

HP Operations Orchestration

Software Version: 10.22

Windows and Linux Operating Systems

Upgrading to a New Version of HP OO 10.x

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Introduction

This document is relevant for customers who are upgrading HP OO 10.x to a later version of HP OO 10.x, or from a Community Edition to the full product.

- If you are upgrading from HP OO 9.x, see *Upgrading to HP OO 10.x from HP OO 9.x*.
- If you have the HP OO Community Edition, you can upgrade to the full edition of HP OO by following this guide. You can either upgrade to the full edition of the same version, or to a newer version (for example, you can upgrade the 10.10 Community Edition directly to 10.22).

Note: If you are not sure which version of HP OO you currently have installed, you can check the version in the **VersionInfo.txt** file in the base folder of each component (Central/RAS/Studio).

Important Notes

Upgrade and Rollback Path

If you currently have HP OO 10.00 and are planning to upgrade, the recommended upgrade path is from 10.00 to 10.22. This is because the upgrades are cumulative, and the upgrade to 10.22 already includes the features included in 10.01, 10.01.0001, 10.02, and 10.10.

Note also, that the rollback process (which rolls back an installation to the previous version) can only remove the latest patch that you installed. This means that if you installed 10.00 and then upgraded to 10.01, and then to 10.22, you will only be able to roll back to 10.01.

Caution: Running the rollback twice will not remove the two latest versions. Attempting to do so will make the system unusable.

Upgrading or rolling back Central nodes should be done sequentially: one node at a time.

32 Bit Platforms not Supported

HP OO 10.22 does not support 32 bit platforms. If you have an earlier version of Studio installed on a 32 bit platform, you will not be able to upgrade this installation to 10.22. You will need to uninstall Studio and install it again on a 64 bit platform.

Migration of the Events Log

HP OO 10.10 introduced the step log mechanism which replaced the events log from earlier versions. When you upgrade to HP OO 10.22, if you previously had a version earlier than 10.10, part of the upgrade process is migrating the events log, which enables you to view run tracking information of runs from before the upgrade. You will be able to view this information in the Run Tree and the Run Log in Central.

Note: The events log will only be migrated if it has up to 500,000 execution events. An events log with more than this will fail the upgrade.

Note: Migrating the events logs adds to the time it takes to upgrade from 10.x to 10.22. Larger events logs will make the upgrade take longer.

Note: After an upgrade, some of the properties are not upgraded, because these properties did not exist prior to HP OO 10.22. For example, the **Current Flow** and **User** columns will be empty in the Run Log.

If you have embedded HP OO inside your own servers, the event log is not upgraded automatically with the installation. If you want to upgrade the event log, you will need to do it via the **upgrade-execution-events** OOSH command.

For more information about OOSH, see the *Operations Orchestration Shell User Guide*

Notes about Upgrading LDAP Configurations

- If you had an LDAP configuration in the earlier version of HP OO 10.x, this is set as the default in HP OO 10.22.
- If you had multiple LDAP configurations in the earlier version, the first configuration is set as the default.
- If you had an LDAP configuration that is not Active Directory, the upgrade process automatically generates a domain.
- If you had an Active Directory LDAP configuration in the earlier version of 10.x, note that after upgrade, the configuration is not of the Active Directory type. It is recommended to recreate this configuration, so that it is of the Active Directory type.

For more information about LDAP configurations, see the *Central User Guide*.

Upgrading from an Installation of HP OO 10.10 or Later Configured with FIPS

If you are upgrading from an installation of HP OO 10.10 (and later) that was already configured with FIPS, see the *HP OO and Hardening Guide*. You will need to repeat steps 4 and 5 from the "Prerequisites" section, and then repeat the steps in the "Configure the Properties in the Java Security File" section.

Upgrading Studio

After an upgrade from 10.02, the Remote Debugger configurations need to be reconfigured in Studio, because the information is no longer taken from the **studio.properties** file.

Manually Add Remote Debugging Permissions to the Administrator Role

After an upgrade from an earlier version than 10.10 to 10.22, you will need to manually add the permissions for remote debugging to the Administrator role. This is because it is a newly-added permission that did not exist in the previous versions. If you do not add this permission, users with the

Administrator role will not be able to see runs that were performed using the Remote Debugger in the Run Explorer.

