

KNIME Server Release Notes and Update Guide

KNIME AG, Zurich, Switzerland Version 4.16 (last updated on 2024-03-13)

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Release Notes

KNIME Server 4.16 is a feature release of the 4.x release line. All clients that have worked with KNIME Server 4.15 will continue to work with KNIME Server 4.16 without restrictions.



To find out which version of KNIME Server you are currently running, you can check the Administration pages on the WebPortal.

Introduction to the update process

This document guides you through the steps that are needed to upgrade an existing KNIME Server installation from version 4.15 to 4.16 or update by applying a bugfix to version 4.16.

You will find a complete guide to installing KNIME Server in the KNIME Server Installation Guide, and a complete description of all configuration options in the KNIME Server Administration Guide.

If you have any questions or need assistance with the update process, please contact your dedicated KNIME support specialist.

Since version 4.11, new installations of KNIME Server are based on Apache **Tomcat**, rather than Apache **TomEE** which was used in previous releases.



With the release of KNIME Server 4.13.0, we discontinue support for TomEE based installations. It is not possible to upgrade a TomEE based KNIME Server to version 4.13.0 or higher. Instead, a fresh installation has to be performed.

If your current KNIME Server installation is already Tomcat based, you can follow the upgrade procedure as outlined below.

Prerequisites

Server

- You have already KNIME Server 4.15.x or KNIME Server 4.16.x running.
- · A KNIME Server installation based on Tomcat application server
- For the sake of readability, this documentation uses <apache-tomcat>/ to refer to the installation directory of the server application.

Client & Executor

- KNIME Analytics Platform clients with KNIME ServerSpace 4.8+ otherwise it will not be able to talk to the Server.
- KNIME Analytics Platform 5.1 as Executor with the corresponding *KNIME Executor Connector* extension version 4.16 installed on the Server side.

Backup

Even though all the data on the Server should be preserved during the update it is highly recommended to create a backup of all important data (see KNIME Server Administration Guide for backup information).



With KNIME Server 4.12 the email configuration moved from the knime.xml to the <knime-server-repository>/config/knime-server.config, so any existing custom configuration must be moved. More information concerning the email configuration can be found in the KNIME Server Administration Guide

Upgrade/update steps

Application server upgrade/update



Start by downloading the following files and make sure that the owner of these files is your KNIME user:

- The <knime-tomcat>.jar file listed here
- If you are updating using Tomcat: the latest Tomcat .war file listed here
- The latest KNIME Server Executor file listed here

Next backup these files before starting the update process:

 The knime.xml file located in <apache-tomcat>/conf/Catalina/localhost/ Please be aware that the name of the file might be different if the .war file had a different name (e.g. com.knime.enterprise.server.xml or webportal.xml).



Failure to backup this file will result in losing access to your scheduled jobs since it contains the secret key that is used to encrypt the schedules.

• The server.xml file located in <apache-tomcat>/conf/

Then follow these steps:

- 1. Stop KNIME Server.
 - a. On Windows: If you have KNIME Server installed as a service, stop KNIME Server and Executor.

If you don't have KNIME Server installed as a service, then run the shutdown.bat file located in <apache-tomcat>/bin

b. On Linux: If you have KNIME Server installed as a service, stop KNIME Server by running the systemctl stop knime-server.service command

If you don't have KNIME Server installed as a service, then run the shutdown.sh file located in <apache-tomcat>/bin

- 2. Delete the existing folder <apache-tomcat>/webapps/knime. You may not have a folder with this name located in the webapps folder. If this is the case, delete the folder that matches the file name of the .war file located in the webapps folder. E.g. if you see a webportal.war file in the webapps folder, delete the webportal folder.
- 3. Move the <filename>.war file located in the webapps folder to a different folder. Then copy the new downloaded war-4.16.x.y.war file to the webapps folder and rename it to <filename>.war.
- 4. Check if the knime.xml file that you backed up before still exists. If not copy the backup to the previous location.
- 5. Copy the downloaded file <knime-tomcat>.jar to <apache-tomcat>/lib. Delete the existing old <knime-tomcat>.jar file that was already in that directory. Make sure to rename the new file to knime-tomcat.jar.

