MICRO FOCUS

ALM Octane

Software Version: 16.0.400

Upgrade Guide for Windows

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Upgrade

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

In this topic:

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 16.0.300 to 16.0.400). 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 **service pack**, meaning that you can only upgrade to 16.0.400 from 16.0.300. If you have not yet upgraded to ALM Octane 16.0.300, upgrade now.

Prepare for upgrade

Before upgrading, 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, such as Elasticsearch, and upgrading accordingly. For details, see "Prerequisites" in the *ALM Octane Installation Guide for Windows*.

3. Stop the ALM Octane service on the server, and if relevant, on all cluster nodes.

4. Create backups of:

    *   The repository located in **C:\Program Files\Octane\repo** (or in a cluster installation: \\MACHINE_NAME\REPO_NAME)

    *   Existing ALM Octane configuration files including **octane.conf**

    *   Your database

    *   Elasticsearch

    *   If you are using ALM Octane Synchronizer, back up :

        ○ **C:\Program Files\Octane\wrapper\wrapper.conf**

        ○ **service.locator.properties (C:\Program Files\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 install ALM Octane to a location other than **C:\Program Files\Octane**?	Refer to the location you used while upgrading.
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 Windows*.

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

    Example of a full path for Windows environment:

    *   **C:\Octane\webapps\root\WEB-INF\classes**

    *   **C:\Octane\webapps\root\WEB-INF\lib**

Step 1: Deploy the new version and start ALM Octane

1. Download the ALM Octane package.

   https://sld.microfocus.com/mysoftware/download/downloadCenter

2. Download and deploy the new version of ALM Octane using:

   ```
   setup.exe
   ```

3. On the server machine, select **Start > ALM Octane > Start ALM Octane**.

4. Check the **C:\Program Files\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.

   - If the log file contains the error message "The value https://<server URL> is invalid URL", refer to the section Upgrading non-standard top-level domains.

   - 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: Configure and upgrade cluster nodes

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

To configure and upgrade cluster nodes:

1. Deploy the new version of ALM Octane to each node.

2. On each node, select **Start > ALM Octane > Start ALM Octane**.

3. Check the **C:\Program Files\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.

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

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.

Post-upgrade (optional)

ALM Octane now supports the HTTP/2 protocol. For details, refer to the *ALM Octane Installation Guide*, in the section **Public URL and Server Ports**.

To implement HTTP/2:

1. In **octane.conf**, set the **force-disable-http2** parameter to **false**.
2. Configure HTTPS using the **key-store** fields.
3. If you are using a load balancer or proxy server, make sure that they support HTTP/2.
4. Restart the ALM Octane server.

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. This includes **octane.conf** from each node, and the folder in which you stored the repository, such as **C:\Program Files\Octane\repo** (or <Repository folder> for cluster configuration).

In this topic:

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. Uninstall the new ALM Octane version using Windows **Add/Remove Programs**.
2. Install the previous ALM Octane version, as described in the ALM Octane Help Center > Installation Guide for Windows (for the previous version).
3. Revert to backups of ALM Octane configuration files, including **octane.conf**.
4. If necessary, copy back the folder in which you stored the repository, such as **C:\Program Files\Octane\repo**.
5. Start the ALM Octane service.

After 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:

• Previously-deployed files

• Elasticsearch indexes

• ALM Octane configuration files, including **octane.conf**

• The site schema

To roll back the site schema

1. Stop the ALM Octane service.

2. Revert to a backup of the site schema.

3. Revert to a backup of Elasticsearch indexes.

4. Uninstall the new ALM Octane version using Windows **Add/Remove Programs**.

5. Install the previous ALM Octane version, as described in the ALM Octane Help Center
   > Installation Guide for Windows (for the previous version).

6. If necessary, copy back the repository folder located in **C:\Program Files\Octane\repo** (or
   <Repository folder> for cluster configuration).

7. Revert to backups of ALM Octane configuration files, including **octane.conf**.

8. Start the ALM 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:

- Previously-deployed files
- 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 the previously-deployed files

1. Uninstall the new ALM Octane version using Windows **Add/Remove Programs**.
2. Install the previous version on a node.
3. Revert to backups of ALM Octane configuration files, including **octane.conf**.

4. Deploy ALM Octane on each cluster node as described in the ALM Octane Help Center
    > Installation Guide for Windows (for the previous version).