Permissions for System Accounts are Upgraded Automatically

In HP OO 10.20 and later, it is possible to assign permissions to roles to view and use individual system accounts. If you are upgrading from version 10.10 or older, any role that has the **View Configuration Items** will be automatically entitled to view all system accounts, and any role that has the **Manage Configuration Items** permission will be automatically entitled to view and use all system accounts. You can modify these default entitlements in Central once the upgrade is complete.

Note: While you can edit existing configuration items in Central 10.22, it is not possible to create new ones. New configuration items can only be created in Studio.

Repeat the Process of Removing the RC4 Cipher from the SSL-supported Ciphers

The remote host supports the use of the RC4 cipher. This cipher is flawed in its generation of a pseudo-random stream of bytes so that a wide variety of small biases are introduced into the stream, decreasing its randomness. So if plain text is repeatedly encrypted (for example, HTTP cookies), and an attacker is able to obtain many (i.e., tens of millions of) cipher texts, the attacker may be able to derive the plain text.

Therefore, you must disable the RC4 cipher on the JRE level (starting with Java 7). After an upgrade from an earlier version of 10.x, you will need to repeat this task.

For instructions, see "Removing the RC4 Cipher from the SSL-supported Ciphers" in the *HP OO Hardening Guide*.

New Role Permissions are Disabled

In HP OO 10.22, there are two new role permissions: **View Audit** and **Manage Data Cleanup**. After an upgrade from an earlier version of 10.x, these permissions will not be enabled for any of the roles.

You will need to manually enable these permissions for the relevant roles in Central 10.22.

Updated Trusted Root Certificates

When you upgrade an HP OO installation from an earlier 10.x version, the SSL truststore is updated to include the up-to-date trusted root certificates, as published by Oracle. This includes deletion of expired certificates, and import of new ones.

Note: If the upgrade detects that your truststore is manually managed (meaning you have removed any of the public root certificates), no certificates will be imported.

Upgrading to HP OO 10.22 from an Earlier Version of HP OO 10.x

You can upgrade to 10.22 from any version of 10.x. It is not necessary to upgrade to the interim versions.

See the *HP OO System Requirements* to verify that your system meets the minimum system requirements.

Prerequisites

- The **apply-upgrade** script backs up the entire installation, so make sure that there is adequate disk space for this.

Note: You may wish to archive this backup, to save space. See [Tips For Freeing Up Disk Space](#).

- It is recommended to make sure that the old version of Central has started successfully at least once. Otherwise, you may not be able to roll back the upgrade, if you decide to do so.
- It is highly recommended to back up the HP OO database before applying the upgrade.
- It is also recommended to back up your Studio workspace from the home folder (**<user_home>/oo**) before applying the upgrade.

Important! Note that the workspace format in HP OO 10.10 and later is different from earlier versions. If you decide to roll back to a previous version, the converted workspace will not be compatible with the previous workspace versions.

- When upgrading from an earlier version of 10.x, you must cancel or finish all paused or running flows and disable existing schedules before applying the upgrade. If there are flows running or paused when you perform the upgrade, it will not be possible to resume them, their status will be “Canceled” and the duration will be “0 seconds”.
- Due to database structure optimizations, upgrading from a previous HP OO version to 10.22 may involve moving considerable amounts of data inside the database.

To allow the upgrade operation to complete quickly and successfully, perform the following steps before upgrading to HP OO 10.22:

a. Purge your old data.

This can be achieved using stored procedures that are available on HPLN.

Keep only the data you really need to be available on the new version.

b. Back up your database.

Keep a copy of your database (preferably after the old data was purged) in order to protect your data.

c. Depending on the amount and type of your data, the upgrade may generate a considerable amount of database transaction logs (“redo logs”). Make sure you have sufficient space allocated.

Note: The upgrade process replaces most files, but preserves logs, security data and user settings defined in the following locations:

Central:

- Anything under **<installation>/central/conf**
- **<installation>/central/tomcat/conf/server.xml**
- **<installation>/central/tomcat/conf/web.xml**

RAS:

- Anything under **<installation>/ras/conf**

Studio:

- Any file with a **.properties** extension under **<installation>/studio/conf**

Upgrading

Upgrading to HP OO 10.x (10.01 and later) is done using a command line script. The relevant scripts are contained in a zip file. The scripts are:

- **apply-upgrade(.bat)** – for upgrading to the new 10.x version
- **rollback(.bat)** – for rolling back to the previously installed 10.x version
- **generate-sql(.bat)** – if your company does not allow HP OO to change the database schema, this is used in addition to **apply-upgrade(.bat)** or **rollback(.bat)**

Note: There are two versions of each script file: with a **.bat** suffix for Windows and with no suffix for Linux.

