

Update Instructions

Celonis Process Mining 4.7

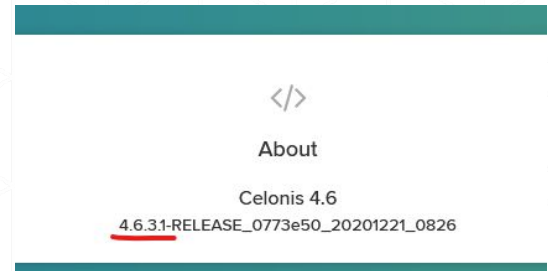
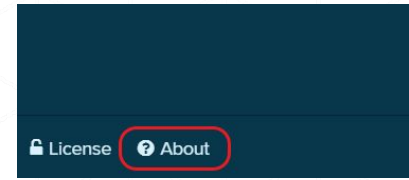
**All steps mentioned
in this guide must be
performed BEFORE
the actual update to
4.7!**

Preconditions

Before you proceed with the instructions, please make sure the following preconditions are met:

- 1. You are updating an existing CPM installation**
This document is not relevant in case of a fresh installation
- 2. The currently installed CPM version is 4.6.3.x**
At this moment you have **installed, launched and verified** the 4.6.3.x version of CPM. If not please request an installer of version 4.6.3.x from the customer support and undergo the whole cycle of software installation and verification. Otherwise the 4.7 installation process will be aborted by the version compatibility verification.
- 3. [Ubuntu Only] The Ubuntu version is 18.** Support of Ubuntu 16 was deprecated. Thus, the OS must be upgraded to **version 18** before the update. This concerns the server hosting the Central Application and the server(s) hosting Compute Services.

To figure out the current version go to the “About” section (the button in the left bottom corner):



Backup procedure (Windows)

For the sake of safety backup the components below:

1. Configuration Store

The database that is storing the application data should be backed up (only in case of PostgreSQL or MsSQL)

2. Application files

The following directories and files should be backed up:

- <installPath>/appfiles/**
- <installPath>/component_configurations/**
- <installPath>/config_custom.properties
- <installPath>/compute/application-custom.properties
- <installPath>/compute/compute_svc.xml
- <installPath>/compute/root/**

Backup procedure (Linux)

For the sake of safety backup the components below:

1. Configuration Store

The database that is storing the application data should be backed up (only in case of PostgreSQL or MsSQL)

2. Application files

The following directories and files should be backed up:

- <installPath>/root/**
- <installPath>/component_configurations/**
- <installPath>/config_custom.properties
- <installPath>/compute/application-custom.properties
- <installPath>/compute/root/**

Custom libraries (Windows)

From version 4.7 onward, **the custom libraries** are preserved with each new installation. No backups and no restoring required! To activate the feature, please follow the instructions below:

1. Prepare the directory

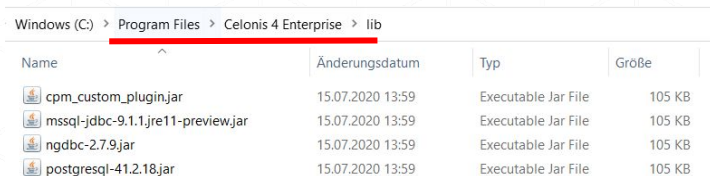
In the application installation folder create a directory called "lib"

2. Copy all CUSTOM libraries (if you have such)

Custom are all libraries that were introduced manually (e.g. jdbc drivers, CPM custom plugins, etc). They must be copied from `<installPath>/appfiles/app/WEB-INF/lib` to `<installPath>/lib`.

IMPORTANT: do not include CPM4 application native libraries from `<installPath>/appfiles/app/WEB-INF/lib`. They might corrupt the installation. In doubt, please contact our customer support team.

