

# HP Operations Orchestration

For Windows and Linux

Software Version: 10.00

## Installation Guide

Document Release Date: March 2013

Software Release Date: March 2013



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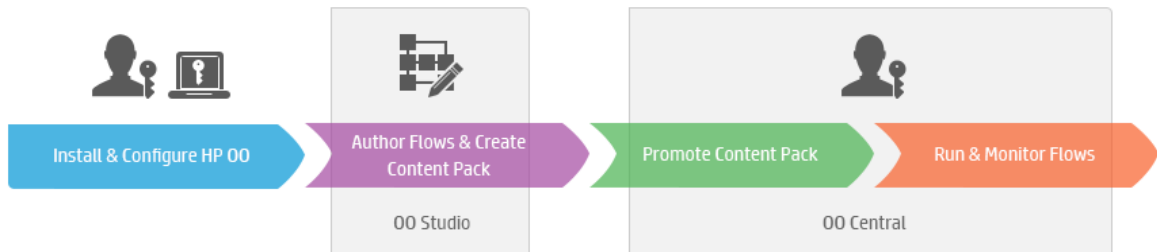
**[http://h20230.www2.hp.com/new\\_access\\_levels.jsp](http://h20230.www2.hp.com/new_access_levels.jsp)**

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# Introduction

This document describes how to install and configure HP Operations Orchestration version 10.00 using the Installation and Configuration wizard. This document also includes details for silent installations.



## Prerequisites and Installation Notes

- Before installing Central, Studio, or RAS, check with your system administrator that you have administrator permission on the system you are installing HP OO. In addition, make sure that the database has the appropriate permissions set. See the Release Notes for details on exceptions and special cases.
- In a clustered environment, you need to synchronize the computers clock times. The clocks must be synchronized to the second with each other.
- Before installing or upgrading the software make sure you back up your system. Consult with your system administrator.
- **LWSSO:** If you choose to upgrade the LWSSO settings from HP OO 9.x, these LWSSO settings will be migrated, but LWSSO will be disabled in HP OO 10.00 (even if it was previously enabled in HP OO 9.x).

### SQL Scripts:

- If you don't have permission to install via remote, you can use SQL scripts from the ISO image to manually create the tables and schema that are required for a remote installation.
- The SQL scripts located at \docs\sql on the ISO image. They include:
  - mssql.sql
  - mysql.sql
  - oracle.sql
  - postgres.sql
- **MySQL:** If you are working with a MySQL database, you need to configure the `my.ini` or `my.cnf` file with the following:

```
net_buffer_length = 1000000  
max_allowed_packet = 500M  
sql-mode="STRICT_TRANS_TABLES,STRICT_ALL_TABLES,ERROR_FOR_DIVISION_BY_ZERO,NO_  
AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION"
```

## ***System Requirements***

Following are the minimum hardware and software requirements for servers and clients running Hewlett-Packard Software Operations Orchestration (HP OO).

Support for 64-bit architecture is available on Windows configurations for Central, Studio, RAS, and cluster components of HP OO.



## Software Requirements

### Software Requirements for Central, RAS, and Database

Component	Requirement
Supported operating systems	<ul style="list-style-type: none"> <li>• Microsoft Windows 2008 Server 64 bit</li> <li>• Microsoft Windows 2008 R2 Server 64 bit</li> <li>• Microsoft Windows 2012 Server 64 bit</li> <li>• RedHat Enterprise Linux 5.x 64 bit</li> <li>• RedHat Enterprise Linux 6.x 64 bit</li> <li>• Ubuntu 12.04.x LTS</li> </ul>
Supported databases	<ul style="list-style-type: none"> <li>• Oracle 11g R2</li> <li>• Oracle MySQL 5.5.x</li> <li>• Oracle MySQL 5.6.x</li> <li>• PostgreSQL 9.0.x</li> <li>• PostgreSQL 9.1.x</li> <li>• Microsoft SQL Server 2008 R2</li> <li>• Microsoft SQL Server 2012</li> </ul>
Supported browsers	<ul style="list-style-type: none"> <li>• Microsoft Internet Explorer 9.x, 10.x (latest)</li> <li>• Mozilla FireFox (latest)</li> <li>• Google Chrome (latest)</li> </ul>

***Software Requirements for Studio***

Component	Requirement
Supported operating systems	<ul style="list-style-type: none"><li>• Microsoft Windows 7 32 bit</li><li>• Microsoft Windows 7 64 bit</li><li>• Microsoft Windows 2008 Server 64 bit</li><li>• Microsoft Windows 2008 R2 Server 64 bit</li><li>• MS Windows 2012 Server 64 bit</li></ul>

.NET 4 is required for debugging flows with .NET operations. If you don't have .NET 4 , any flows or operations with .NET will marked as invalid in Studio.