To upgrade:

1. Download the ZIP file from the HP SSO Portal and extract it into a local drive on your computer.
2. Expand the Upgrade zip file in the root folder of the installation.

Note: The root folder is the installation folder that you chose in the installer, when you installed the earlier version of HP OO 10.x, for example, **C:\Program Files\Hewlett-Packard\HP Operations Orchestration**.

This creates an **upgrade** folder containing a **<new-version>** folder (for example, **10.22**).

Important! Make sure you extract the zip file directly into the main installation folder, and not into a sub-folder. The **apply-upgrade(.bat)** script will only work if the **upgrade** folder is directly under the main installation folder.

3. For Linux, use the following command inside the **<new-version>** folder, to change file permissions:

```
chmod 755 bin/* java/*/bin/*
```

4. Make sure to stop all RASes connected to Central before you upgrade it. This step is important to make the process "clean", and prevent damage that could occur due to the yet-to-be-upgraded nodes, which could have execution leftovers from the previous version.
5. In the **bin** sub-folder, open a command line and run the **apply-upgrade(.bat)** script.

(Optional) If required, use the following command line options:

-f, --force	Force-start the upgrade. This command upgrades the installation, without prompting.
-h, --help	Display help on the available parameters.
-n, --norestart	Do not restart Central/RAS after the upgrade.

6. Type **y** to apply the upgrade.

The progress of the upgrade is displayed. For example:

```
- Central is upgrading Run Log data, please wait...
  4 executions done (44%)
  6 executions done (66%)
  9 executions done (100%)
Summary: total executions: 9, succeeded: 9, failed: 0
```

An **upgrade.log** file is created under `<installation>/upgrade/<new-version>`.

IMPORTANT NOTE for users of Microsoft SQL Server: The upgrade from version 10.02 (or older) will convert some Unicode text to the language of the database collation. As a result, text that does not match the collation (and is non-English) may be corrupted in the upgrade process (foreign characters will be converted to question marks). Make sure your collation is correct.

Upgrading Central When it Uses User-Supplied JDBC Drivers

When you originally installed HP OO 10.00, it was possible to provide the installer with JDBC drivers (JAR files used to connect to the database) on two occasions:

- When configuring the database connection for HP OO, and using a database of the type MySQL (or selecting **Other database**, which enables advanced database configuration).
- When setting up an upgrade from HP OO 9.x, which itself runs with MySQL.

The installer stores user-supplied drivers in two directories:

- `<installation>/central/lib`
- `<installation>/central/tomcat/lib`

When you run the **apply-upgrade** script, it attempts to locate these files in order to exclude them from deletion. Specifically, it looks for files whose names match either `*mysql*.jar` or `*.userjdbc.jar`, and lists the search results.

If you supplied any drivers during installation, you must make sure that they are listed. Note that each driver must show up twice—once for each of the two directories mentioned above.

If any driver is missing, complete the following steps:

1. Cancel the upgrade.
2. Stop Central.
3. Locate the driver file in `<installation>/central/lib`, and change its file name extension from `.jar` to

.userjdbc.jar.

Note: If your HP OO version 9.x uses MySQL, but your HP OO version 10.x does not, the MySQL driver will be missing from the installation. In this case, you must supply the file. You need this driver in order to import the data from the HP OO 9.x database.

Copy the missing file to **<installation>/central/lib** and make sure its name either contains **mysql** or has the extension **.userjdbc.jar**.

4. Repeat the previous step for **<installation>/central/tomcat/lib**.
5. Run **apply-upgrade** again, and make sure you see the driver file listed under both directories.

If you accidentally let **apply-upgrade** delete your driver, you can manually place the driver in the two directories, this time with a **.userjdbc.jar** extension, and then re-run **apply-upgrade**.

Note: If you are upgrading a cluster, the instructions above apply to all Central nodes.

Upgrading When Your Company Does Not Allow Changing the Database Schema

If your company does not allow the HP OO application to change the database schema, the upgrade procedure is different. You will need to use the **generate-sql(.bat)** script, which is also included in the upgrade zip file.

