow the entire content set including the dependent content is now validated. This will help to prevent most of the issues that can occur before the the workflow is even started. If the validation takes too long it can be stopped directly in the same window. Some changes were necessary to make that possible.

The workflow validation framework which uses the interface `WorkflowValidator` in order to create workflow issues was enhanced. Now it is also possible to include the dependent content within a workflow validation and create issues for it.

A new preparation step, represented by the interface `WorkflowValidationPreparation` was added.

Like this it is now possible to define actions that need to take place before the actual workflow validation. Per default the calculation of dependent content takes place in this preparation step. The content is then passed to the `WorkflowValidator`s.

The translation and publication workflows now offer per default the `TranslationValidationPreparation` and the `PublicationValidationPreparation` which calculates the dependent content.

The validators are now defined in two new configuration classes `PublicationWorkflowValidationConfiguration` and `TranslationWorkflowValidationConfiguration`. They define every validator and all the necessary validation models, using public constants for the bean names, so that everything can be re-used in custom workflows later on.

### Upgrade Steps

If you have custom workflows or custom workflow validation configurations, you will need to adapt the configuration classes as stated below. This for example applies to customizations of workflows provided as part of the Blueprint such as the translation workflow. Not doing so will not only affect issues not being reported but also (less obvious, but based on the same mechanism) calculating dependent contents in some workflows.

1. `com.coremedia.rest.cap.workflow.validation.WorkflowValidationConfiguration` was split into `com.coremedia.rest.cap.workflow.validation.configuration.TranslationWorkflowValidationConfiguration` and `com.coremedia.rest.cap.workflow.validation.configuration.PublicationWorkflowValidationConfiguration`. Update the configuration class of your workflow accordingly.
2. The `com.coremedia.rest.cap.workflow.validation.model.WorkflowValidators`'s constructor now receives `com.coremedia.rest.cap.workflow.validation.model.WorkflowTaskValidators` and `com.coremedia.rest.cap.workflow.validation.model.WorkflowStartValidators` besides the workflow name. You can re-use all existing validators from the translation and publication workflows by referencing the beans by their names. The names are available as constants in the respective configuration classes.
3. Should you have a custom publication workflow, using the `DefaultPublicationValidator`, you need to add a `WorkflowValidatorsModel` for your workflow, and add the necessary validators and preparation to it. The default

validators and preparation are available as beans with the names `PublicationWorkflowValidationConfiguration#PUBLICATION_VALIDATION_PREPARATION` & `PublicationWorkflowValidationConfiguration#DEFAULT_PUBLICATION_VALIDATORS`.

**Translation Workflow** The `DependentContentValidator` was deleted and replaced by the `TranslationValidationPreparation`. `PublicationWorkflow` The `DefaultPublicationValidator` was deleted and split into several `WorkflowValidators` [see above]. \* `PublicationValidationPreparation` \* `PublicationContentRightsWorkflowValidator` \* `PublicationContentStateValidator` \* `PublicationNoAssigneeValidator` \* `PublicationSessionUserRightsWorkflowValidator` \* `PublicationWorkflowUndoWithdrawValidator`

For example, this is a snippet of the updated configuration class of the translation workflow with `GlobalLink` available on CoreMedia Labs:

```
...
@Configuration
@Import(TranslationWorkflowValidationConfiguration.class)
public class GlobalLinkWorkflowValidationConfiguration {
    public static final String GLOBAL_LINK_DUE_DATE_KEY = "globalLinkDueDate";
    public static final String TRANSLATION_GLOBAL_LINK_VALIDATOR_KEY =
        "TranslationGlobalLink";
    public static final String HANDLE_SEND_TRANSLATION_REQUEST_ERROR =
        "HandleSendTranslationRequestError";
    ...
    @Bean
    WorkflowValidatorsModel
    translationGccWFValidators(@Qualifier(TRANSLATION_START_VALIDATORS)
    WorkflowStartValidators translationStartValidators,
    @Qualifier(TRANSLATION_WFNOT_RUNNING) List<WorkflowValidator>
    translationWFNotRunning,
    @Qualifier(TRANSLATION_WFRUNNING) List<WorkflowValidator> translationWFRunning,
    @Qualifier(TASK_ERROR_VALIDATOR) WorkflowValidator taskErrorValidator) {
        ValidationTask runningTask = new ValidationTask(TRANSLATE_TASK_NAME,
        TaskState.RUNNING);
        ValidationTask waitingTask = new ValidationTask(TRANSLATE_TASK_NAME,
        TaskState.ACTIVATED);
        // this validator checks the workflow when an editor activates the
        "HandleSendTranslationRequestError"
        ValidationTask sendTranslationRequestErrorTask = new
        ValidationTask(HANDLE_SEND_TRANSLATION_REQUEST_ERROR);
        WorkflowTaskValidators taskValidators = new WorkflowTaskValidators(
            Map.of(runningTask, translationWFRunning,
                waitingTask, translationWFNotRunning,
                sendTranslationRequestErrorTask,
                List.of(taskErrorValidator));
        List<WorkflowValidator> workflowValidators = new ArrayList<>();
```

```

    // this validator checks the due date parameter of the workflow before
    // being started
    workflowValidators.add(new
GCCDateLiesInFutureValidator(GLOBAL_LINK_DUE_DATE_KEY));

workflowValidators.addAll(translationStartValidators.getWorkflowValidators());

    WorkflowStartValidators gccStartValidators = new WorkflowStartValidators(
        translationStartValidators.getWorkflowValidationPreparation(),
        workflowValidators
    );

    return new WorkflowValidatorsModel(TRANSLATION_GLOBAL_LINK_VALIDATOR_KEY,
        taskValidators, gccStartValidators);
}
}

```

Other changes:

- `WorkflowValidationConfiguration#TRANSLATE_WF_NAM` was moved and renamed to `TranslationWorkflowValidationConfiguration#TRANSLATE_TASK_NAME`
- `com.coremedia.rest.cap.workflow.validation.WorkflowValidationParameterModel` was moved to `com.coremedia.rest.cap.workflow.validation.model.WorkflowValidationParameterModel`

[CMS-17549]

## 5.4.2 CoreMedia Content Application Engine

### Removed SettingsServiceFilter

Removed class `com.coremedia.blueprint.cae.settings.SettingsServiceFilter`. Either use the settings service Spring bean or use the FreeMarker settings functions instead.

[CMS-10328]

### Made CAE SameSite Cookie strategy configurable

The config options prefixed `cae.cookie` control the CAE's behavior when sending cookies. It is now possible to configure the value of the `SameSite` attribute and

whether or not to force all cookies to `Secure` and `HttpOnly`. By default the same site strategy is `None` and cookies are forced to `Secure` and `HttpOnly`.

[CMS-18595]

## cae.hashing.secret changed from max length 32 to min length 32

The secret 'cae.hashing.secret' configured in `CaeSecretConfigurationProperties`, which is used for URL parameter hashing changed from max length 32 to min length 32.

[CMS-18518]

## Single and bulk resource patterns and TTLs for cache control in live CAE have been fixed

The single resources pattern for the cache control configuration in live CAE didn't have any effect because of too many escape characters in the pattern. This has now been fixed. Furthermore, the bulk resource pattern has been improved to not mix up with the single resource pattern, and both cache TTL values for these pattern have been increased to 365 days. Please be aware that with this AMP release the cache control TTLs might change, if you use the default settings.

[CMS-18368]

## Removed the JSP settings taglib functions

Removed JSP settings functions `bp:setting` and `bp:settingWithDefault`. Use model beans accessing the settings service instead.

[CMS-16974]

## Reworked CORS configuration / replaced livecontext.crossdomain.whitelist

The configuration of CORS (Cross-Origin Resource Sharing) for the CAE has been reworked. It is now configured using the `cae.cors.*` configuration properties (see public API). The properties `cae.preview.crossdomain-whitelist` and `live`

`context.crossdomain.whitelist` have been removed. They are replaced by `cae.cors.allowed-origins-for-url-pattern\{path:.*` .

See manuals for more information:

- [Content Application Developer Manual - Solution for the Same-Origin Policy Problem](#)
- [Deployment Manual - CORS Properties](#)
- [Connector for HCL Commerce Manual - Solutions for the Same-Origin Policy Problem](#)
- [Connector for SAP Commerce Cloud Manual - Solutions for the Same-Origin Policy Problem](#)

[CMS-16714]

## 5.4.3 CoreMedia Studio Client

### Studio Client Remote Bean Layer Without ExtJs Dependencies

We cleansed the Studio client remote bean layer of all ExtJs dependencies. this affects the modules `client-core`, `client-core-impl`, `client-core-test-helper`, `cap-rest-client`, `cap-rest-client-impl`, `cap-rest-client-test-helper`.

In order todo so, we changed the following API (some of it public, some not public but potentially in use):

- `PropertyChangedEvent` is now (as the documentation has always stated) only available for Beans and no longer works for `Ext.Component`.
- The `PreviewPanelBase` event `"previewUrl"` no longer provides a `PropertyChangeEvent` but instead provides the two parameters `"oldValue"` and `"newValue"`.
- `RemoteBeanImpl#onWriteSuccess` now has two parameters of type `Response` and `RequestInit`.
- `BeanImpl` no longer inherits from ExtJs' `Observable` but from the new `SimpleObservable`. Instead of `BeanImpl#hasAnyListeners()`, use `BeanImpl#hasListeners()`.
- Instead of `DependencyTracker#dependOnObservable(observable:IObservable, eventName:String)`, use `ObservableUtil#dependOn(observable:IObservable, eventName:String)`.
- Instead of `DependencyTracker#dependOnFieldValue(field:BaseField)`, use `ObservableUtil#dependOnFieldValue(field:BaseField)`.

- EventUtil was moved into the module ui-components but it has kept its previous package.
- The class com-coremedia.ui.i18n.ResourceBundle was moved to the module ui-components. It has kept its previous package but was renamed to ResourceBundleUtil.
- The methods AsyncObserver#start() and AsyncObserver#stop() were removed from the API-

Another change is that the Studio client now always transforms Date values into Calendar values in REST requests. On the Studio server side, DateConverter#convertToCalendar() can be used to unmarshal the value.

[CMS-18485]

### 5.4.4 CoreMedia Workspace

#### Avoid Proxy Generation for Spring Configuration Classes

Spring configuration classes were changed so that the `proxyBeanMethods` attribute is set to `false`. This is breaking only if configuration classes in the Blueprint were adapted in your project in a way that `@Bean` annotated methods are called from project code which should be a very rare case.

[CMS-18259]

### 5.4.5 CoreMedia Frontend Workspace

#### Updated Frontend Dependencies

The `frontend-maven-plugin` used in the frontend workspace has been updated to version 1.11.0 to support Apple Silicon platform. The frontend dependencies have been updated to the latest versions and node.js to latest LTS security release 14.15.4.

[CMS-18733]

## 5.4.6 CoreMedia Commerce Hub

### Enhancement of Commerce Hub configurability

The Commerce Hub client can now be configured on the Spring application level using the config options as described on <https://yidongnan.github.io/grpc-spring-boot-starter/en/client/configuration.html>. The Commerce Hub client uses the property 'endpointName' of the 'commerceSettings' struct as configuration service name. If that service is not configured, the settings are inherited from the default service named 'GLOBAL'. If the property 'endpointName' is not set, the 'endpoint' property is used as both service name and address.

[CMS-13621]

## 5.4.7 CoreMedia Headless Server

### Headless Server did not respond with JSON properties and proper HTTP response code when requesting via a non existing site filter

Headless Server responds now with a real JSON response and the correct content type 'application/json'. As this bugfix changes the behavior, this update is considered potentially breaking. Customers should check their client application whether they rely on the old behavior.

[CMS-18620]

## GraphQL Extended Scalars Library updated

The 'graphql-java-extended-scalars' library was updated to version 15.0.0 to be future proof for upcoming updates of graphql-java. Along with this update, the class `com.coremedia.caas.schema.CoercingBigDecimal.java` became redundant and was deleted.

[CMS-18240]

## 5.4.8 Miscellaneous

### Migrated Commerce Cache Capacities and Timeouts to Spring Boot Cache Configurations

The configuration options `commerce.hub.cache.capacities`, `commerce.hub.cache.timeout-seconds`, `livecontext.ecommerce.cache.*.capacity`, and `livecontext.ecommerce.cache.*.time` are deprecated. Use `cache.capacities.ecommerce` and `cache.timeout-seconds.ecommerce` followed by the respective commerce feature token instead. This feature token must now be lowercase. Note that `com.coremedia.blueprint.base.livecontext.ecommerce.common.AbstractCommerceCacheKey` internally converts given feature tokens to lowercase so that its `cacheClass` returns the corresponding 'ecommerce.FEATURE' token for cache configuration lookup.

A complete list of migrated properties is available in `commerce-cache-defaults.properties` provided by the `bpbase-lc-common` module.

[CMS-17868]

### No test-jars

Due to shortcomings in Maven's dependency model regarding the test scope, we do not use test-jars any longer. The relevant functionality of test-jars has either been copied or moved to separate test utility artifacts. Some test-jars have even been dropped without replacement, because they were unused meanwhile or had only been created accidentally ever since. In case you miss any features used by your project tests, please contact the CoreMedia support.

[CMS-14400]

## Image transformation: sharpen applied only once but after scaling

In some cases images were sharpened twice. This could result in unwanted image artifacts. Now the sharpening of images is only applied once after scaling which results in better quality of images.

**Upgrade Steps** The method `TransformImageService#getTransformationOperations(Content content, String property)` had to be changed to prevent the over-sharpening. If a transformation is not defined in the content itself, the method only returns the crop operations from the `Responsive Image Settings`. Sharpening only applies if an image is actually scaled.

You can still access the transformation including all other operations by requesting it through `TransformImageService#getTransformation(Content media, String transformName)`.

[CMS-18778]

## Sitemap URLs

So far, CoreMedia's sitemap URLs started with the prefix `/service/sitemap`. This was a violation of the <https://www.sitemaps.org/protocol.html> standard (section "Sitemap file location"), which requires that sitemap files include only URLs that start with the same path as the sitemap file itself. CoreMedia's sitemaps include URLs like `https://f.q.d.n/resource/blob/.../datasheet.pdf` and `https://f.q.d.n/corporate-en-gb/details/charlotte-may-9802`, which differ in the very first path segment. Thus, the sitemap URLs must not have a path at all, but may consist only of a single segment. Therefore, the paths of sitemap URLs have been flattened from `http://f.q.d.n/service/sitemap/61e75a956d912104971e03ffc6175869/sitemap_index.xml` to `http://f.q.d.n/service-sitemap-61e75a956d912104971e03ffc6175869-sitemap_index.xml`, assuming that the `service-sitemap-<siteId>` prefix is sufficiently specific, so that it will not collide with any vanity URLs or root channel segments.

The old handler method is still in place, so that existing sitemaps continue to work.

[CMS-11868]

## 5.5 Upgrade to 2010.1

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

#### Content Server Database Change

When the *Content Server* starts the first time after upgrading from version 2004 or 2007, it will automatically adapt database tables and remove existing unique constraints for the `versionUuid` column of all document type tables. For Microsoft SQL Server and IBM DB2, and when upgrading from 2007.1, wrong unique constraints are also removed from the `uuid` column of tables `CmUsers` and `CmGroups`.

The constraints are replaced with plain database indices. The database constraints were originally introduced with 2004.1 and 2007.1 but are not helpful and can cause problems. This also fixes a bug for SQL Server and DB2 databases, that the Content Server is unable to import an Active Directory user, if the user account has been disabled and re-enabled again in Active Directory.

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. This is even more important for this change.

[CMS-18049]

#### Update of mongo-java-driver

The `mongo-java-driver` 3.11.2 has been updated to `mongodb-driver-legacy` 4.1.0 and `mongodb-driver-core` 4.1.0. This change required breaking changes as several classes and methods have been deprecated.

Breaking changes are not propagated to CoreMedia public API, but if custom implementations make direct use of MongoDB API, changes may be required.

[CMS-17590]

## Fix for possible false calculation of Dependent Content for Synchronization-Workflow

When you use the Synchronization workflow from version 2007.1, it is necessary to reupload the `synchronization.xml`, to ensure that dependent content is calculated correctly for synchronization. Also the class `DefaultStartSynchronizationWorkflowFormBase` was adapted to ensure that values of additional workflow fields, implementing the `IAdditionalWorkflowDisplayField Mixin` are passed to the Synchronization workflow (the Translation workflow is not affected by this).

[CMS-17933]

## Corba over SSL

The SSL encryption of CORBA traffic was broken, so that a configured SSL port just served unencrypted data, equivalent to the clear text port. This has been fixed now.

[CMS-17723]

## Publisher monitoring

The JMX monitoring interface records failed publications due to an unavailable *Master Live Server* as failed publications now. Previously, such publications were not counted at all.

[CMS-16763]

## translate.xliff.export.excludeContentName defaults to true

Because translating content names may harm your system, the default for `translate.xliff.export.excludeContentName` has been changed from `false` to `true`. Having this, content names will by default not be part of your XLIFF anymore.

For details on possible impact setting `excludeContentName` to `false`, consult the *Blueprint Developer Manual*, section *Translation Workflow/Translation Workflow Properties*.

To restore the old behavior, adapt for example `application.properties` in `studio-server-app` accordingly.

It is recommended, if you export XLIFF as part of your workflows, to adapt the workflow-server configuration accordingly.

[CMS-16730]

## Localization Workflows: Automatic merge of Annotated LinkLists

In translation workflows, annotated LinkLists (`CMTeaser#targets` and `CMCollection#extendedItems`) were **not** merged automatically in previous releases, which lead to problems in derived content. Reason was, that the properties have been marked as "translatable" in the document type definition (`blueprint-doctypes.xml`). Now the "translatable" attribute has been removed to enable the automatic merge, and the improved merge algorithm for struct lists is configured for translation and synchronization workflows. To enable translation of the property `CMTeaser#targets.links.callToActionCustomText`, it is configured as "translatable expression". Note that the changed merge algorithm implicates a different merge behaviour for synchronization workflows.

[CMS-16514]

## cm serverimport: No Suppressed Errors Anymore

Previously, `cm serverimport` may have ignored errors on import silently unless you set the `--halt` option. Now, you will always get a warning on any error.

Note, that it is still recommended using the `--halt` option by default, as you may otherwise get undesired states.

[CMS-11155]

## 5.5.2 CoreMedia Studio

### Fixed Lazy Loading and Content Hiding in Repository View of the Library

The user preference "Show Products and Categories as Content" has been fixed. In addition to this, the lazy loading for the repository tree view has been fixed too.

In order to fix the lazy loading problem, the interface *TreeFilter.as* has been removed from the product. It was used by the plugin *RegisterLibraryTreeFilter* which also has different configuration attributes now. An example usage can be found in the file *CatalogStudioPlugin.mxml* of the Blueprint. Instead of passing a *TreeFilter* instance, the plugin simply takes an absolute or site-relative path as input parameter. This path is then hidden from the user.

[CMS-14533]

## 5.5.3 CoreMedia Studio Client

### Jangaroo Version Updates

To use the new feature of *lazy singletons*, Studio Client uses a new version of Jangaroo. Support for lazy singletons has been added to the run-time (in `jangaroo-libs` 4.0.52), which is fully compatible. The compiler (in `jangaroo-tools` 4.0.72) supports the new annotation `Lazy`, which is also not a breaking change. For details, see [J00-152](#). Note that the update also contains a number of **fixes and improvements** regarding type-checking, which may reveal type errors in ActionScript/MXML code. So in the unlikely case that after the update, you encounter compile errors in Studio Client, please consult the above issues to fix those type errors in your code.

[CMS-18179]

## Moved classes SitesService, Site, SiteModel

The following public API Actionscript classes have been moved into the new module 'studio-client.multi-site-models'. They are now in the package 'com.coremedia.cms.studio.multisite.models.sites'. Otherwise, they kept their signature and behave as before.

- SitesService
- Site
- SiteModel

To access the sitesService, you can still use the EditorContext. However, it is recommended to use the new global constant 'com.coremedia.cms.studio.multisite.models.sites.global.sitesService'.

[CMS-18057]

## New method in IAdditionalWorkflowDisplayFieldMixin

The new `remoteValidationCallback` method must be implemented by all Fields, implementing the IAdditionalWorkflowDisplayFieldMixin. The method `remoteValidationCallback` will be called after every workflow validation and allows the Field to adapt its validation state according to the returned workflow issues.

[CMS-17575]

## WorkflowDateTimeField can adapt validation state according to WorkflowIssues

The WorkflowDateTime field has a new property `issueKeysForValidationState`, which can be used to pass issue keys to the field. When a workflow validation produces issues with the severity warn or error and an issue key matches a value from the `issueKeysForValidationState`, the field will adapt its validation state.

[CMS-17911]

## StartWorkflowFormBase was adapted

The `StartWorkflowFormBase` .as now has a `StartWorkflowFormState` that can be used to pass the initial contents to the Form.

[CMS-17843]

## 5.5.4 CoreMedia Workspace

### Activate HTTP2 (h2c) for studio-client container

With this change, the nginx webserver serving the static files of the studio-client application, will accept only http2 requests. In order to accept HTTP/1.1 you need to set the environment variable `PROTOCOL` to an empty value.

Nginx cannot serve both protocols on the same port by upgrading the protocol during the handshake, therefore we need to tell Traefik to directly speak h2c by setting the label `traefik.protocol: h2c` on the container. Any healthcheck to this container using `cUrl` needs to set `--http2-prior-knowledge` on its requests.

To make this healthcheck work, the underlying nginx base image had to be updated to `1.19.2` .

To accept the environment variable in its configuration, the `default.conf` file is now a template as described in the DockerHub [nginx](#) image description.

[CMS-13480]

## 5.5.5 CoreMedia Frontend Workspace

### Updated Frontend Dependencies

The `frontend-maven-plugin` used in the frontend workspace has been updated to version 1.10.3. The frontend dependencies, have been updated to the latest versions and node.js to latest LTS version 14.15.0.

Update steps:

If you are working with the Frontend Workspace we recommend to also upgrade your local installation of node.js to 14.15.0 and yarn to 1.22.5.

[CMS-18481]

## Product availability calculation

Product availability calculation has been changed in 2007.1 to no longer be based on the (deprecated) `Product#isAvailable`. The logic however did not cover the old default if no availability service was provided for the commerce integration. If this was the case the old implementation did return "true" while the implementation in 2007.1 did return "false". This was not intended, so we changed the logic back to return "true".

[CMS-17979]

## 5.5.6 CoreMedia Deployment

### S3 media store configuration changed

The configuration of the media store `S3Store`, which maintains blobs in AWS S3, has changed. If you use a custom `S3Store` media store with an empty value for `storeDir`, no prefix for the blob path in the S3 bucket is applied now. The `S3Store` used to prepend an unnecessary `/` in this case. If you configure the `S3Store` by defining the property `cap.server.blobstore.s3.bucketname`, the default value for `cap.server.blobstore.s3.rootdir` is now an empty string and not `blobstore/file` as before.

If you use the `S3Store` explicitly and have configured an empty value for `storeDir`, change the value to `/`, so that the server expects the blobs in their old position.

If you configure the `S3Store` by defining the property `cap.server.blobstore.s3.bucketname` and do not set the property `cap.server.blobstore.s3.rootdir` so far, set `cap.server.blobstore.s3.rootdir` to `blobstore/file`, so that the server expects the blobs in their old position.

If you configure the `S3Store` by defining the property `cap.server.blobstore.s3.bucketname` and set the property `cap.server.blobstore.s3.rootdir` to the empty string, change `cap.server.blobstore.s3.rootdir` to `/`, so that the server expects the blobs in their old position.

[CMS-16139]

## 5.5.7 CoreMedia Commerce Hub

### Use WCS adapter profiles with version specific configurations in compose file

Since version `1.3.14`, the `commerce-adapter-wcs` provides Spring profiles for the WCS/HCL versions that are supported. These profiles configure the suitable URLs that are required to connect to the WCS/HCL Commerce system. The environment variables that are passed to the `commerce-adapter-wcs` application have been changed in the Docker Compose `commerce-adapter-wcs.yml` file to using these version profiles. The variables that are configured by the version profiles have been removed from the `commerce-adapter-wcs.yml`. If desired, it is still possible to set all properties in the `commerce-adapter-wcs.yml`.

[CMS-18162]

## 5.5.8 CoreMedia Connector for HCL Commerce

### Removed deprecated API concerning product availability

The following deprecated methods of `com.coremedia.livecontext.ecommerce.catalog.Product` have been removed:

- `isAvailable`
- `getTotalStockCount`
- `getAvailabilityMap`

The following deprecated classes have been removed:

- `com.coremedia.livecontext.product.ProductAvailabilityHandler`
- `com.coremedia.livecontext.product.ProductAvailabilityDynamicIncludePredicate`

The following deprecated properties have been removed from product related types in `schema.graphql` and `commerce-schema.graphql` :

- `available`
- `totalStockCount`

The following deprecated templates contained in example brick "fragment-scenario" have been removed:

- `Product.availabilityFragment.ftl`
- `ProductVariant.availabilityFragment.ftl`

[CMS-17790]

## 5.5.9 CoreMedia Connector for SAP Commerce Cloud

### SAP Commerce Cloud 2005 Support

SAP Commerce Cloud 2005 is supported now.

To connect to SAP Commerce Cloud 1905, the `commerce-adapter-hybris` must be started with Spring profile `hybris-1905` activated.

[CMS-17799]

## 5.5.10 CoreMedia Headless Server

### AssetSearchService in commerce extension now uses a dedicated SearchResultFactory

`AssetSearchService` in commerce extension now uses a dedicated `SearchResultFactory`. Furthermore the factory uses a default caching time of 300 seconds (=5 minutes). The caching time is configurable by the config parameter `'caas.commerce.assetsearchservice.cache.seconds'`. The change is considered breaking as the caching time was previously set by `'caas.querylist.search.cache.seconds'`, which may contain a different value than the new default of 300 seconds.