## Hardware Requirements

The hardware requirements described here are the minimal supported configuration.

Many customers may require more powerful hardware, depending on their load and usage of the system. In some cases, scaling out (adding nodes) is preferable to scaling up (stronger hardware).

### Hardware Requirements for HP OO Central and Database Servers

The minimum hard-drive space requirements differ depending on whether you install Central and the database on the same machine.

These requirements are for on-premise installations where the key components (central servers, RASes) are installed at the customer's site.

Component	Requirement per server (minimum)
CPU	3 Gigahertz (GHz) for single-processor systems or 2 GHz for multi-processor systems  Database server: <ul style="list-style-type: none"><li>• According to the database vendor's recommendations and requirements, but no less than 1 CPU core</li></ul> Central server: <ul style="list-style-type: none"><li>• Minimum: 1 CPU core</li><li>• Recommended: 4 CPU cores</li></ul>
Memory (RAM)	Database server: <ul style="list-style-type: none"><li>• As specified by the vendor, but no less than 2 Gigabyte (GB)</li></ul> Central server: <ul style="list-style-type: none"><li>• Minimum: 2 GB</li><li>• Recommended: 4 GB</li></ul>

Hard-drive space	<p>Database server:</p> <ul style="list-style-type: none"> <li>• 500 MB for HP OO installation and base content pack deployment.</li> <li>• 200 KB for each flow executed</li> <li>• Minimum: 2 GB table space</li> </ul> <p>Central server:</p> <ul style="list-style-type: none"> <li>• 2 GB</li> </ul>
------------------	---

For off-premise installations, where the key components are installed on a cloud-based virtualized machine, the hardware requirements are:

- Central/RAS: extra small machine
- Database: According to the database vendor's recommendations and requirements, but no less than a small machine.

**Note:** In a clustered environment, the clocks on the different machines must be synchronized using some form of time-sync service (daemon) that runs very regularly. The clocks must be within a second of each other. For instructions on how to do this, see <http://www.nist.gov/pml/div688/grp40/its.cfm>.

### ***Hardware Requirements for RAS Installations***

Component	Requirement (minimum)
CPU	<p>2 GHz for single- or multi-processor systems</p> <p>Minimum: 1 CPU core</p> <p>Recommended: 4 CPU cores</p>
Memory (RAM)	1 GB
Hard-drive space	2 GB (this includes room for the flows and operations that are included in the installation)

### ***Hardware Requirements for the Central Client***

Web client machines for Central must meet the minimum hardware requirements for their web browser.

***Hardware Requirements for HP OO Studio Installed on its Own Machine***

Machines on which you install Studio must meet the minimum hardware requirements for their Web browser or the following, whichever is higher.

Component	Requirement (minimum)
CPU	2 Gigahertz (GHz) for single- or multi-processor systems 1 CPU core
Memory (RAM)	2 GB (this is the amount of memory that the Studio process requires)
Hard-drive space	2 GB (this includes room for the flows and operations that are included in the installation)

## ***Virtual Systems***

Installation of the HP OO components on guest systems hosted by the following hypervisors is supported, as long as the guest systems meet the requirements described in this *System Requirements* document:

- VMware ESX Server, version 3.x or later
- Microsoft Hyper-V (all Windows versions)

## ***Cloud Deployments***

HP Operations Orchestration can be installed on cloud computer units. On HP Cloud Services, the server components (Central, RAS) require a small machine, and the database should follow the database vendor's recommendations and requirements, but no less than a small machine.

# Installing HP Operations Orchestration

This section describes how to install HP Operations Orchestration version 10.00. See the [System Requirements](#) section to verify that your system meets the minimum system requirements.

To install HP Operations Orchestration version 10.00 using the Installation and Configuration Wizard:

1. Download the installation file for your relevant operating system and architecture from the HP SSO Portal or insert the HP Operations Orchestration DVD and launch the installer file.