5. Start the ALM Octane service on each cluster node.

Upgrade using Docker

This section describes how to upgrade a Docker image of ALM Octane to a newer Docker version, or migrate on-premises ALM Octane to Docker.

In this topic:

- "Before you begin: Get default configuration files" below
- "Upgrade your Docker version" below
- "Migrate from on-premises to Docker" on the next page

Before you begin: Get default configuration files

Before upgrading or migrating, make sure you have up-to-date ALM Octane .xml configuration files.

1. In Docker Desktop, select **Images** in the left pane.
2. Locate the ALM Octane version you want to configure.
3. Click **Run** and go to **Optional Settings**.
4. In **Container name**, enter a name of your choice.
5. In **Ports**, enter 8080 to use HTTP, or 8443 to use HTTPS.
6. In **Volumes**, enter the following:

   ```
   C:\OctaneDocker\conf    for    opt/octane/conf

   C:\OctaneDocker\log     for    opt/octane/log

   C:\OctaneDocker\repo    for    opt/octane/repo
   ```

7. Click **Run** to execute the Docker image for the fist time.

   The run will fail with errors, because ALM Octane has not been configured.

8. Open **C:\OctaneDocker\repo**. In the **conf-discover** folder you will find the default ALM Octane configuration files.

Upgrade your Docker version

This section describes how to upgrade from a Docker image of ALM Octane to a newer Docker version.

1. Stop ALM Octane in the Docker container.
2. Back up your Oracle or MSSQL database.
3. Back up Elasticsearch.
4. Back up the conf and log folders (if mapped).
5. Back up the REPO folder, which includes the **conf-discover** and **storage** folders.
6. Download the new ALM Octane Docker image.

7. Overwrite the .xml configuration files in the folder **conf-discover** (in the REPO folder) with the default configuration files for the new version. For details see "Before you begin: Get default configuration files" on the previous page.

8. Click the **Run** button and open **Optional Settings**.

9. In **Optional Settings**, define the new container name.

10. In **Optional Settings**, define the identical container configuration as your current Docker image configuration.

    This means that the ports, and the mapping of the conf, log, and repo mount folders should be the same in the new container as your current container.

11. Run the new ALM Octane container configuration.

12. Validate that the container works by checking the container's Log tab, or the wrapper.log and octane.log files in the mapped log folder.

13. Continue with the regular space upgrade procedure, as described in "Step 3: Upgrade spaces in ALM Octane" on page 7.

> **Note:** If you need to roll back the upgrade:
>
> - If the Docker image failed to run, run the image of the earlier version.
> - If Docker successfully upgraded the site, restore backups (database, Elasticsearch, and REPO folder) and run the image again.

## Migrate from on-premises to Docker

This section describes how to migrate from an on-premises ALM Octane installation to a Docker environment, using the same ALM Octane version.

> **Tip:** To upgrade from an on-premises ALM Octane installation to a newer Docker version, you need to first perform the migration described in this section, and then perform the steps described in "Upgrade your Docker version" on the previous page.

1. Check what version of on-premises ALM Octane you are using.

2. Stop ALM Octane on-premises.

3. Back up your Oracle or MSSQL database.

4. Back up Elasticsearch.

5. Back up the **repo** folder.

6. In the **repo** folder, rename the **conf** folder to **conf-discover**.

7. Check each of the *.conf files (elasticsearch-security.conf, ldap.conf, octane.conf, and sso.conf), and locate all keystore and truststore files used by ALM Octane. For more details, refer to the *ALM Octane Installation Guide*.

   You now have two options:

- Move all keystore and truststore files to the **conf-discover** folder.

  In this case, change the file path defined in each of the .conf files to the file name of the relevant keystore or truststore file. For example, if you place a file called security.key inside conf.discover, change the path in the .conf file to `file = security.key`.

- Create a new folder inside **/opt/octane/repo/** to hold the keystore and truststore files.

  In the .conf files, change the path of the keystore and truststore files to this location. For example `file = /opt/octane/repo/cer/security.key`.

8. In the **octane.conf** file, change the **app-url** property to use the following format:

`http://<New Server URL>:[Port]`

9. In the Docker Hub, search for **Octane**.

10. Select **lifecyclemanagement/octane**. The description should say: The official repository for ALM Octane.

11. Select **Tags**.

12. Choose the ALM Octane version identical to your on-premises version, and copy the download command.

13. In a command line, run the command you copied.

14. Overwrite the .xml configuration files in the folder **conf-discover** (in the REPO folder) with the default configuration files for the new version. For details see "Before you begin: Get default configuration files" on page 13.