Additional bugfix: The caching time of 'caas.querylist.search.cache.seconds' was used by the common SearchResultFactory and 'caas.search.cache.seconds' by QueryList-SearchResultFactory, meaning they were mixed up. The usages are now fixed.

[CMS-18188]

## Update of graphql-java

The dependency com.graphql-java:graphql-java has been updated to version 15.0 and corresponding com.graphql-java:graphql-java-spring-webmvc to version 2.0. With the graphql-java update, non-standard scalars need to be defined explicitly now. For more breaking changes that may affect custom code, see release notes of graphql-java.

[CMS-17662]

## Set row limit for AssetSearchService with correct config value

Previously the row limit of the commerce AssetSearchService, used for linked objects on commerce objects, was set with a wrong config parameter. This is fixed, introducing a dedicated new config parameter: 'caas.commerce.assetsearchservice.limit'. The default is -1 = unlimited.

This fix is considered potentially breaking! The wrongly used config value was 'caas.search.cache.seconds' with a default of -1. In case, this config parameter was set to a positive value, the new default of the new config value might change the behaviour for the size of the result set of linked objects of commerce objects.

[CMS-18158]

## Headless now always sends JSON body with JSON properties and proper HTTP response code

Depending on the useragent, Headless Server sends the default Spring mvc white label error page, in case of invalid requests, for example, missing query. Headless Server now makes sure to always send a JSON body with dedicated JSON properties and the proper HTTP response code.

Because this update introduces changes on the protocol layer between the Headless Server and any client, this update is considered potentially breaking.

[CMS-18039]

## 5.5.11 Miscellaneous

### Spring ConfigurationProperties for UserProvider

Spring ConfigurationProperties for UserProvider

The configuration for `UserProviders` used to reside in a separate file, typically named `jndi-\*.properties`. Now, the configuration has been migrated to `Spring ConfigurationProperties`, which simplifies deployment. The content-server configuration already had a (List-valued) subgroup `cap.server.ldap` with two properties, `provider-class` and `properties`. `cap.server.ldap` has been renamed to `cap.server.userproviders` and features all the options you know from the old `jndi-\*.properties` files, or from the property name constants in `LdapUserProvider`. Thus, you can configure a `UserProvider` completely in one place. The minimal configuration for a standard `ActiveDirectoryUserProvider` looks like this now:

```
cap.server.userproviders[0].provider-class=com.coremedia.ldap.ad.ActiveDirectoryUserProvider
cap.server.userproviders[0].java.naming.security.principal=CN=Administrator,CN=Users,DC=acme,DC=com
cap.server.userproviders[0].java.naming.security.credentials=secret
cap.server.userproviders[0].ldap.host=activedirectory.acme.com
cap.server.userproviders[0].ldap.base-distinguished-names[0]=CN=Users,DC=acme,DC=com
```

As you can see from the prefix, the properties have been renamed, and the property name constants in `LdapUserProvider` have been deleted. See the `ConfigurationProperties` class `com.coremedia.ldap.LdapUserProviderConfigurationProperties` for the new property names (you will easily recognize them), and `com.coremedia.ldap.JndiConfigurationProperties` for the supported `java.naming` properties.

Moreover, there is a generic Map-valued property `cap.server.userproviders#.properties` which can be used for (custom) properties that are not modeled explicitly by the `ConfigurationProperties` classes. In particular, you can use this Map to set additional `java.naming` properties that are not covered by `com.coremedia.ldap.JndiConfigurationProperties`, and the `LdapUserProvider` will propagate them to the JNDI framework. In `application.properties` notation, it would look like this:

```
cap.server.userproviders[0].properties[java.naming.language]=en
```

`IdapUserProvider` and some subclasses had a constructor that took the `jndi-\*.properties` file as argument. These constructors have been deleted. They have never been used anyway, and they do not make sense any longer, since we abandoned the `jndi-\*.properties` files. If you have overridden this constructor in your own `UserProvider`, just delete it. Only the (implicit) `NoArg` constructor is used. The signature of `UserProvider#initialize` has changed: The argument used to be the `jndi-\*.properties` file URL, now it is the `Map` of generic properties mentioned above.

[CMS-16842]

## Removed default image transformations

Since the first release of CoreMedia Content Cloud, `TransformImageService.getTransformations()` adds a fallback configuration (defined in Spring configuration `mediatransform.xml`) to the list of available transformations. If an image transformation is not defined in the `responsiveImageSettings` settings content of the site then the corresponding default is applied. The `mediatransform.xml` included some default image transformations, which were overwritten in the Blueprint Demo sites. However, these defaults apply to new sites too even if these sites use completely different crops. This could lead to undesired results and for this reason we removed the default image transformations in `mediatransform.xml`.

**Update steps:** If your sites depend on the Blueprint's default image transformations defined in `mediatransform.xml`, either keep the global defaults or add them to each site. For all other projects, nothing has to be done.

[CMS-16800]

## Global image variants will be loaded when no site is available

The `TransformImageService` didn't find any image variant in the content repository if no site for the given content can be resolved. To resolve the global image variants as a fallback the interface `VariantsStructResolver` has been extended by the method `getGlobalVariants()` which returns the global variants from `"/Settings/Options/Settings/Responsive Image Settings"`.

[CMS-18202]

## Update Maven-Surefire-/Failsafe-Plugin to 3.0.0-M5 and test libraries

`maven-surefire-plugin` and `maven-failsafe-plugin` have been updated to 3.0.0-M5. This fixed a bug, that tests which failed within the setup phase of a test instance were not marked as failed.

Thus, after upgrade, you may experience tests, which fail afterwards. This typically signals tests, which were silently ignored before this update. We stumbled across such an issue within Spring based tests, where required beans were missing in the test context.

While doing the Maven plugin updates, we also updated testing libraries especially because JUnit and Surefire/Failsafe have a strong interaction. The following libraries have been updated to the given versions:

- JUnit Jupiter (aka JUnit 5; API, Params, Engines): 5.7.0-RC1
- JUnit 4: 4.13
- Mockito (Core and JUnit Jupiter extension): 3.5.7
- AssertJ: 3.14.0

**One additional learning from the migration:** Depending on your build process you may experience classes not being found when executing `maven-failsafe-plugin`. This is due to a change in the behavior of the default of the `<classesDirectory>` configuration which clashes with some repackage-JAR mechanisms. If you experience class loading issues after upgrade, you may want to consider a workaround we used, which is explicitly setting `<classesDirectory>`:

```
<configuration>
  <classesDirectory>${project.build.outputDirectory}</classesDirectory>
</configuration>
```

[CMS-17989]

## 5.6 Upgrade to 2004.1

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.

### 5.6.1 CoreMedia Core

#### Universally Unique Identifiers (UUIDs) for Content and Version

The *Content Management Server* maintains stable and universally unique identifiers (UUIDs) as specified in [RFC 4122](#) for content items and versions. Existing and newly created contents and versions get a random UUID in addition to existing numeric content IDs and version numbers. UUIDs are not meant to replace existing IDs, and IDs can be used for all purposes as before. Note, that UUIDs are currently only available on the Content Management Server, and not on live servers.

##### Upgrade:

The *Content Server* automatically adds new database table columns for UUIDs when started. This affects both management and live servers. If the database is Microsoft SQL Server or DB2, then you have to set the configuration property `sql.schema.alterTable=true` once when starting a *Content Server*.

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. This is even more important for this change.

The *Content Feeder* now feeds the content's UUID and the UUID of its latest version. To this end, the fields `uuid` and `latestversionuuid` were added to the Solr schema in `apps/solr/modules/search/solr-config/src/main/app/configsets/content/conf/schema.xml`. You can invoke the *Content Feeder*'s JMX operation `reindexAll` of MBean `AdminBackgroundFeed` with the aspect parameter set to `"uuid"` to set UUIDs of already indexed content. The Search Manual explains re-indexing in general in section "Search Engine | Reindexing | Partial reindexing of Content Feeder indices". It is recommended but not required to perform this re-indexing step.

UUIDs for existing content and versions are generated lazily on the *Content Management Server* when the content or version is accessed the first time after the upgrade. This entails a small performance penalty, but only for the very first access. If you follow the recommendation to let the *Content Feeder* index UUIDs for existing content as described above, then lazy generation of most UUIDs will happen early as side-effect.

### Unified API:

In the *Unified API*, the following methods have been added for UUID support:

- `ContentObject#getUuid()`
- `ContentRepository#getContent(UUID)`
- `Content#getVersion(UUID)`
- `ContentCreatedEvent#getUuid()`
- `ContentDestroyedEvent#getUuid()`
- `ContentRevertedEvent#getUuid()`
- `VersionDestroyedEvent#getUuid()`

The event classes `ContentCreatedEvent`, `ContentDestroyedEvent`, `ContentRevertedEvent`, and `VersionDestroyedEvent` also got new constructors that take an additional UUID parameter. The existing constructors without UUID parameter have been marked as deprecated. Furthermore, the existing method `ContentRepository#getContent(String)` can now also be called with a content UUID's string representation to lookup a content by its UUID.

If the *Unified API* is connected to a live server or to a server of a previous release, then methods that would return a UUID will return `null` instead.

The *Unified API Developer Manual* mentions UUIDs in the new section "The Content Repository | UUIDs".

### Tools:

- `cm dump` now also outputs the UUID of contents and versions
- `cm` tools that accept UUIDs as input parameter: `dump`, `publish`, `query`, `approve`, `destroy`, `cleanversions`, `serverexport`

[CMS-16509]

## Maturing Translation API: TranslatablePredicate and TranslatablePredicateConfiguration

In order to mature our experimental translation API, we had to refactor `com.coremedia.translate.TranslatablePredicate`. Instead of implementing `isTranslatable(CapPropertyDescriptor):boolean` you now need to implement `isTranslatable(List<CapPropertyDescriptor>):boolean`.

The change makes the implementation of `com.coremedia.translate.TranslatablePredicate` straightforward and less error-prone (caused by the slightly different semantics of the existing old methods).

In addition to that, we also eased adding more predicates to decide upon the translatable state of a property descriptor. Instead of having to adapt the bean named `translatablePredicate` in `TranslatablePredicateConfiguration`, you can now just add additional predicates to your Spring context. All existing predicates will be ORed to decide, if a property descriptor is considered translatable or not. A positive decision of any predicate cannot be vetoed.

If for any reason, you need a veto-algorithm, you still need to override the bean `translatablePredicate`.

### Upgrade:

The upgrade path differs for API usages and API implementations.

### API Usages:

If you used `isTranslatable(CapPropertyDescriptor):boolean` only, your code most likely does not need to be adapted at all. A compatible API still exists and will exist in future versions. Note though, that the compatible method `isTranslatable(CapPropertyDescriptor...):boolean` will only return `true`, if the last element of the list shall be considered translatable. Prior to this change the old method `isTranslatable(CapPropertyDescriptor):boolean` was documented, that it shall return `true`, if nested properties (for Structs) may exist, which are translatable.

### API Implementations:

As API implementor you will experience, that your project won't compile. This is because the interface now requires implementing `isTranslatable(List):boolean`.

A compatible replacement for `isTranslatable(CapPropertyDescriptor):boolean` will just check for the first element of the list to be

translatable. You may use the new method `TranslatablePredicate.testFirst(Predicate, List):boolean` as mentioned below for lambdas.

If you want to widen your implementation for Struct use-cases the following approach is suggested:

- Rename your implementation of `isTranslatable(CapPropertyDescriptor):boolean` to `isDescriptorTranslatable(CapPropertyDescriptor):boolean` and make it private.
- Implement `isTranslatable(List):boolean` as follows:

```
@Override
public boolean isTranslatable(List<? extends CapPropertyDescriptor>
descriptors) {
    return descriptors.stream().anyMatch(this::isDescriptorTranslatable);
}
```

### Special Note on Lambdas:

If you used a lambda to implement `TranslatablePredicate` you will get an error as the input argument changed from `CapPropertyDescriptor` to `List<CapPropertyDescriptor>`. A sufficient change would be to get the first element of the list and continue to check that element. The possible `NoSuchElementException` is acceptable, as it is an error, if an empty list is passed to the predicate.

As alternative, a convenience API exists, which is meant to ease your upgrade process. Instead of:

```
TranslatablePredicate tp =
    d -> "xml".equals(d.getName());
```

you may change this to:

```
TranslatablePredicate tp =
    ds -> TranslatablePredicate.testFirst(
        d -> "xml".equals(d.getName()),
        ds
    );
```

[CMS-16402]

## Elastic-Social and MongoDB properties have changed.

The following Elastic-Social properties have changed. Previous versions are still working but have been deprecated and should be migrated:

- es.registration.mails.enabled -> elastic.social.mails.onRegistration
- es.profile.changes.mails.enabled -> elastic.social.mails.onProfileChanges

Previously deprecated properties

- es.comments.\*
- es.users.\*

are now obsolete.

The following MongoDB properties have changed. Previously deprecated properties

- es.counters.\*
- es.models.\*
- es.mongodb.\*
- es.taskQueues.\*

are now obsolete.

[CMS-13113]

## Known Issue: Release cannot be used with DB2 database

The release contains a known issue which makes it impossible to use DB2 as database for the Content Server. Do not try to upgrade to this release, if you are using DB2. A fix will be delivered in one of the next releases.

[CMS-17785]

## CMResourceBundle localizations in Translation Workflows

The property "localizations" of document type "CMResourceBundle" is no longer marked with attribute `extensions:automerge="true"` in the Blueprint document type definition in `modules/server/doctypes/src/main/resources/framework/doctypes/blueprint/blueprint-doctypes.xml`. It was removed to avoid that translation workflows always run into merge conflicts when `CMResourceBundle` value changes are propagated to an existing and already translated derived content.

After this change, structural changes like adding new localized keys to a `CMResourceBundle` must be applied by the translator in a translation workflow. Alternatively, you may decide to keep the attribute `extensions:automerge="true"` for the `CMResourceBundle` document type definition, and keep the existing behavior.

(CMS-16568)

## MongoDB: New TTL index for events\_ collection

A new TTL (Time To Live) Index of 5 min is introduced for property "creationDate" in collection `events_` (database: `blueprint_internal_models`). The index is required to reduce network traffic between MongoDB and ModelService (e.g. in Studio) due to event handling. The index can be configured via Configuration Property `elastic.core.event-collection-ttl-sec`. Set to 0 to disable the index. Note that the existing index on field "creationDate" must be dropped manually for existing MongoDB deployments, before the new index is created. Otherwise the new index cannot be created.

(CMS-16561)

## Unified API in Workflow Server

The Workflow Server defines the Unified API bean `connection` and all associated repository and service beans in the same way as other applications now. That means that the beans are available for synchronous injection into custom beans. It is no longer necessary to use an `ObjectProvider` for this purpose. You can share bean definitions across the Workflow Server and other applications now.

If you have defined custom beans `contentRepository`, `workflowRepository`, `cache` or the like, you should remove your own definitions and use the default beans.

[CMS-10928]

## Translation Workflow Excludes Translatable Nested Properties From Auto-Merge

The "Auto-Merge" feature used in translation workflows to copy non-translatable property values from master to derived contents has been improved to exclude translatable properties nested in struct properties. In previous releases, nested properties that were marked as translatable were both passed to translation, and copied ("auto-merged") from master to derived, which could have led to warnings about merge conflicts in the workflow. One example of such a nested property is the translatable "call to action button text" of the teaser options for a Blueprint's CMArticle content, which is now correctly ignored by the "auto-merge" logic.

Note, that you must re-upload the translation workflow definition using `cm upload` for this to become effective.

As part of this change, the Blueprint configuration for the `translate.xliff.translatableExpressions` bean has moved from `apps/studio-server/modules/studio/studio-blueprint-component/src/main/resources/META-INF/coremedia/component-studio-blueprint.xml` to the newly added Blueprint Maven module `com.coremedia.blueprint:multi-site` in `shared/common/modules/shared/multi-site/src/main/resources/com/coremedia/blueprint/common/multisite/translation-config.xml`. The new module makes the configuration available in the *Workflow Server* as well. If you have changed the configuration, then you must make sure to move it to the new file.

[CMS-10850]

## 5.6.2 CoreMedia Content Application Engine

### Configurable P13N Dynamic Include Behavior

The behavior of P13N Dynamic Includes is now configurable. You can decide to use the container based approach that declares a whole container which contains any p13n relevant content as uncacheable (default behavior, nothing new) or switch to the new approach which will declare single items inside the containers as uncacheable by adding

and enabling a new boolean setting `p13n-dynamic-include-per-item` to the page.

The latter has the advantage that single placements containing a large number of items can still be cached partially if p13n content is contained. Please note that this will only work as expected if you do not use the (now deprecated) `getFlattenedItems` method of the `com.coremedia.blueprint.layout.Container` interface. Please also check the corresponding new section "Rendering Container Layouts" of the frontend developer manual for a possible approach to get rid of `getFlattenedItems`.

## Upgrade Notes

The behavior is fully backwards compatible so in case you did not make any adjustments there is nothing to do.

In case you have made modifications to how p13n dynamic include work please note that the constant `P13N_DYNAMIC_INCLUDES_SETTING` of the class `com.coremedia.blueprint.personalization.include.P13NDynamicContainerStrategy` has been moved to `com.coremedia.blueprint.personalization.include.P13NDynamicIncludeSettings`.

In addition to this the existing (but in our default configuration unused) class `com.coremedia.blueprint.personalization.include.P13NIncludePredicate` now also takes the p13n settings into account. In case you have used the predicate you can decide to add the aforementioned settings to your root channel or preserve the implementation of the version you are migrating from.

[CMS-17169]

## Removal: BlueprintFreemarkerFacade functions

The followings methods of `BlueprintFreemarkerFacade` have been removed.

- `cssClassFor`
- `cssClassForFirstLast`
- `cssClassForOddEven`
- `cssClassAppendNavigationActive`

Please use Freemarker built-ins as replacement.

[CMS-16571]

## Calista via Commerce Hub

Calista now is integrated via Commerce Hub. In order to switch to the integration via Commerce Hub, you need to configure the commerce adapter endpoint in the LiveContext Settings document of the Calista site. The former HCL specific code in the Blueprint below path "blueprint/modules/extensions/ecommerce-ibm" is not used anymore for Calista (IBM/HCL content led integration scenarios).

[CMS-16446]

## Removed OSM CAE Extension

The OSM CAE extension is not maintained anymore and has been removed from the product.

[CMS-15297]

## Removed deprecated default implementation for code compression in CAE

Our default implementation for JavaScript and CSS compression utilizing the YUI compressor has been removed from the `CAE` as this is now handled in the `Frontend Workspace` during the production build of a theme.

This means that without any adjustments the `disableCompress` property of the `CMAbstractCode` document type no longer has any effect. Because of this the corresponding property editors in the CSS and JavaScript Studio Forms have been removed.

Please note that the core functionality still exists and you can reenable the code compression by providing you own minifier. For this the interface `com.coremedia.blueprint.cae.view.processing.Minifier` needs to be implemented and provided to the corresponding beans of type `com.coremedia.blueprint.cae.view.MergeableResourcesView`. To readd the property field you can either directly edit the corresponding studio form code or write a suitable plugin that readds the checkboxes.

[CMS-12372]

## Container#getFlattenedItems is deprecated

The method `getFlattenedItems` of `com.coremedia.blueprint.common.layout.Container` is now deprecated and will be removed in the next major version.

The main reasons for this change (among others) are that flattened items does not work well with the dynamic include mechanism of the CAE (especially regarding Personalization features) and that it breaks the preview based editing by cutting of hierarchical information.

All example bricks and themes have been adjusted so they do not make use of `getFlattenedItems` anymore. API bricks are not affected.

### Upgrade Notes

Please check the new section "Rendering Container Layouts" of the Frontend Developer Manual for a possible approach to get rid of the usages of flattened items in your bricks and themes.

As all the code is available in the `CoreMedia Blueprint` you can also keep the implementation of `getFlattenedItems` by creating a copy but please note that we do not further build on this approach and we cannot guarantee that all coming feature will continue to work.

[CMS-11877]

## Removal: ContentBeanPrefetcher

Class `com.coremedia.objectserver.beans.ContentBeanPrefetcher` was removed. The content bean prefetcher loaded content beans and their dataviews into the CAE cache. However, it is far more common to run warm-up scripts issuing HTTP request against CAE instances.

[CMS-11112]

## Removal: CachingContentBeanFactoryWrapper

Class `com.coremedia.objectserver.beans.CachingContentBeanFactoryWrapper` was removed. The content bean caching aspect was moved to `com.coremedia.objectserver.beans.AbstractBasicContent`

`BeanFactory` which is a super class of `com.coremedia.objectserv  
er.beans.SpringContentBeanFactory`.

[CMS-8659]

## View Inclusion Cycle Check

Projects frequently encounter stack overflow errors which are caused by cyclic view inclusions due to particular constellations of content and template structures, like self targeting teasers. Now, the CAE checks for such cycles and breaks them with a detailed `ViewException`.

Unfortunately, the check is not absolutely reliable, but may produce false positives. (A reliable check would require `View` objects to support equals. We did not want to go that far.) Known patterns for false positives are:

- A `View#render` implementation invokes `ViewUtils#render` with the same bean + viewName, but just a different `View` object. (Consider invoking `View#render` directly, rather than `ViewUtils#render`).
- The `ViewDispatcher#getView` implementation is not determined by its arguments, but considers environmental data.

There are no known false positives in the standard Blueprint, therefore the check is active by default. If you encounter such cases in your project, you can switch off the check by setting `view.cyclecheck=false` in the CAE's application properties. With the check being disabled, the CAE behaves backward compatible.

[CMS-6450]

## Added implicit conversion of "true" and "false" to SettingsService

When accessing a setting with the expected type `Boolean` the `SettingsService` will now implicitly convert `"true"` and `"false"` to the corresponding `Boolean` value. Other `String` values will still produce a `MismatchingSettingsTypeException`.

[CMS-13551]

## 5.6.3 CoreMedia Studio

### New Database schema for upcoming 'Editorial Comments' feature

Editorial Comments are the next big feature for the editorial workflow in the CoreMedia Studio. The first release of this feature is nearly completed and we are currently polishing the user experience in the CoreMedia Studio. This AEP includes a number of underlying changes, preparing CoreMedia Content Cloud's foundation, so that we can make the feature generally available as soon as possible.

Editorial comments require an additional relational database schema, which may co-exist with your existing database instances, for example, the one hosting the content management server. The Studio Server now accesses this new schema called `cm_editorial_comments`. This schema has to be set up according to the [Studio-Developer-Manual](#) section [Editorial Comments Database Configuration](#) and [Editorial Comments Configuration](#). The setup of the tables will be performed by Liquibase during the Studio Server's startup.

In case of a rollback after having upgraded, the new schema `cm_editorial_comments` won't be accessed anymore and can be removed manually from the database. Please consider that there are other changes in this release like the newly introduced UUIDs that will then need extra attention.

[CMS-16995]

### Library: Lazy Loading for Categories

The category tree in the library loads its categories lazy. This implies that the categories are not sorted by name anymore in the library. Lazy loading can be enabled/disabled in the [Preferences](#) in Tab [Product Catalog](#). In versions prior to 2004.1 lazy loading is disabled by default. From 2004.1 on lazy loading is the default.

[CMS-16973]

## Content Hub API: Pagination for improved performance with large external repositories

The Content Hub now supports pagination between a Content-Hub Adapter and an external system. The pagination is triggered by scrolling in the library. This results in the pages being loaded gradually by scrolling down in the tree or repository view. For this reason some API changes were necessary:

### ContentHubAdapter

- `ContentHubAdapter.getItems(ContentHubContext, Folder)` and `ContentHubAdapter.getSubFolders(ContentHubContext, Folder)` have been removed. Implement the method `ContentHubAdapter.getChildren(ContentHubContext, Folder, PaginationState)` instead.
- `ContentHubAdapter.getChildren(ContentHubContext, Folder)` now supports pagination, therefore a new parameter has been introduced and the return type has been changed to provide the new pagination state.
- `ContentHubAdapter.invalidate(ContentHubContext, ContentHubObjectId)` now supports invalidation for pages.

[CMS-16566]

## Updated to jQuery 3.5.0

jQuery 3.5.0 has been released and it includes one security-related bugfix. All usages have been updated.

The jQuery release contains a breaking change which was required to fix the security issue. You have to make sure that all HTML that is included directly via jQuery or via CoreMedia's *Dynamic-Include* brick is either valid *XHTML* or valid *HTML 5* in respect of self-closing tags. For example, consider the following jQuery expression:

```
$("#<div><img/>")
```

Prior to jQuery 3.5.0, this always resulted in `<div></div><img/>` even though `<div/>` is not a valid self-closing tag in HTML 5. After the update the resulting markup will look as follows `<div><img/></div>` on HTML 5 page and thus potentially break existing pages. Website using XHTML are not affected by this change. Please ensure that you only use allowed self-closing tags in your HTML 5 markup.

The change is described in more detail here:  
<https://blog.jquery.com/2020/04/10/jquery-3-5-0-released/>

[CMS-17167]

## Augmented Category and Product Title

The title of newly created Augmented Categories and Products now use the name of the e-Commerce object directly without overriding it by the name of the created content name. The name of newly created Augmented Category and Product content objects was also slightly adapted so that a space character delimits name and ID.

[CMS-16549]

## Uploading any Document below /Assets now always creates asset doctypes

The last change in 1807.2 did not avoid that CMDownload documents, e.g. when uploading a PDF, could be created below the /Assets folder. Now every document should be transformed into a corresponding asset doctype.

[CMS-13229]

## Changed binding behavior of ComboBoxLinkPropertyField

The BindPropertyPlugin attached to the inner LocalComboBox has now set its `componentEvent` to "select" (was "change"). If you want to switch back to the old behavior (which is not recommended) please use the newly introduced configuration `bindPropertyComponentEvent` and set it to "change" again.