The **generate-sql(.bat)** script is used to generate the **upgrade.sql** file in the unzipped upgrade folder. This file contains the SQL for applying all of the upgrade's database changes.

1. Expand the zip file in the root folder of the installation.

This is the installation folder that you chose in the installer, for example, **C:\Program Files \Hewlett-Packard\HP Operations Orchestration**.

This creates an **upgrade** folder containing a **<new-version>** folder (for example, **10.22**).

Important! Make sure you extract the zip file directly into the main installation folder, and not into a sub-folder. The **apply-upgrade(.bat)** script will only work if the **upgrade** folder is directly under the main installation folder.

2. For Linux, use the following command inside the **<new-version>** folder, to change file permissions:

```
chmod 755 bin/* java/*/bin/*
```

3. In the **bin** sub-folder, open a command line and run the **generate-sql(.bat)** script.

The command line options for **generate-sql(.bat)** are:

-h, --help	Display help on the available parameters.
-r, --rollback	Generate the SQL for rollback. Use only after the database has been upgraded.

The **upgrade.sql** file is created in the **<installation>/upgrade/<new-version>** folder.

4. Stop Central/RAS.
5. Apply the database changes by running **upgrade.sql** against the database with the required credentials.
6. Open a command line and run the **apply-upgrade(.bat)** script.

IMPORTANT NOTE for users of Microsoft SQL Server: The upgrade from version 10.02 (or older) will convert some Unicode text to the language of the database collation. As a result, text that does not match the collation (and is non-English) may be corrupted in the upgrade process (foreign characters will be converted to question marks). Make sure your collation is correct .

Upgrading a Cluster

1. In a cluster setup, stop all Central and RAS instances manually.

Caution: This step is crucial. It will make the process "clean", and prevent damage that could occur due to the yet-to-be-upgraded nodes running against the upgraded database.

Note: For Central and RAS, the upgrade process shuts down the server automatically. However, on a cluster, the upgrade stops the node being upgraded, but does not shut down the entire cluster.

2. Apply the upgrade to all the Central/RAS instances.

Caution: Once you have upgraded one Central node to the new 10.x version, you must upgrade all additional nodes to the same version. Restarting a non-upgraded node may cause permanent issues in the cluster (to the database schema changes).

Tips For Freeing Up Disk Space

Once the upgrade is complete:

- You can delete the `java` and `packages` directories under `<installation>/upgrade/<new-version>`, but note that this will make the included scripts non-functional. You can always restore the scripts by re-extracting the upgrade zip.
- You can move the backup directory (created at `<installation>/upgrade/<new-version>/backup`) elsewhere for archival. However, if you later wish to roll back the upgrade, you must move the backup directory back to the original location.

Upgraded Remote Connection

If you have upgraded from HP OO 10.02 to HP OO 10.22, and if you have configured a remote connection for debugging, it will be migrated with the name **Migrated – remoteConnectionHostname**, where **remoteConnectionHostname** is the HP OO 10.02 configured **hostname** field.

You can rename the migrated connection in the Edit Connections dialog box in Studio.

Rolling Back an Upgrade

You can roll back an upgrade using the rollback script. This restores the installation to the state it was before the upgrade, but without losing database data.

The rollback restores the installation to the previous version, including patches. For example, if you have upgraded from HP OO 10.01 to 10.22, the rollback will restore version 10.01. If you upgraded from HP OO 10.00 to 10.22, the rollback will restore version 10.00.

The rollback process can only remove the latest patch that you installed. This means that if you installed 10.00 and then upgraded to 10.01, and then to 10.22, you will only be able to roll back to 10.01.

Caution: It is not possible to roll back twice. You can only roll back the last upgrade that you successfully applied. Attempting to run the rollback twice will make the system unusable.

Important! When rolling back to an earlier version of 10.x, you must cancel or finish all paused or running flows and disable existing schedules before applying the rollback. If there are flows running or paused when you perform the rollback, it will not be possible to resume them, their status will be “Canceled” and the duration will be “0 seconds”.

A component (Central, RAS, Studio) will only be rolled back if:

- The component is backed up under **<installation>/upgrade/<new-version>/backup/<component>**.
- The installed version is identical to the upgrade script's **<new-version>**.

If Central is being rolled back, the script rolls back the database schema changes and preserves data that was added after the upgrade. However, in some cases, data may still be lost due to the schema changes.