After all the folder structure should be similar to the one pictured below:



Name	Änderungsdatum	Typ	Größe
cpm_custom_plugin.jar	15.07.2020 13:59	Executable Jar File	105 KB
mssql-jdbc-9.1.1.jre11-preview.jar	15.07.2020 13:59	Executable Jar File	105 KB
ngdbc-2.7.9.jar	15.07.2020 13:59	Executable Jar File	105 KB
postgresql-41.2.18.jar	15.07.2020 13:59	Executable Jar File	105 KB

Custom libraries (Linux)

From version 4.7 onward, **the custom libraries** are preserved with each new installation. No backups and no restoring required! To activate the feature, please follow the instructions below:

1. Prepare the directory

In the application installation folder create a directory called "lib"

2. Copy all CUSTOM libraries (if you have such)

Custom are all libraries that were introduced manually (e.g. jdbc drivers, CPM custom plugins, etc). They must be copied from `<installPath>/root/app/WEB-INF/lib` to `<installPath>/lib`.

IMPORTANT: do not include CPM4 application native libraries from `<installPath>/root/app/WEB-INF/lib`. They might corrupt the installation. In doubt, please contact our customer support team.

After all the folder structure should be similar to the one pictured below:

```
root@master-node:/opt/celonis/cpm4# ll lib/
total 4820
drwxrwxr-x  2 root root   4096 Jan 25 15:03 ./
drwxr-x--- 11 root root   4096 Jan 25 13:36 ../
-rw-rw-r--  1 root root 2415211 Jan 25 15:03 mysql-connector-java-8.0.23.jar
-rw-rw-r--  1 root root  847480 Jan 25 15:02 postgresql-42.2.18.jar
-rw-rw-r--  1 root root 1660960 Jan 25 15:03 protobuf-java-3.11.4.jar
root@master-node:/opt/celonis/cpm4#
```

Java Options – Central Application (Windows)

Since we deprecated CPM process wrapper (*cbpd_svcw.exe*), the Java Options are now maintained in a separate text file. To preserve the existing Java arguments, please adhere the following instructions:

1. Create a .vmoptions file

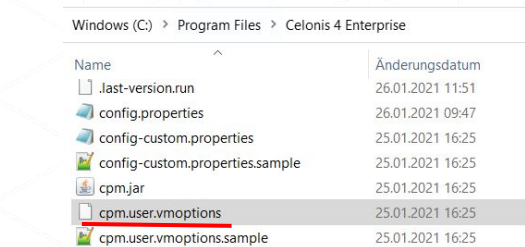
In the installation folder create a file called “cpm.user.vmoptions”:

```
# Formatting rules:
# a) a comment starts with a #
# b) arguments must start with a leading dash (-)
# c) one argument per line, the whole line is treated as a single argument
# d) quotes, backticks, white spaces are allowed (except line breaks!) as
argument values and treated literally, escaping is not needed
# For example:
#-Dloader.path=C:\Program Files\Celonis 4 Enterprise\lib
# e) the paths are relative to the start script, or absolute if a path starts
with <DISK>:\...
# f) a sequence of 3 dollar chars ($$$) is reserved and should not be used!
-Xms512M
-Xmx2048M
```

2. Copy Java Options (if provided earlier):

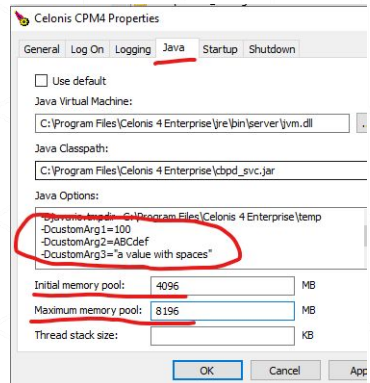
Copy all the Java Options from Celonis CPM4 Properties (-Djava.io.tmpdir must be excluded) into the newly created file (mind following the formatting rules). Adjust the -Xms (Initial Memory) and -Xmx (Maximum Memory) values according to the values from Celonis CPM4 Properties.