15. In Docker Desktop, select **Images** in the left pane.

16. Locate the ALM Octane version that is identical to your on-premises version. Click **RUN**, and open the **Optional Settings**.

17. Enter the following:
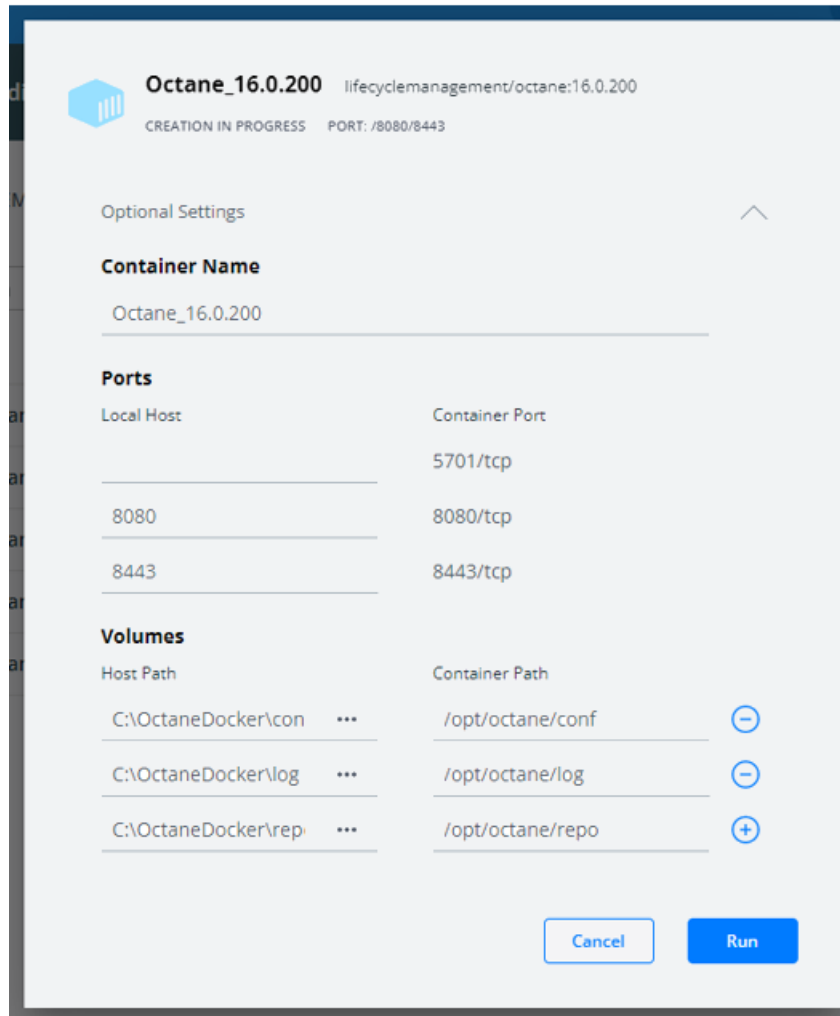
- In **Container name**, enter a name of your choice.
- In **Ports**, enter the same ports you are using in your current on-premises installation: 8080 to use HTTP, or 8443 to use HTTPS.
- In **Volumes**, enter the following:

Host path	Container path
<current .conf folder path> For example: C:\OctaneDocker\conf	opt/octane/conf
<current .log folder path> For example: C:\OctaneDocker\log	opt/octane/log
<your path to the REPO folder>	opt/octane/repo

18. Run the ALM Octane container configuration.
19. Check for errors in the **wrapper.log** and **octane.log** files.

20. ALM Octane is now ready for use.

> **Note:** If migration failed and you need to roll back from Docker to on-premises, restore backups (database, Elasticsearch, and REPO folder) and run your on-premises installation procedure.

Install a patch

This section describes how to install a hotfix patch, without upgrading ALM Octane.

1. Stop the ALM Octane service.

2. Create backups of:

   - The repository

   - Existing ALM Octane configuration files, including **octane.conf**

   - Your database

   - Elasticsearch

3. Run the installer file containing the fix as you would do for a regular upgrade.

4. Start the ALM Octane service and validate that the issue is fixed.

   There is no need to upgrade the spaces.

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