



ALM Octane

Software Version: 16.0.100

Upgrade Guide for Linux

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Contents

ALM Octane	1
Upgrade	4
Upgrade paths	4
Short-term path (STP) prerequisite	5
Long-term path (LTP) prerequisites	5
Prepare for upgrade	6
Step 1: Deploy the new version and start ALM Octane	7
Step 2: Upgrade cluster nodes	8
Step 3: Upgrade spaces in ALM Octane	8
Step 4: Verify that spaces upgraded successfully	9
Step 5: Stop all ALM Octane servers	9
Step 6: Restart the ALM Octane servers	9
Post-upgrade (LTP path)	10
Changes to configuration files	10
Troubleshoot HTTPS filtering	10
Rollback	12
Rollback overview	12
After the upgrade's setup validation phase	12
After a site schema has been upgraded	13
After space schema has been upgraded	13
After upgrade completed	14
After upgrading cluster nodes	15
Send Us Feedback	17

Upgrade

This document describes how to upgrade an existing installation of an on-premises ALM Octane server on Linux.

In this topic:

- ["Upgrade paths" below](#)
- ["Short-term path \(STP\) prerequisite" on the next page](#)
- ["Long-term path \(LTP\) prerequisites" on the next page](#)
- ["Prepare for upgrade" on page 6](#)
- ["Step 1: Deploy the new version and start ALM Octane" on page 7](#)
- ["Step 2: Upgrade cluster nodes" on page 8](#)
- ["Step 3: Upgrade spaces in ALM Octane" on page 8](#)
- ["Step 4: Verify that spaces upgraded successfully" on page 9](#)
- ["Step 5: Stop all ALM Octane servers" on page 9](#)
- ["Step 6: Restart the ALM Octane servers" on page 9](#)

Upgrade paths

ALM Octane allows you to choose between two upgrade paths:

- **Short-term path (STP).** Upgrade to each new service pack (for example, from 15.1.90 to 16.0.100). If you choose this path, you will need to go through all the interim service packs in order to upgrade to the following release.
- **Long-term path (LTP).** Upgrade directly from one release to the next (for example from 15.1.20 to 16.0.100, to the next LTP release), without having to upgrade to each of the interim service packs.

The current version is a **long term path release**, meaning that you can upgrade to ALM Octane 16.0.100 either directly from 15.1.20, or from 15.1.90.

Short-term path (STP) prerequisite

ALM Octane 16.0.100 requires JDK 11. Before upgrading from 15.1.90 to 16.0.100, make sure you have installed JDK 11. Follow the instructions from the JDK provider specific to your operating system.

Long-term path (LTP) prerequisites

Before upgrading from 15.1.20 to 16.0.100, review the following:

1. You cannot upgrade to ALM Octane 16.0.100 if you still have indexes created in Elasticsearch 5.x which have not yet been re-indexed. For details, see the [ALM Octane 15.1.20 Upgrade procedure](#).

To verify that all your spaces are up-to-date, open **Settings > Site > Spaces**. The **ELS Maintenance Status** of all your spaces should be **Done**.

2. ALM Octane 16.0.100 requires Elasticsearch version 7.16.2. After all your spaces are re-indexed, stop the ALM Octane server, and upgrade your Elasticsearch to v7.16.2.
3. ALM Octane 16.0.100 requires JDK 11. Before upgrading from 15.1.20 to 16.0.100, install JDK 11. Follow the instructions from the JDK provider specific to your operating system.
4. During the upgrade, configuration files will be relocated from **/opt/octane/conf** to the repository directory.

To roll back the upgrade, you will need your pre-upgrade configuration files from each node. Make sure you save a copy of the configuration files in a secure location before upgrading. You cannot roll back without these files. This includes **octane.conf**, and any other configuration files in **/opt/octane/conf**.

5. **Non-standard top-level domains.** When upgrading to 16.0.100, ALM Octane validates that the top-level domain (TLD) entered in the SERVER_BASE_URL parameter is listed in <https://www.iana.org/domains/root/db>. If your URL includes a TLD that is not listed there, the upgrade will fail.

We therefore recommend that you change your TLD before upgrading to one of the TLDs listed in <https://www.iana.org/domains/root/db>. Alternatively, contact Support for assistance.