HTML sanitization of old view and widget nodes in Executor version 5.2.2 or higher

With the release of 5.2.2 KNIME executors will have HTML sanitization of old JavaScript View nodes and Widget nodes turned on by default. This should ensure that no malicious HTML can be output. For more information on the possible consequences of node's functionality see the following section in the KNIME Analytics Platform guide.

It is still possible to achieve the old behaviour by turning the sanitization off globally. To do so set the following parameter to false in the knime.ini file in the executor's installation

directory.

-Djs.core.sanitize.clientHTML=false

Additionally sanitization rules can also be further customized, see KNIME WebPortal Administration Guide.

Updating the Executor to KNIME Analytics Platform 5.2.x or higher from version 5.1.x

If possible, start the executor installation in graphical mode (using the correct installation user!). If you have internet access, go to *File* \rightarrow *Update KNIME...* and it will suggest updating to the new version. Follow the steps in the wizard. If you don't have direct internet access, you must download the zipped update sites from the commercial downloads page. Then register the ZIP files in *File* \rightarrow *Preferences* \rightarrow *Install/Update* \rightarrow *Available Software Sites* and go to *File* \rightarrow *Update KNIME...*

Under Linux, if you cannot start the graphical user interface, you can use the updateexecutor.sh script that is in the root of the executor installation.

Call the script on the command line and provide a list of update sites that contain the new versions of the installed extensions and all installed extension will be updated (given that an update is available):

```
./update-executor.sh https://update.knime.com/analytics-platform/5.1
```

If you get error messages when executing update-executor.sh about missing "installable units", make sure that you have provided all necessary update sites.

If you want to selectively update only certain extensions, you have to build the update command yourself. An update is performed by uninstalling (-u) and installing (-i) an extension at the same time:

```
./knime -application org.eclipse.equinox.p2.director -nosplash -consolelog -r <list-of-
update-sites> -i
<list-of-features> -u <list-of-features> -d <knime-installation-folder>
```

For the given command, the parameters have the format specified in the Installing additional extensions section of the KNIME Server Administration Guide.

Updating the Executor to KNIME Analytics Platform 5.1.x or higher from version 4.7.x or lower



If you want to use KNIME Analytics Platform 5.1.0 or higher as an executor on Linux you must make sure that an X Display is available. Otherwise the executor may crash when creating images in KNIME nodes. See next section to learn how to install X Display.

Due to some larger changes, it is not possible to upgrade to KNIME Analytics Platform 5.1.x or higher, from version 4.7.x or lower.

Therefore, if you have KNIME Executor 4.7.x or lower you need to install KNIME Executor 5.1.x from scratch.

Before starting the KNIME Executor installation process create a backup of the <executor-folder> renaming it to <executor-folder>.old. After you successfully install the desired version of KNIME Executor, rename the new folder containing the Executor installation to the old folder name.

Then proceed with the installation of KNIME Executor by downloading the KNIME Executor full build from here and extracting it.

Please refer to the KNIME Server Installation Guide for more details about installing a KNIME Executor.

Migrating previous settings

When switching to a new executor, be sure to migrate any (custom) settings from the previous executor. Here are common configurations to check:

• knime.ini:

Some settings of the knime.ini file may be configured in the executor service, but if present, please migrate these settings:

```
# executor profiles
-profileLocation
<your server's URL>
-profileList
<list of profiles, e.g. executor,python>
# [...]
# executor memory (line starting with -Xmx), e.g.
-Xmx60G
# [...]
# Server's message queue
-Dcom.knime.enterprise.executor.msgq=<your queue address>
# [...]
# any custom entries, e.g. http proxies
```

Extensions:

Some community extensions are not yet or no longer available on the newest KNIME version. For a full list of available community extensions, please see here.