[CMS-8325]

## 5.6.4 CoreMedia Studio Server

### Fixed encoding problem when using Struct as XML feature

When using the `studio.structAsBlobPropertyNames` setting to be able to view and edit struct properties as XML in studio the content retrieved by the REST request was not properly encoded. This has been fixed now.

[CMS-17047]

## 5.6.5 CoreMedia Workspace

### Updated third-party libraries with security fixes

The following third party libraries have been updated for security reasons:

- Aspectj 1.9.5
- Ant 1.10.7
- commons-codec 1.14
- commons-compress 1.20
- metadata-extractor 2.13.0
- xmpcore 6.0.6
- esapi 2.2.0.0

The update of the `xmpcore` library included some API updates that required changes to the `ec-common` module. If you haven't customized the classes in this module and if you aren't using the Adobe XMP API for other purposes, no additional changes should be necessary.

[CMS-16877]

## 5.6.6 CoreMedia Frontend Workspace

### Updated Frontend Dependencies

The frontend dependencies have been updated to the latest versions and Node.js to latest LTS version 12.18.1. Prettier has been updated to version 2 with some changing defaults. See <https://prettier.io/blog/2020/03/21/2.0.0.html> for more details.

#### Update steps:

If you are working with the Frontend Workspace we suggest to also upgrade your local installation of Node.js to 12.18.1 and Prettier to version 2 to keep the file format in sync with the CoreMedia Themes and Bricks.

[CMS-17712]

### Updated frontend dependencies

In the Frontend Workspace the `frontend-maven-plugin` downloads and uses Yarn version 1.22.4 when it is built. The frontend dependencies, have been updated to the latest versions and node.js to latest LTS version 12.16.1.

#### Update steps:

If you are working with the Frontend Workspace we suggest to also upgrade your local installation of Yarn to 1.22.4 and node.js to 12.16.1.

[CMS-17050]

### Changed the behavior of `cm.UNDEFINED` on template side

The value of `cm.UNDEFINED` (e.g. provided by the corresponding Freemarker macro) is now treated in a special way on template side, so various build-ins like `?has_content` and `?length` now produce a more reasonable result when used in conjunction with `cm.UNDEFINED`.

The goal is to reduce overhead when writing templates. In most cases you want to check if a given value is not undefined and not empty. Instead of having to check both you can

now just check if the value is not empty. This also applies to iterating over a possibly UNDEFINED value. Just use `<#list>` instead of checking for undefined first.

### Upgrade Steps:

Please check your templates and make sure that they still produce the correct result after the following changes :

- `cm.UNDEFINED?has_content` now returns false instead of true.
- `#{cm.UNDEFINED}` now outputs an empty String instead of `UNDEFINED` .
- `cm.UNDEFINED == "UNDEFINED"` now returns false instead of true.
- [optional] Remove checks that are no longer needed (e.g. before `?has_content` and `<#list>` )

Please also note that if you need to check for `cm.UNDEFINED` exactly, consider using the function `cm.isUndefined(someValue)` .

You do not need to make any adjustments outside of templates as the special treatment only applies when rendering Freemarker templates.

[CMS-14250]

## Configuration for "titleKey" in brick "preview" changed from "preview\_label\_DEFAULT" to "preview\_label\_default"

There was a misalignment in the brick "preview" that made the default localization for `titleKey="preview_label_default"` useless (one time lower case "default", one time upper case "DEFAULT").

The `titleKey` in the templates got changed to the lower case version ("`preview_label_default`").

[CMS-17150]

## Removed "includeGutter" parameter from "aspect-ratio-box" utility mixin

The "includeGutter" parameter got removed from the "aspect-ratio-box" utility mixin. Please handle this otherwise, if you need this.

[CMS-9886]

## 5.6.7 CoreMedia Commerce Hub

### Missing title

If the commerce adapter wcs is shared between multiple environments (preview/live, for example), the configuration of storefront and asset URLs changed. If the commerce adapter wcs is running in mode for multiple environments, it expects an environment parameter from the connected client.

For example, Preview CAE:

```
commerce.hub.data.customEntityParams.environment = preview
```

For example, Live CAE:

```
commerce.hub.data.customEntityParams.environment = live
```

This environment value is then used on the adapter side to lookup the URL prefix for building storefront and asset URLs for the specific environments.

On the commerce adapter site there are additional environment specific configuration properties:

- `wcs.link.storefront-url-for.live = https://shop-hcl.coremedia.vm/webapp/wcs/stores/servlet`
- `wcs.link.storefront-url-for.preview = https://shop-preview-hcl.coremedia.vm/webapp/wcs/preview/servlet`
- `wcs.link.asset-url-for.live = https://shop-hcl.coremedia.vm`
- `wcs.link.asset-url-for.preview = https://shop-preview-hcl.coremedia.vm`

The former properties `wcs.link.preview-storefront-url` and `wcs.link.preview-asset-url` have been deprecated.

Note: You only need to make use of these environment specific configuration properties, if you share one commerce adapter instance for multiple environments.

[CMS-17092]

## 5.6.8 CoreMedia Connector for Salesforce Commerce Cloud

### Fixed non-SEO content links in Salesforce

If the SEO-friendly URL scheme was disabled in the Salesforce system and the default one was used (with controller-based URLs like Page-Show?cid=...), then the CMS content URLs didn't work correctly. This is fixed with a newer version of the cartridge. But it is also necessary to use a new Salesforce adapter that supports this fix. Otherwise the fix wouldn't work or would have no effect. Please note, that the controller-based URL format is now changed, at least for the CMS content URLs. If you previously have used the non-SEO format, then all CMS content URLs are going change. If you have used the SEO format, there will be no change.

[CMS-16965]

## 5.6.9 CoreMedia Headless Server

### GraphQL REST Mapper non blueprint now

The GraphQL via REST Mapper was moved to non public code (headless-server.web). The corresponding controller (GraphQLRestController) can be disabled with the configuration property 'caas.graphql-restmapping-controller.enabled' set to 'false'. All configuration resources were moved to 'blueprint/modules/headless-server/headless-server-base/src/main/resources', maintaining the same filenames and folderstructure.

[CMS-16909]

## Comments in rest request mappings properties files and ignoring empty lines

There have been some changes to the way the properties files for the REST Request Mapping are parsed:

- It is now possible to use comments by putting a "#" in the beginning of the line

- Empty lines are ignored

[CMS-16884]

## Added new types and fields to the schema

Fields added:

- CMAudio
- CMInteractive
- CMTaxonomy
- CMLocTaxonomy
- CMSettings, The transformation of the settings is customizable via adding a custom Converter<Struct, Map> Bean and removing the old one.
  - Content -> Content.getId()
  - Markup -> Markup.asXml()
  - Date -> GregorianCalendar (just the epoch)
  - Blob -> Blob.getETag()
- CMPlaceholder
- CMGallery
- CMPerson

For the settings there are only local and linked settings and the CMSettings documents supported, not inherited settings

[CMS-16747]

## An update of graphql-java from version 11 to the current version 14

There were various changes in the GraphQL-Java API, some affected us directly:

- The DataFetchers are no longer connected to the GraphQL Object, but instead to a newly created CodeRegistry
- The type field of the OperationTypedefinition was changed to typeName
- The syntax of empty interface definitions changed
- The GraphQLType Interface hierarchy was changed

For more detailed information, please have a look at the GraphQL-Java release notes for the relevant versions: <https://github.com/graphql-java/graphql-java/releases/>

[CMS-16667]

## Missing title

For norming reasons some configuration properties have been renamed:

- old: `caas.querylist.search.cache.seconds` -> new: `caas.querylist-search-cache-for-seconds`
- old: `caas.persisted-queries.query-resources-map-pattern.apollo` -> new: `caas.persisted-queries.apollo-query-map-resources-pattern`
- old: `caas.persisted-queries.query-resources-map-pattern.relay` -> new: `caas.persisted-queries.relay-query-map-resources-pattern`
- old: `caas.persisted-queries.query-resources-exclude-pattern` -> new: `caas.persisted-queries.exclude-file-name-pattern`

[CMS-17141]

## Product lists utilize offset correctly and support paging

- The offset property which can be defined in the content, e.g. in Studio now is only applied to the Products and works as a sort of search filter.
- The type of the field "pagedItems" is now changed to `CollectionItem` instead of `CMTeasable` because of compatibility issues with products
- The field "pagedItems" now retrieves properly paged items

[CMS-16670]

## 5.6.10 Miscellaneous

### UAPI and Headless-Server properties have changed.

The following UAPI properties have changed. Previous versions are still working but have been deprecated and should be migrated:

- `connect.retry.delay.seconds` -> `repository.connect-retry-delay-seconds`
- `com.coremedia.orb.jndiName` -> `repository.orb-jndi-name`

The following Headless-Server properties have changed. Previous versions are still working but have been deprecated and should be migrated:

- `graphql.url` -> `caas.graphql`
- `caas.persisted-queries.query-resources-map-pattern.relay` -> `caas.persisted-queries.relay-query-map-resources-pattern`
- `caas.persisted-queries.query-resources-map-pattern.apollo` -> `caas.persisted-queries.apollo-query-map-resources-pattern`
- `caas.persisted-queries.query-resources-exclude-pattern` -> `caas.persisted-queries.exclude-file-name-pattern`
- `caasserver.endpoint` -> `previewclient.caasserver-endpoint`

The type of property

- `caas.media-cache-time`

has changed from ``long`` to ``java.time.Duration`` with default conversion unit set to milliseconds.

[CMS-16987]

## Select Sites for Synchronization Workflow

For synchronization workflows there now exists the option to select a sub-tree of all derived sites. It allows you to synchronize your master changes only to a selected set of derived sites while leaving the others untouched.

The workflow "synchronization.xml" needs to be uploaded to the workflow server as it was extended with a new variable "targetSiteIds".

```
cm upload -n /com/coremedia/translate/workflow/synchronization.xml
```

[CMS-16503]

## Removed Blueprint Extension nuggad

The Blueprint Extension `nuggad` has been removed. This service has been discontinued as of 30th September 2019.

[CMS-16366]

## XliffImporter/XliffExport: Provide API with direct Xliff in-/output

`XliffImporter` and `XliffExporter` now provide an API to directly hand over objects of type `Xliff`. This provides the option, that you may use custom Xliff parsing. As this extends the corresponding interfaces, you may need to implement the methods now, in case you provided custom implementations for `XliffImporter` and/or `XliffExporter`.

New methods are:

- `XliffImporter#importXliff(Xliff):List<XliffImportResultItem>`, and
- `XliffExporter#exportXliff(Iterable<TranslateItem>, XliffExportOptions):Xliff`.

[CMS-14091]

## New Merge Strategy "Overwrite Target Site" for Synchronization Workflows

There is a new merge strategy available for synchronization workflows: "Overwrite Target Site". When this strategy is chosen, mergeable properties in the derived sites are overwritten with the property value from the master site. The update of properties in the derived site is not dependent on the translation state or if there is a new master version, it is executed always.

The workflow "synchronization.xml" needs to be uploaded to the workflow server as it was extended with a new variable "mergeStrategy".

```
cm upload -n /com/coremedia/translate/workflow/synchronization.xml
```

[CMS-10984]

## Disabled JMX in 'local' Spring environment

Both Spring Boot's built-in JMX as well as the CoreMedia management-component are disabled in 'local' Spring environment to speedup the startup process of local applications. The management component can be re-enabled by providing the system property 'components.disabled=none'.

[CMS-5310]

## 5.7 Upgrade to 2001.1

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.

### 5.7.1 CoreMedia Core

#### Feeding of CMExternalProduct

Fixed feeding of `CMExternalProduct` ("Augmented Product") documents in the *CAE Feeder*. Properties inherited from `CMTeasable` will now be indexed. Before this fix, fields were only set for generic content bean properties like `documenttype` and `creationdate`. To this end, the configuration was changed in the Blueprint's `component-livecontext-caefeeder.xml`.

Re-feeding is not done automatically and also not required. But without re-feeding, the already indexed `{{CMExternalProduct}}`s are not updated if they are not changed.

[CMS-16619]

#### Third-Party Update: Apache Solr 8.4.0

Apache Solr has been updated to version 8.4.0

For detailed changes of Apache Solr have a look at [https://lucene.apache.org/solr/8\\_4\\_0/changes/Changes.html](https://lucene.apache.org/solr/8_4_0/changes/Changes.html).

[CMS-16583]

#### Deprecated Support for Site Indicator Depth != 0

**Motivation:**

In several support issues we observed documents of type `CMSite` (Site Indicator Documents) at several places within the same site. Errors like this are hard to detect by editors, as by having a site indicator depth of 1 (which was the default) one `CMSite`

document could reside in `./FolderOne` and the other in `./FolderTwo` of your site root folder. This caused unpredictable results and sometimes even broken sites. Therefore, we changed the default site indicator depth to 0. For existing projects there are two options how to handle this change:

### Switching to Site Indicator Depth 0 (recommended)

- Move your site indicator documents ( `CMSite` ) to their corresponding site root folders. (If you used the old default site indicator depth of 1, this means up one level.)
- If you have set `sitemodel.site.indicator.depth` (or `siteIndicatorDepth` in the `editor.xml` of Site-Manager) explicitly, change them to 0.

### Sticking to Site Indicator Depth 1 (discouraged)

In order to stay with site indicator depth of 1 (to prevent requiring moving `CMSite` documents), you must override the default of `sitemodel.site.indicator.depth=0` which comes via `bpbasesitemodel.xml`, or `bpbases-multisite-services.xml`.

For `cms-tools-application` you may just add the following property to `commandline-tools-sitemodel.properties`:

```
sitemodel.site.indicator.depth=1
```

For the Site-Manager, set the `siteIndicatorDepth` in the `editor.xml` to 1.

**Verification:** In either case, it is recommended to run `cm validate-multisite` to check for inconsistencies in the end.

**Tests:** If you choose to stick to site indicator depth of 1, you may also have to adapt/revert some `content.xml` files, like for example for `SitemapGenerationControllerTest` and `TopicpageHandlerTest`.

### `cm validate-multisite`:

The `cm-tool validate-multisite` got extended to file an issue of severity `INFO` on deprecated properties such as `siteIndicatorDepth`:

- **Code:** `MS-VALIDATION-2001`
- **Severity:** `INFO`
- **Description:** The property is deprecated.
- **File Output:** deprecated property name, current value of property

[CMS-9521]

## Blob store configuration

When configuring Content Server blob stores, you can add a match condition that only activates the blob store when the blob is uploaded for documents of a certain type. This type condition was interpreted inconsistently depending on the client uploading the blob. While the Unified API and the publisher would check the condition versus the type in which the property is defined, the Site Manager and the replicator would use the exact type of the document instead.

The class `hox.corem.server.media.MatchCondition` has been extended to provide two different configuration options: `documentTypeName` matches the exact document type, whereas `declaringDocumentTypeName`, matches the type declaring the blob property. You need to review your blobstore configuration and change the match conditions as needed.

Note that this change does not cause the Content Server to move blobs that have been uploaded earlier. These remain in their (possibly incorrectly chosen) blobstores. To move the blobs, they have to be uploaded again, stored in a version and possibly published.

[CMS-15245]

## 5.7.2 CoreMedia Content Application Engine

### Deleted class

```
`com.coremedia.objectserver.web.HandlerMappingTracker`
```

Deleted class ``com.coremedia.objectserver.web.HandlerMappingTracker``. Use the spring boot mappings actuator to inspect your application's spring MVC mappings.

[CMS-16533]

## Garbage Collector changed to UseParallelGC, Image Transformation: default permits reduced to 1/4 of heap size

We observed Out Of Memory exceptions in CAEs with small heap configurations (around 1.2 GB). We presume this is due to some bugs in the new garbage collector called G1

(Garbage First) which is the default algorithm for server configurations since JDK 9, e.g. [https://bugs.java.com/bugdatabase/view\\_bug.do?bug\\_id=8192647](https://bugs.java.com/bugdatabase/view_bug.do?bug_id=8192647).

Therefore, we decided to reduce the default configuration for image transformation permits [com.coremedia.transform.throttle.permits] from 1/2 to 1/4 of the maximal java heap size.

This reduces the pressure on the garbage collector. It should not reduce the performance of image transformations in general, but if a lot of CPU cores are available and/or a lot of your images are huge, you might consider increasing this setting.

See also: ThrottlingBlobTransformer configuration in the CAE Developer Manual.

The default Garbage Collector is changed to UseParallelGC for Chef and Docker Deployment. To change the garbage collector:

- for the Docker setup the new coremedia/java-application-base:2.1.7 image contains an environment variable toggle `JAVA_GC_PARALLEL`, that is `false` by default.
- for the Chef setup, a node attribute has been added.

```
default['blueprint']['spring-boot']['java_opts']['use_parallel_gc'] = '-XX:+UseParallelGC'
```

The change to the docker setup is non breaking unless the `JAVA_OPTS` environment variable has been used to set a different garbage collector.

Note: The default Garbage Collector has only changed for CMCC Versions > 1910, so it is non breaking for 1910. For 1910.2 the GC can be configured as described above.

[CMS-16168]

## CAE Spring Boot Actuators can now be started on separate port

Spring Boot Actuators reuse the central part of the Spring MVC infrastructure. The CAE 'viewResolver' bean was type-incompatible with the Spring MVC 'viewResolver' bean. Hence the CAE 'viewResolver' bean was renamed to 'modelAwareViewResolver' so that the Spring Boot Actuators can now be run on a separate port for CAEs.

[CMS-14007]

## 5.7.3 CoreMedia Studio

### Rewritten TabExpandPlugin

The `TabExpandPlugin` was rewritten. The unused 'tabs' config property was removed which breaks the Public API. Just remove the 'tabs' property when using the plugin. Use the `autoHide` property in panel tabs to specify the auto hidden tabs.

[CMS-16548]

### Content Hub: Improvements

The `BlobCache` has been revoked from the public API, in particular from `ContentHubAdapterFactory#createAdapter`. The Content Hub framework takes care for blob caching now, so the ContentHub adapters do not need to bother any longer, but may simply return their original blobs.

[CMS-15936]

### Content Hub: Removed UAPI references

Some changes were necessary to remove references to the *Unified API* and to apply naming conventions. In detail the changes are:

- Java
  - `ContentCreationUtil.getMimeTypeForResourceName(String)` removed. Use `ContentHubMimeTypeService` instead.
  - `convertStringToMarkup(String)` changed to `convertStringToRichtext(String)`
  - `ContentHubContext` reference to site by `siteId` has been replaced with `siteName` and `siteLocale`
- Maven
  - groupIds of content-hub modules have been changed from `com.coremedia.blueprint` to `com.coremedia.blueprint.content-hub`
  - groupIds of content-hub modules have been changed from `com.coremedia` to `com.coremedia.content-hub`

- artifactIds of content-hub modules have been unified. The convention is content-hub. Therefore some modules were renamed from contenthub-\* to content-hub-\*
- added the postfix -ui to the artifactIds of content-hub studio-client modules

[CMS-15110]

## Content Hub: Preview

The Content Hub shows a detail view of the selected item in the library. For details, see the Content Hub sections in the Studio User Manual and the Studio Developer Manual.

### ContentHub API Changes:

`ContentHubAdapter` has a new method `getTransformer`, which must return the `ContentHubTransformer` for this adapter. Due to this explicit relation, `ContentHubTransformer#isApplicable` became obsolete and has been abandoned. Moreover, the adapter may create its transformer internally. The transformer does not have to be a Spring bean any longer.

`ContentHubObject` has a new method `getDetails`, which may return a list of `DetailsSections`, filled with `DetailElements`, which can provide preview data for a Content Hub Object. Per default the Typelcon and the name are shown as preview.

`ContentHubAdapterFactory#createAdapter` has an additional `BlobCache` argument. Implementations must change the signature accordingly. `BlobCache` is a utility class with a single method `cached` which takes a `ContentHubBlob` and returns an equivalent `ContentHubBlob` whose binary data is cached in a temp file, so that it is fetched from the remote system only once. Adapter implementations should pass the blob cache to their items and eventually to their transformer, and cache any `ContentHubBlob` created there.

[CMS-14579]

## Studio remote beans consider themselves empty when load raises internal server error

When receiving an internal server error as response to a load request studio remote beans propagate the loaded event but do not hold any properties. This change breaks any code that relied on the remote bean remaining in its initial state as if it was never loaded.

[CMS-16376]

## 5.7.4 CoreMedia Frontend Workspace

### Updated frontend dependencies

The `frontend-maven-plugin` used in the frontend workspace has been updated to version 1.9.1 and will now download and use Yarn version 1.21.1 when it is built. The frontend dependencies, have been updated to the latest versions and node.js to latest LTS version 10.18.1.

#### Update steps:

If you are working with the Frontend Workspace we suggest to also upgrade your local installation of Yarn to 1.21.1 and node.js to 10.18.1.

[CMS-16630]

### Removed Freemarker macro `bp.responsiveImage`

The deprecated macro `bp.responsiveImage` and the last usages in the example bricks have been removed. Please use the view "media" of `@coremedia/brick-media` instead.

- Usage before as macro: `<@bp.responsiveImage self=self.picture />`
- Usage after when using the brick: `<@cm.include self=self.picture view="media" />`

[CMS-15904]

### Calista Cart with HCL Commerce v9

HCL Commerce v9 compatible JavaScript code for refreshing the Cart icon after add/remove of products is now part of the Calista Theme instead of inline JavaScript in the Commerce workspace.

[CMS-16625]

## 5.7.5 CoreMedia Connector for HCL Commerce

### Marketing Spot Support via Commerce Adapter

- Marketing Spots are now supported via Commerce Hub
- former IBM Implementation is removed from lc-extension
- CMMarketingSpot Interface changed
- Marketing Spots are now only rendered via Commerce System (Placeholder mechanism)
- template support only for default view in placements (commerce-led only)
- CAE does not render Marketing Spots, anymore
- CAE templates for Marketing Spots deleted from Aurora Theme
- CMMarketingSpotForm.mxml cleaned up (removed former CMTeasable and CMDynamicList specific form elements) but document type is not changed to avoid content documenttype migration
- Dynamic Include for Marketing Spots (Handler and Predicate) removed from blueprint
- Studio preview disabled for Marketing Spots since rendered on commerce side
- commerce-adapter-wcs version 1.2.4+
- commerce-adapter-base version 1.2.5+

[CMS-16641]

### Parameter 'siteId' was removed from MappedCatalogsProvider's methods

The parameter `siteId` was removed from the methods of `com.coremedia.blueprint.base.livecontext.ecommerce.common.MappedCatalogsProvider` as the site ID is a mandatory field of the `com.coremedia.livecontext.ecommerce.common.StoreContext`.

[CMS-14573]

## Preview URLs for Augmented Categories and Products

Preview URLs for Augmented Categories and Products have been fixed so that preview parameters such as timetravel data or personas are correctly transformed into preview URLs, e.g. by encoding into preview tokens. The `PreviewUrlService` methods `getCategoryUrl` and `getProductUrl` have been changed so that the `StoreContext` is added as parameter like in the other `getXYZUrl` methods.

[CMS-16731]

## 5.7.6 CoreMedia Connector for SAP Commerce Cloud

### SAP Commerce 1905: language fallback for SKUs with missing attribute values

Affects SAP Commerce 1905, only. This fix activates the language fallback for REST controller for SKUs. If a SKU does not provide attribute values for the current language, the values of the master language are returned

[CMS-16674]

## 5.7.7 CoreMedia Headless Server

### JSLT enabled by default

As of version 2001, JSLT for the REST layer of headless server, is enabled by default.

[CMS-16476]

## REST query mapping now configurable

The resource file containing the rest query mapping is now configurable by the application property 'caas-rest.query-mapping-pattern'. The default resource file was moved from `resources/query-mappings.properties` to `resources/graphql/rest-mapping/simple-mapping.properties`. By default, all properties files in that folder are considered to contain query mappings.

[CMS-16233]

## 5.7.8 Miscellaneous

### Property 'disallow.spring.bean.overrides' no longer supported.

Property `disallow.spring.bean.overrides` is no longer supported. Use spring boot property `spring.main.allow-bean-definition-overriding` instead.

[CMS-16590]

## HCL Commerce v9

HCL Commerce v9 is now the primary version. While v8 is still supported, the demo data (e.g. segment IDs) but also URL patterns/paths are adapted to v9 by default.

[CMS-16529]

## Minor UserProvider Changes

### Deskewed LDAP Expiration

Bulk requests like `LdapMember#getLdapGroups` led to many members with the same expiration, which in turn caused LDAP roundtrip peaks when they expired. Now, the `LdapUserProvider` (esp. the `SimpleActiveDirectoryUserProvider` and the `ActiveDirectoryUserProvider`) deskew their members' expirations by a random factor up to 10% of the configured `com.core`

`media.ldap.expiration` in order to equalize invalidations over time. I.e. if you configure an expiration of 3600s (one hour, default), a member may not be refreshed up to 3960s. If the exact maximum expiration is important in your project, you should lower your `com.coremedia.ldap.expiration` value accordingly.

### Deprecated `UserProvider#getExpirationSeconds`

... because it is not needed any longer. Possible overrides for the `LdapUserProvider` remain effective for compatibility. However, the method is logically related to `com.coremedia.ldap.expiration`, which is also used internally. Thus, overriding the method is no good idea and you should rather stick to setting the property.

[CMS-16385]

## Update of mongo-java-driver to 3.11.2

The mongo-java-driver has been updated to 3.11.2.

[CMS-16383]

## Deprecation: `LdapMember#getOrganizationalUnit`

`LdapMember#getOrganizationalUnit` has been unused for a long time, therefore it is deprecated now. There is a No-Op-default method, so you do not need to implement it in your `LdapMember` implementations any longer. In the unlikely case that you **use** the method in your project code, please let us know, describe your usecase, and we will find a way to preserve the necessary functionality without using it ourselves.

