ConSol Software GmbH

ConSol CM Setup Manual

Version 6.12.0

Contents

A - Introduction

This section provides general information about the content and structure of this manual as well as an introduction to ConSol CM.

This chapter discusses the following:

A.1 ConSol CM for business process management

ConSol CM is a process management platform, especially suited for use as customer service software.

Using ConSol CM you can control and steer business processes with a strong focus on human communication and interaction as required in all fields of customer service management. Well-known examples of huge ConSol CM systems comprise customer service desks, RMA processes, after sales services, call centers and support centers as well as claim and complaint management environments. You can also set up customer portals, including FAQ areas, using ConSol CM. Basically, every business process that is in operation in a company can be modeled and brought to life with ConSol CM.

ConSol CM also provides the functionality to cover adaptive case management. In this way, you can decide, if you would like to design and live a strictly controlled business process or if a rather high level of flexibility is required. You might also combine both concepts, depending on the team or department who work with the process.

Figure 1: *Overview of potential fields of use of the BPM software ConSol CM*

Using ConSol CM, you can handle all components which are relevant in business processes to represent and control your company's processes in an optimal way. ConSol CM is used in various different industries and branches ranging from insurances and banks over fashion designing companies to producers of ticket vending machines or car washes. The flexible process designing mechanism and workflow engine provide a perfect basis for the modeling and controlling of business processes, especially customer service processes, of different kinds.

A.2 List of manuals

ConSol CM provides documentation for several groups of users. The following documents are available:

- **Administrator Manual**
  A detailed manual for CM administrators about the ConSol CM configuration using the Admin Tool.
- **DWH Manual**
  A detailed explanation of the ConSol CM data warehouse (DWH) concept, the database schema and a list of all table structures.
- **Operations Manual**
  A description of the ConSol CM infrastructure, the server integration into IT environments and the operation of the CM system, for IT administrators and operators.
- **Process Designer Manual**
  A guideline for workflow developers about the graphical user interface of the Process Designer and how to program workflow scripts.
- **Setup Manual**
  A technical description for ConSol CM setup in different IT environments. For expert CM administrators.
- **System Requirements**
  List of all requirements that have to be met to install ConSol CM, for IT administrators and CM administrators. Published for each ConSol CM version.
- **Technical Release Notes**
  Technical information about the new ConSol CM features. For CM administrators and key users. Published for each ConSol CM version.
- **User Manual**
  An introduction to the ConSol CM Web Client for end users.

A.3 TecDoc server

For detailed information about all aspects of ConSol CM, please see also our **tecdoc server**, available at https://tecdoc.consol.de. You find there:

- All **ConSol CM manuals**
  The ConSol CM manuals for several target groups in English and in German
- The **release notes** for each ConSol CM version
  Detailed Release Notes documents which explain every new feature of every ConSol CM version
- The **system requirements**
  An overview of the required hardware, middleware, and software prerequisites which are required to install ConSol CM
- The **feature presentations**
  Not too technical presentations which provide an overview of the features of new ConSol CM versions

A.4 About this manual

A.4.1 Before you read this manual

When you read this manual, we suppose that your company has decided to use ConSol CM in a single-server environment. It is your responsibility to set up the necessary components, as the database and application server, and install ConSol CM using a basic system configuration.

The further configuration of ConSol CM is carried out in the Admin Tool. It is described in the *ConSol CM Administrator Manual*.

> Please contact the ConSol CM support or your ConSol CM consultant for information about setting up ConSol CM in a cluster.

A.4.2 Manual structure

This manual contains all you need to know to set up ConSol CM in a single-server environment. It consists of six sections:

- Introduction

  This section provides an introduction to using ConSol CM for business process management and general information about this manual.

- System Architecture

  This section contains information about the system architecture.

- Installing and Setting Up ConSol CM

  This section describes the database setup, the installation of the application server and the installation of the ConSol CM application.

- Installing and Setting Up CMRF and DWH

  This section explains the set up of the CMRF used for reporting with ConSol CM. It contains detailed information about the installation of the CMRF on the application server.

- ConSol CM Add-ons

  This section describes the setup of three ConSol CM addons: CM/Track, CM/Doc and CM/Phone.

- Appendix

  This section contains a list of important files, system properties, trademarks and a glossary.

A.4.3 Variables used for standard path values

The following variables are used for paths in this manual:

- **<JBOSS_HOME>**
  Refers to the home directory of the JBoss application sever where ConSol CM is installed. Set as environment variable of the operating system.
- **<JBOSS_CMRF_HOME>**
  Refers to the home directory of the JBoss application sever where CMRF is installed. Set as environment variable of the operating system.
- **<WEBLOGIC_HOME>**
  Refers to the home directory of the WebLogic application server.

- **<CMAS_DATADIR>**
  Refers to the data directory of ConSol CM which is defined during system setup. This is not an environment variable of the operation system but a CM system property (cmas-core-shared, data.directory).
- **<ENGINEER_HOME_DIR>**
  Refers to the home directory of the engineer. On windows systems, this is often to be found under `C:\users\<USERNAME>`, on Linux systems in `/home/<USERNAME>`.
- **<DB_HOME>**
  Refers to the home directory of the database (MySQL, Oracle or Microsoft SQL).

A.4.4 Variables used for names

The following variables are used for names in this manual:

- **<WEBLOGIC_DOMAIN>**
  Refers to the name of the configured WebLogic domain for CM.
- **<WEBLOGIC_INSTANCE>**
  Refers to the name of the WebLogic instance where CM is running.
- **<CM_USER>**
  Refers to the name of the database user of CM.
- **<CM_DB>**
  Refers to the name of the database used by CM.
- **<CMRF_DOMAIN>**
  Refers to the name of the configured WebLogic domain for CMRF.

A.4.5 Variables used for version numbers

The following variables are used for version numbers in this manual:

- **<JAVA_VERSION>**
  Refers to the version of the used JDK.
- **<CM_VERSION>**
  Refers to the ConSol CM version.
- **<DB_VERSION>**
  Refers to the version of the used database.
- **<AS_VERSION>**
  Refers to the version of the application server.

A.5 Layout explanations

The following icons and colors are used to emphasize and highlight information:

This is an additional information.

This is an important note. Be careful here!

This is a warning!

This is a recommendation from our in-the-field consultants.

A.6 Legal notice

Since we would like to provide a manual for you which helps you manage your CM system, but which also provides additional information about connected topics, we have inserted external links into the manual. In this way, you can get some background information about a topic if you like. This can help you better understand the required CM configuration. Despite careful review, we assume no liability for the content of those external links. The operators of sites linked to are exclusively responsible for their content.

A.7 Gender disclaimer

As far as possible, ConSol CM manuals are written gender-neutral and often address the user with "you". When the phrasing "The user .... he ..." is used, this is always to be considered to refer to both, the feminine as well as the masculine form.

A.8 Copyright

A.9 System components of ConSol CM

ConSol CM comprises different client applications. Depending on your roles and tasks in your company you will use one or more of those applications.

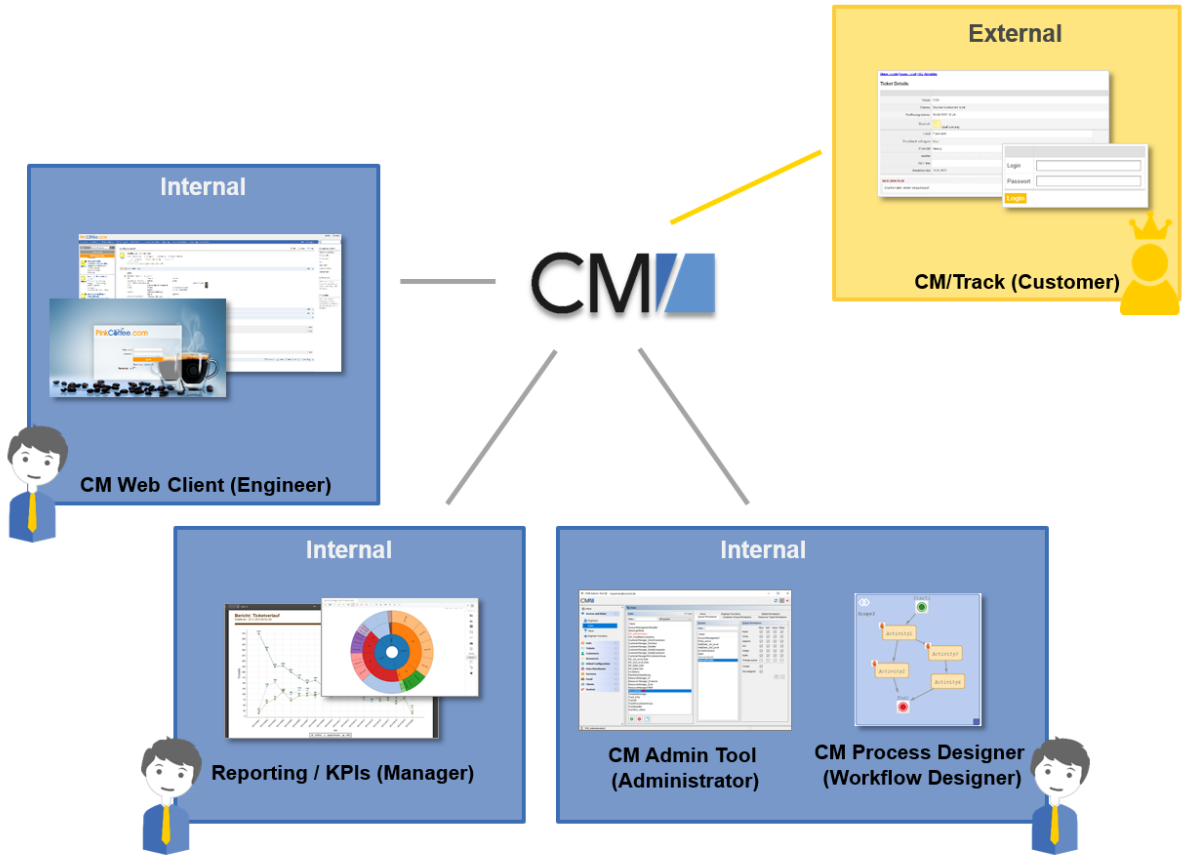


Figure 2: *ConSol CM system components*

- **Web Client**
  The primary access point to the system for engineers, an engineer being the standard user of the system. Engineers work with tickets, customer data and resources.
- **Portal**
  CM/Track, the primary access to the system for (internal or external) customers. CM/Track is a distinct CM module which requires a separate license. With this module, you can offer portal access to the tickets for your customers. Moreover, your FAQs can be made available via the web.
- **Admin Tool**
  For all system configuration tasks. As an administrator, you will primarily work with this tool. This tool is used to define the system setup. All settings (apart from workflows) are configured using the Admin Tool, and access to it is restricted to admin users.
- **Process Designer**
  For the workflow design and implementation. As a workflow developer you will primarily work with the Process Designer. In this tool, all workflows are designed graphically as well as in Groovy code.

The default scope of delivery also includes a data warehouse (DWH) that allows reporting about the data of your tickets.

Furthermore, ConSol CM is not an isolated application but can be easily integrated into your company's IT infrastructure, e.g. using Web Services and/or an Enterprise Service Bus (ESB) or the ConSol CM Webhook interface.

For a detailed explanation of the system components, described from a more technical point of view, please refer to the system administrator's section Architecture of a CM System.

B - System Architecture

ConSol CM is a **Java EE application** which runs on standard application servers. It is designed according to the classical **three-tier model**: the core functionality is provided by the ConSol CM server, the data is stored in a relational database, and the clients access the system via web browser.

The users (which are called engineers in ConSol CM terminology) can write emails directly from the system and CM can receive emails. CM contacts an SMTP server for sending emails. For receiving emails, CM acts like a regular email client using POP or IMAP. Therefore, the contact to a mail server is indispensable for most installations of ConSol CM.

To provide the basis for Business Intelligence, i.e., reporting functionalities, ConSol CM includes an application named CMRF (ConSol CM Reporting Framework) which synchronizes the working database with a Data Warehouse (DWH).

The following sections provide an overview of the architecture and the required components:

B.1 Architecture of a CM System

B.1.1 Introduction to ConSol CM System Architecture

ConSol CM is a ***Java EE*** (Java Enterprise Edition) application that can be run in a standard application server on Unix/Linux or Windows systems. JBoss and Oracle WebLogic are supported.

In this chapter, a short overview of the ConSol CM system architecture will be provided.

> A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

B.1.2 Basic System Architecture

ConSol CM is a Java EE application which is based on the classical three-tier architecture. The ConSol CM server is deployed in an application server and accesses a relational database. Two web interfaces are available as client interfaces: the standard interface is the ConSol CM Web Client, which is used by the engineers to work on the tickets. Another web client is the ConSol CM portal, CM/Track. This provides access to the system for customers who might want to know some basic facts about the status of their tickets. The two Java applications which are used to configure ConSol CM are the Admin Tool and the Process Designer. Both can be downloaded from the ConSol CM start page using Java Web Start (JWS). JWS is a component of every recent Java edition, so no extra installation is required on the PCs or Laptops you want to use to administer the system. On the contrary - you can do this from every regular web client with a supported web browser. Please make sure that the versions of all components which are used in your company meet the system requirements.

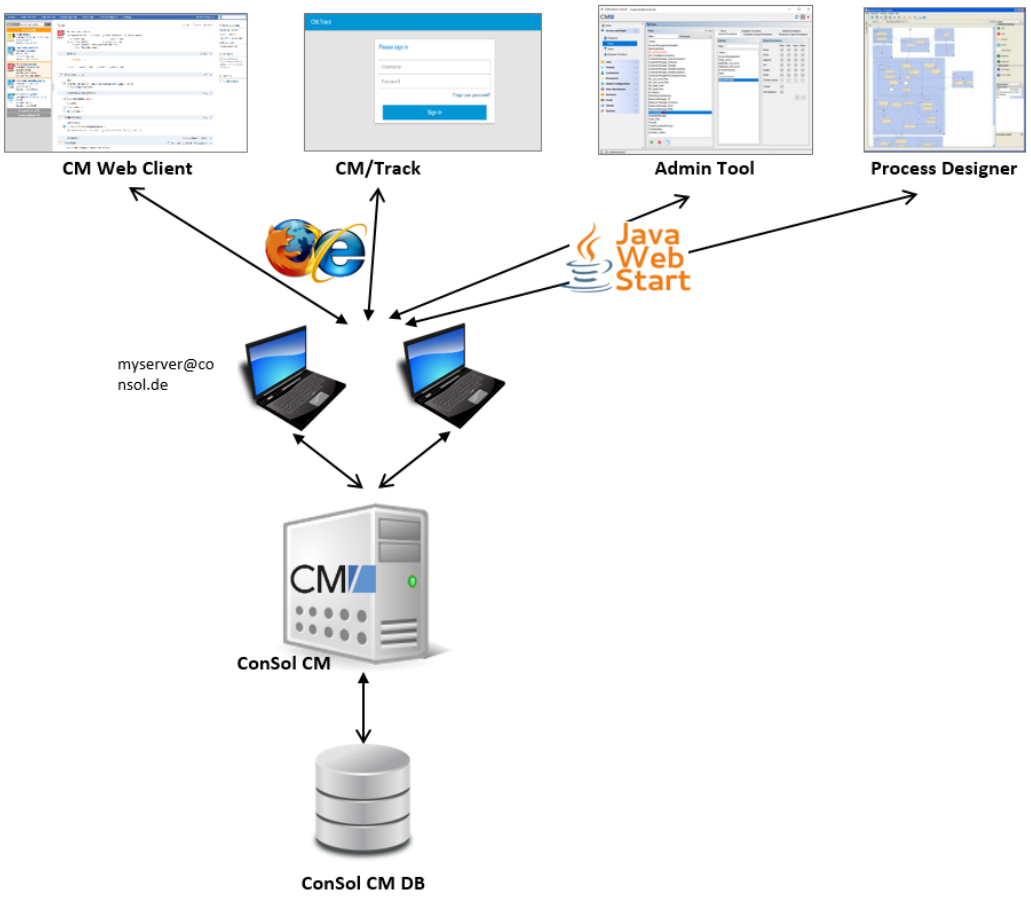


Figure 3: *ConSol CM - Basic system architecture*

B.1.2.1 CM Database

The ConSol CM database (CM DB) is a relational database which can be operated as Oracle, Microsoft SQL Server or MySQL system. For the configuration of the database connection, please refer to section Setting Up the Database for ConSol CM.

> A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

- **Oracle**
  One database schema with one database user is used by ConSol CM.
- **Microsoft SQL**
  One database schema with one database user is used by ConSol CM.
- **MySQL**
  One database with one database user is used by ConSol CM.

B.1.3 System Architecture with Reporting Infrastructure

In order to allow Business Intelligence (BI) tools or other applications to build specific reports, OLAP cubes, and other analyses, ConSol CM provides a data warehouse (DWH) as one of its standard components. The DWH is a separate database (or database scheme, see below). The DWH is filled by a Java EE application called ConSol CM Reporting Framework (CMRF).

The ConSol CM standard function set comprises two components which enable reporting:

- **CMRF** (ConSol CM Reporting Framework)

  This is a Java EE application which synchronizes the ConSol CM database with the ConSol CM data warehouse (DWH). The CMRF can be deployed into the same application server as the core CM (overlay mode) or it can be run on a separate application server (standalone mode). The synchronization of CM data with the DWH is based on direct messaging. For a detailed explanation, please refer to the *ConSol CM Operations Manual*.section *Operating the Data Warehouse*.

- **DWH** (data warehouse)

  The ConSol CM DWH is a relational database which can be operated as Oracle, Microsoft SQL Server, or MySQL system. It stores the integrated/pre-processed data from the ConSol CM database. For the configuration of the database connection, please refer to section Setting Up the Database for CMRF / DWH.

  > A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

Separate application servers for ConSol CM and CMRF (standalone mode):

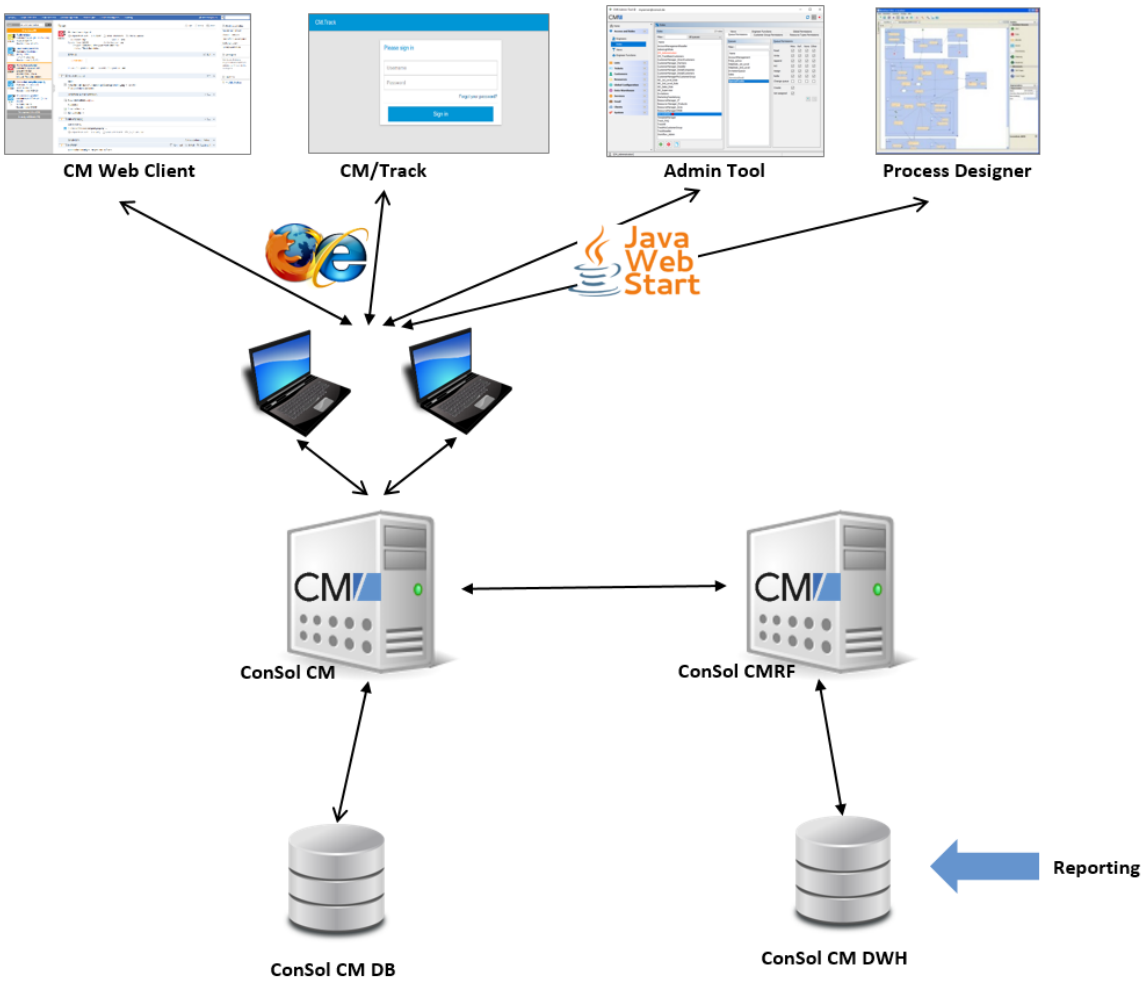


Figure 4: *ConSol CM - Infrastructure with CMRF and DWH (2 servers)*

One application server for ConSol CM and CMRF (overlay mode):

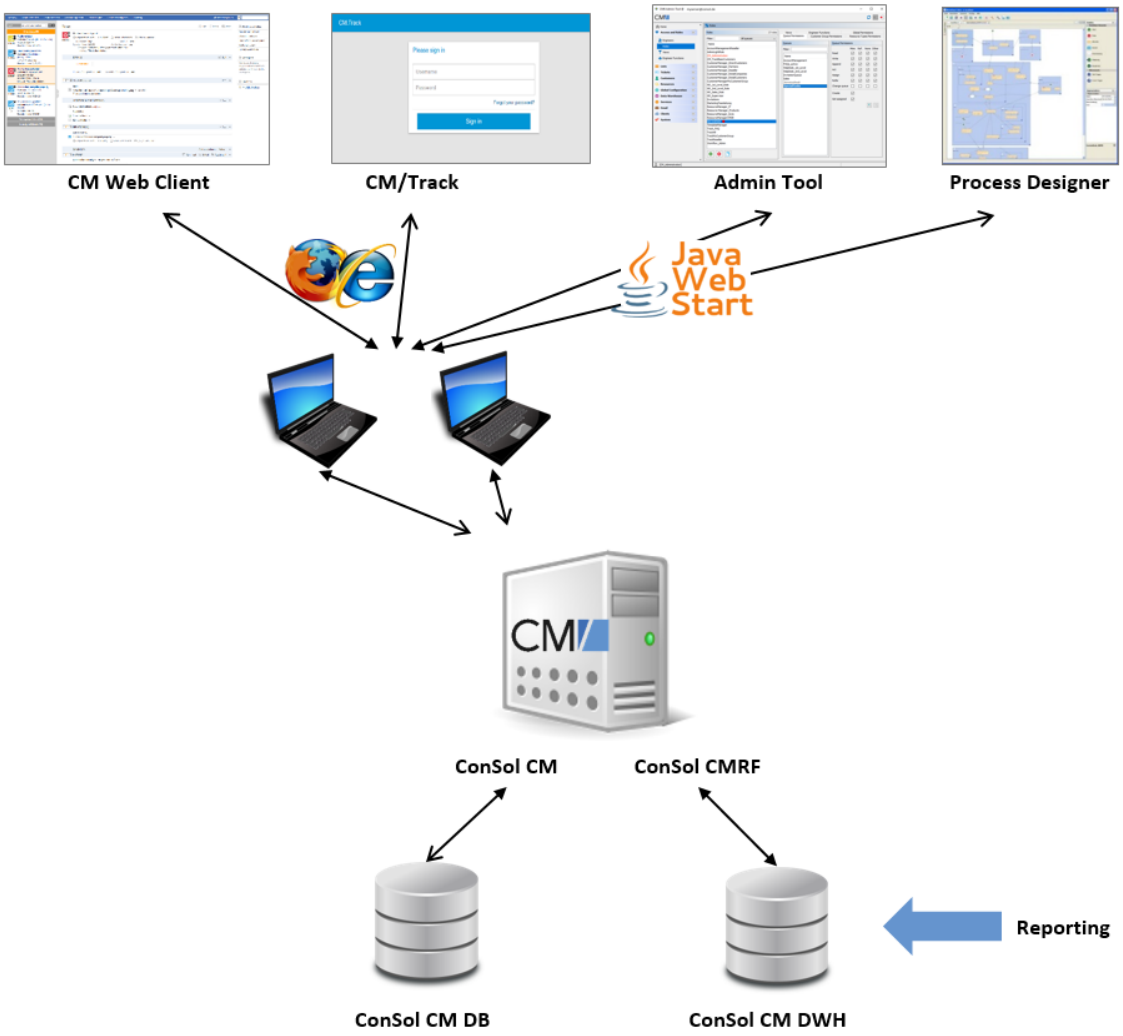


Figure 5: *ConSol CM - Infrastructure with CMRF and DWH (1 server)*

When the DWH has been established, BI (Business Intelligence) applications can be used to create reports, data cubes, and other reporting output formats. Please see the following example with the Pentaho™ BI Suite.

Separate application servers for ConSol CM and CMRF (standalone mode):

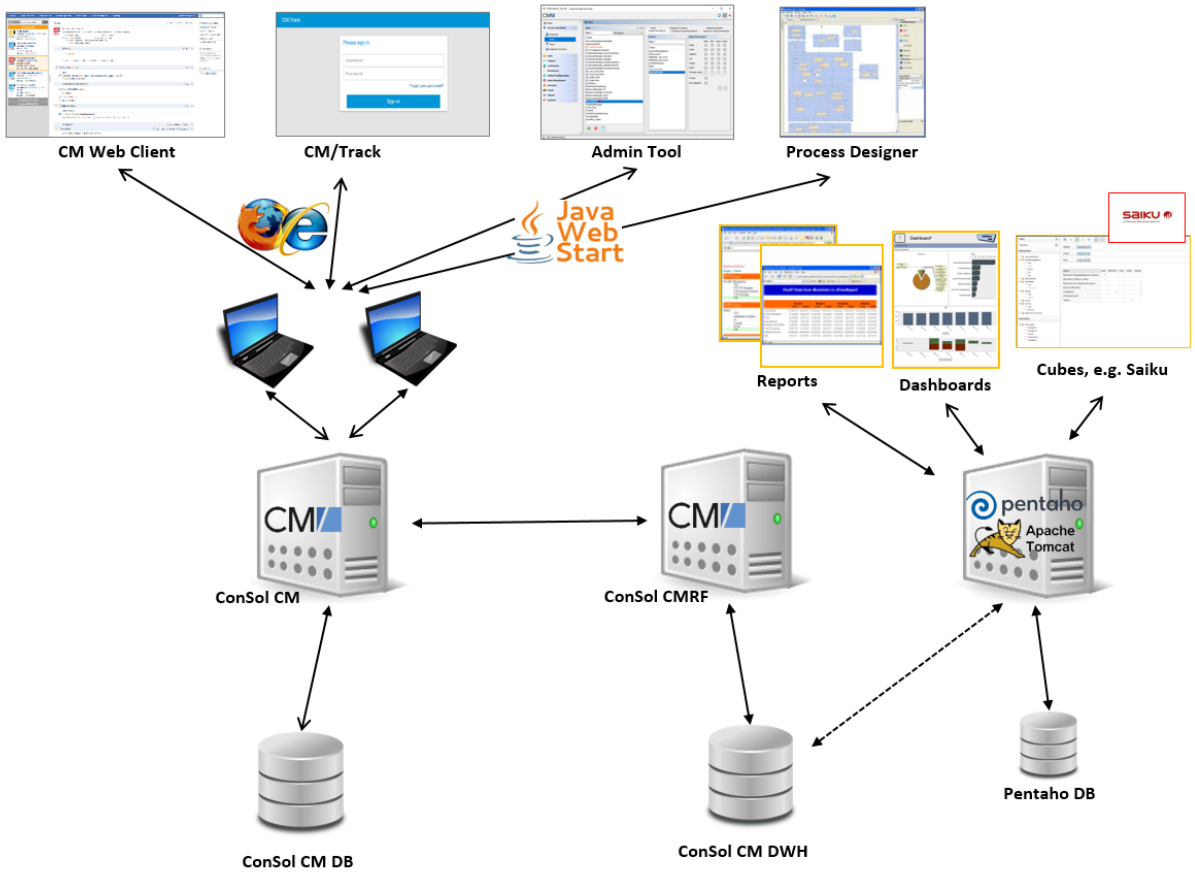


Figure 6: *ConSol CM - Reporting infrastructure (2 servers)*

One application server for ConSol CM and CMRF (overlay mode):

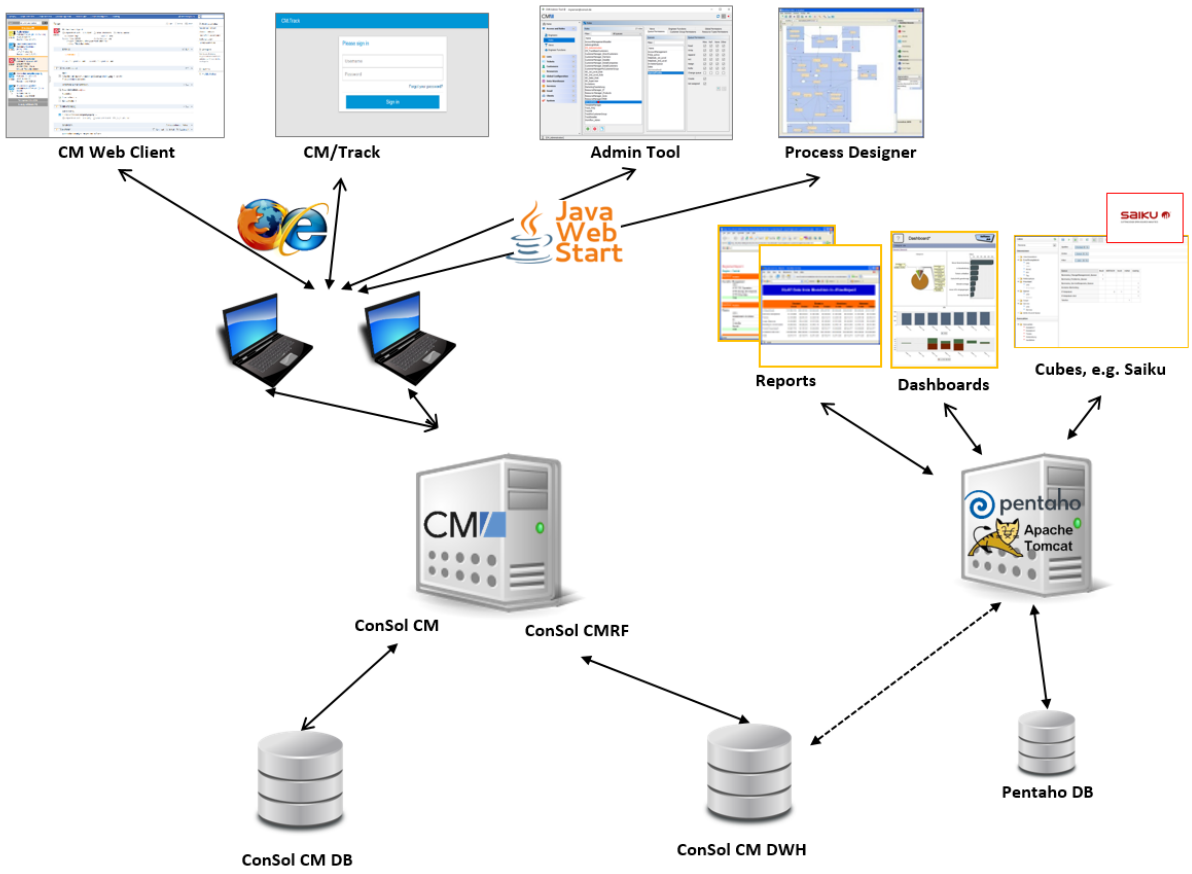


Figure 7: *ConSol CM - Reporting infrastructure (1 server)*

B.1.3.1 DWH Database

- **Oracle**
  One database scheme with one database user is used by the DWH.
- **Microsoft SQL**
  One database scheme with one database user is used by the DWH.
- **MySQL**
  One database with one database user is used by the DWH.

B.1.4 Components for Email Interactions

One of the core functionalities of ConSol CM is integration with mail servers. This allows ConSol CM to send and to receive emails. For the engineer, this means new tickets can easily be opened via email and the entire communication regarding a case is located in the respective ticket, including all incoming and outgoing emails.

In order to receive emails, ConSol CM connects to a mail server and retrieves emails from one or more mailboxes. ConSol CM acts like a regular email client (e.g., Thunderbird, Microsoft Outlook) and uses standard email protocols like IMAP or POP3. If you want to use the secure version, IMAPs and POPs are also supported, in which case the required certificates have to be installed on the server.

In order to send emails, ConSol CM uses an SMTP server.

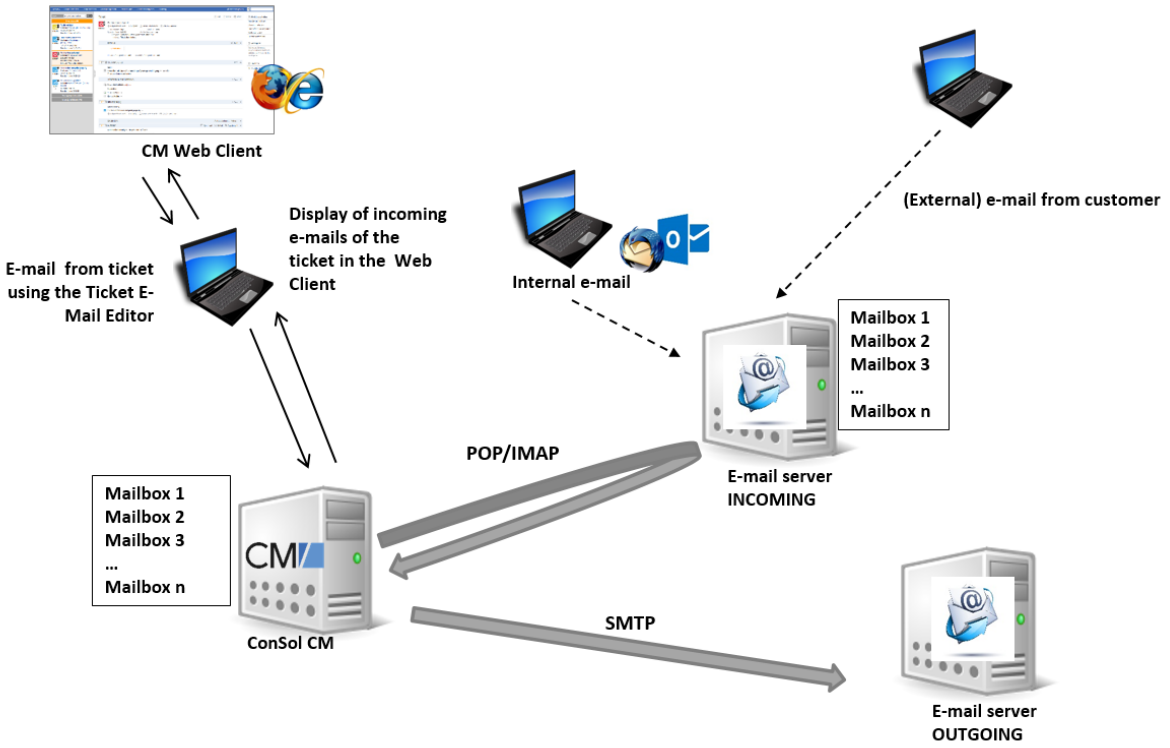


Figure 8: *ConSol CM - Mail server interactions*

B.1.5 Indexer

In order to perform effective searches in the database, ConSol CM builds an index for each ticket field, customer field, and resource field which should be included in a search. Furthermore, the engineer data, the ticket comments and the attachments are indexed by default. The indexes are stored in the file system. Please refer to the *ConSol CM Operations Manual*, sections *ConSol CM Data Directory* and *ConSol CM Indexer* for an explanation of the index directory structure and a detailed introduction to the entire topic.

B.1.6 LDAP Authentication

As standard feature, ConSol CM can use LDAP authentication in the Web Client and/or in the portal (CM/Track). Depending on the configuration of your LDAP server (e.g., Microsoft Active Directory), a user name and password might be required to establish the LDAP connection. All LDAP parameters are stored as ConSol CM system properties.

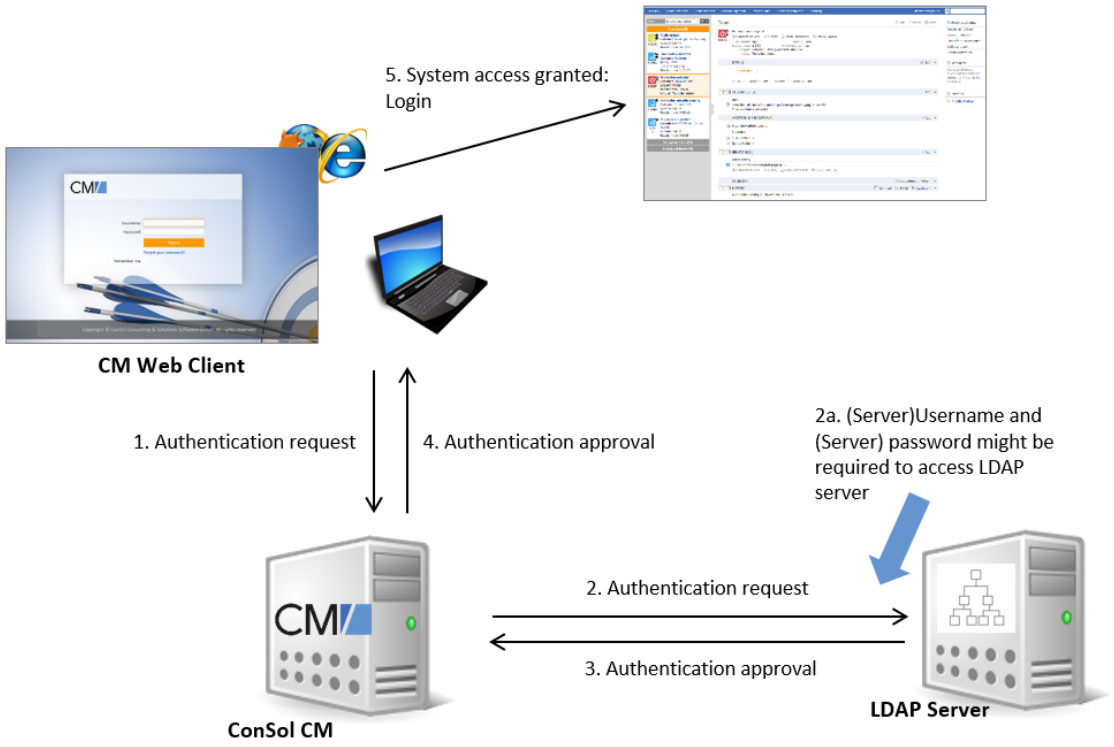


Figure 9: *ConSol CM - LDAP authentication (Web Client)*

B.2 Architecture of the ConSol CM Application

ConSol CM is a Java EE application based on a classical three-tier architecture.

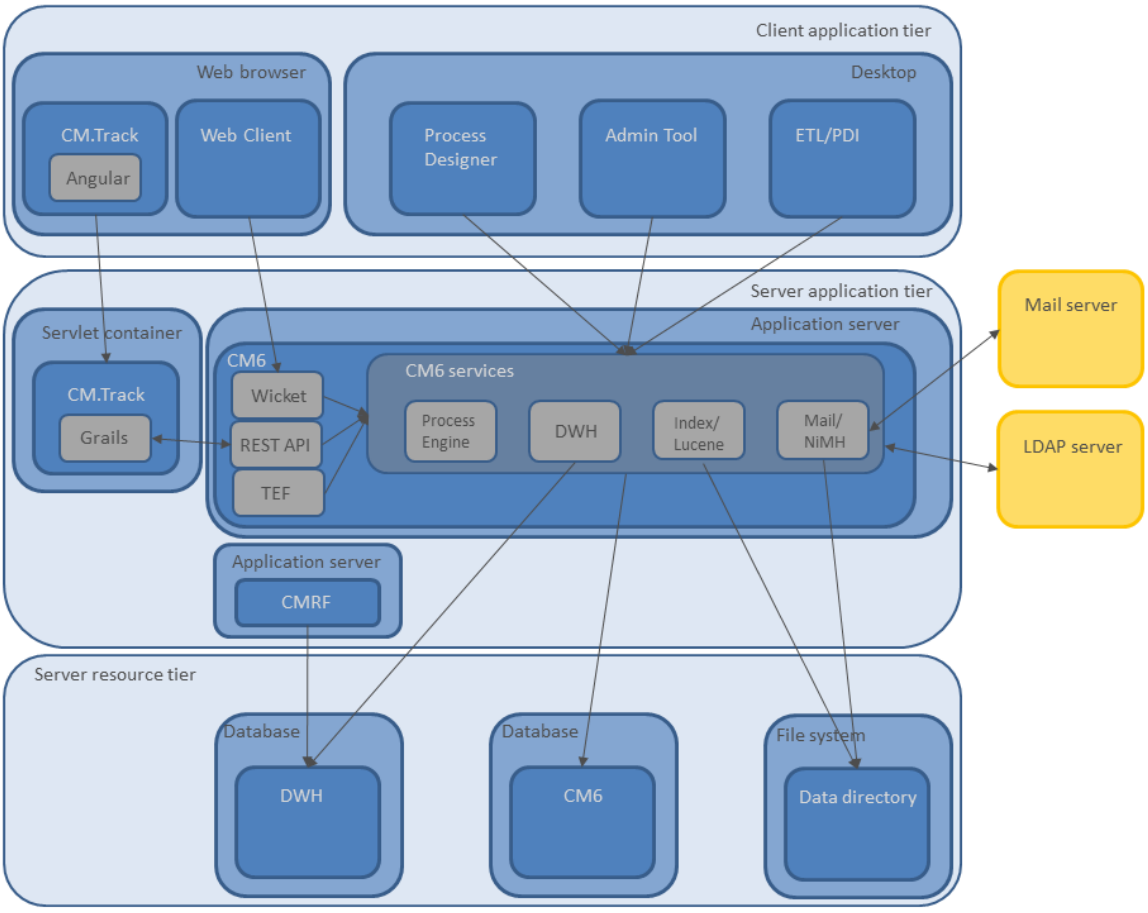


Figure 10: *ConSol CM application architecture*

C - Installing and Setting Up ConSol CM

This section describes how to install and set up ConSol CM in a single-server environment. The Quick Start Guide provides a summary of the steps which you need to carry out. Please have a look at System Architecture for an overview of the system components.

You have to proceed in four steps in order to install and set up ConSol CM:

1. Complete all required preparations, see section Preparations
2. Set up the database (or database scheme), see section Setting Up the Database for ConSol CM.
3. Install the ConSol CM application server with ConSol CM, see section Installing the Application Server for ConSol CM.
4. Set up ConSol CM, either via a pre-configured demo scene or with your specific scene, see section Setting Up the ConSol CM Application.

Please contact the ConSol CM support or your ConSol CM consultant for information about setting up ConSol CM in a cluster.

C.1 Quick Start Guide

This section provides a quick introduction to the installation and setup of ***ConSol CM*** as a single instance system. It lists all steps which are required to install and configure a ConSol CM system. After completing all the steps, you obtain a running system.

The following steps are **mandatory** to install a CM system:

1. Read the *ConSol CM System Requirements* for the CM version you want to install and provide the required hardware, middleware (application server), and software.
2. Prepare the mailboxes on the mail server, see section Preparations.
3. Prepare the database, see section Setting Up the Database for ConSol CM. Check database access using the user name and password which ConSol CM should use to access the database.
4. Install ConSol CM in the application server, see section Installing the Application Server for ConSol CM. Check that the application server lists the ConSol CM application as **deployed**.
5. Set up the ConSol CM application by providing the initial configuration, see section Setting Up the ConSol CM Application. Check that the ConSol CM start page is accessible via web browser.
    a. If you have installed a demo scene, continue to configure the scene.
    b. If you have started with an empty system, you have two options:
        - Build your own CM configuration from scratch (a ConSol CM consultant should support you).
        - Import an existing scene.
6. For further configuration steps, please refer to the *ConSol CM Administrator Manual*.

The following steps are **optional** and provide additional functionalities:

- Configure more mailboxes if required, using the Admin Tool, see *ConSol CM Administrator Manual*, section *Email.*
- Install and configure CM/Track, the customer portal, if required. See section The Customer Portal CM/Track or refer directly to the *ConSol CM Administrator Manual*, section *The Customer Portal: CM/Track*. CM/Track has to be licensed separately.
- Install and configure CM/Archive, the ticket archive, if required. See section CM/Archive or refer directly to the *ConSol CM Administrator Manual*, section *CM/Archive*. CM/Archive has to be licensed separately.
- Install and configure CM/Phone, the ConSol CM CTI solution, if required. See section CTI with ConSol CM: CM/Phone or refer directly to the *ConSol CM Administrator Manual*, section *CTI with ConSol CM: CM/Phone*. CM/Phone must be licensed separately.

In case you want to implement reports, OLAP cubes, or other Business Intelligence components, you have to install and configure the ***CMRF*** (ConSol CM Reporting Framework) and the ***DWH*** (Data Warehouse). This is explained in section Installing and Setting Up CMRF and DWH.

The following steps are **mandatory** to install CMRF:

1. Prepare the database, see section Setting Up the Database for CMRF / DWH.
2. Install the CMRF, see section Installing the CMRF.
3. Configure and fill the DWH, see section Configuring the DWH.

4. Develop the reports and/or cubes. This is not part of a ConSol CM system and is not be explained in this manual. Use your favorite reporting system and refer to the respective documentation.

C.2 Preparations

This chapter contains information about the requirements for setting up ConSol CM in a single-server environment.

- Network
- License
- Application Server
- Database
- Mail Server
- Indexer
- LDAP Authentication (Web Client and CM/Track)
- Data Warehouse

> Please contact the ConSol CM support or your ConSol CM consultant for information about setting up ConSol CM in a cluster.

C.2.1 Introduction

When your company has decided to use ***ConSol CM*** for managing business processes, you, as an administrator, have to prepare your IT environment for the setup of the new application. This section provides lists of all components which have to be prepared to run the CM server with its collaborating systems. Please read the Architecture of a CM System section first.

> It is recommended to set up at least two systems:
>
> - a test system
> - a productive (live) system
>
> All the steps described in the subsequent sections have to be performed for each CM system.

The following sections provide a short overview of a complete ConSol CM system.

C.2.2 Components Required for a ConSol CM Setup

C.2.2.1 Network

A trouble-free communication over your intranet is indispensable. Please make sure that all routes (e.g., CM server - database, CM server - mail server) are configured and are not blocked by firewalls.

C.2.2.2 License

When you start installing ConSol CM, make sure you have a valid license with all required modules and for a sufficient number of users for each module. Ask your ConSol sales representative or CM consultant, if you need any help with this. If you are interested in knowing some details about CM license files, see License Management.

C.2.2.3 Application Server

You need:

- **A machine for the ConSol CM application server** (Linux or Windows)
  - Sufficient CPU, RAM, HD storage
  - Oracle/Sun JDK (Java Development Kit)
  - Application Server (JBoss or WebLogic)
    - For WebLogic: CM will be installed as a separate domain with a managed server.

> A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

Please make sure that the PC which is running the Admin Tool and the Process Designer has direct access to the CM server. It might be necessary to adjust the network configuration for Java. Please note that it might be necessary to take proxies into account and that the connection might be blocked by firewalls.

Please note that access to log files for the ConSol CM administrator is required during operation of the system. The default directory for log files is listed here. In case you want to change the location of log files, please also refer to section *Logging and Log Files* in the *ConSol CM Operations Manual*.

- **JBoss:**
  standalone: <JBOSS_HOME>/standalone/log
- **WebLogic:**
  <WEBLOGIC_HOME>\user_projects\domains\<WEBLOGIC_DOMAIN>\servers\<WEBLOGIC_INSTANCE>\logs

C.2.2.4 Database

Supported Database Systems

The ConSol CM database is a relational database which can be operated as Oracle, Microsoft SQL Server, or MySQL system. For the configuration of the database connection, please refer to section Setting Up the Database for ConSol CM.

A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

- **Oracle**
  One database scheme with one database user is used by ConSol CM.
- **Microsoft SQL**
  One database scheme with one database user is used by ConSol CM.
- **MySQL**
  One database with one database user is used by ConSol CM.

Components Required for the Database

You need:

- **Database server** (Oracle or Microsoft SQL, for smaller systems or test systems also MySQL)

  Prepared database or a prepared schema of sufficient size. The database URL with login and password is needed for setup.

  If CM does not directly connect to the database but connects via a SAN etc., please make sure that the complete access URL is at hand

  Please make sure that the database is part of your every-day backup and that the restore routine is available (and has been tested positive).

C.2.2.5 Mail Server

Email Functionalities in CM

When you work with email functionalities, please keep in mind that we work with two components here as far as incoming emails are concerned:

- The mailbox, which is located on the mail server.
- The email address.

One mailbox can be used by one or more email addresses. ConSol CM retrieves emails using the mail-box address (server, mailbox). However, in the subsequent email scripts which process incoming emails, the mailbox name as well as the email address can be used as variables which are applied to steer further email processing.

All email functionalities and the email configuration are explained in great detail in the *ConSol CM Administrator Manual*. Please refer to the relevant sections to obtain further information regarding email configuration and email scripts.

ConSol CM can retrieve emails from **real** mailboxes only! Public folders (e.g., on a Microsoft Exchange Server) are not supported!

ConSol CM acts towards the mail server where it fetches the emails like a regular email client, using POP, POPs, IMAP or IMAPs. You can configure as many mailboxes as you like in the ConSol CM Admin Tool. Since one mailbox can be configured for one or more email addresses, there are different ways to configure CM. The two **pure** ways would be:

- Use only one mailbox with several email addresses which match on it. Then use the email scripts to parse the incoming emails. The email scripts use the incoming email address to dispatch the tickets or emails (e.g., all emails to *support@mycompany.com* to tickets in the support queue and all emails to *marketing@mycompany.com* to tickets in the marketing queue). Both email addresses are set for the mailbox *mymailbox* on the mail server. Only this mailbox is configured in the Admin Tool.
- Use one mailbox for each department or team. Set the respective parameters within the incoming email script. This script forwards the emails or tickets to the queues according to the mailbox name (e.g., all emails in the mailbox *support* to tickets in the support queue and all emails in the mailbox *marketing* to tickets in the marketing queue).

For the end user, both ways lead to the same results. You might also want to apply an intermediate approach, i.e., use different configurations for different purposes within one server.

Please talk to your CM consultant. He will help you find the best setup for the system environment in your company.

In any case, please read the detailed explanations about CM email functionalities in the *ConSol CM Administrator Manual*, sections *Email* and *Scripts of Type Email*.

Components Required for Email Functionalities

You need:

- **Mailboxes on the incoming mail server**. ConSol CM can work with every common mail server as long as the standard protocols are supported (POP / POPs / IMAP / IMAPs). Public folders (e.g., on a Microsoft Exchange Server) of a mail server cannot be used, only distinct mailboxes can be configured.
  Please note that there might be multiple email addresses for a mailbox. Please contact your CM consultant for help with the optimal system setup for your company.
  For each mailbox configuration within CM the following data is needed:
  - Mailbox name
  - Mail server name
  - Login
  - Password
  - Protocol

  Please make sure that the CM server can access the mail server and contact all desired mailboxes using the given protocol.

- The **URL (smtp:// <SERVER>:<PORT>) of the outgoing mail server**
  - If emails should be sent to external addresses via the ConSol CM system, the SMTP server has to allow relaying.

C.2.2.6 Indexer

There has to be sufficient storage space on the file system.

Please note that the search functionality (e.g., even the search for customers while creating a ticket) does not work if the indexer is not able to run error-free. Therefore, the undisturbed access to the respective file system has to be ensured at any time. This needs to be checked especially in case the file system is located on a mounted partition.

C.2.2.7 LDAP Authentication (Web Client and CM/Track)

If **LDAP** authentication should be used, the following information is needed during setup:

- LDAP server name and port
- If required: user name and password of the LDAP user, in order to be able to contact the LDAP server
- Base DN of the LDAP tree, where the names of the user accounts which shall work with CM can be found
- DN of the attribute which shall be used for user authentication (e.g., *sAMAccountName* or *uid*)

LDAP authentication can also be configured after the initial setup of ConSol CM. Therefore, it is not mandatory that LDAP parameters are at hand during system setup.

Please refer to LDAP Authentication for Engineers in the Web Client and LDAP Authentication for Customers in CM/Track for a more detailed explanation.

C.2.2.8 Data Warehouse

Supported Database Systems

- **Oracle**
  One database scheme with one database user is required for the DWH.
- **Microsoft SQL**
  One database scheme with one database user is required for the DWH.
- **MySQL**
  One database with one database user is required for the DWH.

Components Required for DWH Setup

The following is needed:

- **Database/Scheme**
  - The DWH needs a separate database or a separate scheme of sufficient size. During setup of CMRF the database URL with login and password are needed.
    If you do not directly connect to the DWH database but connect via a SAN etc., please make sure that the complete access URL is at hand during CM setup.
- **Application server**
  - **Option 1:**
    One application server (often used with WebLogic)
    - With WebLogic, CMRF is installed as a second managed server in the same domain.

- **Option 2:**
  Two application servers (two separate machines, often used with JBoss)
    - An additional JBoss server is set up which is running CMRF as an application server.

C.3 Setting Up the Database for ConSol CM

This chapter discusses the following:

C.3.1 Supported Database Management Systems

ConSol CM needs a relational database management system (RDBMS) for the storage of most of its operational data. Three systems are supported:

- MySQL (often used for smaller and for test systems)
- Oracle
- Microsoft SQL Server

> A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

C.3.2 Database Management Tools

We recommend to install a database management tool for your database server:

- Oracle SQL Developer
- MySQL Workbench
- Microsoft SQL Server Management Studio

C.3.3 MySQL

This chapter discusses the following:

- Installation Prerequisites
- General Preparations
- Optional Configuration Settings
- Post-Installation Tasks

To provide a database for ConSol CM or for the CMRF the same steps are required. For the CMRF database just change the database/database user name.

The recommended database character set is *utf-8* with collation *utf8_general_ci* (default collation for *utf-8*).

> utf-8 in MySQL only supports up to 3-byte Unicode characters. It has no support for supplementary characters (BMP characters only).
>
> Character sets with up to 4-byte characters (e.g. utf8mb4) lead to errors during table and index creation during system start up. Hence, they are not supported.

C.3.3.1 Installation Prerequisites

MySQL must be installed with **InnoDB** as default storage engine.

This is configured in the MySQL configuration file. The default file is:

- Linux: `my.cnf`
- Windows: `my.ini`

When you use utf-8 databases, the following instance parameter setting are necessary in the *mysqld* section of the configuration file:

```
[mysqld]
character-set-server=utf8
collation-server=utf8_general_ci
```

C.3.3.2 General Preparations

Create a database for ConSol CM. To do so, log in to MySQL Workbench or SQL Monitor (command line) with:

```
mysql -u root -p
```

(Without `-p` if no password was set during database setup.)

Execute the following commands to create a new database (placeholder *<CM_DB>*) and a new user (placeholder *<CM_USER>*. Grant the user *<CM_USER>* all necessary rights on the database *<CM_DB>*:

```
create database <CM_DB> CHARACTER SET utf8;
grant all on <CM_DB>.* to <CM_USER>@'%' identified by '<PASSWORD>';
grant all on <CM_DB>.* to <CM_USER>@localhost identified by '<PASSWORD>';
flush privileges;
```

C.3.3.3 Optional Configuration Settings

Sometimes threads may be stuck after setup, it may not be possible to log in to CM and restart it.

In this case, disable the query cache in your MySQL configuration by editing the following file:

- Linux: `/etc/mysql/my.cnf`
- Windows: `<DB_HOME>/my.ini`

Make the following settings:

```
query_cache_type = OFF
query_cache_size = 0
```

Alternatively, you can execute the following commands:

```
SET GLOBAL query_cache_type = OFF;
SET GLOBAL query_cache_size = 0;
```

If you are planning to have attachments bigger than 1 MB, the MySQL configuration file must also be adapted:

- Linux: `/etc/mysql/my.cnf`
- Windows: `<DB_HOME>/my.ini`

In the Server section `[mysqld]`, the allowed maximum size of attachments must be entered.

The following value allows 16 MB attachments:

```
max_allowed_packet=16777216
```

C.3.3.4 Post-Installation Tasks

After the CM-specific database objects have been created during the first successful start of the CM application (see Setting Up the ConSol CM Application), you can set the starting ticket number. By default, the ticket numbers are assigned starting with 1, but you can determine that they should start with another number.

For example, execute the following statement to start the ticket numbers with 10000:

```
ALTER TABLE cmas_ticket AUTO_INCREMENT = 10000;
```

C.3.4 Oracle

This chapter discusses the following:

- Installation Prerequisites
- General Preparations
- Post-Installation Tasks

To provide a database for ConSol CM or for CMRF the same steps are required. For the CMRF database just change the database/database user name.

C.3.4.1 Installation Prerequisites

An Oracle instance with database character set `AL32UTF8` is required. This can be checked with the following SQL statement:

```
SELECT * FROM NLS_DATABASE_PARAMETERS WHERE PARAMETER='NLS_CHARACTERSET';
```

The result should be:

Parameter	Value
NLS_CHARACTERSET	AL32UTF8

Initialization Parameter Settings

The following Oracle instance parameters must be changed to the following values or higher:

Parameter	Value
processes	20 + 200 * (number of CM connection pool) If shared with other servers, that + 200 for each CM connection pool
open_cursors	1000 **Note:** Necessary for statement caching in application server

The parameters can be changed as `sysdba` via `sqlplus` on the default instance with the following commands:

```
# sqlplus / as sysdba
> ALTER SYSTEM SET processes=420 SCOPE=SPFILE;
> ALTER SYSTEM SET open_cursors=1000 SCOPE=SPFILE;
```

Note that changes are only effective after restarting the database instance. This can be performed by:

```
> SHUTDOWN;
> STARTUP;
```

C.3.4.2 General Preparations

Create a separate database user account (placeholder *<CM_USER>*) for each CM installation with the roles `CONNECT` and `RESOURCE`.

⚠ For Oracle databases the user name is case insensitive during `CREATE USER` and `GRANT`. But it is stored in upper case in the database meta data. Therefore you must use the upper case name in `SELECT` statements on meta data as `dba_users` and `dba_role_privs`.

The password of this application user must not expire, as it is used in the database connection pool of the application server.

This can be created by the `sqlplus` command line interpreter via the following commands:

```
# sqlplus /nolog (start sqlplus client)
SQL> connect <SYSTEM>/<PASSWORD> --use your DBA user and password, connection to
 the default DB
  -- (or SQL>connect sys/<PASSWORD> as sysdba)
```

```
SQL> create user <CM_USER> identified by <PASSWORD>;
SQL> grant connect, resource to <CM_USER>;
```

Tablespace for Application-specific Tables and Indexes

The database user *<CM_USER>* needs a tablespace where he can store his tables and indexes.

In case a dedicated tablespace should be used for the ConSol CM application, the following SQL is the easiest way to create a tablespace:

```
SQL> create bigfile tablespace <TABLESPACE_NAME>;
```

ⓘ This only works if `OMF` is enabled in the Oracle database. This should be the case for most databases.

If the default tablespace of the database (default: `USERS`) should not be used, the default tablespace of the user must be changed. This can be changed by the following command:

```
SQL> alter user <CM_USER> default tablespace <TABLESPACE_NAME>;
```

For Oracle 12c, it is also required that the database user has a quota on this tablespace:

```
SQL> alter user <CM_USER> QUOTA UNLIMITED ON <TABLESPACE_NAME>;
```

⚠ It is not possible to use more than one tablespace for one CM installation.

ⓘ The application-specific database objects are created by the CM application during the first startup of the application server.

Transactions Recovery

The following settings must be applied for the user accessing an Oracle XA data source in order for XA recovery to operate correctly. The value *<CM_USER>* is the database user defined to connect from JBoss to Oracle.

> ⚠ For Oracle databases the user name is case insensitive during `CREATE USER` and `GRANT`. But it is stored in upper case in the database meta data. Therefore you must use the upper case name in `SELECT` statements on meta data as `dba_users` and `dba_role_privs`.

```
sqlplus / as sysdba
#check version
SELECT * FROM V$VERSION;
#get correct spelling of CMUSER
SELECT username FROM dba_users where username = upper('<CM_USER>');

GRANT SELECT ON sys.dba_pending_transactions TO <CM_USER>;
GRANT SELECT ON sys.pending_trans$ TO <CM_USER>;
GRANT SELECT ON sys.dba_2pc_pending TO <CM_USER>;
GRANT EXECUTE ON sys.dbms_xa TO <CM_USER>; --If using Oracle 10g R2 (patched) or
 later
--OR
GRANT EXECUTE ON sys.dbms_system TO <CM_USER>; --If using an unpatched Oracle
 version prior to 11g
```

C.3.4.3 Post-Installation Tasks

After the CM-specific database objects have been created during the first successful start of the CM application (see Setting Up the ConSol CM Application), you can set the starting ticket number. By default, the ticket numbers are assigned starting with 1, but you can determine that they should start with another number.

For example, execute the following statement as application Oracle user to start the ticket numbers with 10000:

```
drop sequence TICKET_SEQUENCE;
CREATE SEQUENCE TICKET_SEQUENCE" MINVALUE 10000 MAXVALUE
 999999999999999999999999999 INCREMENT BY 1 START WITH 100840 CACHE 20 NOORDER
 NOCYCLE ;
```

C.3.5 Microsoft SQL Server

This chapter discusses the following:

- General Preparations
- Post-Installation Tasks

To provide a database for ConSol CM or for CMRF the same steps are required. For the CMRF database just change the database/database user name.

C.3.5.1 General Preparations

- **JDBC driver**
  In order to use Microsoft SQL Server with ConSol CM, you need to install the XA features of the JDBC driver:
  - Download the JDBC driver from Microsoft and unpack it. Check the system requirements for the correct version.
  - There is a directory `xa` which has several subdirectories for the XA driver DLLs. Choose the correct one according to the architecture your server is running on (e.g., `x86\sqljdbc_xa.dll`) and copy the DLL file into the `binn` directory of your Microsoft SQL Server installation, for example:

    ```
    C:\Program Files (x86)\Microsoft SQL
     Server\MSSQL10.SQLEXPRESS\MSSQL\Binn
    ```

  - Then execute the `xa_install.sql` script from the above unpacked JDBC driver directory.
- **Enable XA Transactions**
  (Source: Execute the steps below Running the Microsoft DTC Service.)
  The Microsoft DTC service should be marked *Automatic* in Service Manager to make sure that it is running when the SQL Server service is started. To enable Microsoft DTC for XA transactions, you must follow these steps:
  1. Click the *Start* button, type *dcomcnfg* in the *Start Search* box, and then press *Enter* to open *Component Services*. You can also type "%windir%\system32\comexp.msc" in the *Start Search* box to open *Component Services*.
  2. Expand *Component Services*, *Computers*, *My Computer*, and then *Distributed Transaction Coordinator*.
  3. Right-click *Local DTC* and then select *Properties*.
  4. Click the *Security* tab on the *Local DTC Properties* dialog box.
  5. Select the *Enable XA Transactions* check box and then click *OK*. This will cause a Microsoft DTC service restart.
  6. Click *OK* again to close the *Properties* dialog box and then close *Component Services*.
  7. Stop and then restart Microsoft SQL Server to make sure that it syncs up with the Microsoft DTC changes.

> ⚠ If a clustered database server is used, you have to choose the **grouped** DTC instead of the **local** DTC to activate *XA Transactions*.

- **Database and database user for CM**
  - Create a new database (placeholder *<CM_DB>*). Execute the following statement on this database:

```
ALTER DATABASE <CM_DB> SET READ_COMMITTED_SNAPSHOT ON;
```

  - Create an application user (placeholder *<CM_USER>*) with the following authorizations:
    - Grant user *<CM_USER>* access to database medium `master` (role `public` and role `SqlJDBCXAUser`).
    - Grant user *<CM_USER>* access to database medium *<CM_DB>* (role `public` and role `db_owner`).

C.3.5.2 Post-Installation Tasks

After the CM-specific database objects have been created during the first successful start of the CM application (see Setting Up the ConSol CM Application), you can set the starting ticket number. By default, the ticket numbers are assigned starting with 1, but you can determine that they should start with another number.

For example, execute the following statement using SQL Management Studio to start the ticket numbers with 10000:

```
dbcc checkident ('cmas_ticket', reseed, 10000)
```

> ⓘ **Performance tip for Windows operating system**
>
> When running Microsoft SQL Server on Windows, the power options have an impact on the database performance. Change the power plan from *Balanced* to *High Performance* to improve database performance.

C.4 Installing the Application Server for ConSol CM

This chapter discusses the following:

C.4.1 General Note

> A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

C.4.2 Supported Application Servers

ConSol CM version 6.11 supports three application servers. Please read the respective sections for information about the system setup.

- Installing ConSol CM with JBoss EAP 6.4 / 7.1.4
- ConSol CM Installation with WebLogic 12c R2

C.4.3 Supported Database Systems

Three Relational Database Management System (RDBMS) types are supported:

- MySQL
- Oracle
- Microsoft SQL Server

C.4.4 Supported Operating Systems

Two main operation systems are supported:

- Linux
- Windows

C.4.5 Installing ConSol CM with JBoss EAP 6.4 / 7.1.4

This chapter discusses the following:

C.4.5.1 Introduction

This section explains the setup of a new ConSol CM system. If you need information about a system update, please refer to the *Release Notes* of the respective CM version.

> Please contact the ConSol CM support or your ConSol CM consultant for information about setting up ConSol CM in a cluster.

C.4.5.2 Prerequisites

> To extract the JBoss .zip files, about 2 GB of hard drive space are required.
>
> The final JBoss installation (without CM) requires about 750 MB.