Miscellaneous:

You may find a proxy configuration file at <oldexecutor>/configuration/.settings/org.eclipse.core.net.prefs. If so, please migrate this file to the new executor. In order to start the new executor automatically, ensure that the executor folder has the correct owner and access permissions (especially on Linux).

Install X Display for KNIME Executor version 5.1.x or higher on Linux



If you want to use KNIME Analytics Platform 5.1.0 or higher as an executor on Linux you must make sure that an X Display is available. Otherwise the executor may crash when creating images in KNIME nodes.

The recommended way is using *xvfb* which is a virtual X Server for otherwise headless application (such as a KNIME Executor).

- 1. Install xvfb
 - On Ubuntu systems, run sudo apt install xvfb
 - On RedHat systems, run sudo yum install xorg-x11-server-Xvfb

 Copy the systemd templates which can be found in the root of the executor installation into your system. Since this may override your existing systemd configuration (mostly /etc/systemd/system/knime-executor.service.d/override.conf) make a backup first.

```
sudo cp -rv <knime_executor>/systemd/. /
```

 If you made any modifications to the copied files make sure to re-apply the changes to the new files (mostly /etc/systemd/system/knime-

executor.service.d/override.conf). Do not replace the new files with the old ones!

4. Run

sudo systemctl daemon-reload

5. Edit the Xvfb service and configure the same operating system user as for the knimeexecutor service by running

sudo systemctl edit Xvfb.service

and supplying the following contents

[Service] User=<same user as for the knime-executor.service>

6. Enable the Xvfb service.

sudo systemctl enable Xvfb.service
sudo systemctl start Xvfb.service

Updating to KNIME Analytics Platform 4.7.x or lower

1

This is only available for KNIME Analytics Platform version 4.4.x or higher. For other cases see previous KNIME Server documentation

If possible, start the executor installation in graphical mode (using the correct installation user!). If you have internet access, go to *File* \rightarrow *Update KNIME*... and it will suggest updating to the new version. Follow the steps in the wizard. If you don't have direct internet access, you must download the zipped update sites from the commercial downloads page. Then register the ZIP files in *File* \rightarrow *Preferences* \rightarrow *Install/Update* \rightarrow *Available Software Sites* and

go to File \rightarrow Update KNIME...

Under Linux, if you cannot start the graphical user interface, you can use the updateexecutor.sh script that is in the root of the executor installation.

Call the script on the command line and provide a list of update sites that contain the new versions of the installed extensions and all installed extension will be updated (given that an update is available):

```
./update-executor.sh https://update.knime.com/analytics-
platform/5.1,https://update.knime.com/community-contributions/trusted/5.1
```

If you get error messages when executing update-executor.sh about missing "installable units", make sure that you have provided all necessary update sites.

If you want to selectively update only certain extensions, you have to build the update command yourself. An update is performed by uninstalling (-u) and installing (-i) an extension at the same time:

```
./knime -application org.eclipse.equinox.p2.director -nosplash -consolelog -r <list-of-
update-sites> -i
<list-of-features> -u <list-of-features> -d <knime-installation-folder>
```

For the given command, the parameters have the format specified in the Installing additional extensions section of the KNIME Server Administration Guide.

knime.ini file

In case you want to use custom settings from your old KNIME Executor's knime.ini file, please copy only the lines following -vmargs to the new knime.ini. The only exception to this are the four lines related to Server Managed Customizations (-profileLocation...), in case those are set. The remaining lines above -vmargs contain paths to resources that have been changed in the new release, so they are not compatible.

Also note that it is now recommended to move the lines related to Server Managed Customizations to Executor's service definition. This will help upgrading to future releases on installation where no GUI is available.

server.xml file

For fresh installations, please note that a server.xml file (<apache-

tomcat>/conf/server.xml) from an older installation cannot be copied over due to some larger changes. Any custom changes applied to your existing server.xml need to be manually copied over to the new server.xml. For upgrades the existing server.xml continues to work, and does not need any adjustments.