In the end it should look as following:



Windows (C:) > Program Files > Celonis 4 Enterprise

Name	Änderungsdatum
.last-version.run	26.01.2021 11:51
config.properties	26.01.2021 09:47
config-custom.properties	25.01.2021 16:25
config-custom.properties.sample	25.01.2021 16:25
cpm.jar	25.01.2021 16:25
cpm.user.vmoptions	25.01.2021 16:25
cpm.user.vmoptions.sample	25.01.2021 16:25



Celonis CPM4 Properties

General Log On Logging **Java** Startup Shutdown

Use default

Java Virtual Machine:
C:\Program Files\Celonis 4 Enterprise\jre\bin\server\jvm.dll

Java Classpath:
C:\Program Files\Celonis 4 Enterprise\cbpd_svc.jar

Java Options:
-Djava.io.tmpdir=C:\Program Files\Celonis 4 Enterprise\temp
-DcustomArg1=100
-DcustomArg2=ABCdef
-DcustomArg3="a value with spaces"

Initial memory pool: 4096 MB
Maximum memory pool: 8196 MB
Thread stack size: KB

OK Cancel App


```
# Formatting rules:
#
# a) one argument per line
# b) no empty lines
# c) no leading and trailing spaces
# d) use double quotes to pass arguments cor
# e) a comment starts with a '#'
# f) the paths are relative to the start scr
-Xms4096M
-Xmx8192M
-DcustomArg1=100
-DcustomArg2=ABCdef
-DcustomArg3="a value with spaces"
```


Java Options – Central Application (Linux)

Since we deprecated CPM VM options definition inside the startup script (*start_application.sh*), the Java Options are now maintained in a separate text file. To preserve the existing Java arguments, please adhere the following instructions:

1. Create a .vmoptions file

In the installation folder create a file called “cpm.user.vmoptions”:

```
# Formatting rules:
# a) a comment starts with a #
# b) arguments must start with leading dash (-)
# c) one argument per line, the whole line is treated as a single argument
# d) quotes, backticks, white spaces are allowed (except line breaks!) as
argument values and treated literally, escaping is not needed
# For example:
#-Dloader.path=/cpm4 dev/lib
# e) the paths are relative to the start script, or absolute if a path starts
with /
-Xms512M
-Xmx2048M
```

2. Copy Java Options (if provided earlier):

Copy all the Java Options from the CPM startup script (*start_application.sh*) into the newly created file (mind following the formatting rules). Adjust the **-Xms** (Initial Memory) and **-Xmx** (Maximum Memory) values according to the values from the script.

In the end it should look as following:

start_application.sh

```
#!/usr/bin/env bash
cd "$(dirname "$0")"
sudo -u ${USER} sh -c 'export JAVA_HOME="$PWD/jre";
cd "$PWD"; mkdir -p logs;
nohup "../jre/bin/java" -Xms1024M -Xmx2048M -jar cpm.jar
>> logs/stdout 2>> logs/stderr & echo $! > cpm.pid'
```

cpm.user.vmoptions

```
# Formatting rules:
# a) a comment starts with a #
# b) arguments must start with leading dash (-)
# c) one argument per line, the whole line is treated as a single argument
# d) quotes, backticks, white spaces are allowed (except line breaks!) as
argument values and treated literally, escaping is not needed
# For example:
#-Dloader.path=/cpm4 dev/lib
# e) the paths are relative to the start script, or absolute if a path starts
with /
-Xms1024M
-Xmx2048M
```

Java Options – Compute Service (Windows)

To prevent the loss of Java Options of the Compute Service, a separate vmoptions file has to be created for every Compute Service:

1. Create a .vmoptions file

In the compute folder (`<installPath>/compute`) create a file called “compute.user.vmoptions”:

```
# Formatting rules:
# a) a comment starts with a #
# b) arguments must start with a leading dash (-)
# c) one argument per line, the whole line is treated as a single argument
# d) quotes, backticks, white spaces are allowed (except line breaks!) as argument
values and treated literally, escaping in not needed
# For example:
#-Dloader.path=C:\Program Files\Celonis 4 Enterprise\lib
# e) the paths are relative to the start script, or absolute if a path starts with
<DISK>:\...
# f) a sequence of 3 dollar chars ($$$) is reserved and should not be used!
-Xms512M
-Xmx2048M
```

2. Copy Java Options (if such provided earlier):

Copy all custom Java Options from `<installPath>/compute/compute_svc.xml` (**-Djava.io.tmpdir** and **-Dspring.profiles.active** must be excluded) into the newly created file (mind following the formatting rules).