- Installation of **Java JDK 1.8** on the server
- JBoss EAP version 6.4 or 7.1.4
- ConSol CM distribution, available distributions are:
  - For MySQL: dist-package-distribution-<CM_VERSION>-mysql-eap-6.zip and dist-package-distribution-<CM_VERSION>-mysql-eap-7.zip
  - For Oracle: dist-package-distribution-<CM_VERSION>-oracle-eap-6.zip and dist-package-distribution-<CM_VERSION>-oracle-eap-7.zip
  - For Microsoft SQL Server: dist-package-distribution-<CM_VERSION>-mssql-eap-6.zip and dist-package-distribution-<CM_VERSION>-mssql-eap-7.zip
- Installed database server, see section Setting Up the Database for ConSol CM
- In case of MySQL as database: MySQL connector 5.1.25
- Installed email server

> A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

Obtaining the Required Software

Please contact your ConSol CM consultant or the ConSol CM support to obtain instructions where to download the required software.

C.4.5.3 Installing JBoss

This installation has been performed and tested with the following software versions. With other systems or versions, the setup might be slightly different.

JBoss version:

- Red Hat JBoss Enterprise Application Platform 6.4.0

ConSol CM version:

- 6.11.0

Operating systems:

- Windows, Linux

Windows

1. Extract the downloaded JBoss archive into a new folder.
2. Edit the file `<JBOSS_HOME>\bin\standalone.conf.bat` (also see standalone.conf.bat).

   Change the Java memory options if needed:

   ```
   set "JAVA_OPTS=-Xms4g -Xmx4g -XX:MaxMetaspaceSize=512m -
    Djava.net.preferIPv4Stack=true"
   ```

3. Add the Java path (the path and Java version can be different on your system):

   ```
   set "JAVA_HOME=C:\Program Files\Java\jdk1.8.0_92"
   ```

   Alternatively you can add *JAVA_HOME* to your operating system environment variables. In this case it is not necessary to set the line above. Refer to the Java documentation on how to do this.

Linux

1. Extract the downloaded JBoss archive into a new folder
2. Edit the file `<JBOSS_HOME>/bin/standalone.conf` (also see standalone.conf):

   On most Linux Systems the `JAVA_HOME` environment variable should already be set. If you wish to use the system standard Java version you do not need to specify the `JAVA_HOME` environment variable.

   If in your case the variables are not set or you wish to specify a path to a specific Java installation add the following line (the path and Java version can be different on your system):

   ```
   JAVA_HOME="/opt/java/64/jdk1.8.0_92"
   ```

You can use `echo $JAVA_HOME` to check if the variable is set correctly.

3. Adjust the JVM memory options, the `-Xmx` value should be at least “4G”. If you want to set the options only when no `JAVA_OPTS` have been set yet, then use the following statement:

```
## Specify options to pass to the Java VM.#
if [ "x$JAVA_OPTS" = "x" ]; then
   JAVA_OPTS="-Xms4g -Xmx4g -XX:MaxMetaspaceSize=512m -
    Djava.net.preferIPv4Stack=true"
   JAVA_OPTS="$JAVA_OPTS -Djboss.modules.system.pkgs=$JBOSS_MODULES_SYSTEM_
    PKGS -Djava.awt.headless=true"
else
   echo "JAVA_OPTS already set in environment; overriding default settings
    with values: $JAVA_OPTS"
fi
```

If you want to overwrite existing `JAVA_OPTS`, do not put the `JAVA_OPS=` statements into the `if` clause

4. If the `JBOSS_HOME` environment variable is already set to a path other than your server path, add the following line at the top of `<JBOSS_HOME>/bin/standalone.conf`. Remember that <JBOSS_HOME> is the path to your JBoss installation.

```
JBOSS_HOME=<JBOSS_HOME>
```

5. Change owner to a non-admin Linux user (example: *hotline*) and make the files executable:
   - chown -R hotline <JBOSS_HOME>/bin
   - chmod 755 -R <JBOSS_HOME>/bin

C.4.5.4 Installing ConSol CM

1. Extract the ConSol CM distribution `dist-package-distribution-<CM_VERSION>-<DB_VERSION>.zip` into <JBOSS_HOME>.
2. Overwrite the 3 subfolders `standalone`, `modules` and `domain`, i.e. confirm the overwriting of existing files.

C.4.5.5 Configuring the Database Connection

In this chapter, you learn how to configure the database connection. Please refer to the section of the database you use:

- MySQL
- Oracle
- Microsoft SQL Server

MySQL

Edit the following file: `<JBOSS_HOME>\standalone\configuration\cm6.xml` (also see cm6.xml) according to your database configuration (see MySQL).

1. Enter the connection URL (including port) and database name.
2. Enter the user name of the database user.

3. Enter the password for the database user.

This needs to be done for two data sources. The relevant places are highlighted in red in the following code example.

The exact content of the configuration file depends on the used application server, database system and ConSol CM version. Always use the file from the distribution which you are installing. Do not copy & paste from this manual or from other installations.

```
<profile>
  <subsystem xmlns="urn:jboss:domain:datasources:1.1">
    <datasources>
      <xa-datasource jndi-name="java:/jdbc/CmDS" pool-name="jdbc/CmDS"
       enabled="true" use-java-context="true" use-ccm="true">
        <driver>mysql-driver</driver>
        <xa-datasource-property name="URL">jdbc:mysql://localhost/cmdatabase</xa-
         datasource-property>
        <security>
          <user-name>cmuser</user-name>
          <password>consol</password>
        </security>

      ...

  <datasource jta="false" jndi-name="java:/jdbc/CmDS-no-tx" pool-name="jdbc/CmDS-
   no-tx" enabled="true" use-java-context="true" use-ccm="true">
    <driver>mysql-driver</driver>
    <connection-url>jdbc:mysql://localhost/cmdatabase</connection-url>
    <security>
      <user-name>cmuser</user-name>
      <password>consol</password>
    </security>
```

Adding the MySQL Connector

MySQL Connector/J is the official JDBC driver for MySQL. The connector is not part of the CM distribution package. Therefore, you must copy it manually into the JBoss directory. You can download the connector from http://dev.mysql.com/downloads/connector/j/.

1. Extract the MySQL connector archive `mysql-connector-java-5.1.25.zip` into a temporary folder. The folder contains the JDBC driver file `mysql-connector-java-5.1.25-bin.jar` (e.g. in version 5.1.25).
2. Copy the JDBC driver, e.g., `mysql-connector-java-5.1.25-bin.jar`, into the folder `<JBOSS_HOME>\modules\system\layers\base\com\mysql\jdbc\main`.

If you receive an error message similar to the following, then you might have to use a newer connector.

```
ERROR [ontroller.management-operation] [-] JBAS014613: Operation ("add")
 failed - address: ([
   ("subsystem" => "datasources"),
   ("jdbc-driver" => "mysql-driver")
]) - failure description: "JBAS010441 ...
```

Code example 1: *Error message for MySQL connector*

3. Edit the file `<JBOSS_HOME>\modules\system\layers\base\com\mysql\jdbc\main\module.xml` located in the same folder. Change the line highlighted in red, so it points to your version of the MySQL connector.

```
<?xml version="1.0" encoding="UTF-8"?>
<module xmlns="urn:jboss:module:1.0" name="com.mysql.jdbc">
   <resources>
      <resource-root path="mysql-connector-java-5.1.25-bin.jar"/>
   </resources>
   <dependencies>
      <module name="javax.api"/>
      <module name="javax.transaction.api"/>
   </dependencies>
</module>
```

Oracle

Edit the file `<JBOSS_HOME>\standalone\configuration\cm6.xml` (also see cm6.xml) according to your database configuration (see Oracle).

1. Enter the connection URL and Oracle SID.
2. Enter the user name of the database user.
3. Enter the password for the database user.

This needs to be done for two data sources. The relevant places are highlighted in red in the following code example.

⚠ The exact content of the configuration file depends on the used application server, database system and ConSol CM version. Always use the file from the distribution which you are installing. Do not copy & paste from this manual or from other installations.

```
...

<subsystem xmlns="urn:jboss:domain:datasources:1.1">
   <datasources>
      <xa-datasource jndi-name="java:/jdbc/CmDS" pool-name="jdbc/CmDS"
       enabled="true" use-java-context="true" use-ccm="true">
         <driver>oracle-driver</driver>
         <xa-datasource-property
          name="URL">jdbc:oracle:thin:@localhost:1521:sid</xa-datasource-property>
         <security>
            <user-name>cmuser</user-name>
```

```
          <password>consol</password>
        </security>

  ...

     </xa-datasource>
     <datasource jta="false" jndi-name="java:/jdbc/CmDS-no-tx" pool-
      name="jdbc/CmDS-no-tx" enabled="true" use-java-context="true" use-ccm="true">
        <driver>oracle-driver</driver>
        <connection-url>jdbc:oracle:thin:@localhost:1521:sid</connection-url>
        <security>
          <user-name>cmuser</user-name>
          <password>consol</password>
        </security>

  ...
```

Oracle JDBC Driver Location

The Oracle JDBC driver is installed as a module and can be found at the following location:

- <JBOSS_HOME>/modules/system/layers/base/oracle/jdbc/main/

Microsoft SQL Server

Edit the following file: `<JBOSS_HOME>\standalone\configuration\cm6.xml` (also see cm6.xml) according to your database configuration (see Microsoft SQL Server).

1. Enter the connection URL.
2. Enter the database name.
3. Enter the user name of the database user.
4. Enter the password for the database user.

This needs to be done for two data sources. The relevant places are highlighted in red in the following code example.

> ⚠ The exact content of the configuration file depends on the used application server, database system and ConSol CM version. Always use the file from the distribution which you are installing. Do not copy & paste from this manual or from other installations.

```
<subsystem xmlns="urn:jboss:domain:datasources:X.X">

  ...

  <datasource jta="false" jndi-name="java:/jdbc/CmDS-no-tx" pool-name="jdbc/CmDS-
   no-tx" enabled="true" use-java-context="true" use-ccm="true">
     <connection-
      url>jdbc:sqlserver://localhost:1433;databaseName=cmdatabase</connection-url>

     ...

     <security>
```

```
      <user-name>cmuser</user-name>
      <password>consol</password>
    </security>

...

</datasource>

<xa-datasource jndi-name="java:/jdbc/CmDS" pool-name="jdbc/CmDS" enabled="true"
 use-java-context="true" use-ccm="true">
    <xa-datasource-property name="URL">
      jdbc:sqlserver://localhost:1433;databaseName=cmdatabase
    </xa-datasource-property>

    ....

    <security>
      <user-name>cmuser</user-name>
      <password>consol</password>
    </security>

...
```

Microsoft SQL Server JDBC Driver Location

The Microsoft SQL Server JDBC driver is installed as a module and can be found at the following location:

- <JBOSS_HOME>/modules/system/layers/base/com/microsoft/sqlserver/jdbc/main/

C.4.5.6 Starting and Shutting Down the CM Server

This section describes how to start and stop the JBoss application server.

> The following section applies to JBoss EAP 6.4 or 7.1.4.

JBoss on Windows

Starting JBoss on Windows

Run the following command to start the JBoss server. Alternatively you can configure JBoss to run as a service.

```
<JBOSS_HOME>\bin\standalone.bat --server-config=cm6.xml -b=<CM_HOST_IP>
```

The `server-config` file is:

- **cm6.xml**
  in a CM-only installation (also see cm6.xml)
- **cm6-cmrf.xml**
  in a CM environment with CMRF/DWH (also see cm6-cmrf.xml)

Shutting Down JBoss on Windows

Run the following command to stop the JBoss server. Alternatively you can put it into the configuration of the Windows service.

```
<JBOSS_HOME>\bin\jboss-cli.bat --connect --command=:shutdown
```

If you did not set a system environment variable for the Java home directory, add the path to the JDK to `<JBOSS_HOME>\bin\jboss-cli.bat`. This prevents Java warnings.

Example for JDK version 1.8.0_92, replace by your Java version.

```
set "JAVA_HOME=C:\Program Files\Java\jdk1.8.0_92"
```

In case the `JBOSS_HOME` environment variable is already set in the system, you can specify the server-specific path at the beginning of `JBOSS_HOME>\bin\jboss-cli.bat`in the following syntax:

```
set JBOSS_HOME='<JBOSS_HOME>'
```

JBoss on Linux

Starting JBoss on Linux

Run the following command to start the JBoss server. Alternatively you can put it into a start script (usually *init.d* or *systemd*).

```
<JBOSS_HOME>/bin/standalone.sh --server-config=cm6.xml -b=<CM_HOST_IP>
```

The `server-config` file is:

- **cm6.xml**
  in a CM-only installation (also see cm6.xml)
- **cm6-cmrf.xml**
  in a CM environment with CMRF/DWH (also see cm6-cmrf.xml)

If JBoss starts normally (*ConSol CM Startup* appears in the `server.log` file) but *localhost:8080* cannot be reached, try setting `<CM_HOST_IP>` to `0.0.0.0`.

Shutting Down JBoss on Linux

Run the following command to stop the JBoss server. Alternatively you can put it into a stop script (usually *init.d* or *systemd*).

```
<JBOSS_HOME>\bin\jboss-cli.sh --connect --command=:shutdown
```

If you did not set a system environment variable for Java, add the path to the JDK to `<JBOSS_HOME>/bin/jboss-cli.sh`. This prevents Java warnings.

Example for JDK version 1.8.0_92, replace by your Java version.

```
JAVA_HOME="/opt/java/64/jdk1.8.0_92"
```

In case the `JBOSS_HOME` environment variable is already set in the system, you can specify the server-specific path at the beginning of `<JBOSS_HOME>\bin\jboss-cli.sh` in the following syntax:

```
JBOSS_HOME='<JBOSS_HOME>'
```

General Configuration

- In case `-b=localhost` or `-b=127.0.0.1` is set as parameter, ConSol CM is only accessible from the same server, where JBoss is running.
- Enter the network IP or the network name to make ConSol CM accessible from outside the sever. In this case ConSol CM URL is not accessible from the inside using the localhost URL.
- If you enter `-b=0.0.0.0` the server is accessible from the outside and inside using the server URL or using the localhost URL (take care of all required security-related precautions!).
- After the server has started, open a browser window and type the server URL to start the ConSol CM setup, see section Setting Up the ConSol CM Application.

The following JAVA_OPTS settings are used by default when setting up a new ConSol CM system.

Default memory configuration for JBoss 6.4 on Java 8 (Xms and Xmx should be set to the same value):

- -Xms4g -Xmx4g -XX:MaxMetaspaceSize=512m

These parameters are starting parameters for production systems. Depending on the size of the system it might be necessary to adjust them. The following factors are important in this context:

- number of concurrent users
- amount of tickets, customers, resources
- amount and size of emails
- amount and size of attachments
- size of the index

As an administrator, you need to check the Java heap size and the garbage collection activity using tools like jconsole or jvisualvm. If the heap size is higher than 80 - 90% of the maximum value and the garbage collection runs frequently, you need to increase the memory allocation (Xmx).

The list includes the officially supported default parameters for JBoss 6.4. They should be suitable for most installations.

- -verbose:gc
- -XX:+PrintGCDetails
- -XX:+PrintGCDateStamps
- -XX:+UseGCLogFileRotation
- -XX:NumberOfGCLogFiles=5
- -XX:GCLogFileSize=3M
- -XX:-TraceClassUnloading
- -XX:+UseCompressedOops

- -Djava.net.preferIPv4Stack=true
- -Djboss.modules.policy-permissions=true
- -Djboss.modules.system.pkgs=$JBOSS_MODULES_SYSTEM_PKGS

Depending on the individual usage of the ConSol CM system, some additional settings might be needed. The following list includes settings which are used on some systems. As these settings are not officially supported, please contact your ConSol CM consultant or the ConSol CM support before using them in your production environment.

- -server
- org.apache.tomcat.util.http.Parameters.MAX_COUNT=6000
- org.apache.coyote.http11.Http11Protocol.MAX_HEADER_SIZE=65535
- org.apache.tomcat.util.http.MimeHeaders.MAX_COUNT=200
- com.arjuna.ats.arjuna.allowMultipleLastResources=true
- -Dhttp://apache.org/xml/features/nonvalidating/load-external-dtd=false
  Prevent cross-scripting attacks
- -Djboss.platform.mbeanserver
  Enable the JMX bean server
- -Djgroups.marshalling.compatible=true
  Use old JGroups protocol instead of newer one
- -Dorg.jboss.resolver.warning=true
  Warning when an XML entity is defined as SYSTEM and the protocol is not `file://` or `vfsfile://`
- -Dserialization.jboss=false
  Disable JBoss serialization and use standard Java serialization instead
- -Dsun.rmi.dgc.client.gcInterval=3600000
- -XX:+UseParallelOldGC
  Use the old garbage collection or any better matching garbage collection depending on your requirements.
- -XX:+HeapDumpOnOutOfMemoryError
- -XX:HeapDumpPath=/some/path
  Use a path, you cannot use a file here
- -Xloggc:some/path/based/on/JbossRoot/log/gc-%t.log
- -XX:ReservedCodeCacheSize=150m
- -XX:CompressedClassSpaceSize=128m

C.4.5.7 Autostarting the CM Server

Installing JBoss EAP as Windows Service

You can install JBoss EAP as a Windows service. The service file needs to be adapted by providing the correct directory for the log files and the CM start configuration. Please also see Starting and Shutting Down the CM Server.

If you have a maintenance contract, please contact the ConSol CM support (+49-89-45841-150 or support@consol.de) to receive further assistance with the configuration.

Autostarting JBoss EAP on Linux Systems

You can use *systemd* or *init.d* scripts to configure autostart for ConSol CM on Linux systems. The JBoss package delivered with ConSol CM contains a *systemd* script which can be used for this purpose.

If you have a maintenance contract, please contact the ConSol CM support (+49-89-45841-150 or support@consol.de) to receive further assistance with the configuration.

C.4.5.8 Configuring Logging

The built-in logging module of JBoss EAP is used. Usually, no changes are required in a standard ***ConSol CM*** standalone installation. If you would like to change the default settings, please adapt the file `<JBOSS_HOME>/standalone/configuration/cm6.xml` (also see cm6.xml).

The file `logging.properties` is a standard JBoss file which is used in the boot process only as long as the regular logging subsystem has not yet been started. `logging.properties` does not have to be modified.

See also Logging Info Page of JBoss Website (as of January 2018)

Location of Log Files

The log files are located in the following folder:

- <JBOSS_HOME>/standalone/log

Please refer to the *ConSol CM Operations Manual*, section *ConSol CM Logging and Log Files* for further information about logging.

C.4.6 Installing ConSol CM with WebLogic 12c R2

This chapter discusses the following:

C.4.6.1 Introduction

This section explains the setup of a new ConSol CM system. If you need information about a system update, please refer to the *Release Notes* of the respective CM version.

> The use of WebLogic in a cluster is not officially supported.

C.4.6.2 Prerequisites

The following prerequisites are needed for installing ConSol CM under WebLogic.

- Java JDK version 1.8.
- Oracle WebLogic Server 12c R2 (12.2.1.1).
- ConSol CM distribution: dist-package-distribution-<CM_VERSION>-**weblogic12**-<DB_VERSION>.-jar, available distributions are:
  - For MySQL: dist-package-distribution-<CM_VERSION>-weblogic12-mysql.jar
  - For Oracle: dist-package-distribution-<CM_VERSION>-weblogic12-oracle.jar
  - For Microsoft SQL Server: dist-package-distribution-<CM_VERSION>-weblogic12-mssql.-jar
- Installed database server and database for ConSol CM, see section Setting Up the Database for ConSol CM.
- Installed mail server

> A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

Obtaining the Required Software

Please contact your ConSol CM consultant or the ConSol CM support to obtain instructions where to download the required software.

C.4.6.3 Installing and Configuring the WebLogic Server

This installation has been performed and tested with the following software versions. With other systems or versions, the setup might be slightly different.

WebLogic Server version:

- 12c (12.2.1.2)

ConSol CM version:

- 6.11.2.2

Operating systems:

- Linux

The installation of the WebLogic server consists of several steps.

Installing the WebLogic Server

The first step is to install the WebLogic Server.

1. Go to the directory where the downloaded WebLogic JAR file is saved.
2. Execute the following command where <path to JDK> is the location of JDK 1.8.

```
<path to JDK>/bin/java -jar fmw_12.2.1.2.0_wls_generic.jar
```

3. Perform the steps of the *Oracle Fusion Middleware 12c WebLogic Server and Coherence Installation* wizard. Click *Install* on the page with the installation summary to complete the installation.

Depending on the installation folder, administrator rights may be necessary. In case another user should start the server later, make sure he has all rights for the WebLogic folder.

If WebLogic is installed in the /usr/local/<WEBLOGIC_HOME>:

```
chown -R <USER_NAME> /usr/local/<WEBLOGIC_HOME>*
```

Creating a Domain for ConSol CM

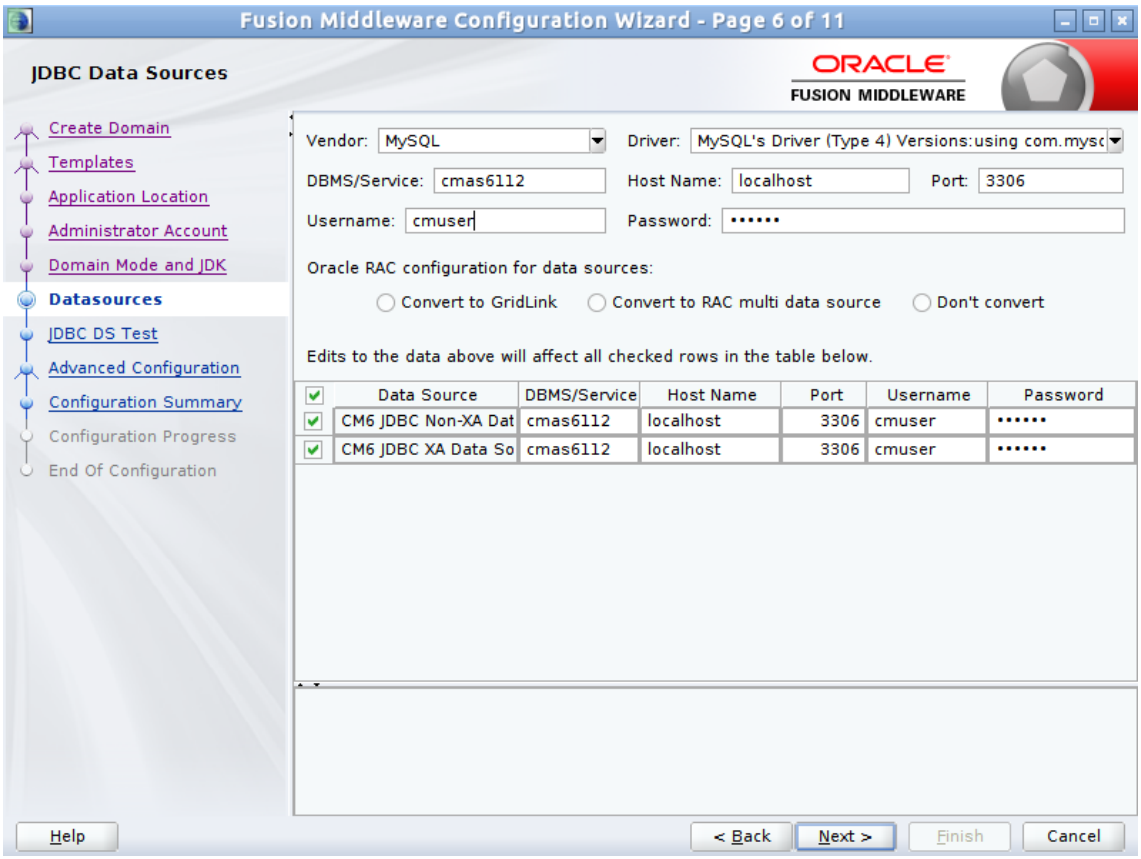
The next step is to create a domain for ConSol CM using the *Fusion Middleware Configuration Wizard*. The wizard can either be launched directly when finishing the installation wizard (see previous step) or be launched manually by executing the `config.sh` / `config.bat` file from `<WL_HOME>/wlserver/common/bin`.

For Linux systems without graphical interface you can use X11 forwarding. Alternatively, you can use the command line version of the configuration wizard, which is automatically started if no screen is available. In case only text is available, just follow the instructions below as well. The steps are similar. The only exception is the test of the database connection which is only available in graphical mode.

1. On the *Create Domain* page, select *Create a new domain*. The Domain Location field shows the path to the domain. By default, the domain is saved in `<WL_HOME>/user_projects/domains`. Click *Next*.
2. On the *Templates* page, select *Create Domain Using Custom Template*. Click the *Browse* button to select the ConSol CM distribution file. Click *Next*.
3. On the *Application Location* page, you can select another location for the application, if required. Click *Next*.
4. On the *Administrator Account* page, you have to set the user name and password of the administrator account. Click *Next*.
5. On the *Domain Mode and JDK* page, you have to choose the domain mode (development or production) and the JDK. Click *Next*.
6. On the *Datasources* page, you have to set the database information, depending on your database system. There are two data sources, Non-XA and XA-. To make changes, you have to check the required rows in the table. Afterwards, you can edit the information above by entering the name of the database, the user name and the passwords. Some information is prefilled from the domain template according to the ConSol CM distribution.

> Here you have to provide the user name and password set during the preparation of the database.

The following screenshot shows an example of a data source configuration using a MySQL database.



Click *Next*.

7. On the *JDBC DS Test* page, the connection to the database is tested. It has to be successful in order to proceed. If the test is not successfully check the configuration (user name, password, database name) on the previous page. Click *Next*.

   > With Microsoft SQL Server, the test might not work properly, in this case continue anyway

8. On the *Advanced Configuration* page, you can change advanced settings, if required.
9. The *Configuration Summary* page shows the configuration summary with the server, services (JMS and JDBC) and deployment (cm6) to be installed. Click *Create* to finish the domain creation.

Starting the WebLogic Admin Server

The next step is to start the WebLogic Admin Server.

> If a Microsoft SQL Server is used, first you need to the specify environmental variable for WebLogic.
>
> 1. Go to <WL_HOME>/oracle_common/common/bin.
> 2. Edit the commExtEnv.sh / commExtEnv.cmd file.

1. Go to `<WL_HOME>/user_projects/domains/<WL_DOMAIN>` using a terminal.
2. Run `startWebLogic.sh` / `startWebLogic.cmd`. You have to enter the user name and password set on the *Administrator Account* page of the domain configuration wizard (see step 4 of the previous step).
3. The server startup is completed when the following log message is displayed: “Server state changed to RUNNING”.

Starting the ConSol CM Managed Server

Now, you can start the ConSol CM Managed Server.

1. Go to `<WL_HOME>/user_projects/domains/<WL_DOMAIN>/bin` using a terminal.
2. Run `startNodeManager.sh` / `startNodeManager.cmd`.
3. The startup of the Node Manager is completed when the following log message is displayed: “Secure socket listener on port 5556 ...”.
4. Log in to the administration console, which can be accessed from `<URL>:7001/console/`.
5. In the tab *Domain Structure*, go to *Environment -> Servers*.
6. In the *Summary of Servers* section, go to the *Control* tab. The list of servers should contain two entries: the AdminServer in the state RUNNING and the ConSol CM Managed Server (default name CM_ManagedServer_1) in the state SHUTDOWN. Select the checkbox of tje ConSol CM Managed Server and click the *Start* button.
7. If prompted, confirm that you want to start the server. ConSol CM runs on `<URL>:7003`

C.4.6.4 Starting the WebLogic Server

There are three servers which have to be started:

- Node Manager
- Admin Server
- Managed Server

Node Manager

Start the WebLogic Node Manager with:

```
<WEBLOGIC_HOME>/user_projects/domains/<WL_DOMAIN>/bin/startNodeManager.sh
```

Code example 2: *Linux*

```
<WEBLOGIC_HOME>\user_projects\domains\<WL_DOMAIN>\bin\startNodeManager.cmd
```

Code example 3: *Windows*

Admin Server

During startup, the WebLogic server prompts for the admin user name and password.

If you chose *production mode* during the setup and you do not want to type the WebLogic admin user and password during Admin Server startup, do the following:

Linux

1. Go to the domain folder (chosen during setup) and edit the Admin Server start file
   `<WEBLOGIC_HOME>/user_projects/domains/<WEBLOGIC_DOMAIN>/startWebLogic.sh`
2. Add the two lines beginning with `export` and replace <ADMIN_USER> and <ADMIN_PASSWORD> with the administrator user name and password which were set during the installation.

   ```
   #!/bin/sh
   # WARNING: This file is created by the Configuration Wizard.
   # Any changes to this script may be lost when adding extensions to this
    configuration.
   export WLS_USER=<ADMIN_USER>
   export WLS_PW=<ADMIN_PASSWORD>
   DOMAIN_HOME="<WEBLOGIC_HOME>/user_projects/domains/<WEBLOGIC_DOMAIN>"
   ${DOMAIN_HOME}/bin/startWebLogic.sh $*
   ```

   
   Note that changes in this file can be overwritten by the WebLogic Configuration Wizard. Back up this file before using the Configuration Wizard.

3. Go to the directory of `startWeblogic.sh` (`<WEBLOGIC_HOME>/user_projects/domains/<WEBLOGIC_DOMAIN>/startWebLogic.sh`). Start the Admin Server

   ```
   sh startWebLogic.sh
   ```

Windows

1. Search domain folder (chosen during setup) and edit Admin Server start file

   `<WEBLOGIC_HOME>\user_projects\domains\<WEBLOGIC_DOMAIN>\startWebLogic.cmd`

2. Add the following two lines below the line with `SETLOCAL`, and replace <ADMIN_USER> and <ADMIN_PASSWORD> with the administrator user name and password which were set during the installation.

   ```
   set WLS_USER=<ADMIN_USER>
   set WLS_PW=<ADMIN_PASSWORD>
   ```

   Note that changes in this file can be overwritten by the WebLogic Configuration Wizard. Back up this file before using the Configuration Wizard. This is a password in plain text! This should not be used in production environments!

3. Start the Admin Server with:

   ```
   <WEBLOGIC_HOME>\user_projects\domains\<WEBLOGIC_DOMAIN>\startWebLogic.cmd
   ```

Managed Server

1. Log in to the WebLogic Administration Console with the following URL:

   ```
   http://localhost:7001/console
   ```

   You have to enter the user name and password set in step 4 of Creating a Domain for ConSol CM.

2. Go to *Environment -> Servers* and select the *Control* tab.
3. Select the checkbox of the managed server running CM (by default *CM_ManagedServer_1*) and click *Start* to start the server. Confirm the server start with *Yes*. The server status changes to *STARTING*.
4. The CM setup can be accessed after the successful startup of the application server.

   The default URL is:

   ```
   http://localhost:7003/
   ```

   Please see Setting Up the ConSol CM Application for further information.

C.4.6.5 Autostarting the CM Server

Installing WebLogic 12c as Windows Service

You can install WebLogic 12c as a Windows service. The service file needs to be adapted by providing the correct directory for the log files and the CM start configuration.

If you have a maintenance contract, please contact the ConSol CM support (+49-89-45841-150 or support@consol.de) to receive further assistance with the configuration.

Autostarting WebLogic 12c on Linux Systems

You can use *systemd* or *init.d* scripts to configure autostart for ConSol CM on Linux systems.

If you have a maintenance contract, please contact the ConSol CM support (+49-89-45841-150 or support@consol.de) to receive further assistance with the configuration.

C.4.6.6 Configuring Logging

Log4j is used for logging. Usually, no changes are required in a standard ConSol CM standalone installation. If you would like to change the default settings, please adapt the file `<WEBLOGIC_HOME>user_projects\domains\<WEBLOGIC_DOMAIN>\log4j.xml`.

See also Apache log4j website.

Location of Log Files

The log files are located in the following folder:

- <WEBLOGIC_HOME>\user_projects\domains\<WEBLOGIC_DOMAIN>\cm-logs

Please refer to the *ConSol CM Operations Manual*, section *ConSol CM Logging and Log Files* for further information about logging.

C.5 Setting Up the ConSol CM Application

This chapter discusses the following:

C.5.1 Introduction

After you have installed ConSol CM as an application on the application server (see section Installing the Application Server for ConSol CM), you can install the ConSol CM application. In this step, the database structure is built and the system is configured.

Depending on the purpose of the CM system (e.g., test/stage/production), you can decide if you would like to

- install a demo environment by using a demo scene which is selected during setup

or if you would like to

- install an "empty" system and import a scene later on. This might be a scene you have received from your ConSol consultant or a scene which has been constructed on your test system

To decide on this, you should be familiar with the ConSol CM scene and deployment concept which is explained in great detail in the *ConSol CM Administrator Manual*, section *Deployment (Import / Export)*.

C.5.2 Starting the Setup

Open the ConSol CM URL in a web browser. Standard URLs would be:

- **JBoss:** http://localhost:8080
- **WebLogic:** http://localhost:7003

You see the ConSol CM setup dialog, which guides you through the setup.

C.5.2.1 Step 1: General

Two general settings have to be made here.

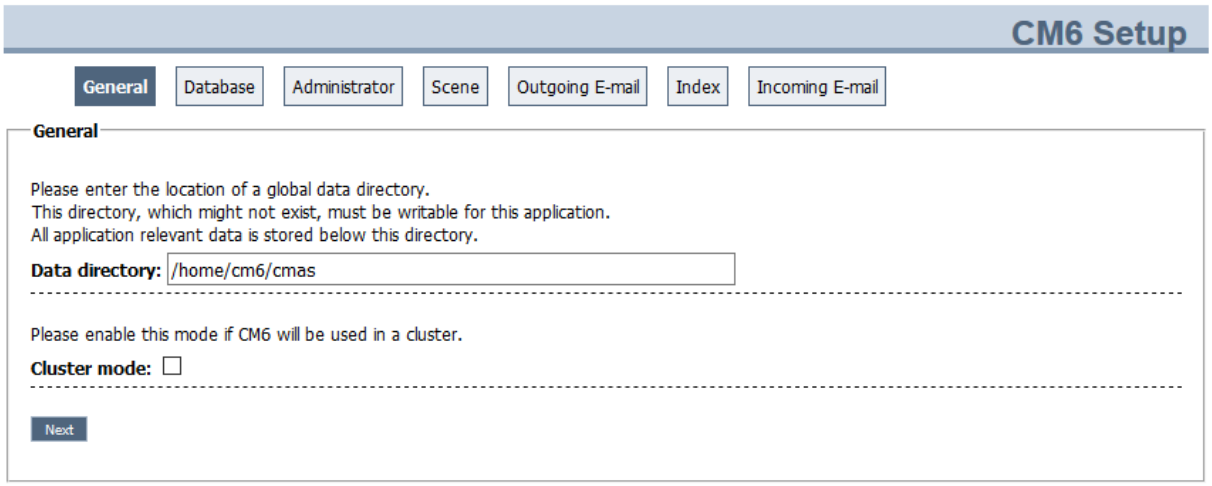


Figure 11: *ConSol CM setup - General*

- **Data directory**
  Choose a folder for application-relevant files like the CM index (for an explanation of this directory, please refer to section *ConSol CM Data Directory* in the *ConSol CM Operations Manual*).
- **Cluster mode**
  Only choose cluster mode if you want to use ConSol CM in a clustered environment (you need more than one application server).

C.5.2.2 Step 2: Database

One database-relevant setting has to be made here.

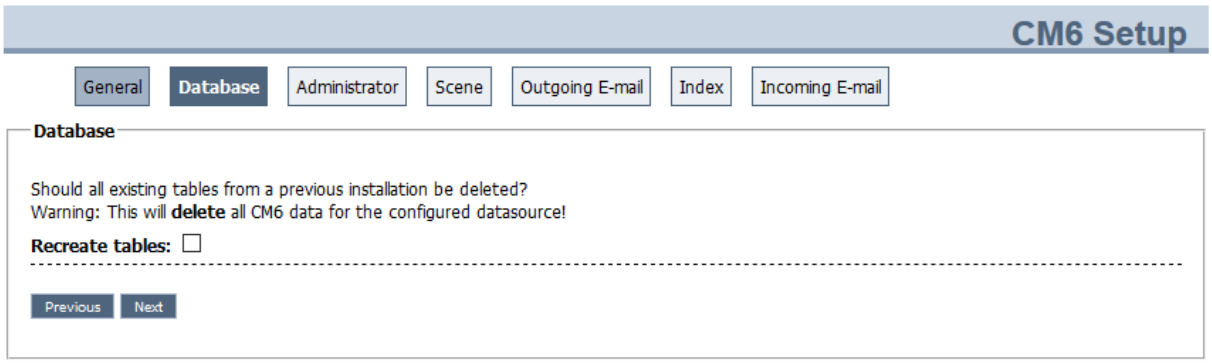


Figure 12: *ConSol CM setup - Database*

- **Recreate tables**
  When using the setup dialog during a reinstallation of ConSol CM, you can tick this checkbox to rebuild the database scheme. This deletes all data. For a new installation, you do not need to tick this checkbox.

C.5.2.3 Step 3: Administrator

Some configuration parameters concerning the administrator account of the system have to be made here.

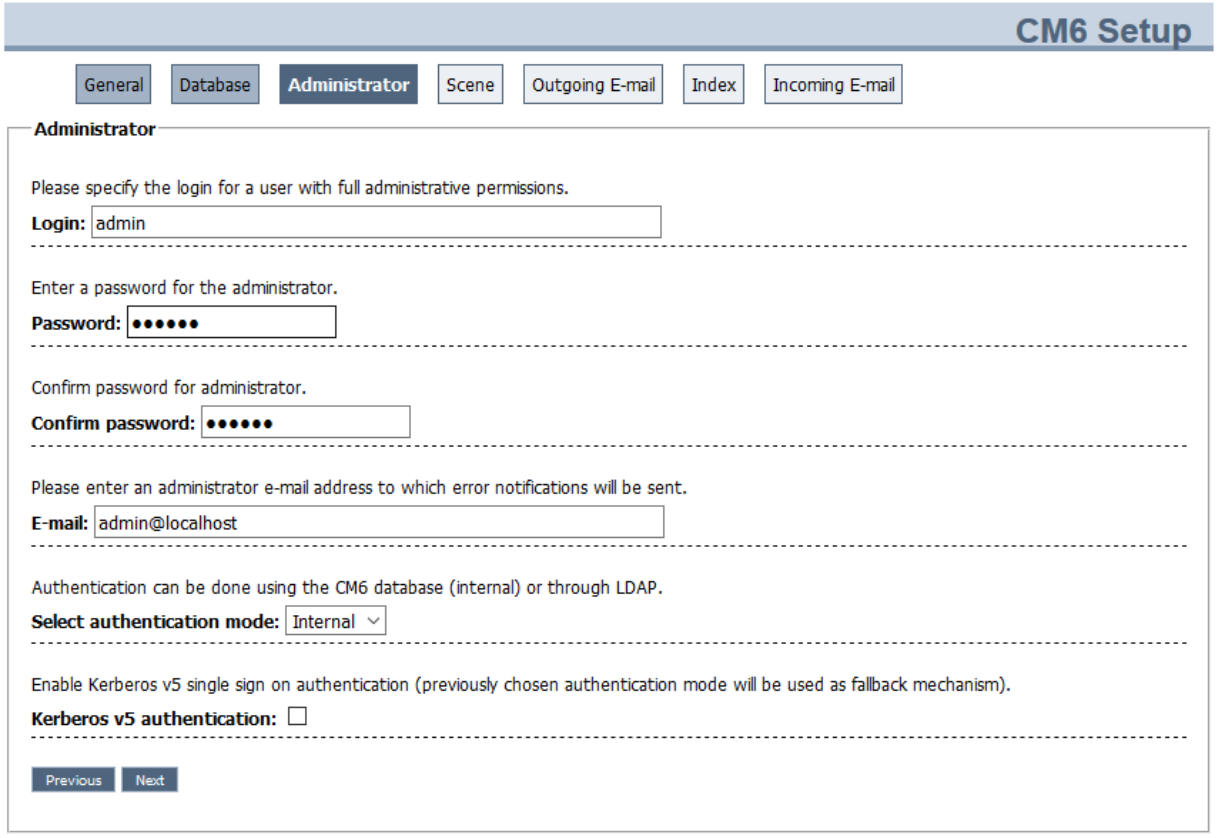


Figure 13: *ConSol CM setup - Administrator*

- **Login**
  The login name of the administrator account (for the Admin Tool).
- **Password**
  The password of this administrator account.
- **Confirm password**
  Confirm the password for the administrator account.
- **Email**
  Enter the email address for the CM administrator. This is the overall admin email is entered in the system property cmas-core-security, admin.email. For some modules (e.g., DWH), a separate admin email can be configured later on, see the detailed explanation of admin email addresses in the *ConSol CM Administrator Manual*, section *Admin Email Addresses* in the appendix.

> You can change this email address later using the Admin Tool.

- **Select authentication mode**
  This defines the initial authentication mode for engineers in the CM Web Client. The system property cmas-core-security, authentication.method is set. The authentication mode can be changed later by changing the value of this property (using the Admin Tool). For a detailed explanation of LDAP authentication, please refer to LDAP Authentication for Engineers in the Web Client. Choose between:
  - Internal (DATABASE)
  - LDAP (LDAP)
- **Kerberos v5 authentication**
  Enables the system for Kerberos authentication. The system property cmas-core-security, kerberos.v5.enabled is set to "true" if the checkbox is ticked. This can be changed later by editing the property using the Admin Tool. For a detailed explanation of the Kerberos setup for CM, please refer to the *ConSol CM Administrator Manual*, section *Single Sign-On with ConSol CM Using Kerberos*.

> The administrator account configured on this screen always uses database authentication even when LDAP is used for the rest of the user accounts. You can create additional accounts with administrator privileges using the Admin Tool. These accounts can use LDAP authentication.

C.5.2.4 Step 4: Scene

Here, you can decide if you want to set up the system with a pre-defined environment or if you would like to start with an empty system and import a scene later.

For a detailed explanation about scenes in ConSol CM, please refer to the *ConSol CM Administrator Manual*, section *Deployment (Import / Export)*.

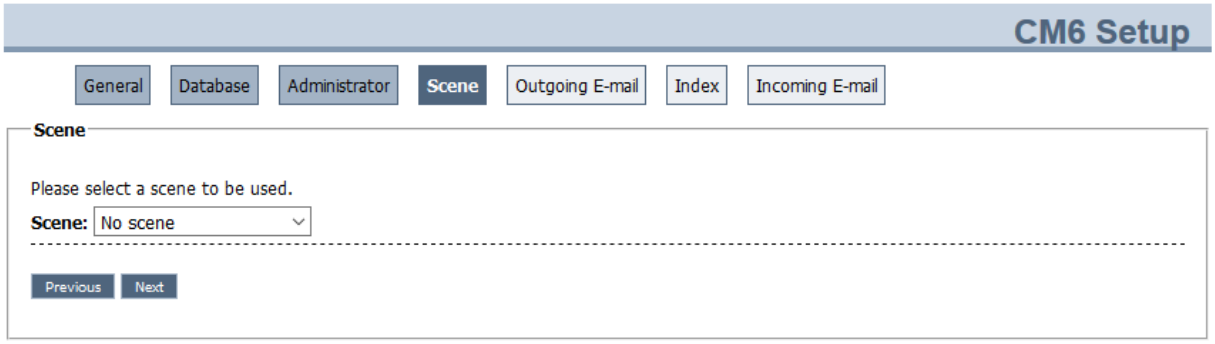


Figure 14: *ConSol CM setup - Scene*

Select:

- **No scene**
  Select this value if you would like to start with an empty system. You can import a scene later using the Admin Tool.
- **Test and Demo Scene**
  This installs a demo environment with demo data.

- **Quickstart scene (1-lvl customer model)**
  This installs a very basic scenario where a one-level customer data model is already created.
- **Quickstart scene (2-lvl customer model)**
  This installs a very basic scenario where a two-level customer data model is already created.

Content of the quickstart scenes

The quickstart scenes help you to get started with ConSol CM by providing some basic configuration which is needed in most CM systems:

- two queues using two simple workflows
- views for the two queues
- several roles containing permissions to work with tickets in the queues, to manage customers and to manage templates
- two engineers
- one enum for priority data fields
- one ticket field group
- one customer data model with one customer data field group
- one customer group using this customer data model
- several text classes with different icons
- several scripts (email processing, two sample widgets for dashboards, scripts containing utility and helper methods)

C.5.2.5 Step 5: Outgoing E-mail

You can configure the SMTP server for outgoing emails here. If you do not want to configure the SMTP server here, you can leave this screen empty and perform the configuration later in the Admin Tool.

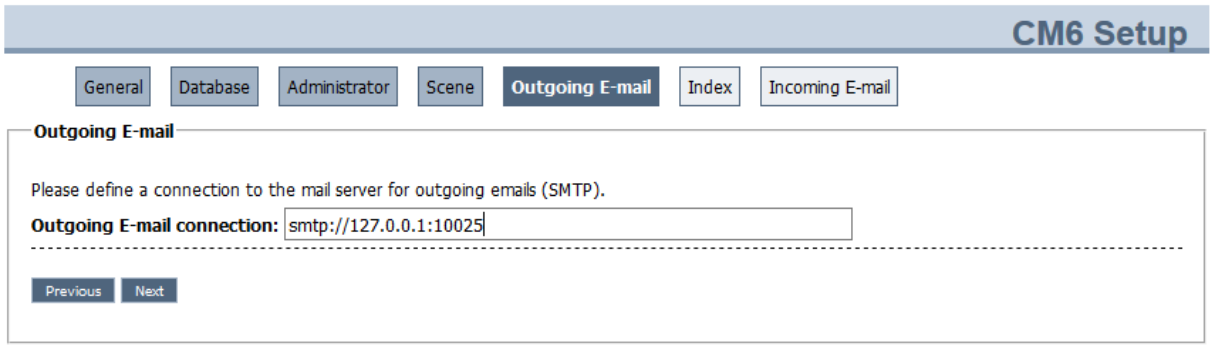


Figure 15: *ConSol CM setup - Outgoing Email*

- **Outgoing E-mail connection**
  Enter the URL of the SMTP server which should be used for sending emails. For a detailed explanation of ConSol CM email functionalities, please refer to the *ConSol CM Administrator Manual*, section *Email*.

C.5.2.6 Step 6: Index

You only have to enter values here if you work with CM in an application server cluster. In this case, one of the cluster nodes is the master for the indexer and the others are the slaves.

In case you work with a single CM instance, leave the fields empty.

For a detailed description of the CM indexer (single mode), please refer to *ConSol CM Indexer* in the *ConSol CM Operations Manual*.

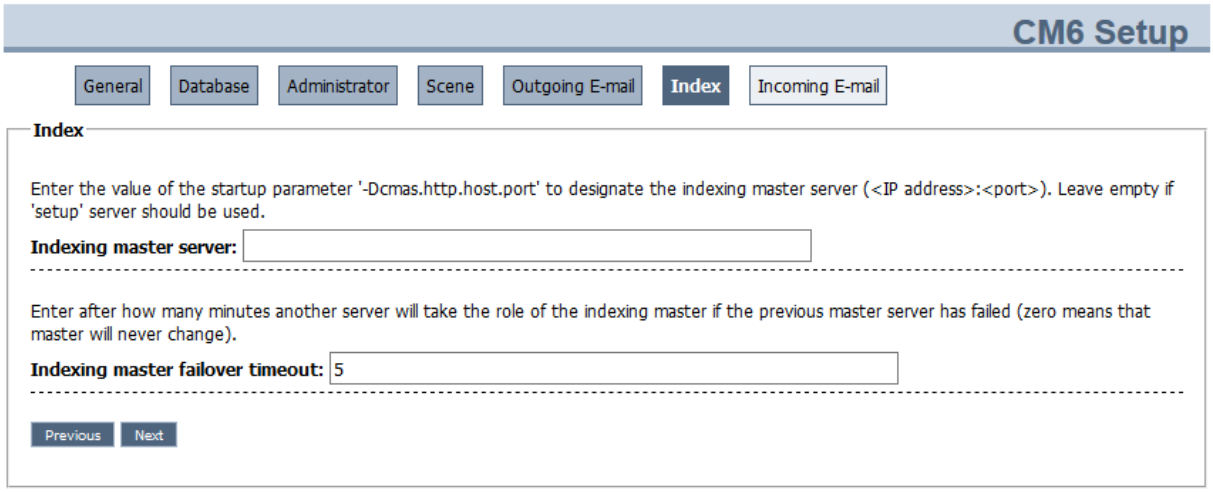


Figure 16: *ConSol CM setup - Index*

- **Indexing master server**
  In case an indexing master should be defined, enter its URL here using the syntax: <IP address>:<port>
- **Indexing master failover timeout**
  In case a master server has been defined, enter here the number of minutes for the failover interval. When the master server is not available, a slave server takes over after this time.

C.5.2.7 Step 7: Incoming E-mail

You can define the parameters for the incoming emails here. If you do not want to configure the mail-boxes here, you can leave this screen empty and perform the configuration later in the Admin Tool.

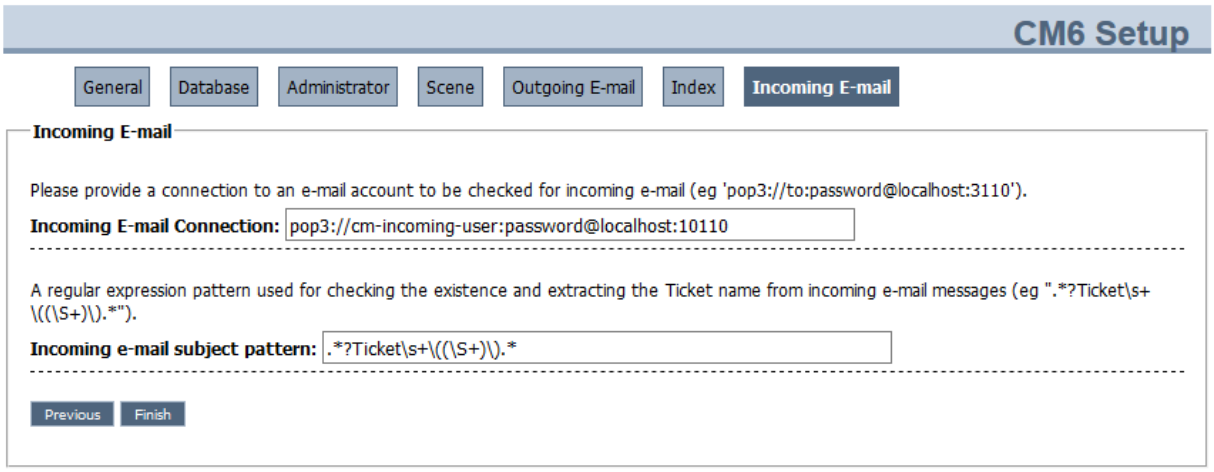


Figure 17: *ConSol CM setup - Incoming Email*

- **Incoming E-mail connection**
  Define an email account (mailbox) where ConSol CM should retrieve incoming emails. The system properties configuring the email connection are set (module `cmas-nimh`). For a detailed explanation of ConSol CM email functionalities, please refer to the *ConSol CM Administrator Manual*, section *Email* and section *Admin Tool Scripts, Scripts of Type Email*. The setting you have made here can be changed later by using the Admin Tool.
- **Incoming e-mail subject pattern**
  Define the regular expression which is used for the mapping of the subject of incoming emails to existing tickets. The system property cmas-nimh-extension, mail.ticketname.pattern is set. You can change the setting later by using the Admin Tool. For a detailed explanation about the mapping of email subjects in CM an its consequences, please refer to the *ConSol CM Administrator Manual*, section *Email*.

C.5.2.8 Step 8: Start Setup

Click *Finish* to start the system setup and configuration. This will take a while (some browsers might display a timeout error, but this does not indicate any problem).

When the setup has finished you see the following screen:

Figure 18: *ConSol CM setup - Start setup and configuration*

C.5.2.9 Step 9: Check the Setup

If you reload the page or open the URL of the CM system in another browser tab/window, you see the start page containing links to open the Web Client, Admin Tool and Process Designer.

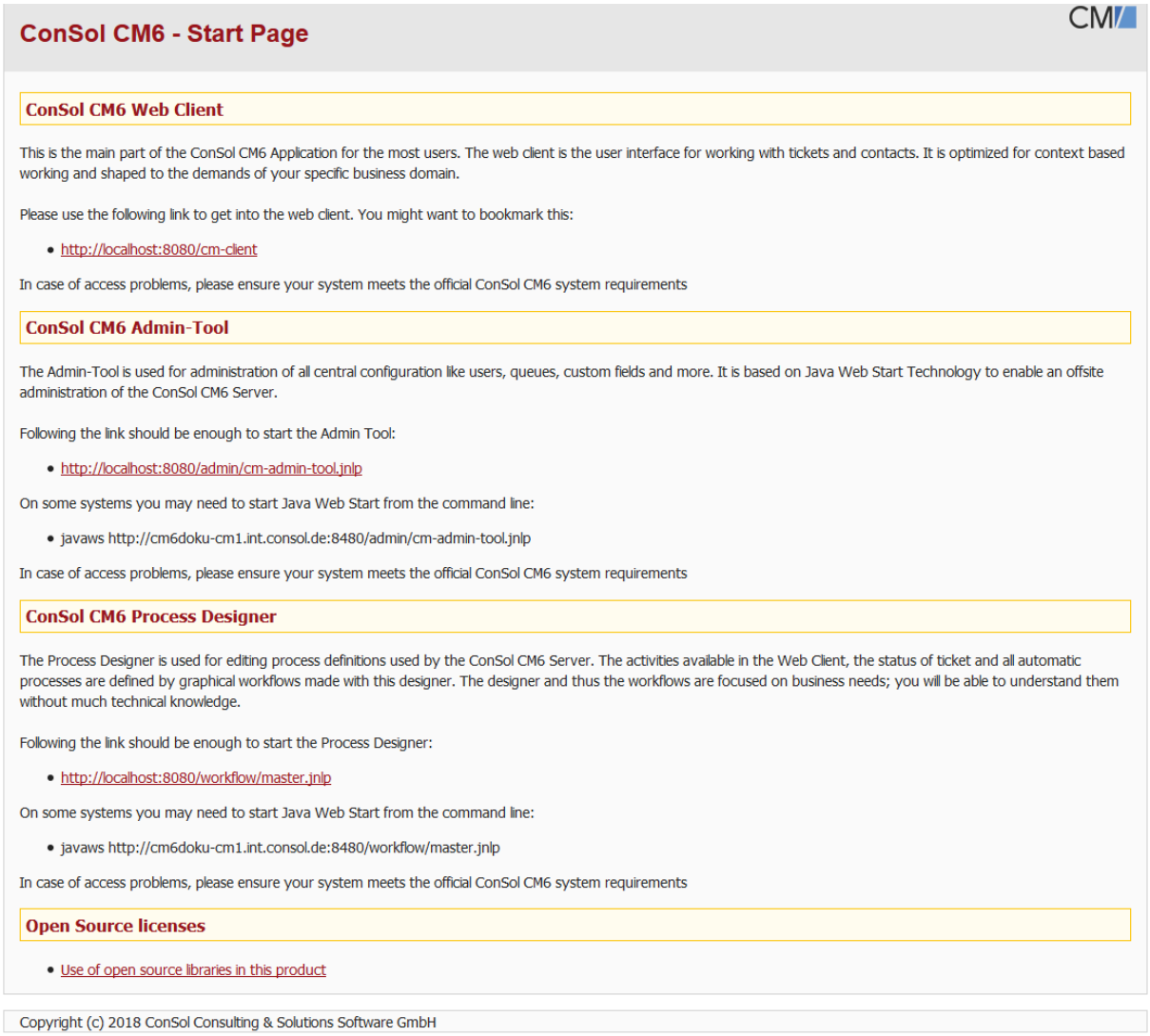


Figure 19: *ConSol CM start page*

Congratulations! You have just finished your CM setup successfully!

C.5.3 License Management

C.5.3.1 General Information about Licenses in ConSol CM

A ConSol CM license file is a text file which contains entries for several modules. For each module, the number of valid licenses is indicated. For example, the following excerpt of a license file shows the ConSol CM Web Client, CONCURRENT_USERS section. Ten licenses have been purchased.

```
[CONCURRENT_USERS]
contractParty = Demo-Licence ConSol
products = WEB_CLIENT,REST
version = 6.10
expirationDate = 31.12.2016
licenses = 10
signature = XXX
```

ConSol CM works with **concurrent users** (sometimes also called floating licenses), i.e., the number of users who are logged in simultaneously is registered, no user names are checked. That means the number of engineers who are managed in the Admin Tool (see section *Engineer Administration* in the *ConSol CM Administrator Manual*) does not have to be identical to the number of Web Client licenses.

A license is consumed when the user logs in. The license is handed back to the server when the user session is terminated, i.e., when the user logs out or when the user session is terminated automatically by the server because the session timeout has been reached (see system property cmas-core-server, server.session.timeout).

C.5.3.2 Sections of a License File

A ConSol CM license file can contain the following sections. All licenses are **concurrent** licenses, see explanation above.

- [ADMINTOOL_USERS]
  The number of users who can log in to the CM Admin Tool.
- [CONCURRENT_USERS]
  The number of CM engineers who can log in to the Web Client
- [PROCESS_DESIGNER]
  The number of users who can log in to the CM Process Designer
- [TRACK]
  The number of customers who can log in to the portal CM/Track
- [TRACK_USERS]
  The number of user profiles for the portal CM/Track. This is the number of engineers who are marked as *Track* in the Engineer Administration.
- [REST_USERS]
  The number of users who can access the REST API. The number of TRACK_USERS is not included in this number (CM/Track also uses the REST API.)
  CM/Phone will also consume REST licenses, one license per client (PC/laptop) where CM/Phone is installed and active.

C.5.4 LDAP Authentication for Engineers in the Web Client

C.5.4.1 Introduction to ConSol CM LDAP Authentication

ConSol CM offers LDAP authentication for the Web Client as a standard feature, i.e., instead of managing the passwords for the ConSol CM engineers in the ConSol CM database, they can be retrieved from an LDAP server (like e.g., a ***Microsoft Active Directory*** server).

When engineers want to log in to the ConSol CM Web Client, they enter their user name and password and press *Enter*. Behind the scenes, the ConSol CM server sends a request with the engineer's user name and password and asks the LDAP server whether those credentials are correct.

If the credentials are correct, the approval is sent back to the ConSol CM server and the engineer is logged into the Web Client.

> Please keep in mind that the LDAP connection is only used to authenticate the user (confirm the identity). The authorization (i.e., the assignment of access permissions in the system) is done via the engineer and role administration in the Admin Tool. For every user who should work with the system as an engineer, an engineer account has to be created in the engineer administration!

Please see also the following picture for an explanation of the CM authentication process using LDAP.

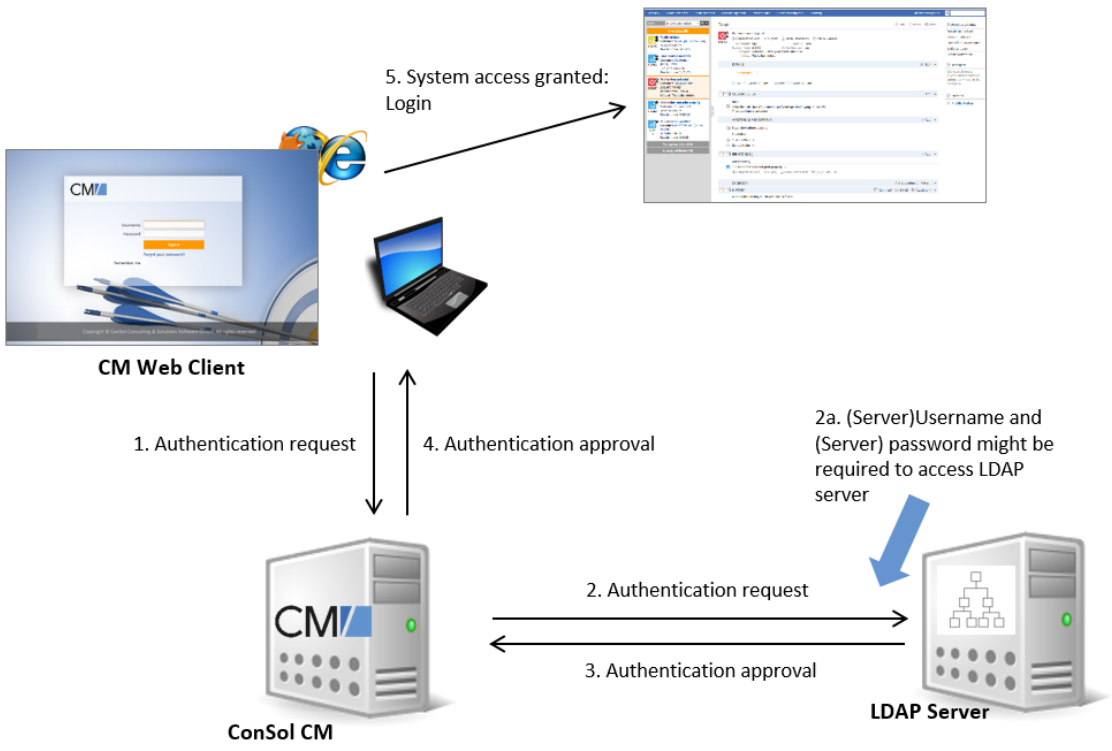


Figure 20: *ConSol CM - LDAP authentication process*

C.5.4.2 Configuring LDAP Authentication

There are two ways you can enable the ConSol CM system to use LDAP authentication for engineers in the Web Client:

- Select LDAP authentication during system setup and enter the requested parameters (system properties) after the setup.
- Set up the system with the regular authentication mechanism and switch to LDAP later on, i.e., enter all required system properties later on.

Configuring LDAP During Initial Setup

During system setup you can select *LDAP* as the authentication mode on the *Administrator* screen (third step). This will set the system property cmas-core-security, authentication.method (see below) to “LDAP”. No further parameters are entered. You have to set the LDAP parameters manually. Please see the next section for an explanation.

Switching the Authentication Mode to LDAP in a Running System

To switch the authentication method to LDAP, you have to set the required values in the system properties (navigation group *System*, navigation item *System Properties*):

- authentication.method
  LDAP
- ldap.authentication
  simple
- ldap.basedn
  The DN (distinguished name) of the LDAP (sub-)tree where the required attributes are located.
- ldap.initialcontextfactory
  The Java class name for the initial context factory of the LDAP implementation when using LDAP authentication. Should usually be `com.sun.jndi.ldap.LdapCtxFactory`.
- ldap.password
  Password for connecting to the LDAP server to look up users. Only needed if look-up cannot be done anonymously.
- ldap.userdn
  LDAP user for connecting to the LDAP server to look up users. Only needed if look-up cannot be done anonymously.

  > ⚠ A server user name/password pair might be required to access the LDAP server. If you are not sure, you might want to use an LDAP browser to confirm.

- ldap.providerurl
  The complete URL for the LDAP server:

  ```
  ldap://<HOSTNAME>:<LDAP PORT>
  ```

- ldap.searchattr
  Search attribute for looking up the LDAP entry connected to the CM login, i.e., the attribute which is used as user name for the authentication.

C.5.4.3 Using LDAPS (LDAP over SSL)

Introduction

Per default, when an LDAP client accesses an LDAP server, the information is transferred in clear text. In case you want the user name and password to be transferred to the LDAP server in encrypted form, you have to set up the LDAP authentication using LDAPS.

Preparations

You have to configure the CM server machine (Java) in a way that can use certificates. One way to do this for a Linux environment is described in the following section.

1. Retrieve the certificate:

   ```
   openssl s_client -connect dc2.mydomain.com:ldaps
   ```

2. The answer will contain a section which starts with `"---BEGIN CERTIFICATE "` and ends with `"END CERTIFICATE ---"`. Copy this section to a file, e.g., `/tmp/certificate2_dc2_mydomain_com.txt`
3. Import the certificate to the truststore of your machine, e.g., `/home/mydirectory/mytruststore`

   ```
   $JAVA_HOME/bin/keytool -import -alias <arbitrary> -trustcacerts -keystore
    /home/mydirectory/mytruststore -file/tmp/certificate2_dc2_mydomain_com.txt
   ```

   You have to enter (set) a password.
4. Enter the truststore in the ConSol CM config file in JAVA_OPTS:

   ```
   -Djavax.net.ssl.trustStore=/home/mydirectory/mytruststore -
    Djavax.net.ssl.trustStorePassword=<see above>
   ```

LDAPS Configuration in the ConSol CM Admin Tool (System Properties)

Configure the ConSol CM server as shown in the following example:

- cmas-core-security, ldap.authentication = simple
- cmas-core-security, ldap.basedn = OU=myOU,DC=myDC
- cmas-core-security, ldap.initialcontextfactory = com.sun.jndi.ldap.LdapCtxFactory
- cmas-core-security, ldap.password = myLDAPpw
- cmas-core-security, ldap.searchattr = sAMAccountName
- cmas-core-security, ldap.userdn = myLDAP_UserDN

Depending on the LDAP server configuration, use one of the following values for the server URL:

- **Standard LDAPs port**
  cmas-core-security, ldap.providerurl = ldaps://dc2.mydomain.com:636
- **LDAPs port Global Catalogue**
  cmas-core-security, ldap.providerurl = ldaps://dc2.mydomain.com:3269

C.6 Operating ConSol CM Behind a Proxy (e.g., Apache HTTPD)

C.6.1 Introduction

In some cases, it might be required to operate ConSol CM behind a proxy server. Two common scenarios are:

1. The Web Client and CM/Track should be available through the proxy, but external access through the proxy to the Admin Tool and to the Process Designer should be blocked. This is explained in section ConSol CM Behind a Proxy, Blocking Admin Tool and Process Designer.
2. All clients, i.e. Web Client, CM/Track, Admin Tool, and Process Designer should be available through the proxy. This is explained in section ConSol CM Behind a Proxy, Allowing Access to Admin Tool and Process Designer.

C.6.2 ConSol CM Behind a Proxy, Blocking Admin Tool and Process Designer

C.6.2.1 Basic Principle

This section provides information about how to operate ConSol CM behind a proxy server (e.g. Microsoft IIS or Apache HTTPD). This might be relevant in a security context, e.g. when you have to set security regulations concerning system access over the internet. You might have to

grant access

- for your engineers to the Web Client (URL http://<yourcm6server>/cm-client)
- for your customers to CM/Track (URL http://<yourcm6server>/restapi) and if CM/Track is deployed in the CM JBoss also URL http://<yourcm6server>/cm-track)

but to

block access

- to the Admin Tool and
- to the Process Designer.