Configuration of the updated KNIME Server

KNIME Server license

The KNIME Server license continues working with the new Server. If you haven't received a license file or if it is not working correctly, please contact KNIME support or your dedicated KNIME account manager.

Enabling execution via Apache Qpid

KNIME Server 4.11 introduced an integrated message broker for communication between KNIME Server and KNIME Executor, based on Apache Qpid (https://qpid.apache.org/). This can be thought of as using an architecture that corresponds closely to distributed KNIME Executors, but runs on a single host, which is used by both KNIME Server and KNIME Executor.

Unlike distributed KNIME Executors, it is not necessary to install a separate message broker such as RabbitMQ. Instead, Apache Qpid is bundled as part of all KNIME Server installations. New installations of KNIME Server use Qpid by default. Older installations might still use RMI, which has been removed with KNIME Server 4.13.

If you are still using RMI, you need to switch your installation to Qpid. Changes are required in two locations:

Application Server

Activate queue in knime-server.config. The file can be found in <knime-serverrepository>/config/knime-server.config. Set the parameter

com.knime.enterprise.executor.embedded-broker= to true

In addition, comment out the line com.knime.server.executor.knime_exe= by placing a # character at the start of the line.

KNIME Executor

i

In the KNIME Executor installation directory, add the following line to the knime.ini file, anywhere after the -vmargs line:

-Dcom.knime.enterprise.executor.msgq=amqp://knime:20knime16@localhost/

Alternatively, you can also add this line to the Executor's service definition.

Unlike the RMI-based execution, using the Qpid message broker requires to startup KNIME Server and KNIME Executor **separately**. For starting up KNIME Server, you can still use the startup.sh/.bat file located in <apache-tomcat>/bin. For starting the Executor, you can use <executor directory>/startexecutor.sh (Linux) or <executor directory>/start-executor.bat (Windows)

In case the Executor startup script is not present, you can start the Executor from command line by running

./knime -nosplash -consolelog -application
com.knime.enterprise.slave.KNIME_REMOTE_APPLICATION

For setting up the KNIME Server service, please follow the steps outlined in the KNIME Server Installation Guide. Installing the Executor as a service follows the same procedure as described for distributed KNIME Executors.

For increased security, we recommend to run both services as a different users.

Preferences file

Note that when switching from RMI to Qpid, the old preferences.epf file in ./workflow_repository/config is **not** used anymore. In order to set preferences on the Executor (e.g. database drivers or Python configuration), please use a preference profile as described in the KNIME Server Admin Guide.

Server temp directory

Switching to Qpid also uses a different temp directory than RMI. On Linux, this defaults to /tmp, which might have size restrictions. In order to manually set a different temp directory, please add the following to the knime.ini file of the KNIME Executor, anywhere below the -vmargs line: -Djava.io.tmpdir=/path/to/tmpdir

Qpid port

In some environments, it is necessary to explicitly open a port for connections to Qpid **on localhost** (even though Server and Executor are running on the same host). By default, the port is 5672. This can be changed in the knime-server.config file.

Server host name in /hosts

By default, the host name of the machine is available in /etc/hosts/. If this is not the case, KNIME Server will not work using Qpid. This can be resolved by adding the server's host name to /etc/hosts/, e.g. 127.0.0.1 <hostname>.

Compressed responses

Due to a change in Tomcat responses sent by KNIME Server 4.11 and 4.12 are not compressed even though compression is configured in the server.xml. In order to enable compression again, you have to add the attribute noCompressionStrongETag=false to all <Connector> elements in your server.xml, e.g.

<Connector noCompressionStrongETag="false" compressibleMimeType="..." compression="on"/>
...

If you create a new server installation using the KNIME Server Installer for 4.13.0 this attribute will be added automatically.

