celonis

INSTALLATION GUIDE

Version 1.9

Corresponding Software Version
Celonis Enterprise 4.5

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REVISION HISTORY

VERSION NUMBER	VERSION DATE	SUMMARY OF REVISIONS MADE
1.4	MAR 22, 2017	Application Version 4.2
1.5	AUG 10, 2017	Updated version for application version 4.2-SP1
1.6	FEB 23, 2018	Updated version for application version 4.3
1.7	MAI 5, 2018	Updated version for application version 4.4
1.8	JUNE 29, 2018	Small corrections for application version 4.4
1.9	FEB 28, 2019	Updated version for application version 4.5

INTRODUCTION

ABOUT THIS GUIDE

Celonis Enterprise is a powerful software for retrieving, visualizing and analyzing real as-is business processes from transactional data. It provides users with the possibility to create and share comprehensive process analyses giving them full transparency about the business processes at hand.

TARGET AUDIENCE

This guide covers all relevant technical information about correctly installing Celonis Enterprise and is meant to be consulted by the following target audiences:

- System Administrators
- Support Personnel
- Technical Staff

LIST OF ABBREVIATIONS

ABBREVIATION	EXPLANATION
CIFS	Common Internet File System
LTS	Long Term Support
SLES	SUSE Linux Enterprise Server
RHEL	Red Hat Enterprise Linux
SP	Service Pack
NFS	Network File System
OS	Operating System
PDF	Portable Document Format
PNG	Portable Network Graphics
SSL	Secure Sockets Layer
HTTP	Hypertext Transfer Protocol
SSHFS	SSH File System
CA	Certification Authority
URL	Uniform Resource Locator

CELONIS ENTERPRISE

OVERVIEW

Celonis is a powerful software for retrieving, visualizing and analyzing real as-is business processes from transactional data. It provides users with the possibility to create and share comprehensive process analyses giving them full transparency about the business processes at hand.

To provide process analyses, Celonis makes use of raw data taken from your database system. For efficient use, the solution requires data to exist in a specified target structure. Thus, raw data from your system will be transformed into that structure on a regular basis. The result will then be stored as either views or tables. As analytical backbone for the management and storage of the raw data as well as the transformed Process Mining data and as enabler for its real-time analytics, Celonis uses common RDBM-systems, such as SAP HANA, MS SQL, Oracle, DB2, and many more.

Celonis was designed as an analysis platform for the supervision of several business processes and by several users at the same time. Therefore, Celonis is a browser-based web application with a client-server architecture that is easily accessible throughout an enterprise for many users at the same time. User access can be restricted either on analysis-, or data-model-level. Users can also be assigned different roles with different rights for making configurations or creating analyses.
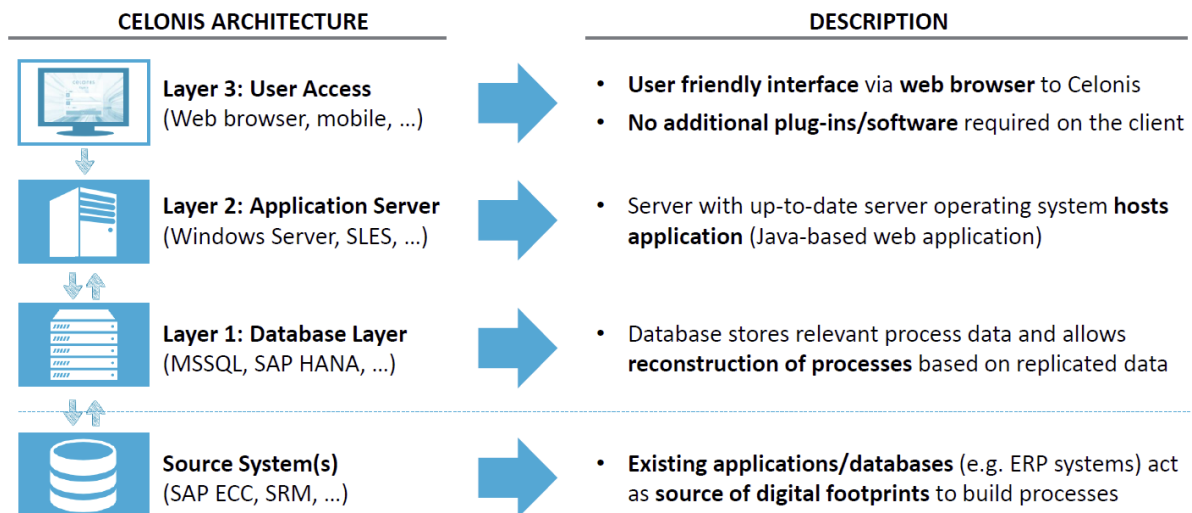

Figure 1: Architecture overview of Celonis Enterprise

PRECONDITIONS

- Analytics database
- Application Server on Intel architecture with one of the following operating systems:
  - Windows Server 2008 R2 and higher
    - Recommended version: 2016
  - SLES 12 SP3 / SP4
    - Recommended version: 12 SP3
  - RHEL 7.6
    - Recommended version: 7.6
  - Ubuntu Server 16.04 LTS or 18.04 LTS
    - Recommended version: 18.04 LTS
- Possibility to transfer the install files to the application server
- Text editor (syntax highlighting support recommended (e.g. Notepad++))
- Root/admin access