[CMS-15861]

## MongoDB deployment with authentication

In Chef and Docker Deployment, MongoDB is deployed now with authentication enabled. The user `coremedia/coremedia` is created by default. In Docker deployment, the user `root/root` is created additionally. These credentials need to be changed for Live Deployments.

**IMPORTANT** : Enabling authentication and creating the initial user via `skript` in the MongoDB Docker file works only on a **fresh install** and if **no users** have been created yet in the MongoDB instance. Otherwise the user needs to be created manually (see below). Authentication can then be enabled manually, if required.

Authentication is performed against the admin database. Example:

```
use admin
db.auth('coremedia','coremedia')
```

The default `mongoDb.clientURI` is configured with credentials, e.g. `mongoDb.clientURI=mongodb://coremedia:coremedia@$(installation.host):27017`.

For development with a MongoDB without authentication, either the credentials prefix can be removed from the `mongoDb.clientURI` or a user can be created manually with:

```
use admin
db.createUser({user: 'coremedia', pwd: 'coremedia', roles:
['userAdminAnyDatabase', 'dbAdminAnyDatabase', 'readWriteAnyDatabase']});
```

[CMS-929]

## Update to the Installed Packages for Salesforce Marketing Cloud

As of August 1, 2019, Marketing Cloud has removed the ability to create legacy packages. See [Legacy Packages](#). Our SFMC integration works now for the **Installed Packages** using [Access Token for Server-to-Server Integrations](#). You don't support anymore **Legacy Packages** which required legacy authentication. See [requestToken Reference for Legacy Packages](#)

[CMS-16305]

## 5.8 Upgrade to 1910.1

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.

### 5.8.1 CoreMedia Core

#### Removal: Deprecated methods and parameters in MediaStore

The deprecated and unused methods `getIds()` and `canUsePredecessorHints()` have been removed from the interface `hox.corem.server.media.MediaStore` and its public API implementation `hox.corem.server.media.S3Store`. Furthermore, the unused parameter `predecessorHints` has been removed from `MediaStore`'s `upload` method and its implementations.

To upgrade, you just need to remove any overrides for the mentioned methods and the `predecessorHints` parameter from your custom implementations. They're not used anymore.

[CMS-15688]

#### Removal: Deprecated BlobStore classes

The deprecated classes from package `hox.corem.server.media` have been removed: `BlobStore`, `ChunkingBlobStore` and `PostgreSQLBlobStore`.

Use the classes with the names from package `hox.corem.server.media.jdbc` instead.

[CMS-15687]

## New issue code for validate-multisite for deleted master link

The `cm validate-multisite` command line tool now reports a warning with newly introduced issue code `MS-VALIDATION-8003` for derived content whose master property links to a deleted content. Issue code `MS-VALIDATION-8002` which previously included such issues, is from now on only used for contents with links to deleted content in properties other than the master property. Furthermore, the severity for `MS-VALIDATION-8002` was reduced from `WARN` to `INFO` for link properties that are declared as "weak links".

If you automatically parsed the tool output (especially the tab-separated file output), to trigger actions like reporting or adjusting content, you may have to adapt your parsing to the new output.

[CMS-15591]

## New issue code for validate-multisite if master version is not set

The `cm validate-multisite` command line tool now reports a warning with newly introduced issue code `MS-VALIDATION-7004` for derived content whose master version is not set.

`MS-VALIDATION-7002` which previously contained these issues, too, now only reports issues for contents which have not been localized yet. As part of this change, the output for issue code `MS-VALIDATION-7002` was extended and now includes the denoted master version as described in the Content Server Manual, section "Validate Multi-Site".

The difference between `MS-VALIDATION-7002` and `MS-VALIDATION-7004` is important, as `MS-VALIDATION-7004` is an invalid state which may cause auto-merging of properties to fail, while `MS-VALIDATION-7002` is a completely valid content state after deriving a site for example.

**Upgrade:** If you automatically parsed the tool output (especially the tab-separated file output), to trigger actions like reporting or adjusting content, you may have to adapt your parsing to the new output.

[CMS-15548]

## Content Server BlobStore Configuration

The Content Server does not create a separate internal Spring application context anymore to load its blob store configuration. Instead, custom media stores and media store selectors must be configured at the Content Server's Spring application context in the same way as Spring beans for other CoreMedia applications are configured. This change also makes it possible to use standard Spring Boot features to set configuration properties, for example to specify blob store paths from environment variables.

Spring bean definitions are not loaded from the following locations anymore:

- `classpath*/framework/spring/blobstore/*/blobstore.xml`
- `<coremHome>/config/contentserver/spring/blobstore/*.xml`

Spring properties are not loaded from the following location anymore:

- `<coremHome>/config/contentserver/spring/blobstore*/*.properties`

Make sure to add all your custom bean definitions and properties from these obsolete locations to the Content Server's Spring application context. For example, you could configure custom beans and properties in `META-INF/coremedia/component-<name>.xml` and `META-INF/coremedia/component-<name>.properties` files.

If you've customized the blob storage, you can verify the configuration by looking at the Content Server log. When started, the Content Server logs lists of media stores and media store selectors as INFO messages "Configured media stores" and "Configured media store selectors". Make sure to verify the order of custom media store selectors in the log output.

[CMS-12338]

## API Change in PostgreSQLBlobStore

Class `com.coremedia.server.media.jdbc.PostgreSQLBlobStore` does not implement `org.springframework.beans.factory.InitializingBean` anymore and its method `afterPropertiesSet()` has been removed.

[CMS-16151]

## Commerce Cache Invalidation

The default value for `livecontext.cache.invalidation.enabled` has been changed to `false`. If you want to use cache invalidation for your commerce integration, you have to enable it in your application (e.g. Studio or CAE). Please note that cache invalidation is not yet supported via Commerce Hub adapters.

[CMS-15620]

## CAE Feeder limits feeding of blobs by size

In its default configuration, the *CAE Feeder* does not feed binary values (blobs) larger than 5 MB anymore. You must adapt your configuration if you need to index the text from larger blobs.

The default value for application property `feeder.beanPropertyMaxBytes` was changed from `-1` (unlimited) to `5242880` (5 MB), so that the *CAE Feeder* skips larger blobs that are configured for feeding with the `BeanMappingFeedablePopulator`. This limit was added to avoid operational problems with unexpectedly large blob values, for example high memory usage or long delays when text is extracted using Apache Tika. You should test feeding with blobs of the configured maximum size and have a look on memory consumption and feeder throughput, when you increase the limit.

Custom `FeedablePopulator` implementations that feed blob values are not affected by this setting.

[CMS-15510]

## 'LiveContextCloneSitePostProcessor' loaded via spring boot autoconfiguration

The resource file `config/workflowserver/spring/applicationContext-1c.xml` was deleted. Artifact `com.coremedia.blueprint.base:bp-base-1c-workflow` provides a `META-INF/spring.factories` resource for spring boot autoconfiguration loading instead.

[CMS-14984]

## Domains in ActiveDirectoryUserProvider

In Active Directory, domains are case insensitive. In CMCC they are case sensitive. An AD domain indeed occurs in different cases in CMCC, depending on how it has been obtained or configured. This led to some failing comparisons of logically equal domain values. Now, the ActiveDirectoryUserProviders normalize the domains to lowercase, so that they appear consistently in CMCC.

If you have configured your AD domain with uppercase characters (EXAMPLE.org) in jaas.conf, you must change it to lowercase, otherwise AD users won't be able to login.

[CMS-12913]

## 5.8.2 CoreMedia Content Application Engine

### Converted `component-livecontext.xml` to spring boot autoconfiguration

The classpath resource `/META-INF/coremedia/component-livecontext.xml` provided by blueprint module `lc-cae` was removed. The replacement is the spring boot autoconfiguration `com.coremedia.livecontext.cae.LcCaeAutoConfiguration`

[CMS-15910]

### security-services.xml

The security settings in `apps/cae/core/cms-core/cae/cae-spring-security/src/main/resources/com/coremedia/cae/security-services.xml` have been changed to also allow double encoded slashes and periods in URLs. This fixes e.g. the redirect after a successful login in Calista demo site.

[CMS-16217]

## HTTP Strict-Transport-Security response header is not set by Apache anymore

The Apache that is deployed and configured by the provided Chef deployment was always setting the `HTTP Strict-Transport-Security` response header for HTTP and HTTPS requests. The `HTTP Strict-Transport-Security` header is not needed for HTTP requests and for HTTPS requests it was set twice, with different values, which leads to undefined behavior. As the CAE always sets the `HTTP Strict-Transport-Security` header (only) when it's actually required, it has been disabled in the Apache configuration.

[CMS-16146]

## Prevent double escaping of some image links provided by BlueprintFreemarkerFacade

To prevent double escaping links provided by `getImageLinksForAspectRatios` and `getImageLinksForAspectRatios` in the `BlueprintFreemarkerFacade` are no longer escaped. Escaping is already handled by Freemarker when the link is rendered inside a template.

[CMS-15957]

## Blueprint's `ErrorAndExceptionMappingResolver` now autowires list of `ErrorAndExceptionHandler` beans

`com.coremedia.blueprint.cae.exception.resolver.ErrorAndExceptionMappingResolver` was changed so that it autowires the list of `com.coremedia.blueprint.cae.exception.handler.ErrorAndExceptionHandler` beans as constructor argument. The corresponding setter was removed.

Exception handlers for `com.coremedia.livecontext.ecommerce.common.CommerceException` and `com.coremedia.blueprint.base.livecontext.ecommerce.common.NoStoreContextAvailable` are provided by `com.coremedia.livecontext.cae.LcCaeAutoConfiguration`.

[CMS-15909]

## Hybris Vendor ID

The Vendor ID for the Hybris connection via Commerce Hub is now "hybris" instead of "SAP Hybris". The only using code in `com.coremedia.livecontext.as.set.ProductCatalogPictureHandler` was adapted accordingly.

[CMS-15623]

## 5.8.3 CoreMedia Studio

### Studio Validates Content Locale to Match Site Locale

Studio displays a warning [version 1910] or an informational issue [version 1904 and 1907] now if the locale of a `CMLocalized` content differs from the locale of its site. Such locale differences can lead to inconsistencies and problems in a multi-site setup and should generally be avoided.

The new validator `com.coremedia.rest.cap.validators.ContentLocaleMatchesSiteLocaleValidator` is enabled in the Blueprint configuration in `component-studio-validators.xml` (for 1904) or `com.coremedia.blueprint.studio.rest.validation.ValidatorsStudioConfiguration` (for 1907 and above). You may decide to remove it again, or change its severity with Spring property `contentLocaleMatchesSiteLocaleValidator.severity` (possible values are "INFO", "WARN", "ERROR").

[CMS-15583]

### ContentHubAdapterBinding removed from ContentHub API

A Content Hub Adapter does not get the entire `ContentHubAdapterBinding` anymore, but only the "settings" within that binding. The determination of the `MimeType` of an external item is by default carried out by the `MimeTypeService`. This can be overridden, if necessary to provide a custom `MimeTypeMapping`. The Mapping from `MimeType` to CoreMedia `ContentType` is by default read from a linked settings document. This can also be overridden, in order to provide a custom `MimeType` to CoreMedia `ContentType` mapping.

[CMS-15100]

## ContentHub

ContentHub framework now provides the ability to search in an external system. Therefore the optional ContentHubSearchService is introduced in the ContentHubAdapter. If a ContentHubSearchService is returned the search in the CollectionView/Library is enabled. As some external systems only provide the ability to search globally and not in a folder, the ContentHubSearchService#supportsSearchBelowFolder makes this configurable in every Adapter instance.

The ContentHub API now defines a ContentHubType for every ContentHubObject. The ContentHubType of a ContentHubObject is responsible how the Object is shown in Studio. Also when importing a ContentHubItem to CoreMedia, the ContentHubType can be used to determine as which CoreMedia ContentType the Item will be imported. In order to enable a fast setup for a "FileSystem"-ContentHub Adapter the BaseFileSystemHubObject.java & the BaseFileSystemItem.java were introduced that provide a default that determines the MimeType of an external item by its file ending. The MimeType will be used to create a ContentHubType for that icon.

The Column behaviour of ContentHub was changed. ContentHub no longer defines four default Columns, but only one which is the Type Column. If you want to display Custom Columns your Adapter needs to return a ColumnProvider. If no ColumnProvider is defined, the ContentHub will take a DefaultColumnProvider instead, which adds a column that displays the displayName of a ContentHubObject, next to the Type Column.

ContentHubObjectId has been simplified. A ContentHubObjectId consists only of the connectionId and the externalId now. All additional features like object type, parent, being root, being a reference and URL encoding have been removed. All factory methods have been replaced by a constructor that takes a connectionId and an externalId as arguments. These changes affect also the String representation used for persistence. Referenced contents have no externalRefId at all any longer. If you have already imported content hub objects into the content repository, and you need to trace them back by their externalRefId property, please contact the CoreMedia Support for migration advice.

[CMS-14581]

## The resource type lookup is now considering class hierarchy.

The resource type lookup inTypeBasedResourceClassFinder for building links to studio resources is now considering the class hierarchy. More specific subclasses are now

considered before their super classes so that links are always created for the most specific type.

[CMS-10339]

## YouTube Content Hub Adapter

The thumbnail picture contents derived from YouTube Content Hub adapter items used to have meaningless names like "maxresdefault (1)". Now they are named after the videos themselves, with suffix "[Thumbnail]".

[CMS-15839]

## ContentHub API changes

All getters in `com.coremedia.contenthub.api.ContentModelReference` and `com.coremedia.contenthub.api.ContentModel` have been changed from `@Nullable` to `@NonNull`. Derived classes must adjust their declarations and implementations.

[CMS-15721]

## The ContentStateValidator now requires a CapConnection as constructor parameter.

The `ContentStateValidator` now requires a `CapConnection` as constructor parameter. The validators that are passed to the `ContentStateValidator` will run their validation, using the `capConnectionSession` of the given `CapConnection`.

[CMS-15199]

## Removed redundant property contextMenuItems of LinkListPropertyField

The property `contextMenuItems` of `LinkListPropertyField` has no functionality and therefore is removed.

[CMS-14589]

## Changed access modifier of some methods in AbstractItemsPluginBase from internal to protected

The class AbstractItemsPluginBase is public API but it's not possible for customers to write subclasses which use the methods because they have access modifier internal. This has been changed and the methods are protected now.

[CMS-14295]

## 5.8.4 CoreMedia Studio Client

### Category Search in Studio

In Commerce sites you can now search for categories in Studio library. For Salesforce Commerce Cloud B2C it is fully implemented as fulltext search within the id and name field. To support these new REST call it is necessary to extend the Open Commerce API Settings (Data API) in you sandbox by adding the new line: " {"resource\_id": "/category\_search", "methods": "post" , "read\_attributes": "[\*]", "write\_attributes": "[\*]"}, ".

For HCL Commerce and SAP Commerce Cloud category search is also available but only as simple id search, without fulltext search capabilities or search within names.

Please note that category search only works on the top level store or product catalog node in the e-commerce library. A search for categories below another category is not possible.

[CMS-16175]

## 5.8.5 CoreMedia Workspace

### Modularization of Project Extensions

With modularization of the CoreMedia Blueprint workspace, project extensions have undergone a structural change, too.

The goal of this build configuration refactoring is to keep the modular workspaces structure of CoreMedia Blueprint. It must be possible to build each application workspace independent of other application workspaces. Extensions that aggregate modules that (conceptually) belong to different workspace would prevent such modular builds.

All bundled extensions that used to reside under `modules/extensions` have been distributed over the modular workspaces they extend. Each workspace has its own `modules/extensions` directory and Maven aggregator.

Each extension point belongs to exactly one workspace, so an extension module plugging into such an extension point belongs to the same workspace. Extensions may also have shared code, which then becomes part of a shared workspace (usually `shared/middle`, otherwise `shared/common`).

For backwards-compatibility and for special use cases like reusing extensions from another repository, it is still possible to keep an extension with all its workspace-specific parts in the central location `modules/extensions`. However, a few changes are necessary to make such extensions work in a CMCC 10 Blueprint workspace.

To migrate a CMS 9 / LC 3 project extension to CMCC 10 (1907+)

1. The extension must reside in a directory named like the extension, below the top-level path `modules/extensions`. It may be nested in another directory for grouping multiple extensions, but such intermediate directories must not contain a `pom.xml` file.
2. The extension must consist of one root Maven project that aggregates its workspace-specific parts. This POM may neither contain any other configuration nor be used as a parent, because it will only be read by the CoreMedia Extension Tool and must not be part of the Maven reactor.
3. For each extension part, the CoreMedia Extension Tool must be able to determine the workspace this extension part belongs to. There are three heuristics to find out the workspace:
  - a. The extension part uses `com.coremedia.blueprint:<workspace>.extensions` as its parent, where `<workspace>` is one of the modular apps- or shared-workspaces like `cae`, `studio-server`, `studio-client` or `middle`.
  - b. The extension part itself uses an extension point. Then, the extension part is assigned to the workspace of the extension point.
  - c. The relative path from the extension's root to the extension part resembles the path of a modular workspace ( `apps/cae`, `apps/studio-client`, `shared/middle` ). This is recommended, but not required if any other heuristic matches, because it resembles the modular workspace paths you should get used to, anyway.

This means that the main work when migrating your extension is to change the POM parents of your first-level extension modules to the corresponding modular workspace extensions aggregators (or remove the `<parent>` element completely and use one of the other two heuristics to let the tool determine the target workspace). When replacing or removing your former parent, its configuration is no longer available. If that configuration consists of dependency management, you should check whether it is still needed (the new parent inherits a lot of dependency management from the workspace's blueprint-parent) and if so, whether it is shared between extension parts. If it is indeed shared, you must move it to a new module that acts as a BOM (bill of material) and depend on this new module with `<scope>import</scope>` wherever needed.

You must copy all other configuration to all extension parts that need it. More often than not, "shared" configuration is not actually needed by *all* modules that inherit this configuration.

After this POM structure refactoring has been applied, it should be possible to run the CoreMedia Extension Tool to add your migrated (but still "centralized") extension to all affected workspaces. The command line is the same as for "distributed" extensions (like the bundled extensions) as given in the Blueprint Developer Manual:

```
mvn -f workspace-configuration/extensions extensions:sync
-Denable=<name-of-your-extension>
```

In Blueprint version 1907.1, the preconfigured Extension Tool version is outdated, so please change the version in `workspace-configuration/extensions/pom.xml` or add it on the command line to use the latest release (4.0.1 as of this writing):

```
mvn -f workspace-configuration/extensions
com.coremedia.maven:extensions-maven-plugin:LATEST:sync
-Denable=<name-of-your-extension>
```

To check that your extension has been enabled successfully, follow the step-by-step instructions in Blueprint Developer Manual, section "Implementing a Custom Extension".

[CMS-15943]

## Updated to latest Spring Framework 5.2.1, Spring Boot 2.2.1, Spring Security 5.2.1, and others

Along with the Spring Framework and Spring Boot the following libraries have been updated:

- Spring Boot 2.2.1.RELEASE

- Spring Framework 5.2.1.RELEASE
- Spring Security 5.2.1.RELEASE
- MySQL driver 8.0.18
- Postgres driver 42.2.8
- okhttp 3.14.4
- commons-fileupload 1.4
- gson 2.8.6
- byte-buddy 1.10.2
- http-core 4.4.12
- HttpClient 4.5.10
- slf4j 1.7.29
- assertj 3.13.2
- cglib 3.3.0
- ASM 7.2
- Jetty 9.4.22.v20191022
- Janino 3.1.0
- commons-dbcp2 2.7.0
- Junit 5.5.2
- Jackson 2.10.0
- Tomcat 9.0.26
- Jakarta Servlet 4.0.3
- Jakarta Mail 1.6.4
- jstl-api 1.2.7
- caffeine 2.8.0
- Jakarta transaction 1.3.3
- Micrometer 1.3.1
- Mockito 3.1.0
- Hibernate Validator 5.4.3.Final

Please check the respective release notes of the libraries for breaking changes and upgrade information. For example:  
<https://github.com/spring-projects/spring-framework/wiki/Upgrading-to-Spring-Framework-5.x>  
<https://github.com/spring-projects/spring-boot/wiki/Spring-Boot-2.2-Release-Notes>  
<https://docs.spring.io/spring-security/site/docs/current/reference/html/new.html>

If you are using the Spring Boot Maven Plugin, then make sure to pass the required system properties to the applications as described in the release notes .

[CMS-15886]

## Removed Maven property `workspace.configuration.dir`

The Maven property `workspace.configuration.dir` was defined in many aggregator POMs and was needed to find the global workspace configuration directory. With the new modular workspace structure, this property is obsolete and has been removed from all POMs, together with the derived properties `development-properties.dir` and `logging-properties.dir` .

[CMS-15572]

## Changed `CMLinkable#getLocalSettings`

On popular demand, we revoked the deprecation state of `CMLinkable#getLocalSettings` . We also removed the overriding of `getLocalSettings` in `CMLinkableImpl` , because it turned out to be confusing. The overriding method is still available as `getLocalAndLinkedSettings` now. `CMTeaserImpl` still overrides `getLocalSettings` such that the teaser target's settings are considered. However, only the local settings of teaser and target are considered now, not the linked settings.

[CMS-14211]

## Upgraded Netty Libraries

Upgraded netty libraries to `io.netty:netty-bom:4.1.42.Final` .

[CMS-16083]

## 5.8.6 CoreMedia Frontend Workspace

### Updated frontend dependencies

The frontend-maven-plugin used in the frontend workspace has been updated to version 1.8.0 and will now download and use Yarn version 1.19.1 when it is built. The frontend dependencies, have been updated to the latest versions and node.js to latest LTS version 10.17.0.

#### Update steps:

If you are working with the Frontend Workspace we suggest to also upgrade your local installation of Yarn to 1.19.1 and node.js to 10.17.0.

(CMS-16088)

### Glyphicon-Brick removed

The glyphicon-brick and all occurrences of its icons were removed from the frontend workspace and replaced with svg graphics. If your code relies on the glyphicon font it can be included manually in your theme.

(CMS-14672)

### Removed legacy example bricks

As announced in the release notes of 1907 the following legacy bricks have been removed:

- @coremedia-examples/livecontext-icons
- @coremedia-examples/bootstrap3
- @coremedia-examples/hero-teaser
- @coremedia-examples/livecontext-banners
- @coremedia-examples/livecontext-product-list
- @coremedia-examples/bootstrap3-navigation
- @coremedia-examples/jquery-plugins
- @coremedia-examples/livecontext-grids
- @coremedia-examples/livecontext-search

- @coremedia-examples/bootstrap3-pagegrid
- @coremedia-examples/livecontext-header
- @coremedia-examples/responsive-carousel

[CMS-15506]

## Theme Build: Fixed SASS Variable Load Order

The load order in which SASS variables files were picked up during theme build was not always correct. This has sometimes caused variable overrides if they were not made directly in the theme to not have an effect. You can now rely on the fact that a variable is always overridden if a package has a dependency on the package which contains the SASS variable which is meant to be overridden.

[CMS-15337]

## 5.8.7 CoreMedia Deployment

### Removed 'commerce.adapter.\*.endpoint' properties

The ``commerce.adapter.*.endpoint`` properties were renamed to ``commerce.hub.data.endpoints.*``.

[CMS-15557]

## Update chef-sugar cookbook

Because the author of the open source software `chef-sugar`, yanked his gem releases, an update to the cookbook and the gem is necessary. For CoreMedia releases prior to `1.9.0.7`, this also requires an update of chef from `12.8.1` to `12.22.1`.

[CMS-15953]

## Websphere Commerce proxy hosts renamed

The proxy hostnames for the development proxy hosts for the Websphere Commerce Shop have been renamed:

- shop-helios -> shop-ibm
- shop-preview-helios -> shop-preview-ibm
- shop-preview-production-helios -> shop-preview-production-ibm

[CMS-15606]

## Sitemanager deployment with Webswing removed

Due to licensing issue, the CoreMedia Site-Manager docker image no longer uses the Webswing framework. As a replacement, the Site-Manager can now be downloaded as a preconfigured zip archive from the docker container at `<container>:80/site-manager.zip`.

[CMS-15040]

## 5.8.8 CoreMedia Commerce Hub

### Support for SAP Commerce 1905

Formerly CoreMedia used the Platform Web Services REST API to integrate with SAP Commerce. Since SAP deprecated and removed the Platform Web Services API in version 1811, CoreMedia now integrates with SAP Commerce 1905 via the OCC Web Services.

Furthermore CoreMedia extended the OCC Web Services by introducing an additional `ycommercewebservices` addon, called ``cmoccaddon``. The ``cmoccaddon`` adds the ability to read Product and Category data optimized for the use with CoreMedia Commerce Hub.

To integrate SAP Commerce 1905 with CoreMedia, the Hybris Commerce Adapter needs to be upgraded to version 1.1.0 or later. The now called legacy integration with Hybris 6.5 will be still available by using a Hybris Commerce Adapter prior to version 1.1.0.

[CMS-15864]

## link.storefront-url property renamed to sfcc.link.storefront-url

The link.storefront-url property is renamed for the SFCC commerce adapter. Its now prefixed with "sfcc." as any other Salesforce properties. If your salesforce adapter is already deployed change the deployment a set the "SFCC\_LINK\_STOREFRONT\_URL" property instead of "LINK\_STOREFRONT\_URL".

[CMS-15812]

## PreviewUrlService API changes

Livecontext `PreviewUrlService#getExternalPageNonSeoUrl` no longer has a default implementation. The return type changed from `Optional<UriComponents>` to `UriComponents`.

