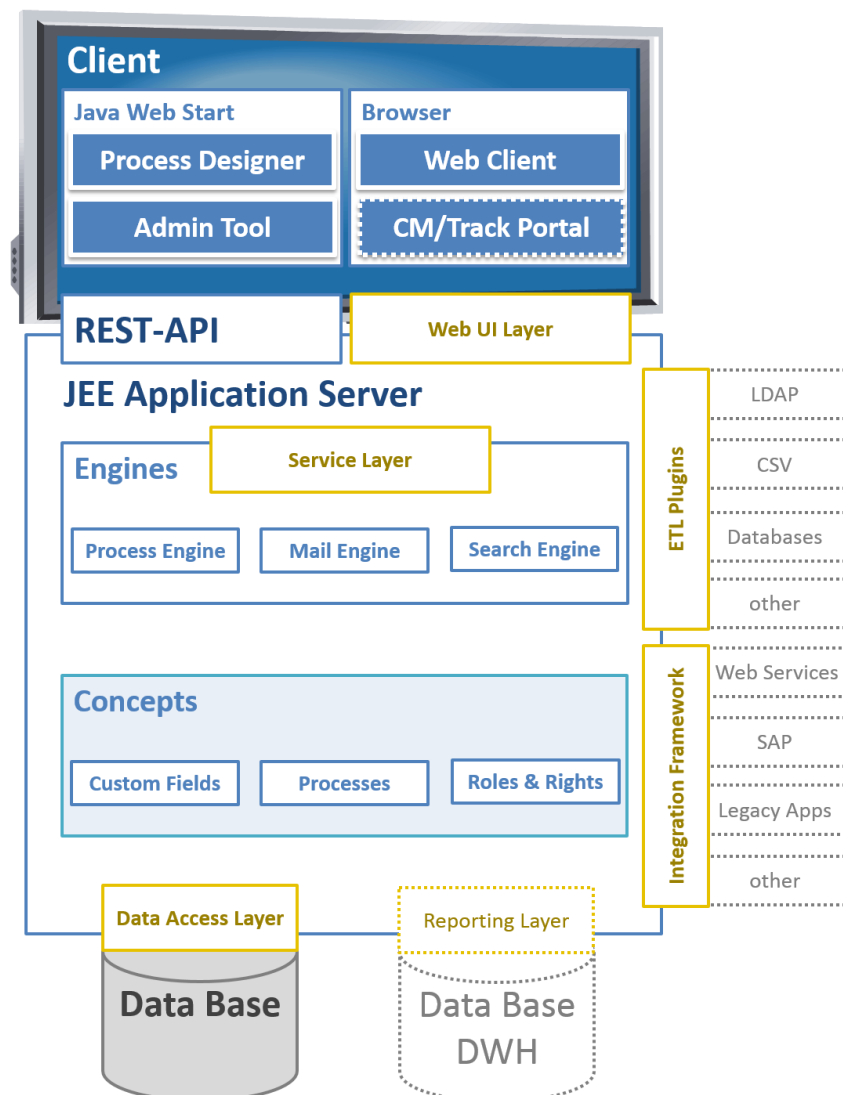


System Requirements for ConSol CM Version 6.10.6

Architectural Overview

ConSol CM is built upon a Java EE web architecture, containing the following core components:

- JEE Application Server running the ConSol CM application and the reporting framework
- Database (one schema for production and reporting data each)



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Users access the application via a web browser. The user interface is provided by the application server as a web application. The business logic is executed inside the ConSol CM server.

In addition, there are two further applications for the administration and configuration of ConSol CM:

- Admin-Tool
- Process Designer

These applications are launched locally on the client computer via Java Web Start.

The fulfillment of the system requirements for on-premise installations by allocating sufficient computing environments is a customer responsibility. Such allocation is outside the scope of delivery for the ConSol CM software product.

Server

Middleware/Platform

ConSol CM is running on one or multiple Java Application Servers for Java Enterprise Edition 5 (EE 5 – needs JRE 1.6: JDK 1.6.0 Update 45), or respectively, for use with JBoss EAP 6.2.0 and 6.4 versions Java Enterprise Edition 6 (EE 6 – needs JRE 1.7: JDK 1.7.0 up to Update 80). JBoss EAP 6.4 including patch versions can additionally be operated with a JRE 1.8 (JDK 1.8.0 up to Update 92). An adequate Java installation must be provided. Only Oracle Java runtime environments are supported and the respective version numbers relate to these runtimes. The system is approved for the following application servers:

- JBoss 5.1.0 GA
- JBoss Enterprise Application Platform EAP 6.2.0
- JBoss Enterprise Application Platform EAP 6.4
- WildFly 8.2.0
- Oracle WebLogic Server 11gR1.

The CM.Track V2 Portal server component can be used in the CM application server. It can also be run on a separate server. For the latter mode of operation it must be run on a JBoss Enterprise Application Platform as mentioned above, or alternatively on an Apache Tomcat 8.0.32 or newer. The requirements of the platform used apply regarding operating system. The Java Runtime Environment for operation of the application server platform and the CM.Track V2 component must be Java version 1.7.0 update 72 or newer.