Troubleshooting

All schedules are lost after updating

One important step during update process is the backup of the knime.xml file so that it can be copied back into the KNIME Server installation folder. The knime.xml file contains a secret key for encrypting the communication between the server and the installation folder. If this is not restored before starting the server, the server will not be able to load jobs and schedules previously created.

Access to KNIME WebPortal version > 4.11 is not possible

Access gives error 404

If you cannot access the URL of the KNIME WebPortal version > 4.11

https://<server-address>/knime/webportal/

and it fails with error 404, usually indicates that during update or installation process the Context Root used to define the KNIME WebPortal URL was left empty (/). This is not possible starting with the release of KNIME WebPortal version 4.11+ for which it is necessary to **always** specify a Context Root.

Please refer to the KNIME Server Installation Guide.

Access gives error 500

If you cannot access the URL of the KNIME WebPortal version > 4.11 https://<server-address>/knime/webportal/ and it fails with error 500, usually indicates that the update did not work as expected.

Please contact KNIME support team via support@knime.com to get this fixed.

Update of KNIME Executor via command line is not possible

This is a known bug when updating from a KNIME Server version 4.11.1. This bug is fixed starting with KNIME Server version 4.11.2.

To solve the issue you need to follow these steps:

- 1. Create a copy of the file named knime.ini-copy
- 2. Remove the -profileLocation option from the knime.ini file
- 3. Update the KNIME Executor via command line
- 4. After a successful update, overwrite your knime.ini file with knime.ini-copy.

If this solution does not work, please contact KNIME support team via support@knime.com

Workflows deployed on the server cannot be executed

• If the following error message appears:

Unable to load workflow, it was created with a future version of KNIME

The KNIME Analytics Platform client with which you are connecting to the KNIME Server and with which the server was built needs to have a lower or equal version to the KNIME Executor. If this is not the case, please ask your KNIME Server Administrator to update the KNIME Server and/or KNIME Executor to the release version of the KNIME Analytics Platform client you are using locally.

- If a missing node is reported, instead, check if the node is already installed and if the version of the respective extension is the same in both the KNIME Analytics Platform client and the KNIME Executor.
- Finally, if your scripting (R or Python) snippets fail, it is possible that the respective packages are missing on KNIME Server. Please refer to the respective guides to install Python and R packages. Please also make sure the user under which you install those packages is the same user running the KNIME Executor.

Connection to KNIME Executor hosts after switching to Qpid is not possible

- Make sure the hostname of the KNIME Server is mentioned in the /etc/hosts file
- Check that the following ports are accessible on localhost. They do not need (and in fact should not) to be accessible from other systems (usually this is the case).
 - With QPid: com.knime.enterprise.executor.embedded-broker.port (default 5672)
 - With RabbitMQ: For KNIME Server and for the KNIME Executor that is setup on a separate machine (default 5672)

- Starting with QPid, KNIME Executor needs to be started manually. Please follow the instructions in the KNIME Server Installation Guide to do so.
- It might be necessary to change the user running the service. Please follow the instructions in the KNIME Server Installation Guide to do so.

Reading from my local file system after update to KNIME Server 4.11+ is not possible

Starting with KNIME Analytics Platform version 4.2, which is the KNIME Executor version for the KNIME Server 4.11 we are, by default, not allowing access to the local file system on the KNIME Server via the new File Util nodes. You can enable this again as described here.

Please note that this only affects nodes that are part of the revised file handling framework.

The authentication field is empty

Please update the knime-tomcat.jar as described in the Application server update section. This must be done before restarting the KNIME Server.

Log4J 2.14 appearing after updating KNIME Executor

Eclipse does not remove old or uninstalled plugins from the hard disk unless garbage collection is run. This may cause unused plugins and jar files, such as log4j, to continue to persist on the hard disk even if they are unused. To remove the old plugins, including unused versions of log4j run the following command inside the KNIME Executor directory.