[CMS-15551]

## Site ID parameter removed from CatalogAliasTranslationService methods

Those methods of `com.coremedia.blueprint.base.livecontext.ecommerce.common.CatalogAliasTranslationService` that took both the store context and the site ID parameters were simplified so that only the store context parameter remains. The site ID is derived from the store context internally.

[CMS-15543]

## e-Marketing Spots Aurora Augmentation

All e-Marketing spots in Aurora Augmentation demo content have been removed as the site is now using Commerce Hub by default, which does not support e-Marketing spots. If you need e-Marketing spots to work like in earlier releases, have a look at Aurora B2B or Calista. They are still using the legacy, non-Commerce-Hub integration which still supports e-Marketing spots.

[CMS-15503]

## 5.8.9 CoreMedia Connector for HCL Commerce

### `CurrentCommerceConnection` has been removed

The preferred way to obtain a commerce connection is to ask the store context for it via `StoreContext#getConnection()` if the store context is available in the current scope.

If it is not, but a site object or a content object is available in the current scope, `CommerceConnectionInitializer` or `CommerceConnectionSupplier` can be used to obtain a commerce connection.

The class `CurrentCommerceConnection` has been removed.

[CMS-15628]

### CommerceConnection#setStoreContext renamed

The `CommerceConnection` method `setStoreContext` has been renamed to `setInitialStoreContext`.

It should not be called from customer code, and is expected to be removed. Instead, `CurrentStoreContext` can be used to set and obtain a custom store context.

[CMS-15627]

### User context removed from commerce connection

As the user context is more specific than the commerce connection, the current user context was moved to its own thread-local and can be obtained via `CurrentUserContext`.

`CommerceConnection` methods `getUserContext` and `setUserContext` have been removed.

[CMS-15626]

## `UserControllerHelper` methods removed

`CurrentUserContext` has been introduced to obtain the current user context from a thread-local.

The `UserContextHelper` methods `getCurrentContext` and `setCurrentContext` have been removed.

[CMS-15625]

## `UserContextProvider` methods removed

The `UserContextProvider` role is to offer a way to create a `UserContext` object, but not to keep one around. Thus, the methods `getCurrentContext`, `setCurrentContext`, and `clearCurrentContext` have been removed.

`CurrentUserContext` has been introduced to obtain the current user context from a thread-local.

[CMS-15624]

## `CurrentStoreContext` replaces `CurrentCommerceConnection`

The preferred way to obtain a commerce connection is to ask the store context for it via `StoreContext#getConnection()` if the store context is available in the current scope. If a site object or a content object is available in the current scope, `CommerceConnectionInitializer` or `CommerceConnectionSupplier` can be used to obtain a commerce connection instance.

If the store context is not available as a method parameter, the current instance can be obtained via `CurrentStoreContext#find()` or `CurrentStoreContext#get()`.

The class `CurrentCommerceConnection` has been removed.

[CMS-15228]

## Refactored Spring Configuration Files of Artifact `bpbase-lc-common`

The XML configuration files provided by artifact `bpbase-lc-common` were removed. Use the new java configuration class `com.coremedia.blueprint.base.livecontext.LcEcommerceServiceConfiguration` instead.

[CMS-15214]

## 5.8.10 CoreMedia Connector for SAP Commerce Cloud

### Removed SAP Hybris Commerce Integration modules from blueprint

With the new integration of different commerce systems via the Commerce Hub, vendor specific implementations were moved into the vendor specific Commerce Adapter workspaces.

The SAP Hybris Commerce Integrations is not part of the blueprint anymore.

The Studio and the CAE do only use the so called generic client library to communicate with the Adapter Service, which itself communicates with the commerce system. The generic client library does not have any vendor specific code, as it serves as a client for all vendors.

For customizations the generic client offers extension points as the commerce adapter API as well.

See the documentation for more details.

[CMS-15180]

## 5.8.11 CoreMedia Connector for Salesforce Commerce Cloud

### Removed Salesforce Commerce Cloud Integration modules from blueprint

With the new integration of different commerce systems via the Commerce Hub, vendor specific implementations were moved into the vendor specific Commerce Adapter workspaces.

The Salesforce Commerce Cloud Integrations is not part of the blueprint anymore.

The Studio and the CAE do only use the so called generic client library to communicate with the Adapter Service, which itself communicates with the commerce system. The generic client library does not have any vendor specific code, as it serves as a client for all vendors.

For customizations the generic client offers extension points as the commerce adapter API as well.

See the documentation for more details.

[CMS-15179]

## 5.8.12 CoreMedia Headless Server

### Add support for Product Lists and some schema changes

Support for Product Lists has been added. During this effort, several changes have been made to the GraphQL schema:

- New interface `CMProductList`
- New `Banner` and `Detail` interfaces extracted from `CMTeasable`, both extending the new interface `CollectionItem`
- The `items` field in `CMCollections` has been generalized from an array of `CMTeasable` to an array of `CollectionItem`.

- The Product interface now also extends the CollectionItem interface, allowing products (and potentially other objects) to appear as items in CMCollections.
- New convenience fields in CMCollection: bannerItems, detailItems, teasableItems.
- The @inherit directive now supports multiple inheritance, the "from" argument

now expects an array of Strings instead of a single String.

Migrating queries using the CMCollection items field: use the teasableItems field instead.

Migrating schema extensions using the @inherit directive: just surround the value of the "from" argument with a pair of brackets.

[CMS-14489]

## Names of rich text views in GraphQL have changed

The names of the rich text views used in GraphQL have changed in order to better reflect their intention.

- View 'detail' is now named 'default'.
- View 'plain' is now named 'plainFirstParagraph'
- View 'teaser' is now named 'simplified'

[CMS-14500]

## 5.8.13 Miscellaneous

### Run confd when workflowconverter is run before workflow-server startup

If the entrypoint chain for the `workflow-server` contains the `workflowconverter` step, run `confd` before to configure the UAPI and role mappings.

To configure UAPI and role mappings the default environment variables are used, i.e. `CAP_CLIENT_SERVER_IOR_URL`.

This change is only breaking if:

- the workflow-server has been used for the workflow tools instead of the management-tools container
- the workflowconverter was started as part of the startup entrypoint chain in the workflow-server and the `capclient.properties` in the workflow-server module have been altered.

[CMS-16351]

## Docker network dependent entrypoint chain scripts have been removed from Dockerfile default command chain

All Spring-Boot application based docker images that use the `coremedia/java-application-base` base image, now don't use the `wait-for*` entrypoint chain scripts in their default any more. The scripts depend on a software defined network making the service names available. In addition to this, services like `cae-feeder-preview` and `cae-feeder-live` are now based on the same image and can't use the same entrypoint chain. In order to setup the development docker-compose setup robustly, the `wait-for*` scripts are now only added by the docker-compose service definitions.

[CMS-15580]

## Removal: Deprecated methods from Blueprint module search-api

Some deprecated methods have been removed from package `com.coremedia.blueprint.cae.search` of Blueprint module `search-api`.

- `SearchResultBean#getFacets` (use `getFacetResult().getFacets()` instead)
- `SearchResultBean#setFacets` (construct a `FacetResult` and set it with `#setFacetResult` instead)
- `ValueAndCount#getName` (use `#getValue` instead)
- `ValueAndCount#setName` (create new instances instead)
- `ValueAndCount#setCount` (create new instances instead)

[CMS-15426]

## Standardize Spring-Boot applications

To simplify future deployments and cluster deployment automation, the CoreMedia Spring-Boot applications have been standardized in regards to ports, servlet contexts and management interfaces. The changes include:

- All Spring-Boot applications except for the `cae-preview-app`, the `cae-live-app` and the `studio-server-app` are being deployed without a servlet context. The `cae-preview-app` and the `cae-live-app` are being deployed with `/blueprint` and the `studio-server-app` with `/api`.
- All Spring-Boot applications except for the `cae-preview-app`, the `cae-live-app` serve their Spring-Boot management interface without a servlet context. The `cae-preview-app` and the `cae-live-app` have their management interface at `/blueprint/servlet/actuator`. Please make sure, that if you activate the actuators in the CAEs, that you restrict the access to them in your reverse proxy.
- All Spring-Boot applications use the following ports if present:
  - HTTP: 8080
  - JDWP: 5005
  - Management: 8081
  - CORBA: 8083
  - gRPC: 6565
  - Prometheus Metrics: 8199
- For development in the workspace using the `spring-boot-maven-plugin`, the ports are being set to unique ports by activation of the `*local` Spring-Boot profiles.
- For development against a remote system, the `docker-compose` setup forwards the internal ports to the same unique development ports.
- In the deployment archive all ports are being set to the unique port schema as well.
- To prevent misconfiguration all Spring-Boot applications do not set any development endpoint properties using `localhost` values.

[CMS-14968]

## Development licenses

The directory in which development licenses are placed for locally starting *Content Servers* from the Blueprint workspace has been moved from `workspace-configuration/development-licenses` to `apps/content-serv`

```
er/spring-boot/content-server-app/development-licenses
```

.

[CMS-14840]

## maven-surefire-plugin et al. updated to 3.0.0-M3

maven-surefire-plugin, maven-failsafe-plugin and maven-surefire-report-plugin have been updated from 2.22.2 to 3.0.0-M3. This fixes several issues especially regarding Java 11.

**Upgrade:** Upgrade efforts are not expected, but still may occur depending on your project. If you happen to experience problems with 3.0.0-M3 and you are better off with 2.22.2 you may safely revert to 2.22.2 as the Blueprint Workspace comes with no explicit requirement on 3.0.0-M3.

In order to ease changing the plugin version of all related Maven plugins, a new property `maven-surefire-plugin.version` has been introduced.

[CMS-14135]

## Ignore missing content or user files when use-remote-content-archive is used

When the management-tools container uses the `use-remote-content-archive` endpoint, it should ignore missing content or user files when moving them to the import dir. Otherwise it is not possible to import only content from a remote archive.

[CMS-16308]

## Spring-Boot / Docker integration for livecontext name changes

In the Spring-Boot application and Docker setup, Spring profiles and docker-compose configurations have been changed to remove the `lc3` prefix.

- the Spring profiles have been renamed:
  - `llc3hybris` -> `dev-hybris`
  - `lc3ibm` -> `dev-wcs`
  - `lc3sfcc` -> `dev-sfcc`

- the docker-compose files for the commerce proxy have been renamed:
  - `compose/lc3hybis.yml` -> `compose/development-hybris.yml`
  - `compose/lc3ibm.yml` -> `compose/development-wcs.yml`
  - `compose/lc3sfcc.yml` -> `compose/development-sfcc.yml`

[CMS-15529]

## Taxonomies: Skip empty folders in taxonomy type lookup

The method `TaxonomyUtil#findFirstTaxonomy(Content folder, String contentType)` was used to lookup a taxonomy recursively to convert the String to a ContentType. This method has been removed and `ContentRepository#getContentType` is used instead.

[CMS-14836]

## Empty Translation Units in XLIFF Export

The XLIFF exporter considers the `EMPTY_IGNORE` option [ `com.coremedia.cap.translate.xliff.XliffExportOptions.EmptyOption.EMPTY_IGNORE` , set by default for XLIFF Export] for String properties in Structs now, and omits empty values in the export if the option is configured.

[CMS-13667]

## 5.9 Upgrade to 1907.1

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

#### Merged Module `bpbase-uapi-util` into `cap-unified-api-util`

Since `bpbase-uapi-util` is actually not specific to `bpbase` features, there is no use keeping the UAPI utilities in two separate modules. Therefore, we merged the two modules, so that the features from `bpbase-uapi-util` are also available in the core layer now. If you use `bpbase-uapi-util` features in your project, you must change the package from `com.coremedia.blueprint.base.util` to `com.coremedia.cap.util`, and the Maven dependency from

```
<dependency>
  <groupId>com.coremedia.blueprint.base</groupId>
  <artifactId>bpbase-uapi-util</artifactId>
</dependency>
```

to

```
<dependency>
  <groupId>com.coremedia.cms</groupId>
  <artifactId>cap-unified-api-util</artifactId>
</dependency>
```

[CMS-15227]

#### Changed Names of Some Spring Boot Apps, Docker Images and Extension Points

With the integration of Spring Boot and Docker into the Blueprint workspace (they used to be separate workspaces in CM9/LC3) and the introduction of modular (sub-)workspaces, the Maven artifactIds and workspace names have been consolidated. Also, CAE

Feeder and Content Server "flavors" (live/preview, management/master/replication) have been unified into one Spring Boot App / Docker image. Furthermore, studio-rest-service has been renamed to studio-server, and studio has been changed to studio-client where appropriate. The following artifactId changes have to be considered:

	CM9/LC3	CMCC 10
Spring Boot Apps	caefeeder-live-app / caefeeder-preview-app	cae-feeder-app
	studio-rest-service-app	studio-server-app
	content-management-server-app / master-live-server-app / replication-live-server-app	content-server-app
Extension Points	caefeeder	cae-feeder
	contentfeeder	content-feeder
	server	content-server
	editor-lib	site-manager
	studio	studio-client
	studio-dynamic	studio-client-dynamic
	studio-lib	studio-server
Docker Images	caefeeder-live / cae-feeder-preview	cae-feeder
	sitemanager-web	site-manager
	studio-rest-service	studio-server
	content-management-server / master-live-server / replication-live-server	content-server
Docker Compose Services	studio-rest	studio-server

Note that for extension points, the old names will still work, but are deprecated.

For more details on the unification of application "flavors", see CMS-14785 for CAE Feeder and CMS-14782 for Content Server.

Because renaming of Docker Compose services results in different host names, this change may affect you custom setup the most. Feel free to revert to the old names by searching and replacing them in `global/deployment/docker/compose/*.yml`.

[CMS-14794]

## Merged Live and Preview CAE Feeder

CAE Feeder comes in two flavors: live and preview. Although the only difference is configuration, these used to be two separate components, Spring Boot applications, and Docker containers. Now, there is only one component, one Spring Boot application and one Docker container. Docker compose takes care of configuring two CAE Feeders, one for preview and one for live. For development, there are separate Spring and Maven profiles provided to start the CAE Feeder in the desired flavor.

[CMS-14785]

## Merged Content Server flavors

The Content Server comes in three flavors: management, master-live and replication-live. Previously these used to be different components, Spring Boot applications and Docker images. Now, there is only one component, one Spring Boot application and one Docker container. The main difference between the flavors is the usage of the Search-Service in the content-management-server, which now has to be enabled explicitly using the property `cap.server.search.enable`. Docker compose takes care of configuring three Content Servers, one as content-management-server, one as master-live-server and one as replication-live-server. For development, there are separate Spring and Maven profiles provided to start the Content-Server in the desired flavor.

[CMS-14782]

## Removal: Class

`'com.coremedia.workflow.common.util.MapRole'`

Removed class `'com.coremedia.workflow.common.util.MapRole'`.

Use externalized configuration instead by configuring as follows:

```
workflow.map-role.<TO_BE_MAPPED>=<MAPPED_ROLE>
```

[CMS-14147]

## Defining custom translation workflow validators

The workflow validation was made public API. It is now possible to define custom translation workflow validators. This is documented within the Studio Manual in section "Customizing Workflow Validation".

[CMS-13761]

## Solr 8 and SolrCloud

Apache Solr has been updated to version 8.1.1. Furthermore, Solr may also run as Solr-Cloud cluster for CMCC now.

For detailed changes of Apache Solr have a look at [https://lucene.apache.org/solr/guide/8\\_1/solr-upgrade-notes.html](https://lucene.apache.org/solr/guide/8_1/solr-upgrade-notes.html) and [https://lucene.apache.org/solr/8\\_1\\_1/changes/Changes.html](https://lucene.apache.org/solr/8_1_1/changes/Changes.html).

### Re-indexing Required

The index format and schema have changed with this version and require full re-indexing from scratch for *Content Feeder*, *CAE Feeder* and *Elastic Social* indices.

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 Feeder, and new Solr instance in parallel to your existing installation, and let them feed the indexes of the newly set up Solr instance. When initial feeding is complete, you can update Content Server, Studio and CAE. They must be configured to use the new Solr instance for search, but will already find an initialized index, so that search is working immediately.

### Index Schema Changes

Numeric and date field types `date`, `int`, `float`, `long`, `double`, `tdate`, `tint`, `tfloat`, `tlong`, `tdouble` have been removed from schema.xml files and fields use the corresponding point field types `pdate`, `pint`, `pfloat`, `pfloat`, `pdouble` now. Trie field types are deprecated since Solr 7 and point fields should be used instead. If you've defined custom fields of such a trie type, you should change them to the corresponding point field type. Most of these fields have also been changed to `stored="false"` because they have Solr DocValues enabled, which can also be used to retrieve the original value similar to stored fields. Multi-valued numeric fields

where the order of values is important are still defined with `stored="true"`, because Solr DocValues do not maintain the order of values.

The *Content Feeder* index fields `name` and `name_tokenized` have been replaced by one field `name` in `modules/search/solr-config/src/main/app/configsets/content/conf/schema.xml`. The new field uses the `SortableTextField` type which supports sorting. Multiple fields were required in the past: the text field `name_tokenized` was used to find contents by words appearing in the name, while the field `name` was used for sorting search results by name. The new `SortableTextField` supports both use cases. You have to adapt custom code to use the field `name` instead of `name_tokenized` if you've referenced the latter in custom code. The field `name` is now configured for support of multiple languages in the same way as it was configured for `name_tokenized` before, which means that language-dependent fields such as `name_en` will automatically be used, if present. For details on language-dependent fields have a look at the Search Manual, chapter "Searching in Different Languages".

The new field `name_lc` in the *Content Feeder* index is set to the lower-cased name of the content and can be used to sort by name in a case-insensitive way.

The deprecated *Content Feeder* index field `folder` and the deprecated *Content Feeder* configuration property `feeder.indexPath` have been removed. The field wasn't used in the default configuration of the product. It was only set to the path of the content's parent folder, if the default configuration of the *Content Feeder* had been changed to set Spring property `feeder.indexPath=true`. You should use the index field `path` instead, which contains the content's own path including its name, or the index field `folderpath` which contains the path as numeric content IDs. If really needed, you could also keep the field `folder` in your custom index schema, and implement feeding with a custom `FeedablePopulator` in the *Content Feeder*.

The field `stringSuggestions` has been added to the *Content Feeder* index and is set to all values from the existing index fields `productCode` and `assetProductCodes`. It is configured in `solrconfig.xml` for search suggestions. Previously `solrconfig.xml` configured `productCode` and `assetProductCodes` fields directly. This is a preparation for possible future changes, especially for modularizing Solr configuration files.

The field `site` has been removed from the *Content Feeder* index. It wasn't used in the product and did not always contain the correct site, if content was indexed before the site was correctly set up, for example before the corresponding `CMSite` document was created (bug CMS-11445). The class `SiteFeedablePopulator` which was responsible to set this field in the *Content Feeder* has also been removed from the Blueprint module `content-feeder-blueprint-component`. If you still need this field, you can keep the field and class in your custom Blueprint.

### Docker Image

The Solr image in the docker deployment is now based on the "slim" flavor of the official Solr docker image from [https://hub.docker.com/\\_/solr/](https://hub.docker.com/_/solr/) . It was based on the "alpine" flavor before, which is no longer available.

The directory layout of the docker image has changed as described for the base image in <https://github.com/docker-solr/docker-solr/pull/210> . Index data is now located in `/var/solr/data` and not in `/opt/solr/solr_cores` anymore.

### SolrCloud Support

It is now also possible to connect CMCC applications to Apache Solr that is running as SolrCloud cluster. See section "Search Engine | SolrCloud" in the Search Manual for details.

[CMS-13291]

## Removal: Workflow Server's Internal Spring Context

The Workflow server no longer manages an internal Spring application context.

`com.coremedia.workflow.common.util.SpringContextManager` was changed so that it no longer loads a fresh Spring application context but exposes the workflow server's root application context. Instead of configuring property sources and bean resources for the Spring application context that was formerly loaded by `com.coremedia.workflow.common.util.SpringContextManager` , just extend the workflow server's root application context in the common way, for example, by adding Spring Boot auto configuration classes to the Workflow server's classpath.

[CMS-12425]

## Changed Default Value of `checkUniqueDbAccess`

Changed default of `cap.server.checkUniqueDbAccess` to true; has been false for backwards compatibility only.

[CMS-12300]

## ORB configuration

Since Java 11 does not contain a Corba ORB any longer, we switched to the Glassfish ORB. The Glassfish ORB originates from the same code base and is mostly compatible with the ORB included in Java 8. However, some things have changed (esp. property

names), and since we could not avoid some breaking changes anyway, we seized the opportunity for some renovation of our Corba features:

- SSL communication
- Redirection
- Single IP sockets
- Disabling server sockets

There have been particular socket factories which implemented these features, and which had to be configured by the system property `com.sun.corba.ee.legacy.connection.ORBSocketFactoryClass`. This has changed completely. We switched from the `com.sun.corba.se.impl.legacy.connection.DefaultSocketFactory` to the modern `com.sun.corba.ee.spi.transport.ORBSocketFactory`. You can configure an `ORBSocketFactory` by the `com.sun.corba.ee.transport.ORBSocketFactoryClass` system property - but you do not need to! Our new default `ORBSocketFactory` implementation supports all the features and can be controlled merely by Spring configuration properties.

For details see section "Communication between the System Applications" in the Operations Basics manual.

The Glassfish ORB needs more memory than the Java 8 ORB. Therefore, we increased the maximum heap sizes of most command line tools to 96 MB.

(CMS-12067)

## ConfigurationProperties for Servers

For the Content and Workflow Server ConfigurationProperties classes have been introduced that replace the different properties files used in the servers:

- `contentserver.properties`
- `publisher.properties`
- `replicator.properties`
- `imageconverter.properties`
- `workflowserver.properties`
- `sql.properties`

Properties can now be configured via Spring Boot. You can use `application.properties`, `system properties`, `environment variables` in uppercase and many more. See

<https://docs.spring.io/spring-boot/docs/current/reference/html/boot-features-external-config.html> for details.

Spring's relaxed binding also allows for different notations of property names like snake or camel case, but the default is 'kebab case' (separating words with dashes).

The change required some property renaming and there are some general rules:

- Generally a dot in a property name now reflects some kind of logical hierarchy.
- List-valued properties are now zero-based and use bracket notation (x.y.1.\* -> x.y 0.\*)

### List of all renamed properties

```
cap.server.http.port -> cap.server.http-port
cap.server.session.ping.interval -> cap.server.session-ping-interval
cap.server.session.transient.threshold ->
cap.server.session-transient-threshold
cap.server.blob.channel.timeout -> cap.server.blob-channel-timeout
cap.server.repository.home -> cap.server.repository-home
cap.server.repository.system -> cap.server.repository-system
cap.server.namingpolicy.allowat -> cap.server.naming-policy-allow-at
cap.server.init.runlevel -> cap.server.init-runlevel
cap.server.termination.timeout.seconds ->
cap.server.termination-timeout-seconds
cap.server.encryptpasswords.keyfile -> cap.server.encrypt-passwords-key-file
```

```
cap.procmon.enable -> cap.server.enable-procmon
cap.sysmon.enable -> cap.server.enable-sysmon
cap.server.ORBServerHost -> com.coremedia.corba.server.host
cap.server.ORBServerPort -> com.coremedia.corba.server.port
cap.server.ORBServerSSLPort -> com.coremedia.corba.server.ssl.ssl-port
cap.server.orb.keepalive.port -> com.coremedia.corba.server.keepalive-port
cap.server.orb.keepalive.interval ->
com.coremedia.corba.server.keepalive-interval
cap.server.resourcecache.size -> cap.server.cache.resource-cache-size
cap.server.resourcecache.status.interval ->
cap.server.cache.resource-cache-status-interval
cap.server.usercache.size -> cap.server.cache.user-cache-size
cap.server.usercache.status.interval ->
cap.server.cache.user-cache-status-interval
cap.server.groupcache.size -> cap.server.cache.group-cache-size
cap.server.groupcache.status.interval ->
cap.server.cache.group-cache-status-interval
cap.server.cache.memberfolderrights.cache.size ->
cap.server.cache.member-folder-rights-cache-size
cap.server.rightscache.size -> cap.server.cache.rights-cache-size
cap.server.rightscache.status.interval ->
cap.server.cache.rights-cache-status-interval
cap.server.login.extended-failure-messages ->
cap.server.login.extended-failure-messages
cap.server.ldap.1.class -> cap.server.ldap[0].providerClass
cap.server.ldap.1.properties -> cap.server.ldap[0].properties
```

```
publisher.status.interval -> publisher.status-interval
publisher.linkValidator.class -> publisher.link-validator-class
publisher.connection.timeoutSeconds -> publisher.connection-timeout-seconds

publisher.target.* -> publisher.target[0].*
publisher.target.2.* -> publisher.target[1].*
publisher.target.ior.url -> publisher.target[0].iorUrl
```

```
publisher.priority.gui.editor -> publisher.priority.guiEditor
```

```
replicator.Packager.flushSize -> replicator.packager-flush-size
replicator.<STAGE>.channelSize -> replicator.channelSize.<STAGE>
```

```
sql.modules.textEngine -> sql.modules-text-engine
sql.store.driver.jdbc -> sql.store.driver-jdbc
sql.store.collector.blob.preservationperiod ->
sql.store.collector.blob.preservation-period
sql.store.convert.correctRichText -> sql.store.convert-correct-rich-text
sql.store.convert.correct-preferences -> sql.store.convert-correct-preferences

sql.store.convert.filterXmlChars -> sql.store.convert-filter-xml-chars
sql.store.sgmlcache.size -> sql.store.sgml-cache-size
sql.store.sgmlcache.interval -> sql.store.sgml-cache-interval
sql.store.convert.defaultHoxImageProperty ->
sql.store.convert-default-hox-image-property
```

```
workflow.ior.url -> workflow.ior-url
workflow.procmon.enable -> workflow.enable-procmon
workflow.sysmon.enable -> workflow.enable-sysmon
workflow.server.ORBServerHost -> com.coremedia.corba.server.host
workflow.server.ORBServerPort -> com.coremedia.corba.server.port
workflow.server.ORBServerSSLPort -> com.coremedia.corba.server.ssl.port

workflow.server.keepalive.ORBServerPort ->
com.coremedia.corba.server.keepalive-port
workflow.server.keepalive.interval ->
com.coremedia.corba.server.keepalive-interval
workflow.server.allow.live -> workflow.server.allow-live
workflow.server.remoteaction.handler -> workflow.server.remote-action-handler

workflow.server.termination.timeout.seconds ->
workflow.server.termination-timeout-seconds
workflow.server.check.integrity -> workflow.server.check-integrity
workflow.server.pa.prefetch.rows -> workflow.server.pa-prefetch-rows
workflow.server.pa.prefetch.tables -> workflow.server.pa-prefetch-tables
workflow.server.longActions.max -> workflow.server.long-actions-max
workflow.server.repository.processJarCache.capacity ->
workflow.server.repository-process-jar-cache-capacity
workflow.pool.threads.min -> workflow.pool.threads-min
workflow.pool.threads.max -> workflow.pool.threads-max
workflow.pool.queue.size -> workflow.pool.queue-size
workflow.server.log.contentmanager.enable ->
workflow.server.log.contentmanager
workflow.server.log.errorlog.enable -> workflow.server.log.errorlog
workflow.server.log.persistenceadapter.enable ->
workflow.server.log.persistenceadapter
workflow.server.log.processsweeper.enable ->
workflow.server.log.processsweeper
workflow.server.log.remoteaction.enable -> workflow.server.log.remoteaction

workflow.server.log.signals.enable -> workflow.server.log.signals
workflow.server.log.timers.enable -> workflow.server.log.timers
workflow.server.log.transactions.enable -> workflow.server.log.transactions

workflow.server.log.contentmanager.invalidations.enable ->
workflow.server.log.contentmanager-invalidations
workflow.common.log.actions.enable -> workflow.common.log.actions
workflow.common.log.expressions.enable -> workflow.common.log.expressions
```

```
workflow.common.log.policies.enable -> workflow.common.log.policies
roles.map.* -> workflow.mapRole.*
new: workflow.service-background and workflow.serviceindicator-background
additionally to workflow.service and workflow.serviceindicator
```

(CMS-3030)

## Changed Login Services and System Users

The login service and user for the connection to the *Content Server* have changed for *Studio Server*, *CAE Feeder* and *User Changes App*. In previous releases, all of these applications logged in as user "webserver" and with login service "webserver", which gave them rights to read and write all content, and to log in as different users without a password, for example to write content in the name of another user. This has been changed in order to give applications only the rights required for their operation. The *Studio Server* and the *User Changes App* now log in with the newly introduced login service "studio" and user "studio". The *CAE Feeder* now logs in with the existing login service "feeder" and user "feeder". The *CAE* and the *Elastic Worker* still use the login service "webserver" and user "webserver" but the rights of this account have been restricted.