Operating System

The server operating system depends on the application server used. If the requirements of the application server are fulfilled ConSol CM generally is operational on different operating systems.

We support:

- Linux with a kernel 2.6.24 or newer (information regarding specific distributions can be provided on request) *or*
- Windows Server 2008 and 2012, in case of limited performance requirements like for specific test systems client versions as well, namely Windows Vista or newer (64 Bit support starting with Windows 7).

Upon specific request the support for ConSol CM on other operating system platforms can be supplied.

Hardware

The recommendations of the middleware manufacturers shall apply. For a typical installation with 50 concurrent users we recommend:

- at least 10 GB of memory (RAM)
- 10 GB of hard drive storage
- 2 GHz Dual Core processor or equivalent.

Network connection

Adequate network connectivity with sufficient bandwidth between components, particularly between database, servers and web container is required. The standard values listed below refer to a network connection essentially available for ConSol CM and not significantly utilized by third party components.

A sufficient network connection additionally implies the following, sufficient for a typical installation with 50 concurrent users:

- Network latency between database, server and web container < 0,5 ms
- Network bandwidth of 1 Gb/s connection between database, server and web container
- No virus scanner on any ConSol CM server
- No firewall separating ConSol CM and its database

Justified divergence from these guidelines may not impair or change throughput, latency or content of the network traffic between components.

Virtualization

ConSol CM supports the virtual environments like VMware ESX Server 5.1. In order to ensure acceptable performance of the system we expect that the following parameters will apply (other information about system requirements like networking applies here without restrictions):

- No overcommit (CPU, Memory)
- Sockets, CPU and hyperthreading for all VMs of the server are configured consistent with the actual hardware. Furthermore the following performance indices are permanently met (determined by use of esxtop for example):
 - ❑ CPU Latency < 5%
 - ❑ VM in Ready State < 5%
 - ❑ Switches/s < 100
 - ❑ Migrates/s < 100

Client

The general usage of the application does need a web browser to access the Web Client. Secure connection over SSL is available. The configuration of the system is done via Admin-Tool and Process Designer, which use Java Web Start Technology.

Operating system environment for all clients:

- Linux or Windows (Vista or newer)

Web browser:

- Firefox 45 Extended Support Release (ESR)
- MS Internet Explorer version 8, 9, 10, or 11 (the functionality provided by the Imagepaste applet in earlier versions of CM is now only available in MS Internet Explorer 11), the CM.Track V2 Portal client only supports MS Internet Explorer 10 and 11
- For use of the CM.Doc (formerly CM/Office) applet Java version 7 browser plugin (JRE 1.7.0 update 51 or newer) **OR** Java version 8 browser plugin (JRE 1.8.0 update 66 or newer)
- For use of CM.Doc for integrating office documents a word processor installation:
 - Microsoft Word 2003, 2007, 2010, 2013, or 2016
 - Apache OpenOffice 3.2.1

Admin-Tool:

- Java version 7 (JRE 1.7.0 update 51 or newer) **OR** Java version 8 (JRE 1.8.0 update 66 or newer)
- launched via Web Start from the web browser

Process Designer:

- Java version 7 (JRE 1.7.0 update 51 or newer) **OR** Java version 8 (JRE 1.8.0 update 66 or newer)
- launched via Web Start from the web browser

Minimum client hardware requirements:

- 1 GHz processor
- 2 GB memory (RAM)
- Screen resolution with a minimum width of 1280 pixel

Database

Data management is handled by a relational database management system. The following database products are supported:

- Oracle 10g, 11g, or 12c
- MS SQL-Server 2005, 2008, 2012, or 2014
- MySQL 5.6 (5.6.13 or newer)

The necessary storage space heavily depends on the usage and has to be determined specifically. In general, typical systems with 50 concurrent users require 50 GB and additionally 5 GB increase per year. The system requirements specified for the database system by the manufacturer apply. A minimum of 4GB RAM system memory is recommended.

For on-premise installations it is the customer's responsibility to supply an appropriate database and suitable connector.

Optionally Connecting Third-Party Systems (Interfaces)

Interfacing ConSol CM with third-party systems can be achieved by using several standard interfaces. Usage of the interfaces generally is optional. The following interfaces are supplied by a standard installation and can be utilized after proper setup of both connected systems.

E-Mail

ConSol CM offers an e-mail interface that can communicate with one or multiple e-mail servers via POP3 or IMAP, respectively, and SMTP protocols. Encrypted connections are possible. The availability of the e-mail services in use will be assumed.

Microsoft Exchange Calendar

Inside the ConSol CM Web Client calendar entries from Microsoft Exchange versions 2010 and 2013 can be displayed, created and edited. Other server versions are not supported. The availability of the necessary Exchange server will be assumed.

LDAP

(Encrypted) LDAP can be used for authenticating the ConSol CM users, if configured. In case authentication is done exclusively by this means, the necessary availability and performance of the LDAP services must be provided.

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REST

Read and write access to the transactional data can easily be implemented via a REST interface exposing a simple web interface, if desired.

Further Optional Interfaces

All additional interfaces (file access, ftp, web service, etc.) are implemented with the help of an included Enterprise Service Bus.

Last update: March 2017, applies to ConSol CM versions 6.10.6 starting with version 6.10.6.0