Windows 64 bit	installer-win64.exe
Linux	installer-linux64.bin
Windows 32 bit (Studio only)	installer-win32.exe

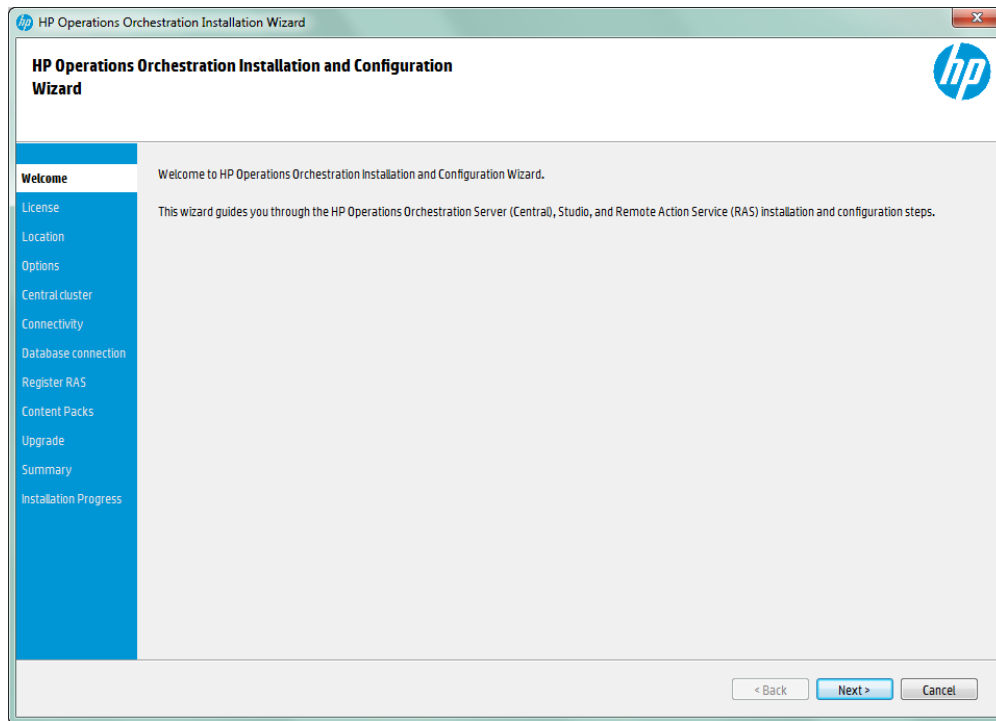
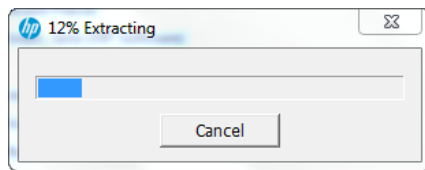
**Note:**

- Make sure the installation folder where you download the installation file to does not contain any spaces or special characters in the name.
- **Windows:**
  - To launch the installer from the HP Operations Orchestration DVD, insert the DVD and copy the installation file to a local drive on your computer.
- **Linux:**
  - To launch the installer from Linux, copy the installer file and run the following command:

```
export DISPLAY=<enter computer ip address>
bash installer-linux64.bin
```

2. To start the wizard, double-click on the installer. The installation package is extracted, and the **HP Operations Orchestration Installation and Configuration Wizard** automatically appears.