CELONIS ENTERPRISE – DEPLOYMENT

DEPLOYMENT OPTIONS

- Single-server deployment supporting scale-up architecture
    - Consists of one Celonis Application Server hosting the central application, managing the system, hosting the Celonis Configuration Store and running the process mining engine.
- Multi-server deployment supporting scale-out architecture
    - Consists of one Celonis Application Server (master) hosting the central application, managing the system and hosting the Celonis Configuration Store.
    - Consists of one to several Compute Nodes running the process mining engine. The Master Application Server can also host the process mining engine for selected data models.
    - Consists of one shared file system (e.g. NFS, SSHFS, CIFS)

A typical scale-out architecture consists of one to several Compute Node per cluster, where in theory there is no limit for the number of Computer Nodes. For more information regarding configuration of the installation, especially with regards to deployment, please consult the Celonis Operation Guide.

Celonis recommends the single-server deployment for all use cases.

CELONIS CONFIGURATION STORE

The Celonis Configuration Store is the central storage of the application metadata, e.g. system settings, users, groups, definitions of analyses, and data models and contains all configuration done via the web frontend. The actual data to be analyzed resides in the connected analytics database.

For medium to large installations as well as any productive installations, Celonis recommends to setup the Celonis Configuration Store using a separate database system. For more information, please consult the Celonis Configuration Store Setup Guide.

CELONIS ENTERPRISE – WINDOWS INSTALLATION

INSTALLATION PROCEDURE

Execute the "celonis4_enterprise_win64.exe" installer and enter

- The path where the software is to be installed
- The port under which the web application will be reachable (default: "9000")
- Set a password for the user for system administrator user "sysadmin".
  Please note, you must change the password on your first log in (to use the default password "$admin!" just press enter).

After successful installation start the "Celonis CPM4" service from your Service Manager.

CELONIS ENTERPRISE – LINUX INSTALLATION

PREREQUISITES

Before you start the installation, please ensure you meet the following requirements:
- The installation file "celonis4_<dist>.run" is located on your target system (e.g. "/tmp/celonis/"). There are separate installers for the different supported Linux distribution, make sure to pick the one matching your distribution and major version.
- You have root privileges on the target system
- You have created a dedicated system user to run the Celonis4 Server on the target system (optional)
- You have installed the OS package "graphviz" (including its automatic dependencies) provided by your distribution or verified its existence. The installer will fail if this package is not installed. It is strongly recommended to install it from your distribution using a package manager:
  - On SLES: Execute "sudo zypper install graphviz"
- Additionally, to use the PDF and PNG exporting functionalities, you need to install the following OS packages (including their automatic dependencies) listed in
- TABLE 1.

SLES	RHEL	Ubuntu
• xauth • xorg-x11-server • libXss1 • gconf2 • mozilla-nss • libasound2 • libasound2-32bit	• xorg-x11-xauth • xorg-x11-server-Xvfb [*] • libXtst • GConf2 • libXScrnSaver • libasound.so.2 • alsa-lib.x86_64 [*] via *subscription-manager repos \ --enable rhel-7-server-optional-rpms*	• xauth • xvfb • libgtk2.0-0 • libxtst6 • libxss1 • libgconf-2-4 • libnss3-1d • libasound2

Table 1: OS packages for PDF and PNG exporting functionalities

INSTALLATION PROCEDURE

1. Log in on the target system.
2. Navigate to the folder where your installation files are located (e.g. "/tmp/celonis/")
3. Start the installation script with the following command:
   o As root: "bash celonis4.run"
   o As non-root: "sudo bash celonis4.run"
4. Please enter the target directory where you wish to install Celonis Enterprise and press enter (to use the default path "/opt/celonis/celonis4/" just press enter)

Figure 2: Specify target installation directory of Celonis Enterprise

5. Please enter the system user which runs the Celonis Server. (to use root just press enter)

Figure 3: Specify system user

6. Specify the port on which you will access the Celonis web frontend (to use the default port "9000" just press enter)

Figure 4: Specify port for Celonis web frontend

7. Specify the initial password for the user sysadmin. This user will be used to log in on the web frontend. Please note, you will have to change the password on your first log in (to use the default password "$admin!" just press enter).