In the end it should look as pictured:

The screenshot shows a Windows Explorer window with the path `This PC > OS (C:) > Program Files > Celonis 4 Enterprise > compute`. The file list includes `compute.jar`, `compute.user.vmoptions` (highlighted in blue), and `compute.user.vmoptions.sample`. An orange arrow points from the file list to a snippet of XML code. The XML code is as follows:

```
<service>
  <id>sappm_compute_svc</id>
  <name>Celonis CPW4 compute</name>
  <description>Celonis Process Mining Service</description>
  <executable>%BASE%\..\jre\bin\java.exe</executable>
  <workingdirectory>%BASE%\workingdirectory>
  <arguments>-Djava.io.tmpdir="%BASE%\temp"
  -Xms4096M -Xmx8192M -DcustomArg1=100
  -DcustomArg2=ABCdef -DcustomArg3="a value with spaces"
  -Dspring.profiles.active=custom -jar compute.jar</arguments>
  <log mode="roll-by-time">
    <pattern>yyyy-MM-dd</pattern>
  </log>
  <logpath>%BASE%\logs</logpath>
  <startmode>Manual</startmode>
</service>
```

Below the XML code, a screenshot of a text editor shows the content of the `compute.user.vmoptions` file, which matches the content shown in the first code block:

```
File Edit Search View Convert Options Help
# Formatting rules:
#
# a) one argument per line
# b) no empty lines
# c) no leading and trailing spaces
# d) use double quotes to pass arguments containing whitespa
# e) a comment starts with a '#'
# f) the paths are relative to the start script, or absolute
-Xms4096M
-Xmx8192M
-DcustomArg1=100
-DcustomArg2=ABCdef
-DcustomArg3="a value with spaces"
```

Java Options – Compute Service (Linux)

Since we deprecated Compute VM options definition inside startup script (`compute/start_compute.sh`), the Compute Java Options are now maintained in a separate text file. To preserve the existing Java arguments, adhere the following instructions:

1. Create a `.vmoptions` file

In the compute folder (`<installPath>/compute`) create a file called `"compute.user.vmoptions"`:

```
# Formatting rules:
# a) a comment starts with a #
# b) arguments must start with leading dash (-)
# c) one argument per line, the whole line is treated as a single argument
# d) quotes, backticks, white spaces are allowed (except line breaks!) as
argument values and treated literally, escaping is not needed
# For example:
#-Dloader.path=/cpm4 dev/lib
# e) the paths are relative to the start script, or absolute if a path starts
with /
-Xms512M
-Xmx2048M
```

2. Copy Java Options (if provided earlier):

Copy all the Java Options from the CPM startup script (`compute/start_compute.sh`) into the newly created file (mind following the formatting rules). Adjust the `-Xms` (Initial Memory) and `-Xmx` (Maximum Memory) values according to the values from the script.

In the end it should look as following:

`compute/start_compute.sh`

```
#!/usr/bin/env bash
cd "$(dirname "$0")"

sudo -u ${USER} sh -c 'export JAVA_HOME="$PWD/../jre";
cd "$PWD"; mkdir -p logs
nohup "$PWD/../jre/bin/java" -Xms1024M -Xmx2048M -jar compute.jar
>> logs/stdout 2>> logs/stderr & echo "$*" > compute.pid'
```

`compute/compute.user.vmoptions`

```
# Formatting rules:
# a) a comment starts with a #
# b) arguments must start with leading dash (-)
# c) one argument per line, the whole line is treated as a single argument
# d) quotes, backticks, white spaces are allowed (except line breaks!) as
argument values and treated literally, escaping is not needed
# For example:
#-Dloader.path=/cpm4 dev/lib
# e) the paths are relative to the start script, or absolute if a path starts
with /
-Xms1024M
-Xmx2048M
```

PDF Export and Stories

In order to avoid unexpected configuration issues related to PDF Export, another layer of validation was incorporated. Make sure that **server.url** and **server.external** (if such specified in config-custom.properties) point to the CPM installation host, otherwise the server will fail to start.