The solution is based on the principle shown in the following picture.

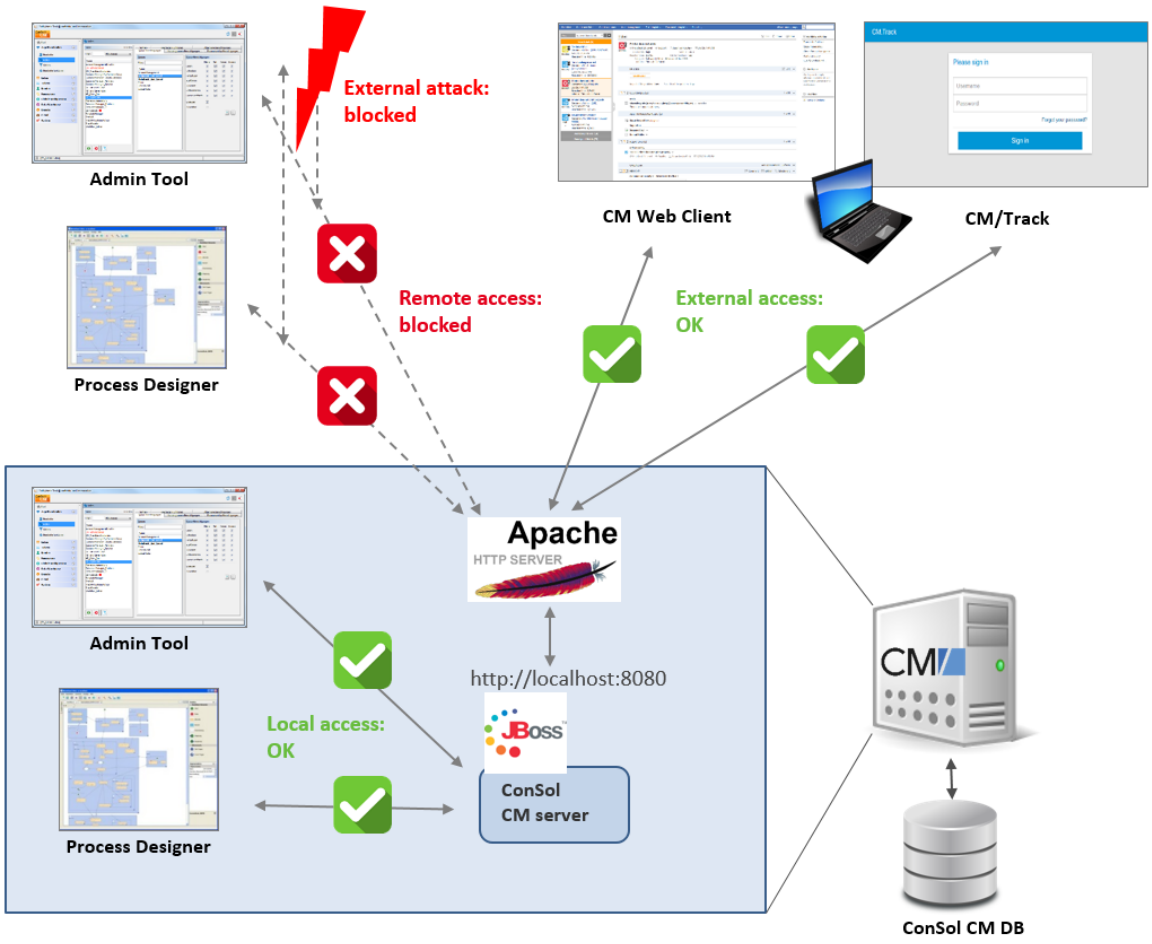


Figure 21: *Operating ConSol CM behind a proxy server (here Apache HTTP server)*

C.6.2.2 Hide Some CM URLs Behind an Apache Proxy Server (= Whitelist Only Dedicated Applications)

This section demonstrates how to allow only certain URLs/paths/applications to be accessible through the proxy. This will hide all other addresses.

The solution is based on an Apache HTTPD version 2.4 and assumes:

- that the JBoss bind address (`-b` parameter) has been set to "127.0.0.1" so it will only allow connections from the local machine
- that the Apache HTTPD and the JBoss reside on the same machine (applicable for most CM installations except clustered environments)

Perform the following steps:

- Install the Apache HTTP server
- Activate the proxy modules
- Add the proxy rules
- Test your installation

Install the Apache HTTP Server

Since Windows binaries (ZIP archive with EXE files) are not directly available on the Apache homepage, we recommend to download the binary files from the Apache Haus.

Activate the Proxy Modules

In `<APACHE_HOME>/conf/httpd.conf` you need to un-comment the following proxy modules to activate proxy functionality:

```
LoadModule proxy_module modules/mod_proxy.so
LoadModule rewrite_module modules/mod_rewrite.so
LoadModule proxy_ajp_module modules/mod_proxy_ajp.so
# LoadModule proxy_http_module modules/mod_proxy_http.so # if you want to use http
 backend
```

Add the Proxy Rules

Add the following section at the end of the `<APACHE_HOME>/conf/httpd.conf` file.

Best Practice is to use AJP as backend protocol.

```
<IfModule proxy_ajp_module>
   ProxyPass /cm-client ajp://localhost:8009/cm-client disablereuse=on
   ProxyPassReverse /cm-client ajp://localhost:8009/cm-client
   ProxyPass /restapi ajp://localhost:8009/restapi disablereuse=on
   ProxyPassReverse /restapi ajp://localhost:8009/restapi
   # If CM/Track is deployed on the JBoss directly, you might want to enable the
    following lines as well
   ProxyPass /cm-track ajp://localhost:8009/cm-track disablereuse=on
   ProxyPassReverse /cm-track ajp://localhost:8009/cm-track
</IfModule>
```

Set `disablereuse=on` to force `mod_proxy` to close connections to its backend after using it. Otherwise you could get issues with things being loaded with delay or not loaded at all, especially in situations with a firewall between Apache and JBoss.

Alternative with rewrite rule, allows easier access as http://<yourcm6server>/

```
RewriteEngine on
RewriteRule ^/$ /cm-client/ [R,L]
RewriteRule ^/cm-client$ /cm-client/ [R,L]
ProxyPass /cm-client/ ajp://localhost:8009/cm-client/ disablereuse=on
ProxyPassReverse /cm-client ajp://localhost:8009/cm-client
```

Test Your Installation

Client Test

Once these modifications are complete, start the httpd (e.g.: execute `httpd.exe` located in the `bin/` directory) and start the CM JBoss.

Now you should be able to access:

```
http://<yourcm6server>/cm-client/login
```

which should display the regular ConSol CM login page.

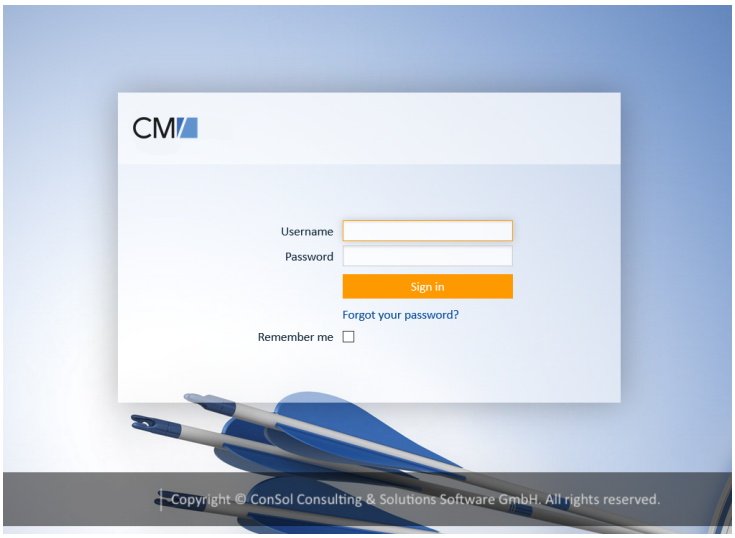


Figure 22: *ConSol CM login page*

Accessing

```
http://<yourcm6server>/admin/cm-admin-tool.jnlp
```

should just result in a HTTP 404 (Page not found).

REST API Test

Basically do the same to test the proxy rule for the ConSol CM REST API.

```
http://localhost/restapi/echo/client
```

This call should display some JSON string:

```
{"Accept-Language":"de,en-
 US;q=0.7,en;q=0.3","Accept":"text/html,application/xhtml+xml,application/xml;q=0.
 9,*/* ;q=0.8"}
```

Installing Apache HTTPD as Windows Service

On Windows machines, you might want to run the Apache HTTPD as a service.

The following command needs to be run with administrator permissions in order to install the Apache HTTPD as a Windows service:

```
D:\work\Apache24\bin>httpd.exe -k install
```

It will result in the following output:

```
Installing the 'Apache2.4' service
The 'Apache2.4' service is successfully installed.
Testing httpd.conf....
Errors reported here must be corrected before the service can be started.
D:\work\Apache24\bin>
```

Please make sure that the start mode of this service is “automatic” (same as the JBoss service!)

C.6.3 ConSol CM Behind a Proxy, Allowing Access to Admin Tool and Process Designer

C.6.3.1 Adding AJP Support to JBoss EAP

In case you want to operate ConSol CM behind a proxy server and want to explicitly allow access to the Admin Tool and to the Process Designer, you have to enable AJP in the JBoss installation.

By default, JBoss EAP does not enable the AJP connector. If you want your CM installation to provide AJP, you need to do perform the steps for your JBoss EAP version.

JBoss EAP 6.4

1. Modify your CM configuration file, e.g.:

   ```
   <JBOSS_HOME>/standalone/configuration/cm6.xml
   ```

2. Find the part for the connectors, which usually looks like the following:

   ```
   <subsystem xmlns="urn:jboss:domain:web:1.5" default-virtual-server="default-
    host" native="false">
     <connector name="http" protocol="HTTP/1.1" scheme="http" socket-
      binding="http"/>
     <virtual-server name="default-host" enable-welcome-root="false">
       <alias name="localhost"/>
     </virtual-server>
   </subsystem>
   ```

3. Add the following line to the `<subsystem>` element:

   ```
   <connector name="ajp" protocol="AJP/1.3" scheme="http" socket-binding="ajp"/>
   ```

   So the final element looks like this:

```
<subsystem xmlns="urn:jboss:domain:web:1.5" default-virtual-server="default-
 host" native="false">
   <connector name="http" protocol="HTTP/1.1" scheme="http" socket-
    binding="http"/>
   <connector name="ajp" protocol="AJP/1.3" scheme="http" socket-
    binding="ajp"/>
   <virtual-server name="default-host" enable-welcome-root="false">
      <alias name="localhost"/>
   </virtual-server>
</subsystem>
```

4. By default, AJP uses port `8009`. In order to change this port, scan the configuration file for an entry like this:

```
<socket-binding name="ajp" port="8009"/>
```

   Modify it according to your needs.

JBoss EAP 7.1.4

1. Modify your CM configuration file, e.g.:

```
<JBOSS_HOME>/standalone/configuration/cm6.xml
```

2. Find the part for the connectors, which usually looks like the following:

```
<subsystem xmlns="urn:jboss:domain:undertow:4.0" default-virtual-
 host="default-host">
   <buffer-cache name="default"/>
   <server name="default-server">
      <http-listener name="default" socket-binding="http" redirect-
       socket="https" enable-http2="true"/>
      <host name="default-host" alias="localhost">
         <location name="/" handler="welcome-content"/>
         <filter-ref name="server-header"/>
         <filter-ref name="x-powered-by-header"/>
         <http-invoker security-realm="ApplicationRealm"/>
      </host>
   </server>
   [...]
</subsystem>
```

3. Add the following line to the `<server name>` element:

```
<ajp-listener name="ajp" socket-binding="ajp" scheme="http"/>
```

   So the final element looks like this:

```
<subsystem xmlns="urn:jboss:domain:undertow:4.0" default-virtual-
 host="default-host">
   <buffer-cache name="default"/>
   <server name="default-server">
      <http-listener name="default" socket-binding="http" redirect-
       socket="https" enable-http2="true"/>
      <ajp-listener name="ajp" socket-binding="ajp" scheme="http"/>
      <host name="default-host" alias="localhost">
         <location name="/" handler="welcome-content"/>
         <filter-ref name="server-header"/>
         <filter-ref name="x-powered-by-header"/>
         <http-invoker security-realm="ApplicationRealm"/>
      </host>
   </server>
   [...]
</subsystem>
```

4. By default, AJP uses port `8009`. In order to change this port, scan the configuration file for an entry like this:

   ```
   <socket-binding name="ajp" port="8009"/>
   ```

   Modify it according to your needs.

D - Installing and Setting Up CMRF and DWH

The ***ConSol CM Reporting Framework*** (CMRF) and ***Data Warehouse*** (DWH) are the modules which are required to provide the basis for Business Intelligence (BI) and reporting in ConSol CM. Please see System Architecture with Reporting Infrastructure for an overview of the required components.

The CMRF is a distinct Java EE application which has to be deployed into an application server. This might be the same application server as used for the CM application (generally not recommended) or this might be a separate application server (usually preferable)

Please carry out the following steps to set up the CMRF and DWH:

1. Prepare the DWH database, see section Setting Up the Database for CMRF / DWH.
2. Install the CMRF, see section Installing the CMRF with JBoss EAP 6.4 / 7.1.4.
3. Configure the data warehouse, see section Configuring the DWH.

When you have installed and filled the data warehouse, you can use any reporting or business intelligence tool of your choice to retrieve data from this database.

D.1 Setting Up the Database for CMRF / DWH

Before you can install the CMRF and DWH, you have to set up a database (or database scheme, respectively) for the DWH. This database (scheme), i.e. the DWH, is later filled by the CMRF.

Please proceed to the section which covers the explanations for the RDBMS which is in operation in your company:

- MySQL
- Oracle
- Microsoft SQL Server

D.1.1 MySQL

A distinct database is required.

Follow the same steps as for creating the ConSol CM database (see section MySQL). Use as database name `cmrf` and user `cmrf`.

No additional setting is necessary.

D.1.2 Oracle

A distinct database schema is required.

Follow the same steps as for creating the ConSol CM database (see section Oracle). Use as database name `cmrf` and user `cmrf`.

D.1.2.1 Transactions Recovery

The following settings must be applied for the user accessing an Oracle XA data source in order for XA recovery to operate correctly. The value `cmrf` is user-defined to connect from JBoss to Oracle:

```
GRANT SELECT ON sys.dba_pending_transactions TO cmrf;
GRANT SELECT ON sys.pending_trans$ TO cmrf;
GRANT SELECT ON sys.dba_2pc_pending TO cmrf;
GRANT EXECUTE ON sys.dbms_xa TO cmrf; --If using Oracle 10g R2 (patched) or later
--OR
GRANT EXECUTE ON sys.dbms_system TO cmrf; --If using an unpatched Oracle version
 prior to 11g
```

D.1.3 Microsoft SQL Server

A distinct database schema is required.

Follow the same steps as for creating the ConSol CM database (see section Microsoft SQL Server). Use as database name `cmrf` and user `cmrf`.

No additional setting is necessary.

D.1.3.1 Special Notes for Microsoft SQL Server

It is necessary to grant the DWH user database access to database medium `master` (role `public` and role `SqlJDBCXAUser`).

For the data transfer with the DWH the option `responseBuffering=full` must be added to the JDBC connection. Add this option to the end of the JDBC URL in the file `cmDb-ds.xml`. It should like as follows (replace the URL and the database name in red with your configuration):

```
jdbc:sqlserver://
 localhost:1433;SelectMethod=cursor;databaseName=cmdatabase;responseBuffering=full;
```

D.2 Installing the CMRF

The ***ConSol CM Reporting Framework***, CMRF, is a distinct Java EE application which has to be deployed into an application server. This might be the same application server as used for the CM application (generally not recommended) or this might be a separate application server (usually preferable). Please refer to section System Architecture with Reporting Infrastructure for explanations on the possible setup scenarios.

To install CMRF, please follow the instructions in one of the following sections, depending on the application server used by your company:

- Installing the CMRF with JBoss EAP 6.4 / 7.1.4
- Installing the CMRF with WebLogic 12c

D.2.1 Installing the CMRF with JBoss EAP 6.4 / 7.1.4

D.2.1.1 Installation Modes

Two installation modes are possible:

- Standalone mode: CMRF is installed in a separate JBoss, not together with ConSol CM. We recommend this solution for production environments.
- Overlay mode: ConSol CM and CMRF run in one application server. We do not recommend this for production environments, only for functional (not performance) tests or development machines.

D.2.1.2 Prerequisites

- Installation of **Java JDK 1.8** on the server
- JBoss EAP version 6.4 or 7.1.4
- ConSol CMRF distribution: cmrf-package-distribution-<CM-VERSION>-overlay|standalone<DB_VERSION>-**jboss-eap-6|7**.zip.

  (*standalone* means ConSol CM and CMRF are deployed in two different JBoss application servers, *overlay* means, they run in one JBoss instance)

  The available distributions are:

  - cmrf-package-distribution-<CM_VERSION>-overlay-mssql-jboss-eap-6.zip and cmrf-package-distribution-<CM_VERSION>-overlay-mssql-jboss-eap-7.zip
  - cmrf-package-distribution-<CM_VERSION>-overlay-mysql-jboss-eap-6.zip and cmrf-package-distribution-<CM_VERSION>-overlay-mysql-jboss-eap-7.zip
  - cmrf-package-distribution-<CM_VERSION>-overlay-oracle-jboss-eap-6.zip and cmrf-package-distribution-<CM_VERSION>-overlay-oracle-jboss-eap-7.zip
  - cmrf-package-distribution-<CM_VERSION>-standalone-mssql-jboss-eap-6.zip and cmrf-package-distribution-<CM_VERSION>-standalone-mssql-jboss-eap-7.zip
  - cmrf-package-distribution-<CM_VERSION>-standalone-mysql-jboss-eap-6.zip and cmrf-package-distribution-<CM_VERSION>-standalone-mysql-jboss-eap-7.zip
  - cmrf-package-distribution-<CM_VERSION>-standalone-oracle-jboss-eap-6.zip and cmrf-package-distribution-<CM_VERSION>-standalone-oracle-jboss-eap-7.zip
- Installed database server
- In case of MySQL as database: MySQL Connector

> A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

Obtaining the Required Software

Please contact your ConSol CM consultant or the ConSol CM support to obtain instructions where to download the required software.

D.2.1.3 Installing the CMRF on a Separate JBoss Server (Standalone Mode)

This chapter discusses the following:

Introduction

ConSol CM and CMRF run on different JBoss application servers (CMRF standalone package distribution). This setup is recommended for production environments.

Installing CMRF

This installation has been performed and tested with the following software versions. With other systems or versions, the setup might be slightly different.

JBoss version:

- Red Hat JBoss Enterprise Application Platform 6.4.0

ConSol CM version:

- 6.11.0

Operating systems:

- Windows, Linux

In the following *<JBOSS_CMRF_HOME>* refers to the installation directory of the JBoss application server which is used for CMRF.

1. Download the required CMRF distribution `cmrf-package-distribution-<CM_VERSION>-standalone-<DB_VERSION>-jboss-eap-6.zip`.
2. Unpack that archive to *<JBOSS_CMRF_HOME>*.
3. Configure the data sources by editing section `<subsystem xmlns="urn:jboss:domain:datasources:X.X">` of the `<JBOSS_CMRF_HOME>/standalone/configuration/cmrf.xml` file.
4. Check the notes about the database configuration in the section Setting Up the Database for CMRF / DWH.
5. Start the CMRF server with the following command: `<JBOSS_CMRF_HOME>/bin/standalone.sh --server-config=cmrf.xml -b=<CMRF_HOST_IP>`

Editing the CMRF Configuration File

Configure the two data sources for CMRF according to your database configuration (see Setting Up the Database for CMRF / DWH) in the file `<JBOSS_CMRF_HOME>standalone\configuration\cmrf.xml` (also see cmrf.xml).

1. Enter the connection URL.
2. Enter the database name.

3. Enter the user name of the database user.
4. Enter the password for the database user.

This needs to be done for two data sources. The relevant places are highlighted in red in the following code example.

The exact content of the configuration file depends on the used application server, database system and ConSol CM version. Always use the file from the distribution which you are installing. Do not copy & paste from this manual or from other installations.

Example Microsoft SQL

```
<datasources>
   <xa-datasource jndi-name="java:/jdbc/CmrfDS" pool-name="jdbc/CmrfDS"
    enabled="true" use-java-context="true" use-ccm="true">
   <recovery no-recovery="true" />
   <driver>sqlserver-driver</driver>
   <xa-datasource-property
    name="URL">jdbc:sqlserver://localhost:1433;databaseName=cmrf</xa-datasource-
    property>
   <security>
      <user-name>cmrf</user-name>
      <password>consol</password>
   </security>
   ...
   </xa-datasource>
   <datasource jta="false" jndi-name="java:/jdbc/CmrfDS-no-tx" pool-
    name="jdbc/CmrfDS-no-tx" enabled="true" use-java-context="true" use-ccm="true">
      <driver>sqlserver-driver</driver>
      <connection-url>jdbc:sqlserver://localhost:1433;databaseName=cmrf</connection-
       url>
      <security>
         <user-name>cmrf</user-name>
         <password>consol</password>
      </security>
   </datasource>
   ...
</datasources>
```

Code example 4: *cmrf.xml for Microsoft SQL Server*

Adding the CMRF Server Configuration to CM

The server configuration for CMRF needs to be added to the CM configuration file `cm6.xml`, which is located in:

- <JBOSS_HOME>standalone\configuration\cm6.xml

Add the XA data source from `cmrf.xml` to `cm6.xml` inside the following tags:

```
<profile>
   <subsystem xmlns="urn:jboss:domain:datasources:1.1">
      <datasources>
```

Add the new data source with the following information behind the two existing data sources.

The exact content of the configuration file depends on the used application server, database system and ConSol CM version. Always use the file from the distribution which you are installing. Do not copy & paste from this manual or from other installations.

```
<!-- CMRF Datasources -->
<xa-datasource jndi-name="java:/jdbc/CmrfDS" pool-name="jdbc/CmrfDS" enabled="true"
 use-java-context="true" use-ccm="true">
   <recovery no-recovery="true" />
   <driver>sqlserver-driver</driver>
   <xa-datasource-property
    name="URL">jdbc:sqlserver://localhost:1433;databaseName=cmrf</xa-datasource-
    property>
   <security>
      <user-name>cmrf</user-name>
      <password>consol</password>
   </security>
   <xa-pool>
      <min-pool-size>5</min-pool-size>
      <max-pool-size>200</max-pool-size>
      <prefill>true</prefill>
      <wrap-xa-resource>false</wrap-xa-resource>
      <is-same-rm-override>false</is-same-rm-override>
   </xa-pool>
   <statement>
      <prepared-statement-cache-size>32</prepared-statement-cache-size>
      <share-prepared-statements/>
   </statement>
   <validation>
      <valid-connection-checker class-
       name="org.jboss.jca.adapters.jdbc.extensions.mssql.MSSQLValidConnectionChecke
       r"/>
      <background-validation>true</background-validation>
      <background-validation-millis>60000</background-validation-millis>
      <validate-on-match>false</validate-on-match>
   </validation>
   <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-isolation>
   <xa-datasource-class>com.microsoft.sqlserver.jdbc.SQLServerXADataSource</xa-
    datasource-class>
   <xa-datasource-property name="SelectMethod">direct</xa-datasource-property>
   <xa-datasource-property name="ResponseBuffering">full</xa-datasource-property>
</xa-datasource>
<!-- CMRF Datasources END -->
```

Configuring CMRF Server Startup

Windows

The configuration of CMRF startup is done in the following file:

- <JBOSS_CMRF_HOME>bin\standalone.conf.bat (also see standalone.conf.bat)

1. Configure Java or use a system environment variable.

```
set "JAVA_HOME=C:\Program Files\Java\jdk1.8.0_92
```

2. Configure the Java memory options:

```
set "JAVA_OPTS=-Xms4g -Xmx4g -XX:MaxMetaspaceSize=512m"
```

3. In case you want to set up a separate JBoss server on the same system where the JBoss with ConSol CM is running, add a port offset:

```
set "JAVA_OPTS=%JAVA_OPTS% -Djboss.socket.binding.port-offset=100"
```

Linux

1. Extract the downloaded JBoss archive into a new folder
   - <JBOSS_CMRF_HOME>bin/standalone.conf (also see standalone.conf)

   On most Linux systems the `JAVA_HOME` environment variable should already be set. If you wish to use the system standard Java version you do not need to specify the `JAVA_HOME` environment variables.

   If in your case the variables are not set or you wish to specify a path to a specific Java installation add the following lines (the path and Java version can be different on your system):

```
JAVA_HOME="/opt/java/64/jdk1.8.0_92"
```

   You can check if the `JAVA_HOME` environment variable is set by using `echo $JAVA_HOME`

2. Change the Java memory options when needed, `-Xmx` value should be at least 4G:

```
JAVA_OPTS="-Xms4g -Xmx4g -XX:MaxMetaspaceSize=512m -
 Djava.net.preferIPv4Stack=true"
```

3. Make sure that the Java options are not inside the following if statement. If they are inside, existing settings will **not** be overwritten:

```
#if [ "x$JAVA_OPTS" = "x" ]; then
   #JAVA_OPTS="-Xms4g -Xmx4g -XX:MaxMetaspaceSize=512m -
    Djava.net.preferIPv4Stack=true"
#fi
```

4. Add options for CM:

```
JAVA_OPTS="$JAVA_OPTS -Djboss.modules.system.pkgs=$JBOSS_MODULES_SYSTEM_PKGS
 -Djava.awt.headless=true"
```

5. If the `JBOSS_HOME` environment variable is already set to different path than your server path, add the following line on top of `<JBOSS_CMRF_HOME>/bin/standalone.conf`

```
JBOSS_HOME=<JBOSS_CMRF_HOME>
```

6. Change owner to non-admin linux user (example: hotline) and make files executable:
   - chown -R hotline ...<JBOSS_CMRF_HOME>/bin
   - chmod 755 -R ...<JBOSS_CMRF_HOME>/bin

DWH Configuration Using the Admin Tool

Proceed with the installation by configuring the Data Warehouse (DWH).

Please note that the value for the CMRF URL for the CMRF host has to be:

`remote://<CMRF_HOST_IP>:<JNDI_PORT>` (i.e. `remote://192.168.0.1:4447`)

Configuring CMRF Server Startup and Shutdown

Windows

```
<JBOSS_CMRF_HOME>bin\standalone.bat --server-config=cmrf.xml -b=0.0.0.0
```

Linux

```
<JBOSS_CMRF_HOME>bin/standalone.sh --server-config=cmrf.xml -b=0.0.0.0
```

Autostart CMRF Server

You can configure autostart for the CMRF server on Windows and on Linux. The procedure is similar to autostart of ConSol CM. Please see Autostarting the CM Server for further information.

D.2.1.4 Installing the CMRF on the Same JBoss Server (Overlay Mode)

This chapter discusses the following:

- Introduction
- Installing CMRF
- Configuring the CMRF Server Startup

Introduction

The ConSol CM system and the CMRF run on the same JBoss application server (overlay package distribution).

⚠ This is not recommended for production environments. In a production scenario, use two different physical machines for CM and CMRF, see Installing the CMRF on a Separate JBoss Server (Standalone Mode).

Installing CMRF

This installation has been performed and tested with the following software versions. With other systems or versions, the setup might be slightly different.

ⓘ JBoss version:

- Red Hat JBoss Enterprise Application Platform 6.4.0

ConSol CM version:

- 6.11.0

Operating systems:

- Windows, Linux

Copying the Files

Extract the file `cmrf-package-distribution-<CM_VERSION>-overlay-<DB_VERSION>-jboss-eap-6.zip` and move its content to your JBoss installation directory. Overwrite all existing files.

Editing the CMRF Configuration File

Configure the four data sources for CM and CMRF according to your database configuration (see Setting Up the Database for CMRF / DWH) in the file `cm6-cmrf.xml` (also see cm6-cmrf.xml).

1. Enter the connection URL.
2. Enter the database name.
3. Enter the user name of the database user.
4. Enter the password for the database user.

This needs to be done for all four data sources. The relevant places are highlighted in red in the following code example.

⚠ The exact content of the configuration file depends on the used application server, database system and ConSol CM version. Always use the file from the distribution which you are installing. Do not copy & paste from this manual or from other installations.

Example MySQL

```
<datasources>
   <xa-datasource jndi-name="java:/jdbc/CmDS" pool-name="jdbc/CmDS" enabled="true"
    use-java-context="true" use-ccm="true">
      <recovery no-recovery="true" />
      <driver>mysql-driver</driver>
      <xa-datasource-property name="URL">jdbc:mysql://localhost/cmdatabase</xa-
       datasource-property>
```

```
      <security>
         <user-name>cmuser</user-name>
         <password>consol</password>
      </security>
      ...
   </xa-datasource>

   <datasource jta="false" jndi-name="java:/jdbc/CmDS-no-tx" pool-name="jdbc/CmDS-
    no-tx" enabled="true" use-java-context="true" use-ccm="true">
      <driver>mysql-driver</driver>
      <connection-url>jdbc:mysql://localhost/cmdatabase</connection-url>
      <security>
         <user-name>cmuser</user-name>
         <password>consol</password>
      </security>
      ...
   </datasource>

   <xa-datasource jndi-name="java:/jdbc/CmrfDS" pool-name="jdbc/CmrfDS"
    enabled="true" use-java-context="true" use-ccm="true">
      <recovery no-recovery="true" />
      <driver>mysql-driver</driver>
      <xa-datasource-property name="URL">jdbc:mysql://localhost/cmrf</xa-datasource-
       property>
      <security>
         <user-name>cmrf</user-name>
         <password>consol</password>
      </security>
      ...
   </xa-datasource>

   <datasource jta="false" jndi-name="java:/jdbc/CmrfDS-no-tx" pool-
    name="jdbc/CmrfDS-no-tx" enabled="true" use-java-context="true" use-ccm="true">
      <driver>mysql-driver</driver>
      <connection-url>jdbc:mysql://localhost/cmrf</connection-url>
      <security>
         <user-name>cmrf</user-name>
         <password>consol</password>
      </security>
      ...
   </datasource>
</datasources>
```

Code example 5: *cm6-cmrf.xml for MySQL*

DWH Configuration Using the Admin Tool

Proceed with the installation by configuring the Data Warehouse (DWH).

Please note that the value for the CMRF URL for the CMRF host has to be:

`remote://<CMRF_HOST_IP>:<JNDI_PORT>` (i.e. `remote://192.168.0.1:4447`)

Configuring the CMRF Server Startup

Windows

Use a new server start command in overlay mode. The new configuration file `cm6-cmrf.xml` must be set instead of `cm6.xml`.

```
<JBOSS_HOME>\bin\standalone.bat --server-config=cm6-cmrf.xml -b=0.0.0.0
```

Linux

```
<JBOSS_HOME>/bin/standalone.sh --server-config=cm6-cmrf.xml -b=0.0.0.0
```

D.2.2 Installing the CMRF with WebLogic 12c

D.2.2.1 Installation Mode

The following manual describes how to install the ConSol CM Reporting Framework ***CMRF*** in the same WebLogic domain as the ConSol CM server.

D.2.2.2 Prerequisites

- Installed WebLogic Server with installed ConSol CM domain, see Installing ConSol CM with WebLogic 12c R2.
- ConSol CMRF ear file: cmrf-package-ear-<CM_VERSION>.ear.
- Installed database server and database for CMRF (see section Setting Up the Database for CMRF / DWH).

> A detailed list of supported operation systems, application servers, database systems, and other systems, as well as storage and CPU requirements is given in the current *System Requirements*.

Obtaining the Required Software

Please contact your ConSol CM consultant or the ConSol CM support to obtain instructions where to download the required software.

D.2.2.3 Installing the CMRF to the ConSol CM Domain

This chapter discusses the following:

- Creating a Server for CMRF
- Creating the Data Sources for CMRF
- Installing the CMRF Application
- Starting the CMRF
- Configuring the CMRF in the Admin Tool

You can install CMRF in a separate WebLogic domain.

Installing the CMRF

This installation has been performed and tested with the following software versions. With other systems or versions, the setup might be slightly different.

> WebLogic Server version:
>
> - 12c (12.2.1.2)
>
> ConSol CM version:
>
> - 6.11.2.2
>
> Operating systems:
>
> - Linux

Creating a Server for CMRF

First, a server for CMRF needs to be created. It can use the same machine as the ConSol CM server.

1. Go to *Environment -> Servers*.
2. Click *New*.
3. Enter a name for the server, e.g. “cmrf-server”.
4. Enter a port, e.g. “7002”.
5. Click *Finish* to create a server.
6. Edit the created server. On the *Configuration -> General* tab, select the machine of the ConSol CM server (by default the name is “CM_Machine_1”).
7. Click *Save*.

Creating the Data Sources for CMRF

Next, two data sources for CMRF need to be created.

1. Go to *Services -> Data Sources*.
2. Click *New -> Generic Data Source*.
3. Enter a name:
   - Non-XA data source: “CMRF JDBC Non-XA Data Source”
   - XA data source: “CMRF JDBC XA Data Source”
4. Enter the JNDI Name:
   - Non-XA data source: “jdbc/CmrfDS-no-tx”
   - XA data source: “jdbc/CmrfDS”
5. Select the database type (Oracle, Microsoft SQL or MySQL).
6. Click *Next*.
7. Select the appropriate driver for Non-XA or XA data sources of the selected database type.
8. Click *Next*.
9. In case of the non-XA data source: Uncheck the option *Supports Global Transactions*.
10. Enter the connection properties (database name, database URL and port, user name and password
11. Click *Next*.
12. Test the connection.
13. Click *Next*.
14. Select “cmrf-server” and “CM_ManagedServer_1” as targets.
15. Click *Save*.

The final configuration of the data sources (CM and CMRF) should look as follows:

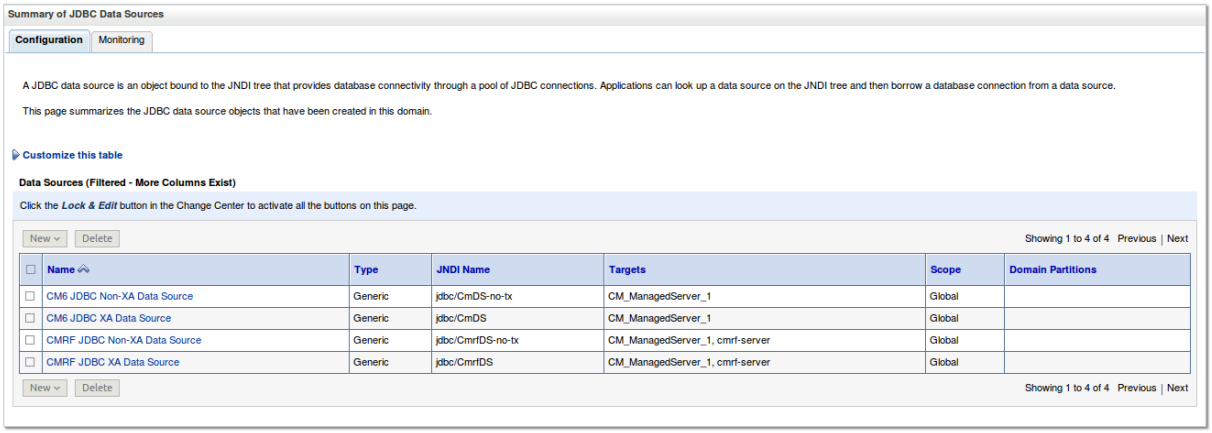


Figure 23: *Data sources for ConSol CM and CMRF*

Installing the CMRF Application

The next step is to install the CMRF application.

1. Download the CMRF ear file.
2. Go to *Deployments* and click *Install*.
3. Select the CMRF ear file on the file system.
4. Click *Next*.
5. On the next page, the checkbox *Install this deployment as an application* needs to be selected.
6. Click *Next*.
7. Select the CMRF server (“cmrf-server”) as a target for the deployment.
8. Click *Next*.
9. Click *Finish*.
10. Activate the changes in the Change Center.

The final configuration of the deployments looks as follows:

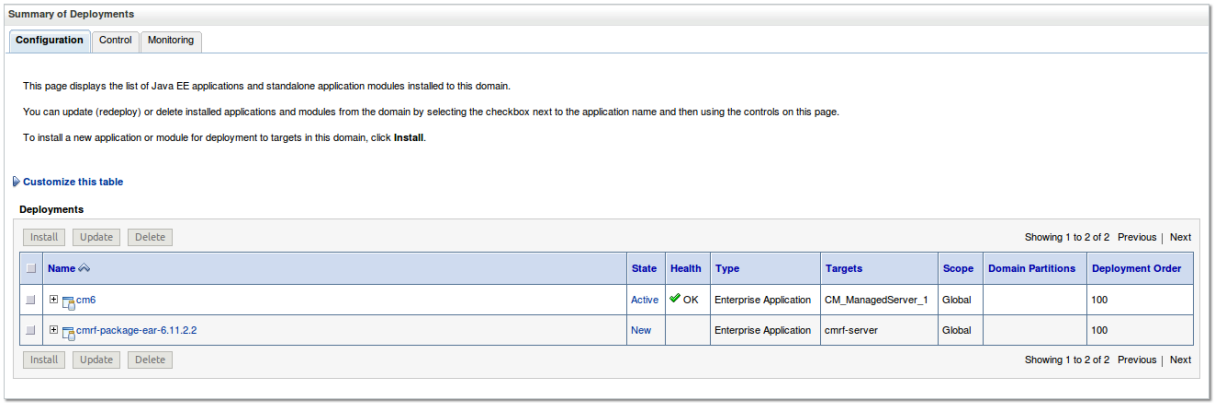


Figure 24: *Deployments for ConSol CM and CMRF*

Starting the CMRF

Now, the CMRF can be started.

1. Go to *Deployments -> Control*.
2. Select the CMRF deployment and click *Start -> Servicing all requests*.
3. Go to *Environment -> Servers*.
4. Select the *Control* tab.
5. Select the CMRF server and click *Start*.

Configuring the CMRF in the Admin Tool

Further configuration of the CMRF / DWH is carried out in the Admin Tool, navigation group *Data Warehouse*, navigation item *Administration*. There you can set the DWH mode and configure the email notifications.

As a quick summary, you need to carry out the following steps to start the DWH:

1. Execute the *Initialize* action (wait for the CMRF log message that the initialization is finished).
2. Execute the *Transfer* action (wait for a notification mail that the transfer was either finished successfully or failed with an error).
3. If you want to use the DWH *Live* mode then please activate it by changing the DWH mode from ADMIN to LIVE in the configuration window.

The DWH configuration and initialization are covered in great detail in the *ConSol CM Administrator Manual* in section *Data Warehouse (DWH) Management*. Please refer to this document for further information.

D.3 Configuring the DWH

The DWH configuration and initialization are covered in great detail in the *ConSol CM Administrator Manual* in section *Data Warehouse (DWH) Management*. Please refer to this document for further information.

D.3.1 DWH-Related System Properties

Two types of system properties can be set for ***ConSol CM***:

1. ConSol CM system properties which have to be set using the Admin Tool (navigation group *System*, navigation item *System Properties*). In the end, these are also Java properties, but they are set in a different way. Please see section CM System Properties for the DWH for details.
2. Java system properties which have to be provided as `-D` parameters at the start of a CM system. These properties are explained in section Java System Properties for the DWH.

D.3.2 CM System Properties for the DWH

The following tables provide the values or examples for very important ConSol CM system properties which are relevant for the DWH setup.

All properties must be set via the Admin Tool for module `cmas-dwh-server`.

Property name	JBoss EAP 6.4 / 7.1.4
java.naming.factory.initial	org.jboss.naming.remote.client.InitialContextFactory
java.naming.factory.url.pkgs	org.jboss.naming
java.naming.provider.url (CMRF URL)	remote://<CMRF_HOST_IP>:<JNDI_PORT> (i.e. remote://192.168.0.1:4447)
communication.channel	DIRECT

Property name	WebLogic
java.-naming.factory.initial	weblogic.jndi.WLInitialContextFactory
java.-naming.factory.url.pkgs	web-logic.jndi.-factories:weblogic.corba.j2ee.naming.url:weblogic.corba.client.naming
java.-naming.provider.url (CMRF URL)	t3://<CMRF_HOST_IP>:<JNDI_PORT> (i.e. t3://localhost:7010)
communication.channel	DIRECT

Please see List of System Properties by Module (DWH) for a list of all ConSol CM System properties which are used in the DWH context.

D.3.3 Java System Properties for the DWH

D.3.3.1 Introduction to Java System Properties for CMRF

There exist some options which effect the CMRF functionally, which can only be provided as Java system properties during application server startup. If you want to use these system properties, they should be added to the startup scripts of the application server. In this way, these parameters are used on every restart. The variable `JAVA_OPTS` is used to configure general startup parameters in the scripts for all supported application servers. You can add the CMRF system properties here.

Windows

```
set JAVA_OPTS="%JAVA_OPTS% -D<option>=<value>"
```

Linux

```
set JAVA_OPTS="$JAVA_OPTS -D<option>=<value>"
```

This works for standalone and overlay installations.

D.3.3.2 Java System Properties

Java System Properties for Internationalization

The following system properties are available in the context of the localization / internationalization of static DWH tables. This might be required to retrieve the localized names of CM objects from the DWH. The following figure shows an example for CM projects.

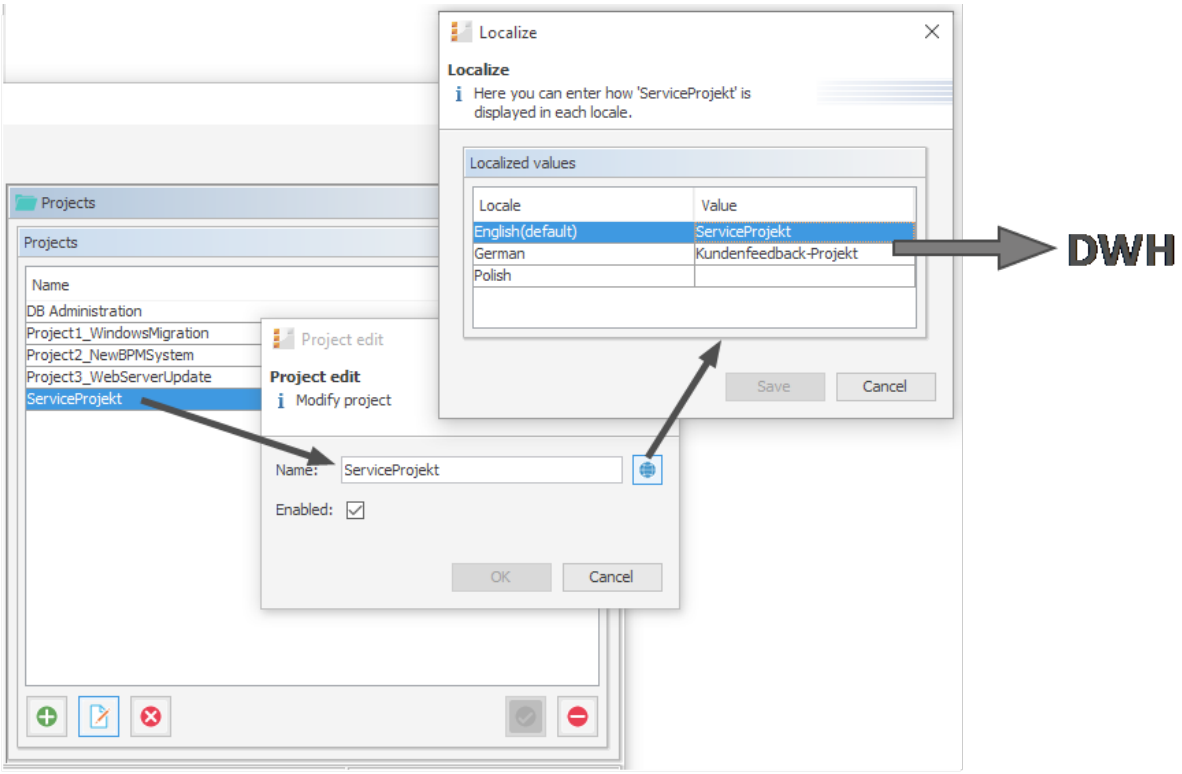


Figure 25: *ConSol CM Admin Tool - Defining localized names for projects*

cmrf.localization.enabled

This parameter is used for the internationalization of static Data Warehouse tables. The default value of this property is “false”, so static data tables are not internationalized. If this property is set to “true”, the columns holding the localized values are added to the database tables automatically and a DWH update operation is required to fill them.

> ⚠ Setting `cmrf.localization.enabled` to “true” can increase the runtime of DWH updates significantly.

The following example shows the database table for projects with localized project names.

table *dim_project*

project_id	project_uid	name	name_en	name_de
46	2fc3d1c9-2df4-11e4-b9c4-ad888261acc9	ServiceProjekt	ServiceProjekt	Kundenfeedback-Projekt
47	4bb09eda-9e5f-4142-b33e-41e9b03d1e8f	Project3_WebServerUpdate	Project 3	Projekt 3
48	6db541f8-8a05-42e9-8eff-64620369ee9c	Project1_WindowsMigration	Project 1 Windows Migration	Projekt 1 Windows-Migration
49	aa570a20-3322-4696-9ffc-fd0750aebe25	Project2_NewBPMSystem	Project 2 New ERP System	Projekt 2 Neues ERP-System
50	5fce3e53-c8d1-11e5-998a-67528c2f9cca	DB Administration	DB Administration	NULL
NULL	NULL	NULL	NULL	NULL

Figure 26: *DWH Table with localized values*

cmrf.mysqlLocales

When using ConSol CMRF with the MySQL database engine, a configuration with more than two locales causes an error stating *row size too large* because of limitations of this product (see http://dev.mysql.com/doc/refman/5.6/en/column-count-limit.html). Locales in CMRF can be configured via the system property `cmrf.mysqlLocales`. The locales are provided as a comma separated list, for example:

```
-Dcmrf.mysqlLocales=en,de
```

If `cmrf.mysqlLocales` is not set, the default `locale(Locale.getDefault().getLanguage())` is used. This system property alone does not activate the internationalization of the static tables. Upon (re-) start of the server the database tables are changed and updated accordingly if the value changed. The relevant localization columns are added or dropped depending on the property value. When setting the value to “false” (or not providing the property value at all) no further action is necessary. When setting is initially set to true a DWH update operation is needed to fill the newly created columns.

An example start command for a CM server (with JBoss) would be:

```
nohup $JBOSS_HOME/bin/standalone.sh --server-config=cm6-cmrf.xml -b=0.0.0.0 -
 Dcmrf.mysqlLocales=en,de -Dcmrf.localization.enabled=true
```

Or alternatively:

```
set JAVA_OPTS="$JAVA_OPTS -Dcmrf.mysqlLocales=en,de -
 Dcmrf.localization.enabled=true
".. $JBOSS_HOME/bin/standalone.sh --server-config=cm6-cmrf.xml -b=0.0.0.0 $JAVA_
 OPTS
```

E - ConSol CM Add-ons

This section explains how to set up the optional ConSol CM add-ons:

- The Customer Portal CM/Track
- CM/Doc
- CM/Archive
- CTI with ConSol CM: CM/Phone

E.1 The Customer Portal CM/Track

This chapter discusses the following:

E.1.1 Introduction to CM/Track

The ConSol CM customer portal, CM/Track, is an add-on which has to be purchased separately.

CM/Track offers a web portal where customers can log in to the ConSol CM system and gain an overview of their tickets or the tickets of their company. Thus, persons who log in to CM/Track have to be registered as contacts in the ConSol CM system. The CM/Track client implementation is based on the ConSol CM REST API.

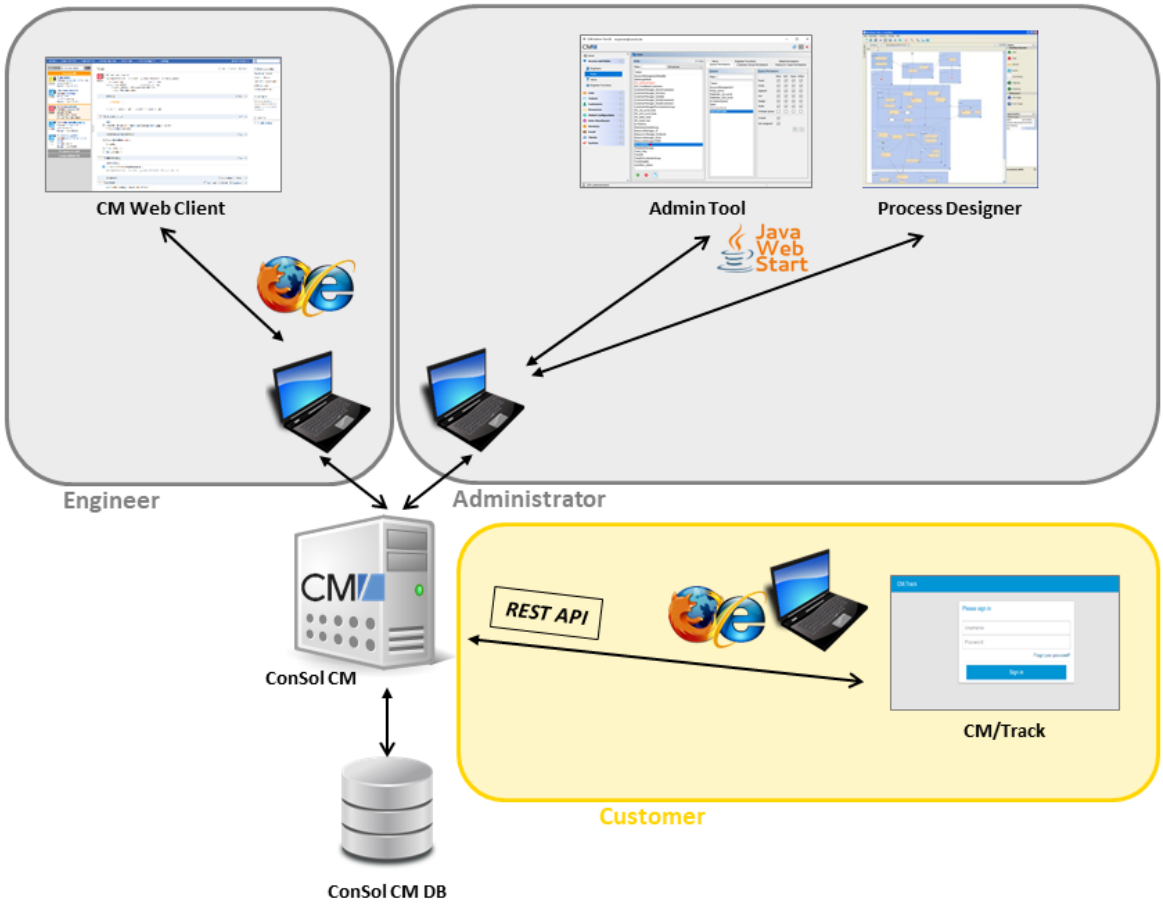


Figure 27: *Access to ConSol CM using different web clients*

Technically, CM/Track is a `.war` file which is deployed in your CM application server.

A standard CM/Track instance offers rather basic functionalities, e.g., a ticket list, a ticket detail view, and a form to create new tickets. Usually, CM/Track is customized, i.e., the HTML/JavaScript pages are modified and a custom-specific `.war` file is deployed. Often, the layout is adapted to the company's corporate design.

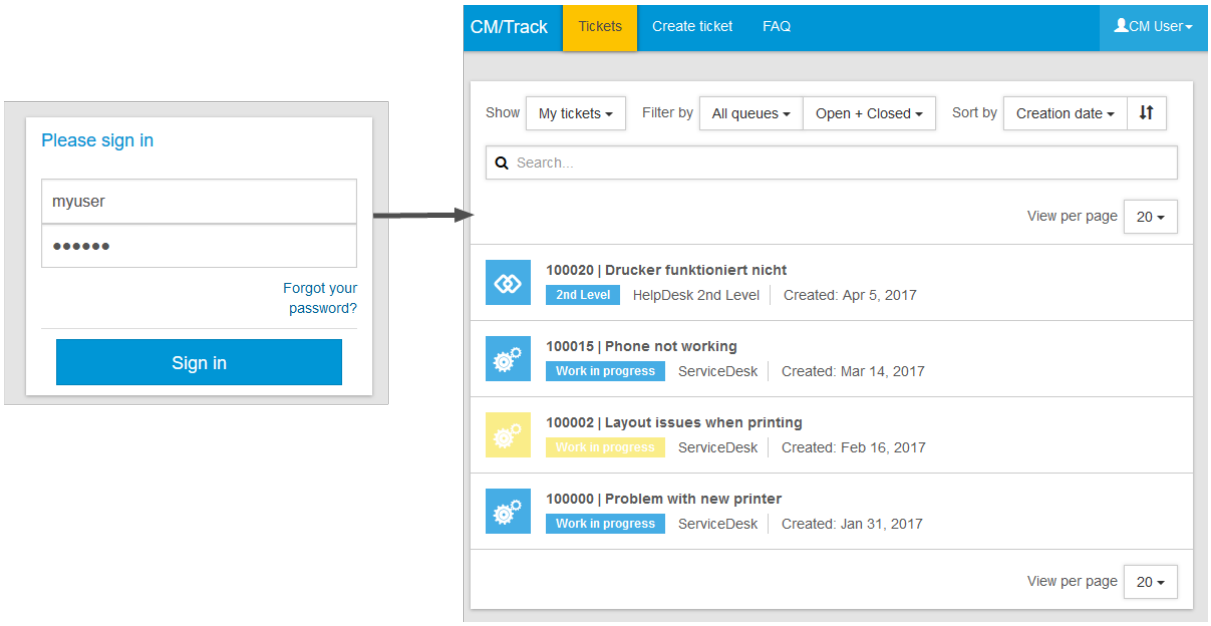


Figure 28: *Standard CM/Track V2*

E.1.2 Installation of CM/Track

Please read the *ConSol CM System Requirements* for the version you would like to install and take all mentioned information into consideration!

The currently supported version of CM/Track is **CM/Track V2**. The support for CM/Track V1 was phased out with ConSol CM version 6.11.2.2.

> ⚠ If you run CM/Track V1 and perform an update to CM version 6.11.2.2 you must migrate to CM/Track V2, which includes adapting V2 in the same way V1 was adapted, if you do not use the standard flavor of CM/Track. Please note that there is **no automatic update** from V1 to V2, since the two are separate web applications which are deployed in the application server!

E.1.2.1 Installing CM/Track V2

This version needs Java 8.

CM/Track V2 can be deployed in the application server where CM is running or in a separate servlet container (currently, as of July 2016, supported: Tomcat). The latter allows to run CM/Track as a separate portal which could be operated in another security context than CM, e.g., in a DMZ. If you deploy CM/Track V2 in a separate Tomcat servlet container but on the same machine as JBoss, please avoid port conflicts! JBoss as well as Tomcat use the 8080 port as default.

Perform the following steps:

1. Deploy the `.war` file:
   - In case the standard version of CM/Track is used, you have to deploy the standard `.war` file, usually named `cmtrack-v2-distribution-<CM_VERSION>.war` (example: `cmtrack-v2-distribution-6.12.0.1.war`).
   - In case a customer-specific `.war` file is used, you have to deploy this specific `.war` file.
   - Deployment together with CM:
     Just deploy the `.war` file mentioned above. You do not need to change the file name.
   - Deployment in a Tomcat servlet container:
     Rename the `.war` file to `track.war`.
2. By default, CM/Track V2 will look for the CM server / REST API on `http://localhost:8888`. In order to change this default setting, you need to perform one of the following steps:
   - Set the respective system variable for the REST API in the file `standalone.conf` (Linux) or `standalone.conf.bat` (Windows)

     ```
     export CM_REST_URL=<PROTOCOL>://<CM_SERVER>:<CM_PORT>/restapi
     ```

   - Add the following Java option to the start script:

     ```
     -Djersey.cm6.url=<PROTOCOL>://<CM_SERVER>:<CM_PORT>/restapi
     ```

3. Restart the CM server during deployment.

4. Test the deployment by calling the following URL:

```
<PROTOCOL>://<CM_SERVER>:<CM_PORT>/track/
```

The login screen should be displayed.

E.1.3 Configuring CM/Track

Please refer to the detailed explanations in the *ConSol CM Administrator Manual*, section *The Customer Portal - CM/Track* to learn how to configure CM/Track for your environment.

E.1.4 LDAP Authentication for Customers in CM/Track

E.1.4.1 Introduction to ConSol CM LDAP Authentication

ConSol CM offers LDAP authentication for CM/Track as a standard feature, i.e., instead of managing the passwords for the ConSol CM customers in the ConSol CM database, they can be retrieved from an LDAP server (like e.g., a ***Microsoft Active Directory*** server).

When customers want to log in to CM/Track, they enter their user name and password and press *Enter*. Behind the scenes, the ConSol CM server sends a request with the customer's user name and password and asks the LDAP server whether those credentials are correct.

If the credentials are correct, the approval is sent back to the ConSol CM server and the customer is logged into CM/Track.

> Please keep in mind that the LDAP connection is only used to authenticate the customer (confirm the identity). The authorization (i.e., the assignment of access permissions in the system) is done via the assignment of a CM/Track user profile in the Web Client. The CM/Track user profiles are managed in the engineer and role administration in the Admin Tool.

Please see also the following picture for an explanation of the CM/Track authentication process using LDAP.

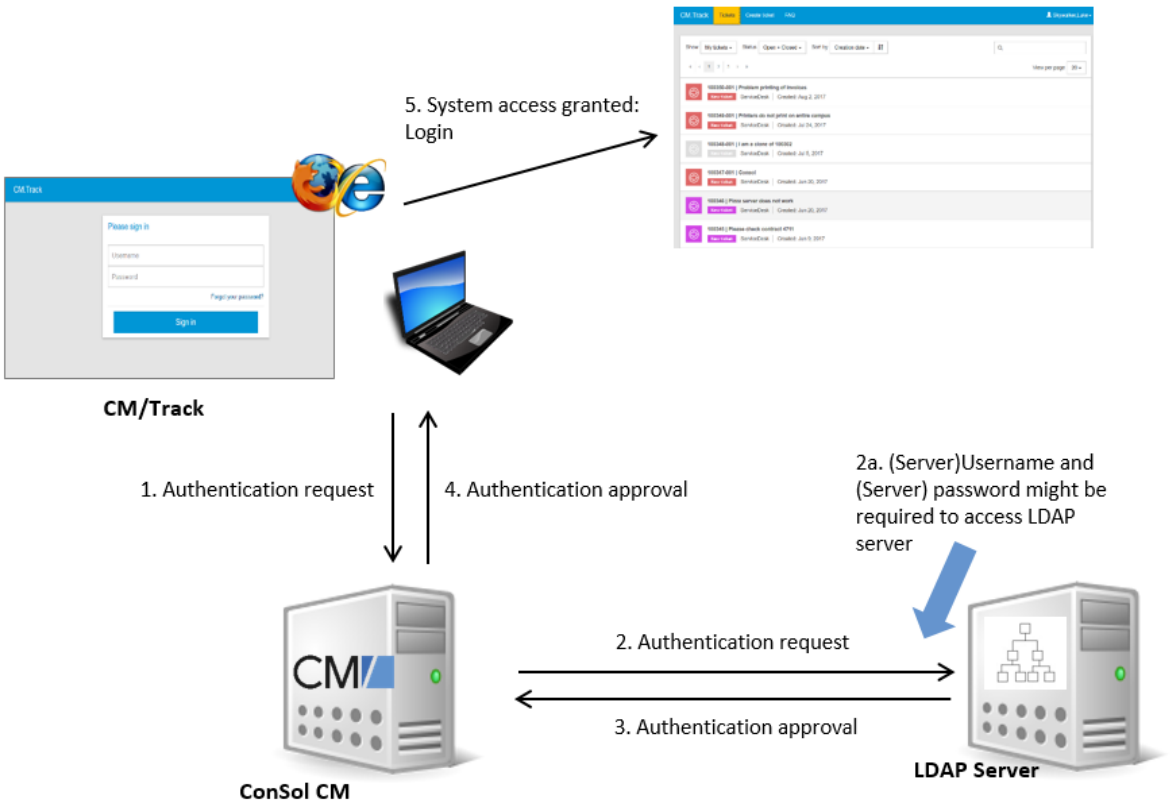


Figure 29: *ConSol CM - LDAP authentication process for CM/Track*

E.1.4.2 Configuring LDAP Authentication

LDAP authentication is activated by setting the system property cmas-core-security, contact.authentication.method to “LDAP”.

Then you have to set the required values in the system properties (navigation group *System*, navigation item *System Properties*).

The LDAP servers can be defined using the following system properties from the module `cmas-core-security`.

{name} is a string that you can choose to distinguish LDAP servers. It must always be set, even if only one LDAP server is configured. You should use a simple string for the {name}, not containing any keywords, like *internal* or *external*, and which does not contain special characters.

- cmas-core-security, contact.authentication.method
  LDAP
- ldap.contact.{name}.providerurl
  The property value is the address of the LDAP server in the form *ldap[s]://host:port*.
- ldap.contact.{name}.userdn
  The value is the user DN used to look up the contact DN by the LDAP ID. An anonymous account is used if the value is not set.
- ldap.contact.{name}.password
  The property contains the password to look up the contact DN by the LDAP ID. An anonymous account is used if the value is not set.
- ldap.contact.{name}.basedn
  This represents the base path to search for the contact DN by the LDAP ID, e.g., “ou=accounts,dc=mycompany,dc=de”.
- ldap.contact.{name}.searchattr
  The property value stands for the attribute to search for the contact DN by the LDAP ID, e.g., “uid”.

Initially, these system properties might not be present in your CM system. Just add them manually. Changes to any of the above system properties do not require a server restart and are propagated to all cluster nodes. The use of the placeholder {name} allows configurations to define several different LDAP servers.

- ldap.initialcontextfactory
  This is a predefined global property. If it is not set, “com.sun.jndi.ldap.LdapCtxFactory” is used as its value.

Authentication attempts against LDAP servers are made until first success, where the server order is determined by their {name} values (ascending alphabetical order of the values).

Mixed Authentication Mode

Set the system property cmas-core-security, contact.authentication.method depending on the desired order of authentication instances:

- **LDAP,DATABASE:**
  First attempt authentication using the available LDAP server(s), if an LDAP ID is provided. On failure, try a database login if the customer has a database password.
- **DATABASE,LDAP:**
  First attempt a database login if the customer has a database password. On failure try authentication using the available LDAP server(s) if an LDAP ID is provided.

The CM system will first contact the instance which is mentioned first, than the second one. For example, when the contact authentication method is set to “LDAP,DATABASE” and the customer (contact) uses the password which is only valid in the database, the login will succeed.

In `server.log` the following message will be displayed:

```
LDAP login failed: [LDAP: error code 49 - Invalid Credentials]; nested exception is
 javax.naming.AuthenticationException: [LDAP: error code 49 - Invalid Credentials]
```

E.1.4.3 Logging of LDAP Login Attempts in CM/Track

All LDAP errors encountered are logged without a stack trace using loggers with the following prefix:

- `com.consol.cmas.core.security.contact`

The stack trace of LDAP errors is not logged because failed login attempts on the first LDAP server would clutter logs if a following login on the second LDAP server succeeded.

E.1.4.4 Using LDAPS (LDAP over SSL)

Introduction

Per default, when an LDAP client accesses an LDAP server, the information is transferred in clear text. In case you want the user name and password to be transferred to the LDAP server in encrypted form, you have to set up the LDAP authentication using LDAPS.

Preparations

You have to configure the CM server machine (Java) in a way that can use certificates. One way to do this for a Linux environment is described in the following section.

1. Retrieve the certificate:

   ```
   openssl s_client -connect dc2.mydomain.com:ldaps
   ```

2. The answer will contain a section which starts with `"---BEGIN CERTIFICATE "` and ends with `"END CERTIFICATE ---"`. Copy this section to a file, e.g., `/tmp/certificate2_dc2_mydomain_com.txt`
3. Import the certificate to the truststore of your machine, e.g., `/home/mydirectory/mytruststore`

   ```
   $JAVA_HOME/bin/keytool -import -alias <arbitrary> -trustcacerts -keystore
    /home/mydirectory/mytruststore -file/tmp/certificate2_dc2_mydomain_com.txt
   ```

   You have to enter (set) a password.
4. Enter the truststore in the ConSol CM config file in JAVA_OPTS:

   ```
   -Djavax.net.ssl.trustStore=/home/mydirectory/mytruststore -
    Djavax.net.ssl.trustStorePassword=<see above>
   ```

LDAPS Configuration in the ConSol CM Admin Tool (System Properties)

Configure the ConSol CM server as shown in the following example:

- cmas-core-security, ldap.authentication = simple
- cmas-core-security, ldap.contact.name.basedn = OU=myOU,DC=myDC
- cmas-core-security, ldap.initialcontextfactory = com.sun.jndi.ldap.LdapCtxFactory
- cmas-core-security, ldap.contact.name.password = myLDAPpw
- cmas-core-security, ldap.contact.name.searchattr= sAMAccountName
- cmas-core-security, ldap.contact.name.userdn = myLDAP_UserDN

Depending on the LDAP server configuration, use one of the following values for the server URL:

- **Standard LDAPs port**
  cmas-core-security, ldap.contact.name.providerurl = ldaps://dc2.mydomain.com:636
- **LDAPs port Global Catalogue**
  cmas-core-security, ldap.contact.name.providerurl = ldaps://dc2.mydomain.com:3269

E.2 CM/Doc

This chapter discusses the following:

E.2.1 Requirements for Using CM/Doc

On the client PC or laptop, the following requirements have to be met to use CM/Doc:

- Microsoft Windows operating system
- Locally installed CM/Doc application
- Locally installed Microsoft Word / OpenOffice

Detailed information about the installed Microsoft Word and OpenOffice versions can be found in the current *System Requirements*.

E.2.2 Configuring CM/Doc

CM/Doc is enabled using the system property cmweb-server-adapter, cmoffice.enabled. Set this system property to “true” in the Admin Tool. In addition, you need to set the port to which the CM/Doc application should connect in the system property cmweb-server-adapter, cmoffice.websocket.port in the Admin Tool. If HTTPS is used, the engineers need to trust the URL configured for CM/Doc in their browsers.