The connections of the *Studio Server* and *User Changes App* are still privileged as it was the case in previous releases. They can log in as different users without providing a password, but user "studio" only grants read rights on content for the connection session. This is sufficient because content is always written in the name of an editor user and not as system user "studio". Project extensions that modify content from the connection session should be changed to switch to a session with sufficient rights. Alternatively, you could also grant more rights to the "studio" user.

The *CAE Feeder* now only has read rights on content and its connection is no longer privileged. This is sufficient for its operation.

The connections of the *CAE* and *Elastic Worker* don't have rights to modify content anymore. The user "webserver" only grants read rights by default. Furthermore, connections of the login service "webserver" are no longer privileged. They cannot log in as different user without a password. If you still need this functionality, you can add the configuration option "`cap.server.loginServiceWebserverPrivileged=true`" to the *Content Server* configuration to make connections of login service "webserver" privileged again. This option may be removed in the future, so please tell us if you really need it.

Note that for existing repositories, user rights and group memberships are not updated automatically but must be adapted manually:

Release 1901.1 already restricted the default rights of system users and introduced the new system group "system-write" for CMS-1892. If you don't have that group yet, then you should adapt existing users and groups as follows:

1. On the *Content Management Server* :
  - a. Create the new group "system-write" and add rules for documents and folders that grant all rights. The new group should have the same flags and rights as it was the case for the existing group "system".
  - b. Make the new group "system-write" a member of the existing group "system".
  - c. Make system users "workflow" and "publisher" members of the group "system-write" instead of "system"
  - d. Create a new user "studio" and make it a member of group "system".
  - e. On the *Content Management Server* and the *Master Live Server* : Change the rules of the group "system" to grant read rights on documents and folders only.
2. If you already have the group "system-write" and the changes of CMS-1892 from 1901.1 in your repository, then proceed as follows:
  - a. On the *Content Management Server*: Create a new user "studio" and make it a member of group "system".
  - b. On all *Content Servers* : Make user "webserver" a member of group "system" instead of "system-write"
  - c. Only on *Master Live Server* and *Replication Live Servers* : The group "system-write" should have no members anymore and can be deleted.

[CMS-378]

## Changed Site Manager LookAndFeel for Windows

The `WindowsLookAndFeel` has vanished in Java 11 (was not public API, anyway). The `CoreMediaLookAndFeel` was derived from the `WindowsLookAndFeel` and brings no benefits for the LookAndFeel flavors available in Java 11. Therefore, we do not explicitly configure a LookAndFeel any longer in our default `editor.xml` , but simply stick to the Swing default. The `CoreMediaLookAndFeel` is still available and extends the `NimbusLookAndFeel` now. If you favor this over the Swing default LookAndFeel, you can keep on using it. Of course, you can still use your own custom LookAndFeel or the "system" LookAndFeel.

Change:

The field `LayoutTableCellRenderer#headerBorder` has been deleted, since the according value was only available in the `WindowsLookAndFeel`, which has been withdrawn in Java 11.

[CMS-15198]

## Made Serverimport More Deterministic

Serverexport is somewhat error prone due to the subtle behaviour of the cut feature. Hence, it easily happens that links in serverexport files are inconsistent wrt. their path and href values. The behaviour of serverimport in such cases depended on the order in which link source and target were imported, which in turn cannot be controlled, esp. if you import concurrently with the threads option. Sometimes the import succeeded, and sometimes it failed, and the serverimport deleted the apparently broken link.

This works deterministic now, and the links are always preserved if they can be derived from the path value, even if the href value is invalid.

Since we had to change some internal checks, particular inconsistencies in the import set may be reported with different warnings now. You may even see additional warnings, because we do some more checks now. However, the new warnings do not affect the halt-on-error policy. The actual import has not become stricter than before.

[CMS-14166]

## Content Types must restrict master links to same type

The link type of link list property `master` is now restricted to link to the same type for content types `AMTaxonomy`, `CMImageMap`, `CMLocTaxonomy`, `CMP13NSearch`, `CMTaxonomy`, `CMViewtype` and `ESDynamicList`, instead of allowing super types. This should match values of existing content, because the property was always intended to link to the same type only. This change fixes some violations that were reported by the `cm validate-multisite` tool.

Please validate that existing documents of these types do not link to other types. For details, see section "Changing LinkType of LinkListProperty" in the Content Server Manual.

[CMS-13307]

## Replication Live Server startup

The configuration option `replicator.preventOnlineSwitch` and the associated JMX property have been removed. As a replacement, the property `replicator.force-online-switch` has been added. If `false` (the default), the *Replication Live Server* waits for the replication process to catch up with the *Master Live Server* before going into online runlevel. If `true`, the server will go online immediately.

The change from the old behavior is that `replicator.force-online-switch=true` will ensure the switch to online mode even if the *Master Live Server* is not currently reachable. This is helpful if the runlevels of multiple *Replication Live Servers* are not coordinated by a central monitoring/watchdog solution that would be able to take the servers online if the `_Master Live Server_` is down.

Note that both, the old and the new option, define the startup behavior of a *Replication Live Server* for which `cap.server.init-runlevel=online` has been configured or implied as the default. For other initial runlevels, neither option has any effect.

[CMS-12635]

## 5.9.2 CoreMedia Content Application Engine

### New Module `bpbase-querylist-impl` for common Businesslogic of Querylists

A new module `bpbase-querylist-impl` is added, that contains helper functionality to handle businesslogic of Querylists.

This change is breaking, as it moves helper functionality from the following classes of module `contentbeans` to the new module `bpbase-querylist-impl`:

```
com.coremedia.blueprint.cae.contentbeans.CMQueryListImpl  com.coremedia.blueprint.cae.contentbeans.PaginationImpl
com.coremedia.blueprint.common.util.SearchQueryUtil      com.coremedia.blueprint.common.util.SettingsStructToSearchQueryConverter
```

The module `contentbeans` now needs a dependency to `bpbase-querylist-impl`.

[CMS-15673]

## Alignment of default Image Crops

While Studio aligns new image crops automatically with the focus point, the CAE used to align default crops with the center of the image. This has been changed now, and the CAE also considers the focus point for default croppings. If you prefer the old behaviour, refrain from calculating the focus point in `CMPictureImpl#getTransformMap`, and simply leave it at `null`.

[CMS-14383]

## Removal: Untyped `ContentBeanFactory#createBean(s)For` and `AbstractContentBean#createBean(s)For` methods

Four methods have been removed.

Replace the methods as follows:

- `ContentBeanFactory#createBeanFor(Content)` - use `ContentBeanFactory#createBeanFor(Content, Class)` instead
- `ContentBeanFactory#createBeansFor(List<? extends Content>)` - use `ContentBeanFactory#createBeansFor(Iterable<? extends Content>, Class)` instead
- `AbstractContentBean#createBeanFor(Content)` - use `AbstractContentBean#createBeanFor(Content, Class)` instead
- `AbstractContentBean#createBeansFor(List<? extends Content>)` - use `AbstractContentBean#createBeansFor(Iterable<? extends Content>, Class)` instead

[CMS-14112]

## Removal: `bp.message` macros

The Freemarker Macros and Functions `bp.message`, `bp.getMessage()` and `bp.hasMessage()` are removed, because they are moved to the `cm` taglib.

### Upgrade Steps:

Search and replace following macros and functions in your templates:

- `bp.message` to `cm.message`

- `bp.getMessage` to `cm.getMessage`
- `bp.hasMessage` to `cm.hasMessage`

This has been done to all available Blueprint templates.

[CMS-13758]

## Deprecation: Aspects have been deprecated

The package `com.coremedia.cae.aspect` has been deprecated. Since nowadays the contentbeans are delivered as source code and can be changed directly, there is no need for the complexity of Aspects any longer.

The OpenStreetMap integration, which is still based on Aspects, is not used by default and has been deprecated too.

[CMS-13379]

## Removal: cae-legacy.ftl

The deprecated Freemarker Macros of `cae-legacy.ftl` and the `CAELegacyFreemarkerFacade` are removed.

Use `cae.ftl` and the `CAEFreemarkerFacade` instead.

[CMS-9327]

## New default value for cae.is.standalone

The application.properties for the CAE Preview app now set `cae.is.standalone=false` by default. This adds the `/blueprint/servlet` prefix to generated URLs. Otherwise they will not be routed correctly by Traefik.

[CMS-14846]

## 5.9.3 CoreMedia Studio

### Third-Party Update: Spring Boot 2.1.6, Spring Framework 5.1.8 and other third party libraries

The following third party libraries were updated:

- Spring Boot 2.1.6.RELEASE
- Spring Framework 5.1.8.RELEASE
- byte-buddy 1.9.13
- httpclient 4.5.9
- Jetty 9.4.19.v20190610
- Jangaroo 4.5.68

The update of *HttpClient* includes some security-related changes. If you are using the *HttpClient* library in your project code, you will potentially encounter problems with the SSL connection of your internal test systems. This only applies if you are using non-public domain names internally. You can solve these issue in your test code by providing the `HttpClient` with its own `SSLContext` and a `DefaultHostnameVerifier` that does not use the `PublicSuffixMatcher` .

[CMS-15069]

### Removal: External Library Extension

The external library has been removed from the Blueprint. This feature is replaced by the Content Hub.

[CMS-14983]

### Removal: Navigation Tree CollectionView Extension

The library extension for displaying the navigation tree has been removed [it was disabled by default]. The functionality can be implemented with the Content Hub now.

[CMS-14838]

## Extracted Remote Dynamic Packages from studio-client

The Remote Dynamic Packages feature has been extracted from the studio-client into a separate optional application called studio-packages-proxy. The studio-client now only serves static resources and no Java code. If enabled, the studio-packages-proxy can be deployed in front of the studio-client and will then proxy all requests to the studio-client, redirecting the requests to remote packages.

[CMS-14684]

## Enhanced tool bar buttons functionality for workflows

Within the ControlRoomStudioPlugin.mxml the property "listToolBarButtons" was changed to "listToolBarButtonsFunction". Now it is possible to show buttons in the workflowPanelToolBar, depending from the chosen workflow and the current panel.

Migrate steps: Simply return a function that returns the array with the buttons that you want to show

[CMS-14584]

## Quick Create has been moved to editor-sdk

In order to use the quick create functionality for core components, the quick create has been moved to the editor-sdk. Note that corresponding namespaces in MXML and imports have been changed accordingly.

[CMS-14483]

## Studio REST Service now runs on Spring MVC Instead of Jersey

As part of our efforts for supporting Java 11, the Studio REST service now runs on Spring MVC instead of Jersey 1 (JAX-RS). Jersey dependencies are now banned throughout the workspace to avoid any mixture.

While the Studio REST framework itself received a major overhaul, the effect for Studio backend developers is not as big. Migrating your Jersey-based code to Spring-MVC-based code is mostly straightforward. There are multiple 'cheat sheets' around of how to replace your Jersey /JAX-RS keywords by Spring MVC keywords. Some of the more important ones are listed in the following:

```
Spring MVC => JAX-RS
@RequestMapping(path = "/myresource" => @Path("/myresource"))
@PostMapping => @POST
@PutMapping => @PUT
@GetMapping => @GET
@DeleteMapping => @DELETE
@ResponseBody => N/A (not necessary)
@RequestBody => N/A (not necessary)
@PathVariable("id") => @PathParam("id")
@RequestParam("xyz") => @QueryParam("xyz")
@RequestParam(value="xyz") => @FormParam("xyz")
@RequestMapping(produces = ...) => @Produces(...)
@RequestMapping(consumes = ...) => @Consumes(...)
```

One major change concerns REST resources implementing 'EntityResource' (although it is not public API we know that the interface is in use in customer blueprint extensions). Previously, the interface assumed that implementing resources where of scope 'prototype'. Now the default scope is assumed. As a result, implementing resources must not hold any state such as IDs but serve requests in a state-less fashion. Changes to the interface reflect this new assumption as request parameters now need to be passed as method parameters instead of being stored in class variables.

[CMS-12077]

## Increased Studio performance for reusable tabs

To increase Studio performance, we offer the possibility to reuse tabs for multiple working items instead of creating new tabs over and over again. Currently, this possibility is just implemented for document form tabs that display content items (Premulars). Consult the section "Re-Using Studio Tabs For Better Performance" of the Studio Manual.

[CMS-7863]

## Document Type Selection for Preferred New Content

As an editor, I can now select the preferred document types that should appear on the top of the new content drop down menu (of the library toolbar) and on top of the "New

Content" menu (of the favorites toolbar). Open the Content tab in the user preferences to select the preferred types.

[CMS-3081]

## Default folder selection in New Content dialogs is back to normal

While replacing the textual selection of the target folder with a more sophisticated folder chooser, the default folder selection accidentally changed. The selection of the default folder is now back to normal so that custom lookup methods again take precedence over the built-in suggestions.

[CMS-15148]

## Shoppable Video supports multiple banners at the same start time

The default behavior of the Studio validator used for the *Shoppable Video* has changed. It is now possible to define multiple content items with the same start time in the timeline, so that custom shoppable videos can support this use case per default.

If you want to stick to the old validation behavior, then configure the `TimelineValidator` in the `ValidatorsStudioConfiguration` class accordingly.

[CMS-15103]

## Custom validation for translation workflows

As described in the Studio Developer Manual in section "Customizing Workflow Validation", you can define your own validators for a translation workflow. Within your custom validator you need to regularly call the runnable "isAbortRequestedRunnable" which will be provided by the parameters handed to the validator. The runnable will throw an exception if the validation was aborted. The exception will be handled by the validation framework.

[CMS-14260]

## Removal: Studio IOC mechanism

The Studio IOC mechanism from the Studio core has been removed. Usages of the *ComponentContextManager* and the ActionScript annotations *ProvideToExtChildren* and *InjectFromExtParent* need to be refactored into using ValueExpressions with plain ExtJs component configurations.

*ContentAction* doesn't have the config parameter `_contentVariableName_` anymore and the content must be configured by the parameter `_contentValueExpression_`.

*RichTextAction* has a new config parameter `_ckEditorValueExpression_` which is mandatory. Instead using the action directly it is recommended to use the components `_RichTextMenuItem_` and `_RichTextMenuItem_` which have the action's `_ckEditorValueExpression_` already configured.

[CMS-14063]

## Quick Create configured by Setting content

The quick create dialogs consistently use the so-called **Content Creation** setting to enable setting the target paths for new content per content type. The possibility to use the deployment properties by setting `CMArticle_home_folder=` was removed.

### Upgrade Steps

Create a Setting content called **Content Creation** in each site or globally at the following locations:

- `<site>/Options/Settings`
- `/Settings/Options/Settings`

The global setting will be used if there is no site-specific configuration. There has to be a top-level *Struct* called `paths` which contains *Link* properties where the content type is the key and the target folder is the value.

[CMS-13219]

## 5.9.4 CoreMedia Elastic Social

### Removal: Module social-spring-social

The Spring Library `spring-social` is not maintained anymore. Therefore, the CoreMedia module `social-spring-social`, which uses `spring-social`, is removed.

This affects the following Elastic Social functionality, that is not available anymore:

- Login with provider (Facebook, Twitter)
- Registration with Provider (Facebook, Twitter)

#### Details:

All classes of module `social-spring-social` are removed, as this module is removed:

- `com.coremedia.elastic.social.springsocial.CommunityUserConnectionRepository`
- `com.coremedia.elastic.social.springsocial.CommunityUsersConnectionRepository`
- `com.coremedia.elastic.social.springsocial.CommunityUserSignInAdapter`
- `com.coremedia.elastic.social.springsocial.ModelIndexes`

The following methods are removed from `bpbase-es-common`

- `com.coremedia.blueprint.base.elastic.social.configuration.ElasticSocialConfiguration#isTwitterAuthenticationEnabled`
- `com.coremedia.blueprint.base.elastic.social.configuration.ElasticSocialConfiguration#isFacebookAuthenticationEnabled`

Additionally, all functionality in Blueprint, that uses `social-spring-social`, is removed, too. This functionality mainly resides in the Blueprint module `es-cae`.

- The package `com.coremedia.blueprint.elastic.social.cae.springsocial` is removed.

- The class `com.coremedia.blueprint.elastic.social.cae.springsocial.SessionSiteFilter` is moved to a new package `com.coremedia.blueprint.elastic.social.cae.filter`.
- All provider specific functionality is removed.

The following templates of the `elastic-social` example brick are adapted:

- `com.coremedia.blueprint.es.webflow/Login.login.ftl`
- `com.coremedia.blueprint.es.webflow/UserDetails.bpUserDetails.ftl`

[CMS-14578]

## 5.9.5 CoreMedia Workspace

### Modular Application Workspaces

With CMCC major version 10 [1907], the Blueprint workspace has been restructured in order to support independent development of each CoreMedia application.

Up to CM9 [1904], the Blueprint workspace was monolithic in the sense that it is not possible to build only parts of the workspace. Even opening a workspace sub-folder in an IDE is not possible in a meaningful way.

Since the strongest possible technical separation of code is in which application it is used, the new workspace consists of several workspaces that can be built independently. Each application runs in its own process (usually a JVM) and as such manages its own third-party library versions. The applications are Content Server (including its flavors "management", "master live" and "replication live"), Workflow Server, Studio Server (REST backend), Studio Client, two Studio auxiliary services (User Changes and Packages Proxy), CAE ("preview" and "live"), CAE Feeder ("preview" and "live"), Content Feeder, Solr, Headless Server (part of the product since 1907), Elastic Worker, and the deprecated Site Manager. In addition, there are workspaces containing resources: Frontend (templates, themes, bricks) and (demo) Content.

There are workspaces containing shared code that have to be built before the application workspaces that use this shared code. The most basic workspace, "Common", contains code shared by Content Server, Workflow Server, and Studio Packages Proxy. On top of that, the "Middle" workspace bundles shared code used by all middle tier servers or applications, namely Studio Server, User Changes, CAE, CAE Feeder, Content Feeder,

Headless Server, Elastic Worker, and Site Manager. Solr, Studio Client, Content and Frontend do not use any shared code at all.

After both shared workspaces have been built, any application workspace can be built and opened in an IDE independently. As a project developer, you can focus on one application. Changes to shared code must be performed with extra care, and now you can easily see whether the code you change is application-specific or shared.

Sorting all Maven modules by their usage in applications results in a workspace structure where compared to CM9, every single module is located under a new, different path. However, the contents of these modules did not change at all, at least not for the sake of modularisation. To migrate a CM9 workspace to CMCC 10, in most cases, merging via Git should work, but be prepared for conflicts in Maven POMs. For other VCSs, a mapping from old to new module paths will be provided.

### Upgrading the Blueprint workspace

Before upgrading to 1907 you should first upgrade to the 1904.2 tag of your CMS-9 or LC3 product. For CMCC-10 we merged all the different product branches into one and created a git history that allows you to merge the 1907.1 blueprint onto your 1904.2 blueprint.

[CMS-14747]

## EE4J Dependencies

Several Java Enterprise dependencies are now maintained by the Eclipse EE4J project and are available under different Maven coordinates. Some of these dependencies were part of the JDK in Java 8, but are no longer bundled with Java 11.

The following dependencies have been updated to new Maven coordinates and version:

- `com.sun.activation:jakarta-activation`, version 1.2.1
- `com.sun.mail:jakarta-mail`, version 1.6.3
- `jakarta.annotation:jakarta.annotation-api`, version 1.3.4
- `jakarta.transaction:jakarta-transaction-api`, version 1.3.2
- `jakarta.xml.bind:jakarta.xml.bind-api`, version 2.3.2
- `org.glassfish.jaxb:jaxb-runtime`, version 2.3.2

Outdated Maven coordinates for these dependencies are listed in the `bannedDependencies` section of the Blueprint's `maven-enforcer-plugin` configuration. If you get a build error about a banned dependency in your project code, then you will have to replace it with the new Maven artifact. Have a look at the `maven-enforcer-plugin` configuration, which contains a comment about the recommended replacement.

[CMS-14639]

## Java 11 Support

CMCC runs with Java 11. Many third party libraries have been updated to Java 11 capable versions.

All JDK changes since Java 8 apply to CMCC. For details see

<https://www.oracle.com/technetwork/java/javase/11-relnote-issues-5012449.html>

<https://www.oracle.com/technetwork/java/javase/10-relnote-issues-4108729.html>

<https://www.oracle.com/technetwork/java/javase/9all-relnotes-3704433.html>

In particular, existing CMS9 projects are likely to encounter the following issues when migrating to CMCC:

### Dependencies

Since Java 11 is modularized, some classes have vanished from the standard runtime environment. In order to compile CMCC, you might need some of the following additional dependencies in your project modules.

```
<dependency>
  <groupId>jakarta.annotation</groupId>
  <artifactId>jakarta.annotation-api</artifactId>
</dependency>
<dependency>
  <groupId>com.sun.activation</groupId>
  <artifactId>jakarta.activation</artifactId>
</dependency>
<dependency>
  <groupId>jakarta.transaction</groupId>
  <artifactId>jakarta.transaction-api</artifactId>
</dependency>
<dependency>
  <groupId>jakarta.xml.bind</groupId>
  <artifactId>jakarta.xml.bind-api</artifactId>
</dependency>
<dependency>
  <groupId>org.glassfish.jaxb</groupId>
  <artifactId>jaxb-runtime</artifactId>
</dependency>
```

The necessity of jaxb-runtime turns out only if you (transitively) encounter concrete jaxb-api features. You should always declare this as a runtime dependency together with the jaxb-api dependency.

### Order of Collections

The order of collections differs between Java 8 and 11. If the order is relevant, use Lists or sort before you iterate.

## Memory

With Java 11, some components need more memory, which is mainly caused by the GlassFish ORB. If your application suddenly runs out of memory with Java 11, try with 32M additional heap memory.

[CMS-14538]

## Maven Compiler Settings for Java 11

The maven-compiler-plugin is now configured to compile Java 11 classes. To this end, the Maven property `<maven.compiler.release>11</maven.compiler.release>` has been set.

[CMS-13495]

## Third-Party Update: Groovy updated to 2.4.16

Groovy updated to 2.4.16

[CMS-12347]

## Third-Party Update: Apache Tomcat embedded in Spring Boot to version 9.0.21

Along with the update to the Spring Boot release 2.1.6, the CoreMedia applications now run with embedded *Apache Tomcat 9.0.21* per default. This also includes the update to the *Servlet Spec 4.0*.

**Upgrade Steps** The major change of moving to the Servlet Spec 4.0 is the change of the following Maven coordinates which have to be updated in the project workspace.