./knime -application org.eclipse.equinox.p2.garbagecollector.application \backslash -nosplash -consolelog

Changelog (KNIME Server 4.16)

KNIME Server 4.16.0

(released December 6, 2022)

Enhancements

- SRV-3760: Update Tomcat to 9.0.68
- SRV-3720: Support generic HTTP requests and responses for jobs

Bug Fixes

• SRV-3726: Partially executed job may have "finished at" set from start

KNIME Server 4.16.1

(released February 7, 2023)

Enhancement

• SRV-3739: Update Microsoft Graph libraries for Azure AD OIDC authentication

Bug Fixes

- SRV-3721: Call Workflow Action is triggered again after the executed job is opened in RWE
- SRV-3765: Moving/Copying Components on Server always overwrites snapshots
- SRV-3766: Retries after unsuccessful scheduled job execution are only half the configured number
- SRV-3772: Job Schedules Permissions can no longer be changed
- SRV-3774: Restoring jobs with credentials takes much longer since 4.14

KNIME Server 4.16.2

(released February 15, 2023)

Bug Fixes

• SRV-3777: Can't edit jobs in remote workflow editor for KNIME Server

KNIME Server 4.16.3

(released March 29, 2023)

Enhancements

• SRV-3776: Add access token parsing to authenticator

Bug Fixes

- SRV-3775: Race condition when retrieving logs from executors
- SRV-3783: Swagger pages link to wrong support website

KNIME Server 4.16.4

(released May 17, 2023)

Bug Fixes

- SRV-3782: Enable adding node details to notifications sent from WebPortal
- WEBP-923: ConcurrentModificationException while executing to next page

KNIME Server 4.16.5

(released July 19, 2023)

Bug Fixes

- SRV-3799: KNIME Server Connector fails to connect if KnimeCookieProcessor is set
- SRV-3794: Clicking on workflow group in AP Explorer results in exception in Console view
- SRV-3750: Wrong state logged for jobs in job-pool
- SRV-3392: Can't login from AP on Windows if user or password contains umlaut

Enhancements

- SRV-3798: Update CXF to 3.6.1
- SRV-3797: Update Jackson to 2.15.1
- SRV-3788: Update KNIME Server to Tomcat 9.0.76

KNIME Server 4.16.6

(released September 14, 2023)

Enhancements

- SRV-3813: Update dependencies in order to fix potential security vulnerabilities
- SRV-3815: Update Tomcat to 9.0.80

Bug Fixes

- SRV-3808: Main SwaggerUI does not work
- SRV-3811: AP doesn't throw exception when updating the job fails
- SRV-3810: Loading workflow with a \+ in it will result the executor to be considered as a consumer
- SRV-3812: Webportal doesn't show share 'Link without login' when enabled via user groups
- WEBP-959: Enable "download" report button again

KNIME Server 4.16.7

(released December 15, 2023)

Enhancements

- SRV-3821: Update Tomcat to 9.0.83
- SRV-3823: Update RabbitMQ client to 5.20.0

KNIME Server 4.16.8

(released January 29, 2024)

Bug Fixes

- WEBP-965: Placeholder Strings "There has been no [...] set" are Shown in Workflow Tiles
- SRV-3832: Missing repositoryVersion file leads to missing permissions and schedules
- SRV-3831: When permissions cannot be read during startup all users get read access
- SRV-3825: Jobs in pool are re-used even though they're still running

KNIME Server 4.16.9

(released February 23, 2024)

Bug Fix

• SRV-3833: RabbitMQ client closes connection if message size is too large

KNIME Server 4.16.10

(This bugfix version was skipped)

KNIME Server 4.16.11

(released May 21, 2024)

Enhancement

• SRV-3845: Update Tomcat to 9.0.89

Bug Fixes

- SRV-3804: Standard executor.epf configuration for KNIME-EJB-Address creates WARN in executor logs
- SRV-3843: UI-extensions require write-permissions to work in data app

KNIME Server 4.16.12

(released May 29, 2024)

Bug Fix

• SRV-3847: Workflow execution not possible any more if OAuth is enabled





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