If CM/Doc is used with OpenOffice, the engineers have to set the path to the OpenOffice installation within the CM/Doc application.

Please refer to the *ConSol CM Administrator Manual* for a detailed explanation about how to configure CM/Doc for your system.

E.3 CM/Archive

CM/Archive is a ConSol CM add-on which allows to archive tickets from ConSol CM. It is a separate Java web application with a MongoDB database.

The following figure illustrates how CM/Archive integrates with ConSol CM.

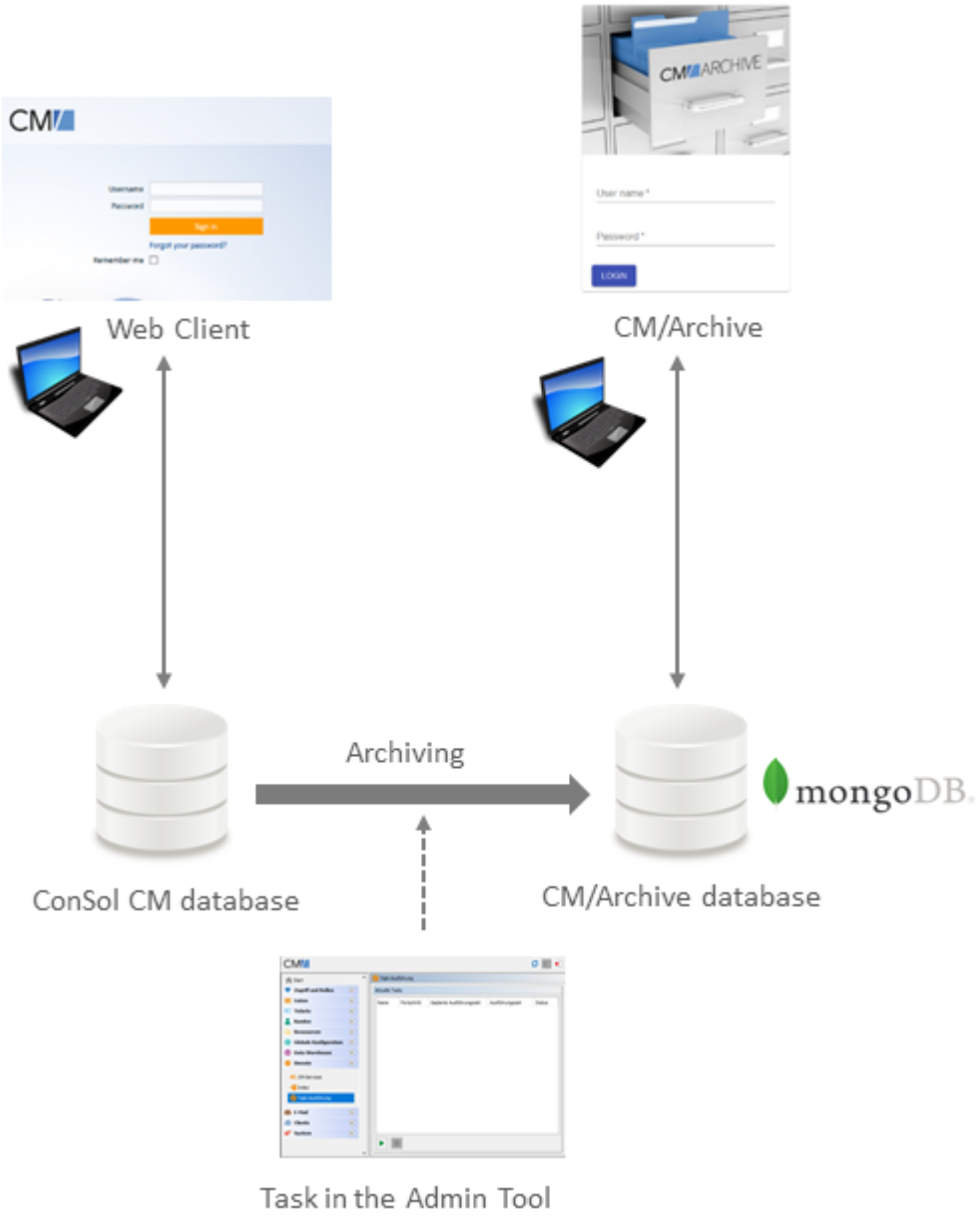


Figure 30: *Architecture of ConSol CM with CM/Archive*

E.3.1 Requirements for CM/Archive

The following system requirements apply for CM/Archive:

- ConSol CM version 6.11.2.1 and up
- MongoDB version 3.6
- Java 1.8

Please also see the official system requirements on the TecDoc server.

E.3.2 Installing CM/Archive

The following steps are required to install CM/Archive:

1. Installing and Setting Up the MongoDB Database
2. Setting the System Properties for CM/Archive in the Admin Tool
3. Setting the Properties for the CM/Archive Application
4. Starting CM/Archive

> **Preliminary note**
>
> The CM/Archive application is delivered with three modes: production mode, demo mode and developer mode. This manual covers the installation in production mode, as the other modes should be used only for testing purposes.

E.3.2.1 Installing and Setting Up the MongoDB Database

The first step is to install the MongoDB. You can find a detailed description in the respective MongoDB documentation for your operating system:

- Linux: Install MongoDB on Linux
- Windows: Install MongoDB on Windows

The next step is to configure the CM/Archive user with the corresponding authentication. Please proceed as follows:

1. **Start the MongoDB instance without authentication**

   Use the following command to start the MongoDB instance without authentication:

   ```
   mongod --port 27017 --dbpath /data/archive
   ```

   The *mongod* options have the following meaning:

   - --port: Indicates the database connection port. The default value is “27017”.
   - --dpath: Defines the directory where the MongoDB instance stores its data. The default value is “/data/db” on Linux and macOS, and “\data\db” on Windows.
   - --bind_ip: Use this option to provide the IP address if you want to change the default value (“localhost, 127.0.0.1”).

   Please see the mongod documentation for further information about the options.

2. **Connect to the MongoDB instance**

   Use the following command to connect to the MongoDB instance:

   ```
   mongo --host 127.0.0.1:27017
   ```

   The following output should be displayed:

```
MongoDB shell version v3.6.4
connecting to: mongodb://127.0.0.1:27017
MongoDB server version: 3.6.4
>
```

3. **Create the administrator user**

   The administrator user has to be created in the *admin* database with the role *userAdminAnyDatabase*. The administrator user has only permissions to create and manage users and roles. It cannot be used for any other operations, e.g., reading data. The following command can be used to create the administrator user:

```
use admin
db.createUser(
   {
      user: "admin",
      pwd: "consol",
      roles: [ { role: "userAdminAnyDatabase", db: "admin" } ]
   }
)
```

4. **Restart the MongoDB instance with access control**

   Disconnect the MongoDB shell and restart it with the `--auth` option or, if you use a configuration file, the `security.authorization` setting. The following command can be used to restart the MongoDB instance:

```
mongod --auth --port 27017 --dbpath /data/archive
```

   Clients that connect to this instance must now authenticate themselves as a MongoDB user. They can only perform actions as determined by their assigned roles.

5. **Connect with the administrator user**

   Use the following command to connect to the MongoDB instance with the above created administrator user:

```
mongo --host 127.0.0.1:27017
use admin
db.auth("admin", "consol")
```

6. **Create the CM/Archive user**

   Create the CM/Archive user `archive` with the database `archivedb` using the `db.createUser()` command. The user needs to have the `readWrite` role, as shown in the following example:

```
use admin
db.createUser(
   {
      user: "archive",
      pwd: "consol",
      roles: [ { role: "readWrite", db: "archivedb" } ]
   }
)
```

7. **Connect with the CM/Archive user**

   Use the following command to connect to the MongoDB instance with the above created CM/Archive user:

```
mongo --host 127.0.0.1:27017
use admin
db.auth("archive", "consol")
use archivedb
```

E.3.2.2 Setting the System Properties for CM/Archive in the Admin Tool

The system properties for CM/Archive are managed in two modules in the Admin Tool:

cmas-archive-core-server:

- `archive.uri`
  URL from which the CM/Archive application can be accessed.

cmas-auth-server:

- `access.token.signing.key`
  Secret shared between the authorization server and client application using OAuth2, needs to match *archive.oauth2.access.token.signing.key* in the configuration file.
- `client.archive.access.token.validity.seconds`
- `client.archive.refresh.token.validity.seconds`
- `client.archive.secret`
  Secret shared between the authorization server and CM/Archive, needs to match *archive.oauth2.client.secret* in the configuration file.

E.3.2.3 Setting the Properties for the CM/Archive Application

Some properties for the CM/Archive application need to be provided in a properties file which has to be saved in the same directory as the `war` file of CM/Archive.

The name of the properties file is `archive-prod.properties`. It has to contain the following settings:

```
archive.cm6.endpoint=http://127.0.0.1:8888
archive.oauth2.access.token.signing.key=94623427-5a74-11e8-a6eb-6127838b1c93
archive.oauth2.client.secret=94623428-5a74-11e8-a6eb-6127838b1c93
archive.mongodb.database.name=archivedb
archive.mongodb.uri=mongodb://archive:consol@127.0.0.1:27017/?&journal=true&w=major
 ity&maxPoolSize=1000
```

The following list states the meaning of the properties:

- **archive.cm6.endpoint**
  This is the URL and port where the ConSol CM instance is executed.
- **archive.oauth2.access.token.signing.key**
  Secret shared between the authorization server and client application using OAuth2, needs to match the ConSol CM system property `cmas-auth-server`, `access.token.signing.key`
- **archive.oauth2.client.secret**
  Secret shared between the authorization server and CM/Archive, needs to match the ConSol CM system property `cmas-auth-server`, `client.archive.secret`
- **archive.mongodb.database.name**
  This is the name of the MongoDB database as created in step 6 above.
- **archive.mongodb.uri**
  User name and password of the CM/Archive user, and URL of the MongoDB instance

E.3.2.4 Starting CM/Archive

Start CM/Archive using the following command:

```
java -jar archive-6.11.2.2.war --spring.profiles.active=prod
```

By default, CM/Archive starts on port 8080. You can choose a different port by adding, e.g., `--server.port=8090` to the command.

You can also create a start script for CM/Archive. The following example shows a start script for Linux operating systems.

```
#!/bin/bash

ARCHIVE="archive"
PIDFILE="$ARCHIVE.pid"

case "$1" in
   start)
      PID=$(java -jar archive-6.11.2.1.war --spring.profiles.active=prod > /dev/null
       2>&1 & echo $!)
      if [ -z $PID ]; then
         echo "Enable to start $ARCHIVE. No PID was created"
      else
         echo $PID > $PIDFILE
      fi
      ;;
   stop)
      PID=$(cat $PIDFILE)
      if [ -f $PIDFILE ]; then
         kill -9 $PID
         rm -f $PIDFILE
      fi
      ;;
   restart)
      $0 stop
      $0 start
      ;;
   *)
      echo "Usage: $0 {start|stop|restart}"
      ;;
esac
exit 0
```

Code example 6: *Start script archive.sh for CM/Archive on Linux*

Please note that execute permissions are needed for the script file:

```
chmod +x archive.sh
```

You can start, stop and restart CM/Archive with the following commands:

```
./archive.sh start|stop|restart
```

E.4 CTI with ConSol CM: CM/Phone

This chapter discusses the following:

E.4.1 Introduction to CM/Phone

CM/Phone is a distinct ConSol CM module which has to be licensed in addition to the core ConSol CM system. For license information, please see License Management.

CM/Phone is a Windows client application for the integration of telephony systems using the ***TAPI 3*** protocol. TAPI is part of any Windows operating system and provides generic telephony functions. The CM/Phone client has to be installed on each Windows client which should use the CTI (Computer Telephony Integration) functionality with ConSol CM.

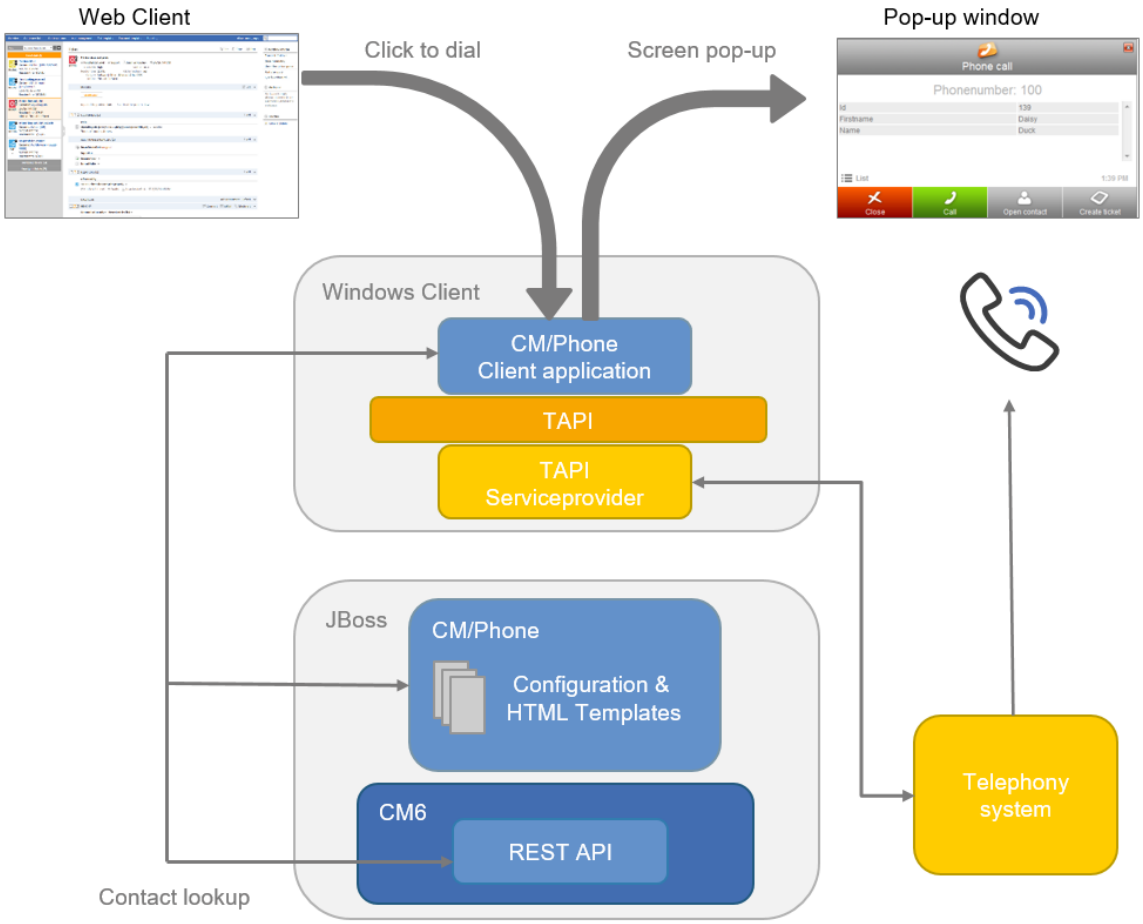


Figure 31: *ConSol CM/Phone - Basic principle*

E.4.1.1 Incoming Calls

The CM/Phone client monitors the telephone handset (i.e., the selected TAPI device, `address` or `line`) for incoming calls. When an incoming call has been registered, a pop-up window is displayed with the phone number of the caller. The ConSol CM customer database is searched for matches for this customer. If one or more matches have been found, a customer list is offered for selection. Engineers can then decide if they want to create a ticket for the customer or if they want to have the customer page displayed. If no corresponding customer data matches the phone number, just the calling number is displayed and the option *Create customer* is offered.

> ⚠ Please note that a user can only see the customer data in the CM/Phone pop-up window which is allowed by the user's permissions. Others will be filtered out and will thus not be visible.

The pop-up window is based on HTML template files which are located in the CM/Phone folder on the ConSol CM server. These templates are loaded by the CM/Phone client application during startup. The information displayed in the pop-up window (customer fields from the customer data model) can be customized by editing the template files (see section Configuring the Client Pop-Up Window (for Incoming Calls)).

The following options can be selected in the pop-up window if exactly one customer matches in the CM database:

- **Open customer**
  Opens the customer page (contact/company) in the Web Client (alternatively *Create customer* will be listed if the caller is unknown in ConSol CM).
- **Create ticket**
  Opens the *Create ticket* page for this found (or new) customer in the Web Client.
- **Call back**
  Will be available in the case of a missed call.
- **Close**
  Closes the CM/Phone pop-up window.

In case the customer is not yet present in the ConSol CM system, the caller's phone number will be used to fill in the phone number field in the customer data annotated as `dialable`. This will be done for new customers and newly created tickets. Should multiple fields be annotated as `dialable`, the first one will be pre-filled. If the user has access to multiple customer groups, the respective `dialable` phone number fields of each customer group will be pre-filled.

E.4.1.2 Outgoing Calls

The engineer can start an outgoing call directly by clicking on a phone number (e.g., in the customer data) in a customer field which has been annotated as `dialable`. The CM/Phone application is started automatically by the browser and the phone number is passed to the telephone system as a command line parameter. The CM/Phone application creates an outgoing call via TAPI and quits immediately.

E.4.2 CM/Phone Setup

E.4.2.1 System Requirements

Please refer to the *System Requirements* of the ConSol CM version which is installed in your environment for detailed information concerning server and client requirements for the CM/Phone setup.

E.4.2.2 Components Required for CM/Phone Setup

For the CM/Phone setup you, as an administrator, need:

- The license for CM/Phone. Please contact your ConSol CM consultant.
- The CM/Phone `.war` file for deployment in the application server.
- A TAPI 3 driver in the telephone system.

E.4.2.3 Installing CM/Phone on the Application Server

Basic CM/Phone Server Installation

The CM/Phone module is delivered as a `.war` package. The `.war` package is provided as a folder (not as a packed file) because in this way you can easily access the configuration files located in this path.

For the server installation, perform the following steps:

1. Copy the `cm-phone.war` folder for JBoss to: <JBOSS_HOME>/standalone/deployments

   > Please note that in some application servers (e.g., JBoss EAP) it might be required to explicitly enable the server to work with exploded `.war` files.
   >
   > In JBoss: Edit the file `<JBOSS_HOME>/standalone/configuration/cm6-cmrf.xml` (or `cm6.xml`) and add `auto-deploy-exploded="true"` for the subsystem deployment-scanner.
   >
   > **Example:**
   >
   > ...
   >
   > ```
   > <subsystem xmlns="urn:jboss:domain:deployment-scanner:1.1">
   >   <;deployment-scanner path="deployments"
   >     relative-to="jboss.server.base.dir"
   >     scan-interval="0" auto-deploy-exploded="true"/>
   > ```
   >
   > ...

2. Adapt the configuration as needed (see sections below).
3. Restart the application server.

To confirm that the application was deployed correctly, visit the URL:

- http://<CM_Server>:<CM_Port>/cm-phone/

You should see the welcome page of the application with the link to the CM/Phone installer download.

Configuring CM/Phone on the Application Server

All application parameters are set in the file `cmphone-config.xml` located under:

- **JBoss:**
  <JBOSS_HOME>/standalone/deployments/cm-phone.war

This file is loaded by the CM/Phone client application during startup and each time the settings dialog is closed with *OK*.

However, this file should not be edited in order to configure the system. Please make sure that all configuration parameters are set using the Admin Tool.

Configuring the Client Pop-Up Window (for Incoming Calls)

The contents of the pop-up window are based on the HTML templates in the following path:

- **JBoss**
  <JBOSS_HOME>/standalone/deployments/cm-phone.war/templates

The main directory contains the templates for the default language (of the client system!):

- CallNotification.html
- ContactData.html
- ContactList.html

For each additional language which should be supported, a folder with the name of the locale has to be created (e.g., `de` for German) which contains localized copies of the template files.

The templates are used to render the customer details in the pop-up window. Since every customer may want to see different information in the pop-up, the content can be adapted by editing the HTML files. The templates contain tags which are replaced with current values by the client application during a call. Those templates are Admin Tool templates which have to be defined for each customer group. Please see the *ConSol CM Administrator Manual*, section *Configure the Admin Tool Templates for Customer Data for Each Customer Group* for details.

If required, you can change the names of the templates. You can use any file name you want for the three HTML files, just make sure you have entered the correct values in the `config` file.

CallNotification.html

This is the first template which is displayed as soon as an incoming call is detected by the CM/Phone client. This window only displays the calling number because at this point in the process there is no customer data available.

Available tags:

- **[phonenumber]**
  Phone number of the caller.
  Example: <h1>Phonenumber: [phonenumber]</h1>
- **[calltime]**
  Time of the call.
- **[content]**
  This will show additional information within the pop-up window:
  A Loading icon during the customer look-up or an error message if something went wrong during the look-up, e.g., wrong user name or password, etc.

These tags are case sensitive and must be lower case.

ContactData.html

This will display the current customer details if the look-up finds a matching customer for the phone number. In this template all customer fields of the customer data model can be used as tags. This allows the display of customer details to be adapted to any customer's need.

All tags from the `CallNotification` template are available (see above), plus the following tags:

- **[phonenumber]**
  The number of the caller.
- **[contact.id]**
  ConSol CM internal ID of the customer. This ID may be used to create additional links into the ConSol CM Web Client. (Not used in the example below)
- **[contactContent]**
  Here, the customer data is filled in according to the template which is defined for each customer group in the Admin Tool under *<CustomerObject> -> Templates -> CMPhone customer details*.
- **[calltime]**
  Timestamp of the incoming call.

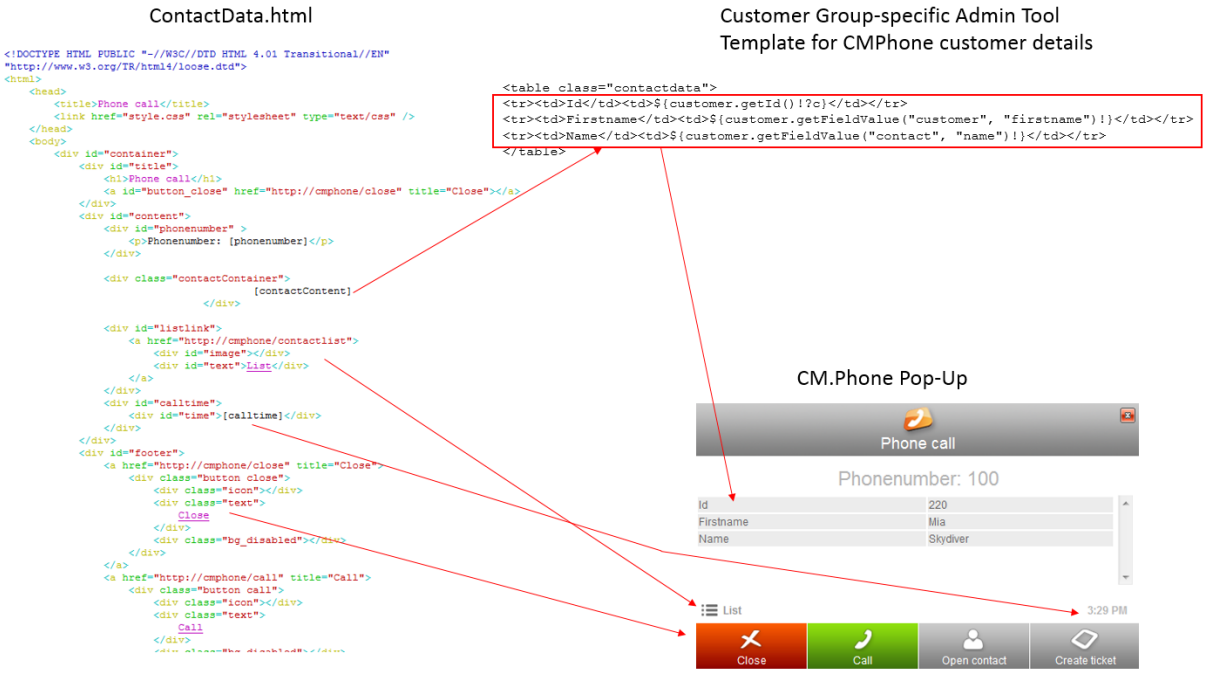


Figure 32: *ConSol CM/Phone - Customer details in CM/Phone pop-up*

ContactList.html

If the look-up finds more than one customer for a phone number, the `ContactList` template is displayed in the pop-up window. For each matching customer, a row is added in the customer table within the template.

The following tags are available:

- **[contactlistContent]**
  This tag defines the layout of the list. Here, the contact data is filled in according to the template which is defined for each customer group in the Admin Tool under *<CustomerObject> -> Templates -> CMPhone Customer List*.

- **[calltime]**
  The time of the incoming call.
- **[phonenumber]**
  The number of the caller.

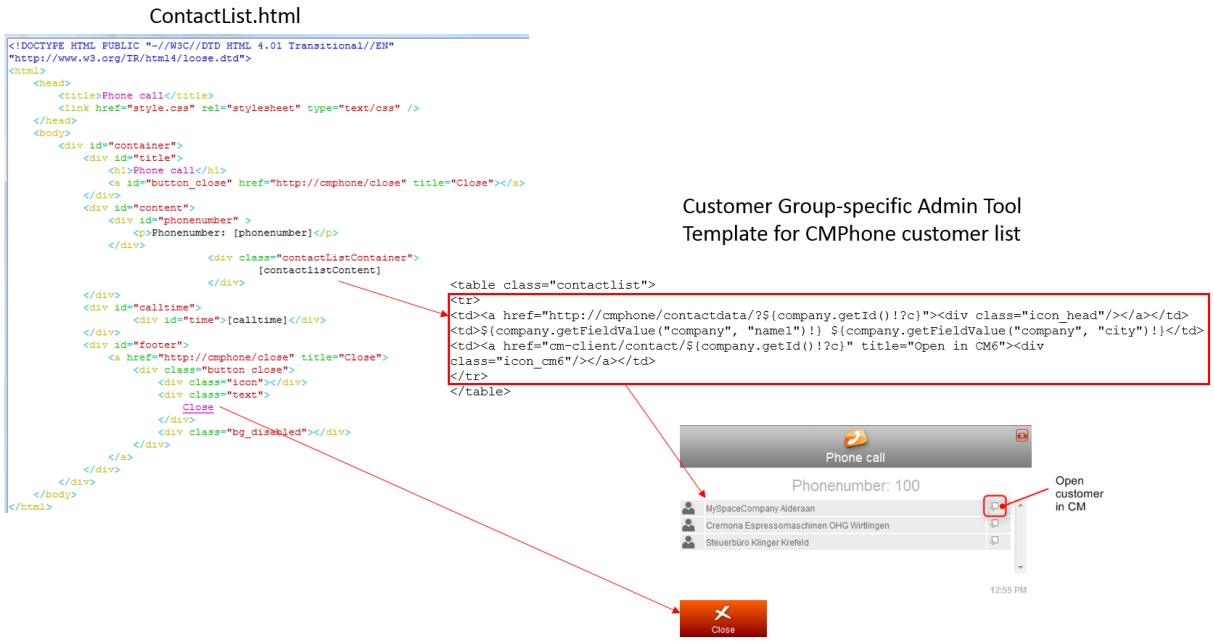


Figure 33: *ConSol CM/Phone - Customer list in CM/Phone pop-up*

Links/Buttons within the Templates

Four buttons are configured in the standard templates:

- **Close**
  Closes the pop-up window.
- **Call**
  Starts an outgoing phone call to the calling number.
- **Open Contact**
  Opens the customer in the Web Client.
- **Create Ticket**
  Opens the Web Client in the *Create ticket* page.

These buttons can also be customized within the templates. Buttons may be removed or additional buttons or links may be added, as required. Each button refers to an HTML link.

For CM/Phone there are two types of links available:

- **External links**
  These links will open a browser window to display the page.
  For example, the link `http://heldesk/cm-client/contact/[contact.id]` will open the Web Client and display the selected customer.
  For these links, all data fields of the customer data may be used to create the URL. This way, additional functions may be added by creating a link to a customer-specific web application and by passing user data from ConSol CM as parameters, e.g.: https://in-tranet.mycompany.de/index.php?id=234&id_person=[customer.personid]

- **CM/Phone internal links**
  These links are only valid within the pop-up window.
  Format: http://cmphone/<command>/?<parameter>
  The following commands are available:
  - **contactdata**
    Displays the `ContactData` template for the selected customer.
    Parameter: Contact Id
    This command is used in the `ContactList` template to allow the user to select and display a specific customer:
    http://cmphone/contactdata/?[contact.id]
  - **contactlist**
    Displays the `ContactList` template.
    This command is used to allow the user to go back to the list of customers from the *Customer Data* page:
    http://cmphone/contactlist
  - **call**
    Starts an outgoing phone call to the phone number of the customer:
    http://cmphone/call
  - **runcmd**
    Starts a local application on the client PC.
    Parameter: Command line of the application
    This may be used, for instance, to start a database application and pass a user ID as a command line parameter, e.g.:
    http://cmphone/runcmd/?dbapp.exe+userid=[customer.userid]
  - **close**
    Closes the pop-up window:
    http://cmphone/close

Replacing the CM/Phone Pop-Up Window by a Custom Web Application

If a customer does not want to use the pop-up window from CM/Phone, but instead requires a custom web application to be opened for a phone call, this can be done by setting the `OnCallCmd` parameter in the `cmphone-config.xml` file. If it is set to an external URL, a browser window will be opened with this URL for each phone call. The pop-up window will not be displayed.

E.4.2.4 Installing CM/Phone on Each Windows Client

The CM/Phone client application has to be installed locally on all client PCs that need CTI functionality. The setup package has to be downloaded from the CM/Phone start page on the CM server.

> ⚠ Administrator rights are needed on the client PC to install the CM/Phone application. The reason for this is the registration as `phone: protocol handler`, which requires writing a Windows registry entry.

For the client installation, perform the following steps.

Step 1: Open the CM/Phone Start Page

Open the following URL: `http://<CM_URL>/cm-phone`. The CM/Phone start page with information about the installation and the system requirements is displayed.

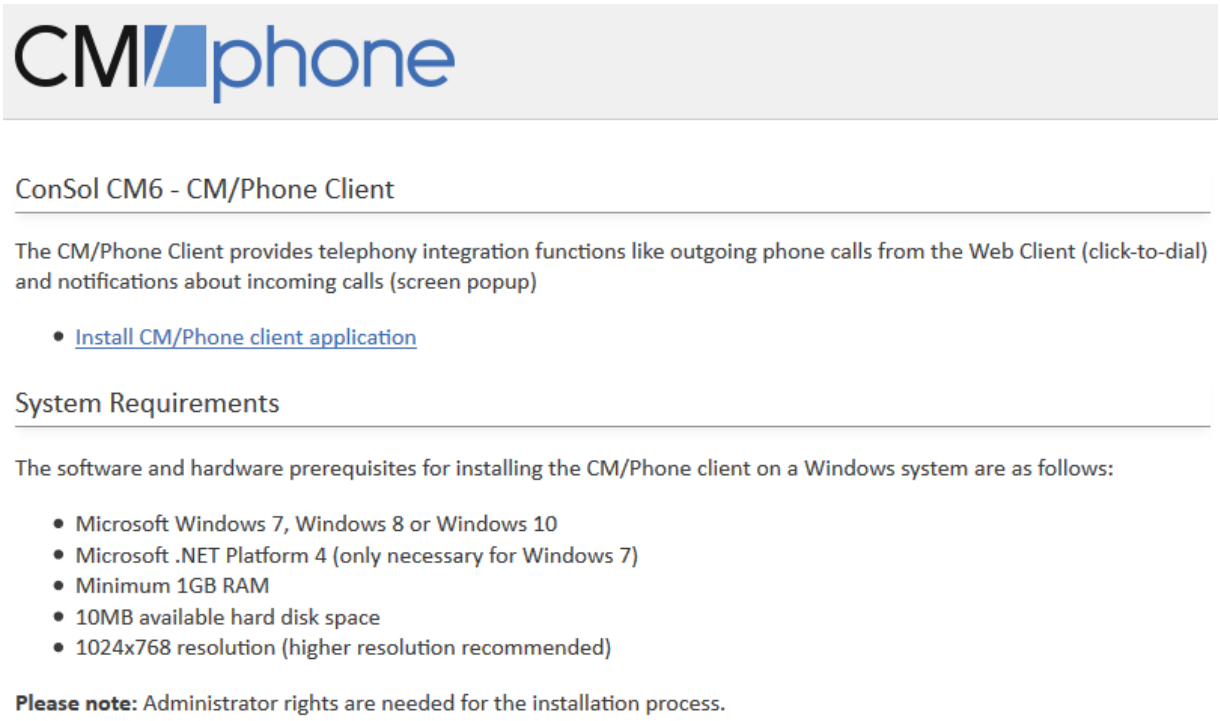


Figure 34: *ConSol CM/Phone - Client setup (1)*

Step 2: Download and Run the Installation Package

Click the *Install CM/Phone client application* link to download the file `setup.exe`. Follow the steps of the installation wizard.

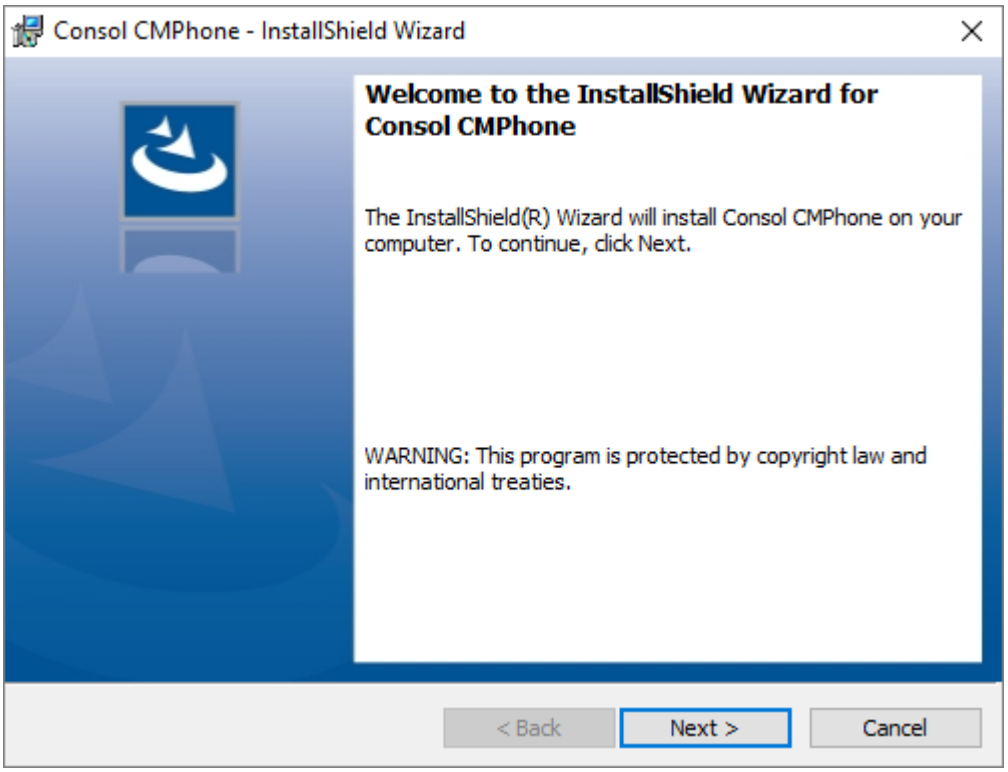


Figure 35: *ConSol CM/Phone - Client setup (2)*

Step 3: Start the CM/Phone Application

Start *All programs -> Consol -> Consol CMPhone*. After the first start it will display the configuration dialog:

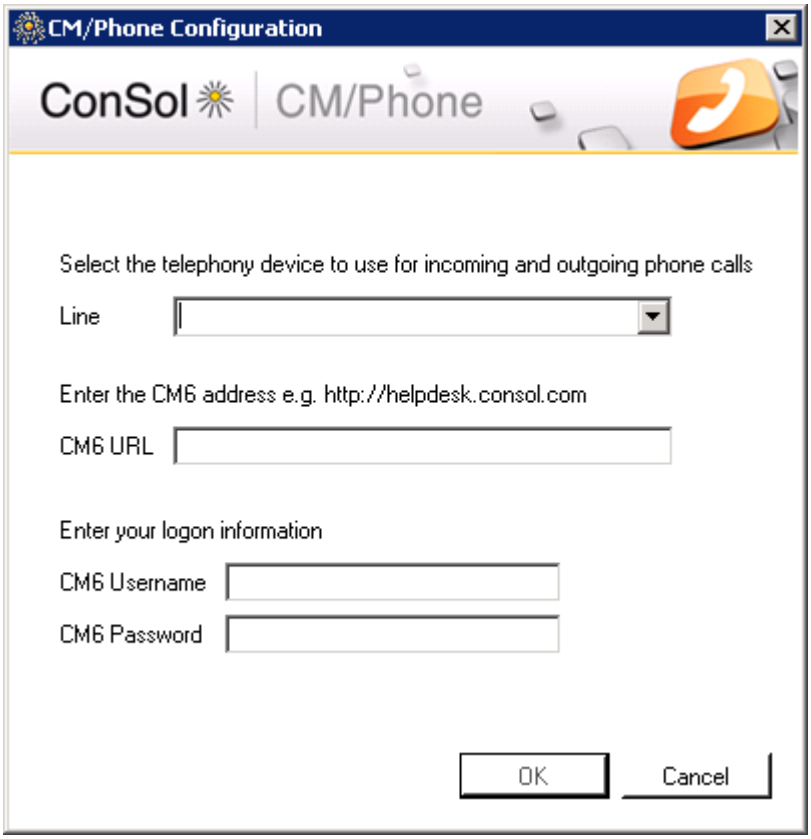


Figure 36: *ConSol CM/Phone - Client setup (3)*

Step 3a: Configure the Client Application

Fill in the following fields:

- **Line**
  Select the TAPI line which should be used.
- **CM6 URL**
  Enter the URL of the ConSol CM system. The basic URL is required, e.g., `http://myserver:8080`.
- **CM6 Username**
  Your ConSol CM user name (The user has to have enough rights to search for customers using the ConSol CM REST API!).
- **CM6 Password**
  Your ConSol CM password.

> The configuration dialog can be opened anytime by opening the context menu of the CM/Phone notification icon in the task bar and selecting *Settings ...* .

E.4.2.5 Engineer Authentication Modes

The ConSol CM CTI client does not work together with SSO authentication mode (see the *ConSol CM Administrator Manual*, section *Single Sign-On with ConSol CM Using Kerberos*).

E.4.3 Configuration of CM/Phone in the Admin Tool

In the Admin Tool you have to perform the following steps to configure CM/Phone:

- Set the annotations for the customer fields which contain phone numbers.
- Configure the Admin Tool templates for customer data for each customer group.
- Configure the phone number format for each customer group.
- Set the system properties.
- Optional: Change the dialing prefix for outgoing calls.

Those steps are explained in detail in the *ConSol CM Administrator Manual*.

E.4.4 Troubleshooting and Testing

E.4.4.1 Logging

For debugging purposes, a log file may be activated on the client. In order to do this, the log configuration file `log4net.xml`, in the installation path of the client, usually `<Program Files>\ConSol\CMPhone`, has to be configured.

Since most users do not have write access to the *Program Files* directory, the log file path has to be set to a folder that is writable for the user, e.g.:

```
<file value="c:\temp\cmphone.log" />

<appender name="RollingFileAppender" type="log4net.Appender.RollingFileAppender">

   <file value=" c:\temp\cmphone.log" />
   <appendToFile value="true" />
   <rollingStyle value="Size" />
   <maxSizeRollBackups value="10" />
   <maximumFileSize value="1MB" />
   <staticLogFileName value="true" />
   <layout type="log4net.Layout.PatternLayout">
      <conversionPattern value="%date %-5level %logger - %message%newline" />
   </layout>
</appender>
```

Code example 7: *Log4net configuration for CM/Phone logging*

Notes:

- Special characters and/or whitespaces do not have to be escaped.
- Use the following to write the log file into the user's home directory:

  ```
  <file value="${USERPROFILE}\phone.log" />
  ```

E.4.4.2 Registration as `phone: protocol handler`

If the client application cannot be installed by the users themselves because of insufficient access rights, the application may be distributed by a system administrator employing a software distribution system. In that case, the application needs to be registered on the client as `phone: protocol handler` by creating the appropriate registry keys:

```
[HKEY_CLASSES_ROOT\phone]
//Please make sure to set the space in URL Protocol, otherwise it will not work.
[HKEY_CLASSES_ROOT\phone\DefaultIcon]
@="C:\\Program Files (x86)\\ConSol\\CMPhone\\cmphone.ico"
[HKEY_CLASSES_ROOT\phone\shell]
[HKEY_CLASSES_ROOT\phone\shell\open]
[HKEY_CLASSES_ROOT\phone\shell\open\command]
@="C:\\Program Files (x86)\\ConSol\\CMPhone\\cmphone.exe" //(example)
```

Code example 8: *Registry keys for CM/Phone*

E.4.4.3 Using Direct Access to CM via REST API for Testing

CM/Phone uses the REST API to request data from the ConSol CM server. Thus you can check several use cases using direct REST access to the system. For example, you could check if units with a certain phone number are available in the system thereby checking if the REST interface is available as required and/or checking if units with this phone number can be found in the CM database. The latter could also be used for troubleshooting in case CM/Phone does not display the correct caller in the CM/Phone pop-up window for an incoming call.

Use the following command (e.g., with a REST client in the browser or using tools like ***curl***):

- **For XML output**

```
http://<CM_SERVER_URL>:<CM_PORT>/restapi/units.xml/?phoneNumber=
 [telefonNummer]
```

- **For text output**

```
http://<CM_SERVER_URL>:<CM_PORT>/restapi/units/?phoneNumber=[telefonNummer]
```

For a detailed explanation about all available REST commands (not only concerning CM/Phone), please read the *ConSol CM REST API Documentation*.

F - Appendix

This section contains several appendices:

F.1 List of Important Files

The following files are important for the ConSol CM installation and are explained in this section in some more detail.

> ⚠ Examples of the files are included for illustration purposes only. Please always use the files which come with your ConSol CM distribution!

- cm6.xml
  Used to configure ConSol CM
- cm6-cmrf.xml
  Used to configure ConSol CM and CMRF in the overlay configuration
- cmrf.xml
  Used to configure CMRF in the standalone configuration
- standalone.conf
  Used to configure environment variables in JBoss on Linux
- standalone.conf.bat
  Used to configure environment variables in JBoss on Windows

F.1.1 cm6.xml

`cm6.xml` is the main configuration file for a ConSol CM system without CMRF. The content of the file depends on the used application server, database system and ConSol CM version. You should always use the file from the distribution which you are installing.

You need to edit `cm6.xml` to enter the following information:

- user name and password of the CM database user
- URL of the database connection

This information needs to be provided for two data sources:

- xa-datasource jndi-name="java:/jdbc/CmDS"
- datasource jta="false" jndi-name="java:/jdbc/CmDS-no-tx"

The relevant places are highlighted in red in the following example file.

In addition, `cm6.xml` is used to configure logging, see Configuring Logging for JBoss or Configuring Logging for WebLogic.

The exact content of the configuration file depends on the used application server, database system and ConSol CM version. Always use the file from the distribution which you are installing. Do not copy & paste from this manual or from other installations.

```
<?xml version='1.0' encoding='UTF-8'?>

<server xmlns="urn:jboss:domain:1.5">

  <extensions>
    <extension module="org.jboss.as.connector"/>
    <extension module="org.jboss.as.deployment-scanner"/>
    <extension module="org.jboss.as.ee"/>
    <extension module="org.jboss.as.jdr"/>
    <extension module="org.jboss.as.jmx"/>
    <extension module="org.jboss.as.logging"/>
    <extension module="org.jboss.as.messaging"/>
    <extension module="org.jboss.as.naming"/>
    <extension module="org.jboss.as.remoting"/>
    <extension module="org.jboss.as.security"/>
    <extension module="org.jboss.as.transactions"/>
    <extension module="org.jboss.as.web"/>
  </extensions>

  <system-properties>
    <property name="jboss.as.management.blocking.timeout" value="360000"/>
    <property name="org.apache.coyote.http11.Http11Protocol.MAX_HEADER_SIZE"
value="65535"/>
  </system-properties>

  <management>
    <security-realms>
      <security-realm name="ManagementRealm">
        <authentication>
          <local default-user="$local"/>
```

```
          <properties path="mgmt-users.properties" relative-
to="jboss.server.config.dir"/>
        </authentication>
        <authorization map-groups-to-roles="false">
          <properties path="mgmt-groups.properties" relative-
to="jboss.server.config.dir"/>
        </authorization>
      </security-realm>
      <security-realm name="ApplicationRealm">
        <authentication>
          <local default-user="$local" allowed-users="*"/>
          <properties path="application-users.properties" relative-
to="jboss.server.config.dir"/>
        </authentication>
        <authorization>
          <properties path="application-roles.properties" relative-
to="jboss.server.config.dir"/>
        </authorization>
      </security-realm>
    </security-realms>
    <audit-log>
      <formatters>
        <json-formatter name="json-formatter"/>
      </formatters>
      <handlers>
        <file-handler name="file" formatter="json-formatter" path="audit-log.log"
relative-to="jboss.server.data.dir"/>
      </handlers>
      <logger log-boot="true" log-read-only="false" enabled="false">
        <handlers>
          <handler name="file"/>
        </handlers>
      </logger>
    </audit-log>
    <management-interfaces>
      <native-interface security-realm="ManagementRealm">
        <socket-binding native="management-native"/>
      </native-interface>
      <http-interface security-realm="ManagementRealm">
        <socket-binding http="management-http"/>
      </http-interface>
    </management-interfaces>
    <access-control provider="simple">
      <role-mapping>
        <role name="SuperUser">
          <include>
            <user name="$local"/>
          </include>
        </role>
      </role-mapping>
    </access-control>
  </management>

  <profile>
    <subsystem xmlns="urn:jboss:domain:datasources:1.1">
```

```
      <datasources>
        <xa-datasource jndi-name="java:/jdbc/CmDS" pool-name="jdbc/CmDS"
enabled="true" use-java-context="true" use-ccm="true">
          <recovery no-recovery="true" />
          <driver>mysql-driver</driver>
          <xa-datasource-property
name="URL">jdbc:mysql://localhost/cmdatabase</xa-datasource-property>
          <security>
            <user-name>cmuser</user-name>
            <password>consol</password>
          </security>
          <xa-pool>
            <min-pool-size>5</min-pool-size>
            <max-pool-size>200</max-pool-size>
            <prefill>true</prefill>
            <wrap-xa-resource>false</wrap-xa-resource>
          </xa-pool>
          <statement>
            <prepared-statement-cache-size>32</prepared-statement-cache-size>
            <share-prepared-statements>true</share-prepared-statements>
          </statement>
          <validation>
            <valid-connection-checker class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLValidConnectionChecker"/>
            <exception-sorter class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLExceptionSorter"/>
            <background-validation>true</background-validation>
            <background-validation-millis>60000</background-validation-millis>
            <validate-on-match>false</validate-on-match>
          </validation>
          <timeout>
            <idle-timeout-minutes>5</idle-timeout-minutes>
          </timeout>
          <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-
isolation>
          <xa-datasource-
class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-datasource-class>
          <xa-datasource-property name="UseCursorFetch">true</xa-datasource-
property>
          <xa-datasource-property name="DefaultFetchSize">100</xa-datasource-
property>
          <xa-datasource-property name="socketTimeout">86400000</xa-datasource-
property>
        </xa-datasource>
        <datasource jta="false" jndi-name="java:/jdbc/CmDS-no-tx" pool-
name="jdbc/CmDS-no-tx" enabled="true" use-java-context="true" use-ccm="true">
          <driver>mysql-driver</driver>
          <connection-url>jdbc:mysql://localhost/cmdatabase</connection-url>
          <security>
            <user-name>cmuser</user-name>
            <password>consol</password>
          </security>
          <pool>
            <min-pool-size>5</min-pool-size>
            <max-pool-size>200</max-pool-size>
```

```
            <prefill>true</prefill>
          </pool>
          <statement>
            <prepared-statement-cache-size>32</prepared-statement-cache-size>
            <share-prepared-statements>true</share-prepared-statements>
          </statement>
          <validation>
            <valid-connection-checker class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLValidConnectionChecker"/>
            <exception-sorter class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLExceptionSorter"/>
            <background-validation>true</background-validation>
            <background-validation-millis>60000</background-validation-millis>
            <validate-on-match>false</validate-on-match>
          </validation>
          <timeout>
            <idle-timeout-minutes>5</idle-timeout-minutes>
          </timeout>
          <driver-class>com.mysql.jdbc.Driver</driver-class>
          <connection-property name="useCursorFetch">true</connection-property>
          <connection-property name="defaultFetchSize">100</connection-property>
          <connection-property name="socketTimeout">86400000</connection-property>
        </datasource>
        <drivers>
          <driver name="mysql-driver" module="com.mysql.jdbc">
            <driver-class>com.mysql.jdbc.Driver</driver-class>
            <xa-datasource-
class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-datasource-class>
          </driver>
        </drivers>
      </datasources>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:deployment-scanner:1.1">
      <deployment-scanner path="deployments" relative-to="jboss.server.base.dir"
scan-interval="0" auto-deploy-exploded="false"/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:ee:1.1">
      <spec-descriptor-property-replacement>false</spec-descriptor-property-
replacement>
      <jboss-descriptor-property-replacement>true</jboss-descriptor-property-
replacement>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:jca:1.1">
      <archive-validation enabled="true" fail-on-error="true" fail-on-
warn="false"/>
      <bean-validation enabled="true"/>
      <default-workmanager>
        <short-running-threads>
          <core-threads count="50"/>
          <queue-length count="50"/>
          <max-threads count="50"/>
          <keepalive-time time="10" unit="seconds"/>
        </short-running-threads>
        <long-running-threads>
          <core-threads count="50"/>
```

```
          <queue-length count="50"/>
          <max-threads count="50"/>
          <keepalive-time time="10" unit="seconds"/>
        </long-running-threads>
      </default-workmanager>
      <cached-connection-manager/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:jdr:1.0"/>
    <subsystem xmlns="urn:jboss:domain:jmx:1.3">
      <expose-resolved-model/>
      <expose-expression-model/>
      <remoting-connector/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:messaging:1.4">
      <hornetq-server>
        <persistence-enabled>true</persistence-enabled>
        <security-enabled>false</security-enabled>
        <journal-type>NIO</journal-type>
        <journal-min-files>2</journal-min-files>

        <connectors>
          <netty-connector name="netty" socket-binding="messaging"/>
          <netty-connector name="netty-throughput" socket-binding="messaging-
throughput">
            <param key="batch-delay" value="50"/>
          </netty-connector>
          <in-vm-connector name="in-vm" server-id="0"/>
        </connectors>

        <acceptors>
          <netty-acceptor name="netty" socket-binding="messaging"/>
          <netty-acceptor name="netty-throughput" socket-binding="messaging-
throughput">
            <param key="batch-delay" value="50"/>
            <param key="direct-deliver" value="false"/>
          </netty-acceptor>
          <in-vm-acceptor name="in-vm" server-id="0"/>
        </acceptors>

        <security-settings>
          <security-setting match="#">
            <permission type="send" roles="guest"/>
            <permission type="consume" roles="guest"/>
            <permission type="createNonDurableQueue" roles="guest"/>
            <permission type="deleteNonDurableQueue" roles="guest"/>
          </security-setting>
        </security-settings>

        <address-settings>
          <address-setting match="#">
            <dead-letter-address>jms.queue.DLQ</dead-letter-address>
            <expiry-address>jms.queue.ExpiryQueue</expiry-address>
            <redelivery-delay>0</redelivery-delay>
            <max-size-bytes>10485760</max-size-bytes>
            <page-size-bytes>2097152</page-size-bytes>
```

```
            <address-full-policy>PAGE</address-full-policy>
            <message-counter-history-day-limit>10</message-counter-history-day-
limit>
          </address-setting>
          <!-- in case of db failure we don't want to loose messages because we
could not set index status to red -->
          <address-setting match="jms.queue.queue/cm6-index">
            <redelivery-delay>60000</redelivery-delay> <!-- 60 seconds -->
            <max-delivery-attempts>-1</max-delivery-attempts> <!-- infinite times
-->
          </address-setting>
          <!-- in case of db failure we don't want to loose messages because we
could not update custom mail redelivery flag  -->
          <address-setting match="jms.queue.queue/cm6-mail">
            <redelivery-delay>60000</redelivery-delay> <!-- 60 seconds -->
            <max-delivery-attempts>-1</max-delivery-attempts> <!-- infinite times
-->
          </address-setting>
        </address-settings>

        <jms-connection-factories>
          <connection-factory name="InVmConnectionFactory">
            <connectors>
              <connector-ref connector-name="in-vm"/>
            </connectors>
            <entries>
              <entry name="java:/ConnectionFactory"/>
            </entries>
          </connection-factory>
          <connection-factory name="RemoteConnectionFactory">
            <connectors>
              <connector-ref connector-name="netty"/>
            </connectors>
            <entries>
              <entry name="java:jboss/exported/jms/RemoteConnectionFactory"/>
            </entries>
          </connection-factory>
          <pooled-connection-factory name="hornetq-ra">
            <transaction mode="xa"/>
            <connectors>
              <connector-ref connector-name="in-vm"/>
            </connectors>
            <entries>
              <entry name="java:/JmsXA"/>
            </entries>
          </pooled-connection-factory>
        </jms-connection-factories>

        <jms-destinations>
          <jms-queue name="queue/cm6-index">
            <entry name="java:/queue/cm6-index"/>
            <durable>true</durable>
          </jms-queue>
          <jms-queue name="queue/cm6-mail">
            <entry name="java:/queue/cm6-mail"/>
```

```
            <durable>true</durable>
          </jms-queue>
          <jms-topic name="topic/cm6-event">
            <entry name="java:/topic/cm6-event"/>
          </jms-topic>
        </jms-destinations>
      </hornetq-server>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:naming:1.4">
      <remote-naming/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:remoting:1.1">
      <connector name="remoting-connector" socket-binding="remoting" security-
realm="ApplicationRealm"/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:resource-adapters:1.1"/>
    <subsystem xmlns="urn:jboss:domain:security:1.2">
      <security-domains>
        <security-domain name="other" cache-type="default">
          <authentication>
            <login-module code="Remoting" flag="optional">
              <module-option name="password-stacking" value="useFirstPass"/>
            </login-module>
            <login-module code="RealmDirect" flag="required">
              <module-option name="password-stacking" value="useFirstPass"/>
            </login-module>
          </authentication>
        </security-domain>
        <security-domain name="jboss-web-policy" cache-type="default">
          <authorization>
            <policy-module code="Delegating" flag="required"/>
          </authorization>
        </security-domain>
        <security-domain name="jboss-ejb-policy" cache-type="default">
          <authorization>
            <policy-module code="Delegating" flag="required"/>
          </authorization>
        </security-domain>
      </security-domains>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:transactions:1.4">
      <core-environment>
        <process-id>
          <uuid/>
        </process-id>
      </core-environment>
      <recovery-environment socket-binding="txn-recovery-environment" status-
socket-binding="txn-status-manager"/>
      <coordinator-environment default-timeout="300"/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:web:1.5" default-virtual-server="default-
host" native="false">
      <connector name="http" protocol="HTTP/1.1" scheme="http" socket-
binding="http"/>
      <virtual-server name="default-host" enable-welcome-root="false">
```

```
        <alias name="localhost"/>
        <!--<access-log pattern='%h %l %u %t %r %s %b %{Referer}i %{User-Agent}i
%S %T'>-->
          <!--<directory path="./" relative-to="jboss.server.log.dir"/>-->
        <!--</access-log>-->
      </virtual-server>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:logging:1.3">
      <size-rotating-file-handler name="FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="server.log"/>
        <append value="true"/>
        <level name="INFO"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="CMWEB_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="cmweb.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="CMRF_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="cmrf.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="SQL_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="sql.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="ERROR_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="errors.log"/>
```

```
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <level name="ERROR"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="SUPPORT_LIBS_ERROR_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="support_libs_errors.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <level name="ERROR"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="APPCTX_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="ctx.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="MAIL_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="mail.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="TRANSFER_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="transfer.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%X{username}-%X{context}-%X
{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>
```

```
      <size-rotating-file-handler name="TX_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="tx.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="INDEX_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="index.log"/>
        <append value="true"/>
        <level name="INFO"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="INDEX_DAO_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="index_dao.log"/>
        <append value="true"/>
        <level name="INFO"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="SESSION" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="session.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="WORKFLOW" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="workflow.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
```

```
      </size-rotating-file-handler>

      <size-rotating-file-handler name="TIMER_MANAGER_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="timer-manager.log"/>
        <append value="true"/>
        <level name="DEBUG"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="OPERATION_TIMES" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="operationtimes.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="HIBERNATE_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="hibernate.log"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <append value="true"/>
      </size-rotating-file-handler>

      <!-- ================================ -->
      <!-- Append messages to the console -->
      <!-- ================================ -->

      <console-handler name="CONSOLE">
        <level name="INFO"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </console-handler>


      <!-- CM -->

      <!-- Our own classes-->
      <logger category="com.consol">
        <level name="INFO"/>
      </logger>

      <logger category="com.consol.cmas.core.security">
        <level name="INFO"/>
      </logger>
```

```
      <logger category="com.consol.cmas.core.dao.hibernate.util">
        <level name="INFO"/>
      </logger>

      <logger
category="com.consol.cmas.core.index.jms.ConnectionRefreshingDefaultMessageListene
rContainer">
        <level name="WARN"/>
      </logger>

      <!-- CM/Web -->
      <logger category="com.consol.cmweb">
        <level name="INFO"/>
        <handlers>
          <handler name="ERROR_FILE"/>
          <handler name="CMWEB_FILE"/>
        </handlers>
      </logger>

      <!-- CMRF -->
      <logger category="com.consol.cmrf">
        <level name="INFO"/>
        <handlers>
          <handler name="CMRF_FILE"/>
          <handler name="ERROR_FILE"/>
        </handlers>
      </logger>

      <logger category="MAIL" use-parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="MAIL_FILE"/>
        </handlers>
      </logger>

      <logger category="TRANSFER" use-parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="TRANSFER_FILE"/>
        </handlers>
      </logger>

      <!-- ================================================================-->
      <!-- Hibernate -->
      <logger category="org.hibernate">
        <level name="INFO"/>
      </logger>

      <logger category="org.hibernate.util">
        <level name="ERROR"/>
      </logger>

      <logger category="org.hibernate.tool">
        <level name="ERROR"/>
      </logger>
```

```
      <!-- Set this to DEBUG for debugging SQL statements coming from hibernate --
>
      <logger category="org.hibernate.SQL" use-parent-handlers="false">
        <!-- Show SQL-->
        <level name="INFO"/>
        <handlers>
          <handler name="SQL_FILE"/>
        </handlers>
      </logger>

      <logger category="org.hibernate.type" use-parent-handlers="false">
        <!-- Show types used in SQL selects as well-->
        <level name="INFO"/>
        <handlers>
          <handler name="SQL_FILE"/>
        </handlers>
      </logger>

      <logger category="org.hibernate.cfg" use-parent-handlers="false">
        <!-- Show types used in SQL selects as well-->
        <level name="WARN"/>
      </logger>

      <logger category="org.infinispan.jmx">
        <level name="WARN"/>
      </logger>

      <!-- ======================================================================-->
      <!-- Spring -->
      <logger category="org.springframework">
        <level name="INFO"/>
      </logger>

      <logger category="org.springmodules">
        <level name="INFO"/>
      </logger>

      <logger category="org.springframework.context" use-parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="APPCTX_FILE"/>
        </handlers>
      </logger>

      <logger category="org.springframework.transaction" use-parent-
handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="TX_FILE"/>
        </handlers>
      </logger>

      <logger category="org.springframework.beans.factory" use-parent-
handlers="false">
```

```
        <level name="INFO"/>
        <handlers>
          <handler name="APPCTX_FILE"/>
          <handler name="ERROR_FILE"/>
        </handlers>
      </logger>

      <logger category="org.acegisecurity">
        <level name="INFO"/>
      </logger>

      <!-- skip automatic logging of runtime exceptions for remote applications --
>
      <logger
category="com.consol.cmas.app.admin.servlet.AdminExtendedHttpInvokerServiceExporte
r">
        <level name="INFO"/>
      </logger>
      <logger
category="com.consol.cmas.app.workflow.servlet.WorkflowExtendedHttpInvokerServiceE
xporter">
        <level name="INFO"/>
      </logger>
      <logger
category="org.springframework.remoting.support.RemoteInvocationTraceInterceptor">
        <level name="ERROR"/>
      </logger>

      <!-- ================================================================= -->
      <!-- index -->
      <logger category="com.consol.cmas.core.index" use-parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="INDEX_FILE"/>
        </handlers>
      </logger>

      <logger
category="com.consol.cmas.core.dao.hibernate.IndexUpdateTaskDaoHibernate" use-
parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="INDEX_DAO_FILE"/>
        </handlers>
      </logger>

      <!-- ================================================================= -->
      <!-- workflow -->
      <logger category="com.consol.cmas.workflow.engine.exe.event.TimerManager"
use-parent-handlers="false">
        <level name="DEBUG"/>
        <handlers>
          <handler name="TIMER_MANAGER_FILE"/>
        </handlers>
      </logger>
```

```
      <!-- ===================================================================== -->
      <!-- operation times -->
      <!-- logger
category="com.consol.cmweb.client.webapp.timemeasure.log.Log4jOperationLogger">
        <level name="DEBUG"/>
        <handlers>
          <handler name="OPERATION_TIMES"/>
        </handlers>
      </logger-->

      <!-- ===================================================================== -->
      <!-- Further support libs: -->
      <logger category="org.jnp.interfaces.NamingContext">
        <level name="INFO"/>
      </logger>

      <!-- Limit the com.sun category to INFO as its FINE is verbose -->
      <logger category="com.sun">
        <level name="INFO"/>
      </logger>

      <!-- Limit the sun category to INFO as its FINE is verbose -->
      <logger category="sun">
        <level name="INFO"/>
      </logger>

      <!-- Limit the javax.xml.bind category to INFO as its FINE is verbose -->
      <logger category="javax.xml.bind">
        <level name="INFO"/>
      </logger>

      <!-- Limit the javax.activation category to INFO as its FINE is verbose -->
      <logger category="javax.activation">
        <level name="INFO"/>
      </logger>

      <!-- Limit JBoss categories
      <logger category="org.jboss">
        <level name="INFO"/>
      </logger>
      -->

      <!-- Limit the JSR77 categories -->
      <logger category="org.jboss.management">
        <level name="INFO"/>
      </logger>

      <!-- Limit the verbose facelets compiler -->
      <logger category="facelets.compiler">
        <level name="WARN"/>
      </logger>

      <!-- Limit the verbose ajax4jsf cache initialization -->
      <logger category="org.ajax4jsf.cache">
```

```
        <level name="WARN"/>
      </logger>

      <!-- Limit the verbose embedded jopr categories -->
      <logger category="org.rhq">
        <level name="WARN"/>
      </logger>

      <!-- Limit the verbose seam categories -->
      <logger category="org.jboss.seam">
        <level name="WARN"/>
      </logger>

      <!-- Limit dozer output -->
      <logger category="org.dozer">
        <level name="WARN"/>
      </logger>

      <!-- Limit the org.apache logger to INFO as its DEBUG is verbose -->
      <logger category="org.apache">
        <level name="INFO"/>
      </logger>

      <!-- Limit apache axis to INFO as its DEBUG is even more verbose -->
      <logger category="org.apache.axis" use-parent-handlers="false">
        <level name="INFO"/>
      </logger>

      <logger category="org.compass">
        <level name="INFO"/>
      </logger>

      <logger category="org.jboss">
        <level name="INFO"/>
      </logger>

      <logger category="org.jboss.as.server.deployment">
        <level name="ERROR"/>
      </logger>

      <logger category="com.arjuna">
        <level name="INFO"/>
      </logger>

      <logger category="org.jboss.logging">
        <level name="INFO"/>
      </logger>

      <logger category="org.jboss.ha">
        <level name="INFO"/>
      </logger>

      <!-- ============================================================== -->
      <!-- Keep chatty support libraries as silent as possible -->
```

```
      <!-- Limit the org.jgroups logger to WARN as its INFO is verbose -->
      <logger category="org.jgroups">
        <level name="WARN"/>
      </logger>

      <logger category="org.apache.pdfbox">
        <level name="WARN"/>
      </logger>

      <logger category="org.apache.velocity" use-parent-handlers="false">
        <level name="WARN"/>
      </logger>

      <logger category="org.quartz">
        <level name="WARN"/>
      </logger>

      <logger category="org.apache.wicket.protocol.http.WicketURLDecoder">
        <level name="ERROR"/>
      </logger>

      <logger category="org.apache.wicket.protocol.http.RequestLogger">
        <level name="ERROR"/>
      </logger>

      <logger category="org.apache.jackrabbit">
        <level name="WARN"/>
      </logger>

      <!-- ========================================================================= -->
      <!-- Errors which are thrown by support libs but are properly handled
           by our application are written to a separate log file in order
           to keep the server.log clean -->
      <logger category="org.hibernate.event.def.AbstractFlushingEventListener"
use-parent-handlers="true">
        <level name="ERROR"/>
        <handlers>
          <handler name="SUPPORT_LIBS_ERROR_FILE"/>
        </handlers>
      </logger>

      <logger category="sessionTimeoutEngineerLogger" use-parent-handlers="true">
        <level name="INFO"/>
        <handlers>
          <handler name="SESSION"/>
        </handlers>
      </logger>

      <logger category="com.consol.cmweb.client.webapp.CmWebSession" use-parent-
handlers="true">
        <level name="INFO"/>
        <handlers>
          <handler name="SESSION"/>
        </handlers>
      </logger>
```

```
      <logger
category="org.hibernate.engine.StatefulPersistenceContext.ProxyWarnLog" use-
parent-handlers="true">
        <level name="ERROR"/>
      </logger>

      <logger category="com.consol.cmas.workflow" use-parent-handlers="true">
        <level name="INFO"/>
        <handlers>
          <handler name="WORKFLOW"/>
          <handler name="ERROR_FILE"/>
        </handlers>
      </logger>

      <logger
category="com.consol.cmas.core.server.internal.workflow.DefaultWorkflowEventListen
er" use-parent-handlers="true">
        <level name="INFO"/>
        <handlers>
          <handler name="WORKFLOW"/>
          <handler name="ERROR_FILE"/>
        </handlers>
      </logger>

      <!-- managing issue with logs entries like INFO  [
java.sql.DatabaseMetaData] [-] HHH000262: Table not found: -->
      <logger category="java.sql.DatabaseMetaData" use-parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="HIBERNATE_FILE"/>
        </handlers>
      </logger>

      <root-logger>
        <handlers>
          <handler name="CONSOLE"/>
          <handler name="FILE"/>
          <handler name="ERROR_FILE"/>
        </handlers>
      </root-logger>

      <!-- Clustering logging -->
      <!-- Uncomment the following to redirect the org.jgroups and
         org.jboss.ha categories to a cluster.log file.
      <size-rotating-file-handler name="CLUSTER" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="cluster.log"/>
        <append value="true"/>
        <level name="INFO"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
```

```
      </size-rotating-file-handler>

      <logger category="org.jgroups">
        <level name="DEBUG"/>
        <handlers>
          <handler name="CLUSTER"/>
        </handlers>
      </logger>

      <logger category="org.jboss.ha">
        <level name="DEBUG"/>
        <handlers>
          <handler name="CLUSTER"/>
        </handlers>
      </logger>
      -->

    </subsystem>
  </profile>

  <interfaces>
    <interface name="management">
      <inet-address value="${jboss.bind.address.management:127.0.0.1}"/>
    </interface>
    <interface name="public">
      <inet-address value="${jboss.bind.address:127.0.0.1}"/>
    </interface>
    <interface name="unsecure">
      <inet-address value="${jboss.bind.address.unsecure:127.0.0.1}"/>
    </interface>
  </interfaces>

  <socket-binding-group name="standard-sockets" default-interface="public" port-
offset="${jboss.socket.binding.port-offset:0}">
    <socket-binding name="management-native" interface="management"
port="${jboss.management.native.port:9999}"/>
    <socket-binding name="management-http" interface="management"
port="${jboss.management.http.port:9990}"/>
    <socket-binding name="management-https" interface="management"
port="${jboss.management.https.port:9443}"/>
    <socket-binding name="ajp" port="8009"/>
    <socket-binding name="http" port="8080"/>
    <socket-binding name="https" port="8443"/>
    <socket-binding name="messaging" port="5445"/>
    <socket-binding name="messaging-group" port="0" multicast-
address="${jboss.messaging.group.address:231.7.7.7}" multicast-
port="${jboss.messaging.group.port:9876}"/>
    <socket-binding name="messaging-throughput" port="5455"/>
    <socket-binding name="remoting" port="4447"/>
    <socket-binding name="txn-recovery-environment" port="4712"/>
    <socket-binding name="txn-status-manager" port="4713"/>
    <outbound-socket-binding name="mail-smtp">
      <remote-destination host="localhost" port="25"/>
    </outbound-socket-binding>
  </socket-binding-group>
```

```
</server>
```

Code example 9: *cm6.xml for JBoss with MySQL*

F.1.2 cm6-cmrf.xml

`cm6-cmrf.xml` is the main configuration file for a ConSol CM system with CMRF in overlay mode. The content of the file depends on the used application server, database system and ConSol CM version. You should always use the file from the distribution which you are installing.