Prepare for upgrade

After you fill the above prerequisites, review the following:

1. Check that all spaces are up to date, first in **Settings > Site > Spaces**, and then in **Settings > Site > POST UPGRADE JOBS**. Delete any spaces that you do not want to upgrade to prevent problems in future upgrades.
2. Verify that your server machine, and if relevant, all cluster nodes, meet all prerequisites.
This includes checking the supported versions for all third party tools and upgrading accordingly. For details, see "Prerequisites" in the [ALM Octane Installation Guide for Linux](#).
3. Stop the **octane** service on the server, and if relevant, on all cluster nodes.
4. Create backups of:
 - The repository
 - Existing ALM Octane configuration files, including **octane.conf**
 - Your database
 - Elasticsearch
 - If you are using ALM Octane Synchronizer, back up :
 - **C:\octane\wrapper\wrapper.conf**
 - **service.locator.properties (C:\octane\webapps)**

For recommendations on making these backups, see [Best practices for backing up ALM Octane data](#) in the ALM Octane Help Center.

5. Take note of any special aspects of your configuration, such as:

Special configuration	Recommendation
Did you use a different user, other than the octane user, to install?	If you did, the user is set in the OCTANE_USER environment variable. Use this user to upgrade.
Did you install ALM Octane to a location other than /opt/octane ?	Refer to the location you used while upgrading.
What sudoer user did you use to install?	Use the same sudoer user that was used for installation to upgrade.
Did your organization's DBA make changes to database schemas, such as the addition of tables or columns?	Define an exception file. The exception file instructs ALM Octane to ignore manual changes to the database schemas during installation. For details, see "Using exception files for manual database changes" in the ALM Octane Installation Guide for Linux .

6. Before upgrading, remove all patches or hotfixes at **WEB-INF/lib** and **WEB-INF/classes**.

Step 1: Deploy the new version and start ALM Octane

1. Download the ALM Octane RPM package:

<https://www.microfocus.com/en-us/products/application-lifecycle-management-octane-on-prem/download>

2. Deploy the rpm package for the new version of ALM Octane using:

```
rpm -U <name of the RPM file>
```

3. Start the ALM Octane server.

```
systemctl start octane
```

4. Check the **/opt/octane/log/wrapper.log** file. If you encounter a recoverable error in the **wrapper.log** or **upgrade.log** files, fix the problem and restart the server to resume upgrade.
 - If the log file contains the error message “The value https://<server URL> is invalid URL”, refer to the section ["Post-upgrade \(LTP path\)" on page 10](#).
 - The following is required if you configured trust on the ALM Octane server, when connecting to a remote location such as the database server. If your Java trust store (**<java_home>/jre/lib/security/cacerts**) uses a non-default password, enter this password in **octane.conf** in the **java-default-trust-store-password** parameter.



Caution: Do not use ALM Octane until you have completed ["Step 3: Upgrade spaces in ALM Octane" on the next page](#).

Step 2: Upgrade cluster nodes

After the upgrade on the first node has completed successfully, you can upgrade the remaining nodes in a cluster.

To upgrade cluster nodes:

1. Deploy the new version of ALM Octane to each node.
2. On each node, start the ALM Octane server.

```
systemctl start octane
```

3. Check the **/opt/octane/log/wrapper.log** file. If you do not see the "Server is ready!" message, correct the errors shown in the log.

If you encounter a recoverable error in the **wrapper.log** or **upgrade.log** files, fix the problem and restart the server to resume upgrade.



Caution: Do not use ALM Octane until you have completed "[Step 3: Upgrade spaces in ALM Octane](#)" below.

Step 3: Upgrade spaces in ALM Octane

After upgrading, log into ALM Octane as the site admin to upgrade each space.

To upgrade spaces in ALM Octane:

1. In a browser, navigate to **<ServerURL>:<port>/ui?site**.
2. Log in with the user name and password defined in the **octane.conf** file.
To upgrade all spaces at once, log in as the site admin.
3. Click **Site** and then click the **Spaces** tab.
4. Select one or more spaces and click **Upgrade**.
Upgrade is available only if the space needs to be upgraded.
5. Individual workspaces are upgraded in the background.