Notes:

- Any changes that were made in the file system since the upgrade will be lost, including changes to configuration files and log files.
- If you are rolling back from 10.22 to an earlier 10.x version, some types of configuration items located under sub-folders will be deleted. This occurs when you have multiple configuration items with the same type and name (in different folders).
- The rollback might be faulty if the old (pre-upgrade) version of Central was never started prior to the upgrade.

To roll back to an earlier version of 10.x:

1. Open a command line.
2. Run the **rollback(.bat)** script, which is included in the upgrade zip file.

(Optional) If required, use the following command line options:

-f, --force	Force-start the rollback. This command rolls back the installation, without prompting.
-h, --help	Display help on the available parameters.
-n, --norestart	Do not restart Central/RAS after the rollback.
-o, --filesonly	Do not roll back the database schema. You only need to use this option if you have manually restored a backup of the database, which you created before the upgrade. For more information, see "Restoring a Database Backup Created Before the Upgrade" on page 18.

The rollback script uses the same **upgrade.log** file as the upgrade script.

Note: After you roll back, it is advised to move or delete the backup directory (created at **<installation>/upgrade/<new-version>/backup**). Otherwise, if you re-upgrade later, no fresh backup will be created, so any file changes that you made since the rollback will not be backed up.

Rolling Back When Your Company Does Not Allow Changing the Database Schema

If your company does not allow the HP OO application to change the database schema, the rollback procedure is different. You will need to use the **generate-sql(.bat)** script with the **-r** option, which generates a **rollback.sql** file in the unzipped upgrade folder.

1. Open a command line and run the **generate-sql(.bat)** script with the **-r** option.

The command line options for **generate-sql(.bat)** are:

-h, --help	Display help on the available parameters.
-r, --rollback	Generate the SQL for rollback. Use only after the database has been upgraded.

For example:


```
generate-sql -r
```

The **rollback.sql** file is created in the unzipped **<installation>/upgrade/<new-version>** folder.

2. Stop Central/RAS.
3. Apply the database changes by running **rollback.sql** against the database with the required credentials.
4. Roll back HP OO 10.x using **rollback(.bat)**.

Central/RAS restarts automatically after the rollback.

Rolling Back Studio

Important notes!

- The workspace format in HP OO 10.10 and later is different from prior versions. If you decide to roll back to a previous version, the converted workspace will not be compatible with the previous version.
- If you have a 10.22 workspace with folders inside the **Configuration** sections, you will not be able to launch a previous Studio version. You will need to open the workspace in HP OO 10.22 and flatten the configuration items (move all items to the root section and delete the folders) before you can open the workspace in a previous Studio version.

If you roll back to a previous revision you have two options to preserve your workspace:

- If you performed a workspace backup, you can replace your current workspace (**<user_home>.oo**) with the backed up version.

If you use this approach you will lose all changes made after the workspace backup.

If you want to keep the changes you made after the workspace backup, we recommend using the second approach.

- Create content packs from the projects, before rolling back:
 - a. Create content packs from all your 10.22 format projects.
 - b. Delete all the 10.22 format projects from your **<user_home>.oo/Workspace**, and also delete them from SCM.
 - c. Roll back HP OO to the previous version.
 - d. Unzip the content pack jar in the **<user_home>/oo/Workspace** folder, keeping the name without the **-cp-version** suffix.

For example, **test1-cp-1.0.0.jar** will be unzipped to the **<user_home>/oo/Workspace/test1** folder.

- e. Delete the **Lib** and **META-INF** folders.
- f. Open Studio and import the projects again.

Rolling Back a Cluster

In a cluster setup, it is recommended to stop all Central/RAS instances manually before rolling back.

Important! If you have added new cluster nodes since the most recent upgrade (of the existing nodes), rolling back the new nodes may cause problems. You should re-install such nodes instead of rolling them back. Only roll back the older nodes. If unsure, consider rolling back the oldest Central only, and then re-installing the rest.

Restoring a Database Backup Created Before the Upgrade

If the database schema rollback fails, and you have created a backup of the database prior to the upgrade, you can restore the backup as follows.

1. Stop Central/RAS.
2. Manually restore the database backup.
3. Open a command line and run the **rollback(.bat)** script with the **-o** option.

For example:

```
rollback -o
```

Central/RAS restarts automatically after the rollback.

This restores the files only and does not roll back the database schema.