You need to edit `cm6-cmrf.xml` to enter the following information:

- user name and password of the database user (both CM and CMRF)
- URL of the database connection (both CM and CMRF)

This information needs to be provided for two data sources:

- xa-datasource jndi-name="java:/jdbc/CmDS"
- datasource jta="false" jndi-name="java:/jdbc/CmDS-no-tx"

The relevant places are highlighted in red in the following example file.

In addition, `cm6-cmrf.xml` is used to configure logging, see Configuring Logging for JBoss or Configuring Logging for WebLogic.

The exact content of the configuration file depends on the used application server, database system and ConSol CM version. Always use the file from the distribution which you are installing. Do not copy & paste from this manual or from other installations.

```
<?xml version='1.0' encoding='UTF-8'?>

<server xmlns="urn:jboss:domain:1.5">

  <extensions>
    <extension module="org.jboss.as.connector"/>
    <extension module="org.jboss.as.deployment-scanner"/>
    <extension module="org.jboss.as.ee"/>
    <extension module="org.jboss.as.jdr"/>
    <extension module="org.jboss.as.jmx"/>
    <extension module="org.jboss.as.logging"/>
    <extension module="org.jboss.as.messaging"/>
    <extension module="org.jboss.as.naming"/>
    <extension module="org.jboss.as.remoting"/>
    <extension module="org.jboss.as.sar"/>
    <extension module="org.jboss.as.security"/>
    <extension module="org.jboss.as.transactions"/>
    <extension module="org.jboss.as.web"/>
  </extensions>


  <management>
    <security-realms>
      <security-realm name="ManagementRealm">
        <authentication>
          <local default-user="$local"/>
          <properties path="mgmt-users.properties" relative-
to="jboss.server.config.dir"/>
        </authentication>
        <authorization map-groups-to-roles="false">
```

```
          <properties path="mgmt-groups.properties" relative-
to="jboss.server.config.dir"/>
        </authorization>
      </security-realm>
      <security-realm name="ApplicationRealm">
        <authentication>
          <local default-user="$local" allowed-users="*"/>
          <properties path="application-users.properties" relative-
to="jboss.server.config.dir"/>
        </authentication>
        <authorization>
          <properties path="application-roles.properties" relative-
to="jboss.server.config.dir"/>
        </authorization>
      </security-realm>
    </security-realms>
    <audit-log>
      <formatters>
        <json-formatter name="json-formatter"/>
      </formatters>
      <handlers>
        <file-handler name="file" formatter="json-formatter" path="audit-log.log"
relative-to="jboss.server.data.dir"/>
      </handlers>
      <logger log-boot="true" log-read-only="false" enabled="false">
        <handlers>
          <handler name="file"/>
        </handlers>
      </logger>
    </audit-log>
    <management-interfaces>
      <native-interface security-realm="ManagementRealm">
        <socket-binding native="management-native"/>
      </native-interface>
      <http-interface security-realm="ManagementRealm">
        <socket-binding http="management-http"/>
      </http-interface>
    </management-interfaces>
    <access-control provider="simple">
      <role-mapping>
        <role name="SuperUser">
          <include>
            <user name="$local"/>
          </include>
        </role>
      </role-mapping>
    </access-control>
  </management>

  <profile>
    <subsystem xmlns="urn:jboss:domain:datasources:1.1">
      <datasources>
        <xa-datasource jndi-name="java:/jdbc/CmDS" pool-name="jdbc/CmDS"
enabled="true" use-java-context="true" use-ccm="true">
          <recovery no-recovery="true" />
```

```
          <driver>mysql-driver</driver>
          <xa-datasource-property
name="URL">jdbc:mysql://localhost/cmdatabase</xa-datasource-property>
          <security>
            <user-name>cmuser</user-name>
            <password>consol</password>
          </security>
          <xa-pool>
            <min-pool-size>5</min-pool-size>
            <max-pool-size>200</max-pool-size>
            <prefill>true</prefill>
            <wrap-xa-resource>false</wrap-xa-resource>
          </xa-pool>
          <statement>
            <prepared-statement-cache-size>32</prepared-statement-cache-size>
            <share-prepared-statements>true</share-prepared-statements>
          </statement>
          <validation>
            <valid-connection-checker class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLValidConnectionChecker"/>
            <exception-sorter class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLExceptionSorter"/>
            <background-validation>true</background-validation>
            <background-validation-millis>60000</background-validation-millis>
            <validate-on-match>false</validate-on-match>
          </validation>
          <timeout>
            <idle-timeout-minutes>5</idle-timeout-minutes>
          </timeout>
          <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-
isolation>
          <xa-datasource-
class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-datasource-class>
          <xa-datasource-property name="UseCursorFetch">true</xa-datasource-
property>
          <xa-datasource-property name="DefaultFetchSize">100</xa-datasource-
property>
          <xa-datasource-property name="socketTimeout">180000</xa-datasource-
property>
        </xa-datasource>
        <datasource jta="false" jndi-name="java:/jdbc/CmDS-no-tx" pool-
name="jdbc/CmDS-no-tx" enabled="true" use-java-context="true" use-ccm="true">
          <driver>mysql-driver</driver>
          <connection-url>jdbc:mysql://localhost/cmdatabase</connection-url>
          <security>
            <user-name>cmuser</user-name>
            <password>consol</password>
          </security>
          <pool>
            <min-pool-size>5</min-pool-size>
            <max-pool-size>200</max-pool-size>
            <prefill>true</prefill>
          </pool>
          <statement>
            <prepared-statement-cache-size>32</prepared-statement-cache-size>
```

```
            <share-prepared-statements>true</share-prepared-statements>
          </statement>
          <validation>
            <valid-connection-checker class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLValidConnectionChecker"/>
            <exception-sorter class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLExceptionSorter"/>
            <background-validation>true</background-validation>
            <background-validation-millis>60000</background-validation-millis>
            <validate-on-match>false</validate-on-match>
          </validation>
          <timeout>
            <idle-timeout-minutes>5</idle-timeout-minutes>
          </timeout>
          <driver-class>com.mysql.jdbc.Driver</driver-class>
          <connection-property name="useCursorFetch">true</connection-property>
          <connection-property name="defaultFetchSize">100</connection-property>
          <connection-property name="socketTimeout">180000</connection-property>
        </datasource>
        <xa-datasource jndi-name="java:/jdbc/CmrfDS" pool-name="jdbc/CmrfDS"
enabled="true" use-java-context="true" use-ccm="true">
          <recovery no-recovery="true" />
          <driver>mysql-driver</driver>
          <xa-datasource-property name="URL">jdbc:mysql://localhost/cmrf</xa-
datasource-property>
          <security>
            <user-name>cmrf</user-name>
            <password>consol</password>
          </security>
          <xa-pool>
            <min-pool-size>5</min-pool-size>
            <max-pool-size>200</max-pool-size>
            <prefill>true</prefill>
            <wrap-xa-resource>false</wrap-xa-resource>
          </xa-pool>
          <statement>
            <prepared-statement-cache-size>32</prepared-statement-cache-size>
            <share-prepared-statements>true</share-prepared-statements>
          </statement>
          <validation>
            <valid-connection-checker class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLValidConnectionChecker"/>
            <exception-sorter class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLExceptionSorter"/>
            <background-validation>true</background-validation>
            <background-validation-millis>60000</background-validation-millis>
            <validate-on-match>false</validate-on-match>
          </validation>
          <timeout>
            <idle-timeout-minutes>5</idle-timeout-minutes>
          </timeout>
          <transaction-isolation>TRANSACTION_READ_COMMITTED</transaction-
isolation>
          <xa-datasource-
class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-datasource-class>
```

```
          <xa-datasource-property name="UseCursorFetch">true</xa-datasource-
property>
          <xa-datasource-property name="DefaultFetchSize">100</xa-datasource-
property>
          <xa-datasource-property name="socketTimeout">180000</xa-datasource-
property>
        </xa-datasource>
        <datasource jta="false" jndi-name="java:/jdbc/CmrfDS-no-tx" pool-
name="jdbc/CmrfDS-no-tx" enabled="true" use-java-context="true" use-ccm="true">
          <driver>mysql-driver</driver>
          <connection-url>jdbc:mysql://localhost/cmrf</connection-url>
          <security>
            <user-name>cmrf</user-name>
            <password>consol</password>
          </security>
          <pool>
            <min-pool-size>5</min-pool-size>
            <max-pool-size>200</max-pool-size>
            <prefill>true</prefill>
          </pool>
          <statement>
            <prepared-statement-cache-size>32</prepared-statement-cache-size>
            <share-prepared-statements>true</share-prepared-statements>
          </statement>
          <validation>
            <valid-connection-checker class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLValidConnectionChecker"/>
            <exception-sorter class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLExceptionSorter"/>
            <background-validation>true</background-validation>
            <background-validation-millis>60000</background-validation-millis>
            <validate-on-match>false</validate-on-match>
          </validation>
          <timeout>
            <idle-timeout-minutes>5</idle-timeout-minutes>
          </timeout>
          <driver-class>com.mysql.jdbc.Driver</driver-class>
            <connection-property name="useCursorFetch">true</connection-property>
            <connection-property name="defaultFetchSize">100</connection-property>
            <connection-property name="socketTimeout">180000</connection-property>
          </datasource>
        <drivers>
          <driver name="mysql-driver" module="com.mysql.jdbc">
            <driver-class>com.mysql.jdbc.Driver</driver-class>
            <xa-datasource-
class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-datasource-class>
          </driver>
        </drivers>
      </datasources>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:deployment-scanner:1.1">
      <deployment-scanner path="deployments" relative-to="jboss.server.base.dir"
scan-interval="0" auto-deploy-exploded="false"/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:ee:1.1">
```

```
      <spec-descriptor-property-replacement>false</spec-descriptor-property-
replacement>
      <jboss-descriptor-property-replacement>true</jboss-descriptor-property-
replacement>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:jca:1.1">
      <archive-validation enabled="true" fail-on-error="true" fail-on-
warn="false"/>
      <bean-validation enabled="true"/>
      <default-workmanager>
        <short-running-threads>
          <core-threads count="50"/>
          <queue-length count="50"/>
          <max-threads count="50"/>
          <keepalive-time time="10" unit="seconds"/>
        </short-running-threads>
        <long-running-threads>
          <core-threads count="50"/>
          <queue-length count="50"/>
          <max-threads count="50"/>
          <keepalive-time time="10" unit="seconds"/>
        </long-running-threads>
      </default-workmanager>
      <cached-connection-manager/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:jdr:1.0"/>
    <subsystem xmlns="urn:jboss:domain:jmx:1.3">
      <expose-resolved-model/>
      <expose-expression-model/>
      <remoting-connector/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:messaging:1.4">
      <hornetq-server>
        <persistence-enabled>true</persistence-enabled>
        <security-enabled>false</security-enabled>
        <journal-type>NIO</journal-type>
        <journal-min-files>2</journal-min-files>

        <connectors>
          <netty-connector name="netty" socket-binding="messaging"/>
          <netty-connector name="netty-throughput" socket-binding="messaging-
throughput">
            <param key="batch-delay" value="50"/>
          </netty-connector>
          <in-vm-connector name="in-vm" server-id="0"/>
        </connectors>

        <acceptors>
          <netty-acceptor name="netty" socket-binding="messaging"/>
          <netty-acceptor name="netty-throughput" socket-binding="messaging-
throughput">
            <param key="batch-delay" value="50"/>
            <param key="direct-deliver" value="false"/>
          </netty-acceptor>
          <in-vm-acceptor name="in-vm" server-id="0"/>
```

```
        </acceptors>

        <security-settings>
          <security-setting match="#">
            <permission type="send" roles="guest"/>
            <permission type="consume" roles="guest"/>
            <permission type="createNonDurableQueue" roles="guest"/>
            <permission type="deleteNonDurableQueue" roles="guest"/>
          </security-setting>
        </security-settings>

        <address-settings>
          <address-setting match="#">
            <dead-letter-address>jms.queue.DLQ</dead-letter-address>
            <expiry-address>jms.queue.ExpiryQueue</expiry-address>
            <redelivery-delay>0</redelivery-delay>
            <max-size-bytes>10485760</max-size-bytes>
            <page-size-bytes>2097152</page-size-bytes>
            <address-full-policy>PAGE</address-full-policy>
            <message-counter-history-day-limit>10</message-counter-history-day-
limit>
          </address-setting>
          <!-- in case of db failure we don't want to loose messages because we
could not set index status to red -->
          <address-setting match="jms.queue.queue/cm6-index">
            <redelivery-delay>60000</redelivery-delay> <!-- 60 seconds -->
            <max-delivery-attempts>-1</max-delivery-attempts> <!-- infinite times
-->
          </address-setting>
          <!-- in case of db failure we don't want to loose messages because we
could not update custom mail redelivery flag  -->
          <address-setting match="jms.queue.queue/cm6-mail">
            <redelivery-delay>60000</redelivery-delay> <!-- 60 seconds -->
            <max-delivery-attempts>-1</max-delivery-attempts> <!-- infinite times
-->
          </address-setting>
        </address-settings>

        <jms-connection-factories>
          <connection-factory name="InVmConnectionFactory">
            <connectors>
              <connector-ref connector-name="in-vm"/>
            </connectors>
            <entries>
              <entry name="java:/ConnectionFactory"/>
            </entries>
          </connection-factory>
          <connection-factory name="RemoteConnectionFactory">
            <connectors>
              <connector-ref connector-name="netty"/>
            </connectors>
            <entries>
              <entry name="java:jboss/exported/jms/RemoteConnectionFactory"/>
            </entries>
          </connection-factory>
```

```
          <pooled-connection-factory name="hornetq-ra">
            <transaction mode="xa"/>
            <connectors>
              <connector-ref connector-name="in-vm"/>
            </connectors>
            <entries>
              <entry name="java:/JmsXA"/>
            </entries>
          </pooled-connection-factory>
        </jms-connection-factories>

        <jms-destinations>
          <jms-queue name="queue/cm6-index">
            <entry name="java:/queue/cm6-index"/>
            <durable>true</durable>
          </jms-queue>
          <jms-queue name="queue/cm6-mail">
            <entry name="java:/queue/cm6-mail"/>
            <durable>true</durable>
          </jms-queue>
          <jms-topic name="topic/cm6-event">
            <entry name="java:/topic/cm6-event"/>
          </jms-topic>
        </jms-destinations>
      </hornetq-server>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:naming:1.4">
      <remote-naming/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:remoting:1.1">
      <connector name="remoting-connector" socket-binding="remoting" security-
realm="ApplicationRealm"/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:resource-adapters:1.1"/>
    <subsystem xmlns="urn:jboss:domain:sar:1.0"/>
    <subsystem xmlns="urn:jboss:domain:security:1.2">
      <security-domains>
        <security-domain name="other" cache-type="default">
          <authentication>
            <login-module code="Remoting" flag="optional">
              <module-option name="password-stacking" value="useFirstPass"/>
            </login-module>
            <login-module code="RealmDirect" flag="required">
              <module-option name="password-stacking" value="useFirstPass"/>
            </login-module>
          </authentication>
        </security-domain>
        <security-domain name="jboss-web-policy" cache-type="default">
          <authorization>
            <policy-module code="Delegating" flag="required"/>
          </authorization>
        </security-domain>
        <security-domain name="jboss-ejb-policy" cache-type="default">
          <authorization>
            <policy-module code="Delegating" flag="required"/>
```

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          </authorization>
        </security-domain>
      </security-domains>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:transactions:1.4">
      <core-environment>
        <process-id>
          <uuid/>
        </process-id>
      </core-environment>
      <recovery-environment socket-binding="txn-recovery-environment" status-
socket-binding="txn-status-manager"/>
      <coordinator-environment default-timeout="300"/>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:web:1.5" default-virtual-server="default-
host" native="false">
      <connector name="http" protocol="HTTP/1.1" scheme="http" socket-
binding="http"/>
      <virtual-server name="default-host" enable-welcome-root="false">
        <alias name="localhost"/>
      </virtual-server>
    </subsystem>
    <subsystem xmlns="urn:jboss:domain:logging:1.3">
      <size-rotating-file-handler name="FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="server.log"/>
        <append value="true"/>
        <level name="INFO"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="CMWEB_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="cmweb.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="CMRF_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="cmrf.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
```

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      </size-rotating-file-handler>

      <size-rotating-file-handler name="SQL_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="sql.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="ERROR_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="errors.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <level name="ERROR"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="SUPPORT_LIBS_ERROR_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="support_libs_errors.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <level name="ERROR"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="APPCTX_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="ctx.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="MAIL_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="mail.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
```

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{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="TX_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="tx.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="INDEX_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="index.log"/>
        <append value="true"/>
        <level name="INFO"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="INDEX_DAO_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="index.log"/>
        <append value="true"/>
        <level name="INFO"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="SESSION" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="session.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="WORKFLOW" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="workflow.log"/>
        <append value="true"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
```

```
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="TIMER_MANAGER_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="timer-manager.log"/>
        <append value="true"/>
        <level name="DEBUG"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <size-rotating-file-handler name="HIBERNATE_FILE" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="hibernate.log"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <append value="true"/>
      </size-rotating-file-handler>

      <!-- ============================== -->
      <!-- Append messages to the console -->
      <!-- ============================== -->

      <console-handler name="CONSOLE">
        <level name="INFO"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </console-handler>


      <!-- CM -->

      <!-- Our own classes-->
      <logger category="com.consol">
        <level name="INFO"/>
      </logger>

      <logger category="com.consol.cmas.core.security">
        <level name="INFO"/>
      </logger>

      <logger category="com.consol.cmas.core.dao.hibernate.util">
        <level name="INFO"/>
      </logger>

      <logger
```

```
category="com.consol.cmas.core.index.jms.ConnectionRefreshingDefaultMessageListene
rContainer">
        <level name="WARN"/>
      </logger>

      <!-- CM/Web -->
      <logger category="com.consol.cmweb">
        <level name="INFO"/>
        <handlers>
          <handler name="ERROR_FILE"/>
          <handler name="CMWEB_FILE"/>
        </handlers>
      </logger>

      <!-- CMRF -->
      <logger category="com.consol.cmrf">
        <level name="INFO"/>
        <handlers>
          <handler name="CMRF_FILE"/>
          <handler name="ERROR_FILE"/>
        </handlers>
      </logger>

      <logger category="MAIL" use-parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="MAIL_FILE"/>
        </handlers>
      </logger>

      <!-- ================================================================-->
      <!-- Hibernate -->
      <logger category="org.hibernate">
        <level name="INFO"/>
      </logger>

      <logger category="org.hibernate.util">
        <level name="ERROR"/>
      </logger>

      <logger category="org.hibernate.tool">
        <level name="ERROR"/>
      </logger>

      <!-- Set this to DEBUG for debugging SQL statements coming from hibernate --
>
      <logger category="org.hibernate.SQL" use-parent-handlers="false">
        <!-- Show SQL-->
        <level name="INFO"/>
        <handlers>
          <handler name="SQL_FILE"/>
        </handlers>
      </logger>

      <logger category="org.hibernate.type" use-parent-handlers="false">
```

```
        <!-- Show types used in SQL selects as well-->
        <level name="INFO"/>
        <handlers>
          <handler name="SQL_FILE"/>
        </handlers>
      </logger>

      <logger category="org.hibernate.cfg" use-parent-handlers="false">
        <!-- Show types used in SQL selects as well-->
        <level name="WARN"/>
      </logger>

      <logger category="org.infinispan.jmx">
        <level name="WARN"/>
      </logger>

      <!-- ================================================================-->
      <!-- Spring -->
      <logger category="org.springframework">
        <level name="INFO"/>
      </logger>

      <logger category="org.springmodules">
        <level name="INFO"/>
      </logger>

      <logger category="org.springframework.context" use-parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="APPCTX_FILE"/>
        </handlers>
      </logger>

      <logger category="org.springframework.transaction" use-parent-
handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="TX_FILE"/>
        </handlers>
      </logger>

      <logger category="org.springframework.beans.factory" use-parent-
handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="APPCTX_FILE"/>
          <handler name="ERROR_FILE"/>
        </handlers>
      </logger>

      <logger category="org.acegisecurity">
        <level name="INFO"/>
      </logger>

      <!-- skip automatic logging of runtime exceptions for remote applications --
```

```
>
      <logger
category="com.consol.cmas.app.admin.servlet.AdminExtendedHttpInvokerServiceExporte
r">
        <level name="INFO"/>
      </logger>
      <logger
category="com.consol.cmas.app.workflow.servlet.WorkflowExtendedHttpInvokerServiceE
xporter">
        <level name="INFO"/>
      </logger>
      <logger
category="org.springframework.remoting.support.RemoteInvocationTraceInterceptor">
        <level name="ERROR"/>
      </logger>

      <!-- ================================================================== -->
      <!-- index -->
      <logger category="com.consol.cmas.core.index" use-parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="INDEX_FILE"/>
        </handlers>
      </logger>

      <logger
category="com.consol.cmas.core.dao.hibernate.IndexUpdateTaskDaoHibernate" use-
parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="INDEX_DAO_FILE"/>
        </handlers>
      </logger>

      <!-- ================================================================== -->
      <!-- workflow -->
      <logger category="com.consol.cmas.workflow.engine.exe.event.TimerManager"
use-parent-handlers="false">
        <level name="DEBUG"/>
        <handlers>
          <handler name="TIMER_MANAGER_FILE"/>
        </handlers>
      </logger>

      <!-- ================================================================== -->
      <!-- Further support libs: -->
      <logger category="org.jnp.interfaces.NamingContext">
        <level name="INFO"/>
      </logger>

      <!-- Limit the com.sun category to INFO as its FINE is verbose -->
      <logger category="com.sun">
        <level name="INFO"/>
      </logger>
```

```
        <!-- Limit the sun category to INFO as its FINE is verbose -->
        <logger category="sun">
          <level name="INFO"/>
        </logger>

        <!-- Limit the javax.xml.bind category to INFO as its FINE is verbose -->
        <logger category="javax.xml.bind">
          <level name="INFO"/>
        </logger>

        <!-- Limit the javax.activation category to INFO as its FINE is verbose -->
        <logger category="javax.activation">
          <level name="INFO"/>
        </logger>

        <!-- Limit JBoss categories
        <logger category="org.jboss">
          <level name="INFO"/>
        </logger>
        -->

        <!-- Limit the JSR77 categories -->
        <logger category="org.jboss.management">
          <level name="INFO"/>
        </logger>

        <!-- Limit the verbose facelets compiler -->
        <logger category="facelets.compiler">
          <level name="WARN"/>
        </logger>

        <!-- Limit the verbose ajax4jsf cache initialization -->
        <logger category="org.ajax4jsf.cache">
          <level name="WARN"/>
        </logger>

        <!-- Limit the verbose embedded jopr categories -->
        <logger category="org.rhq">
          <level name="WARN"/>
        </logger>

        <!-- Limit the verbose seam categories -->
        <logger category="org.jboss.seam">
          <level name="WARN"/>
        </logger>

        <!-- Limit dozer output -->
        <logger category="org.dozer">
          <level name="WARN"/>
        </logger>

        <!-- Limit the org.apache logger to INFO as its DEBUG is verbose -->
        <logger category="org.apache">
          <level name="INFO"/>
        </logger>
```

```
<!-- Limit apache axis to INFO as its DEBUG is even more verbose -->
<logger category="org.apache.axis" use-parent-handlers="false">
  <level name="INFO"/>
</logger>

<logger category="org.compass">
  <level name="INFO"/>
</logger>

<logger category="org.jboss">
  <level name="INFO"/>
</logger>

<logger category="org.jboss.as.server.deployment">
  <level name="ERROR"/>
</logger>

<logger category="com.arjuna">
  <level name="INFO"/>
</logger>

<logger category="org.jboss.logging">
  <level name="INFO"/>
</logger>

<logger category="org.jboss.ha">
  <level name="INFO"/>
</logger>

<!-- ================================================================= -->
<!-- Keep chatty support libraries as silent as possible -->

<!-- Limit the org.jgroups logger to WARN as its INFO is verbose -->
<logger category="org.jgroups">
  <level name="WARN"/>
</logger>

<logger category="org.apache.pdfbox">
  <level name="WARN"/>
</logger>

<logger category="org.apache.velocity" use-parent-handlers="false">
  <level name="WARN"/>
</logger>

<logger category="org.quartz">
  <level name="WARN"/>
</logger>

<logger category="org.apache.wicket.protocol.http.WicketURLDecoder">
  <level name="ERROR"/>
</logger>

<logger category="org.apache.wicket.protocol.http.RequestLogger">
```

```
        <level name="ERROR"/>
      </logger>

      <logger category="org.apache.jackrabbit">
        <level name="WARN"/>
      </logger>

      <!-- ================================================================ -->
      <!-- Errors which are thrown by support libs but are properly handled
           by our application are written to a separate log file in order
           to keep the server.log clean -->
      <logger category="org.hibernate.event.def.AbstractFlushingEventListener"
use-parent-handlers="true">
        <level name="ERROR"/>
        <handlers>
          <handler name="SUPPORT_LIBS_ERROR_FILE"/>
        </handlers>
      </logger>

      <logger category="sessionTimeoutEngineerLogger" use-parent-handlers="true">
        <level name="INFO"/>
        <handlers>
          <handler name="SESSION"/>
        </handlers>
      </logger>

      <logger category="com.consol.cmweb.client.webapp.CmWebSession" use-parent-
handlers="true">
        <level name="INFO"/>
        <handlers>
          <handler name="SESSION"/>
        </handlers>
      </logger>

      <logger
category="org.hibernate.engine.StatefulPersistenceContext.ProxyWarnLog" use-
parent-handlers="true">
        <level name="ERROR"/>
      </logger>

      <logger category="com.consol.cmas.workflow" use-parent-handlers="true">
        <level name="INFO"/>
        <handlers>
          <handler name="WORKFLOW"/>
          <handler name="ERROR_FILE"/>
        </handlers>
      </logger>

      <logger
category="com.consol.cmas.core.server.internal.workflow.DefaultWorkflowEventListen
er" use-parent-handlers="true">
        <level name="INFO"/>
        <handlers>
          <handler name="WORKFLOW"/>
          <handler name="ERROR_FILE"/>
```

```
        </handlers>
      </logger>

      <!-- managing issue with logs entries like INFO  [
java.sql.DatabaseMetaData] [-] HHH000262: Table not found: -->
      <logger category="java.sql.DatabaseMetaData" use-parent-handlers="false">
        <level name="INFO"/>
        <handlers>
          <handler name="HIBERNATE_FILE"/>
        </handlers>
      </logger>

      <root-logger>
        <handlers>
          <handler name="CONSOLE"/>
          <handler name="FILE"/>
          <handler name="ERROR_FILE"/>
        </handlers>
      </root-logger>

      <!-- Clustering logging -->
      <!-- Uncomment the following to redirect the org.jgroups and
         org.jboss.ha categories to a cluster.log file.
      <size-rotating-file-handler name="CLUSTER" autoflush="true">
        <file relative-to="jboss.server.log.dir" path="cluster.log"/>
        <append value="true"/>
        <level name="INFO"/>
        <rotate-size value="300m"/>
        <max-backup-index value="6"/>
        <formatter>
          <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
        </formatter>
      </size-rotating-file-handler>

      <logger category="org.jgroups">
        <level name="DEBUG"/>
        <handlers>
          <handler name="CLUSTER"/>
        </handlers>
      </logger>

      <logger category="org.jboss.ha">
        <level name="DEBUG"/>
        <handlers>
          <handler name="CLUSTER"/>
        </handlers>
      </logger>
      -->

    </subsystem>
  </profile>

  <interfaces>
    <interface name="management">
```

```
      <inet-address value="${jboss.bind.address.management:127.0.0.1}"/>
    </interface>
    <interface name="public">
      <inet-address value="${jboss.bind.address:127.0.0.1}"/>
    </interface>
    <interface name="unsecure">
      <inet-address value="${jboss.bind.address.unsecure:127.0.0.1}"/>
    </interface>
  </interfaces>

  <socket-binding-group name="standard-sockets" default-interface="public" port-
offset="${jboss.socket.binding.port-offset:0}">
    <socket-binding name="management-native" interface="management"
port="${jboss.management.native.port:9999}"/>
    <socket-binding name="management-http" interface="management"
port="${jboss.management.http.port:9990}"/>
    <socket-binding name="management-https" interface="management"
port="${jboss.management.https.port:9443}"/>
    <socket-binding name="ajp" port="8009"/>
    <socket-binding name="http" port="8080"/>
    <socket-binding name="https" port="8443"/>
    <socket-binding name="messaging" port="5445"/>
    <socket-binding name="messaging-group" port="0" multicast-
address="${jboss.messaging.group.address:231.7.7.7}" multicast-
port="${jboss.messaging.group.port:9876}"/>
    <socket-binding name="messaging-throughput" port="5455"/>
    <socket-binding name="remoting" port="4447"/>
    <socket-binding name="txn-recovery-environment" port="4712"/>
    <socket-binding name="txn-status-manager" port="4713"/>
    <outbound-socket-binding name="mail-smtp">
      <remote-destination host="localhost" port="25"/>
    </outbound-socket-binding>
  </socket-binding-group>

</server>
```

Code example 10: *cm6-cmrf.xml for JBoss with MySQL*

F.1.3 cmrf.xml

`cmrf.xml` is the main configuration file for CMRF in standalone mode. The content of the file depends on the used application server, database system and ConSol CM version. You should always use the file from the distribution which you are installing.

You need to edit `cmrf.xml` to enter the following information:

- user name and password of the CMRF database user
- URL of the database connection

This information needs to be provided for two data sources:

- xa-datasource jndi-name="java:/jdbc/CmDS"
- datasource jta="false" jndi-name="java:/jdbc/CmDS-no-tx"

The relevant places are highlighted in red in the following example file.

In addition, `cmrf.xml` is used to configure logging for CMRF, see Configuring Logging for JBoss or Configuring Logging for WebLogic.

> ⚠ The exact content of the configuration file depends on the used application server, database system and ConSol CM version. Always use the file from the distribution which you are installing. Do not copy & paste from this manual or from other installations.

```
<?xml version='1.0' encoding='UTF-8'?>

<server xmlns="urn:jboss:domain:1.5">
    <extensions>
        <extension module="org.jboss.as.connector"/>
        <extension module="org.jboss.as.deployment-scanner"/>
        <extension module="org.jboss.as.ee"/>
        <extension module="org.jboss.as.jdr"/>
        <extension module="org.jboss.as.jmx"/>
        <extension module="org.jboss.as.logging"/>
        <extension module="org.jboss.as.messaging"/>
        <extension module="org.jboss.as.naming"/>
        <extension module="org.jboss.as.remoting"/>
        <extension module="org.jboss.as.security"/>
        <extension module="org.jboss.as.transactions"/>
        <extension module="org.jboss.as.web"/>
    </extensions>
    <management>
        <security-realms>
            <security-realm name="ManagementRealm">
                <authentication>
                    <local default-user="$local"/>
                    <properties path="mgmt-users.properties" relative-
to="jboss.server.config.dir"/>
                </authentication>
                <authorization map-groups-to-roles="false">
                    <properties path="mgmt-groups.properties" relative-
to="jboss.server.config.dir"/>
                </authorization>
            </security-realm>
```

```
            <security-realm name="ApplicationRealm">
                <authentication>
                    <local default-user="$local" allowed-users="*"/>
                    <properties path="application-users.properties" relative-
to="jboss.server.config.dir"/>
                </authentication>
                <authorization>
                    <properties path="application-roles.properties" relative-
to="jboss.server.config.dir"/>
                </authorization>
            </security-realm>
        </security-realms>
        <audit-log>
            <formatters>
                <json-formatter name="json-formatter"/>
            </formatters>
            <handlers>
                <file-handler name="file" formatter="json-formatter" relative-
to="jboss.server.data.dir" path="audit-log.log"/>
            </handlers>
            <logger log-boot="true" log-read-only="false" enabled="false">
                <handlers>
                    <handler name="file"/>
                </handlers>
            </logger>
        </audit-log>
        <management-interfaces>
            <native-interface security-realm="ManagementRealm">
                <socket-binding native="management-native"/>
            </native-interface>
            <http-interface security-realm="ManagementRealm">
                <socket-binding http="management-http"/>
            </http-interface>
        </management-interfaces>
        <access-control provider="simple">
            <role-mapping>
                <role name="SuperUser">
                    <include>
                        <user name="$local"/>
                    </include>
                </role>
            </role-mapping>
        </access-control>
    </management>
    <profile>
        <subsystem xmlns="urn:jboss:domain:datasources:1.1">
            <datasources>
                <xa-datasource jndi-name="java:/jdbc/CmrfDS" pool-
name="jdbc/CmrfDS" enabled="true" use-java-context="true" use-ccm="true">
                    <recovery no-recovery="true" />
                    <driver>mysql-driver</driver>
                    <xa-datasource-property
name="URL">jdbc:mysql://localhost/cmrf</xa-datasource-property>
                    <security>
                        <user-name>cmrf</user-name>
```

```
                        <password>consol</password>
                    </security>
                    <xa-pool>
                        <min-pool-size>5</min-pool-size>
                        <max-pool-size>200</max-pool-size>
                        <prefill>true</prefill>
                        <wrap-xa-resource>false</wrap-xa-resource>
                    </xa-pool>
                    <statement>
                        <prepared-statement-cache-size>32</prepared-statement-
cache-size>
                        <share-prepared-statements>true</share-prepared-
statements>
                    </statement>
                    <validation>
                      <valid-connection-checker class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLValidConnectionChecker"/>
                      <exception-sorter class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLExceptionSorter"/>
                      <background-validation>true</background-validation>
                      <background-validation-millis>60000</background-validation-
millis>
                      <validate-on-match>false</validate-on-match>
                    </validation>
                    <timeout>
                        <idle-timeout-minutes>5</idle-timeout-minutes>
                    </timeout>
                    <transaction-isolation>TRANSACTION_READ_
COMMITTED</transaction-isolation>
                    <xa-datasource-
class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-datasource-class>
                    <xa-datasource-property name="UseCursorFetch">true</xa-
datasource-property>
                    <xa-datasource-property name="DefaultFetchSize">100</xa-
datasource-property>
                    <xa-datasource-property name="socketTimeout">180000</xa-
datasource-property>
                </xa-datasource>
                <datasource jta="false" jndi-name="java:/jdbc/CmrfDS-no-tx" pool-
name="jdbc/CmrfDS-no-tx" enabled="true" use-java-context="true" use-ccm="true">
                    <driver>mysql-driver</driver>
                    <connection-url>jdbc:mysql://localhost/cmrf</connection-url>
                    <security>
                        <user-name>cmrf</user-name>
                        <password>consol</password>
                    </security>
                    <pool>
                        <min-pool-size>5</min-pool-size>
                        <max-pool-size>200</max-pool-size>
                        <prefill>true</prefill>
                    </pool>
                    <statement>
                        <prepared-statement-cache-size>32</prepared-statement-
cache-size>
                        <share-prepared-statements>true</share-prepared-
```

```
statements>
                    </statement>
                    <validation>
                      <valid-connection-checker class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLValidConnectionChecker"/>
                      <exception-sorter class-
name="org.jboss.jca.adapters.jdbc.extensions.mysql.MySQLExceptionSorter"/>
                      <background-validation>true</background-validation>
                      <background-validation-millis>60000</background-validation-
millis>
                      <validate-on-match>false</validate-on-match>
                    </validation>
                    <timeout>
                        <idle-timeout-minutes>5</idle-timeout-minutes>
                    </timeout>
                    <driver-class>com.mysql.jdbc.Driver</driver-class>
                    <connection-property name="useCursorFetch">true</connection-
property>
                    <connection-property name="defaultFetchSize">100</connection-
property>
                    <connection-property name="socketTimeout">180000</connection-
property>
                </datasource>
                <drivers>
                    <driver name="mysql-driver" module="com.mysql.jdbc">
                        <driver-class>com.mysql.jdbc.Driver</driver-class>
                        <xa-datasource-
class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-datasource-class>
                    </driver>
                </drivers>
            </datasources>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:deployment-scanner:1.1">
            <deployment-scanner path="deployments" relative-
to="jboss.server.base.dir" scan-interval="0" auto-deploy-exploded="false"/>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:ee:1.1">
            <spec-descriptor-property-replacement>false</spec-descriptor-property-
replacement>
            <jboss-descriptor-property-replacement>true</jboss-descriptor-
property-replacement>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:jca:1.1">
            <archive-validation enabled="true" fail-on-error="true" fail-on-
warn="false"/>
            <bean-validation enabled="true"/>
            <default-workmanager>
                <short-running-threads>
                    <core-threads count="50"/>
                    <queue-length count="50"/>
                    <max-threads count="50"/>
                    <keepalive-time time="10" unit="seconds"/>
                </short-running-threads>
                <long-running-threads>
                    <core-threads count="50"/>
```

```
                    <queue-length count="50"/>
                    <max-threads count="50"/>
                    <keepalive-time time="10" unit="seconds"/>
                </long-running-threads>
            </default-workmanager>
            <cached-connection-manager/>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:jdr:1.0"/>
        <subsystem xmlns="urn:jboss:domain:jmx:1.3">
            <expose-resolved-model/>
            <expose-expression-model/>
            <remoting-connector/>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:messaging:1.4">
            <hornetq-server>
                <persistence-enabled>true</persistence-enabled>
                <security-enabled>false</security-enabled>
                <journal-type>NIO</journal-type>
                <journal-min-files>2</journal-min-files>
                <connectors>
                    <netty-connector name="netty" socket-binding="messaging"/>
                    <netty-connector name="netty-throughput" socket-
binding="messaging-throughput">
                        <param key="batch-delay" value="50"/>
                    </netty-connector>
                    <in-vm-connector name="in-vm" server-id="0"/>
                </connectors>
                <acceptors>
                    <netty-acceptor name="netty" socket-binding="messaging"/>
                    <netty-acceptor name="netty-throughput" socket-
binding="messaging-throughput">
                        <param key="batch-delay" value="50"/>
                        <param key="direct-deliver" value="false"/>
                    </netty-acceptor>
                    <in-vm-acceptor name="in-vm" server-id="0"/>
                </acceptors>
                <security-settings>
                    <security-setting match="#">
                        <permission type="send" roles="guest"/>
                        <permission type="consume" roles="guest"/>
                        <permission type="createNonDurableQueue" roles="guest"/>
                        <permission type="deleteNonDurableQueue" roles="guest"/>
                    </security-setting>
                </security-settings>
                <address-settings>
                    <!--default for catch all-->
                    <address-setting match="#">
                        <dead-letter-address>jms.queue.DLQ</dead-letter-address>
                        <expiry-address>jms.queue.ExpiryQueue</expiry-address>
                        <redelivery-delay>0</redelivery-delay>
                        <max-delivery-attempts>-1</max-delivery-attempts>
                        <max-size-bytes>10485760</max-size-bytes>
                        <address-full-policy>PAGE</address-full-policy>
                        <page-size-bytes>2097152</page-size-bytes>
                        <message-counter-history-day-limit>10</message-counter-
```

```
history-day-limit>
                    </address-setting>
                </address-settings>
                <jms-connection-factories>
                    <connection-factory name="InVmConnectionFactory">
                        <connectors>
                            <connector-ref connector-name="in-vm"/>
                        </connectors>
                        <entries>
                            <entry name="java:/ConnectionFactory"/>
                        </entries>
                    </connection-factory>
                    <connection-factory name="RemoteConnectionFactory">
                        <connectors>
                            <connector-ref connector-name="netty"/>
                        </connectors>
                        <entries>
                            <entry
name="java:jboss/exported/jms/RemoteConnectionFactory"/>
                        </entries>
                    </connection-factory>
                    <pooled-connection-factory name="hornetq-ra">
                        <transaction mode="xa"/>
                        <connectors>
                            <connector-ref connector-name="in-vm"/>
                        </connectors>
                        <entries>
                            <entry name="java:/JmsXA"/>
                        </entries>
                    </pooled-connection-factory>
                </jms-connection-factories>
                <jms-destinations>
                </jms-destinations>
            </hornetq-server>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:naming:1.4">
            <remote-naming/>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:remoting:1.1">
            <connector name="remoting-connector" socket-binding="remoting"/>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:resource-adapters:1.1"/>
        <subsystem xmlns="urn:jboss:domain:security:1.2">
            <security-domains>
                <security-domain name="other" cache-type="default">
                    <authentication>
                        <login-module code="Remoting" flag="optional">
                            <module-option name="password-stacking"
value="useFirstPass"/>
                        </login-module>
                        <login-module code="RealmDirect" flag="required">
                            <module-option name="password-stacking"
value="useFirstPass"/>
                        </login-module>
                    </authentication>
```

```
                </security-domain>
                <security-domain name="jboss-web-policy" cache-type="default">
                    <authorization>
                        <policy-module code="Delegating" flag="required"/>
                    </authorization>
                </security-domain>
                <security-domain name="jboss-ejb-policy" cache-type="default">
                    <authorization>
                        <policy-module code="Delegating" flag="required"/>
                    </authorization>
                </security-domain>
            </security-domains>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:transactions:1.4">
            <core-environment>
                <process-id>
                    <uuid/>
                </process-id>
            </core-environment>
            <recovery-environment socket-binding="txn-recovery-environment"
status-socket-binding="txn-status-manager"/>
            <coordinator-environment default-timeout="300"/>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:web:1.5" default-virtual-
server="default-host" native="false">
            <connector name="http" protocol="HTTP/1.1" scheme="http" socket-
binding="http"/>
            <virtual-server name="default-host" enable-welcome-root="true">
                <alias name="localhost"/>
            </virtual-server>
        </subsystem>
        <subsystem xmlns="urn:jboss:domain:logging:1.3">
          <size-rotating-file-handler name="FILE" autoflush="true">
            <file relative-to="jboss.server.log.dir" path="server.log"/>
            <append value="true"/>
            <level name="INFO"/>
            <rotate-size value="300m"/>
            <max-backup-index value="6"/>
            <formatter>
              <pattern-formatter pattern="%d %-5.5p [%30.-30c] %m%n"/>
            </formatter>
          </size-rotating-file-handler>

          <size-rotating-file-handler name="CMRF_FILE" autoflush="true">
            <file relative-to="jboss.server.log.dir" path="cmrf.log"/>
            <append value="true"/>
            <level name="INFO"/>
            <rotate-size value="300m"/>
            <max-backup-index value="6"/>
            <formatter>
              <pattern-formatter pattern="%d %-5.5p [%30.-30c] %m%n"/>
            </formatter>
          </size-rotating-file-handler>

          <!-- Appender for SQL statements only -->
```

```
          <size-rotating-file-handler name="SQL_FILE" autoflush="true">
            <file relative-to="jboss.server.log.dir" path="sql.log"/>
            <append value="true"/>
            <rotate-size value="300m"/>
            <max-backup-index value="6"/>
            <formatter>
              <pattern-formatter pattern="%d %-5.5p [%30.-30c] %m%n"/>
            </formatter>
          </size-rotating-file-handler>

          <size-rotating-file-handler name="ERROR_FILE" autoflush="true">
            <file relative-to="jboss.server.log.dir" path="errors.log"/>
            <append value="true"/>
            <rotate-size value="300m"/>
            <max-backup-index value="6"/>
            <level name="ERROR"/>
            <formatter>
              <pattern-formatter pattern="%d %-5.5p [%30.-30c] %m%n"/>
            </formatter>
          </size-rotating-file-handler>

          <size-rotating-file-handler name="SUPPORT_LIBS_ERROR_FILE"
autoflush="true">
            <file relative-to="jboss.server.log.dir" path="support_libs_
errors.log"/>
            <append value="true"/>
            <rotate-size value="300m"/>
            <max-backup-index value="6"/>
            <level name="ERROR"/>
            <formatter>
              <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
            </formatter>
          </size-rotating-file-handler>

          <size-rotating-file-handler name="APPCTX_FILE" autoflush="true">
            <file relative-to="jboss.server.log.dir" path="ctx.log"/>
            <append value="true"/>
            <rotate-size value="300m"/>
            <max-backup-index value="6"/>
            <formatter>
              <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
            </formatter>
          </size-rotating-file-handler>

          <size-rotating-file-handler name="TX_FILE" autoflush="true">
            <file relative-to="jboss.server.log.dir" path="tx.log"/>
            <append value="true"/>
            <rotate-size value="300m"/>
            <max-backup-index value="6"/>
            <formatter>
              <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
            </formatter>
```

```
          </size-rotating-file-handler>

            <size-rotating-file-handler name="HIBERNATE_FILE" autoflush="true">
                <file relative-to="jboss.server.log.dir" path="hibernate.log"/>
                <rotate-size value="300m"/>
                <max-backup-index value="6"/>
                <append value="true"/>
            </size-rotating-file-handler>

          <console-handler name="CONSOLE">
            <level name="INFO"/>
            <formatter>
              <pattern-formatter pattern="%d %-5.5p [%30.-30c] [%X{username}-%X
{context}-%X{sessionId}] %m%n"/>
            </formatter>
          </console-handler>

          <!-- CM -->

          <!-- Our own classes-->
          <logger category="com.consol">
            <level name="INFO"/>
          </logger>

          <!-- CMRF -->
          <logger category="com.consol.cmrf">
            <level name="INFO"/>
            <handlers>
              <handler name="CMRF_FILE"/>
              <handler name="ERROR_FILE"/>
            </handlers>
          </logger>

          <!-- ====================================================================--
>
          <!-- Hibernate -->
          <logger category="org.hibernate">
            <level name="INFO"/>
          </logger>

          <logger category="org.hibernate.util">
            <level name="ERROR"/>
          </logger>

          <logger category="org.hibernate.tool">
            <level name="ERROR"/>
          </logger>

          <!-- Set this to DEBUG for debugging SQL statements coming from
hibernate -->
          <logger category="org.hibernate.SQL" use-parent-handlers="false">
            <!-- Show SQL-->
            <level name="INFO"/>
            <handlers>
              <handler name="SQL_FILE"/>
```

```
            </handlers>
          </logger>

          <logger category="org.hibernate.type" use-parent-handlers="false">
            <!-- Show types used in SQL selects as well-->
            <level name="INFO"/>
            <handlers>
              <handler name="SQL_FILE"/>
            </handlers>
          </logger>

          <logger category="org.hibernate.cfg" use-parent-handlers="false">
            <!-- Show types used in SQL selects as well-->
            <level name="WARN"/>
          </logger>

          <logger category="org.infinispan.jmx">
            <level name="WARN"/>
          </logger>

          <!-- ======================================================================--
>
          <!-- Spring -->
          <logger category="org.springframework">
            <level name="INFO"/>
          </logger>

          <logger category="org.springmodules">
            <level name="INFO"/>
          </logger>

          <logger category="org.springframework.context" use-parent-
handlers="false">
            <level name="INFO"/>
            <handlers>
              <handler name="APPCTX_FILE"/>
            </handlers>
          </logger>

          <logger category="org.springframework.transaction" use-parent-
handlers="false">
            <level name="INFO"/>
            <handlers>
              <handler name="TX_FILE"/>
            </handlers>
          </logger>

          <logger category="org.springframework.beans.factory" use-parent-
handlers="false">
            <level name="INFO"/>
            <handlers>
              <handler name="APPCTX_FILE"/>
              <handler name="ERROR_FILE"/>
            </handlers>
          </logger>
```

```
          <logger category="org.acegisecurity">
            <level name="INFO"/>
          </logger>

          <!-- ======================================================================
-->
          <!-- Further support libs: -->
          <!-- Limit the org.apache logger to INFO as its DEBUG is verbose -->
          <logger category="org.apache">
            <level name="INFO"/>
          </logger>

          <!-- Limit apache axis to INFO as its DEBUG is even more verbose -->
          <logger category="org.apache.axis" use-parent-handlers="false">
            <level name="INFO"/>
          </logger>

          <logger category="org.jboss">
            <level name="INFO"/>
          </logger>

          <logger category="org.jboss.as.server.deployment">
            <level name="ERROR"/>
          </logger>

          <logger category="com.arjuna">
            <level name="INFO"/>
          </logger>

          <logger category="org.jboss.logging">
            <level name="INFO"/>
          </logger>

          <logger category="org.jboss.ha">
            <level name="INFO"/>
          </logger>

            <!-- managing issue with logs entries like INFO  [
java.sql.DatabaseMetaData] [-] HHH000262: Table not found: -->
            <logger category="java.sql.DatabaseMetaData" use-parent-
handlers="false">
                <level name="INFO"/>
                <handlers>
                    <handler name="HIBERNATE_FILE"/>
                </handlers>
            </logger>

          <root-logger>
            <handlers>
              <handler name="CONSOLE"/>
              <handler name="FILE"/>
              <handler name="ERROR_FILE"/>
            </handlers>
          </root-logger>
```

```
        </subsystem>
    </profile>
    <interfaces>
        <interface name="management">
            <inet-address value="${jboss.bind.address.management:127.0.0.1}"/>
        </interface>
        <interface name="public">
            <inet-address value="${jboss.bind.address:127.0.0.1}"/>
        </interface>
    </interfaces>
    <socket-binding-group name="standard-sockets" default-interface="public" port-
offset="${jboss.socket.binding.port-offset:0}">
        <socket-binding name="management-native" interface="management"
port="${jboss.management.native.port:9999}"/>
        <socket-binding name="management-http" interface="management"
port="${jboss.management.http.port:9990}"/>
        <socket-binding name="management-https" interface="management"
port="${jboss.management.https.port:9443}"/>
        <socket-binding name="ajp" port="8009"/>
        <socket-binding name="http" port="8080"/>
        <socket-binding name="https" port="8443"/>
        <socket-binding name="messaging" port="5445"/>
        <socket-binding name="messaging-group" port="0" multicast-
address="${jboss.messaging.group.address:231.7.7.7}" multicast-
port="${jboss.messaging.group.port:9876}"/>
        <socket-binding name="messaging-throughput" port="5455"/>
        <socket-binding name="remoting" port="4447"/>
        <socket-binding name="txn-recovery-environment" port="4712"/>
        <socket-binding name="txn-status-manager" port="4713"/>
    </socket-binding-group>
</server>
```

Code example 11: *cmrf.xml for JBoss with MySQL*

F.1.4 standalone.conf

`standalone.conf` is a JBoss configuration file for the environment variables on Linux. The content of the file depends on the used application server. You should always use the file from the JBoss distribution which you are installing.

You need to edit `standalone.conf` to enter the following information:

- Java memory options

The relevant places are highlighted in red in the following example file.

```
## -*- shell-script -*- ######################################################
##                                                                          ##
##  JBoss Bootstrap Script Configuration                                    ##
##                                                                          ##
##############################################################################

#
# This file is optional; it may be removed if not needed.
#

#
# Specify the maximum file descriptor limit, use "max" or "maximum" to use
# the default, as queried by the system.
#
# Defaults to "maximum"
#
#MAX_FD="maximum"

#
# Specify the profiler configuration file to load.
#
# Default is to not load profiler configuration file.
#
#PROFILER=""

#
# Specify the location of the Java home directory.  If set then $JAVA will
# be defined to $JAVA_HOME/bin/java, else $JAVA will be "java".
#
#JAVA_HOME="/opt/java/jdk"

#
# Specify the exact Java VM executable to use.
#
#JAVA=""

if [ "x$JBOSS_MODULES_SYSTEM_PKGS" = "x" ]; then
   JBOSS_MODULES_SYSTEM_PKGS="org.jboss.byteman"
fi

# Uncomment the following line to prevent manipulation of JVM options
# by shell scripts.
#
#PRESERVE_JAVA_OPTS=true
```

```
#
# Specify options to pass to the Java VM.
#
if [ "x$JAVA_OPTS" = "x" ]; then
   JAVA_OPTS="-Xms4g -Xmx4g -XX:MaxMetaspaceSize=512m -
Djava.net.preferIPv4Stack=true"
   JAVA_OPTS="$JAVA_OPTS -Djboss.modules.system.pkgs=$JBOSS_MODULES_SYSTEM_PKGS -
Djava.awt.headless=true"
   JAVA_OPTS="$JAVA_OPTS -Djboss.modules.policy-permissions=true"
else
   echo "JAVA_OPTS already set in environment; overriding default settings with
values: $JAVA_OPTS"
fi

# Sample JPDA settings for remote socket debugging
#JAVA_OPTS="$JAVA_OPTS -agentlib:jdwp=transport=dt_
socket,address=8787,server=y,suspend=n"

# Sample JPDA settings for shared memory debugging
#JAVA_OPTS="$JAVA_OPTS -agentlib:jdwp=transport=dt_
shmem,server=y,suspend=n,address=jboss"

# Uncomment to not use JBoss Modules lockless mode
#JAVA_OPTS="$JAVA_OPTS -Djboss.modules.lockless=false"

# Uncomment to gather JBoss Modules metrics
#JAVA_OPTS="$JAVA_OPTS -Djboss.modules.metrics=true"

# Uncomment this to run with a security manager enabled
# SECMGR="true"
```

Code example 12: *standalone.conf (Linux)*

F.1.5 standalone.conf.bat

`standalone.conf.bat` is a JBoss configuration file for the environment variables on Windows. The content of the file depends on the used application server. You should always use the file from the JBoss distribution which you are installing.

You need to edit `standalone.conf.bat` to enter the following information:

- Java memory options

The relevant places are highlighted in red in the following example file.

```
rem ### -*- batch file -*- ##############################################################
rem #                                                                                    ##
rem #  JBoss Bootstrap Script Configuration                                              ##
rem #                                                                                    ##
rem ########################################################################################

rem # $Id: run.conf.bat 88820 2009-05-13 15:25:44Z dimitris@jboss.org $

rem #
rem # This batch file is executed by run.bat to initialize the environment
rem # variables that run.bat uses. It is recommended to use this file to
rem # configure these variables, rather than modifying run.bat itself.
rem #

rem Uncomment the following line to disable manipulation of JAVA_OPTS (JVM
parameters)
rem set PRESERVE_JAVA_OPTS=true

if not "x%JAVA_OPTS%" == "x" (
  echo "JAVA_OPTS already set in environment; overriding default settings with
values: %JAVA_OPTS%"
  goto JAVA_OPTS_SET
)

rem #
rem # Specify the JBoss Profiler configuration file to load.
rem #
rem # Default is to not load a JBoss Profiler configuration file.
rem #
rem set "PROFILER=%JBOSS_HOME%\bin\jboss-profiler.properties"

rem #
rem # Specify the location of the Java home directory (it is recommended that
rem # this always be set). If set, then "%JAVA_HOME%\bin\java" will be used as
rem # the Java VM executable; otherwise, "%JAVA%" will be used (see below).
rem #
rem set "JAVA_HOME=C:\opt\jdk1.6.0_23"

rem #
rem # Specify the exact Java VM executable to use - only used if JAVA_HOME is
rem # not set. Default is "java".
rem #
rem set "JAVA=C:\opt\jdk1.6.0_23\bin\java"

rem #
```

```
rem # Specify options to pass to the Java VM. Note, there are some additional
rem # options that are always passed by run.bat.
rem #

rem # JVM memory allocation pool parameters - modify as appropriate.
set "JAVA_OPTS=-Xms4g -Xmx4g -XX:MaxMetaspaceSize=512m"

rem # Prefer IPv4
set "JAVA_OPTS=%JAVA_OPTS% -Djava.net.preferIPv4Stack=true"

rem # Set the jboss.modules.policy-permissions property to true by default.
set "JAVA_OPTS=%JAVA_OPTS%  -Djboss.modules.policy-permissions=true "

rem # Make Byteman classes visible in all module loaders
rem # This is necessary to inject Byteman rules into AS7 deployments
set "JAVA_OPTS=%JAVA_OPTS% -Djboss.modules.system.pkgs=org.jboss.byteman"

rem # Sample JPDA settings for remote socket debugging
rem set "JAVA_OPTS=%JAVA_OPTS% -agentlib:jdwp=transport=dt_
socket,address=8787,server=y,suspend=n"

rem # Sample JPDA settings for shared memory debugging
rem set "JAVA_OPTS=%JAVA_OPTS% -agentlib:jdwp=transport=dt_
shmem,address=jboss,server=y,suspend=n"

rem # Use JBoss Modules lockless mode
rem set "JAVA_OPTS=%JAVA_OPTS% -Djboss.modules.lockless=true"

rem # Uncomment this to run with a security manager enabled
rem set "SECMGR=true"

