

KNIME Server Release Notes and Update Guide

KNIME AG, Zurich, Switzerland
Version 4.15 (last updated on 2022-08-29)

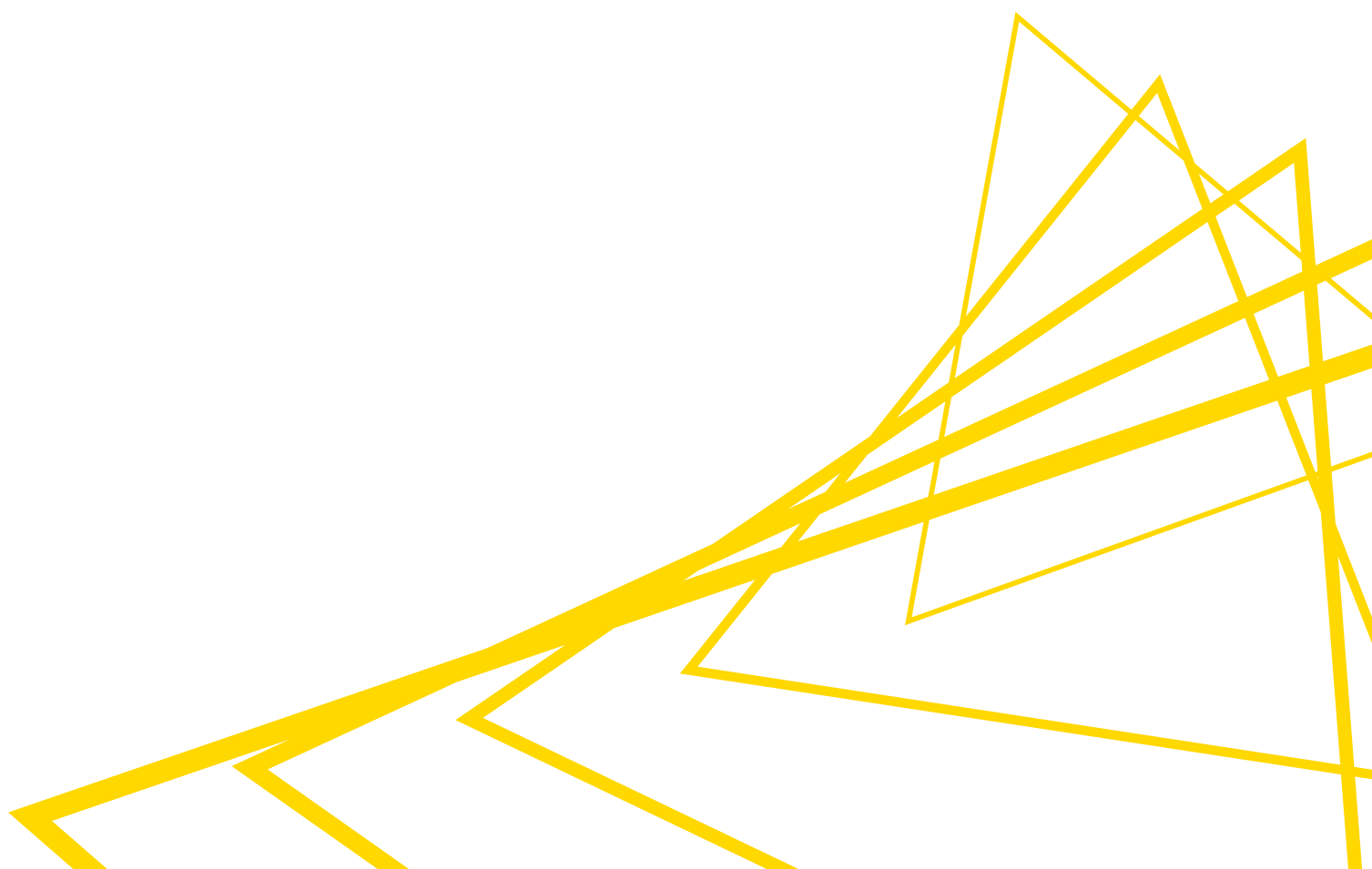


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Release Notes

KNIME Server 4.15 is a feature release of the 4.x release line. All clients that have worked with KNIME Server 4.14 will continue to work with KNIME Server 4.15 without restrictions.



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

New Features

For a list that includes the new Analytics Platform 4.6 features see [here](#).

Highlighted new functionality is:

- Enhanced Dynamic Data Apps ([what's new](#))
- KNIME Edge ([what's new](#))
- New WebPortal login page ([what's new](#))

A detailed changelog for [KNIME Server 4.15](#) is also available.

Enhanced Dynamic Data Apps

There are new re-execution capabilities in widgets that are similar to the capability previously only provided via the Refresh Button Widget node. Data teams can now be more flexible with the UX of their data apps and build in automatic re-execution upon value change in certain widgets.

Removal of legacy WebPortal

The current WebPortal has been the default since KNIME Server 4.12. In order to remove legacy dependencies, the old WebPortal has been completely removed from this release.

KNIME Edge

Data and IT teams can now provide inference workflows as a service with KNIME Edge. Applying models on the edge is a technical solution for a number of requirements, including reducing costs, minimizing latency, increasing reliability, and enabling deployment of inference services in multiple geographic regions.

New WebPortal Login Page

The WebPortal login page has been redesigned to match the overall look and feel of KNIME WebPortal. In addition, it can be themed the same way as the WebPortal itself. To learn more about how to modify the look of KNIME WebPortal, refer to the [Theming section](#) of the KNIME WebPortal Administration Guide.