Figure 5: Specify initial Celonis web frontend password

8. The installation is now complete. Navigate to your install directory (default "/opt/celonis/celonis4/") and start the service with the following command:
   o As root: "sh start.sh"
   o As non-root: "sudo sh start.sh"

CELONIS WEB FRONTEND

You can access the web frontend with the following URL:
- "http://<hostname of your server>:<port>" (e.g. http://celonispm:9000)
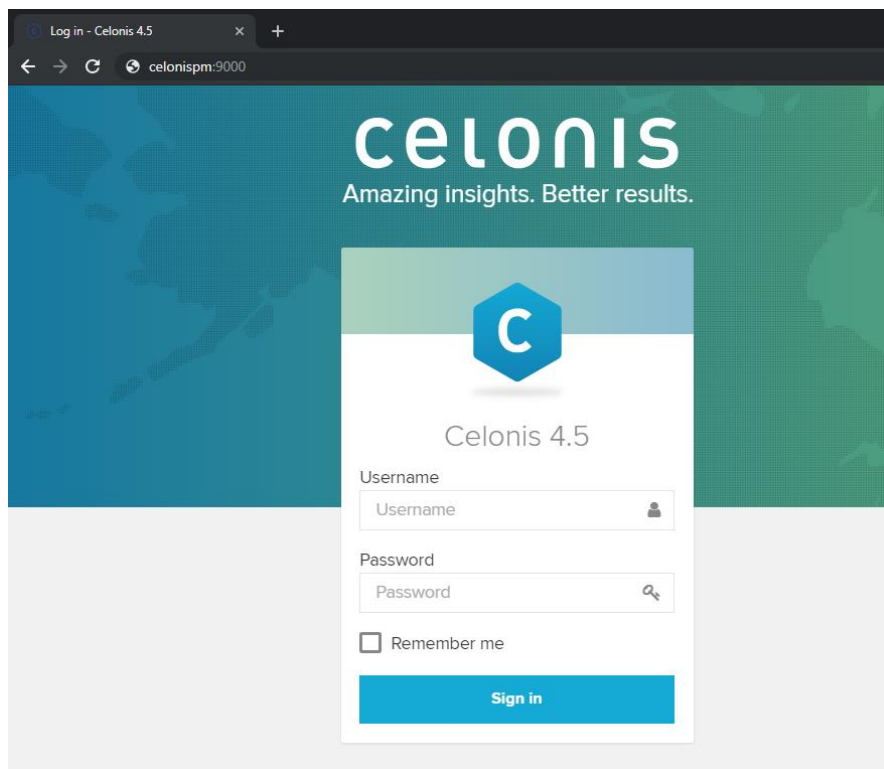

Figure 6: Celonis web frontend

To log in, you can use the user "sysadmin" and the password you provided in step 7. After the log in, you must activate the license and configure your data as described in Celonis Documentation.

For more information regarding configuration of the installation, especially with regards to security, please consult the Celonis Operation Guide.

CONFIGURE CELONIS ENTERPRISE

PDF/PNG EXPORT

In case the PDF/PNG exporting does not work, please check the following steps:

- PDF and PNG exporting functionalities are only available on newer Linux distributions (SLES 12, RHEL 7, Ubuntu 16) and on Windows. Please note, that when upgrading the OS (e.g. from SLES11 to SLES12), the software must be reinstalled with the appropriate installer for the new OS.
- Make sure you have installed all previously listed OS packages on Linux. Check the log files of the application for possible errors or further missing libraries.
- In case you have SSL activated, the user running the Celonis Enterprise service/process needs to trust the certificate. For certificates signed by an official CA or your company's CA, this should already be the case. In case you are using a self-signed certificate, make sure to add this certificate to the trusted certificates of the service user.
- You have correctly set the parameter "server.url" to the URL, at which the application is accessible from within the network (e.g. https://celonis.mycompany.com) in the "config-custom.properties" file. In case the local access for the process generating the PDF on the server needs to be different (e.g. because you unload SSL on a frontend server that also handles a third-party authentication), you can set the parameter "server.external" to the address, where the instance is reachable locally.
- The HTTP header "X-Frame-Options" is by default set to "DENY" for security reasons. If you see error messages in the browser console regarding this header while downloading a PDF, you can set the property "http.framepolicy.xframeoptions" in the "config-custom.properties" file to "SAMEORIGIN" while considering the security implications.
- In case the PDF only contains the structure of the analysis and charts, but no data (i.e. only lines), your system might be lacking the necessary fonts or font libraries. In this case, you can set the property "externaltool.legacy=true" in the "config-custom.properties" file.
- The user running Celonis needs to have a valid and writable "home" directory for storing temporary files.
- As a last resort, you can manually adjust the script and executable used for exporting. Check the log files generated during startup of the application for the current configuration.
- One example of an adjustment would be a manual override of the user's "home" directory (the "home" directory of the user running the Celonis process needs to be writable by this user. If the "home" directory points to a non-writable directory (e.g. "/root"), the exporting will fail).

SUPPORT DESK MANAGEMENT

To contact Celonis support, you have the following possibilities:

Hotline: **+49 (0)89 416 159 677**

Email: servicedesk@celonis.de

Support-Portal: https://servicedesk.celonis.com

Please include at least the following items in your issue description:

- Used browser including version (e.g. Google Chrome Version 64.0)
- Installation which you are trying to access (in case there is e.g. Dev and Prod)
- URL used to access the system (sometimes, there can be more than one URL to reach a single installation. This will also help to identify the installation you are trying to access)
- User name used to logon
- Screenshot of the error message/situation
- Log files of the application (if accessible on the server)

For additional information please refer to "Service Description for Celonis Support Services" available on the official Celonis website.

REFERENCES

- Celonis Operation Guide
- Celonis Configuration Store Setup Guide