:JAVA_OPTS_SET
```

Code example 13: *standalone.conf.bat (Windows)*

F.2 System Properties

The following chapter provides detailed information about the system properties used in ConSol CM.

F.2.1 Alphabetical List of System Properties

This chapter describes the following properties:

access.token.signing.key

- **Module**: cmas-auth-server
- **Description**: Determines the secret shared between the authorization server and all client applications using OAuth2, e.g. CM/Archive. The value of this property needs to match the value of *archive.oauth2.access.token.signing.key* in the configuration file of CM/Archive.
- **Type**: password
- **Restart required**: yes
- **System**: no
- **Optional**: no
- **Example value**: my_password
- **Since**: 6.11.2.0

admin.email

- **Module**: cmas-core-security
- **Description**: The email address of the ConSol CM administrator. The value which you entered during system set-up is used initially.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0

admin.login

- **Module**: cmas-core-security
- **Description**: The name of the ConSol CM administrator. The value which you entered during system set-up is used initially.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: admin
- **Since**: 6.0

admin.tool.consumed.licences.check.interval

- **Module**: cmas-app-admin-tool
- **Description**: Sets the interval (in seconds) to monitor the number of consumed licenses.
- **Type**: integer
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Example value**: 30 (default value)
- **Since**: 6.11.0.0

admin.tool.consumed.licences.pool.name

- **Module**: cmas-app-admin-tool
- **Description**: Sets the license pool name to monitor the number of consumed licenses.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: CONCURRENT_USERS (default value)
- **Since**: 6.11.0.0

admin.tool.session.check.interval

- **Module**: cmas-app-admin-tool
- **Description**: Configures the time interval (in seconds) in which the system checks for inactive (ended) Admin Tool sessions.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 30
- **Since**: 6.7.5

archive.uri

- **Module**: cmas-archive-core-server
- **Description**: Sets the URL from which the CM/Archive application can be accessed
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: <server_url>:8090
- **Since**: 6.11.2.0

attachment.allowed.types

- **Module**: cmas-core-server
- **Description**: Comma-separated list of allowed file name extensions (if no value is defined, all file extensions are allowed).
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: txt,zip,doc
- **Since**: 6.5.0

attachment.max.size

- **Module**: cmas-core-server
- **Description**: Maximum attachment size, in MB. This is a validation property of the CM API. It controls the size of attachments at tickets, units, and resources. It also controls the size of incoming (not outgoing!) email attachments. The value of this property needs to be aligned with the respective setting in the application server configuration.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 100 (default value)
- **Since**: 6.4.0

attachment.type.hints

- **Module**: cmas-core-server
- **Description**: Allows you to assign MIME types to not yet officially supported file extensions, so these file extensions can be detected correctly.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 7z:application/x-7z-compressed, zip:application/zip, wav:audio/x-wav
- **Since**: 6.11.2.0

attachment.upload.timeout

- **Module**: cmweb-server-adapter
- **Description**: Defines the transaction timeout in minutes for adding attachments to a ticket, resource or customer. Counts the time for the upload of all attachments of one transaction. When the timeout occurs, all files which have been temporarily stored on the server are deleted. No file is uploaded.
- **Type**: Integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes

- **Example value**: 3
- **Since**: 6.10.5.3

authentication.method

- **Module**: cmas-core-security
- **Description**: User authentication method (internal CM database or LDAP authentication). Allowed values are LDAP or DATABASE.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: DATABASE
- **Since**: 6.0

autocommit.cf.changes

- **Module**: cmas-dwh-server
- **Description**: Defines whether DWH tasks which result from configurational changes on ticket fields are executed automatically without manual interaction in the Admin Tool. Can be also set in the Admin Tool in the navigation item *DWH*. The default and recommended value is “false”.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false (default value)
- **Since**: 6.7.0

autocomplete.enabled

- **Module**: cmas-app-admin-tool
- **Description**: If the flag is missing or its value is “false”, then the *Autocomplete address* navigation item is hidden in Admin Tool.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.2.0

automatic.booking.enabled

- **Module**: cmweb-server-adapter
- **Description**: If enabled, time spend on creating comment/email will be measured and automatic time booking will be added.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.4.2

batch-commit-interval

- **Module**: cmas-dwh-server
- **Description**: Number of objects in a DWH message. Larger values mean better transfer performance at the cost of higher memory usage.
  Starting with ConSol CM version 6.11, this property is only used if the package size of a DWH operation is not set. This can only happen when the command is directly addressed to the Java MBean `consol.cmas.global.dwh.synchronizationService`, e.g. using the `update()` method. When a DWH operation is started using the Admin Tool, there is always a value for the package size. If not explicitly set, the default value of 1000 is used as value for `batch.commit.interval`.
- **Default value**: 1000
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 100
- **Since**: 6.0.0

big.task.minimum.size

- **Module**: cmas-core-index-common
- **Description**: Indicates the minimum size of index task (in parts, each part has 100 entities) to qualify this task as a big one. Big tasks have a lower priority than normal tasks.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 15 (default value)
- **Since**: 6.8.3

cache-cluster-name

- **Module**: cmas-core-cache
- **Description**: JBoss cache cluster name.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 635a6de1-629a-4129-8299-2d98633310f0
- **Since**: 6.4.0

calendar.csv.dateFormat

- **Module**: cmas-core-server
- **Description**: Format of the date given in the csv file containing the list of holidays.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: dd/MM/yyyy
- **Since**: 6.9.3.2

calendar.csv.separator

- **Module**: cmas-core-server
- **Description**: Separator used in the csv file containing the list of holidays.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: ,
- **Since**: 6.9.3.2

checkUserOnlineIntervalInSeconds

- **Module**: cmweb-server-adapter
- **Description**: The interval in seconds to check which users are online (default 180sec = 3min).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 180

- **Since**: 6.0
- **Removed in**: 6.5 / 6.11.0.1

client.archive.access.token.validity.seconds

- **Module**: cmas-auth-server
- **Description**: Determines the validity period in seconds of the access token required for using CM/Archive.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 43200 (default value)
- **Since**: 6.11.2.0

client.archive.enabled

- **Module**: cmas-auth-server
- **Description**: Determines if CM/Archive is enabled (“true”) or disabled (“false”).
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: false
- **Since**: 6.11.2.0
- **Removed in**: 6.11.2.2

client.archive.refresh.token.validity.seconds

- **Module**: cmas-auth-server
- **Description**: Determines the validity period in seconds of the refresh token required for obtaining new access tokens for CM/Archive.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 2592000 (default value)
- **Since**: 6.11.2.0

client.archive.secret

- **Module**: cmas-auth-server
- **Description**: Determines the secret shared between the authorization server and CM/Archive. The value of the property needs to match the value of *archive.oauth2.client.secret* in the configuration file of CM/Archive.
- **Type**: password
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: my_password
- **Since**: 6.11.2.0

client.was.access.token.validity.seconds

- **Module**: cmas-auth-server
- **Description**: Determines the validity period in seconds of the access token required for using the Web Admin Suite.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 43200 (default value)
- **Since**: 6.12.0.0

client.was.refresh.token.validity.seconds

- **Module**: cmas-auth-server
- **Description**: Determines the validity period in seconds of the refresh token required for obtaining new access tokens for the Web Admin Suite.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 2592000 (default value)
- **Since**: 6.12.0.0

client.was.secret

- **Module**: cmas-auth-server
- **Description**: Determines the secret shared between the authorization server and the Web Admin Suite.
- **Type**: password
- **Restart required**: no

- **System**: no
- **Optional**: no
- **Example value**: my_password
- **Since**: 6.12.0.0

cluster.mode

- **Module**: cmas-core-shared
- **Description**: Specifies whether ConSol CM is running in a cluster.
- **Type**: boolean
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.1.0

cluster.unicast

- **Module**: cmas-core-shared
- **Description**: Flag to activate jgroups unicast mode for ConSol CM clusters (as opposed to the default multicast mode causing problems in some data center environments). If set to “true”, remember to set the JVM start parameters: `jgroups.bind.port`, `jgroups.bind.address` and `jgroups.initial_hosts`.
- **Type**: boolean
- **Restart required**: yes
- **System**: yes
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.11.0.0
- **Removed in**: 6.12.0.0

cmas.dropSchemaBeforeSetup

- **Module**: cmas-setup-hibernate
- **Description**: Flag if schema is to be (was) dropped during setup
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.0

cmoffice.enabled

- **Module**: cmweb-server-adapter
- **Description**: Flag if CM/Doc (former CM/Office) is enabled.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.4.0

cmoffice.oo.path.NUMBER

- **Module**: cmweb-server-adapter
- **Description**: Possible location of the OpenOffice installation. The properties are numbered starting with 0.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: c:\Program Files (x86)\LibreOffice 3.6\program
- **Since**: 6.10.1.0
- **Removed in**: 6.12.0.0

cmoffice.strict.versioning.enabled

- **Module**: cmweb-server-adapter
- **Description**: Controls if the SAVE operation in Microsoft Word / OpenOffice documents creates a new attachment (“true”) or overwrites the existing attachment (“false”). This concerns the behavior within one session using the text editing program. If the program is stopped, the overwrite mechanism will not work anymore.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.10.5.4

cmoffice.websocket.port

- **Module**: cmweb-server-adapter
- **Description**: Determines the port on which the CM/Doc application should be started and connected to.
- **Type**: integer

- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 30333
- **Since**: 6.12.0.0

comment.authors.disabled

- **Module**: cmas-restapi-core
- **Description**: Disables the display of the content's author via REST API.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.11.0

commentRequiredForTicketCreation

- **Module**: cmweb-server-adapter
- **Description**: Flag if the comment is a required field for ticket creation.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true (default value)
- **Since**: 6.2.0

communication.channel

- **Module**: cmas-dwh-server
- **Description**: Communication channel. Only possible value since CM version 6.11.0.0: DIRECT
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: DIRECT
- **Since**: 6.8.5.0
- **Removed in**: 6.11.0.0 (DIRECT mode is the only available mode and is set automatically)

config.data.version

- **Module**: cmas-core-server
- **Description**: The internal version number of the current system configuration. This property is maintained internally, please do not change it unless advised by ConSol.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 11
- **Since**: 6.0

config.import.global.transaction.enabled

- **Module**: cmas-core-server
- **Description**: Flag deciding whether configuration (without localizations) should be imported within a single transaction.
- **Type**: Boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.11.1.0

connection.release.mode

- **Module**: cmas-setup-hibernate
- **Description**: Describes the JEE connection handling strategy for transactions. If set to “AFTER_TRANSACTION”, the connection will be cached during the transaction and released at the end. If set to “AFTER_STATEMENT”, the connection will be released to the pool after each statement execution. Please do not change the default here unless advised by ConSol.
- **Type**: string
- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: AFTER_STATEMENT (default for JEE environment)
- **Since**: 6.0

contact.authentication.method

- **Module**: cmas-core-security
- **Description**: Indicates contact authentication method, where possible values are DATABASE or LDAP or LDAP,DATABASE or DATABASE,LDAP.
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: LDAP
- **Since**: 6.9.3.0

contact.inherit.permissions.only.to.own.customer.group

- **Module**: cmas-core-security
- **Description**: Indicates whether an authenticated contact inherits all customer group permissions from the CM/Track user profile (“false”) or only has permissions to his own customer group (“true”).
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.9.2.3

csrf.domain.allow.none

- **Module**: cmas-restapi-core
- **Description**: Determines whether empty `Origin/Referer` headers are accepted. By default, the property is set to “false”, so that existing REST requests without `Origin/Referer` headers work.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false (default value)
- **Since**: 6.11.2.2

csrf.domain.white.list

- **Module**: cmas-restapi-core
- **Description**: The list of domains (separated with “|”) which are allowed in `Origin/Referer` headers and will not be blocked by the CSRF (cross-site request forgery) filter. By default, the property is empty so that cross-site requests are blocked.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: https://example.com:80 | http://www.consol.de:8080
- **Since**: 6.11.2.2

csrf.domain.white.list

- **Module**: cmweb-server-adapter
- **Description**: The list of domains (separated with "|") which are allowed and will not be checked by CSRF (cross-site request forgery) filter
- **Type**: String
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: example.com | consol.de
- **Since**: 6.10.7.0

csrf.request.filter.enabled

- **Module**: cmas-restapi-core
- **Description**: It allows to disable the CSRF (cross-site request forgery) request filter for the REST API.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.11.2.2

csrf.request.filter.enabled

- **Module**: cmweb-server-adapter
- **Description**: It allows to disable CSRF (Cross-site request forgery) request filter
- **Type**: Boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.10.7.0

customfield.content.file.max.size

- **Module**: cmas-core-server
- **Description**: Determines the maximum size in MB of the images which can be added as content of rich text fields.
- **Type**: integer
- **Restart required**: no
- **System**: yes

- **Optional**: yes
- **Example value**: 10
- **Since**: 6.11.2.2

customizationVersion

- **Module**: cmweb-server-adapter
- **Description**: UID representing the latest web customization version. Used only internally, please do not change the value.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: cd58453e-f3cc-4538-8030-d15e8796a4a7
- **Since**: 6.5.0

dao.log.threshold.milliseconds

- **Module**: cmas-core-server
- **Description**: Used to configure database operation times logging. DAO methods whose execution takes longer than the time set in this property (in milliseconds) are logged.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 500 (default value)
- **Since**: 6.11.1.0

dao.log.username

- **Module**: cmas-core-server
- **Description**: Used to configure database operation times logging. The execution of DAO methods which are related to the user name stated in this property is logged. Only one user name can be provided. The value is empty by default.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: webadmin
- **Since**: 6.11.1.0

data.directory

- **Module**: cmas-core-shared
- **Description**: Directory for ConSol CM data (e.g., index)
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: C:\Users\user\cmas
- **Since**: 6.0

data.optimization

- **Module**: cmweb-server-adapter
- **Description**: Defines optimization to be applied on response data. So far, the following values are supported (for setting more than one value, separate values by '|'): MINIFICATION and COMPRESSION. MINIFICATION minifies HTML data by e.g. stripping whitespaces and comments. COMPRESSION applies gzip compression to HTTP response. (Note: If you are running in cluster mode and want to test different configurations in parallel, you can set different values for each cluster node by specifying property `data.optimization.nodeId` to override default property.)
- **Type**: string
- **Restart required**: COMPRESSION can be switched on/off without restart, MINIFICATION requires restart.
- **System**: yes
- **Optional**: yes
- **Example value**: MINIFICATION|COMPRESSION

database.notification.enabled

- **Module**: cmas-core-index-common
- **Description**: Indicates whether the notification channel “database” should be used for index updates instead of JMS. The default value is “true.”
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.8.4.7
- **Removed in**: 6.12.0.0

database.notification.redelivery.delay.seconds

- **Module**: cmas-core-index-common
- **Description**: If the notification channel “database” is used for index updates, this property indicates the delay for notification redelivery when an exception occurs.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60
- **Since**: 6.8.4.7

database.notification.redelivery.max.attempts

- **Module**: cmas-core-index-common
- **Description**: In case of index update database notification channel, indicates maximum redelivery attempts when an exception occurs.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60
- **Since**: 6.8.4.7

defaultAttachmentEntryClassName

- **Module**: cmweb-server-adapter
- **Description**: The default content entry class used to classify an attachment if no other class was set explicitly.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: DefaultTextElement
- **Since**: 6.9.2.0

defaultCommentClassName

- **Module**: cmas-core-server
- **Description**: Name of the default text class for comments.
- **Type**: string
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Example value**: default_class
- **Since**: 6.3.0

defaultContentEntryClassName

- **Module**: cmweb-server-adapter
- **Description**: Default text class for new ACIMs.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: default_class
- **Since**: 6.3.0

defaultIncommingMailClassName

- **Module**: cmas-core-server
- **Description**: Name of the default text class for incoming emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: default_class
- **Since**: 6.3.0

defaultNumberOfCustomFieldsColumns

- **Module**: cmweb-server-adapter
- **Description**: Default number of columns for ticket fields.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 3
- **Since**: 6.2.0

defaultOutgoingMailClassName

- **Module**: cmas-core-server
- **Description**: Name of the default text class for outgoing emails.
- **Type**: string
- **Restart required**: no

- **System**: no
- **Optional**: yes
- **Example value**: default_class
- **Since**: 6.3.0

delete.ticket.enabled

- **Module**: cmas-app-admin-tool
- **Description**: Controls if the menu entry *Delete* is displayed in the context menu in the Admin Tool for the ticket list in the ticket administration.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.4.0

diffTrackingEnabled

- **Module**: cmweb-server-adapter
- **Description**: Removed in ConSol CM version 6.11.
  Defines if parallel editing of a ticket by different engineers should be possible.
  “false”: Previous way of handling changes when editing a ticket. If the ticket has been changed in the meantime, the current engineer will not be able to submit his changes without being forced to reload the page before submitting.
  “true”: New changes handling mode. If the ticket has been changed, this will not block the submission of other changes anymore. If the part of the ticket that was changed was exactly the part that is changed by the submitting engineer, then an information message will be displayed, but the ticket change will be persisted/stored anyway.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true (default)
- **Since**: 6.10.1
- **Removed in**: 6.11.0

diffTrackingEnabledForUnitAndResource

- **Module**: cmweb-server-adapter
- **Description**: Enables the prevention of concurrent modifications on units / resources.
- **Type**: boolean
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Example value**: 3
- **Since**: 6.11.0.0

diff.tracking.disabled

- **Module**: cmas-restapi-core
- **Description**: Fallback property for disabling diff tracking for CM/Track, which is history-based so it can be heavy.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.10.5.6

disable.admin.task.auto.commit

- **Module**: cmas-core-index-common
- **Description**: All tasks created for index update will be automatically executed right after creation.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.1

domain.map.for.client.config.<DOMAIN_NAME>

- **Module**: cmas-restapi-core
- **Description**: Enables mapping multiple instances of CM/Track to a specific domain. DOMAIN_NAME is the name of the client configuration in the Admin Tool (if your CM/Track configuration is called “trackV2customized”, the name of the property is `domain.map.for.client.config.trackV2customized`). You can provide several URLs separated by a comma.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: https://www.consol.de, https://www.consol.com
- **Since**: 6.10.7.0

dwh.administration.refresh.interval.seconds

- **Module**: cmas-app-admin-tool
- **Description**: Internal DWH property, not to be changed manually. This property is used to set the interval for refreshing the list of actions in the Admin Tool, section *Data Warehouse -> Administration -> Actions*.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.11.0.1

dwh.mode

- **Module**: cmas-dwh-server
- **Description**: Current mode for DWH data transfer. Possible values are OFF, ADMIN, LIVE
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: OFF
- **Since**: 6.0.1

engineer.description.cache.enabled

- **Module**: cmas-core-server
- **Description**: Defines whether user descriptions are cached. The default value is “true”, please do not change it unless advised by ConSol.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.11.0

engineer.description.mode

- **Module**: cmas-core-server
- **Description**: Defines whether user names in the ticket history are taken from the database or dynamically rendered using templates. The default value “DYNAMIC” is a bit more costly from the performance perspective, while “PROTOCOL” is faster but returns historical names which might be outdated. Use “PROTOCOL” if you have lots of history entries from many different users.

- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: PROTOCOL
- **Since**: 6.11.0

engineer.description.template.name

- **Module**: cmas-core-server
- **Description**: Defines the name of the template which is used to render engineer names for display in the Web Client. The template has to be stored in the *Templates* section of the Admin Tool.
- **Type**: String
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: engineer description template name (default value)
- **Since**: 6.11.0

eviction.event.queue.size

- **Module**: cmas-core-cache
- **Description**: The size of the queue holding cache events. The default value is 200000. It is recommended to increase the value slightly (up to 400000) on systems with high traffic or load.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 200000 (default value)
- **Since**: 6.4.0

eviction.lifeSpan

- **Module**: cmas-core-cache
- **Description**: Sets the interval (in milliseconds) for cache entry validity. When this time is elapsed, the entry is removed from the cache.
- **Type**: integer
- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: 86400000 (default value)
- **Since**: 6.11.1.0

eviction.max.nodes

- **Module**: cmas-core-cache
- **Description**: Sets the maximum size of internal caches. The default value is 100000. Increasing it will lead to higher memory consumption and is not recommended unless explicitly advised by ConSol.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 100000 (default value)
- **Since**: 6.4.0

eviction.strategy

- **Module**: cmas-core-cache
- **Description**: Determines the cache eviction strategy. Please see the Infinispan documentation for details.
- **Type**: string
- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: LRU, LIRS (default value)
- **Since**: 6.11.1.0

eviction.wakeup.interval

- **Module**: cmas-core-cache
- **Description**: Sets the interval (in milliseconds) between two cache queue event processing cycles. The default value is 3000. It is recommended to decrease it (minimum is 1500) on systems with high traffic or load.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 3000 (default value)
- **Since**: 6.4.0

expert.mode

- **Module**: cmas-core-shared
- **Description**: Switches expert mode on/off thereby unblocking/blocking expert features. For example, the CM system property `initialized` is only available in the expert mode.
- **Type**: boolean

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.0

external.line.access.prefix

- **Module**: cmas-core-server
- **Description**: General prefix to dial before an area code. Set for each customer group separately.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 411
- **Since**: 6.9.3.0

favoritesSizeLimit

- **Module**: cmweb-server-adapter
- **Description**: Maximum number of items in Favorites list.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 10
- **Since**: 6.0

fetchLock.interval

- **Module**: cmas-workflow-jbpm
- **Description**:
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5000
- **Removed in**: 6.8.0

fetchSize.strategy

- **Module**: cmas-core-server
- **Description**: Strategy for selecting the fetch size on JDBC result sets.

- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: FetchSizePageBasedStrategy, FetchSizeThresholdStrategy, FetchSizeFixedStrategy
- **Since**: 6.8.4.1

fetchSize.strategy.FetchSizeFixedStrategy.value

- **Module**: cmas-core-server
- **Description**: Sets fetch size value if the selected strategy to set the fetch size is `FetchSizeFixedStrategy`.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 150
- **Since**: 6.8.4.1

fetchSize.strategy.FetchSizePageBasedStrategy.limit

- **Module**: cmas-core-server
- **Description**: Sets maximum fetch size value if the selected strategy to set the fetch size is `FetchSizePageBasedStrategy`.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 10000
- **Since**: 6.8.4.1

fetchSize.strategy.FetchSizeThresholdStrategy.value

- **Module**: cmas-core-server
- **Description**: Sets fetch size threshold border values if the selected strategy to set the fetch size is `FetchSizeThresholdStrategy`.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 150,300,600,1000
- **Since**: 6.8.4.1

filesystem.polling.threads.number

- **Module**: cmas-nimh
- **Description**: Number of threads started for database emails' queue polling. The default value is 1
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.4.0

filesystem.polling.threads.shutdown.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Waiting time after the shutdown signal. When the timeout is reached, the thread will be terminated.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

filesystem.polling.threads.watchdog.interval.seconds

- **Module**: cmas-nimh
- **Description**: Determines the interval in seconds to execute the watchdog which checks the activity of the threads of the file system poller.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 30 (default value)
- **Since**: 6.4.0

filesystem.task.enabled

- **Module**: cmas-nimh
- **Description**: With this property the service thread related to a given poller can be disabled.
- **Type**: boolean
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.4.0

filesystem.task.interval.seconds

- **Module**: cmas-nimh
- **Description**: Default interval for polling mailboxes in seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

filesystem.task.polling.folder

- **Module**: cmas-nimh
- **Description**: Polling folder location which will be scanned for emails in the format of eml files. The default value is the `mail` subdirectory of the ConSol CM data directory
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: c://cmas//mail
- **Since**: 6.4.0

filesystem.task.timeout.seconds

- **Module**: cmas-nimh
- **Description**: After this time (of inactivity) the service thread is considered damaged and automatically restarted. Default: 120 seconds
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.4.0

filesystem.task.transaction.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Default transaction timeout (in seconds) for email fetching transactions. Should be correlated with number of messages fetched at once.

- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

forward.mails.to.representatives

- **Module**: cmweb-server-adapter
- **Description**: Determines if emails which are manually sent from the Web Client are also sent to representing engineers. The default value of the property is “false”, meaning that this kind of emails are not forwarded to the representing engineer. Set the property to “true” if you want to restore the previous behavior, i.e., all emails which are sent to the represented engineer are automatically forwarded to the representing engineer. Please take into account that this might not be desired if the same person is an engineer and a customer in the CM system.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: false (default value)
- **Since**: 6.11.1.7

This property only configures the handling of manually sent emails. The handling of automatically sent emails depends on the used Java method.

globalSearchResultSizeLimit

- **Module**: cmweb-server-adapter
- **Description**: Maximum number of items in Quick Search result.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 10
- **Since**: 6.0

heartbeat

- **Module**: cmas-core-server
- **Description**: Timestamp that indicates if an instance of the application is connected to the database schema.
- **Type**: integer

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1234567899
- **Since**: 6.10.5.3

helpFilePath

- **Module**: cmweb-server-adapter
- **Description**: URL for online help. If not empty, the *Help* link is displayed in the Web Client.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: http://www.consol.de
- **Since**: 6.2.1

hibernate.dialect

- **Module**: cmas-setup-hibernate
- **Description**: The dialect used by hibernate. Usually set during initial set-up (depending on the database system).
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: org.hibernate.dialect.MySQL5InnoDBDialect
- **Since**: 6.0

hideTicketSubject

- **Module**: cmweb-server-adapter
- **Description**: If set to “true”, the ticket subject is hidden.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.2.1

ignore-queues

- **Module**: cmas-dwh-server
- **Description**: A comma-separated list of queue names which are not not transferred to the DWH.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: QueueName1,QueueName2,QueueName3
- **Since**: 6.6.19
- **Removed in**: 6.8.1

index.attachment

- **Module**: cmas-core-index-common
- **Description**: Specifies whether the content of attachments is indexed.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.4.3

index.history

- **Module**: cmas-core-index-common
- **Description**: Specifies whether unit and ticket history are indexed.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.1.0
- **Removed in**: 6.11.0

index.status

- **Module**: cmas-core-index-common
- **Description**: Status of the Indexer, possible values RED, YELLOW, GREEN, will be displayed in the Admin Tool.
- **Type**: string
- **Restart required**: no

- **System**: yes
- **Optional**: no
- **Example value**: GREEN
- **Since**: 6.6.1

index.task.worker.threads

- **Module**: cmas-core-index-common
- **Description**: How many threads will be used to execute index tasks (synchronization, administrative and repair tasks). We recommend to use a value not larger than 2.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1 (default value)
- **Since**: 6.6.14, 6.7.3. Since 6.8.0 and exclusively in 6.6.21 also normal (live) index updates are affected by this property.

index.version.current

- **Module**: cmas-core-index-common
- **Description**: Holds information about the current (possibly old) index version.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1 (default value)
- **Since**: 6.7.0

index.version.newest

- **Module**: cmas-core-index-common
- **Description**: Holds information about which index version is considered newest.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1 (default value)
- **Since**: 6.7.0

indexed.assets.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many assets should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 200 (default value)
- **Since**: 6.8.0

indexed.engineers.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many engineers should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 300 (default value)
- **Since**: 6.6.14, 6.7.3

indexed.resources.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many resources should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 200 (default value)
- **Since**: 6.10.0.0

indexed.tickets.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many tickets should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: 100 (default value)
- **Since**: 6.6.14, 6.7.3

indexed.units.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many units should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 200 (default value)
- **Since**: 6.6.14, 6.7.3

initialized

- **Module**: cmas-setup-manager
- **Description**: Flag if ConSol CM is initialized. If this value is missing or not “true”, the setup will be performed. Starting with ConSol CM version 6.11, this property is only available in expert mode.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.0

> ⚠ Be careful with using this property! When you set the value to “false”, the ConSol CM server will perform the system setup at the next start, i.e. all data of the existing system is lost, including system properties!

internal.line.access.prefix

- **Module**: cmas-core-server
- **Description**: Prefix that the company’s telephony system requires for outside lines. Set for each customer group separately.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: 199
- **Since**: 6.9.3.0

is.cmrf.alive

- **Module**: cmas-dwh-server
- **Description**: As a starting point, the time the last message was sent to CMRF should be used. If a response from CMRF is not received after the set value (in seconds), it should create a DWH operation status with an error message indicating that CMRF is down.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1200
- **Since**: 6.7.0

java.naming.factory.initial

- **Module**: cmas-dwh-server
- **Description**: Factory class for the DWH context factory.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: org.jnp.interfaces.NamingContextFactory
- **Since**: 6.0.1
- **Removed in**: 6.11.0.0

java.naming.factory.url.pkgs

- **Module**: cmas-dwh-server
- **Description**:
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: org.jboss.naming:org.jnp.interfaces
- **Since**: 6.0.1
- **Removed in**: 6.11.0.0

java.naming.provider.url

- **Module**: cmas-dwh-server
- **Description**: URL of naming provider.

- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: localhost
- **Since**: 6.0.1
- **Removed in**: 6.11.0.0

jobExecutor.adminMail

- **Module**: cmas-workflow-engine
- **Description**: Email address which will get notified about job execution problems (when retry counter is exceeded).
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: admin@consol.de
- **Since**: 6.8.0

jobExecutor.idleInterval

- **Module**: cmas-workflow-jbpm
- **Description**:
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 45000
- **Removed in**: 6.8.0
- **Replaced by**: jobExecutor.idleInterval.seconds

jobExecutor.idleInterval.seconds

- **Module**: cmas-workflow-engine
- **Description**: Determines how often the job executor thread will look for new jobs to execute.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 45 (default value up to CM version 6.10.5.2. The default value for CM versions

6.10.5.3 and up is 5)

- **Since**: 6.8.0

jobExecutor.jobExecuteRetryNumber

- **Module**: cmas-workflow-jbpm
- **Description**:
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5
- **Removed in**: 6.8.0
- **Replaced by**: jobExecutor.jobMaxRetries

jobExecutor.jobMaxRetries

- **Module**: cmas-workflow-engine
- **Description**: Controls the number of retry attempts the job executor will do before declaring a job as failed.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 5 (default value)
- **Since**: 6.8.0

jobExecutor.jobMaxRetriesReachedSubject

- **Module**: cmas-workflow-engine
- **Description**: The subject used in the notification mail which administrators receive about failed job executors.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: Job maximum retries reached. Job was removed!!! (default value)
- **Since**: 6.8.0

jobExecutor.lockingLimit

- **Module**: cmas-workflow-engine
- **Description**: Number of jobs locked at once (marked for execution) by the job executor thread.
- **Type**: integer

- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 5 (default value since CM version 6.10.5.3)
- **Since**: 6.8.0

jobExecutor.lockTimeout.seconds

- **Module**: cmas-workflow-engine
- **Description**: Determines how long the job can be locked (marked for execution) by the job executor.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 360 (default value)
- **Since**: 6.8.0

jobExecutor.mailFrom

- **Module**: cmas-workflow-engine
- **Description**: Email address which will be set as From header for notifications to the administrator.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: jobexecutor@consol.de
- **Since**: 6.8.0

jobExecutor.maxInactivityInterval.minutes

- **Module**: cmas-workflow-engine
- **Description**: Number of minutes of allowed job executor inactivity (e.g. when it is blocked by long timer execution). After this time executors threads are restarted.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 30 (default value)
- **Since**: 6.9.2.0

jobExecutor.threads

- **Module**: cmas-workflow-engine
- **Description**: Number of job execution threads.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 1 (default value)
- **Since**: 6.8.0

jobExecutor.timerRetryInterval

- **Module**: cmas-workflow-jbpm
- **Description**:
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 10000
- **Removed in**: 6.8.0
- **Replaced by**: jobExecutor.timerRetryInterval.seconds

jobExecutor.timerRetryInterval.seconds

- **Module**: cmas-workflow-engine
- **Description**: Determines how long the job executor thread will wait after job execution error.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 10 (default up to CM version 6.10.5.2. The default value for CM versions 6.10.5.3 and up is 30)
- **Since**: 6.8.0

jobExecutor.txTimeout.seconds

- **Module**: cmas-workflow-engine
- **Description**: Transaction timeout used for job execution.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes

- **Example value**: 60 (default value)
- **Since**: 6.8.0

kerberos.v5.enabled

- **Module**: cmas-core-security
- **Description**: Indicates whether SSO via Kerberos is enabled.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false (default value if Kerberos was not enabled during system setup)
- **Since**: 6.2.0

kerberos.v5.username.regex

- **Module**: cmas-core-security
- **Description**: Regular expression used for mapping Kerberos principals to CM user login names.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: (.*)@.*
- **Since**: 6.2.0

last.config.change

- **Module**: cmas-core-server
- **Description**: Random UUID created during the last configuration change. This is a value maintained internally, please do not change it unless advised by ConSol.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 2573c7b7-2bf5-47ff-b5a2-bad31951a266
- **Since**: 6.1.0, 6.2.1

last.config.change.templates

- **Module**: cmas-core-server
- **Description**: Random UUID created during the last change in templates. This is a value maintained internally, please do not change it unless advised by ConSol.
- **Type**: string
- **Restart required**: no

- **System**: yes
- **Optional**: no
- **Example value**: 2573c7c7-2af5-4eff-b9c2-bad31951a266
- **Since**: 6.10.5.0

last.ping.timestamp

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property shows the status of CMRF and is filled automatically by the CMRF. It contains the date of the last response on the ping from the ConSol CM server to the CMRF.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 32323214
- **Since**: 6.11.0.1

ldap.authentication

- **Module**: cmas-core-security
- **Description**: Authentication method used when using LDAP authentication. Possible values are “anonymous” and “simple”.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: simple (default value)
- **Since**: 6.0

ldap.basedn

- **Module**: cmas-core-security
- **Description**: Base DN used for looking up LDAP user accounts when using LDAP authentication.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: ou=accounts,dc=consol,dc=de
- **Since**: 6.0

ldap.certificate.basedn

- **Module**: cmas-core-server
- **Description**: Base DN for certificates location in the LDAP tree. If not provided, `cmas-core-security, ldap.basedn` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: ou=accounts,dc=consol,dc=de
- **Since**: 6.8.4

ldap.certificate.content.attribute

- **Module**: cmas-core-server
- **Description**: LDAP attribute name used where certificate data is stored in the LDAP tree.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: usercertificate (default value)
- **Since**: 6.8.4

ldap.certificate.password

- **Module**: cmas-core-server
- **Description**: LDAP Certificates manager password. If not set, `cmas-core-security, ldap.password` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.8.4

ldap.certificate.providerurl

- **Module**: cmas-core-server
- **Description**: LDAP Certificates provider URL. If not set, `cmas-core-security, ldap.providerurl` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes

- **Example value**: ldap://ldap.consol.de:389
- **Since**: 6.8.4

ldap.certificate.searchattr

- **Module**: cmas-core-server
- **Description**: LDAP attribute name used to search for certificate in the LDAP tree.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: mail (default value)
- **Since**: 6.8.4

ldap.certificate.userdn

- **Module**: cmas-core-server
- **Description**: LDAP Certificates manager DN. If not set, `cmas-core-security, ldap.userdn` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.8.4

ldap.contact.name.basedn

- **Module**: cmas-core-security
- **Description**: Base path to search for contact DN by LDAP ID.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: ou=accounts,dc=consol,dc=de
- **Since**: 6.9.3.0

ldap.contact.name.password

- **Module**: cmas-core-security
- **Description**: Password to look up contact DN by LDAP ID. If not set, the anonymous account is used.
- **Type**: string
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Since**: 6.9.3.0

ldap.contact.name.providerurl

- **Module**: cmas-core-security
- **Description**: Address of the LDAP server (ldap[s]://host:port).
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: ldap://ldap.consol.de:389
- **Since**: 6.9.3.0

ldap.contact.name.searchattr

- **Module**: cmas-core-security
- **Description**: Attribute to search for contact DN by LDAP ID.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: uid
- **Since**: 6.9.3.0

ldap.contact.name.userdn

- **Module**: cmas-core-security
- **Description**: User DN to look up contact DN by LDAP ID. If not set, the anonymous account is used.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Since**: 6.9.3.0

ldap.initialcontextfactory

- **Module**: cmas-core-security
- **Description**: Class name for the initial context factory of the LDAP implementation when using LDAP authentication. If it is not set, `com.sun.jndi.ldap.LdapCtxFactory` is used.
- **Type**: string
- **Restart required**: yes
- **System**: yes

- **Optional**: no
- **Example value**: com.sun.jndi.ldap.LdapCtxFactory
- **Since**: 6.0

ldap.password

- **Module**: cmas-core-security
- **Description**: Password for connecting to LDAP to look up users when using LDAP authentication. Only needed if look-up cannot be performed anonymously.
- **Type**: password
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.1.2

ldap.providerurl

- **Module**: cmas-core-security
- **Description**: LDAP provider when using LDAP authentication.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: ldap://myserver.consol.de:389
- **Since**: 6.0

ldap.searchattr

- **Module**: cmas-core-security
- **Description**: Search attribute for looking up LDAP entry associated with a CM login.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: uid
- **Since**: 6.0

ldap.userdn

- **Module**: cmas-core-security
- **Description**: LDAP user for connecting to LDAP to look up users when using LDAP authentication. Only needed if look-up cannot be performed anonymously.
- **Type**: string
- **Restart required**: no

- **System**: yes
- **Optional**: yes
- **Since**: 6.1.2

live.start

- **Module**: cmas-dwh-server
- **Description**: When the DWH synchronization mode is set to LIVE using the Admin Tool (navigation group *Data Warehouse*, navigation item *Administration*, *Configuration* button), this property is created and set to the current date.
  If LIVE mode is not enabled and there is no data in `cmas_dwh_ser_sync_object`, the property `live.start` is deleted.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes (automatically added in DWH “LIVE” mode)
- **Example value**: 15028802377645
- **Since**: 6.7.0

local.country.prefix

- **Module**: cmas-core-server
- **Description**: Prefix of the local country code. Set for each customer group separately.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 48
- **Since**: 6.9.3.0

mail.attachments.validation.info.sender

- **Module**: cmas-nimh-extension
- **Description**: Sets the From header for error notification emails which are sent when the validation of the attachment type fails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: admin@mail.com
- **Since**: 6.7.5

mail.attachments.validation.info.subject

- **Module**: cmas-nimh-extension
- **Description**: Sets the subject for error notification emails which are sent when the validation of the attachment type fails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Email was not processed because its attachments were rejected!
- **Since**: 6.7.5

mail.db.archive

- **Module**: cmas-nimh-extension
- **Description**: If property is set to “true”, incoming emails are archived in the database.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.8.5.5

mail.encryption

- **Module**: cmas-core-server
- **Description**: If the property is set to “true”, the encrypt checkbox in the Ticket Email Editor is checked by default. The default value of the property is “false”.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.8.4.0

mail.error.from.address

- **Module**: cmas-nimh-extension
- **Description**: From address for error emails from NIMH
- **Type**: email
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: myuser@consol.de
- **Since**: 6.4.0

mail.error.to.address

- **Module**: cmas-nimh-extension
- **Description**: To address for error emails from NIMH. As a default the email address of the administrator which you have entered during system setup is used.
- **Type**: email
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.4.0

mail.from

- **Module**: cmweb-server-adapter
- **Description**: This email address is used instead of the engineer's email address during email conversations.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: consolcm@example.com
- **Since**: 6.1.2

mail.notification.engineerChange

- **Module**: cmas-core-server
- **Description**: Determines whether notification emails should be sent when the engineer of a ticket is changed.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.1.0

mail.notification.sender

- **Module**: cmas-core-server
- **Description**: From address for notification emails when the engineer of a ticket is changed. If not set, `cmas-core-security, admin.email` is used instead.

- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: cm6notification@cm6installation
- **Since**: 6.6.3

mail.on.error

- **Module**: cmas-nimh-extension
- **Description**: If set to “true” an error email is sent to the above configured address in case the email message could not be processed.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default)
- **Since**: 6.4.0

mail.redelivery.retry.count

- **Module**: cmas-core-server
- **Description**: Number of redelivery attempts of an outgoing email.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 3
- **Since**: 6.1.0

mail.reply.to

- **Module**: cmweb-server-adapter
- **Description**: When set, the Ticket Email Editor in the Web Client displays a Reply-To field pre-filled with this value.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: consolcm@example.com
- **Since**: 6.0.1

mail.sender.address

- **Module**: cmas-workflow-jbpm
- **Description**: From address for emails from the workflow engine.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Removed in**: 6.8.0
- **Replaced by**: jobExecutor.mailFrom

mail.smtp.email

- **Module**: cmas-core-server
- **Description**: SMTP email URL for outgoing emails
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: smtp://mail.mydomain.com:25
- **Since**: 6.0

mail.smtp.email.password

- **Module**: cmas-core-server
- **Description**: SMTP password for outgoing email communication. If this property is set, it takes precedence over the value from the SMTP URL.
- **Type**: password
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: password
- **Since**: 6.11.2.2

mail.smtp.email.user

- **Module**: cmas-core-server
- **Description**: SMTP user name for outgoing email communication. If this property is set, it takes precedence over the value from the SMTP URL.
- **Type**: string
- **Restart required**: no
- **System**: yes

- **Optional**: yes
- **Example value**: myuser
- **Since**: 6.11.2.2

mail.smtp.envelopesender

- **Module**: cmas-core-server
- **Description**: Email address used as sender in SMTP envelope. If not set, the From address of the email is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: mysender@mydomain.com
- **Since**: 6.5.7

mail.smtp.tls.enabled

- **Module**: cmas-core-server
- **Description**: Activates SMTP via SSL/TLS (SMTPS) for sending emails from the Web Client and scripts. The default value is “false”. If it is set to “true”, SMTPS is activated for sending emails.
- **Type**: boolean
- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.11.1.6

mail.ticketname.pattern

- **Module**: cmas-nimh-extension
- **Description**: Regular expression pattern used to identify the ticket name in the subject of incoming mails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: .*?Ticket\s+\((\S+)\).*
- **Since**: 6.4.0

mailbox.<NUMBER>.name

- **Module**: cmas-nimh
- **Description**: Identifier (name) of the mailbox.

- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: myEmailAccount
- **Since**: 6.11.2.0

mailbox.1.connection.host

- **Module**: cmas-nimh
- **Description**: Host (server) for first configured mailbox. Will overwrite the default parameter `mailbox.default.connection.host`.

mailbox.1.connection.password

- **Module**: cmas-nimh
- **Description**: Password for first configured mailbox. Will overwrite the default parameter `mailbox.default.connection.password`.

mailbox.1.connection.port

- **Module**: cmas-nimh
- **Description**: Port for first configured mailbox. Will overwrite the default parameter `mailbox.default.connection.port`.

mailbox.1.connection.protocol

- **Module**: cmas-nimh
- **Description**: Protocol (e.g., IMAP or POP3) for first configured mailbox. Will overwrite the default parameter `mailbox.default.connection.protocol`.

mailbox.1.connection.username

- **Module**: cmas-nimh
- **Description**: User name for first configured mailbox. Will overwrite the default parameter `mailbox.default.connection.username`.

mailbox.2.connection.host

- **Module**: cmas-nimh
- **Description**: Host (server) for second configured mailbox. Will overwrite the default parameter `mailbox.default.connection.host`.

mailbox.2.connection.password

- **Module**: cmas-nimh
- **Description**: Password for second configured mailbox. Will overwrite the default parameter `mailbox.default.connection.password`.

mailbox.2.connection.port

- **Module**: cmas-nimh
- **Description**: Port for second configured mailbox. Will overwrite the default parameter `mailbox.default.connection.port`.

mailbox.2.connection.protocol

- **Module**: cmas-nimh
- **Description**: Protocol (e.g., IMAP or POP3) for second configured mailbox. Will overwrite the default parameter `mailbox.default.connection.protocol`.

mailbox.2.connection.username

- **Module**: cmas-nimh
- **Description**: User name for second configured mailbox. Will overwrite the default parameter `mailbox.default.connection.username`.

For all NIMH-related mailbox properties, the following principle is used: a default property is defined (e.g. `mailbox.default.connection.port`). If no mailbox-specific value is configured, this default value will be used.

mailbox.default.connection.host

- **Module**: cmas-nimh
- **Description**: Host (server name) of a given mailbox from which the poller reads emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10.10.1.157
- **Since**: 6.4.0

mailbox.default.connection.password

- **Module**: cmas-nimh
- **Description**: Password for given mailbox from which the poller reads emails.
- **Type**: password
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: consol
- **Since**: 6.4.0

mailbox.default.connection.port

- **Module**: cmas-nimh
- **Description**: Port for a given mailbox from which the poller reads emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 143
- **Since**: 6.4.0

mailbox.default.connection.protocol

- **Module**: cmas-nimh
- **Description**: Poller's protocol e.g., IMAP or POP3. No default value
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: imap
- **Since**: 6.4.0

mailbox.default.connection.username

- **Module**: cmas-nimh
- **Description**: User name for a given mailbox from which the poller reads emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: username
- **Since**: 6.4.0

mailbox.default.session.mail.debug

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Allows for more detailed JavaMail session debugging.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: true
- **Since**: 6.4.0

mailbox.default.session.mail.mime.address.strict

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Counterpart of the old `mule mail.mime.strict`, allows to set not so strict email header parsing.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.4.0

mailbox.default.session.mail.<PROTOCOL>.connectiontimeout

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Determines the connection timeout in milliseconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 3000
- **Since**: 6.4.0 (IMAP and POP3) / 6.11.2.0 (IMAPS and POP3S)

mailbox.default.session.mail.<PROTOCOL>.fetchsize

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Determines the size of partial fetch in bytes for the indicated protocol.
  For IMAP systems: in CM versions 6.10.7.0 and up, the value of `mailbox.default.session.mail.imap.fetchsize` is set to 1048576 (equals 1 MB) during the initial setup of a ConSol CM system. During an update of an existing ConSol CM system, the value of the property is left unchanged, if the property is already present. In case the property is not yet present, it is added with the default value.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 1048576
- **Since**: 6.9.4.0 (IMAP and POP3) / 6.11.2.0 (IMAPS and POP3S)

mailbox.default.session.mail.<PROTOCOL>.partialfetch

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Determines whether the protocol's partial fetch capability should be used.
  For IMAP systems: in CM versions 6.10.7.0 and up, the value of `mailbox.default.session.mail.imap.partialfetch` is set to "false" during the initial setup of a ConSol CM system. During an update of an existing ConSol CM system, the value of the property is left unchanged, if the property is already present. In case the property is not yet present, it is added with the default value.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.4.0 (IMAP and POP3) / 6.11.2.0 (IMAPS and POP3S)

mailbox.default.session.mail.<PROTOCOL>.timeout

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Determines the I/O timeout in milliseconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 120 for IMAP(S) and 3000 for POP3(S)
- **Since**: 6.4.0 (IMAP and POP3), 6.11.2.0 (IMAPS and POP3S)

mailbox.default.task.delete.read.messages

- **Module**: cmas-nimh
- **Description**: This defines whether messages should be removed from the mailbox after processing. For IMAP protocol messages are marked as SEEN by default. For POP3 protocol, when flag is set to "true" the message is removed, otherwise remains on server and will result in infinite reads.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.4.0

mailbox.default.task.enabled

- **Module**: cmas-nimh
- **Description**: With this property, the service thread related to the given poller can be disabled.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.4.0

mailbox.default.task.interval.seconds

- **Module**: cmas-nimh
- **Description**: Default interval for polling mailboxes in seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

mailbox.default.task.max.message.size

- **Module**: cmas-nimh
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10485760 (default value, 10 MB)
- **Since**: 6.4.0

mailbox.default.task.max.messages.per.run

- **Module**: cmas-nimh
- **Description**: Number of messages fetched at once from mailbox. Must be correlated with transaction timeout. The default value is 20
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.4.0

mailbox.default.task.timeout.seconds

- **Module**: cmas-nimh
- **Description**: After this time (of inactivity) the service thread is considered damaged and automatically restarted. The default value is 120 seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.4.0

mailbox.default.task.transaction.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Default transaction timeout (in seconds) for email fetching transactions. Should be correlated with number of messages fetched at once.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

mailbox.polling.threads.mail.log.enabled

- **Module**: cmas-nimh
- **Description**: Enables email logging which is especially crucial in cluster environment (used as semaphore there)
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.9.4.1

mailbox.polling.threads.number

- **Module**: cmas-nimh
- **Description**: Number of threads for accessing mailboxes.
- **Type**: integer
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Example value**: 1 (default value)
- **Since**: 6.4.0

mailSender.executionInterval.seconds

- **Module**: cmas-core-server
- **Description**: Determines the period in seconds before the system checks if there are new emails to be sent.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.12.0.0

mailSender.lockingLimit

- **Module**: cmas-core-server
- **Description**: Determines the number of emails fetched from the database for sending in a single transaction.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1
- **Since**: 6.12.0.0

mailSender.lockTimeout.seconds

- **Module**: cmas-core-server
- **Description**: Determines the period in seconds before a locked email is released for another lock.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 199
- **Since**: 6.12.0.0

mailSender.maxAttempts

- **Module**: cmas-core-server
- **Description**: Determines the maximum number of attempts, including the first attempt, before an email is removed.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 3
- **Since**: 6.12.0.0

mailSender.nodeId

- **Module**: cmas-core-server
- **Description**: Determines the ID of the node on which the thread for sending emails is started (only in clustered environments). If the value is “all” or no value is provided, the threads are started on every node.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: all
- **Since**: 6.12.0.0

mailSender.retryInterval.seconds

- **Module**: cmas-core-server
- **Description**: Determines the period in seconds before another attempt to send an email is made, if the previous attempt failed.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.12.0.0

mailSender.threads.number

- **Module**: cmas-core-server
- **Description**: Determines the number of threads for sending emails.
- **Type**: integer
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Example value**: 1
- **Since**: 6.12.0.0

mailSender.txTimeout.seconds

- **Module**: cmas-core-server
- **Description**: Determines the transaction timeout for sending emails in seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.12.0.0

mailTemplateAboveQuotedText

- **Module**: cmweb-server-adapter
- **Description**: Determines the behavior of the email template in the Ticket Email Editor when another email is quoted, i.e. forwarded or replied to. Often used to place the signature correctly.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.2.4

max.licences.perUser

- **Module**: cmas-core-server
- **Description**: Sets the maximum number of licenses which a single user can use (e.g., logging in from different browsers). By default this value is not restricted.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.8.4.5

maxSizePerPagemapInMegaBytes

- **Module**: cmweb-server-adapter
- **Description**: The parameter defines the size (in MB) of the file which is created by the Wicket framework per user session. i.e. for each engineer which is currently logged in. The file is used to save pages during the running session. When the defined size limit has been reached and new entries are added, the oldest entries are removed. In the Web Client, due to this behavior, an engineer who works with an "old" page will be redirected to the *Overview*/Start page (usually the dashboard page) when the "old" page is removed from the file.
  So in case engineers who work with a great number of open tabs in ConSol CM and complain about being redirected to the *Overview* page, it might be useful to increase this parameter. In large systems, you could use e.g. a value of 45 or 50. Since this is the size of the file which is saved on disk, the maximum value depends on the available disk space, however, a value which is too large is not recommended either.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 15
- **Since**: 6.3.5

monitoring.engineer.login

- **Module**: cmas-core-server
- **Description**: Login of monitoring engineer.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: nagios
- **Since**: 6.9.3.0

monitoring.unit.login

- **Module**: cmas-core-server
- **Description**: Login of monitoring unit.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: nagios
- **Since**: 6.9.3.0

nimh.enabled

- **Module**: cmas-core-server
- **Description**: Enables the NIMH service. Must be suffixed with the cluster node ID, e.g., `nimh.enabled.NODEID` = “true”.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false
- **Since**: 6.9.4.0

notification.error.description

- **Module**: cmas-dwh-server
- **Description**: Text for error emails from the DWH.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Error occurred
- **Since**: 6.0.1

notification.error.from

- **Module**: cmas-dwh-server
- **Description**: From address for error emails from the DWH
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.error.subject

- **Module**: cmas-dwh-server
- **Description**: Subject for error emails from the DWH
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: Error occurred
- **Since**: 6.0.1

notification.error.to

- **Module**: cmas-dwh-server
- **Description**: To address for error emails from the DWH
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_successfully.description

- **Module**: cmas-dwh-server
- **Description**: Text for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished successfully
- **Since**: 6.0.1

notification.finished_successfully.from

- **Module**: cmas-dwh-server
- **Description**: From address for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_successfully.subject

- **Module**: cmas-dwh-server
- **Description**: Subject for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: Transfer finished successfully
- **Since**: 6.0.1

notification.finished_successfully.to

- **Module**: cmas-dwh-server
- **Description**: To address for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_unsuccessfully.description

- **Module**: cmas-dwh-server
- **Description**: Text for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished unsuccessfully
- **Since**: 6.0.1

notification.finished_unsuccessfully.from

- **Module**: cmas-dwh-server
- **Description**: From address for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_unsuccessfully.subject

- **Module**: cmas-dwh-server
- **Description**: Subject for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no

- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished unsuccessfully
- **Since**: 6.0.1

notification.finished_unsuccessfully.to

- **Module**: cmas-dwh-server
- **Description**: To address for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.host

- **Module**: cmas-dwh-server
- **Description**: Email (SMTP) server hostname for sending DWH emails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myserver.consol.de
- **Since**: 6.0.1

notification.password

- **Module**: cmas-dwh-server
- **Description**: Password for sending DWH emails (optional).
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.0.1

notification.port

- **Module**: cmas-dwh-server
- **Description**: SMTP port for sending DWH emails.
- **Type**: string
- **Restart required**: no

- **System**: yes
- **Optional**: yes
- **Example value**: 25
- **Since**: 6.0.1

notification.protocol

- **Module**: cmas-dwh-server
- **Description**: The protocol used for sending emails from the DWH.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: pop3

notification.tls.enabled

- **Module**: cmas-dwh-server
- **Description**: Activates SMTP via SSL/TLS (SMTPS) for sending notification emails from the DWH. The default value is “false”. If it is set to “true”, SMTPS is activated for sending notifications from the DWH.
- **Type**: string
- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.11.1.6

notification.username

- **Module**: cmas-dwh-server
- **Description**: (SMTP) user name for sending DWH emails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser
- **Since**: 6.0.1

notifications.enabled

- **Module**: cmas-web-notifications
- **Description**: Determines whether the notifications feature is enabled (“true”) or disabled (“false”). The default value is “true” for ConSol CM systems running on JBoss application servers, and “false” for ConSol CM systems running on WebLogic application servers.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: true
- **Since**: 6.12.0.0

number.of.tasks

- **Module**: cmas-core-server
- **Description**: Number of threads to use by the Task Execution Framework (TEF).
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1
- **Since**: 6.9.4.0

outdated.lock.age

- **Module**: cmas-workflow-jbpm
- **Description**:
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60000
- **Removed in**: 6.8.0
- **Replaced by**: cmas-workflow-engine, jobExecutor.lockTimeout.seconds

pagemapLockDurationInSeconds

- **Module**: cmweb-server-adapter
- **Description**: Number of seconds to pass before pagemap is considered to be locked for too long.
- **Type**: integer
- **Restart required**: yes

- **System**: yes
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.7.3

password.reset.mail.from

- **Module**: cmas-core-security
- **Description**: The `From` address for the email which is sent to a customer who requests a new password (using the *Forgot your password?* link) in CM/Track and to an engineer who requests a new password (using the *Forgot your password?* link) in the Web Client.
- **Type**: String
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: mypwreset@consol.de
- **Since**: 6.11.0.1

policy.password.age

- **Module**: cmas-core-security
- **Description**: Maximum validity period, in number of days, example “183” (6 months), default value: “5500” (= 15 years, i.e., no password change enforced).
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 5500 (15 years, default value)
- **Since**: 6.10.1.0

policy.password.pattern

- **Module**: cmas-core-security
- **Description**: RegEx pattern for the password, default value: “^.3,$” (at least 3 characters).
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: "^.3,$" (default value)
- **Since**: 6.10.1.0

policy.rotation.ratio

- **Module**: cmas-core-security
- **Description**: Defines how often passwords may repeat. For example, setting the value to X means that the new password cannot be present among the user's X previous passwords.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1 (default value)
- **Since**: 6.10.1.0

policy.track.username.case.sensitive

- **Module**: cmas-core-security
- **Description**: Defines whether customer (user) names in CM/Track are treated case-sensitive on login.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.11.0.0

policy.username.case.sensitive

- **Module**: cmas-core-security
- **Description**: Defines whether user names are case-sensitive.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.10.1.0

postActivityExecutionScriptName

- **Module**: cmweb-server-adapter
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: postActivityExecutionHandler
- **Since**: 6.2.0

queue.polling.threads.number

- **Module**: cmas-nimh
- **Description**: Number of threads started for polling the email queue in the database.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1 (default value)
- **Since**: 6.4.0

queue.polling.threads.shutdown.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Waiting time after the shutdown signal. When the timeout is reached, the thread will be terminated.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

queue.polling.threads.watchdog.interval.seconds

- **Module**: cmas-nimh
- **Description**: Determines the interval in seconds to execute the watchdog which checks the activity of the threads of the email queue poller.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 30 (default value)
- **Since**: 6.4.0

queue.task.error.pause.seconds

- **Module**: cmas-nimh
- **Description**: Maximum number of seconds, the queue poller waits after infrastructure (e.g. database) error.
- **Type**: integer

- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 180 (default value)
- **Since**: 6.4.0

queue.task.interval.seconds

- **Module**: cmas-nimh
- **Description**: Main emails' queue polling thread interval.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 15 (default value)
- **Since**: 6.4.0

queue.task.max.retries

- **Module**: cmas-nimh
- **Description**: Maximum number of email processing retries after an exception. When reached, the email is moved to the email archive. This email can be rescheduled again using NIMH API (or the Admin Tool).
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.4.0

queue.task.timeout.seconds

- **Module**: cmas-nimh
- **Description**: After this time of inactivity (in seconds), the service thread is considered damaged and automatically restarted.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 600 (default value)
- **Since**: 6.4.0

queue.task.transaction.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Transaction timeout for email processing in the pipe.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

queuesExcludedFromGS

- **Module**: cmweb-server-adapter
- **Description**: Comma-separated list of queue names which are excluded from Quick Search.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: Helpdesk,FAQ
- **Since**: 6.0

recent.items.cleanup.cluster.node.id

- **Module**: cmas-core-server
- **Description**: Value of a `-Dcmas.clusternode.id` designating the node which will clean up recent items.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 1 (assuming the cluster node started with `-Dcmas.clusternode.id=1` parameter)
- **Since**: 6.11.0.1

recent.items.cleanup.interval.minutes

- **Module**: cmas-core-server
- **Description**: Controls the time interval (in minutes) in which recent items should be checked for removal.
- **Type**: integer
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: 60
- **Since**: 6.11.0.1

recent.items.max.per.engineer

- **Module**: cmas-core-server
- **Description**: Maximum number of preserved recent items per engineer while cleaning up (older recent items will be deleted).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 500
- **Since**: 6.11.0.1

recent.items.persistence.enabled

- **Module**: cmas-core-server
- **Description**: Enables persistence of recent items. If the property is set to “false”, it prevents storing new recent items. If a recently visited widget (`recentlyVisitedWidget`) is used on a dashboard, this property needs to be set to “true”. Otherwise, you can set it to “false” to save system resources.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.11.1.0

recoverable.exceptions

- **Module**: cmas-dwh-server
- **Description**: Comma-separated list of exception definitions: CLASS[+][:REGEX]. The exceptions included in the list do not stop CM from sending to the CMRF process, but force it to try again. If optional '+' after CLASS is present, classes which extend CLASS are matched.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: java.sql.SQLRecoverableException,java.lang.RuntimeException+:.*T.1\,2T.*
- **Since**: 6.8.4.6

refreshTimeInCaseOfConcurrentRememberMeRequests

- **Module**: cmas-workflow-jbpm
- **Description**: It sets the refresh time (in seconds) after which the page will be reloaded in case of concurrent remember me requests. This feature prevents one user from occupying many licenses. Please increase that time if sessions are still occupying.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: yes
- **Example value**: 5
- **Since**: 6.8.2

rememberMeLifetimeInMinutes

- **Module**: cmweb-server-adapter
- **Description**: Lifetime for *remember me* in minutes.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 1440
- **Since**: 6.0

request.scope.transaction

- **Module**: cmweb-server-adapter
- **Description**: It allows to disable request scope transaction. By default one transaction is used per request. Setting this property to “false” there will cause one transaction per service method invocation.
- **Type**: boolean
- **Restart required**: yes
- **System**: yes
- **Optional**: yes
- **Example value**: true
- **Since**: 6.8.1

resetCode.expirationPeriod

- **Module**: cmas-core-security
- **Description**: Defines the expiration period for the link when resetting the password in CM/Track.
- **Type**: Integer
- **Restart required**: no

- **System**: no
- **Optional**: yes
- **Example value**: 86400000 (default value, 24 hours)
- **Since**: 6.10.1

resource.replace.batchSize

- **Module**: cmas-core-server
- **Description**: Defines the number of objects to be processed in a resource replace action.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5
- **Since**: 6.10.0.0

resource.replace.timeout

- **Module**: cmas-core-server
- **Description**: Transaction timeout (in seconds) of a resource replacement action step.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 120
- **Since**: 6.10.0.0

scene

- **Module**: cmas-setup-scene
- **Description**: Scene file which was imported during setup (can be empty).
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: vfszip:/P:/dist/target/jboss/server/cmas/deploy/cm-dist-6.5.1-SNAPSHOT.ear/APP-INF/lib/dist-scene-6.5.1-SNAPSHOT.jar/META-INF/cmas/scenes/helpdesk-sales_scene.jar/
- **Since**: 6.0

script.evict.unused.after.hours

- **Module**: cmas-core-server
- **Description**: Determines the number of hours for which unused scripts remain in the cache. After this time, the compiled class of the script is removed. The ConSol CM server checks for scripts to evict every hour.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 24 (default)
- **Since**: 6.11.1.14

script.logging.threshold.seconds

- **Module**: cmas-core-server
- **Description**: When this time, in seconds, is exceeded during script execution, a warning is emitted in the logs.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10 (default)
- **Since**: 6.10.1.0

script.validation.interval.seconds

- **Module**: cmas-app-admin-tool
- **Description**: Interval in seconds between two code checks in the Admin Tool or the Process Designer code editor
- **Type**: Integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 1 (default value)
- **Since**: 6.11.0.1

searchPageSize

- **Module**: cmweb-server-adapter
- **Description**: Default page size for search results.
- **Type**: integer
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: 20
- **Since**: 6.0

searchPageSizeOptions

- **Module**: cmweb-server-adapter
- **Description**: Options for the page size for search results.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 10|20|30|40|50|75|100
- **Since**: 6.0

security.fields.customer.exposure.check.enabled

- **Module**: cmas-restapi-core
- **Description**: Enables customer exposure annotation checks for ticket fields.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.10.5.4

security.restrict.unit.access.to.own.data

- **Module**: cmas-restapi-core
- **Description**: If set to “true”, an additional check is performed when a user logs in as a customer using the REST API, e.g. CM/Track. When requesting customer data, only the company of the user or other contacts of the user’s company are returned. If set to “false”, no additional security check is performed and the former security rules apply.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true (default value)
- **Since**: 6.9.2.14

serial.mods.tracking.enabled

- **Module**: cmas-core-server
- **Description**: Low level technical flag deciding whether serial diff tracking for entities is enabled. If enabled, there will be no `StackOverflow` error in case a dependency between two entities (for example engineer and ticket) causes an infinite loop first and then as a result, the StackOverflow. The property must be added to the configuration manually. It will not be added to a system configuration during setup or update.

  > ⚠ Please enable the restricted ticket change behavior described in this section only when advised by a ConSol representative! It is a low level technical flag with intricate consequences for system behavior and thus should not be used without thorough scrutiny.

- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.10.7.0, 6.11.0.5

server.instance.task.crash.period.seconds

- **Module**: cmas-core-server
- **Description**: Determines the period (in seconds) for detecting live and crashed ConSol CM server instances.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 15 (default value)
- **Since**: 6.11.1.6

server.instance.task.period.seconds

- **Module**: cmas-core-server
- **Description**: Determines the interval (in seconds) between repeated task executions. The task will be executed repeatedly with the given number of seconds between each execution.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 5 (default value)
- **Since**: 6.11.1.6

server.session.archive.reaper.interval

- **Module**: cmas-core-server
- **Description**: Determines the interval (in seconds) when the reaper for archived server sessions is executed, refers to the database table `cmas_user_session`.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.7.1

server.session.archive.timeout

- **Module**: cmas-core-server
- **Description**: Server sessions archive validity timeout (in days). After this time session info is removed from the database (refers to the database table `cmas_user_session`).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 3 or 7
- **Since**: 6.7.1

server.session.reaper.interval

- **Module**: cmas-core-server
- **Description**: Determines the interval (in seconds) when the reaper for inactive (ended) server sessions is executed, refers to the database table `cmas_user_session`.
- **Type**: integer
- **Restart required**: only Session Service
- **System**: yes
- **Optional**: no
- **Example value**: 10800 (3 hours)
- **Since**: 6.6.1, 6.7.1

server.session.timeout

- **Module**: cmas-core-server
- **Description**: Server session timeout (in seconds) for connected clients (database table `cmas_user_session`). Each client can overwrite this timeout with custom value using its ID (ADMIN_TOOL, WEB_CLIENT, WORKFLOW_EDITOR, TRACK (before 6.8, please use PORTER), ETL, REST)

appended to property name, e.g., `server.session.timeout.ADMIN_TOOL`.
Please see also the Page Customization attributes *updateTimeServerSessionActivityEnabled* and *updateTimeServerSessionActivity*, both of type *cmApplicationCustomization*.

- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1800
- **Since**: 6.6.1, 6.7.1

Detailed explanation for the Admin Tool:

- server.session.timeout.ADMIN_TOOL
  Defines the time interval how long the server considers a session valid while there is no activity from the Admin Tool holding the session. The Admin Tool is not aware of this value, it only suffers having an invalid session, if the last activity has been longer in the past.
- admin.tool.session.check.interval
  Defines the time between two checks done by the Admin Tool, if the server still considers its session valid.

For example, if admin.tool.session.check.interval = 60, the Admin Tool queries the server every minute if its session is still active/valid. In case server.session.timeout.ADMIN_TOOL = 600 the Admin Tool will get the response that the session is now invalid after ten minutes of inactivity.

serverPoolingInterval

- **Module**: cmweb-server-adapter
- **Description**: Defines the time in seconds for pooling server to invalidate caches on the web layer.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5
- **Since**: 6.1.0

skip-ticket

- **Module**: cmas-dwh-server
- **Description**: Tickets are not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false

- **Since**: 6.6.19
- **Removed in**: 6.8.1

skip-ticket-history

- **Module**: cmas-dwh-server
- **Description**: History of ticket is not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

skip-unit

- **Module**: cmas-dwh-server
- **Description**: Units are not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

skip-unit-history

- **Module**: cmas-dwh-server
- **Description**: History of unit is not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

skip.wfl.transfer.cleanup

- **Module**: cmas-core-server
- **Description**: If set to “true”, skips workflow cleanup after transfer.

- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.9.4.1

skip.wfl.transfer.translations.cleanup

- **Module**: cmas-core-server
- **Description**: Enables skipping the cleanup of localized properties of removed workflow elements.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.10.5.5

split.history

- **Module**: cmas-dwh-server
- **Description**: Changes the SQL that fetches the history for the tickets during DWH transfer so that the history is not fetched for all tickets at once but only for one ticket per SQL.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: false
- **Since**: 6.8.0

start.groovy.task.enabled

- **Module**: cmas-app-admin-tool
- **Description**: For being able to run Admin Tool scripts of type *Task* in the Admin Tool (navigation group *Services*, navigation item *Task Execution*). It is required to enable the *Start task* button, which is hidden by default. This is done by setting this system property to “true”.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.4.0

statistics.calendar

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.client.group

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.contact.role

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.content.entry

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.content.entry.class

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.content.entry.history

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.customer.definition

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.engineer

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.enum.group

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.field.definition

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.group.definition

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.locale

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.localized.property

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.mla

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.project

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.queue

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.resource

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.resource.group

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.resource.history

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.resource.relation.definition

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.resource.type

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.ticket

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.ticket.function

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.ticket.history

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.time.booking

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.timestamp

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.unit

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.unit.history

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.unit.relation.definition

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.workflow

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

strict.utf.bmp.enabled

- **Module**: cmas-core-server
- **Description**: In ConSol CM versions lower than 6.10.6, incoming emails with a subject line containing four-byte UTF8 characters could not be handled by some installations using the MySQL database engine. The reason is the encoding/collation configuration of the database using a