- `javax.servlet:javax.servlet-api:3.1.0 -> jakarta.servlet:jakarta.servlet-api:4.0.2`
- `javax.servlet.jsp:javax.servlet.jsp-api:2.2.1 -> jakarta.servlet.jsp-api:jakarta.servlet.jsp-api:2.3.5`
- `javax.servlet.jsp.jstl:javax.servlet.jsp.jstl-api:1.2.1 -> jakarta.servlet.jsp.jstl:jakarta.servlet.jsp.jstl-api:1.2.4`

- `org.glassfish.web:jstl-impl:1.2` -> `org.apache.taglibs:taglibs-standard-impl:1.2.5`

With the update to Apache Tomcat 9 the `tomcat7-maven-plugin` is not supported anymore. Please refer to our documentation and use the `spring-boot-maven-plugin` instead.

[CMS-5938]

## 5.9.6 CoreMedia Frontend Workspace

### Changed helper magnific-popup to brick

The Javascript helper `magnific-popup` has been moved to bricks since its only purpose is to provide the Magnific Popup functionality.

Update Steps:

- Change `"@coremedia/js-magnific-popup": "^1.0.0"` to `"@coremedia/brick-magnific-popup": "^1.0.0"` in your `package.json`
- Change the imports in your Javascript files from `from "@coremedia/js-magnific-popup";` to `from "@coremedia/brick-magnific-popup";`

[CMS-15046]

### Changed helper Node-Decoration-Service to brick

The Javascript helper `node-decoration-service` has been moved to bricks since its only purpose is to provide event based DOM manipulations.

Update Steps:

- Change `"@coremedia/js-node-decoration-service": "^1.0.0"` to `"@coremedia/brick-node-decoration-service": "^1.0.0"` in your `package.json`
- Change the imports in your Javascript files from `from "@coremedia/js-node-decoration-service";` to `from "@coremedia/brick-node-decoration-service";`

[CMS-15045]

## Changed helper device-detector to brick

The Javascript helper device-detector has been moved to bricks since its only purpose is to provide device detection functionality.

### Update Steps:

- Change `"@coremedia/js-device-detector": "^1.0.0"` to `"@coremedia/brick-device-detector": "^1.0.0"` in your `package.json`
- Change the imports in your Javascript files from `from "@coremedia/js-device-detector";` to `from "@coremedia/brick-device-detector";`

[CMS-15044]

## Unified Javascript, Sass and Freemarker utilities into new brick Utils

All utilities for Javascript, Sass and Freemarker have been moved from the `/lib` folder to the new API brick called "Utils". Therefore the dependencies in your themes and bricks and the includes in your templates need to be updated.

### Update Steps:

- Change every occurrence of the following dependencies in the `package.json` files of your theme or brick to only one `"@coremedia/brick-utils": "^1.0.0"`:
  - `"@coremedia/js-basic": "^1.0.0"`
  - `"@coremedia/js-jquery-utils": "^1.0.0"`
  - `"@coremedia/js-logger": "^1.0.0"`
  - `"@coremedia/js-utils": "^1.0.0"`
  - `"@coremedia/ftl-utils": "^1.0.0"`
  - `"@coremedia/sass-utils": "^1.0.0"`
- every import in a Javascript file from the JS libraries (basic, utils, jquery-utils, logger) need to be adapted. If there are now multiple, they can be combined. For example:
  - `{{import { EVENT_LAYOUT_CHANGED } from "@coremedia/js-basic";}}`

`{{import { ajax, findAndSelf } from "@coremedia/js-jquery-utils";}}` becomes `{{import { EVENT_LAYOUT_CHANGED, ajax, findAndSelf } from "@coremedia/brick-utils";}}`

- every import in a freemarker template to the ftl utilities also need to be rewritten to the new utils brick:
  - `<#import "*/node_modules/@coremedia/ftl-utils/src/freemarkerLibs/components.ftl" as components />`

becomes `<#import "*/node_modules/@coremedia/brick-utils/src/freemarkerLibs/components.ftl" as components />`

[CMS-15043]

## Renamed video brick to mediaelement brick

The video brick has been renamed to mediaelement brick since its only purpose is to provide the mediaelement functionality.

### Update Steps:

- Change `"@coremedia/brick-video": "^1.0.0"` to `"@coremedia/brick-mediaelement": "^1.0.0"` in your `package.json`
- Change the imports in your Javascript files from `from "@coremedia/brick-video";` to `from "@coremedia/brick-mediaelement";`

[CMS-14952]

## Removal: Deprecated "html5" views for CMVideo and CMAudio

The deprecated views `CMVideo.html5.ftl` and `CMAudio.html5.ftl` have been removed. Please use `CMVideo.media.ftl` and `CMAudio.media.ftl` instead.

[CMS-14900]

## Freemarker Code Completion in Frontend Workspace

To activate code completion for Java Classes in Freemarker Templates of the Frontend Workspace you now need to explicitly enable the Maven profile `code-completion`. Before the change the profile was enabled by default. The property `skipFrontendCodeCompletion` (which used to disable the dependencies required for code completion) does no longer exist.

[CMS-14837]

## Removal: Deprecated Legacy Responsive Media Format

The legacy responsive image format which is deprecated since CoreMedia 7 is no longer supported by the responsive images JavaScript of the Frontend Workspace. In case you did not make any customizations to the responsive images format and use the function `responsiveImageLinksData` of the `BlueprintFreemarkerFacade` there is nothing to do.

Old Format:

```

```

New Format:

```

```

```
"name" : "2x1",
"ratioWidth" : 2,
"ratioHeight" : 1,
"linksForWidth" : {
  "200": "image2x1_small.jpg",
  "400": "image2x1_other.jpg"
}
}
}' />
```

[CMS-14766]

## Removal: Freemarker function `bp.getPlacementByName()`

The deprecated Freemarker function `bp.getPlacementByName(name, pagegrid)` has been removed. Use the default implementation `pagegrid.getPlacementForName(name)` instead.

[CMS-14714]

## Removal: Freemarker function `bp.uncroppedImageLink()`

The deprecated Freemarker function `bp.uncroppedImageLink(picture)` has been removed. Use the default implementation `cm.getLink(picture.data)` instead.

[CMS-14710]

## Third-Party Update: jQuery to 3.4.1

Updated jQuery from 3.3.1 to 3.4.1 in the blueprint and in the frontend workspace. If you are using jQuery in your themes, please update the dependency in the `package.json` of the theme too to avoid importing both jquery versions.

### Upgrade steps:

Search for `"jquery": "3.3.1"` in the frontend workspace (in `package.json`) and replace it with `"jquery": "^3.0.0"`

[CMS-14697]

# Introducing the new API Brick Concept and new Example Bricks

The Bricks have been split up into two categories. We now distinct between API Bricks and example bricks to showcase the use of API Bricks.

## API Bricks and Example Bricks

The bricks in `frontend/lib/bricks` provide a stable API and are maintained as such. They focus on stability and customizability. For more information consult the Frontend Developer Manual.

Example Bricks are contained in the `frontend/bricks` folder and serve as an example to show how frontend features can be implemented in the `Frontend Workspace`. As this is the folder where your own bricks reside they are prefixed with "example-" to avoid naming clashes. In NPM the example bricks (and all our themes) now use the custom scope "@coremedia-examples" to have a clear separation between API packages and examples. Examples can be changed or removed in new releases without prior notice. In order to use example bricks in your theme you need to create a copy and rename them accordingly.

## New example banner bricks

Templates and styling for special banner variants that were part of the calista theme have been consolidated and transformed into example-bricks. They no longer rely on bootstrap but utilize CSS flexbox layouts. Newly introduced banner variants are `left-right-banner` and `square-banner`.

Every banner variant still depends on the brick `default-teaser` as API and uses its Freemarker macros to showcase different configuration options. Every brick provides styling and templates, specifies image crops for different breakpoints and a grid to be as independent as possible.

## Navigation brick that does not require bootstrap

As part of our examples we introduced new example brick `navigation` that does not require bootstrap in order to be functional. It provides the same functionality as the bootstrap implementation.

## Upgrade Notes

### API Bricks

- The package `@coremedia/slick-carousel` is now considered an API brick and was renamed to `@coremedia/brick-slick-carousel` accordingly. It was moved from `lib/helpers` to `lib/bricks`.
  - Please adjust your theme dependencies accordingly
  - Freemarker import statements also need to be adjusted to reflect the new name of the brick
- Adjustments in `default-teaser` brick
  - Renamed `CMPlaceholder.asTeaser.ftl` to `CMPlaceholder.teaser.ftl` so banner variants created with the `default-teaser` brick will automatically benefit from it.
  - Removed `CMGallery.asTeaser.ftl` as it has only added the CSS class `cm-teasable--gallery` to templates. Feel free to readd the template in your themes if you need special styling based on this CSS class.
  - `Container.asPlacement.ftl` and `Container.asTeaser.ftl` now have to be provided by the theme to define which banner is to be used as the default implementation if no layout variant is set (please check our example themes for an implementation if you did not yet have an own version of these templates). The intention is to decouple the way the pagegrid is setup from the generic API contained in the `default-teaser` brick that helps rendering banners.
- Removed `generic-templates` brick
  - Moved basic templates and styles for page rendering to new API brick `page`. Make sure to add a dependency to your theme if you have used the templates.
  - Moved `*.asLink.ftl` and `Navigation.asBreadcrumb.ftl` to `navigation` brick.
  - Moved `CMHTML.asFooter.ftl` to `footer` brick.
  - Moved `CMTeasable.asListItem.ftl` to `elastic-social` brick.
  - Moved generic `cm-richtext` styling to `sass-utils` package.
  - Moved `CMTeasable.asRichtextEmbed.ftl` and `CMPicture.asRichtextEmbed.ftl` to a new example brick `richtext-embed`.
  - Moved `PageGrid.ftl` and `PageGridPlacement.ftl` to our example themes. The fallback in the common view repository in the maven module `cae-`

`base-lib` remains. If you have made use of the templates you need to copy them to your themes [e.g. from the version you migrated from].

- If you are using the templates and stylings of the `detail` brick make sure that you now have an explicit dependency in your themes as it was previously automatically included by the `generic-templates` brick.
- The `media` brick now contains the `@coremedia/js-responsive-images` package. The `@coremedia/js-responsive-images` package has been removed.

### Example Bricks

- The package `@coremedia/brick-360-spinner` is now considered an example brick and was renamed to `@coremedia-examples/brick-360-spinner`. It was moved from `lib/bricks` to `bricks`. Additionally, the `@coremedia/js-360-spinner` package was integrated into the `@coremedia-examples/brick-360-spinner` package. The `@coremedia/js-360-spinner` package has been removed.
- The package `@coremedia/brick-detail` is now considered an example brick and was renamed to `@coremedia-examples/brick-detail`. It was moved from `lib/bricks` to `bricks`.
  - The default value for "relatedView" is now "asRelated" in all templates
- The package `@coremedia/brick-download-portal` is now considered an example brick and was renamed to `@coremedia-examples/brick-download-portal`. It was moved from `lib/bricks` to `bricks`.
- The package `@coremedia/brick-elastic-social` is now considered an example brick and was renamed to `@coremedia-examples/brick-elastic-social`. It was moved from `lib/bricks` to `bricks`.
- The package `@coremedia/brick-footer` is now considered an example brick and was renamed to `@coremedia-examples/brick-footer`. It was moved from `lib/bricks` to `bricks`.
- The package `@coremedia/brick-fragment-scenario` is now considered an example brick and was renamed to `@coremedia-examples/brick-fragment-scenario`. It was moved from `lib/bricks` to `bricks`.
- The package `@coremedia/brick-shoppable-video` is now considered an example brick and was renamed to `@coremedia-examples/brick-shoppable-video`. It was moved from `lib/bricks` to `bricks`.

## Discontinued Bricks / Libraries

- The brick `hero-teaser` is discontinued. The final version can be found under `bricks/example-hero-teaser (legacy)` . You can either maintain a local copy of it or check if the `example-hero-banner` fits your needs.
- The brick `responsive-carousel` is discontinued. The final version can be found under `bricks/example-responsive-carousel (legacy)` . You can either maintain a local copy of it or check if the `example-carousel-banner` fits your needs.
- The brick `bootstrap` is discontinued. The final version can be found under `bricks/example-bootstrap3 (legacy)` . If you want to keep using the brick you need to maintain a local copy of it.
- The brick `navigation` which was based on bootstrap is discontinued. The final version can be found under `bricks/example-bootstrap3-navigation (legacy)` . If you want to keep using the brick you need to maintain a local copy of it. Please also check the new example brick `navigation` for a possible replacement that does not require bootstrap.
- The brick `bootstrap-pagegrid` is discontinued. The final version can be found under `bricks/example-bootstrap3-pagegrid (legacy)` . If you want to keep using the brick you need to maintain a local copy of it.
- The package `@coremedia/js-jquery-plugins` is discontinued. The final version can be found under `bricks/example-jquery-plugins (legacy)` . If you want to keep using the brick you need to maintain a local copy of it.

## Moved Templates and Styles

- The templates and styling for the landscape banner have been moved from the calista theme to the new brick `example-landscape-banner` including styling and the following templates:
  - `CMTeasable.asLandscapeBanner.ftl`
  - `CMTeasable.asPreviewForLandscape.ftl`
  - `Container.asPlacementlandscape.ftl`
  - `Container.asLandscapeBanner.ftl`
- The templates and styling for the portrait banner have been moved from the calista theme to the new brick `example-landscape-banner` including styling and the following templates:
  - `CMTeasable.asPortraitBanner.ftl`
  - `CMTeasable.asPreviewForPortrait.ftl`

- `Container.asPlacementportrait.ftl`
- `Container.asPortraitBanner.ftl`

## Other

- The localization for view types in studio found in `BlueprintViewtypes.properties` of the `blueprint-forms` has been adjusted to provide localization for the new view types that were introduced by the new banner bricks. Entries for view types that are no longer in use have been removed.

[CMS-14577]

## Changed Video Behaviour for Example-Bricks

The `renderMedia` macro in `defaultTeaser.ftl` accepts an additional `mediaView` parameter that can be used to change the default configuration for media in a certain view.

The default behaviour of videos rendered by the example-banner bricks has changed. While hero banners will now always render a video with autoplay, muted, hideControls and loop settings set, videos in portrait/landscape and carousel banners will always open a popup and autoplay the video there. Videos in left-right/square and detail banners can be configured in the Studio's video options and will always display the video inline.

Take a look at the bricks section in the frontend manual to learn more about the video behaviour of all example-banners.

[CMS-14524]

## Removal: Freemarker Function `lc.getSecureScheme()`

The deprecated and unused Freemarker function `lc.getSecureScheme()` has been removed. Since HTTPS is the default nowadays, all requests should be secured and this function is not needed anymore.

### Upgrade Steps:

Search for existing usages of `lc.getSecureScheme()` and remove them.

[CMS-14471]

## Introduced new theme "ChefCorp"

Two new themes are added to the Frontend Workspace. One new theme called "ChefCorp" is introduced to replace the discontinued "Corporate" Theme. The Chef Corp website uses the same, just slightly altered content, but with a modern and iconic design. Additionally, a second theme called Shared-Example is added. This theme is the shared base for the Blueprint themes "Calista" and "Chef Corp". They use the new Theme Inheritance mechanism, which has been introduced in this release too.

[CMS-14363]

## Rendering for 360-Spinner now takes "Pictures and Other Media" into account

The rendering for the 360-Spinner was streamlined with the rendering for other media variants. This means it now takes media linked to "Pictures and Other Media" into account and can be used inside "Pictures and Other Media" of other CMTeasables as well.

[CMS-14333]

## Removal: Brick "cta"

The brick "`@coremedia/brick-cta`" has been removed from the frontend workspace. Please use the freemarker library `cta.ftl` contained in `@coremedia/ftl-utils` instead.

[CMS-13942]

## Removal: Brick "responsive-images"

In 1807.1 the brick "`@coremedia/brick-media`" was introduced as a replacement for the brick "`responsive-images`". The latter brick has now been removed from the frontend workspace. Please check the upgrade notes of 1807.1 for further information.

[CMS-13938]

## Added new favicon handling

The implementation of the favicon functionality has been changed

### Changes:

- The "favicon" forms have been removed.
- A new partial template `Page._favicon.ftl` renders static favicons.
- To support most platforms with their own design requirements CoreMedia's example code is generated by [RealFaviconGenerator](#)

[CMS-13899]

## Removal: Deprecated bootstrap carousel code

The bootstrap carousel implementation has been replaced with the slick carousel in all packages of the frontend workspace since CoreMedia 1904. The slick carousel provides a state of the art carousel / slideshow implementation that is highly customizable (see <http://kenwheeler.github.io/slick/> ). It was already in use for the brick `@coremedia/brick-responsive-carousel` for a couple of releases.

### Removed Code:

The following code was removed from the brick package `@coremedia/brick-bootstrap` :

- View `Container#asCarousel` : Please use the freemarker library `slickCarousel.ftl` in the helper package `@coremedia/slick-carousel` as a replacement.
- JavaScript module `cmCarousel.js` and its initialization code `cmCarousel.init.js` : Using the mentioned freemarker library you probably do not need to write any new initialization code. If special requirements are needed you can use the `slickCarousel.js` contained in `@coremedia/slick-carousel` to manually initialize the slick-carousel.
- The jQuery Plugin `jquery.bcSwipe.js` and its ES6 shim module `bcSwipe.shim.js`
- The SCSS variable `$cm-carousel-prefix` and the styling rules generated from the variable

[CMS-13813]

## CMPicture.media.ftl will no longer render a title attribute

The `CMPicture.media.ftl` template contained in the `@coremedia/brick-media` brick will no longer add the content name or the copyright property to the title attribute of the `img` html tag.

[CMS-13635]

## Introduced Theme Configuration

A theme is now configured via a `theme.config.json` (or `theme.config.json5`) instead of having a hard coded configuration in the build process.

This mechanism allows more flexibility, provides new features and makes the `*-theme.xml` obsolete as all configuration is generated from it.

## Upgrade Steps

The default theme configuration (which is also generated by the `theme-creator` for a theme called `my-theme`) looks as follows:

```
{
  "name": "my-theme",
  "styles": [
    {
      "type": "webpack",
      "src": "src/sass/my-theme.scss"
    }
  ],
  "scripts": [
    {
      "type": "webpack",
      "src": "src/js/my-theme.js"
    }
  ],
  "l10n": {
    "bundleNames": [
      "MyTheme",
      "Bricks"
    ]
  }
}
```

In case you did not make any modifications to your `*-theme.xml` after it had been created by the `theme-creator` you can just copy the aforementioned code to a `theme.config.json` in your theme folder, adjust the theme name and remove the `*-theme.xml`. Otherwise please check the following steps.

## Adding a description and a thumbnail

In case you had a description and/or a thumbnail picture, you need to move it to the theme configuration. Both `description` and `thumbnail` are top-level properties. A typical usage could be:

```
{
  "name": "my-theme",
  "description": "This is my theme!",
  "thumbnail": "my-theme.jpg",
  ...
}
```

Please note that the path to the thumbnail picture is now relative to the theme's root directory rather than the theme's target directory. We highly suggest not placing the thumbnail picture inside the `src/img` folder of the theme anymore as long as you don't want the thumbnail to be available in the actual rendering of the website.

## External links

Defining external links can be achieved via a script or style of type `externalLink`.

```
{
  "name": "my-theme",
  ...
  "styles": [
    {
      "type": "externalLink",
      "src": "http://your.url/css/style.css"
    }
  ],
  "scripts": [
    {
      "type": "externalLink",
      "src": "http://your.url/js/script.js"
    }
  ]
}
```

## Scripts and Styles not to be bundled with Webpack

If you just want to use an script or style resource that is not to be bundled via Webpack there is an additional type called "copy" which requires a `src` and `target` property.

```
{
  "name": "my-theme",
  ...
  "styles": [
    {
      "type": "copy",
      "src": "src/css/my-style.css",
      "target": "css/my-style.css"
    }
  ],
  "scripts": [
    {
      "type": "copy",
      "src": "src/vendor/some-script.js",

```

```

    "target": "js/some-script.js"
  }
]
}

```

### Custom settings for scripts and styles

Scripts and styles of all types can have the same custom settings as in the theme-descriptor. These settings can be applied separately for every array item inside the scripts and styles array. This could look as follows:

```

{
  "name": "my-theme",
  ...
  "styles": [
    {
      "type": "webpack",
      "src": "src/sass/my-theme.scss",
      "ieExpression": "gt ie10"
    }
  ],
  "scripts": [
    {
      "type": "webpack",
      "src": "src/js/my-theme.js",
      "inHead": true
    }
  ]
}

```

Please consult the [Frontend Developer Manual](#) for a full list of custom settings.

### Resource Bundles

If your theme provides additional resource bundles, please add it to the `bundleName` property of the `l10n` top level property.

```

{
  "name": "my-theme",
  ...
  "l10n": {
    "bundleNames": [
      "MyTheme",
      "AdditionalBundle",
      "Bricks"
    ]
  }
}

```

Please note that the bundle names do neither contain the language (e.g. `_en`) nor the extension of the properties file (`.properties`). If you need to change the master language you can set the `masterLanguage` property of the `l10n` top level property.

## New Features

This is a small overview about the new features of the Frontend Workspace. Please consult the Frontend Developer Manual for more detailed information.

### Customizable Source and Target Layouts

You are no longer required to place your main sass / javascript files under `src/sass/themeName.scss` / `src/js/themeName.js`. Feel free to adjust the `src` property of the scripts and styles to whatever file structure you prefer.

### Generating Additional Webpack Bundles

Additional Webpack Bundles can now be generated without adjusting the `webpack.config.js`. Just put another script or style of type `webpack` into the list of scripts and styles. However there is one restriction for styles because of technical limitations: All CSS/SCSS files need to be put into the same folder. The reason behind this is that our used Webpack plugins and loaders assume that all generated CSS files are placed under a common public path.

### New Setting "defer" for Scripts

You can now defer the loading of scripts ( [https://www.w3schools.com/tags/att\\_script\\_defer.asp](https://www.w3schools.com/tags/att_script_defer.asp) ) using the custom setting `defer` in your theme configuration. In case you have custom templates for rendering CMJavaScript as script tags make sure you take the new `htmlAttributes` content property into account.

[CMS-13127]

## Removal: Cycle2 Plugin

We removed the Cycle2 plugin and replaced the remaining usages with the `Slick Carousel` ( <http://kenwheeler.github.io/slick/> ).

This mainly affects the brick `pdp-augmentation`. If you have made customizations by introducing own carousels based on the Cycle2 plugin we strongly suggest to migrate to `Slick Carousel` as well e.g. by utilizing our corresponding brick `slick-carousel`.

[CMS-13119]

## Removal: Dimmer configuration from templates

All configuration regarding for dimmer rendering has been removed from templates. Please use the dimmer mixin which is part of the `@coremedia/sass-utils` package as a replacement.

Affected views / macros:

- macro "responsivelImage" of "image.ftl" in cae-base-lib
- views "teaserMedia", "teaser" and "asTeaser" of "default-teaser" brick
- macro "renderMedia" of "default-teaser" brick
- views "heroMedia", "hero" and "asHero" of "hero-teaser" brick
- "\_picture" view of CImageMap, LiveContextProductTeasable and LiveContextExternalChannel

Additional changes:

- The value of the `background` style generated by the `dimmer` mixin has changed to "linear-gradient(180deg, rgba[237, 237, 237, 0] 50%, rgba[51, 51, 51, .65]);"

[CMS-13040]

## Removal: Optional parameter "limitAspectRatios"

The parameter `limitAspectRatios`, used in Freemarker templates, has been removed. It was used to limit the aspect ratios for the responsive images, but was mostly never set and caused some confusion. If you are using it in your themes, you can still use it, but our bricks do not support the parameter anymore.

[CMS-12602]

## Added Themes Inheritance

The Frontend Workspace supports themes depending on another theme in its `package.json`. So it will include all Freemarker templates, JavaScript, SCSS files, localizations, images and brick dependencies, inherited from its parent.

### Details

For existing themes, you need to add the dependency to the parent theme to the `package.json`. Also adapt the `webpack.config.js`. For SASS you need to

extract `_variables.scss` and `_partials.scss` from the `theme.scss` of the parent theme. Please check the frontend manual for more details.

For new themes you can use `yarn create-theme <name>` to choose a parent theme to derive from.

If you don't want to use Child-Themes, no changes have to be done in your custom themes.

[CMS-12199]

## Third-Party Update: Webpack 4 and Babel 7

Webpack and Babel has been updated to version 4 and 7 respectively.

### Support For Webpack `mode`

Building themes will generate production versions of the the theme by default. It's not necessary anymore to set the `NODE_ENV` (`yarn run --production build`).

- For the production build, just run `yarn build`.
- For the development build use `yarn build --mode=development`.

### Support for `babel.config.js`

You can now add a `babel.config.js` to theme's root folder to customize the babel configuration:

```
const { babelConfig } = require("@coremedia/theme-utils");

module.exports = api => {
  const config = babelConfig(api);
  // ... your customizations
  return config;
};
```

```
};
```

## Upgrade Steps

### Adjust your theme's `package.json`

You just need to make sure that the `webpack` version in your theme's `package.json` now needs to be `"^4.0.0"`.

### Importing Our Default Webpack Configuration

The webpack configuration is now a named export instead of the default export meaning that the code in your `webpack.config.js` needs a slight adjustment.

```
const webpackTheme = require("@coremedia/theme-utils");
module.exports = webpackTheme;
```

To:

```
const { webpackConfig } = require("@coremedia/theme-utils");
module.exports = webpackConfig;
```

### [Optional] If you have made customizations to the `webpack.config.js`

The webpack mode can only be accessed using the function based webpack configuration [see <https://webpack.js.org/configuration/configuration-types#exporting-a-function>]. As we were using the object approach our default webpack configuration provided by the package `@coremedia/theme-utils` has been changed and now provides a function instead of an object. Changes to our default configuration should be made as follows:

```
const { webpackConfig } = require("@coremedia/theme-utils");
module.exports = (env, argv) => {
  const config = webpackConfig(env, argv);
  // ... your customizations
  return config;
};
```

```
};
```

Please also consult <https://webpack.js.org/migrate/4/> for webpack specific upgrade hints or <https://babeljs.io/docs/en/v7-migration> to see what changed with the babel upgrade.