New configuration options

It is now possible to change the default for the `Skip execution if previous job is still running` option when creating schedules. This is controlled via two configuration settings:

`com.knime.server.action.schedule.force_skip_execution=<true|false>`: Specifies the default value for `Skip execution if previous job is still running` for scheduled job execution in KNIME Analytics Platform. This only works for KNIME Analytics Platform 4.5 or higher. The default value is `false`.

`com.knime.server.action.schedule.enable_skip_execution_checkbox=<true|false>`: Specifies if the option `Skip execution if previous job is still running` for scheduled job execution is enabled in KNIME Analytics Platform. This only works for KNIME Analytics Platform 4.5 or higher. The default value is `true`.

In addition, it is now possible to enforce minimum password requirements in case the integrated database is used for authentication:

`com.knime.server.auth.min.password.length=<value>`: Specifies the minimum length that is required for user passwords. The default value is `-1`, which means no minimum password length. This configuration option is only relevant when using the internal user database.

`com.knime.server.auth.complex.passwords=<true|false>`: Specifies if complex passwords should be enforced. A complex password contains at least one lower-case character, one upper-case character, one number, and a non-alphanumeric character. The default value is `false`. This configuration option is only relevant when using the internal user database.

Architecture changes

KNIME Server 4.14.0 requires Java 11 to run. In case you are already using an older version of KNIME Server and it is still running on Java 8, please first update to Java 11 JDK, and then update the `JAVA_HOME` variable in the `systemd` configuration file (Linux), or in the `service properties` (Windows), or in the `setenv` script (`setenv.sh` on Linux, `setenv.bat` on Windows) located under `knime_server/[apache]/bin` (if no service is used.)

Introduction to the update process

This document guides you through the steps that are needed to upgrade an existing KNIME Server installation from version 4.14 to 4.15 or update by applying a bugfix to version 4.15.

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 4.14.x or KNIME Server 4.15.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 4.6 as Executor with the corresponding *KNIME Executor Connector* extension version 4.15 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



KNIME Server 4.14.0 and above require Java 11 to run. In case you are using an older version of KNIME Server and it is still running on Java 8, please first update to a Java 11 JDK (e.g. from [here](#)), and then update the `JAVA_HOME` variable in the `systemd` configuration file (Linux), or in the service properties (Windows), or in the `setenv` script (`setenv.sh` on Linux, `setenv.bat` on Windows) located under `knime_server/[apache]/bin` (if no service is used.)

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-4.15.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`.

Updating from KNIME Analytics Platform 4.4.x or higher

If possible, start the executor installation in graphical mode (using the correct installation user!). If you have internet access, go to *File* → *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* → *Preferences* → *Install/Update* → *Available Software Sites* and go to *File* → *Update KNIME...*

Under Linux, if you cannot start the graphical user interface, you can use the `update-`

executor.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/4.6
```

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.

Upgrading from KNIME Analytics Platform 4.3.x and older

Due to some larger changes, it is not possible to upgrade to KNIME Analytics Platform 4.6.x from a version older than 4.4.0. Therefore, you need to install KNIME Executor 4.6.x version 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. This installer includes all extensions required for running as an Executor for KNIME Server.

Alternatively you can also install KNIME Analytics Platform from scratch and install the KNIME Executor connector extension version 4.15 into it. In this case, you will need to run the newly installed KNIME Analytics Platform 4.6 instance as the user that owns the installation.

Please refer to the [KNIME Server Installation Guide](#) for more details about installing a KNIME

Executor.

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-server-repository>/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

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>/start-executor.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 by 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 \ -nosplash  
-consolelog
```


Changelog (KNIME Server 4.15)

KNIME Server 4.15.0 (released June 15, 2022)

Enhancements

- [SRV-3687] - Hide stack traces in error pages created by Tomcat
- [SRV-3679] - Rename "deploy to server" to "Upload to Server or Hub"
- [SRV-3676] - Allow updating executor groups and rules during runtime of KS
- [SRV-3665] - Hide executor IPs in jobs from non-admin users
- [SRV-3663] - Update Tomcat to 9.0.58
- [SRV-3652] - Support resetting job in REST interface
- [SRV-3399] - Add mason control for execution on an executed job with no input parameters
- [SRV-763] - Reset workflow on server via context menu

Bugfixes

- [SRV-3701] - Faulty web resource extensions break wizard execution
- [SRV-3675] - Fix display of jobs with colons in their name (Windows only)
- [SRV-3672] - NullPointerException when no metadata is found for snapshot
- [SRV-3655] - Configuration dialog doesn't ignore unknown fields for representations
- [SRV-3653] - Potential deadlock when a workflow with schedules with execution retries is overwritten
- [SRV-3651] - Job is loaded even when no JobMessageDispatcher could be started
- [SRV-3650] - Detection of vanished executors incorrectly marks active executor as vanished after server restart (QPid only)
- [SRV-3647] - Executors can acquire more core tokens than the license allows
- [SRV-3645] - Don't call workflow when job vanishes from executor
- [SRV-3641] - Executor cannot acquire core tokens any more after server restart (Qpid-only)

KNIME Server 4.15.1 (released July 27, 2022)

Enhancements

- [SRV-3707] - Limit maximum “wait” time for certain REST API calls
- [SRV-3708] - Hide all error stack traces in default installation
- [SRV-3710] - Add reference to enabling Strict Transport Security to documentation
- [SRV-3722] - Don't follow http to https redirects when adding new mount point

Bugfixes

- [SRV-3719] - Typo in log message

KNIME Server 4.15.2 (released September 21, 2022)

Bugfixes

- [SRV-3733] - Executor application sets headless property too late
- [SRV-3731] - Server Installer claims it requires Java 11 (but also works with Java 17), also links to adoptopenjdk.net outdated

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