two-byte BMP (Basic Multilingual Plane) 0 plane which cannot be changed in some installations for technical reasons. Other database engines were unaffected. Emails with this encoding could not be imported into the system at all in CM versions lower than 6.10.6. In order to accommodate this issue this system property for configuration is available.
Setting it to “true” will filter out all four-byte UTF8 characters before any database interaction, so the problems mentioned above will not occur.
The property value is “true” by default for MySQL databases, and “false” for any other database where it should not be necessary at all. Change it for a MySQL database only, if the settings positively will support four-byte characters.

- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.10.6.0

supportEmail

- **Module**: cmweb-server-adapter
- **Description**:
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.0
- **Removed in**: 6.11.0.1

synchronize.archive.timeout.minutes

- **Module**: cmas-core-index-common
- **Description**: Determines the time period in minutes during which index updates are archived. The default value of this property is “60” for clustered environments and “0” for non-clustered environments. If the master node is switched, the new master can recover missing data in case it had not been fully synchronized with the previous master indexing server at the moment of switch.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60
- **Since**: 6.12.0.0

synchronize.master.address

- **Module**: cmas-core-index-common
- **Description**: Value of `-Dcmas.http.host.port` specifying how to connect to the indexing master server. The default value is null. Since 6.6.17 this value is configurable in set-up to designate the initial indexing master server. Since 6.12.0.0 it is possible to switch the node acting as master node by entering the address of the new master node. The index updates are archived for the time configured in the property `cmas-core-index-common`, `synchronize.archive.timeout.minutes`, so the new master can recover missing data in case it had not been fully synchronized with the previous master indexing server at the moment of switch.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 127.0.0.1:80
- **Since**: 6.6.0

synchronize.master.security.token

- **Module**: cmas-core-index-common
- **Description**: The password for accessing the index snapshot via URL, e.g., for index synchronization or for backups.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: token
- **Since**: 6.6.0

synchronize.master.security.user

- **Module**: cmas-core-index-common
- **Description**: The user name for accessing the index snapshot via URL, e.g., for index synchronization or for backups.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: user
- **Since**: 6.6.0

synchronize.master.timeout.minutes

- **Module**: cmas-core-index-common
- **Description**: Determines how long the master server may continually fail until a new master gets elected. Since 6.6.17, this value is configurable in setup, where 0 means that master server will never change (failover is disabled).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5 (default value)
- **Since**: 6.6.0

synchronize.megabits.per.second

- **Module**: cmas-core-index-common
- **Description**: Determines how much bandwidth the master server may consume when transferring index changes to all slave servers. Do not use all available bandwidth to transfer index changes between hosts, as doing so will most probably partition the cluster due to some subsystems being unable to communicate.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 85 (default value)
- **Since**: 6.6.0

synchronize.sleep.millis

- **Module**: cmas-core-index-common
- **Description**: Determines how often each slave server polls the master server for index changes.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1000 (default value)
- **Since**: 6.6.0

task.execution.interval.seconds

- **Module**: cmas-core-server
- **Description**: Time in seconds between the end of an accomplished task in the TEF (Task Execution Framework) and the start of the next task.
- **Type**: Integer

- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 5
- **Since**: 6.9.4.0

task.execution.node.id

- **Module**: cmas-core-server
- **Description**: Only relevant in clustered environments. The ID of the node where scripts of the TEF (Task Execution Framework) will be executed. This applies to both scripts called from the workflow and scripts called manually using the Admin Tool. The Admin Tool can be started from any node.
- **Type**: Integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 2
- **Since**: 6.11.0.1

task.panel.refresh.interval.seconds

- **Module**: cmas-app-admin-tool
- **Description**: Time in seconds after which the task list (in the Admin Tool) of the Task Execution Framework is refreshed.
- **Type**: Integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 10
- **Since**: 6.10.5.3 (not added automatically during update from versions prior to 6.10.5.3!)

themeOverlay

- **Module**: cmweb-server-adapter
- **Description**: Name of the folder containing the skin used to customize the layout of the Web Client.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: consolINT
- **Since**: 6.0, functionality changed in 6.11.2.0

ticket.delete.timeout

- **Module**: cmas-core-server
- **Description**: Transaction timeout (in seconds) for deleting tickets.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60
- **Since**: 6.1.3

ticket.from.incoming.message.accepted.links

- **Module**: cmas-core-server
- **Description**: List of domains to which links in incoming emails and links in comments added via REST API are clickable in the ticket history. Regular expressions can be used to specify the allowed URLs. It is possible to add several URLs by using a whitespace as delimiter. The URL must start with one of the allowed protocols (http, https, ftp, ftps, file, mailto). All other links are removed, i.e., the link is displayed in the ticket history as text but it cannot be clicked. If the property is left empty, all links are removed. The regular expression `.+` can be used to allow all domains.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: https://.*\.consol\.de (allows links to “https://<any>.consol.de”)
- **Since**: 6.11.1.7

Please note that whitelisting domains might make ConSol CM vulnerable to cross-site scripting and other attacks. Choose the domains you whitelist carefully!

ticketListRefreshIntervalInSeconds

- **Module**: cmweb-server-adapter
- **Description**: Refresh interval for the ticket list (in seconds).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 180
- **Since**: 6.0

ticketListSizeLimit

- **Module**: cmweb-server-adapter
- **Description**: Maximum number of tickets in ticket list.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 100
- **Since**: 6.0

tickets.delete.size

- **Module**: cmas-core-server
- **Description**: Defines the number of tickets deleted per transaction.
- **Type**: integer
- **Restart required**: only Session Service
- **System**: yes
- **Optional**: no
- **Example value**: 10 (default value)
- **Since**: 6.8.1

time.buffer

- **Module**: cmas-dwh-server
- **Description**: Number of minutes to extend date of start live mode.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 5
- **Since**: 6.8.1.11

transaction.timeout.minutes

- **Module**: cmas-core-server
- **Description**: Sets the transaction timeout for the task execution service, i.e., one run of a task must finish before this timeout is reached. The changes are visible only for new tasks, the execution of which started after the configuration change.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: 10*60 (10 hours - default value)
- **Since**: 6.10

ttl.days

- **Module**: cmas-web-notifications
- **Description**: Determines the time (in days) after which unpinned notifications are removed.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 15
- **Since**: 6.12.0.0

tx.read.only.mode.enabled

- **Module**: cmweb-server-adapter
- **Description**: Enables read-only transactions for faster page loading. This transactional behavior was introduced in 6.11.0, and this property acts as a safety guard to restore the old behaviors. Do not change this value unless facing tx problems and advised by ConSol.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.11

unit.description.mode

- **Module**: cmas-core-server
- **Description**: Defines whether unit (contact) descriptions in the ticket history are taken from the database or dynamically rendered using templates. The value, “DYNAMIC”, is a bit more costly from the performance perspective, while “PROTOCOL” is faster but returns historical names which might be outdated. Use “PROTOCOL” if you have lots of history entries from many different units. This is also the default value in CM versions 6.11.1.1 and up. In CM versions up to 6.11.1.0, “DYNAMIC” is the default.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: PROTOCOL
- **Since**: 6.11.0

unit.replace.batchSize

- **Module**: cmas-core-server
- **Description**: Defines the number of objects to be processed in a unit replace action.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5
- **Since**: 6.8.2

unit.replace.timeout

- **Module**: cmas-core-server
- **Description**: Transaction timeout (in seconds) of a unit replacement action step.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 120
- **Since**: 6.8.2

unit.transfer.order

- **Module**: cmas-dwh-server
- **Description**: Defines in which order customer field groups should be transferred to the DWH.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: company;customer
- **Since**: 6.6.19
- **Removed in**: 6.8.1

unitIndexSearchResultSizeLimit

- **Module**: cmweb-server-adapter
- **Description**: Maximum number of units in unit search result (e.g. when searching for contact).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: 5
- **Since**: 6.0

unused.content.remover.cluster.node.id

- **Module**: cmas-core-server
- **Description**: Value of a `cmas.clusternode.id` designating which node will remove unused ticket attachments and unit content entries.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 1 (assuming cluster node started with the parameter `-Dcmas.clusternode.id=1`)
- **Since**: 6.9.0.0

unused.content.remover.enabled

- **Module**: cmas-core-server
- **Description**: Specifies whether a removal of unused ticket attachments and unit content entries should take place.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.9.0.0

unused.content.remover.polling.minutes

- **Module**: cmas-core-server
- **Description**: Determines how often unused ticket attachments and unit content entries should be checked for removal.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 15
- **Since**: 6.9.0.0

unused.content.remover.ttl.minutes

- **Module**: cmas-core-server
- **Description**: Minimum interval, in minutes, after which unused ticket attachments and unit content entries can be removed.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1440
- **Since**: 6.9.0.0

update.6.11.0.0.sleep

- **Module**: cmas-setup-hibernate
- **Description**: Helper property for the update preparation scripts introduced in context of CM database refactoring in version 6.11. This is an optional setting allowing a delay (in milliseconds) after each loop iteration of the preparation scripts. Setting the delay should lower the database load, for example during working hours. This property may be removed after the update preparation tasks finish.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.0, for use in 6.10.5.x

update.6.11.0.0.timezone

- **Module**: cmas-setup-hibernate
- **Description**: Helper property for the ticket history migration (the new way of counting history groups). Since 6.11.0.0 the groups are constant (2h time span), but before 6.11.0.0 groups were not constant and depended on the customer's time zone. Migration scripts use an old algorithm to calculate groups and therefore need information about the time zone. The property should be set to the timezone which is most commonly used by the customers. If the property is not set, the default server time zone is used (`TimeZone.getDefault()`). The property should be set before updating to 6.11.0.0 and will be removed automatically after migration. The list of accepted timezones can be found for example here: http://joda-time.sourceforge.net/timezones.html.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: Europe/Berlin
- **Since**: 6.11.0.0, for use before updating to this version

urlLogoutPath

- **Module**: cmweb-server-adapter
- **Description**: URL which is opened when the user logs out. There are three configuration possibilities:
  - Empty value: The user is redirected to the login page.
  - <CM URL>/cm-client/logout: The user is redirected to the logout page, which includes a link to log in again.
  - Any URL: The user is redirected to the given URL outside ConSol CM.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: https://mycmserver/cm-client/logout
- **Since**: 6.3.1, behavior changed in 6.11.2.0

voCacheEnabled

- **Module**: cmweb-server-adapter
- **Description**: This property enables additional caching for the Web Client, voCaching, of complete objects, thus improving performance.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: true
- **Since**: 6.11.1.0

Notes:

- Since ConSol CM version 6.11.1.1, the default value is “true” for non-clustered environments. The value is set to “true” automatically during the setup or update of ConSol CM 6.11.1.1.
- When voCaching is enabled and lazy loading is used for folding ticket history entries, once the engineer unfolded an entry, he cannot fold it again by reloading the page or opening the ticket from the workspace.
- When using the dynamic mode for displaying engineer and customer names in the ticket history (as configured in the system properties cmas-core-server, engineer.description.mode and cmas-core-server, unit.description.mode), the new version of the engineer and/or customer name is only displayed after the ticket has been changed.
- This system property is ignored for clustered environments (environments with cmas-core-shared, cluster.mode set to “true”). In clustered environments, voCaching is always disabled to avoid problems that changes made to objects on one node are not visible on the other nodes.

warmup.executor.enabled

- **Module**: cmas-core-server
- **Description**: Specifies whether the server should asynchronously warm up during startup (e.g., fill some of the internal caches).
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.9.4.2

webSessionTimeoutInMinutes

- **Module**: cmweb-server-adapter
- **Description**: Session timeout in minutes.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 180
- **Removed in**: 6.7.1
- **Replaced by**: cmas-core-server, server.session.timeout

wfl.sticky.transfer.disabled

- **Module**: cmas-core-server
- **Description**: Enables using preserved original names of workflow elements.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false
- **Since**: 6.10.1.0

wicketAjaxRequestHeaderFilterEnabled

- **Module**: cmweb-server-adapter
- **Description**: This enables filter for Wicket AJAX requests, coming from stale pages with Wicket 1.4 scripting (CM pre-6.8.0), after update to CM6 post-6.8.0.
- **Type**: boolean
- **Restart required**: yes
- **System**: yes
- **Optional**: yes
- **Example value**: false
- **Since**: 6.8.1

workflow.deploy.cache.eviction.disabled

- **Module**: cmas-core-server
- **Description**: Determines if the infinispan cache should be cleared after deployment (“true”) or not (“false”). If the property is set to “true”, all mappings are removed from the cache.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.11.1.4

X-Frame-Options

- **Module**: cmweb-server-http-headers
- **Description**: Example property to illustrate the configuration of HTTP headers. In this case the delivered HTTP header contains the field *X-Frame-Options* with the value “SAMEORIGIN”.

  Each property in the module `cmweb-server-http-headers` represents one header field. The property name/key identifies the response header field and the value of the property is the field value sent in this header.

> ⚠ Please be aware that additional HTTP response headers must be correctly defined with the exact spelling as officially specified! Please note also that the correct interpretation and application of these headers is fully in the realm and responsibility of the client browser which requested the page!

- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: SAMEORIGIN
- **Since**: 6.10.8

F.2.2 List of System Properties by Module

This chapter lists the system properties included in the following modules.

F.2.2.1 cmas-app-admin-tool (module)

admin.tool.consumed.licences.check.interval

- **Module**: cmas-app-admin-tool
- **Description**: Sets the interval (in seconds) to monitor the number of consumed licenses.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 30 (default value)
- **Since**: 6.11.0.0

admin.tool.consumed.licences.pool.name

- **Module**: cmas-app-admin-tool
- **Description**: Sets the license pool name to monitor the number of consumed licenses.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: CONCURRENT_USERS (default value)
- **Since**: 6.11.0.0

admin.tool.session.check.interval

- **Module**: cmas-app-admin-tool
- **Description**: Configures the time interval (in seconds) in which the system checks for inactive (ended) Admin Tool sessions.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 30
- **Since**: 6.7.5

autocomplete.enabled

- **Module**: cmas-app-admin-tool
- **Description**: If the flag is missing or its value is “false”, then the *Autocomplete address* navigation item is hidden in Admin Tool.
- **Type**: boolean
- **Restart required**: no
- **System**: yes

- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.2.0

delete.ticket.enabled

- **Module**: cmas-app-admin-tool
- **Description**: Controls if the menu entry *Delete* is displayed in the context menu in the Admin Tool for the ticket list in the ticket administration.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.4.0

dwh.administration.refresh.interval.seconds

- **Module**: cmas-app-admin-tool
- **Description**: Internal DWH property, not to be changed manually. This property is used to set the interval for refreshing the list of actions in the Admin Tool, section *Data Warehouse -> Administration -> Actions*.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.11.0.1

script.validation.interval.seconds

- **Module**: cmas-app-admin-tool
- **Description**: Interval in seconds between two code checks in the Admin Tool or the Process Designer code editor
- **Type**: Integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 1 (default value)
- **Since**: 6.11.0.1

start.groovy.task.enabled

- **Module**: cmas-app-admin-tool
- **Description**: For being able to run Admin Tool scripts of type *Task* in the Admin Tool (navigation group *Services*, navigation item *Task Execution*). It is required to enable the *Start task* button, which is hidden by default. This is done by setting this system property to “true”.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.4.0

task.panel.refresh.interval.seconds

- **Module**: cmas-app-admin-tool
- **Description**: Time in seconds after which the task list (in the Admin Tool) of the Task Execution Framework is refreshed.
- **Type**: Integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 10
- **Since**: 6.10.5.3 (not added automatically during update from versions prior to 6.10.5.3!)

F.2.2.2 cmas-archive-core-server (module)

archive.uri

- **Module**: cmas-archive-core-server
- **Description**: Sets the URL from which the CM/Archive application can be accessed
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: <server_url>:8090
- **Since**: 6.11.2.0

F.2.2.3 cmas-auth-server (module)

access.token.signing.key

- **Module**: cmas-auth-server
- **Description**: Determines the secret shared between the authorization server and all client applications using OAuth2, e.g. CM/Archive. The value of this property needs to match the value of *archive.oauth2.access.token.signing.key* in the configuration file of CM/Archive.
- **Type**: password
- **Restart required**: yes
- **System**: no
- **Optional**: no
- **Example value**: my_password
- **Since**: 6.11.2.0

client.archive.access.token.validity.seconds

- **Module**: cmas-auth-server
- **Description**: Determines the validity period in seconds of the access token required for using CM/Archive.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 43200 (default value)
- **Since**: 6.11.2.0

client.archive.enabled

- **Module**: cmas-auth-server
- **Description**: Determines if CM/Archive is enabled (“true”) or disabled (“false”).
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: false
- **Since**: 6.11.2.0
- **Removed in**: 6.11.2.2

client.archive.refresh.token.validity.seconds

- **Module**: cmas-auth-server
- **Description**: Determines the validity period in seconds of the refresh token required for obtaining new access tokens for CM/Archive.
- **Type**: integer

- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 2592000 (default value)
- **Since**: 6.11.2.0

client.archive.secret

- **Module**: cmas-auth-server
- **Description**: Determines the secret shared between the authorization server and CM/Archive. The value of the property needs to match the value of *archive.oauth2.client.secret* in the configuration file of CM/Archive.
- **Type**: password
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: my_password
- **Since**: 6.11.2.0

client.was.access.token.validity.seconds

- **Module**: cmas-auth-server
- **Description**: Determines the validity period in seconds of the access token required for using the Web Admin Suite.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 43200 (default value)
- **Since**: 6.12.0.0

client.was.refresh.token.validity.seconds

- **Module**: cmas-auth-server
- **Description**: Determines the validity period in seconds of the refresh token required for obtaining new access tokens for the Web Admin Suite.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 2592000 (default value)
- **Since**: 6.12.0.0

client.was.secret

- **Module**: cmas-auth-server
- **Description**: Determines the secret shared between the authorization server and the Web Admin Suite.
- **Type**: password
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: my_password
- **Since**: 6.12.0.0

F.2.2.4 cmas-core-cache (module)

cache-cluster-name

- **Module**: cmas-core-cache
- **Description**: JBoss cache cluster name.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 635a6de1-629a-4129-8299-2d98633310f0
- **Since**: 6.4.0

eviction.event.queue.size

- **Module**: cmas-core-cache
- **Description**: The size of the queue holding cache events. The default value is 200000. It is recommended to increase the value slightly (up to 400000) on systems with high traffic or load.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 200000 (default value)
- **Since**: 6.4.0

eviction.lifeSpan

- **Module**: cmas-core-cache
- **Description**: Sets the interval (in milliseconds) for cache entry validity. When this time is elapsed, the entry is removed from the cache.
- **Type**: integer
- **Restart required**: yes
- **System**: no

- **Optional**: yes
- **Example value**: 86400000 (default value)
- **Since**: 6.11.1.0

eviction.max.nodes

- **Module**: cmas-core-cache
- **Description**: Sets the maximum size of internal caches. The default value is 100000. Increasing it will lead to higher memory consumption and is not recommended unless explicitly advised by ConSol.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 100000 (default value)
- **Since**: 6.4.0

eviction.strategy

- **Module**: cmas-core-cache
- **Description**: Determines the cache eviction strategy. Please see the Infinispan documentation for details.
- **Type**: string
- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: LRU, LIRS (default value)
- **Since**: 6.11.1.0

eviction.wakeup.interval

- **Module**: cmas-core-cache
- **Description**: Sets the interval (in milliseconds) between two cache queue event processing cycles. The default value is 3000. It is recommended to decrease it (minimum is 1500) on systems with high traffic or load.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 3000 (default value)
- **Since**: 6.4.0

F.2.2.5 cmas-core-index-common (module)

big.task.minimum.size

- **Module**: cmas-core-index-common
- **Description**: Indicates the minimum size of index task (in parts, each part has 100 entities) to qualify this task as a big one. Big tasks have a lower priority than normal tasks.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 15 (default value)
- **Since**: 6.8.3

database.notification.enabled

- **Module**: cmas-core-index-common
- **Description**: Indicates whether the notification channel “database” should be used for index updates instead of JMS. The default value is “true.”
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.8.4.7
- **Removed in**: 6.12.0.0

database.notification.redelivery.delay.seconds

- **Module**: cmas-core-index-common
- **Description**: If the notification channel “database” is used for index updates, this property indicates the delay for notification redelivery when an exception occurs.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60
- **Since**: 6.8.4.7

database.notification.redelivery.max.attempts

- **Module**: cmas-core-index-common
- **Description**: In case of index update database notification channel, indicates maximum redelivery attempts when an exception occurs.
- **Type**: integer

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60
- **Since**: 6.8.4.7

disable.admin.task.auto.commit

- **Module**: cmas-core-index-common
- **Description**: All tasks created for index update will be automatically executed right after creation.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.1

index.attachment

- **Module**: cmas-core-index-common
- **Description**: Specifies whether the content of attachments is indexed.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.4.3

index.history

- **Module**: cmas-core-index-common
- **Description**: Specifies whether unit and ticket history are indexed.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.1.0
- **Removed in**: 6.11.0

index.status

- **Module**: cmas-core-index-common
- **Description**: Status of the Indexer, possible values RED, YELLOW, GREEN, will be displayed in the Admin Tool.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: GREEN
- **Since**: 6.6.1

index.task.worker.threads

- **Module**: cmas-core-index-common
- **Description**: How many threads will be used to execute index tasks (synchronization, administrative and repair tasks). We recommend to use a value not larger than 2.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1 (default value)
- **Since**: 6.6.14, 6.7.3. Since 6.8.0 and exclusively in 6.6.21 also normal (live) index updates are affected by this property.

index.version.current

- **Module**: cmas-core-index-common
- **Description**: Holds information about the current (possibly old) index version.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1 (default value)
- **Since**: 6.7.0

index.version.newest

- **Module**: cmas-core-index-common
- **Description**: Holds information about which index version is considered newest.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: 1 (default value)
- **Since**: 6.7.0

indexed.assets.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many assets should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 200 (default value)
- **Since**: 6.8.0

indexed.engineers.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many engineers should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 300 (default value)
- **Since**: 6.6.14, 6.7.3

indexed.resources.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many resources should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 200 (default value)
- **Since**: 6.10.0.0

indexed.tickets.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many tickets should be loaded into memory at once, per thread, during indexing.
- **Type**: integer

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 100 (default value)
- **Since**: 6.6.14, 6.7.3

indexed.units.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many units should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 200 (default value)
- **Since**: 6.6.14, 6.7.3

synchronize.archive.timeout.minutes

- **Module**: cmas-core-index-common
- **Description**: Determines the time period in minutes during which index updates are archived. The default value of this property is “60” for clustered environments and “0” for non-clustered environments. If the master node is switched, the new master can recover missing data in case it had not been fully synchronized with the previous master indexing server at the moment of switch.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60
- **Since**: 6.12.0.0

synchronize.master.address

- **Module**: cmas-core-index-common
- **Description**: Value of `-Dcmas.http.host.port` specifying how to connect to the indexing master server. The default value is null. Since 6.6.17 this value is configurable in set-up to designate the initial indexing master server. Since 6.12.0.0 it is possible to switch the node acting as master node by entering the address of the new master node. The index updates are archived for the time configured in the property `cmas-core-index-common`, `synchronize.archive.timeout.minutes`, so the new master can recover missing data in case it had not been fully synchronized with the previous master indexing server at the moment of switch.
- **Type**: integer

- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 127.0.0.1:80
- **Since**: 6.6.0

synchronize.master.security.token

- **Module**: cmas-core-index-common
- **Description**: The password for accessing the index snapshot via URL, e.g., for index synchronization or for backups.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: token
- **Since**: 6.6.0

synchronize.master.security.user

- **Module**: cmas-core-index-common
- **Description**: The user name for accessing the index snapshot via URL, e.g., for index synchronization or for backups.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: user
- **Since**: 6.6.0

synchronize.master.timeout.minutes

- **Module**: cmas-core-index-common
- **Description**: Determines how long the master server may continually fail until a new master gets elected. Since 6.6.17, this value is configurable in setup, where 0 means that master server will never change (failover is disabled).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5 (default value)
- **Since**: 6.6.0

synchronize.megabits.per.second

- **Module**: cmas-core-index-common
- **Description**: Determines how much bandwidth the master server may consume when transferring index changes to all slave servers. Do not use all available bandwidth to transfer index changes between hosts, as doing so will most probably partition the cluster due to some subsystems being unable to communicate.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 85 (default value)
- **Since**: 6.6.0

synchronize.sleep.millis

- **Module**: cmas-core-index-common
- **Description**: Determines how often each slave server polls the master server for index changes.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1000 (default value)
- **Since**: 6.6.0

F.2.2.6 cmas-core-security (module)

admin.email

- **Module**: cmas-core-security
- **Description**: The email address of the ConSol CM administrator. The value which you entered during system set-up is used initially.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0

admin.login

- **Module**: cmas-core-security
- **Description**: The name of the ConSol CM administrator. The value which you entered during system set-up is used initially.
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: admin
- **Since**: 6.0

authentication.method

- **Module**: cmas-core-security
- **Description**: User authentication method (internal CM database or LDAP authentication). Allowed values are LDAP or DATABASE.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: DATABASE
- **Since**: 6.0

contact.authentication.method

- **Module**: cmas-core-security
- **Description**: Indicates contact authentication method, where possible values are DATABASE or LDAP or LDAP,DATABASE or DATABASE,LDAP.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: LDAP
- **Since**: 6.9.3.0

contact.inherit.permissions.only.to.own.customer.group

- **Module**: cmas-core-security
- **Description**: Indicates whether an authenticated contact inherits all customer group permissions from the CM/Track user profile (“false”) or only has permissions to his own customer group (“true”).
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.9.2.3

kerberos.v5.enabled

- **Module**: cmas-core-security
- **Description**: Indicates whether SSO via Kerberos is enabled.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false (default value if Kerberos was not enabled during system setup)
- **Since**: 6.2.0

kerberos.v5.username.regex

- **Module**: cmas-core-security
- **Description**: Regular expression used for mapping Kerberos principals to CM user login names.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: (.*)@.*
- **Since**: 6.2.0

ldap.authentication

- **Module**: cmas-core-security
- **Description**: Authentication method used when using LDAP authentication. Possible values are “anonymous” and “simple”.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: simple (default value)
- **Since**: 6.0

ldap.basedn

- **Module**: cmas-core-security
- **Description**: Base DN used for looking up LDAP user accounts when using LDAP authentication.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: ou=accounts,dc=consol,dc=de
- **Since**: 6.0

ldap.contact.name.basedn

- **Module**: cmas-core-security
- **Description**: Base path to search for contact DN by LDAP ID.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: ou=accounts,dc=consol,dc=de
- **Since**: 6.9.3.0

ldap.contact.name.password

- **Module**: cmas-core-security
- **Description**: Password to look up contact DN by LDAP ID. If not set, the anonymous account is used.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Since**: 6.9.3.0

ldap.contact.name.providerurl

- **Module**: cmas-core-security
- **Description**: Address of the LDAP server (ldap[s]://host:port).
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: ldap://ldap.consol.de:389
- **Since**: 6.9.3.0

ldap.contact.name.searchattr

- **Module**: cmas-core-security
- **Description**: Attribute to search for contact DN by LDAP ID.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: uid
- **Since**: 6.9.3.0

ldap.contact.name.userdn

- **Module**: cmas-core-security
- **Description**: User DN to look up contact DN by LDAP ID. If not set, the anonymous account is used.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Since**: 6.9.3.0

ldap.initialcontextfactory

- **Module**: cmas-core-security
- **Description**: Class name for the initial context factory of the LDAP implementation when using LDAP authentication. If it is not set, `com.sun.jndi.ldap.LdapCtxFactory` is used.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: com.sun.jndi.ldap.LdapCtxFactory
- **Since**: 6.0

ldap.password

- **Module**: cmas-core-security
- **Description**: Password for connecting to LDAP to look up users when using LDAP authentication. Only needed if look-up cannot be performed anonymously.
- **Type**: password
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.1.2

ldap.providerurl

- **Module**: cmas-core-security
- **Description**: LDAP provider when using LDAP authentication.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: ldap://myserver.consol.de:389
- **Since**: 6.0

ldap.searchattr

- **Module**: cmas-core-security
- **Description**: Search attribute for looking up LDAP entry associated with a CM login.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: uid
- **Since**: 6.0

ldap.userdn

- **Module**: cmas-core-security
- **Description**: LDAP user for connecting to LDAP to look up users when using LDAP authentication. Only needed if look-up cannot be performed anonymously.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.1.2

password.reset.mail.from

- **Module**: cmas-core-security
- **Description**: The `From` address for the email which is sent to a customer who requests a new password (using the *Forgot your password?* link) in CM/Track and to an engineer who requests a new password (using the *Forgot your password?* link) in the Web Client.
- **Type**: String
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: mypwreset@consol.de
- **Since**: 6.11.0.1

policy.password.age

- **Module**: cmas-core-security
- **Description**: Maximum validity period, in number of days, example “183” (6 months), default value: “5500” (= 15 years, i.e., no password change enforced).
- **Type**: integer
- **Restart required**: no

- **System**: no
- **Optional**: yes
- **Example value**: 5500 (15 years, default value)
- **Since**: 6.10.1.0

policy.password.pattern

- **Module**: cmas-core-security
- **Description**: RegEx pattern for the password, default value: “^.3,$” (at least 3 characters).
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: "^.3,$" (default value)
- **Since**: 6.10.1.0

policy.rotation.ratio

- **Module**: cmas-core-security
- **Description**: Defines how often passwords may repeat. For example, setting the value to X means that the new password cannot be present among the user's X previous passwords.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1 (default value)
- **Since**: 6.10.1.0

policy.username.case.sensitive

- **Module**: cmas-core-security
- **Description**: Defines whether user names are case-sensitive.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.10.1.0

policy.track.username.case.sensitive

- **Module**: cmas-core-security
- **Description**: Defines whether customer (user) names in CM/Track are treated case-sensitive on login.

- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.11.0.0

resetCode.expirationPeriod

- **Module**: cmas-core-security
- **Description**: Defines the expiration period for the link when resetting the password in CM/Track.
- **Type**: Integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 86400000 (default value, 24 hours)
- **Since**: 6.10.1

F.2.2.7 cmas-core-server (module)

attachment.allowed.types

- **Module**: cmas-core-server
- **Description**: Comma-separated list of allowed file name extensions (if no value is defined, all file extensions are allowed).
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: txt,zip,doc
- **Since**: 6.5.0

attachment.max.size

- **Module**: cmas-core-server
- **Description**: Maximum attachment size, in MB. This is a validation property of the CM API. It controls the size of attachments at tickets, units, and resources. It also controls the size of incoming (not outgoing!) email attachments. The value of this property needs to be aligned with the respective setting in the application server configuration.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: 100 (default value)
- **Since**: 6.4.0

attachment.type.hints

- **Module**: cmas-core-server
- **Description**: Allows you to assign MIME types to not yet officially supported file extensions, so these file extensions can be detected correctly.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 7z:application/x-7z-compressed, zip:application/zip, wav:audio/x-wav
- **Since**: 6.11.2.0

calendar.csv.dateFormat

- **Module**: cmas-core-server
- **Description**: Format of the date given in the csv file containing the list of holidays.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: dd/MM/yyyy
- **Since**: 6.9.3.2

calendar.csv.separator

- **Module**: cmas-core-server
- **Description**: Separator used in the csv file containing the list of holidays.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: ,
- **Since**: 6.9.3.2

config.data.version

- **Module**: cmas-core-server
- **Description**: The internal version number of the current system configuration. This property is maintained internally, please do not change it unless advised by ConSol.
- **Type**: integer
- **Restart required**: no

- **System**: yes
- **Optional**: no
- **Example value**: 11
- **Since**: 6.0

config.import.global.transaction.enabled

- **Module**: cmas-core-server
- **Description**: Flag deciding whether configuration (without localizations) should be imported within a single transaction.
- **Type**: Boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.11.1.0

customfield.content.file.max.size

- **Module**: cmas-core-server
- **Description**: Determines the maximum size in MB of the images which can be added as content of rich text fields.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.11.2.2

dao.log.threshold.milliseconds

- **Module**: cmas-core-server
- **Description**: Used to configure database operation times logging. DAO methods whose execution takes longer than the time set in this property (in milliseconds) are logged.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 500 (default value)
- **Since**: 6.11.1.0

dao.log.username

- **Module**: cmas-core-server
- **Description**: Used to configure database operation times logging. The execution of DAO methods which are related to the user name stated in this property is logged. Only one user name can be provided. The value is empty by default.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: webadmin
- **Since**: 6.11.1.0

defaultCommentClassName

- **Module**: cmas-core-server
- **Description**: Name of the default text class for comments.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: default_class
- **Since**: 6.3.0

defaultIncommingMailClassName

- **Module**: cmas-core-server
- **Description**: Name of the default text class for incoming emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: default_class
- **Since**: 6.3.0

defaultOutgoingMailClassName

- **Module**: cmas-core-server
- **Description**: Name of the default text class for outgoing emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: default_class
- **Since**: 6.3.0

engineer.description.cache.enabled

- **Module**: cmas-core-server
- **Description**: Defines whether user descriptions are cached. The default value is “true”, please do not change it unless advised by ConSol.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.11.0

engineer.description.mode

- **Module**: cmas-core-server
- **Description**: Defines whether user names in the ticket history are taken from the database or dynamically rendered using templates. The default value “DYNAMIC” is a bit more costly from the performance perspective, while “PROTOCOL” is faster but returns historical names which might be outdated. Use “PROTOCOL” if you have lots of history entries from many different users.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: PROTOCOL
- **Since**: 6.11.0

engineer.description.template.name

- **Module**: cmas-core-server
- **Description**: Defines the name of the template which is used to render engineer names for display in the Web Client. The template has to be stored in the *Templates* section of the Admin Tool.
- **Type**: String
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: engineer description template name (default value)
- **Since**: 6.11.0

external.line.access.prefix

- **Module**: cmas-core-server
- **Description**: General prefix to dial before an area code. Set for each customer group separately.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 411
- **Since**: 6.9.3.0

fetchSize.strategy

- **Module**: cmas-core-server
- **Description**: Strategy for selecting the fetch size on JDBC result sets.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: FetchSizePageBasedStrategy, FetchSizeThresholdStrategy, FetchSizeFixedStrategy
- **Since**: 6.8.4.1

fetchSize.strategy.FetchSizeFixedStrategy.value

- **Module**: cmas-core-server
- **Description**: Sets fetch size value if the selected strategy to set the fetch size is `FetchSizeFixedStrategy`.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 150
- **Since**: 6.8.4.1

fetchSize.strategy.FetchSizePageBasedStrategy.limit

- **Module**: cmas-core-server
- **Description**: Sets maximum fetch size value if the selected strategy to set the fetch size is `FetchSizePageBasedStrategy`.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes

- **Example value**: 10000
- **Since**: 6.8.4.1

fetchSize.strategy.FetchSizeThresholdStrategy.value

- **Module**: cmas-core-server
- **Description**: Sets fetch size threshold border values if the selected strategy to set the fetch size is `FetchSizeThresholdStrategy`.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 150,300,600,1000
- **Since**: 6.8.4.1

heartbeat

- **Module**: cmas-core-server
- **Description**: Timestamp that indicates if an instance of the application is connected to the database schema.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1234567899
- **Since**: 6.10.5.3

internal.line.access.prefix

- **Module**: cmas-core-server
- **Description**: Prefix that the company's telephony system requires for outside lines. Set for each customer group separately.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 199
- **Since**: 6.9.3.0

last.config.change

- **Module**: cmas-core-server
- **Description**: Random UUID created during the last configuration change. This is a value maintained internally, please do not change it unless advised by ConSol.
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 2573c7b7-2bf5-47ff-b5a2-bad31951a266
- **Since**: 6.1.0, 6.2.1

last.config.change.templates

- **Module**: cmas-core-server
- **Description**: Random UUID created during the last change in templates. This is a value maintained internally, please do not change it unless advised by ConSol.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 2573c7c7-2af5-4eff-b9c2-bad31951a266
- **Since**: 6.10.5.0

ldap.certificate.basedn

- **Module**: cmas-core-server
- **Description**: Base DN for certificates location in the LDAP tree. If not provided, `cmas-core-security, ldap.basedn` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: ou=accounts,dc=consol,dc=de
- **Since**: 6.8.4

ldap.certificate.content.attribute

- **Module**: cmas-core-server
- **Description**: LDAP attribute name used where certificate data is stored in the LDAP tree.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: usercertificate (default value)
- **Since**: 6.8.4

ldap.certificate.password

- **Module**: cmas-core-server
- **Description**: LDAP Certificates manager password. If not set, `cmas-core-security, ldap.password` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.8.4

ldap.certificate.providerurl

- **Module**: cmas-core-server
- **Description**: LDAP Certificates provider URL. If not set, `cmas-core-security, ldap.providerurl` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: ldap://ldap.consol.de:389
- **Since**: 6.8.4

ldap.certificate.searchattr

- **Module**: cmas-core-server
- **Description**: LDAP attribute name used to search for certificate in the LDAP tree.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: mail (default value)
- **Since**: 6.8.4

ldap.certificate.userdn

- **Module**: cmas-core-server
- **Description**: LDAP Certificates manager DN. If not set, `cmas-core-security, ldap.userdn` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.8.4

local.country.prefix

- **Module**: cmas-core-server
- **Description**: Prefix of the local country code. Set for each customer group separately.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 48
- **Since**: 6.9.3.0

mail.encryption

- **Module**: cmas-core-server
- **Description**: If the property is set to “true”, the encrypt checkbox in the Ticket Email Editor is checked by default. The default value of the property is “false”.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.8.4.0

mail.notification.engineerChange

- **Module**: cmas-core-server
- **Description**: Determines whether notification emails should be sent when the engineer of a ticket is changed.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.1.0

mail.notification.sender

- **Module**: cmas-core-server
- **Description**: From address for notification emails when the engineer of a ticket is changed. If not set, `cmas-core-security, admin.email` is used instead.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes

- **Example value**: cm6notification@cm6installation
- **Since**: 6.6.3

mail.redelivery.retry.count

- **Module**: cmas-core-server
- **Description**: Number of redelivery attempts of an outgoing email.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 3
- **Since**: 6.1.0

mail.smtp.email

- **Module**: cmas-core-server
- **Description**: SMTP email URL for outgoing emails
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: smtp://mail.mydomain.com:25
- **Since**: 6.0

mail.smtp.email.password

- **Module**: cmas-core-server
- **Description**: SMTP password for outgoing email communication. If this property is set, it takes precedence over the value from the SMTP URL.
- **Type**: password
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: password
- **Since**: 6.11.2.2

mail.smtp.email.user

- **Module**: cmas-core-server
- **Description**: SMTP user name for outgoing email communication. If this property is set, it takes precedence over the value from the SMTP URL.
- **Type**: string
- **Restart required**: no

- **System**: yes
- **Optional**: yes
- **Example value**: myuser
- **Since**: 6.11.2.2

mail.smtp.envelopesender

- **Module**: cmas-core-server
- **Description**: Email address used as sender in SMTP envelope. If not set, the From address of the email is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: mysender@mydomain.com
- **Since**: 6.5.7

mail.smtp.tls.enabled

- **Module**: cmas-core-server
- **Description**: Activates SMTP via SSL/TLS (SMTPS) for sending emails from the Web Client and scripts. The default value is “false”. If it is set to “true”, SMTPS is activated for sending emails.
- **Type**: boolean
- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.11.1.6

mailSender.executionInterval.seconds

- **Module**: cmas-core-server
- **Description**: Determines the period in seconds before the system checks if there are new emails to be sent.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.12.0.0

mailSender.lockingLimit

- **Module**: cmas-core-server
- **Description**: Determines the number of emails fetched from the database for sending in a single transaction.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1
- **Since**: 6.12.0.0

mailSender.lockTimeout.seconds

- **Module**: cmas-core-server
- **Description**: Determines the period in seconds before a locked email is released for another lock.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 199
- **Since**: 6.12.0.0

mailSender.maxAttempts

- **Module**: cmas-core-server
- **Description**: Determines the maximum number of attempts, including the first attempt, before an email is removed.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 3
- **Since**: 6.12.0.0

mailSender.nodeId

- **Module**: cmas-core-server
- **Description**: Determines the ID of the node on which the thread for sending emails is started (only in clustered environments). If the value is “all” or no value is provided, the threads are started on every node.
- **Type**: string
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Example value**: all
- **Since**: 6.12.0.0

mailSender.retryInterval.seconds

- **Module**: cmas-core-server
- **Description**: Determines the period in seconds before another attempt to send an email is made, if the previous attempt failed.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.12.0.0

mailSender.threads.number

- **Module**: cmas-core-server
- **Description**: Determines the number of threads for sending emails.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1
- **Since**: 6.12.0.0

mailSender.txTimeout.seconds

- **Module**: cmas-core-server
- **Description**: Determines the transaction timeout for sending emails in seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.12.0.0

max.licences.perUser

- **Module**: cmas-core-server
- **Description**: Sets the maximum number of licenses which a single user can use (e.g., logging in from different browsers). By default this value is not restricted.
- **Type**: integer

- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.8.4.5

monitoring.engineer.login

- **Module**: cmas-core-server
- **Description**: Login of monitoring engineer.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: nagios
- **Since**: 6.9.3.0

monitoring.unit.login

- **Module**: cmas-core-server
- **Description**: Login of monitoring unit.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: nagios
- **Since**: 6.9.3.0

nimh.enabled

- **Module**: cmas-core-server
- **Description**: Enables the NIMH service. Must be suffixed with the cluster node ID, e.g., `nimh.enabled.NODEID` = “true”.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false
- **Since**: 6.9.4.0

number.of.tasks

- **Module**: cmas-core-server
- **Description**: Number of threads to use by the Task Execution Framework (TEF).

- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1
- **Since**: 6.9.4.0

recent.items.cleanup.cluster.node.id

- **Module**: cmas-core-server
- **Description**: Value of a `-Dcmas.clusternode.id` designating the node which will clean up recent items.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 1 (assuming the cluster node started with `-Dcmas.clusternode.id=1` parameter)
- **Since**: 6.11.0.1

recent.items.cleanup.interval.minutes

- **Module**: cmas-core-server
- **Description**: Controls the time interval (in minutes) in which recent items should be checked for removal.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60
- **Since**: 6.11.0.1

recent.items.max.per.engineer

- **Module**: cmas-core-server
- **Description**: Maximum number of preserved recent items per engineer while cleaning up (older recent items will be deleted).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 500
- **Since**: 6.11.0.1

recent.items.persistence.enabled

- **Module**: cmas-core-server
- **Description**: Enables persistence of recent items. If the property is set to “false”, it prevents storing new recent items. If a recently visited widget (`recentlyVisitedWidget`) is used on a dashboard, this property needs to be set to “true”. Otherwise, you can set it to “false” to save system resources.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.11.1.0

resource.replace.batchSize

- **Module**: cmas-core-server
- **Description**: Defines the number of objects to be processed in a resource replace action.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5
- **Since**: 6.10.0.0

resource.replace.timeout

- **Module**: cmas-core-server
- **Description**: Transaction timeout (in seconds) of a resource replacement action step.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 120
- **Since**: 6.10.0.0

script.evict.unused.after.hours

- **Module**: cmas-core-server
- **Description**: Determines the number of hours for which unused scripts remain in the cache. After this time, the compiled class of the script is removed. The ConSol CM server checks for scripts to evict every hour.
- **Type**: integer
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: 24 (default)
- **Since**: 6.11.1.14

script.logging.threshold.seconds

- **Module**: cmas-core-server
- **Description**: When this time, in seconds, is exceeded during script execution, a warning is emitted in the logs.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10 (default)
- **Since**: 6.10.1.0

serial.mods.tracking.enabled

- **Module**: cmas-core-server
- **Description**: Low level technical flag deciding whether serial diff tracking for entities is enabled. If enabled, there will be no `StackOverflow` error in case a dependency between two entities (for example engineer and ticket) causes an infinite loop first and then as a result, the StackOverflow. The property must be added to the configuration manually. It will not be added to a system configuration during setup or update.

  > ⚠ Please enable the restricted ticket change behavior described in this section only when advised by a ConSol representative! It is a low level technical flag with intricate consequences for system behavior and thus should not be used without thorough scrutiny.

- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.10.7.0, 6.11.0.5

server.instance.task.crash.period.seconds

- **Module**: cmas-core-server
- **Description**: Determines the period (in seconds) for detecting live and crashed ConSol CM server instances.
- **Type**: integer
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Example value**: 15 (default value)
- **Since**: 6.11.1.6

server.instance.task.period.seconds

- **Module**: cmas-core-server
- **Description**: Determines the interval (in seconds) between repeated task executions. The task will be executed repeatedly with the given number of seconds between each execution.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 5 (default value)
- **Since**: 6.11.1.6

server.session.archive.reaper.interval

- **Module**: cmas-core-server
- **Description**: Determines the interval (in seconds) when the reaper for archived server sessions is executed, refers to the database table `cmas_user_session`.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.7.1

server.session.archive.timeout

- **Module**: cmas-core-server
- **Description**: Server sessions archive validity timeout (in days). After this time session info is removed from the database (refers to the database table `cmas_user_session`).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 3 or 7
- **Since**: 6.7.1

server.session.reaper.interval

- **Module**: cmas-core-server
- **Description**: Determines the interval (in seconds) when the reaper for inactive (ended) server sessions is executed, refers to the database table `cmas_user_session`.

- **Type**: integer
- **Restart required**: only Session Service
- **System**: yes
- **Optional**: no
- **Example value**: 10800 (3 hours)
- **Since**: 6.6.1, 6.7.1

server.session.timeout

- **Module**: cmas-core-server
- **Description**: Server session timeout (in seconds) for connected clients (database table `cmas_user_session`). Each client can overwrite this timeout with custom value using its ID (ADMIN_TOOL, WEB_CLIENT, WORKFLOW_EDITOR, TRACK (before 6.8, please use PORTER), ETL, REST) appended to property name, e.g., `server.session.timeout.ADMIN_TOOL`.
  Please see also the Page Customization attributes *updateTimeServerSessionActivityEnabled* and *updateTimeServerSessionActivity*, both of type *cmApplicationCustomization*.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1800
- **Since**: 6.6.1, 6.7.1

Detailed explanation for the Admin Tool:

- server.session.timeout.ADMIN_TOOL
  Defines the time interval how long the server considers a session valid while there is no activity from the Admin Tool holding the session. The Admin Tool is not aware of this value, it only suffers having an invalid session, if the last activity has been longer in the past.
- admin.tool.session.check.interval
  Defines the time between two checks done by the Admin Tool, if the server still considers its session valid.

For example, if admin.tool.session.check.interval = 60, the Admin Tool queries the server every minute if its session is still active/valid. In case server.session.timeout.ADMIN_TOOL = 600 the Admin Tool will get the response that the session is now invalid after ten minutes of inactivity.

skip.wfl.transfer.cleanup

- **Module**: cmas-core-server
- **Description**: If set to “true”, skips workflow cleanup after transfer.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.9.4.1

skip.wfl.transfer.translations.cleanup

- **Module**: cmas-core-server
- **Description**: Enables skipping the cleanup of localized properties of removed workflow elements.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.10.5.5

strict.utf.bmp.enabled

- **Module**: cmas-core-server
- **Description**: In ConSol CM versions lower than 6.10.6, incoming emails with a subject line containing four-byte UTF8 characters could not be handled by some installations using the MySQL database engine. The reason is the encoding/collation configuration of the database using a two-byte BMP (Basic Multilingual Plane) 0 plane which cannot be changed in some installations for technical reasons. Other database engines were unaffected. Emails with this encoding could not be imported into the system at all in CM versions lower than 6.10.6. In order to accommodate this issue this system property for configuration is available.
  Setting it to “true” will filter out all four-byte UTF8 characters before any database interaction, so the problems mentioned above will not occur.
  The property value is “true” by default for MySQL databases, and “false” for any other database where it should not be necessary at all. Change it for a MySQL database only, if the settings positively will support four-byte characters.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.10.6.0

task.execution.interval.seconds

- **Module**: cmas-core-server
- **Description**: Time in seconds between the end of an accomplished task in the TEF (Task Execution Framework) and the start of the next task.
- **Type**: Integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 5
- **Since**: 6.9.4.0

task.execution.node.id

- **Module**: cmas-core-server
- **Description**: Only relevant in clustered environments. The ID of the node where scripts of the TEF (Task Execution Framework) will be executed. This applies to both scripts called from the workflow and scripts called manually using the Admin Tool. The Admin Tool can be started from any node.
- **Type**: Integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 2
- **Since**: 6.11.0.1

tickets.delete.size

- **Module**: cmas-core-server
- **Description**: Defines the number of tickets deleted per transaction.
- **Type**: integer
- **Restart required**: only Session Service
- **System**: yes
- **Optional**: no
- **Example value**: 10 (default value)
- **Since**: 6.8.1

ticket.delete.timeout

- **Module**: cmas-core-server
- **Description**: Transaction timeout (in seconds) for deleting tickets.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60
- **Since**: 6.1.3

ticket.from.incoming.message.accepted.links

- **Module**: cmas-core-server
- **Description**: List of domains to which links in incoming emails and links in comments added via REST API are clickable in the ticket history. Regular expressions can be used to specify the allowed URLs. It is possible to add several URLs by using a whitespace as delimiter. The URL must start with one of the allowed protocols (http, https, ftp, ftps, file, mailto). All other

links are removed, i.e., the link is displayed in the ticket history as text but it cannot be clicked. If the property is left empty, all links are removed. The regular expression `.+` can be used to allow all domains.

- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: https://.*\.consol\.de (allows links to “https://<any>.consol.de”)
- **Since**: 6.11.1.7

⚠ Please note that whitelisting domains might make ConSol CM vulnerable to cross-site scripting and other attacks. Choose the domains you whitelist carefully!

transaction.timeout.minutes

- **Module**: cmas-core-server
- **Description**: Sets the transaction timeout for the task execution service, i.e., one run of a task must finish before this timeout is reached. The changes are visible only for new tasks, the execution of which started after the configuration change.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10*60 (10 hours - default value)
- **Since**: 6.10

unit.description.mode

- **Module**: cmas-core-server
- **Description**: Defines whether unit (contact) descriptions in the ticket history are taken from the database or dynamically rendered using templates. The value, “DYNAMIC”, is a bit more costly from the performance perspective, while “PROTOCOL” is faster but returns historical names which might be outdated. Use “PROTOCOL” if you have lots of history entries from many different units. This is also the default value in CM versions 6.11.1.1 and up. In CM versions up to 6.11.1.0, “DYNAMIC” is the default.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: PROTOCOL
- **Since**: 6.11.0

unit.replace.batchSize

- **Module**: cmas-core-server
- **Description**: Defines the number of objects to be processed in a unit replace action.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5
- **Since**: 6.8.2

unit.replace.timeout

- **Module**: cmas-core-server
- **Description**: Transaction timeout (in seconds) of a unit replacement action step.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 120
- **Since**: 6.8.2

unused.content.remover.cluster.node.id

- **Module**: cmas-core-server
- **Description**: Value of a `cmas.clusternode.id` designating which node will remove unused ticket attachments and unit content entries.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 1 (assuming cluster node started with the parameter `-Dcmas.clusternode.id=1`)
- **Since**: 6.9.0.0

unused.content.remover.enabled

- **Module**: cmas-core-server
- **Description**: Specifies whether a removal of unused ticket attachments and unit content entries should take place.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: true
- **Since**: 6.9.0.0

unused.content.remover.polling.minutes

- **Module**: cmas-core-server
- **Description**: Determines how often unused ticket attachments and unit content entries should be checked for removal.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 15
- **Since**: 6.9.0.0

unused.content.remover.ttl.minutes

- **Module**: cmas-core-server
- **Description**: Minimum interval, in minutes, after which unused ticket attachments and unit content entries can be removed.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1440
- **Since**: 6.9.0.0

warmup.executor.enabled

- **Module**: cmas-core-server
- **Description**: Specifies whether the server should asynchronously warm up during startup (e.g., fill some of the internal caches).
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.9.4.2

wfl.sticky.transfer.disabled

- **Module**: cmas-core-server
- **Description**: Enables using preserved original names of workflow elements.
- **Type**: boolean
- **Restart required**: no

- **System**: no
- **Optional**: yes
- **Example value**: false
- **Since**: 6.10.1.0

workflow.deploy.cache.eviction.disabled

- **Module**: cmas-core-server
- **Description**: Determines if the infinispan cache should be cleared after deployment (“true”) or not (“false”). If the property is set to “true”, all mappings are removed from the cache.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.11.1.4

F.2.2.8 cmas-core-shared (module)

cluster.mode

- **Module**: cmas-core-shared
- **Description**: Specifies whether ConSol CM is running in a cluster.
- **Type**: boolean
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.1.0

cluster.unicast

- **Module**: cmas-core-shared
- **Description**: Flag to activate jgroups unicast mode for ConSol CM clusters (as opposed to the default multicast mode causing problems in some data center environments). If set to “true”, remember to set the JVM start parameters: `jgroups.bind.port`, `jgroups.bind.address` and `jgroups.initial_hosts`.
- **Type**: boolean
- **Restart required**: yes
- **System**: yes
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.11.0.0
- **Removed in**: 6.12.0.0

data.directory

- **Module**: cmas-core-shared
- **Description**: Directory for ConSol CM data (e.g., index)
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: C:\Users\user\cmas
- **Since**: 6.0

expert.mode

- **Module**: cmas-core-shared
- **Description**: Switches expert mode on/off thereby unblocking/blocking expert features. For example, the CM system property `initialized` is only available in the expert mode.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.0

F.2.2.9 cmas-dwh-server (module)

autocommit.cf.changes

- **Module**: cmas-dwh-server
- **Description**: Defines whether DWH tasks which result from configurational changes on ticket fields are executed automatically without manual interaction in the Admin Tool. Can be also set in the Admin Tool in the navigation item *DWH*. The default and recommended value is “false”.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false (default value)
- **Since**: 6.7.0

batch-commit-interval

- **Module**: cmas-dwh-server
- **Description**: Number of objects in a DWH message. Larger values mean better transfer performance at the cost of higher memory usage.
  Starting with ConSol CM version 6.11, this property is only used if the package size of a DWH operation is not set. This can only happen when the command is directly addressed to

the Java MBean `consol.cmas.global.dwh.synchronizationService`, e.g. using the `update()` method. When a DWH operation is started using the Admin Tool, there is always a value for the package size. If not explicitly set, the default value of 1000 is used as value for `batch.commit.interval`.

- **Default value**: 1000
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 100
- **Since**: 6.0.0

communication.channel

- **Module**: cmas-dwh-server
- **Description**: Communication channel. Only possible value since CM version 6.11.0.0: DIRECT
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: DIRECT
- **Since**: 6.8.5.0
- **Removed in**: 6.11.0.0 (DIRECT mode is the only available mode and is set automatically)

dwh.mode

- **Module**: cmas-dwh-server
- **Description**: Current mode for DWH data transfer. Possible values are OFF, ADMIN, LIVE
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: OFF
- **Since**: 6.0.1

ignore-queues

- **Module**: cmas-dwh-server
- **Description**: A comma-separated list of queue names which are not not transferred to the DWH.
- **Type**: string
- **Restart required**: no
- **System**: yes

- **Optional**: yes
- **Example value**: QueueName1,QueueName2,QueueName3
- **Since**: 6.6.19
- **Removed in**: 6.8.1

is.cmrf.alive

- **Module**: cmas-dwh-server
- **Description**: As a starting point, the time the last message was sent to CMRF should be used. If a response from CMRF is not received after the set value (in seconds), it should create a DWH operation status with an error message indicating that CMRF is down.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1200
- **Since**: 6.7.0

java.naming.factory.initial

- **Module**: cmas-dwh-server
- **Description**: Factory class for the DWH context factory.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: org.jnp.interfaces.NamingContextFactory
- **Since**: 6.0.1
- **Removed in**: 6.11.0.0

java.naming.factory.url.pkgs

- **Module**: cmas-dwh-server
- **Description**:
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: org.jboss.naming:org.jnp.interfaces
- **Since**: 6.0.1
- **Removed in**: 6.11.0.0

java.naming.provider.url

- **Module**: cmas-dwh-server
- **Description**: URL of naming provider.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: localhost
- **Since**: 6.0.1
- **Removed in**: 6.11.0.0

last.ping.timestamp

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property shows the status of CMRF and is filled automatically by the CMRF. It contains the date of the last response on the ping from the ConSol CM server to the CMRF.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 32323214
- **Since**: 6.11.0.1

live.start

- **Module**: cmas-dwh-server
- **Description**: When the DWH synchronization mode is set to LIVE using the Admin Tool (navigation group *Data Warehouse*, navigation item *Administration*, *Configuration* button), this property is created and set to the current date.
  If LIVE mode is not enabled and there is no data in `cmas_dwh_ser_sync_object`, the property `live.start` is deleted.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes (automatically added in DWH “LIVE” mode)
- **Example value**: 15028802377645
- **Since**: 6.7.0

notification.error.description

- **Module**: cmas-dwh-server
- **Description**: Text for error emails from the DWH.
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Error occurred
- **Since**: 6.0.1

notification.error.from

- **Module**: cmas-dwh-server
- **Description**: From address for error emails from the DWH
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.error.subject

- **Module**: cmas-dwh-server
- **Description**: Subject for error emails from the DWH
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Error occurred
- **Since**: 6.0.1

notification.error.to

- **Module**: cmas-dwh-server
- **Description**: To address for error emails from the DWH
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_successfully.description

- **Module**: cmas-dwh-server
- **Description**: Text for emails from the DWH when a transfer finishes successfully.
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished successfully
- **Since**: 6.0.1

notification.finished_successfully.from

- **Module**: cmas-dwh-server
- **Description**: From address for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_successfully.subject

- **Module**: cmas-dwh-server
- **Description**: Subject for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished successfully
- **Since**: 6.0.1

notification.finished_successfully.to

- **Module**: cmas-dwh-server
- **Description**: To address for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_unsuccessfully.description

- **Module**: cmas-dwh-server
- **Description**: Text for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished unsuccessfully
- **Since**: 6.0.1

notification.finished_unsuccessfully.from

- **Module**: cmas-dwh-server
- **Description**: From address for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_unsuccessfully.subject

- **Module**: cmas-dwh-server
- **Description**: Subject for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished unsuccessfully
- **Since**: 6.0.1

notification.finished_unsuccessfully.to

- **Module**: cmas-dwh-server
- **Description**: To address for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.host

- **Module**: cmas-dwh-server
- **Description**: Email (SMTP) server hostname for sending DWH emails.
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myserver.consol.de
- **Since**: 6.0.1

notification.password

- **Module**: cmas-dwh-server
- **Description**: Password for sending DWH emails (optional).
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.0.1

notification.port

- **Module**: cmas-dwh-server
- **Description**: SMTP port for sending DWH emails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 25
- **Since**: 6.0.1

notification.protocol

- **Module**: cmas-dwh-server
- **Description**: The protocol used for sending emails from the DWH.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: pop3

notification.tls.enabled

- **Module**: cmas-dwh-server
- **Description**: Activates SMTP via SSL/TLS (SMTPS) for sending notification emails from the DWH. The default value is “false”. If it is set to “true”, SMTPS is activated for sending notifications from the DWH.
- **Type**: string

- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.11.1.6

notification.username

- **Module**: cmas-dwh-server
- **Description**: (SMTP) user name for sending DWH emails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser
- **Since**: 6.0.1

recoverable.exceptions

- **Module**: cmas-dwh-server
- **Description**: Comma-separated list of exception definitions: CLASS[+][:REGEX]. The exceptions included in the list do not stop CM from sending to the CMRF process, but force it to try again. If optional '+' after CLASS is present, classes which extend CLASS are matched.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: java.sql.SQLRecoverableException,java.lang.RuntimeException+:.*T.1\,2T.*
- **Since**: 6.8.4.6

skip-ticket

- **Module**: cmas-dwh-server
- **Description**: Tickets are not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

skip-ticket-history

- **Module**: cmas-dwh-server
- **Description**: History of ticket is not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

skip-unit

- **Module**: cmas-dwh-server
- **Description**: Units are not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

skip-unit-history

- **Module**: cmas-dwh-server
- **Description**: History of unit is not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

split.history

- **Module**: cmas-dwh-server
- **Description**: Changes the SQL that fetches the history for the tickets during DWH transfer so that the history is not fetched for all tickets at once but only for one ticket per SQL.
- **Type**: boolean
- **Restart required**: no

- **System**: yes
- **Optional**: yes
- **Example value**: false
- **Since**: 6.8.0

statistics.calendar

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.client.group

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.contact.role

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.content.entry

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.content.entry.class

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.content.entry.history

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.customer.definition

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.

- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.engineer

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.enum.group

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.field.definition

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes

- **Example value**: 0
- **Since**: 6.11.0.1

statistics.group.definition

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.locale

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.localized.property

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.mla

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.project

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.queue

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.resource

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.

- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.resource.group

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.resource.history

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.resource.relation.definition

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes

- **Example value**: 0
- **Since**: 6.11.0.1

statistics.resource.type

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.ticket

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.ticket.function

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.ticket.history

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.time.booking

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.timestamp

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.unit

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.

- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.unit.history

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.unit.relation.definition

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.1

statistics.workflow

- **Module**: cmas-dwh-server
- **Description**: Internal DWH property, not to be changed manually. This property is filled automatically by the CMRF to store statistical data from the DWH. This data is displayed in the Admin Tool, section *Data Warehouse -> Monitor -> CMRF Statistics*.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes

- **Example value**: 0
- **Since**: 6.11.0.1

time.buffer

- **Module**: cmas-dwh-server
- **Description**: Number of minutes to extend date of start live mode.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 5
- **Since**: 6.8.1.11

unit.transfer.order

- **Module**: cmas-dwh-server
- **Description**: Defines in which order customer field groups should be transferred to the DWH.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: company;customer
- **Since**: 6.6.19
- **Removed in**: 6.8.1

F.2.2.10 cmas-nimh (module)

filesystem.polling.threads.number

- **Module**: cmas-nimh
- **Description**: Number of threads started for database emails' queue polling. The default value is 1
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.4.0

filesystem.polling.threads.shutdown.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Waiting time after the shutdown signal. When the timeout is reached, the thread will be terminated.

- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

filesystem.polling.threads.watchdog.interval.seconds

- **Module**: cmas-nimh
- **Description**: Determines the interval in seconds to execute the watchdog which checks the activity of the threads of the file system poller.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 30 (default value)
- **Since**: 6.4.0

filesystem.task.enabled

- **Module**: cmas-nimh
- **Description**: With this property the service thread related to a given poller can be disabled.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.4.0

filesystem.task.interval.seconds

- **Module**: cmas-nimh
- **Description**: Default interval for polling mailboxes in seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

filesystem.task.polling.folder

- **Module**: cmas-nimh
- **Description**: Polling folder location which will be scanned for emails in the format of eml files. The default value is the `mail` subdirectory of the ConSol CM data directory
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: c://cmas//mail
- **Since**: 6.4.0

filesystem.task.timeout.seconds

- **Module**: cmas-nimh
- **Description**: After this time (of inactivity) the service thread is considered damaged and automatically restarted. Default: 120 seconds
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.4.0

filesystem.task.transaction.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Default transaction timeout (in seconds) for email fetching transactions. Should be correlated with number of messages fetched at once.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

mailbox.<NUMBER>.name

- **Module**: cmas-nimh
- **Description**: Identifier (name) of the mailbox.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: myEmailAccount
- **Since**: 6.11.2.0

mailbox.1.connection.host

- **Module**: cmas-nimh
- **Description**: Host (server) for first configured mailbox. Will overwrite the default parameter `mailbox.default.connection.host`.

mailbox.1.connection.password

- **Module**: cmas-nimh
- **Description**: Password for first configured mailbox. Will overwrite the default parameter `mailbox.default.connection.password`.

mailbox.1.connection.port

- **Module**: cmas-nimh
- **Description**: Port for first configured mailbox. Will overwrite the default parameter `mailbox.default.connection.port`.

mailbox.1.connection.protocol

- **Module**: cmas-nimh
- **Description**: Protocol (e.g., IMAP or POP3) for first configured mailbox. Will overwrite the default parameter `mailbox.default.connection.protocol`.

mailbox.1.connection.username

- **Module**: cmas-nimh
- **Description**: User name for first configured mailbox. Will overwrite the default parameter `mailbox.default.connection.username`.

mailbox.2.connection.host

- **Module**: cmas-nimh
- **Description**: Host (server) for second configured mailbox. Will overwrite the default parameter `mailbox.default.connection.host`.

mailbox.2.connection.password

- **Module**: cmas-nimh
- **Description**: Password for second configured mailbox. Will overwrite the default parameter `mailbox.default.connection.password`.

mailbox.2.connection.port

- **Module**: cmas-nimh
- **Description**: Port for second configured mailbox. Will overwrite the default parameter `mailbox.default.connection.port`.

mailbox.2.connection.protocol

- **Module**: cmas-nimh
- **Description**: Protocol (e.g., IMAP or POP3) for second configured mailbox. Will overwrite the default parameter `mailbox.default.connection.protocol`.

mailbox.2.connection.username

- **Module**: cmas-nimh
- **Description**: User name for second configured mailbox. Will overwrite the default parameter `mailbox.default.connection.username`.

For all NIMH-related mailbox properties, the following principle is used: a default property is defined (e.g. `mailbox.default.connection.port`). If no mailbox-specific value is configured, this default value will be used.

mailbox.default.connection.host

- **Module**: cmas-nimh
- **Description**: Host (server name) of a given mailbox from which the poller reads emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10.10.1.157
- **Since**: 6.4.0

mailbox.default.connection.password

- **Module**: cmas-nimh
- **Description**: Password for given mailbox from which the poller reads emails.
- **Type**: password
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: consol
- **Since**: 6.4.0

mailbox.default.connection.port

- **Module**: cmas-nimh
- **Description**: Port for a given mailbox from which the poller reads emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: 143
- **Since**: 6.4.0

mailbox.default.connection.protocol

- **Module**: cmas-nimh
- **Description**: Poller's protocol e.g., IMAP or POP3. No default value
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: imap
- **Since**: 6.4.0

mailbox.default.connection.username

- **Module**: cmas-nimh
- **Description**: User name for a given mailbox from which the poller reads emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: username
- **Since**: 6.4.0

mailbox.default.session.mail.debug

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Allows for more detailed JavaMail session debugging.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.4.0

mailbox.default.session.mail.mime.address.strict

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Counterpart of the old `mule mail.mime.strict`, allows to set not so strict email header parsing.
- **Type**: boolean
- **Restart required**: no

- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.4.0

mailbox.default.session.mail.<PROTOCOL>.connectiontimeout

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Determines the connection timeout in milliseconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 3000
- **Since**: 6.4.0 (IMAP and POP3) / 6.11.2.0 (IMAPS and POP3S)

mailbox.default.session.mail.<PROTOCOL>.fetchsize

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Determines the size of partial fetch in bytes for the indicated protocol.
  For IMAP systems: in CM versions 6.10.7.0 and up, the value of `mailbox.default.session.mail.imap.fetchsize` is set to 1048576 (equals 1 MB) during the initial setup of a ConSol CM system. During an update of an existing ConSol CM system, the value of the property is left unchanged, if the property is already present. In case the property is not yet present, it is added with the default value.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 1048576
- **Since**: 6.9.4.0 (IMAP and POP3) / 6.11.2.0 (IMAPS and POP3S)

mailbox.default.session.mail.<PROTOCOL>.partialfetch

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Determines whether the protocol's partial fetch capability should be used.
  For IMAP systems: in CM versions 6.10.7.0 and up, the value of `mailbox.default.session.mail.imap.partialfetch` is set to "false" during the initial setup of a ConSol CM system. During an update of an existing ConSol CM system, the value of the property is left unchanged, if the property is already present. In case the property is not yet present, it is added with the default value.
- **Type**: boolean
- **Restart required**: no

- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.4.0 (IMAP and POP3) / 6.11.2.0 (IMAPS and POP3S)

mailbox.default.session.mail.<PROTOCOL>.timeout

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Determines the I/O timeout in milliseconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 120 for IMAP(S) and 3000 for POP3(S)
- **Since**: 6.4.0 (IMAP and POP3), 6.11.2.0 (IMAPS and POP3S)