## [Optional] If you maintain a list of JavaScript files associated to a theme

For technical reasons we needed to introduce a `commons.js` file. If you have manually created a list of JavaScript files to be loaded you also need to add this new file. It needs to be loaded before all other JavaScript files.

[CMS-11711]

## Introduced new example brick "popup"

The brick "quickinfo" has been removed and is replaced by the new example brick "popup", which is based on the library `magnific-popup`. The template view for this layout is named `*.asPopup.ftl`.

### Upgrade Steps:

If you're using the brick "quickinfo" in your theme, you need to change the import in the `package.json` from `"@coremedia/brick-quick-info": "^1.0.0"` to `"@coremedia/brick-popup": "^1.0.0"`. The CSS class `cm-quickinfo` has changed to `cm-popup` too.

### Changes:

- The "shop-now" functionality has been moved to the example brick "cart". Products in the popup link to the product detail page by default. Check template `LiveContentProductTeasable._shopNow.ftl` for details.
- The "popup" functionality of the brick "video" has been moved to brick "popup". Videos link to the detail page. Check template `CMVideo._playButton.ftl` for details.
- The "quickinfo" view and functionality of the brick "image-maps" has been moved to brick "popup". Check template `CMImageMap._areasMap.ftl` for details.
- The brick "shoppable-video" does not rely on the brick "quick-info" anymore. It uses the brick "default-teaser" as layout for the shoppable teasers of the video instead.

[CMS-7986]

## Removal: elevateZoom Plugin

Removed the "elevateZoom" plugin used in "product-assets" example brick. The functionality is now handled by a more up-to-date custom implementation.

[CMS-15082]

## Dependency check for bricks is now active again

Due to a bug the dependency check that makes sure that all used dependencies are declared in the corresponding package's `package.json` was not active for bricks. This was unintentional and has been fixed now. In case you have created custom bricks or made adjustments to existing ones it may happen that after the upgrade the theme build will fail stating that you need to add some dependencies to your bricks.

[CMS-14612]

## Moved theme-importer to studio-server

The frontend workspace now produces a `frontend.zip` via `yarn(frontend/target/frontend.zip)`. The `content-users.zip` does not contain the themes anymore and the content workspace has no dependency on the frontend workspace anymore.

The frontend workspace does not use the `ThemeImporterRunner` Java client anymore and the detour through `serverexport-content` has been removed.

The class `com.coremedia.blueprint.themeimporter.client.ThemeImporterRunner` has also been removed as this was its only usage. Please use the `theme-importer` command-line-client to import themes directly into the Content-Server. All `theme-importer` code now lives in `studio-server` workspace, because a part of it was already been used in the studio.

The `theme-importer` has also been extended to allow import from regular urls.

Be aware to import themes before the content because the content still contains links to themes, which would be removed when the themes do not already exist.

[CMS-14562]

## Maven Proxy Settings will now only be passed for "yarn install"

When passing proxy settings to other yarn scripts lerna will complain about unknown parameters. As lerna is not in place for `yarn install` (and that's where the proxy settings come into play) the maven proxy settings should now be working as expected.

[CMS-14522]

## Unified Search Input Fields

All search input fields now share the same HTML markup and CSS classes, following the BEM model.

In Search Brick:

- `SearchActionState.asSearchField.ftl`
- `SearchActionState.asResultPage.ftl`

In Livecontext Brick:

- `CommerceSearchActionState.asHeader.ftl`

[CMS-13926]

## Removal: Layout variants "superhero" and "squarelist" from Hybris

View variants `superhero` and `squarelist` have been removed from test content because no corresponding templates exist for LiveContext for SAP Hybris.

[CMS-13581]

## Render macro of `cta.ftl` will no longer render an empty div tag

If no Call-To-Action button is configured the `render` macro of the `cta.ftl` contained in `@coremedia/ftl-utils` will no longer render an empty div.

[CMS-13016]

## Removal: Freemarker Function `lc.fragmentHighlightingMetaData()`

The deprecated Freemarker function `lc.fragmentHighlightingMetaData()` has been removed. It was the same as `bp.getPlacementHighlightingMetaData()`.

### Upgrade Steps:

Search for existing usages of `lc.fragmentHighlightingMetaData()` and replace it with `bp.getPlacementHighlightingMetaData()`. This has been done to all available Blueprint templates.

[CMS-10457]

## Removal: Brick "livecontext"

The `livecontext` brick has been removed. All functionality has been spread over different bricks (enhancing their functionality to support commerce objects out of the box), moved into new bricks or has been removed if it was considered dead code. We strongly suggest to check each of the changes to decide about the impact on your existing themes.

## General Styling Rules for CSS Classes

Removed special heading styles without replacement:

- `cm-heading1 / cm-heading1--boxed`
- `cm-heading2 / cm-heading2--boxed`
- `cm-heading3 / cm-heading3--boxed`
- `cm-heading4 / cm-heading4--boxed`
- `cm-heading5 / cm-heading5--boxed`
- `cm-heading6 / cm-heading6--boxed`

Removed Utility Functions of <https://html5boilerplate.com/>

- `cm-visuallyhidden` (you can use the macro `visually-hidden` of `@core media/sass-utils` as a replacement)
- `cm-hidden`
- `cm-ir`

- `cm-invisible`
- `cm-clearfix`

Removed Styling Rules affecting the following CSS Classes

- `cm-icon`
- `cm-grid`
- `cm-row`
- `cm-collection`

Feel free to readd these styling rules accordingly from the version you are migrating from if they are still in use.

## PDP Augmentation / Product Carousel

The brick `pdp-augmentation` is now an example brick and was renamed to `product-assets`.

The styles and JavaScript of the Zoom Functionality and Magnific Popup integration has also been moved to the brick. The brick now utilizes the `slick-carousel` rather than the outdated `cycle2` Plugin.

The following templates have been moved to the `fragment-scenario` brick:

- `Product.externalHeader.ftl`
- `Product.externalFooter.ftl`

## Uncropped Catalog Pictures

Rendering for uncropped catalog pictures was moved to `media` brick.

Moved Templates:

- `CatalogPicture.media.ftl`

Moved CSS:

- `cm-uncropped-catalog-picture` was renamed to `cm-media--uncropped`

## Marketing Spots

Rendering for IBM Marketing Spots has been moved to the `aurora` theme.

Moved Templates:

- `CMMarketingSpot.asPlacement.ftl`
- `CMMarketingImage.asTeaser.ftl`
- `CMMarketingText.asTeaser.ftl`

Moved Styling Rules For CSS Classes:

- `cm-collection--marketingspot`

### Link Rendering

The following templates have been moved to the `navigation` brick:

- `Category.asLink.ftl`
- `CategoryInSite.asLink.ftl`
- `Product.asLink.ftl`
- `ProductInSite.asLink.ftl`

### List Item Rendering

The following templates have been moved to the `elastic-social` brick:

- `CommerceObject.asListItem.ftl`

### Notification Styling

Styling for `cm-notification` is now part of the `elastic-social` brick.

### Fragment Templates

The following templates have been moved to the `fragment-scenario` brick:

- `CMAction.asFragment.ftl`
- `Product.availabilityFragment.ftl`
- `Product.metadata.ftl`
- `ProductVariant.availabilityFragment.ftl`

The following templates have been removed from the `fragment-scenario` brick and added to the `aurora` and the `calista` theme:

- `PageGridPlacement.asTeaser.ftl`
- `PageGridPlacement.asTeaserHero.ftl`

## Header Search Field

Styling for a header search field has been consolidated and merged into the `search` brick. The search brick has offered a different implementation for search suggestion than the code of the former `livecontext` brick. Therefore the remaining parts of the legacy brick `livecontext-search` have been moved. They can be copied to your workspace to reduce migration efforts. The legacy brick `livecontext-search` will be removed in the next AEP.

## Icon Font

The `livecontext` brick offered an icon font named `livecontext-icons`. We replaced all usages with the `glyphicons` icon font which is available in a new brick called `glyphicons`. While we encourage switching to the new icon font (if suitable) the old icon font can be found in the legacy brick `livecontext-icons` which can be copied into your workspace to reduce migration efforts. The brick will be removed in the next AEP.

## Popup / Header Functionality

Styling and JavaScript for Popups and Header Icons has been moved to the legacy brick `livecontext-header` which can be copied into your workspace to reduce migration efforts. The brick will be removed in the next AEP.

## Product-List Placeholders

Rendering for product-list placeholders has been removed from our bricks and templates as the implementation has been moved to the `chefcorp` theme and is quite different. The code however remains in the legacy brick `livecontext-product-list` which can be copied into your workspace to reduce migration efforts. The brick will be removed in the next AEP.

Moved Templates:

- `CMPlaceholder.productlist-categories.ftl`
- `CMPlaceholder.productlist-header.ftl`
- `CMPlaceholder.productlist-listing.ftl`
- `ProductInSite.asCategoryItem.ftl`
- `ProductList.categories.ftl`
- `ProductList.ftl`
- `ProductList.header.ftl`

- `ProductList.listing.ftl`

Moved Styling Rules For CSS Classes:

- `cm-product-list-grid`
- `cm-category-item`
- `cm-category`

Moved JavaScript:

- Equalize container heights for different `cm-category-item`
- JQuery Plugin `equalHeights` (if you have used the plugin for other purposes, feel free to copy it into your own bricks / themes, we advice switching to a more modern approach with CSS flexbox)

## Tiles Layouts

Due to the introduction of the new example bricks, rendering for "tiles" layouts was unused by our bricks and themes and has been removed. The code however remains in the legacy brick `livecontext-grids` which can be copied into your workspace to reduce migration efforts. The brick will be removed in the next AEP.

Moved Templates:

- `Container.asPlacementtiles-layout-50-50-portrait.ftl`
- `Container.asPlacementtiles-layout-50-50-landscape.ftl`
- `Container.asPlacementtiles-layout-center.ftl`
- `Container.asPlacementtiles-layout-highlight.ftl`
- `Container.asPlacementtiles-layout-landscape.ftl`
- `Container.asPlacementtiles-layout-left.ftl`
- `Container.asPlacementtiles-layout-portrait.ftl`
- `Container.asPlacementtiles-layout-right.ftl`

Moved Styling Rules for CSS Classes:

- `cm-collection--tiles-50-50-portrait`
- `cm-collection--tiles-50-50-landscape`
- `cm-collection--tiles-center`
- `cm-collection--tiles-highlight`
- `cm-collection--tiles-landscape`
- `cm-collection--tiles-left`

- `cm-collection--tiles-portrait`
- `cm-collection--tiles-right`

### Product / Category Support For Banners

The product / category support has been integrated into `default-teaser` (so all banner types now support product and categories out-of-the-box). Before the change the `livecontext` brick has added support for product / category banners. The old templates are still available in a legacy brick `livecontext-banners` which can be copied into your workspace to reduce migration efforts. The brick will be removed in the next AEP.

It is very difficult to provide a clear migration path for the banner support as the new example banners are meant as a replacement. So we will just provide a list of involved templates and styling:

Templates:

- `Container.asPlacement.ftl`
- `Container.asPlacementcarousel.ftl`
- `PageGridPlacement.ftl`
- `CategoryInSite.teaser.ftl`
- `LiveContextProductTeasable.ftl`
- `ProductInSite.teaser.ftl`
- `LiveContextExternalChannel._picture.ftl`
- `LiveContextProductTeasable._picture.ftl`
- `LiveContextProductTeasable.asQuickInfo.ftl`
- `Product.info.ftl`
- `Product.pricing.ftl`
- `CommerceObject.asHero.ftl`
- `CommerceObject.asTeaser.ftl`
- `CommerceObject.ftl`

Styling:

- Pricing
- Product Information
- Show Now Button

## Cart Support

The support for rendering a cart and adding / removing items has been moved to a new example brick `cart` :

Moved Templates:

- `Cart.ftl` (renamed to `Cart.asCart.ftl` )

Styling:

- Cart rendering
- Add-To-Cart Button rendering

Moved JavaScript:

- Add-To-Cart
- Remove-From-Cart
- Event Hook for Cart Updated

The header integration is now part of the `calista` example theme.

Moved Templates:

- `Cart.asHeader.ftl`

Styling:

- Cart Icon
- Popup positioning

Moved JavaScript:

- Open / Close Cart Popup
- Refresh Cart Popup on change

[CMS-9553]

## 5.9.7 CoreMedia Deployment

### Deployment archive and Chef deployment updates

- The Chef requirement for the deployment archive is now 14.x.x. With this update, some cookbooks had to be updated as well. The most relevant change was the update of the `apache2` cookbook to 7.1.0. With this update, the `apache2::web_app` definition is no longer available, which made the `coremedia-proxy::webapp` wrapper definition and the whole cookbook obsolete. Rendering a new virtual host configuration has now become less complex. Please visit the [apache2 cookbooks documentation](#) for more details.
- The product specific cookbooks `blueprint-lc3-sfcc`, `blueprint-cms9`, `blueprint-lc3-ibm-wcs` and `blueprint-lc3-hybris` have been merged into a single cookbook named `blueprint-cmcc`.
- The `blueprint-tomcat` cookbook has been replaced with the `blueprint-spring-boot` cookbook.
- The recipes `blueprint-dev-tooling::rpm-build` and `blueprint-dev-tooling::rpm-install` have been removed. If you still need to build rpms, please use one of the available maven plugins to wrap the spring-boot application jars. Spring-Boot jars are executable and easy to configure, removing all the complexity of a rpm build process.
- The Chef attribute structure of the deployment archive has been changed slightly. For more details review the [global/deployment/chef/MIGRATION.md](#) in the workspace.
- The example Chef roles have been reorganized. Similar to the removal of the product specific cookbooks, the product specific roles have been removed in favor of central roles for all products. The commerce system specific configurations can now be activated using the boolean Chef node attributes:

```
node['blueprint']['sfcc']['enabled'] = false
node['blueprint']['sap-hybris']['enabled'] = false
node['blueprint']['ibm-wcs']['enabled'] = false
```

[CMS-14469]

## Use Spring-Boot application artifacts in deployment archive

With this change, the deployment archive will no longer use the tomcat deployment with war webapp artifacts but Spring-Boot application jar artifacts. The `blueprint-tomcat` cookbook has been replaced with the `blueprint-spring-boot` cookbook. Please see the cookbooks documentation `README.md` within the cookbook and the `global/deployment/chef/MIGRATION.md` in the workspace for more details.

[CMS-14140]

## 5.9.8 CoreMedia Commerce Hub

### Migration of commerce cache configuration

The former commerce cache configuration for in the vendor specific commerce extension needs to be migrated to the new cache configuration used for commerce hub. There are two in memory caching layer. The commerce adapter itself comes with a default cache configuration to reduce the load on the connected commerce systems. The configuration is described in the Commerce Adapter documentation. The commerce api which communicates via gRPC with the Commerce Adapter comes also with its own caching layer. You should adapt existing cache sizes and timeouts to the new commerce hub property keys. See `com.coremedia.blueprint.base.livecontext.client.config.CommerceAdapterClientConfigurationProperties.CacheConfiguration` for details. The default configuration can be found in `com.coremedia.blueprint.base.livecontext.client.cache.CachingDataClientFactory`. If you want to customize the defaults you can use the following property pattern: `commerce.hub.capacities.* commerce.hub.timeout-Seconds.*`

For example: `commerce.hub.capacities.Product=5000 commerce.hub.timeout-Seconds.Product=300`

[CMS-14940]

## 5.9.9 CoreMedia Connector for HCL Commerce

### Removal: Methods 'CommerceBean#getCatalog' and 'Catalog#isMasterCatalog'

Use the newly introduced utility method `AbstractCommerceBean#getCatalog(CommerceBean)` to obtain a commerce bean's catalog. The replacement for `Catalog#isMasterCatalog` is to use custom commerce bean attributes (`CommerceBean#getCustomAttributes()`) instead.

[CMS-14963]

### Removal: Method `AbstractCatalogResource#getConnection`

The method `com.coremedia.ecommerce.studio.rest.AbstractCatalogResource#getConnection` was removed. Use the commerce connection provided by the commerce entity's store context instead.

[CMS-14574]

### 'CommerceConnection' returns optional services wrapped in 'Optional' instead of as 'null's

The `CommerceConnection` interface has been changed to no longer return optional services as `null` if they are not available, but as `{Optional}s` instead.

This should uncover potential NPEs and also makes them easier to use in `Optional` call chains.

[CMS-14529]

### Removal: PriceService

The deprecated `PriceService` interface has been removed.

To obtain list and offer prices, call methods `getListPrice()` and `getOfferPrice()` on `com.coremedia.livecontext.ecommerce.catalog.Product` instead.

[CMS-14386]

## `PreviewUrlService#getExternalPageUrl` split

The interface method `PreviewUrlService#getExternalPageUrl` has been split into two separate methods, `getExternalPageSeoUrl` and `getExternalPageNonSeoUrl`. The former is required to be implemented in custom commerce adapters, the latter is optional.

[CMS-14338]

## Removal: StoreContextBuilderImpl#from(String)

Deprecated method `StoreContextBuilderImpl#from(String)` has been removed.

Provide a commerce connection and call `StoreContextBuilderImpl#from(CommerceConnection, String)` instead.

[CMS-14195]

## Replaced Betamax with Hoverfly in LC-ECommerce Rest Tests

- Get ready for Java 11. Get rid of Betamax and its transitive deprecated Jetty dependency
- Betamax seems to be unmaintained, while hoverfly is see <https://hoverfly.readthedocs.io/en/latest/> for more details.

In case you implemented own Betamax tests in your project, migrate them accordingly to Hoverfly.

[CMS-13860]

## `StoreContext#getConnection()` added

`StoreContext#getConnection()` has been introduced to make the commerce connection available via the store context.

Custom commerce vendor implementations that implement the `StoreContext` interface will have to be updated to carry and provide a commerce connection.

This is the preferred way over accessing `CurrentCommerceConnection` to obtain a commerce connection.

[CMS-10394]

## 5.9.10 CoreMedia Connector for Salesforce Commerce Cloud

### List and offer prices retrieval fixed

The retrieval of the list and offer prices has been changed. Both are looked up again in the prices map and for the specified currency. If the list price can not be obtained, nothing is returned, but if the offer price cannot be found, the (minimum) sales price is returned as a fallback.

[CMS-14696]

## 5.9.11 Miscellaneous

### Update docker java-application-base image

The docker base image `coremedia/java-application-base` has been updated to `2.1.3`. This major update includes the following changes:

- update to Java 11 OpenJDK.
- switch from Alpine to Debian.
- tini was added as process subreaper.
- the JVM flag `-XX:+ExitOnOutOfMemoryError` was added to kill on OOM.

- if the environment variable `HEAP_DUMP_ON_OOM` is set to true, heap dumps will be written to `/coremedia/heapdumps` in case of an OOM.
- The `PRODUCT` environment variable has been removed.

Please see visit the [DockerHub Repo](#) for current updates.

[CMS-15576]

## Refined CommerceBeanInvalidator

The `ContentStringValueChangeEvent` has been enhanced with the property descriptor which the value belongs to. The `CommerceBeanInvalidator` checks the property descriptor and handles only values of properties named "externallid". If your content model contains other observed properties that contain commerce IDs to be handled by the `CommerceBeanInvalidator`, you must adjust `CommerceBeanInvalidator#isApplicable`.

[CMS-15096]

## Removed: Optionals

The class `com.coremedia.common.util.Optionals` with its sole, deprecated method `streamOfOptional(Optional)` has been removed.

Use `java.util.Optional#stream()` instead.

[CMS-15030]

## XliffImporter allows importing into checked out content

The Studio upload dialog and the `com.coremedia.cap.translate.xliff.XliffImporter` API now allow importing XLIFF with translations into documents that are checked out by the current user. In previous releases an error was raised (`XliffImportResultCode#ALREADY_CHECKED_OUT`) and users had to check in content manually before importing XLIFF. This change removes the need for this manual step.

There's still an error if the target content is checked out by a different user. To this end, a new enum value has been added in `com.coremedia.cap.translate.xliff.XliffImportResultCode` : `CHECKED_OUT_BY_OTH`

`ER_USER` . The enum value `ALREADY_CHECKED_OUT` has been removed. You have to adapt your code if you reference the removed enum value in your project code.

(CMS-14396)

## Third-Party Update: JUnit Jupiter, Mockito, and Maven Surefire

JUnit Jupiter has been updated to 5.5.1 and related JUnit Platform to 1.5.1. Dependency Management is now done via JUnit 5 BOM `org.junit:junit-bom` .

Along with that any usages of artifacts `junit-jupiter-api` , `junit-jupiter-params` , and `junit-jupiter-engine` has been replaced by aggregator artifact `junit-jupiter` . Dependency checks regarding used/unused dependencies for these artifacts have been disabled.

Maven Surefire and Failsafe Plugin have been updated to version 2.22.2 as recommended by JUnit Jupiter Developers.

Due to these changes it is required to add the JUnit Vintage Engine to all modules running legacy JUnit 4 tests:

```
<dependency>
  <groupId>org.junit.vintage</groupId>
  <artifactId>junit-vintage-engine</artifactId>
  <scope>test</scope>
</dependency>
```

as otherwise Surefire will not be able to detect JUnit 4 tests to run. Thus, for your project modules ensure that you always combine the `junit:junit` artifact with the vintage engine as mentioned above.

In addition to that Mockito got updated from 2.23.4 to 3.0.0 to reduce the gap between JUnit (used by Mockito) and Mockito.

(CMS-14134)

## Multi-Site API change in ContentObjectSiteAspect

The behaviour of methods `#getMasterVersionNumber` and `#getMasterVersion` in `com.coremedia.cap.multisite.ContentObjectSiteAspect` was changed to return correct values for derived contents that haven't been translated yet.

In previous releases, method `#getMasterVersion` returned null for not yet translated content, and method `#getMasterVersionNumber` returned the negative value of the master version from which the content was derived. This unexpected behavior wasn't mentioned in the API documentation and was now changed to more reasonable return values: Method `#getMasterVersion` returns the version from which the content was derived and method `#getMasterVersionNumber` returns the numeric version number of that version (positive value).

Please check usages of these methods in your project code and make sure that they match the new behavior. To check whether a derived content has not yet been translated, you can use method `ContentObjectSiteAspect#getTranslationState`. It will return `TranslationState#NOT_LOCALIZED_YET` in that case.

[CMS-14121]

## XLIFF Validation Enabled

XLIFF is now validated on import by default.

To control XLIFF validation behavior, use Spring property `translate.xliff.import.xliffValidationMode`. Its default value has changed from `DISABLED` to `FAIL_ON_WARNING`.

[CMS-14102]

## New XliffImportResultCode INVALID\_PROPERTY\_TYPE

The enum `com.coremedia.cap.translate.xliff.XliffImportResultCode` got the new value `INVALID_PROPERTY_TYPE` that represents errors while importing XLIFF that are caused by a wrong type of target property.

Custom code with switch statements on the `XliffImportResultCode` enum and without default clause must be adapted for successful compile. If you get a compile error for such a switch statement, you must add a clause for the new enum value `INVALID_PROPERTY_TYPE` or a default clause.

[CMS-14055]

## JVM Options

With Java 11, many JVM options have changed. This concerns especially (but not only) garbage collection, mainly because the default garbage collector has been switched from parallel GC to G1 with Java 10. We have reworked all JVM options throughout deployment, examples and documentation, so that they are now suitable for Java 11.

[CMS-13649]

## Added Time Unit to Property `sql.store.sgml-cache-interval`

Property `sql.store.sgml-cache-interval` was renamed to `sql.store.sgml-cache-interval-seconds`.

[CMS-13115]

## CoreMedia Bricks and Themes no longer rely on bootstrap

With the general restructuring of our bricks and themes we removed the dependency to the bootstrap framework. This means that the framework is no longer integrated by default when loading any of our bricks.

## Upgrade Notes

If you want to keep using bootstrap you can still utilize the legacy brick `@coremedia-examples/brick-bootstrap` by creating a copy and add it as a dependency to your theme [please also check the `eject` feature described in the Frontend Developer Guide]. Please note that the brick will be removed in the next AEP.

This enables customers who don't want to utilize the framework to use our bricks while still supporting the framework. As a side note you can now control which version of bootstrap you want to use by adjusting the "bootstrap-sass" dependency and the imports on SASS and JavaScript side accordingly.

[CMS-12965]

## Dissolved module bpbase-multisite-api

The module bpbase-multisite-api has been resolved.

### Details:

- class `SiteHelper` has been moved:
  - from module `bpbase-multisite-api` to `cap-multisite`
  - from package `com.coremedia.blueprint.base.multisite` to `com.coremedia.cap.multisite`
- module `bpbase-multisite-api` has been removed
- module `bpbase-multisite-impl` has been renamed to `bpbase-multisite`

[CMS-15133]

## Improved Image transformation API

The image transformation API has been improved.

Changes in `TransformImageService : * getTransformationOperations(Content, String, Map<String, String>)` has been deprecated. Use `getTransformationOperations(Content, String)` instead. The new method uses a generic and configurable way to resolve the operations. \* `transformWithDimensions(Content, Blob, TransformedBlob, String, String, Integer, Integer)` has been deprecated. Use `transformWithDimensions(Content, String, String, Integer, Integer)` instead. Uses the new method `getTransformationOperations(Content, String)` to resolve the necessary operations.

See the Java Documentation for more informations.

[CMS-14661]

## Removal: Class BeanWrappingBeanCustomizer

Class `com.coremedia.springframework.customizer.BeanWrappingBeanCustomizer` was deleted. Use XML customizer `customize:wrap` instead

[CMS-14068]

## 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

Ludwig-Erhard-Straße 18

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:

*Support request*

- 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:

*Support checklist*

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.

*Log files*

### 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.