Note: Until all of the post-upgrade jobs have completed, some data may be unavailable in trend graphs and other Elasticsearch-related features.

Step 4: Verify that spaces upgraded successfully

Verify that all spaces were upgraded successfully from the previous version. To verify that a space has been upgraded, check that:

- The space status is **Active** (or Inactive if it was previously deactivated).
- The space version is updated to the current version.

In addition, check that all post-upgrade jobs were completed in **Settings > Site > POST UPGRADE JOBS**.

Step 5: Stop all ALM Octane servers

Clear caches by stopping all ALM Octane servers.

Note: All of the servers must be stopped before you restart any of them.

Step 6: Restart the ALM Octane servers

After you stop all of the servers, you can restart them.

Next steps:

- If you are on the Short-term path (STP), upgrade is done.
- If you are on the Long-term path (LTP), proceed with "[Post-upgrade \(LTP path\)](#)" on the next page.

Post-upgrade (LTP path)

After upgrading from the previous LTP release, perform the following additional tasks.

In this topic:

- ["Changes to configuration files" below](#)
- ["Troubleshoot HTTPS filtering" below](#)

Changes to configuration files

- In ALM Octane 15.1.20, the configuration files were located in **/opt/octane/conf** (Linux) or **C:\Program Files\octane\conf** (Windows). Following upgrade, they are automatically moved to the **conf** folder inside the **repository** folder.

This means that the configuration is defined once for all nodes, rather than replicated per node as it was in the past.

In the future, if you need to make changes to any of the configuration settings, you only need to do this once in the relevant file located in the **conf** folder, inside the **repository** folder. When you restart each of the nodes, ALM Octane pulls the configuration change automatically from the repository.

- Following upgrade, the **repository-folder** property is no longer located in the **octane.conf** file. Instead, it is moved to the **wrapper-parameters-forcustomer-site.conf** file, and configured with the **set.REPO_DIR** property.

Troubleshoot HTTPS filtering

ALM Octane 16.0.100 includes security enforcement for on-premises environments working with HTTPS. If ALM Octane is defined in **octane.conf > app-url** as using HTTPS protocol, users trying to access ALM Octane with HTTP will now be blocked.

To enable HTTP when SSL is defined in ALM Octane:

In some cases, you may want to use HTTP protocol to access ALM Octane despite defining your environment as secure (for example for an internal tool). In this case, add the parameter **allow-http-requests-if-ssl-enabled** to the **octane.conf > server-binding** section, and define its value as **true**. This enables usage of HTTP in a secure environment.

To enable HTTP when SSL is defined via reverse proxy:

If you are working with SSL offloading, the **X-Forwarded-Proto** header must be defined in a reverse proxy. If you have not defined this header, you will no longer be able to connect to ALM Octane via a load balancer. To resolve this you can either define the header as described in [KM03286744](#), or choose one of the following options:

- Add the **octane.conf** parameter **allow-http-requests-if-ssl-enabled** as described above.
- After upgrading, edit the value of the site parameter **ENABLE_SECURED_CONNECTION_VALIDATION** to **false** to disable the new HTTPS filter when using SSL offloading.

Next steps:

- Download the newest IDE plugins for this ALM Octane version. See [IDE integrations](#) in the ALM Octane Help Center.
- If you work with the REST API, you might want to check if any API resources have been deprecated. While the deprecated resources are supported for a while, we recommend that you start updating your code so that you use the resource aliases instead. To see deprecated resources for a particular version, see [What's changed in the REST API](#) in the ALM Octane Help Center.

Rollback

This section describes how to roll back after upgrading an on-premises ALM Octane server. This may be necessary if for some reason the upgrade fails or performance is slow.

Depending on when you want to roll back, there are different steps to perform.

Note: To roll back you need the pre-upgrade backups of all configuration files including **octane.conf** from each node.

In this topic:

- ["Rollback overview" below](#)
- ["After the upgrade's setup validation phase" below](#)
- ["After a site schema has been upgraded" on the next page](#)
- ["After space schema has been upgraded" on the next page](#)
- ["After upgrade completed" on page 14](#)
- ["After upgrading cluster nodes" on page 15](#)

Rollback overview

In general, your rollback process depends on the upgrade path you have taken (STP or LTP).