mailbox.default.task.delete.read.messages

- **Module**: cmas-nimh
- **Description**: This defines whether messages should be removed from the mailbox after processing. For IMAP protocol messages are marked as SEEN by default. For POP3 protocol, when flag is set to “true” the message is removed, otherwise remains on server and will result in infinite reads.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.4.0

mailbox.default.task.enabled

- **Module**: cmas-nimh
- **Description**: With this property, the service thread related to the given poller can be disabled.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.4.0

mailbox.default.task.interval.seconds

- **Module**: cmas-nimh
- **Description**: Default interval for polling mailboxes in seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

mailbox.default.task.max.message.size

- **Module**: cmas-nimh
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10485760 (default value, 10 MB)
- **Since**: 6.4.0

mailbox.default.task.max.messages.per.run

- **Module**: cmas-nimh
- **Description**: Number of messages fetched at once from mailbox. Must be correlated with transaction timeout. The default value is 20
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.4.0

mailbox.default.task.timeout.seconds

- **Module**: cmas-nimh
- **Description**: After this time (of inactivity) the service thread is considered damaged and automatically restarted. The default value is 120 seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.4.0

mailbox.default.task.transaction.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Default transaction timeout (in seconds) for email fetching transactions. Should be correlated with number of messages fetched at once.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

mailbox.polling.threads.mail.log.enabled

- **Module**: cmas-nimh
- **Description**: Enables email logging which is especially crucial in cluster environment (used as semaphore there)
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.9.4.1

mailbox.polling.threads.number

- **Module**: cmas-nimh
- **Description**: Number of threads for accessing mailboxes.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1 (default value)
- **Since**: 6.4.0

queue.polling.threads.number

- **Module**: cmas-nimh
- **Description**: Number of threads started for polling the email queue in the database.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: 1 (default value)
- **Since**: 6.4.0

queue.polling.threads.shutdown.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Waiting time after the shutdown signal. When the timeout is reached, the thread will be terminated.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

queue.polling.threads.watchdog.interval.seconds

- **Module**: cmas-nimh
- **Description**: Determines the interval in seconds to execute the watchdog which checks the activity of the threads of the email queue poller.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 30 (default value)
- **Since**: 6.4.0

queue.task.error.pause.seconds

- **Module**: cmas-nimh
- **Description**: Maximum number of seconds, the queue poller waits after infrastructure (e.g. database) error.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 180 (default value)
- **Since**: 6.4.0

queue.task.interval.seconds

- **Module**: cmas-nimh
- **Description**: Main emails' queue polling thread interval.
- **Type**: integer
- **Restart required**: no

- **System**: no
- **Optional**: yes
- **Example value**: 15 (default value)
- **Since**: 6.4.0

queue.task.max.retries

- **Module**: cmas-nimh
- **Description**: Maximum number of email processing retries after an exception. When reached, the email is moved to the email archive. This email can be rescheduled again using NIMH API (or the Admin Tool).
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.4.0

queue.task.timeout.seconds

- **Module**: cmas-nimh
- **Description**: After this time of inactivity (in seconds), the service thread is considered damaged and automatically restarted.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 600 (default value)
- **Since**: 6.4.0

queue.task.transaction.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Transaction timeout for email processing in the pipe.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

F.2.2.11 cmas-nimh-extension (module)

mail.attachments.validation.info.sender

- **Module**: cmas-nimh-extension
- **Description**: Sets the From header for error notification emails which are sent when the validation of the attachment type fails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: admin@mail.com
- **Since**: 6.7.5

mail.attachments.validation.info.subject

- **Module**: cmas-nimh-extension
- **Description**: Sets the subject for error notification emails which are sent when the validation of the attachment type fails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Email was not processed because its attachments were rejected!
- **Since**: 6.7.5

mail.db.archive

- **Module**: cmas-nimh-extension
- **Description**: If property is set to “true”, incoming emails are archived in the database.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.8.5.5

mail.error.from.address

- **Module**: cmas-nimh-extension
- **Description**: From address for error emails from NIMH
- **Type**: email
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.4.0

mail.error.to.address

- **Module**: cmas-nimh-extension
- **Description**: To address for error emails from NIMH. As a default the email address of the administrator which you have entered during system setup is used.
- **Type**: email
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.4.0

mail.on.error

- **Module**: cmas-nimh-extension
- **Description**: If set to “true” an error email is sent to the above configured address in case the email message could not be processed.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default)
- **Since**: 6.4.0

mail.ticketname.pattern

- **Module**: cmas-nimh-extension
- **Description**: Regular expression pattern used to identify the ticket name in the subject of incoming mails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: .*?Ticket\s+\((\S+)\).*
- **Since**: 6.4.0

F.2.2.12 cmas-restapi-core (module)

comment.authors.disabled

- **Module**: cmas-restapi-core
- **Description**: Disables the display of the content's author via REST API.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.11.0

csrf.domain.allow.none

- **Module**: cmas-restapi-core
- **Description**: Determines whether empty `Origin/Referer` headers are accepted. By default, the property is set to “false”, so that existing REST requests without `Origin/Referer` headers work.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false (default value)
- **Since**: 6.11.2.2

csrf.domain.white.list

- **Module**: cmas-restapi-core
- **Description**: The list of domains (separated with “|”) which are allowed in `Origin/Referer` headers and will not be blocked by the CSRF (cross-site request forgery) filter. By default, the property is empty so that cross-site requests are blocked.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: https://example.com:80 | http://www.consol.de:8080
- **Since**: 6.11.2.2

csrf.request.filter.enabled

- **Module**: cmas-restapi-core
- **Description**: It allows to disable the CSRF (cross-site request forgery) request filter for the REST API.
- **Type**: boolean
- **Restart required**: no

- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.11.2.2

diff.tracking.disabled

- **Module**: cmas-restapi-core
- **Description**: Fallback property for disabling diff tracking for CM/Track, which is history-based so it can be heavy.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.10.5.6

domain.map.for.client.config.<DOMAIN_NAME>

- **Module**: cmas-restapi-core
- **Description**: Enables mapping multiple instances of CM/Track to a specific domain. DOMAIN_NAME is the name of the client configuration in the Admin Tool (if your CM/Track configuration is called “trackV2customized”, the name of the property is `domain.map.for.client.config.trackV2customized`). You can provide several URLs separated by a comma.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: https://www.consol.de, https://www.consol.com
- **Since**: 6.10.7.0

security.fields.customer.exposure.check.enabled

- **Module**: cmas-restapi-core
- **Description**: Enables customer exposure annotation checks for ticket fields.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.10.5.4

security.restrict.unit.access.to.own.data

- **Module**: cmas-restapi-core
- **Description**: If set to “true”, an additional check is performed when a user logs in as a customer using the REST API, e.g. CM/Track. When requesting customer data, only the company of the user or other contacts of the user’s company are returned. If set to “false”, no additional security check is performed and the former security rules apply.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true (default value)
- **Since**: 6.9.2.14

F.2.2.13 cmas-restapi-http-headers (module)

This module contains properties which represent header fields which should be sent with REST API requests and responses.

Each property in the module `cmas-restapi-http-headers` represents one header field. The property name/key identifies the HTTP header field and the value of the property is the field value sent in this header.

Please be aware that additional HTTP response headers must be correctly defined with the exact spelling as officially specified. Please note also that the correct interpretation and application of these headers is fully in the realm and responsibility of the HTTP client.

For example, if you add the property `Access-Control-Allow-Origin` with the value “http://www.example.com” to the `cmas-restapi-http-headers` module, REST API requests from *http://www.example.com* can be allowed in your domain even if the general policy is to allow only requests from the same domain.

As there are no default values for the headers in this module, the module is not displayed when creating the first property in it. The module name needs to be typed in manually in this case.

F.2.2.14 cmas-setup-hibernate (module)

cmas.dropSchemaBeforeSetup

- **Module**: cmas-setup-hibernate
- **Description**: Flag if schema is to be (was) dropped during setup
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.0

connection.release.mode

- **Module**: cmas-setup-hibernate
- **Description**: Describes the JEE connection handling strategy for transactions. If set to “AFTER_TRANSACTION”, the connection will be cached during the transaction and released at the end. If set to “AFTER_STATEMENT”, the connection will be released to the pool after each statement execution. Please do not change the default here unless advised by ConSol.
- **Type**: string
- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: AFTER_STATEMENT (default for JEE environment)
- **Since**: 6.0

hibernate.dialect

- **Module**: cmas-setup-hibernate
- **Description**: The dialect used by hibernate. Usually set during initial set-up (depending on the database system).
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: org.hibernate.dialect.MySQL5InnoDBDialect
- **Since**: 6.0

update.6.11.0.0.sleep

- **Module**: cmas-setup-hibernate
- **Description**: Helper property for the update preparation scripts introduced in context of CM database refactoring in version 6.11. This is an optional setting allowing a delay (in milliseconds) after each loop iteration of the preparation scripts. Setting the delay should lower the database load, for example during working hours. This property may be removed after the update preparation tasks finish.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 0
- **Since**: 6.11.0.0, for use in 6.10.5.x

update.6.11.0.0.timezone

- **Module**: cmas-setup-hibernate
- **Description**: Helper property for the ticket history migration (the new way of counting history groups). Since 6.11.0.0 the groups are constant (2h time span), but before 6.11.0.0 groups were not constant and depended on the customer's time zone. Migration scripts use an old algorithm to calculate groups and therefore need information about the time zone. The property should be set to the timezone which is most commonly used by the customers. If the property is not set, the default server time zone is used (`TimeZone.getDefault()`). The property should be set before updating to 6.11.0.0 and will be removed automatically after migration. The list of accepted timezones can be found for example here: http://joda-time.sourceforge.net/timezones.html.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: Europe/Berlin
- **Since**: 6.11.0.0, for use before updating to this version

F.2.2.15 cmas-setup-manager (module)

initialized

- **Module**: cmas-setup-manager
- **Description**: Flag if ConSol CM is initialized. If this value is missing or not "true", the setup will be performed. Starting with ConSol CM version 6.11, this property is only available in expert mode.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.0

> ⚠ Be careful with using this property! When you set the value to "false", the ConSol CM server will perform the system setup at the next start, i.e. all data of the existing system is lost, including system properties!

F.2.2.16 cmas-setup-scene (module)

scene

- **Module**: cmas-setup-scene
- **Description**: Scene file which was imported during setup (can be empty).
- **Type**: string
- **Restart required**: no

- **System**: yes
- **Optional**: no
- **Example value**: vfszip:/P:/dist/target/jboss/server/cmas/deploy/cm-dist-6.5.1-SNAPSHOT.ear/APP-INF/lib/dist-scene-6.5.1-SNAPSHOT.jar/META-INF/cmas/scenes/helpdesk-sales_scene.jar/
- **Since**: 6.0

F.2.2.17 cmas-web-notifications (module)

notifications.enabled

- **Module**: cmas-web-notifications
- **Description**: Determines whether the notifications feature is enabled (“true”) or disabled (“false”). The default value is “true” for ConSol CM systems running on JBoss application servers, and “false” for ConSol CM systems running on WebLogic application servers.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: true
- **Since**: 6.12.0.0

ttl.days

- **Module**: cmas-web-notifications
- **Description**: Determines the time (in days) after which unpinned notifications are removed.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: 15
- **Since**: 6.12.0.0

F.2.2.18 cmas-workflow-engine (module)

jobExecutor.adminMail

- **Module**: cmas-workflow-engine
- **Description**: Email address which will get notified about job execution problems (when retry counter is exceeded).
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes

- **Example value**: admin@consol.de
- **Since**: 6.8.0

jobExecutor.idleInterval.seconds

- **Module**: cmas-workflow-engine
- **Description**: Determines how often the job executor thread will look for new jobs to execute.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 45 (default value up to CM version 6.10.5.2. The default value for CM versions 6.10.5.3 and up is 5)
- **Since**: 6.8.0

jobExecutor.jobMaxRetries

- **Module**: cmas-workflow-engine
- **Description**: Controls the number of retry attempts the job executor will do before declaring a job as failed.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 5 (default value)
- **Since**: 6.8.0

jobExecutor.jobMaxRetriesReachedSubject

- **Module**: cmas-workflow-engine
- **Description**: The subject used in the notification mail which administrators receive about failed job executors.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: Job maximum retries reached. Job was removed!!! (default value)
- **Since**: 6.8.0

jobExecutor.lockingLimit

- **Module**: cmas-workflow-engine
- **Description**: Number of jobs locked at once (marked for execution) by the job executor thread.
- **Type**: integer
- **Restart required**: no

- **System**: yes
- **Optional**: yes
- **Example value**: 5 (default value since CM version 6.10.5.3)
- **Since**: 6.8.0

jobExecutor.lockTimeout.seconds

- **Module**: cmas-workflow-engine
- **Description**: Determines how long the job can be locked (marked for execution) by the job executor.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 360 (default value)
- **Since**: 6.8.0

jobExecutor.mailFrom

- **Module**: cmas-workflow-engine
- **Description**: Email address which will be set as From header for notifications to the administrator.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: jobexecutor@consol.de
- **Since**: 6.8.0

jobExecutor.maxInactivityInterval.minutes

- **Module**: cmas-workflow-engine
- **Description**: Number of minutes of allowed job executor inactivity (e.g. when it is blocked by long timer execution). After this time executors threads are restarted.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 30 (default value)
- **Since**: 6.9.2.0

jobExecutor.threads

- **Module**: cmas-workflow-engine
- **Description**: Number of job execution threads.

- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 1 (default value)
- **Since**: 6.8.0

jobExecutor.timerRetryInterval.seconds

- **Module**: cmas-workflow-engine
- **Description**: Determines how long the job executor thread will wait after job execution error.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 10 (default up to CM version 6.10.5.2. The default value for CM versions 6.10.5.3 and up is 30)
- **Since**: 6.8.0

jobExecutor.txTimeout.seconds

- **Module**: cmas-workflow-engine
- **Description**: Transaction timeout used for job execution.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.8.0

F.2.2.19 cmas-workflow-jbpm (module)

fetchLock.interval

- **Module**: cmas-workflow-jbpm
- **Description**:
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5000
- **Removed in**: 6.8.0

jobExecutor.idleInterval

- **Module**: cmas-workflow-jbpm
- **Description**:
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 45000
- **Removed in**: 6.8.0
- **Replaced by**: jobExecutor.idleInterval.seconds

jobExecutor.jobExecuteRetryNumber

- **Module**: cmas-workflow-jbpm
- **Description**:
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5
- **Removed in**: 6.8.0
- **Replaced by**: jobExecutor.jobMaxRetries

jobExecutor.timerRetryInterval

- **Module**: cmas-workflow-jbpm
- **Description**:
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 10000
- **Removed in**: 6.8.0
- **Replaced by**: jobExecutor.timerRetryInterval.seconds

mail.sender.address

- **Module**: cmas-workflow-jbpm
- **Description**: From address for emails from the workflow engine.
- **Type**: string
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: myuser@consol.de
- **Removed in**: 6.8.0
- **Replaced by**: jobExecutor.mailFrom

outdated.lock.age

- **Module**: cmas-workflow-jbpm
- **Description**:
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60000
- **Removed in**: 6.8.0
- **Replaced by**: cmas-workflow-engine, jobExecutor.lockTimeout.seconds

refreshTimeInCaseOfConcurrentRememberMeRequests

- **Module**: cmas-workflow-jbpm
- **Description**: It sets the refresh time (in seconds) after which the page will be reloaded in case of concurrent remember me requests. This feature prevents one user from occupying many licenses. Please increase that time if sessions are still occupying.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: yes
- **Example value**: 5
- **Since**: 6.8.2

F.2.2.20 cmweb-server-http-headers (module)

X-Frame-Options

- **Module**: cmweb-server-http-headers
- **Description**: Example property to illustrate the configuration of HTTP headers. In this case the delivered HTTP header contains the field *X-Frame-Options* with the value “SAMEORIGIN”.

  Each property in the module `cmweb-server-http-headers` represents one header field. The property name/key identifies the response header field and the value of the property is the field value sent in this header.

> ⚠ Please be aware that additional HTTP response headers must be correctly defined with the exact spelling as officially specified! Please note also that the correct interpretation and application of these headers is fully in the realm and responsibility of the client browser which requested the page!

- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: SAMEORIGIN
- **Since**: 6.10.8

F.2.2.21 cmweb-server-adapter (module)

attachment.upload.timeout

- **Module**: cmweb-server-adapter
- **Description**: Defines the transaction timeout in minutes for adding attachments to a ticket, resource or customer. Counts the time for the upload of all attachments of one transaction. When the timeout occurs, all files which have been temporarily stored on the server are deleted. No file is uploaded.
- **Type**: Integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 3
- **Since**: 6.10.5.3

automatic.booking.enabled

- **Module**: cmweb-server-adapter
- **Description**: If enabled, time spend on creating comment/email will be measured and automatic time booking will be added.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.4.2

checkUserOnlineIntervalInSeconds

- **Module**: cmweb-server-adapter
- **Description**: The interval in seconds to check which users are online (default 180sec = 3min).

- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 180
- **Since**: 6.0
- **Removed in**: 6.5 / 6.11.0.1

cmoffice.enabled

- **Module**: cmweb-server-adapter
- **Description**: Flag if CM/Doc (former CM/Office) is enabled.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.4.0

cmoffice.oo.path.NUMBER

- **Module**: cmweb-server-adapter
- **Description**: Possible location of the OpenOffice installation. The properties are numbered starting with 0.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: c:\Program Files (x86)\LibreOffice 3.6\program
- **Since**: 6.10.1.0
- **Removed in**: 6.12.0.0

cmoffice.strict.versioning.enabled

- **Module**: cmweb-server-adapter
- **Description**: Controls if the SAVE operation in Microsoft Word / OpenOffice documents creates a new attachment (“true”) or overwrites the existing attachment (“false”). This concerns the behavior within one session using the text editing program. If the program is stopped, the overwrite mechanism will not work anymore.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: true
- **Since**: 6.10.5.4

cmoffice.websocket.port

- **Module**: cmweb-server-adapter
- **Description**: Determines the port on which the CM/Doc application should be started and connected to.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 30333
- **Since**: 6.12.0.0

commentRequiredForTicketCreation

- **Module**: cmweb-server-adapter
- **Description**: Flag if the comment is a required field for ticket creation.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true (default value)
- **Since**: 6.2.0

csrf.domain.white.list

- **Module**: cmweb-server-adapter
- **Description**: The list of domains (separated with "|") which are allowed and will not be checked by CSRF (cross-site request forgery) filter
- **Type**: String
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: example.com | consol.de
- **Since**: 6.10.7.0

csrf.request.filter.enabled

- **Module**: cmweb-server-adapter
- **Description**: It allows to disable CSRF (Cross-site request forgery) request filter
- **Type**: Boolean
- **Restart required**: no

- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.10.7.0

customizationVersion

- **Module**: cmweb-server-adapter
- **Description**: UID representing the latest web customization version. Used only internally, please do not change the value.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: cd58453e-f3cc-4538-8030-d15e8796a4a7
- **Since**: 6.5.0

data.optimization

- **Module**: cmweb-server-adapter
- **Description**: Defines optimization to be applied on response data. So far, the following values are supported (for setting more than one value, separate values by '|'): MINIFICATION and COMPRESSION. MINIFICATION minifies HTML data by e.g. stripping whitespaces and comments. COMPRESSION applies gzip compression to HTTP response. (Note: If you are running in cluster mode and want to test different configurations in parallel, you can set different values for each cluster node by specifying property `data.optimization.nodeId` to override default property.)
- **Type**: string
- **Restart required**: COMPRESSION can be switched on/off without restart, MINIFICATION requires restart.
- **System**: yes
- **Optional**: yes
- **Example value**: MINIFICATION|COMPRESSION

defaultAttachmentEntryClassName

- **Module**: cmweb-server-adapter
- **Description**: The default content entry class used to classify an attachment if no other class was set explicitly.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: DefaultTextElement
- **Since**: 6.9.2.0

defaultContentEntryClassName

- **Module**: cmweb-server-adapter
- **Description**: Default text class for new ACIMs.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: default_class
- **Since**: 6.3.0

defaultNumberOfCustomFieldsColumns

- **Module**: cmweb-server-adapter
- **Description**: Default number of columns for ticket fields.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 3
- **Since**: 6.2.0

diffTrackingEnabled

- **Module**: cmweb-server-adapter
- **Description**: Removed in ConSol CM version 6.11.
  Defines if parallel editing of a ticket by different engineers should be possible.
  “false”: Previous way of handling changes when editing a ticket. If the ticket has been changed in the meantime, the current engineer will not be able to submit his changes without being forced to reload the page before submitting.
  “true”: New changes handling mode. If the ticket has been changed, this will not block the submission of other changes anymore. If the part of the ticket that was changed was exactly the part that is changed by the submitting engineer, then an information message will be displayed, but the ticket change will be persisted/stored anyway.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true (default)
- **Since**: 6.10.1
- **Removed in**: 6.11.0

diffTrackingEnabledForUnitAndResource

- **Module**: cmweb-server-adapter
- **Description**: Enables the prevention of concurrent modifications on units / resources.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 3
- **Since**: 6.11.0.0

favoritesSizeLimit

- **Module**: cmweb-server-adapter
- **Description**: Maximum number of items in Favorites list.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 10
- **Since**: 6.0

forward.mails.to.representatives

- **Module**: cmweb-server-adapter
- **Description**: Determines if emails which are manually sent from the Web Client are also sent to representing engineers. The default value of the property is “false”, meaning that this kind of emails are not forwarded to the representing engineer. Set the property to “true” if you want to restore the previous behavior, i.e., all emails which are sent to the represented engineer are automatically forwarded to the representing engineer. Please take into account that this might not be desired if the same person is an engineer and a customer in the CM system.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: no
- **Example value**: false (default value)
- **Since**: 6.11.1.7

This property only configures the handling of manually sent emails. The handling of automatically sent emails depends on the used Java method.

globalSearchResultSizeLimit

- **Module**: cmweb-server-adapter
- **Description**: Maximum number of items in Quick Search result.

- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 10
- **Since**: 6.0

helpFilePath

- **Module**: cmweb-server-adapter
- **Description**: URL for online help. If not empty, the *Help* link is displayed in the Web Client.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: http://www.consol.de
- **Since**: 6.2.1

hideTicketSubject

- **Module**: cmweb-server-adapter
- **Description**: If set to “true”, the ticket subject is hidden.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.2.1

mail.from

- **Module**: cmweb-server-adapter
- **Description**: This email address is used instead of the engineer’s email address during email conversations.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: consolcm@example.com
- **Since**: 6.1.2

mail.reply.to

- **Module**: cmweb-server-adapter
- **Description**: When set, the Ticket Email Editor in the Web Client displays a Reply-To field pre-filled with this value.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: consolcm@example.com
- **Since**: 6.0.1

mailTemplateAboveQuotedText

- **Module**: cmweb-server-adapter
- **Description**: Determines the behavior of the email template in the Ticket Email Editor when another email is quoted, i.e. forwarded or replied to. Often used to place the signature correctly.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.2.4

maxSizePerPagemapInMegaBytes

- **Module**: cmweb-server-adapter
- **Description**: The parameter defines the size (in MB) of the file which is created by the Wicket framework per user session. i.e. for each engineer which is currently logged in. The file is used to save pages during the running session. When the defined size limit has been reached and new entries are added, the oldest entries are removed. In the Web Client, due to this behavior, an engineer who works with an "old" page will be redirected to the *Overview*/Start page (usually the dashboard page) when the "old" page is removed from the file.
  So in case engineers who work with a great number of open tabs in ConSol CM and complain about being redirected to the *Overview* page, it might be useful to increase this parameter. In large systems, you could use e.g. a value of 45 or 50. Since this is the size of the file which is saved on disk, the maximum value depends on the available disk space, however, a value which is too large is not recommended either.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 15
- **Since**: 6.3.5

pagemapLockDurationInSeconds

- **Module**: cmweb-server-adapter
- **Description**: Number of seconds to pass before pagemap is considered to be locked for too long.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.7.3

postActivityExecutionScriptName

- **Module**: cmweb-server-adapter
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: postActivityExecutionHandler
- **Since**: 6.2.0

queuesExcludedFromGS

- **Module**: cmweb-server-adapter
- **Description**: Comma-separated list of queue names which are excluded from Quick Search.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: Helpdesk,FAQ
- **Since**: 6.0

rememberMeLifetimeInMinutes

- **Module**: cmweb-server-adapter
- **Description**: Lifetime for *remember me* in minutes.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 1440
- **Since**: 6.0

request.scope.transaction

- **Module**: cmweb-server-adapter
- **Description**: It allows to disable request scope transaction. By default one transaction is used per request. Setting this property to “false” there will cause one transaction per service method invocation.
- **Type**: boolean
- **Restart required**: yes
- **System**: yes
- **Optional**: yes
- **Example value**: true
- **Since**: 6.8.1

searchPageSize

- **Module**: cmweb-server-adapter
- **Description**: Default page size for search results.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 20
- **Since**: 6.0

searchPageSizeOptions

- **Module**: cmweb-server-adapter
- **Description**: Options for the page size for search results.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 10|20|30|40|50|75|100
- **Since**: 6.0

serverPoolingInterval

- **Module**: cmweb-server-adapter
- **Description**: Defines the time in seconds for pooling server to invalidate caches on the web layer.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: 5
- **Since**: 6.1.0

supportEmail

- **Module**: cmweb-server-adapter
- **Description**:
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.0
- **Removed in**: 6.11.0.1

themeOverlay

- **Module**: cmweb-server-adapter
- **Description**: Name of the folder containing the skin used to customize the layout of the Web Client.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: consolINT
- **Since**: 6.0, functionality changed in 6.11.2.0

ticketListRefreshIntervalInSeconds

- **Module**: cmweb-server-adapter
- **Description**: Refresh interval for the ticket list (in seconds).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 180
- **Since**: 6.0

ticketListSizeLimit

- **Module**: cmweb-server-adapter
- **Description**: Maximum number of tickets in ticket list.
- **Type**: integer
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: 100
- **Since**: 6.0

tx.read.only.mode.enabled

- **Module**: cmweb-server-adapter
- **Description**: Enables read-only transactions for faster page loading. This transactional behavior was introduced in 6.11.0, and this property acts as a safety guard to restore the old behaviors. Do not change this value unless facing tx problems and advised by ConSol.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.11

unitIndexSearchResultSizeLimit

- **Module**: cmweb-server-adapter
- **Description**: Maximum number of units in unit search result (e.g. when searching for contact).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5
- **Since**: 6.0

urlLogoutPath

- **Module**: cmweb-server-adapter
- **Description**: URL which is opened when the user logs out. There are three configuration possibilities:
  - Empty value: The user is redirected to the login page.
  - <CM URL>/cm-client/logout: The user is redirected to the logout page, which includes a link to log in again.
  - Any URL: The user is redirected to the given URL outside ConSol CM.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: https://mycmserver/cm-client/logout
- **Since**: 6.3.1, behavior changed in 6.11.2.0

voCacheEnabled

- **Module**: cmweb-server-adapter
- **Description**: This property enables additional caching for the Web Client, voCaching, of complete objects, thus improving performance.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: true
- **Since**: 6.11.1.0

Notes:

- Since ConSol CM version 6.11.1.1, the default value is “true” for non-clustered environments. The value is set to “true” automatically during the setup or update of ConSol CM 6.11.1.1.
- When voCaching is enabled and lazy loading is used for folding ticket history entries, once the engineer unfolded an entry, he cannot fold it again by reloading the page or opening the ticket from the workspace.
- When using the dynamic mode for displaying engineer and customer names in the ticket history (as configured in the system properties cmas-core-server, engineer.description.mode and cmas-core-server, unit.description.mode), the new version of the engineer and/or customer name is only displayed after the ticket has been changed.
- This system property is ignored for clustered environments (environments with cmas-core-shared, cluster.mode set to “true”). In clustered environments, voCaching is always disabled to avoid problems that changes made to objects on one node are not visible on the other nodes.

webSessionTimeoutInMinutes

- **Module**: cmweb-server-adapter
- **Description**: Session timeout in minutes.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 180
- **Removed in**: 6.7.1
- **Replaced by**: cmas-core-server, server.session.timeout

wicketAjaxRequestHeaderFilterEnabled

- **Module**: cmweb-server-adapter
- **Description**: This enables filter for Wicket AJAX requests, coming from stale pages with Wicket 1.4 scripting (CM pre-6.8.0), after update to CM6 post-6.8.0.
- **Type**: boolean
- **Restart required**: yes
- **System**: yes
- **Optional**: yes
- **Example value**: false
- **Since**: 6.8.1

F.2.3 List of System Properties by Area

This chapter lists the system properties which are relevant for the following areas.

- CMRF & DWH Configuration
- Indexer and Search Configuration
- LDAP Configuration
- Email Configuration
- Activity Interval Configuration
- List of System Properties by Area
- HTTP Header Configuration

F.2.3.1 CMRF & DWH Configuration

autocommit.cf.changes

- **Module**: cmas-dwh-server
- **Description**: Defines whether DWH tasks which result from configurational changes on ticket fields are executed automatically without manual interaction in the Admin Tool. Can be also set in the Admin Tool in the navigation item *DWH*. The default and recommended value is “false”.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false (default value)
- **Since**: 6.7.0

batch-commit-interval

- **Module**: cmas-dwh-server
- **Description**: Number of objects in a DWH message. Larger values mean better transfer performance at the cost of higher memory usage.
  Starting with ConSol CM version 6.11, this property is only used if the package size of a DWH operation is not set. This can only happen when the command is directly addressed to the Java MBean `consol.cmas.global.dwh.synchronizationService`, e.g. using the `update()` method. When a DWH operation is started using the Admin Tool, there is always a value for the package size. If not explicitly set, the default value of 1000 is used as value for `batch.commit.interval`.
- **Default value**: 1000
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 100
- **Since**: 6.0.0

communication.channel

- **Module**: cmas-dwh-server
- **Description**: Communication channel. Only possible value since CM version 6.11.0.0: DIRECT
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: DIRECT

- **Since**: 6.8.5.0
- **Removed in**: 6.11.0.0 (DIRECT mode is the only available mode and is set automatically)

dwh.mode

- **Module**: cmas-dwh-server
- **Description**: Current mode for DWH data transfer. Possible values are OFF, ADMIN, LIVE
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: OFF
- **Since**: 6.0.1

ignore-queues

- **Module**: cmas-dwh-server
- **Description**: A comma-separated list of queue names which are not not transferred to the DWH.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: QueueName1,QueueName2,QueueName3
- **Since**: 6.6.19
- **Removed in**: 6.8.1

is.cmrf.alive

- **Module**: cmas-dwh-server
- **Description**: As a starting point, the time the last message was sent to CMRF should be used. If a response from CMRF is not received after the set value (in seconds), it should create a DWH operation status with an error message indicating that CMRF is down.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1200
- **Since**: 6.7.0

java.naming.factory.initial

- **Module**: cmas-dwh-server
- **Description**: Factory class for the DWH context factory.
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: org.jnp.interfaces.NamingContextFactory
- **Since**: 6.0.1
- **Removed in**: 6.11.0.0

java.naming.factory.url.pkgs

- **Module**: cmas-dwh-server
- **Description**:
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: org.jboss.naming:org.jnp.interfaces
- **Since**: 6.0.1
- **Removed in**: 6.11.0.0

java.naming.provider.url

- **Module**: cmas-dwh-server
- **Description**: URL of naming provider.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: localhost
- **Since**: 6.0.1
- **Removed in**: 6.11.0.0

notification.error.description

- **Module**: cmas-dwh-server
- **Description**: Text for error emails from the DWH.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Error occurred
- **Since**: 6.0.1

notification.error.from

- **Module**: cmas-dwh-server
- **Description**: From address for error emails from the DWH
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.error.subject

- **Module**: cmas-dwh-server
- **Description**: Subject for error emails from the DWH
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Error occurred
- **Since**: 6.0.1

notification.error.to

- **Module**: cmas-dwh-server
- **Description**: To address for error emails from the DWH
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_successfully.description

- **Module**: cmas-dwh-server
- **Description**: Text for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished successfully
- **Since**: 6.0.1

notification.finished_successfully.from

- **Module**: cmas-dwh-server
- **Description**: From address for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_successfully.subject

- **Module**: cmas-dwh-server
- **Description**: Subject for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished successfully
- **Since**: 6.0.1

notification.finished_successfully.to

- **Module**: cmas-dwh-server
- **Description**: To address for emails from the DWH when a transfer finishes successfully.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_unsuccessfully.description

- **Module**: cmas-dwh-server
- **Description**: Text for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished unsuccessfully
- **Since**: 6.0.1

notification.finished_unsuccessfully.from

- **Module**: cmas-dwh-server
- **Description**: From address for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.finished_unsuccessfully.subject

- **Module**: cmas-dwh-server
- **Description**: Subject for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Transfer finished unsuccessfully
- **Since**: 6.0.1

notification.finished_unsuccessfully.to

- **Module**: cmas-dwh-server
- **Description**: To address for emails from the DWH when a transfer finishes unsuccessfully.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.0.1

notification.host

- **Module**: cmas-dwh-server
- **Description**: Email (SMTP) server hostname for sending DWH emails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myserver.consol.de
- **Since**: 6.0.1

notification.password

- **Module**: cmas-dwh-server
- **Description**: Password for sending DWH emails (optional).
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.0.1

notification.port

- **Module**: cmas-dwh-server
- **Description**: SMTP port for sending DWH emails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 25
- **Since**: 6.0.1

notification.protocol

- **Module**: cmas-dwh-server
- **Description**: The protocol used for sending emails from the DWH.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: pop3

notification.tls.enabled

- **Module**: cmas-dwh-server
- **Description**: Activates SMTP via SSL/TLS (SMTPS) for sending notification emails from the DWH. The default value is “false”. If it is set to “true”, SMTPS is activated for sending notifications from the DWH.
- **Type**: string
- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.11.1.6

notification.username

- **Module**: cmas-dwh-server
- **Description**: (SMTP) user name for sending DWH emails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: myuser
- **Since**: 6.0.1

recoverable.exceptions

- **Module**: cmas-dwh-server
- **Description**: Comma-separated list of exception definitions: CLASS[+][:REGEX]. The exceptions included in the list do not stop CM from sending to the CMRF process, but force it to try again. If optional '+' after CLASS is present, classes which extend CLASS are matched.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: java.sql.SQLRecoverableException,java.lang.RuntimeException+:.*T.1\,2T.*
- **Since**: 6.8.4.6

skip-ticket

- **Module**: cmas-dwh-server
- **Description**: Tickets are not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

skip-ticket-history

- **Module**: cmas-dwh-server
- **Description**: History of ticket is not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

skip-unit

- **Module**: cmas-dwh-server
- **Description**: Units are not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

skip-unit-history

- **Module**: cmas-dwh-server
- **Description**: History of unit is not transferred during transfer/update.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.19
- **Removed in**: 6.8.1

split.history

- **Module**: cmas-dwh-server
- **Description**: Changes the SQL that fetches the history for the tickets during DWH transfer so that the history is not fetched for all tickets at once but only for one ticket per SQL.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: false
- **Since**: 6.8.0

unit.transfer.order

- **Module**: cmas-dwh-server
- **Description**: Defines in which order customer field groups should be transferred to the DWH.

- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: company;customer
- **Since**: 6.6.19
- **Removed in**: 6.8.1

F.2.3.2 Indexer and Search Configuration

Indexer

big.task.minimum.size

- **Module**: cmas-core-index-common
- **Description**: Indicates the minimum size of index task (in parts, each part has 100 entities) to qualify this task as a big one. Big tasks have a lower priority than normal tasks.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 15 (default value)
- **Since**: 6.8.3

database.notification.redelivery.delay.seconds

- **Module**: cmas-core-index-common
- **Description**: If the notification channel “database” is used for index updates, this property indicates the delay for notification redelivery when an exception occurs.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 60
- **Since**: 6.8.4.7

database.notification.redelivery.max.attempts

- **Module**: cmas-core-index-common
- **Description**: In case of index update database notification channel, indicates maximum redelivery attempts when an exception occurs.
- **Type**: integer
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: 60
- **Since**: 6.8.4.7

disable.admin.task.auto.commit

- **Module**: cmas-core-index-common
- **Description**: All tasks created for index update will be automatically executed right after creation.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.6.1

index.attachment

- **Module**: cmas-core-index-common
- **Description**: Specifies whether the content of attachments is indexed.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.4.3

index.history

- **Module**: cmas-core-index-common
- **Description**: Specifies whether unit and ticket history are indexed.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.1.0
- **Removed in**: 6.11.0

index.status

- **Module**: cmas-core-index-common
- **Description**: Status of the Indexer, possible values RED, YELLOW, GREEN, will be displayed in the Admin Tool.

- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: GREEN
- **Since**: 6.6.1

index.task.worker.threads

- **Module**: cmas-core-index-common
- **Description**: How many threads will be used to execute index tasks (synchronization, administrative and repair tasks). We recommend to use a value not larger than 2.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1 (default value)
- **Since**: 6.6.14, 6.7.3. Since 6.8.0 and exclusively in 6.6.21 also normal (live) index updates are affected by this property.

index.version.current

- **Module**: cmas-core-index-common
- **Description**: Holds information about the current (possibly old) index version.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1 (default value)
- **Since**: 6.7.0

index.version.newest

- **Module**: cmas-core-index-common
- **Description**: Holds information about which index version is considered newest.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1 (default value)
- **Since**: 6.7.0

indexed.assets.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many assets should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 200 (default value)
- **Since**: 6.8.0

indexed.engineers.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many engineers should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 300 (default value)
- **Since**: 6.6.14, 6.7.3

indexed.resources.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many resources should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 200 (default value)
- **Since**: 6.10.0.0

indexed.tickets.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many tickets should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: 100 (default value)
- **Since**: 6.6.14, 6.7.3

indexed.units.per.thread.in.memory

- **Module**: cmas-core-index-common
- **Description**: Determines how many units should be loaded into memory at once, per thread, during indexing.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 200 (default value)
- **Since**: 6.6.14, 6.7.3

synchronize.master.address

- **Module**: cmas-core-index-common
- **Description**: Value of `-Dcmas.http.host.port` specifying how to connect to the indexing master server. The default value is null. Since 6.6.17 this value is configurable in set-up to designate the initial indexing master server. Since 6.12.0.0 it is possible to switch the node acting as master node by entering the address of the new master node. The index updates are archived for the time configured in the property `cmas-core-index-common`, `synchronize.archive.timeout.minutes`, so the new master can recover missing data in case it had not been fully synchronized with the previous master indexing server at the moment of switch.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 127.0.0.1:80
- **Since**: 6.6.0

synchronize.master.security.token

- **Module**: cmas-core-index-common
- **Description**: The password for accessing the index snapshot via URL, e.g., for index synchronization or for backups.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: token
- **Since**: 6.6.0

synchronize.master.security.user

- **Module**: cmas-core-index-common
- **Description**: The user name for accessing the index snapshot via URL, e.g., for index synchronization or for backups.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: user
- **Since**: 6.6.0

synchronize.master.timeout.minutes

- **Module**: cmas-core-index-common
- **Description**: Determines how long the master server may continually fail until a new master gets elected. Since 6.6.17, this value is configurable in setup, where 0 means that master server will never change (failover is disabled).
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5 (default value)
- **Since**: 6.6.0

synchronize.megabits.per.second

- **Module**: cmas-core-index-common
- **Description**: Determines how much bandwidth the master server may consume when transferring index changes to all slave servers. Do not use all available bandwidth to transfer index changes between hosts, as doing so will most probably partition the cluster due to some subsystems being unable to communicate.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 85 (default value)
- **Since**: 6.6.0

synchronize.sleep.millis

- **Module**: cmas-core-index-common
- **Description**: Determines how often each slave server polls the master server for index changes.
- **Type**: integer
- **Restart required**: no

- **System**: yes
- **Optional**: no
- **Example value**: 1000 (default value)
- **Since**: 6.6.0

Search Results

globalSearchResultSizeLimit

- **Module**: cmweb-server-adapter
- **Description**: Maximum number of items in Quick Search result.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 10
- **Since**: 6.0

searchPageSize

- **Module**: cmweb-server-adapter
- **Description**: Default page size for search results.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 20
- **Since**: 6.0

searchPageSizeOptions

- **Module**: cmweb-server-adapter
- **Description**: Options for the page size for search results.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 10|20|30|40|50|75|100
- **Since**: 6.0

unitIndexSearchResultSizeLimit

- **Module**: cmweb-server-adapter
- **Description**: Maximum number of units in unit search result (e.g. when searching for contact).
- **Type**: integer

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 5
- **Since**: 6.0

F.2.3.3 LDAP Configuration

LDAP Configuration (if LDAP is Used as Authentication Mode in the CM Web Client)

LDAP parameters apply only if the authentication mode for the CM Web Client has been set to “LDAP”:

authentication.method

- **Module**: cmas-core-security
- **Description**: User authentication method (internal CM database or LDAP authentication). Allowed values are LDAP or DATABASE.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: DATABASE
- **Since**: 6.0

ldap.authentication

- **Module**: cmas-core-security
- **Description**: Authentication method used when using LDAP authentication. Possible values are “anonymous” and “simple”.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: simple (default value)
- **Since**: 6.0

ldap.basedn

- **Module**: cmas-core-security
- **Description**: Base DN used for looking up LDAP user accounts when using LDAP authentication.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no

- **Example value**: ou=accounts,dc=consol,dc=de
- **Since**: 6.0

ldap.initialcontextfactory

- **Module**: cmas-core-security
- **Description**: Class name for the initial context factory of the LDAP implementation when using LDAP authentication. If it is not set, `com.sun.jndi.ldap.LdapCtxFactory` is used.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: com.sun.jndi.ldap.LdapCtxFactory
- **Since**: 6.0

ldap.password

- **Module**: cmas-core-security
- **Description**: Password for connecting to LDAP to look up users when using LDAP authentication. Only needed if look-up cannot be performed anonymously.
- **Type**: password
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.1.2

ldap.providerurl

- **Module**: cmas-core-security
- **Description**: LDAP provider when using LDAP authentication.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: ldap://myserver.consol.de:389
- **Since**: 6.0

ldap.searchattr

- **Module**: cmas-core-security
- **Description**: Search attribute for looking up LDAP entry associated with a CM login.
- **Type**: string
- **Restart required**: no
- **System**: yes

- **Optional**: no
- **Example value**: uid
- **Since**: 6.0

ldap.userdn

- **Module**: cmas-core-security
- **Description**: LDAP user for connecting to LDAP to look up users when using LDAP authentication. Only needed if look-up cannot be performed anonymously.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.1.2

LDAP Configuration (if LDAP is Used as Authentication Mode in CM/Track)

LDAP parameters apply only if the authentication mode for CM/Track has been set to “LDAP”:

contact.authentication.method

- **Module**: cmas-core-security
- **Description**: Indicates contact authentication method, where possible values are DATABASE or LDAP or LDAP,DATABASE or DATABASE,LDAP.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: LDAP
- **Since**: 6.9.3.0

ldap.contact.name.basedn

- **Module**: cmas-core-security
- **Description**: Base path to search for contact DN by LDAP ID.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: ou=accounts,dc=consol,dc=de
- **Since**: 6.9.3.0

ldap.contact.name.password

- **Module**: cmas-core-security
- **Description**: Password to look up contact DN by LDAP ID. If not set, the anonymous account is used.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Since**: 6.9.3.0

ldap.contact.name.providerurl

- **Module**: cmas-core-security
- **Description**: Address of the LDAP server (ldap[s]://host:port).
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: ldap://ldap.consol.de:389
- **Since**: 6.9.3.0

ldap.contact.name.searchattr

- **Module**: cmas-core-security
- **Description**: Attribute to search for contact DN by LDAP ID.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: uid
- **Since**: 6.9.3.0

ldap.contact.name.userdn

- **Module**: cmas-core-security
- **Description**: User DN to look up contact DN by LDAP ID. If not set, the anonymous account is used.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Since**: 6.9.3.0

ldap.initialcontextfactory

- **Module**: cmas-core-security
- **Description**: Class name for the initial context factory of the LDAP implementation when using LDAP authentication. If it is not set, `com.sun.jndi.ldap.LdapCtxFactory` is used.
- **Type**: string
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: com.sun.jndi.ldap.LdapCtxFactory
- **Since**: 6.0

F.2.3.4 Email Configuration

Outgoing Email

mail.smtp.email

- **Module**: cmas-core-server
- **Description**: SMTP email URL for outgoing emails
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: smtp://mail.mydomain.com:25
- **Since**: 6.0

mail.smtp.envelopesender

- **Module**: cmas-core-server
- **Description**: Email address used as sender in SMTP envelope. If not set, the From address of the email is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: mysender@mydomain.com
- **Since**: 6.5.7

mail.from

- **Module**: cmweb-server-adapter
- **Description**: This email address is used instead of the engineer's email address during email conversations.
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: consolcm@example.com
- **Since**: 6.1.2

mail.reply.to

- **Module**: cmweb-server-adapter
- **Description**: When set, the Ticket Email Editor in the Web Client displays a Reply-To field pre-filled with this value.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: consolcm@example.com
- **Since**: 6.0.1

mailTemplateAboveQuotedText

- **Module**: cmweb-server-adapter
- **Description**: Determines the behavior of the email template in the Ticket Email Editor when another email is quoted, i.e. forwarded or replied to. Often used to place the signature correctly.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: false
- **Since**: 6.2.4

mail.sender.address

- **Module**: cmas-workflow-jbpm
- **Description**: From address for emails from the workflow engine.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Removed in**: 6.8.0
- **Replaced by**: jobExecutor.mailFrom

mail.smtp.tls.enabled

- **Module**: cmas-core-server
- **Description**: Activates SMTP via SSL/TLS (SMTPS) for sending emails from the Web Client and scripts. The default value is “false”. If it is set to “true”, SMTPS is activated for sending emails.
- **Type**: boolean
- **Restart required**: yes
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.11.1.6

Incoming Email

nimh.enabled

- **Module**: cmas-core-server
- **Description**: Enables the NIMH service. Must be suffixed with the cluster node ID, e.g., `nimh.enabled.NODEID` = “true”.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false
- **Since**: 6.9.4.0

filesystem.polling.threads.number

- **Module**: cmas-nimh
- **Description**: Number of threads started for database emails' queue polling. The default value is 1
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10
- **Since**: 6.4.0

filesystem.polling.threads.shutdown.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Waiting time after the shutdown signal. When the timeout is reached, the thread will be terminated.
- **Type**: integer
- **Restart required**: no

- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

filesystem.polling.threads.watchdog.interval.seconds

- **Module**: cmas-nimh
- **Description**: Determines the interval in seconds to execute the watchdog which checks the activity of the threads of the file system poller.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 30 (default value)
- **Since**: 6.4.0

filesystem.task.enabled

- **Module**: cmas-nimh
- **Description**: With this property the service thread related to a given poller can be disabled.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.4.0

filesystem.task.interval.seconds

- **Module**: cmas-nimh
- **Description**: Default interval for polling mailboxes in seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

filesystem.task.polling.folder

- **Module**: cmas-nimh
- **Description**: Polling folder location which will be scanned for emails in the format of eml files. The default value is the `mail` subdirectory of the ConSol CM data directory

- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: c://cmas//mail
- **Since**: 6.4.0

filesystem.task.timeout.seconds

- **Module**: cmas-nimh
- **Description**: After this time (of inactivity) the service thread is considered damaged and automatically restarted. Default: 120 seconds
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.4.0

filesystem.task.transaction.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Default transaction timeout (in seconds) for email fetching transactions. Should be correlated with number of messages fetched at once.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

mailbox.<number>.name

- **Module**: cmas-nimh
- **Description**: Identifier (name) of the mailbox.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: myEmailAccount
- **Since**: 6.11.2.0

mailbox.default.connection.host

- **Module**: cmas-nimh
- **Description**: Host (server name) of a given mailbox from which the poller reads emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 10.10.1.157
- **Since**: 6.4.0

mailbox.default.connection.password

- **Module**: cmas-nimh
- **Description**: Password for given mailbox from which the poller reads emails.
- **Type**: password
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: consol
- **Since**: 6.4.0

mailbox.default.connection.port

- **Module**: cmas-nimh
- **Description**: Port for a given mailbox from which the poller reads emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 143
- **Since**: 6.4.0

mailbox.default.connection.protocol

- **Module**: cmas-nimh
- **Description**: Poller's protocol e.g., IMAP or POP3. No default value
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: imap
- **Since**: 6.4.0

mailbox.default.connection.username

- **Module**: cmas-nimh
- **Description**: User name for a given mailbox from which the poller reads emails.
- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: username
- **Since**: 6.4.0

mailbox.default.session.mail.debug

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Allows for more detailed JavaMail session debugging.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.4.0

mailbox.default.session.mail.mime.address.strict

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Counterpart of the old `mule mail.mime.strict`, allows to set not so strict email header parsing.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.4.0

mailbox.default.session.mail.<PROTOCOL>.connectiontimeout

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information. Determines the connection timeout in milliseconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: 3000
- **Since**: 6.4.0 (IMAP and POP3) / 6.11.2.0 (IMAPS and POP3S)

mailbox.default.session.mail.<PROTOCOL>.fetchsize

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information.
  Determines the size of partial fetch in bytes for the indicated protocol.
  For IMAP systems: in CM versions 6.10.7.0 and up, the value of `mailbox.default.session.mail.imap.fetchsize` is set to 1048576 (equals 1 MB) during the initial setup of a ConSol CM system. During an update of an existing ConSol CM system, the value of the property is left unchanged, if the property is already present. In case the property is not yet present, it is added with the default value.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: 1048576
- **Since**: 6.9.4.0 (IMAP and POP3) / 6.11.2.0 (IMAPS and POP3S)

mailbox.default.session.mail.<PROTOCOL>.partialfetch

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information.
  Determines whether the protocol's partial fetch capability should be used.
  For IMAP systems: in CM versions 6.10.7.0 and up, the value of `mailbox.default.session.mail.imap.partialfetch` is set to "false" during the initial setup of a ConSol CM system. During an update of an existing ConSol CM system, the value of the property is left unchanged, if the property is already present. In case the property is not yet present, it is added with the default value.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true
- **Since**: 6.9.4.0 (IMAP and POP3) / 6.11.2.0 (IMAPS and POP3S)

mailbox.default.session.mail.<PROTOCOL>.timeout

- **Module**: cmas-nimh
- **Description**: JavaMail property, see JavaMail API documentation for further information.
  Determines the I/O timeout in milliseconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes

- **Example value**: 120 for IMAP(S) and 3000 for POP3(S)
- **Since**: 6.4.0 (IMAP and POP3), 6.11.2.0 (IMAPS and POP3S)

mailbox.default.task.delete.read.messages

- **Module**: cmas-nimh
- **Description**: This defines whether messages should be removed from the mailbox after processing. For IMAP protocol messages are marked as SEEN by default. For POP3 protocol, when flag is set to “true” the message is removed, otherwise remains on server and will result in infinite reads.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.4.0

mailbox.default.task.enabled

- **Module**: cmas-nimh
- **Description**: With this property, the service thread related to the given poller can be disabled.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.4.0

mailbox.default.task.interval.seconds

- **Module**: cmas-nimh
- **Description**: Default interval for polling mailboxes in seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

mailbox.default.task.max.message.size

- **Module**: cmas-nimh
- **Type**: integer
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Example value**: 10485760 (default value, 10 MB)
- **Since**: 6.4.0

mailbox.default.task.max.messages.per.run

- **Module**: cmas-nimh
- **Description**: Number of messages fetched at once from mailbox. Must be correlated with transaction timeout. The default value is 20
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.4.0

mailbox.default.task.timeout.seconds

- **Module**: cmas-nimh
- **Description**: After this time (of inactivity) the service thread is considered damaged and automatically restarted. The default value is 120 seconds.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60
- **Since**: 6.4.0

mailbox.default.task.transaction.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Default transaction timeout (in seconds) for email fetching transactions. Should be correlated with number of messages fetched at once.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

mailbox.polling.threads.mail.log.enabled

- **Module**: cmas-nimh
- **Description**: Enables email logging which is especially crucial in cluster environment (used as semaphore there)

- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default value)
- **Since**: 6.9.4.1

mailbox.polling.threads.number

- **Module**: cmas-nimh
- **Description**: Number of threads for accessing mailboxes.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1 (default value)
- **Since**: 6.4.0

queue.polling.threads.number

- **Module**: cmas-nimh
- **Description**: Number of threads started for polling the email queue in the database.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 1 (default value)
- **Since**: 6.4.0

queue.polling.threads.shutdown.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Waiting time after the shutdown signal. When the timeout is reached, the thread will be terminated.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

queue.polling.threads.watchdog.interval.seconds

- **Module**: cmas-nimh
- **Description**: Determines the interval in seconds to execute the watchdog which checks the activity of the threads of the email queue poller.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 30 (default value)
- **Since**: 6.4.0

queue.task.error.pause.seconds

- **Module**: cmas-nimh
- **Description**: Maximum number of seconds, the queue poller waits after infrastructure (e.g. database) error.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 180 (default value)
- **Since**: 6.4.0

queue.task.interval.seconds

- **Module**: cmas-nimh
- **Description**: Main emails' queue polling thread interval.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 15 (default value)
- **Since**: 6.4.0

queue.task.max.retries

- **Module**: cmas-nimh
- **Description**: Maximum number of email processing retries after an exception. When reached, the email is moved to the email archive. This email can be rescheduled again using NIMH API (or the Admin Tool).
- **Type**: integer
- **Restart required**: no
- **System**: no

- **Optional**: yes
- **Example value**: 10
- **Since**: 6.4.0

queue.task.timeout.seconds

- **Module**: cmas-nimh
- **Description**: After this time of inactivity (in seconds), the service thread is considered damaged and automatically restarted.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 600 (default value)
- **Since**: 6.4.0

queue.task.transaction.timeout.seconds

- **Module**: cmas-nimh
- **Description**: Transaction timeout for email processing in the pipe.
- **Type**: integer
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: 60 (default value)
- **Since**: 6.4.0

mail.attachments.validation.info.sender

- **Module**: cmas-nimh-extension
- **Description**: Sets the From header for error notification emails which are sent when the validation of the attachment type fails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: admin@mail.com
- **Since**: 6.7.5

mail.attachments.validation.info.subject

- **Module**: cmas-nimh-extension
- **Description**: Sets the subject for error notification emails which are sent when the validation of the attachment type fails.
- **Type**: string

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: Email was not processed because its attachments were rejected!
- **Since**: 6.7.5

mail.db.archive

- **Module**: cmas-nimh-extension
- **Description**: If property is set to “true”, incoming emails are archived in the database.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: false (default value)
- **Since**: 6.8.5.5

mail.error.from.address

- **Module**: cmas-nimh-extension
- **Description**: From address for error emails from NIMH
- **Type**: email
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.4.0

mail.error.to.address

- **Module**: cmas-nimh-extension
- **Description**: To address for error emails from NIMH. As a default the email address of the administrator which you have entered during system setup is used.
- **Type**: email
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: myuser@consol.de
- **Since**: 6.4.0

mail.on.error

- **Module**: cmas-nimh-extension
- **Description**: If set to “true” an error email is sent to the above configured address in case the email message could not be processed.
- **Type**: boolean
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: true (default)
- **Since**: 6.4.0

mail.ticketname.pattern

- **Module**: cmas-nimh-extension
- **Description**: Regular expression pattern used to identify the ticket name in the subject of incoming mails.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: .*?Ticket\s+\((\S+)\).*
- **Since**: 6.4.0

Attachments for Incoming Emails

attachment.allowed.types

- **Module**: cmas-core-server
- **Description**: Comma-separated list of allowed file name extensions (if no value is defined, all file extensions are allowed).
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: txt,zip,doc
- **Since**: 6.5.0

attachment.max.size

- **Module**: cmas-core-server
- **Description**: Maximum attachment size, in MB. This is a validation property of the CM API. It controls the size of attachments at tickets, units, and resources. It also controls the size of incoming (not outgoing!) email attachments. The value of this property needs to be aligned with the respective setting in the application server configuration.
- **Type**: integer

- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 100 (default value)
- **Since**: 6.4.0

Email Encryption (Outgoing and Incoming)

These settings only apply if email encryption is active (true).

mail.encryption

- **Module**: cmas-core-server
- **Description**: If the property is set to “true”, the encrypt checkbox in the Ticket Email Editor is checked by default. The default value of the property is “false”.
- **Type**: boolean
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: true
- **Since**: 6.8.4.0

In case certificates are stored in an LDAP directory, the following settings have to be made:

ldap.certificate.basedn

- **Module**: cmas-core-server
- **Description**: Base DN for certificates location in the LDAP tree. If not provided, `cmas-core-security, ldap.basedn` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: ou=accounts,dc=consol,dc=de
- **Since**: 6.8.4

ldap.certificate.content.attribute

- **Module**: cmas-core-server
- **Description**: LDAP attribute name used where certificate data is stored in the LDAP tree.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes

- **Example value**: usercertificate (default value)
- **Since**: 6.8.4

ldap.certificate.password

- **Module**: cmas-core-server
- **Description**: LDAP Certificates manager password. If not set, `cmas-core-security, ldap.password` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Since**: 6.8.4

ldap.certificate.providerurl

- **Module**: cmas-core-server
- **Description**: LDAP Certificates provider URL. If not set, `cmas-core-security, ldap.providerurl` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: ldap://ldap.consol.de:389
- **Since**: 6.8.4

ldap.certificate.searchattr

- **Module**: cmas-core-server
- **Description**: LDAP attribute name used to search for certificate in the LDAP tree.
- **Type**: string
- **Restart required**: no
- **System**: yes
- **Optional**: yes
- **Example value**: mail (default value)
- **Since**: 6.8.4

ldap.certificate.userdn

- **Module**: cmas-core-server
- **Description**: LDAP Certificates manager DN. If not set, `cmas-core-security, ldap.userdn` is used.
- **Type**: string
- **Restart required**: no
- **System**: yes

- **Optional**: yes
- **Since**: 6.8.4

F.2.3.5 Activity Interval Configuration

admin.tool.session.check.interval

- **Module**: cmas-app-admin-tool
- **Description**: Configures the time interval (in seconds) in which the system checks for inactive (ended) Admin Tool sessions.
- **Type**: integer
- **Restart required**: yes
- **System**: yes
- **Optional**: no
- **Example value**: 30
- **Since**: 6.7.5

server.session.timeout

- **Module**: cmas-core-server
- **Description**: Server session timeout (in seconds) for connected clients (database table `cmas_user_session`). Each client can overwrite this timeout with custom value using its ID (ADMIN_TOOL, WEB_CLIENT, WORKFLOW_EDITOR, TRACK (before 6.8, please use PORTER), ETL, REST) appended to property name, e.g., `server.session.timeout.ADMIN_TOOL`.
  Please see also the Page Customization attributes *updateTimeServerSessionActivityEnabled* and *updateTimeServerSessionActivity*, both of type *cmApplicationCustomization*.
- **Type**: integer
- **Restart required**: no
- **System**: yes
- **Optional**: no
- **Example value**: 1800
- **Since**: 6.6.1, 6.7.1

Detailed explanation for the Admin Tool:

- server.session.timeout.ADMIN_TOOL
  Defines the time interval how long the server considers a session valid while there is no activity from the Admin Tool holding the session. The Admin Tool is not aware of this value, it only suffers having an invalid session, if the last activity has been longer in the past.
- admin.tool.session.check.interval
  Defines the time between two checks done by the Admin Tool, if the server still considers its session valid.

For example, if admin.tool.session.check.interval = 60, the Admin Tool queries the server every minute if its session is still active/valid. In case server.session.timeout.ADMIN_TOOL = 600 the Admin Tool will get the response that the session is now invalid after ten minutes of inactivity.

F.2.3.6 HTTP Header Configuration

It is possible to configure the HTTP response header returned with the web page in the Web Client. This allows, for example, to define security-related response headers according to the requirements dictated by policy or environment. These properties are managed in the module `cmweb-server-http-headers`. The name of the property is the field of the response header and the value of the property is the field value sent in the header.

Both name and value must match the exact spelling of the HTTP specification for the desired response header field. The correct interpretation and handling of the header lies in the responsibility of the client browser.

Example Property: X-Frame-Options

- **Module**: cmweb-server-http-headers
- **Description**: Example property to illustrate the configuration of HTTP headers. In this case the delivered HTTP header contains the field *X-Frame-Options* with the value “SAMEORIGIN”.

  Each property in the module `cmweb-server-http-headers` represents one header field. The property name/key identifies the response header field and the value of the property is the field value sent in this header.

  

  Please be aware that additional HTTP response headers must be correctly defined with the exact spelling as officially specified! Please note also that the correct interpretation and application of these headers is fully in the realm and responsibility of the client browser which requested the page!

- **Type**: string
- **Restart required**: no
- **System**: no
- **Optional**: yes
- **Example value**: SAMEORIGIN
- **Since**: 6.10.8

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Glossary

A

ACF

ACF is the abbreviation of Activity Control Form. ACFs can be used in workflow activities to force the engineer to fill out certain fields before proceeding.

ACIM

Activity item - entry in the history section of a ticket (e.g., comment, email, attachment, time booking entry).

AD

Microsoft Active Directory - an LDAP-based directory service for Microsoft Windows domain networks.

additional customer

Additional customers are customers (companies or contacts) who are interested in the ticket. They are optional and usually have a role indicating the reason why they were added.

additional engineer

Additional engineers are users who have a specific purpose, which depends on your business process. Usually, they have to carry out certain tasks within the process.

Admin Tool

ConSol CM component, Java application to configure and manage a ConSol CM system.

AJP

Apache JServ Protocol, see, for example https://en.wikipedia.org/wiki/Apache_JServ_Protocol

B

BI

Business Intelligence - methods, technologies, and architectures to transform data into useful information for business purposes.

C

CFEL

Custom Field Expression Language - Java classes and methods of the ConSol CM API to access data in ticket fields, customer fields and resource fields.

CIDR

Classless Inter-Domain Routing, notation for IP address ranges

CM/Archive

CM/Archive is a ConSol CM add-on which allows archiving tickets, so that old tickets can be deleted from the ConSol CM database.

CM/Doc

A standard module of ConSol CM which enables the engineer via ConSol CM Web Client to work with Microsoft Word or OpenOffice documents prefilled with ConSol CM ticket or customer parameters.

CM/Phone

The ConSol CM module which provides CTI for CM.

CM/Resource Pool

CM/Resource Pool is an optional add-on which allows to store different kinds

of objects as resources in ConSol CM.

CM/Track

CM/Track is the portal of ConSol CM. Customers can access their tickets through CM/Track.

CMDB

ConSol CM database - the working database of the CM system.

CMRF

ConSol CM Reporting Framework - a JEE application which synchronizes data between the ConSol CM database and the DWH.

company

The company is the upper hierarchical level of a two-level customer model. A company can have several contacts.

contact

The contact is the lower hierarchical level of a two-level customer model. A contact can only belong to one company.

CRM

Customer Relationship Management. Approach to manage a company's customers, e.g., to collect data from different sources and integrate the data to generate information which allows, e.g., to optimize the services for the customers.

CTI

Computer Telephony Integration - a denomination for any technology that facilitates interaction between a telephone and a computer.

customer

The customer represents the external side of a ticket. It designates the person or object that gave the reason for creating a ticket. A customer can either be a company or a contact.

customer action

Part of the Action Framework. An action which is performed for a customer object, i.e., a contact or company object.

customer data model

The customer data model is the definition of the customers. It determines the available data fields and possible relations.

customer field

A field where data for customers (contacts or companies) can be stored. Similar to ticket fields for ticket data. Previously called Data Object Group Field.

customer field group

A group of fields where data for customers (contacts or companies) can be stored. Similar to ticket field group for ticket data. Previously called Data Object Group.

customer group

The customer group determines which customer data model is used for its customers and which actions are available.

customer object

A customer (a contact or a company). Formerly called Data Object. The term Unit is used in the programming context.

D

Dashboard

A type of report which integrates data from different sources providing an overall perspective of a certain topic. Often times graphical representation is used.

DWH

Data Warehouse - A database used for reporting and data analysis. In a standard ConSol CM distribution, a DWH is included and only has to be installed and configured.

E

engineer

Engineers are the users who work on the tickets in the Web Client

ERP system

Enterprise Resource Planning - often used for this type of enterprise management software.

ESB

Enterprise Service Bus - a software architecture used for communication between mutually interacting software applications in a service-oriented architecture (SOA).

ETL

Extract Transform Load - extracts data from one source (a database or other source), transforms it, and loads it into a database, e.g., a data warehouse.

F

FlexCDM

Flexible Customer Data Model - the customer data model introduced in ConSol CM in version 6.9. For each customer group, a specific customer data model can be defined.

G

GUI

Graphical User Interface

H

history

The history contains all changes which were carried out for the ticket, customer, or resource.

HMAC

Hash-based Message Authentication Code, message authentication function using hashes

I

IMAP

Internet Message Access Protocol - Internet standard protocol to access email on a remote email server. Can be used as plain IMAP or as secure IMAP (IMAPs). In the latter case, proper certificates are required.

J

Java EE

Java Enterprise Edition

JMS

Java Message Service - Java EE component used to send messages between JMS clients.

JRE

Java Runtime Environment. Provides a Java Virtual Machine for Clients.

K

Kerberos

A network authentication protocol based on (Kerberos) tickets which requires a special infrastructure.

KPI

Key Performance Indicator - parameter used for performance measurement for companies, projects, etc.

L

LDAP

LDAP is the abbreviation of Lightweight Directory Access Protocol. It is a protocol used to manage login information for several applications.

LDAPS

LDAP over SSL

M

mailbox

Destination to which email messages are delivered. Mailboxes are managed on an email server. ConSol CM can access one or more mailboxes to retrieve emails.

main customer

The main customer is the customer who gave the reason for creating the ticket. The main customer is mandatory for a ticket.

Mule

An open source Java-based Enterprise Service Bus (ESB).

N

NIMH

New Incoming Mail Handler - module for retrieving incoming emails.

P

PCDS

Page Customization Definition Section

Pentaho

PentahoTM is a business intelligence (BI) suite which is available in open source and as enterprise editions.

permission

Permissions determine which objects the users can see in the Web Client and which actions they are allowed to perform. Permissions are always granted via roles, i.e., they are not assigned to a single user but to a group of users sharing a common role. Usually these users belong to the same team and/or have similar functions in the company.

POP

Post Office Protocol - Internet standard protocol to retrieve emails from a remote server via TCP/IP. Can be used as plain POP or as secure POP (POPs).

In the latter case, proper certificates are required.

portal

CM/Track - provides customer access to ConSol CM.

Process Designer

ConSol CM component used to design, develop, and deploy workflows.

Q

queue

The queue contains thematically related tickets which should be handled in the same way and follow the same business process (workflow). Permissions and other parameters are also defined based on queues.

R

RDBMS

Relational Database Management System - e.g. Oracle ®, MS SQL Server ®, MySQL.

relation

Relations are connections between different data objects in ConSol CM. This can be a relation between two objects of the same type, e.g., between tickets, customers, and resources, or a relation between objects of different types, e.g., between a ticket and a resource or a customer and a resource.

representation

Representations are temporary replacements. The representing user receives a copy of all emails which are sent from the CM system to the represented user's email address. In addition, his ticket list has an option to display the tickets of the represented user.

resource

Resources are objects managed in CM/Resource Pool.

resource action

Part of the Action Framework. An action performed for a resource object.

resource field

A field where resource data can be stored.

resource field group

A group of fields where data for resources can be stored. Similar to ticket field group for ticket data.

resource type

The resource type is the definition of the resources. It determines the available data fields and possible relations and actions.

REST

Representational State Transfer - conventions for transferring data over HTTP connections.

role

Roles are assigned to users. They define the users' access permissions and views.

S

script

Program written for a specific run-time environment that can interpret and automate the execution of tasks. In

ConSol CM, scripts are stored in the Admin Tool and are stored as scripts for activities in workflows.

search action

Part of the Action Framework. An action performed for the result set of a search.

SMTP

Simple Message Transfer Protocol - standard protocol for sending emails.

T

TAPI

Telephony Application Programming Interface - a Microsoft Windows API which provides computer/telephony integration and enables PCs running Microsoft Windows to use telephone services.

TEF

Task Execution Framework - a ConSol CM module which can execute tasks asynchronously.

template

Templates contain predefined and pre-formatted text. They can be used for comments, emails, and documents.

ticket

The ticket is the request of the customer which the engineer works on. It is the object which runs through the business process defined by the workflow.

ticket field

A field where ticket data can be stored. Previously called Custom Field

ticket field group

A group of ticket fields where ticket data can be stored. Previously called Custom Field Group.

ticket list

The ticket list is located to the left of the main working area of the Web Client. It shows tickets which are relevant for the current user.

time booking

Time bookings allow the engineers to register the time they worked on a ticket or project.

U

Unit

Java class which represents a customer object. i.e. a contact is an object of class Unit and a company is also an object of class Unit.

user

Users are the people who work with the ConSol CM system. Users who work on tickets in the Web Client are also called engineers.

V

view

Views limit the tickets which are shown in the ticket list in the ConSol CM Web Client to those tickets matching specific criteria (scopes from one or more workflows). Views are assigned to roles.

W

Web Admin Suite

ConSol CM component, web application to configure and manage the ConSol CM system. Will replace the Admin Tool.

Web Client

The Web Client is the primary access to the system for the users. They use the Web Client to work on tickets.

Wicket

Apache Wicket is an open source, component oriented, serverside, Java web application framework. See https://wicket.apache.org/ for details information.

workflow

The workflow is the implementation of the business process managed in ConSol CM. It contains a series of steps which are carried out by the engineers.