- **Short-term path (STP).** To roll back to the previous STP release, revert to JRE 8, and then follow the steps described in the following sections.
- **Long-term path (LTP).** To roll back to the previous LTP release, you need to revert from Elasticsearch 7.16.2 to Elasticsearch 6.x. The rollback will therefore require the following stages:
 - a. Restore the old Elasticsearch server.
 - b. Revert to JRE 8.
 - c. Revert to the previous rpm file as described in the steps below.
 - d. Restore the backups of Elasticsearch and the database.
 - e. Restore the ALM Octane configuration files.
 - f. Start ALM Octane.

After the upgrade's setup validation phase

You can roll back after the upgrade's setup validation phase, whether it passed or failed.

If the upgrade reached setup validation, the following have been modified:

- Previously-deployed files
- ALM Octane configuration files, including **octane.conf**

To roll back the deployed files, including `octane.conf`

1. Revert to JRE 8.
2. Revert to the previous rpm file: `rpm -Uvh --oldpackage <filename>`
3. Revert to backups of ALM Octane configuration files, including **`octane.conf`**.

Note: In previous versions, these configuration files were located in the **`opt/octane/conf`** directory.

4. Start the ALM Octane server (the octane service).

After a site schema has been upgraded

You can roll back after the site schema has been upgraded.

If the upgrade upgraded the site schema, the following has been modified:

- The site schema (database)
- Elasticsearch indexes
- ALM Octane configuration files, including **`octane.conf`**

To roll back the site schema

1. Stop the ALM Octane server (the octane service).
2. Revert to JRE 8.
3. Revert to a backup of the site schema.
4. Revert to a backup of Elasticsearch indexes.
5. Revert to the previous rpm file: `rpm -Uvh --oldpackage <filename>`
6. Revert to backups of ALM Octane configuration files, including **`octane.conf`**.

Note: In previous versions, these configuration files were located in the **`opt/octane/conf`** directory.

7. Start the ALM Octane server (the octane service).

After space schema has been upgraded

If the upgrade upgraded the space schema, the following have been modified:

- Previously-deployed files
- Elasticsearch indexes
- ALM Octane configuration files, including **`octane.conf`**

- The site schema
- The space schema

Rolling back a single space is relevant after upgrade of a space failed. In this case, fixes are required depending on the cause of the failure, as seen in the logs and in the UI.

Note: This is only relevant if the space upgrade failed with **CORRUPTED** status. If it ended in **SUSPENDED** status, implement the fixes as instructed in the logs and in the UI, and then resume upgrade. No rollback actions are required.

To roll back changes to the space schema:

1. Revert to the backup of the space schema.
2. Revert to the backups of Elasticsearch indexes related to the specific space.
Space-specific indexes can be identified by the space logical name embedded in their name, using the pattern **mqm_{space logical name}_***.
Note: There are multiple Elasticsearch indexes for each space. Make sure to roll back all of them.
3. Revert to the repository backup of this specific space.
4. Fix what caused the upgrade to fail.
5. Run the following API to repair the space:

```
POST {octane server}/admin/shared_spaces/repair?ids={space_id}
```

Tip: To repair multiple spaces, provide the **space_ids** separated by commas.

6. Upgrade again.

After upgrade completed

If the upgrade completed successfully, the following have been modified:

- ALM Octane configuration files, including **octane.conf**
- The site schema
- The space schema(s)
- Elasticsearch indexes
- ALM Octane repository files

To roll back the entire upgrade

1. Follow the procedure ["To roll back the site schema" on the previous page](#).
2. Revert to backups of all space schemas.
3. Revert to backups of all Elasticsearch indexes.
4. Revert to backup of the previous repository.

After upgrading cluster nodes

If you upgraded additional cluster nodes, the following has been modified on the cluster nodes:

- Previously-deployed files
- ALM Octane configuration files, including **octane.conf**

To roll back to the **rpm** package

1. Revert to JRE 8.
2. Revert to the previous **rpm** file on each cluster node: `rpm -Uvh --oldpackage <filename>`
3. Revert to backups of ALM Octane configuration files, including **octane.conf**.

Note: In previous versions, these configuration files were located in the **opt/octane/conf** directory.

4. Start the ALM Octane server (the octane service) on each cluster node.

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