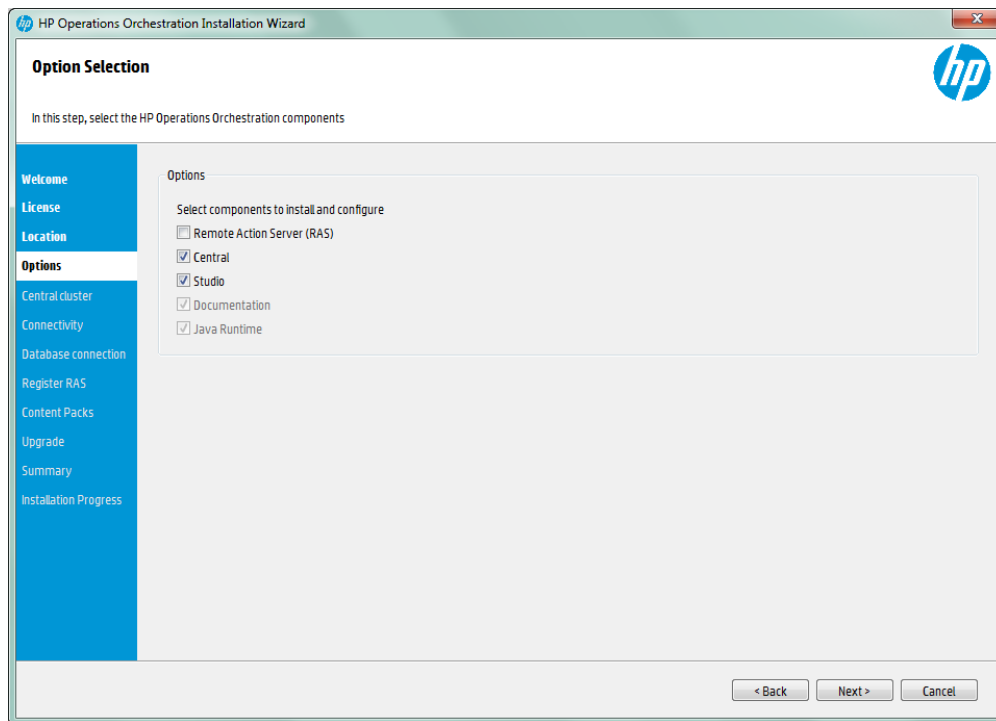
**Note:** If you are running the Windows 32 bit installer, you will only be able to install Studio and all the options will be disabled.



3. Click **Next**. In the License Agreement, select **I Agree**, and then click **Next**.
4. In the **Installation Options** step, select the HP Operations Orchestration software that you would like to install and configure, and then click **Next**.

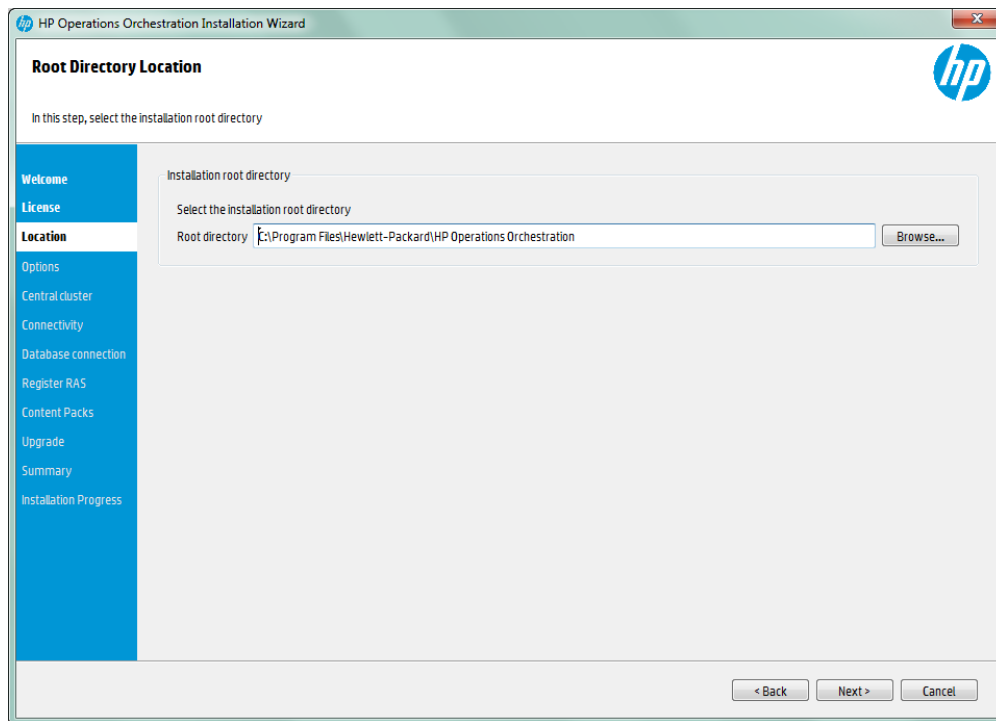
**Note:** You can install Central without setting up a RAS server. If you install a RAS Server, it is recommended that you install this on a separate server to Central. Refer to the Concepts Guide for more information.



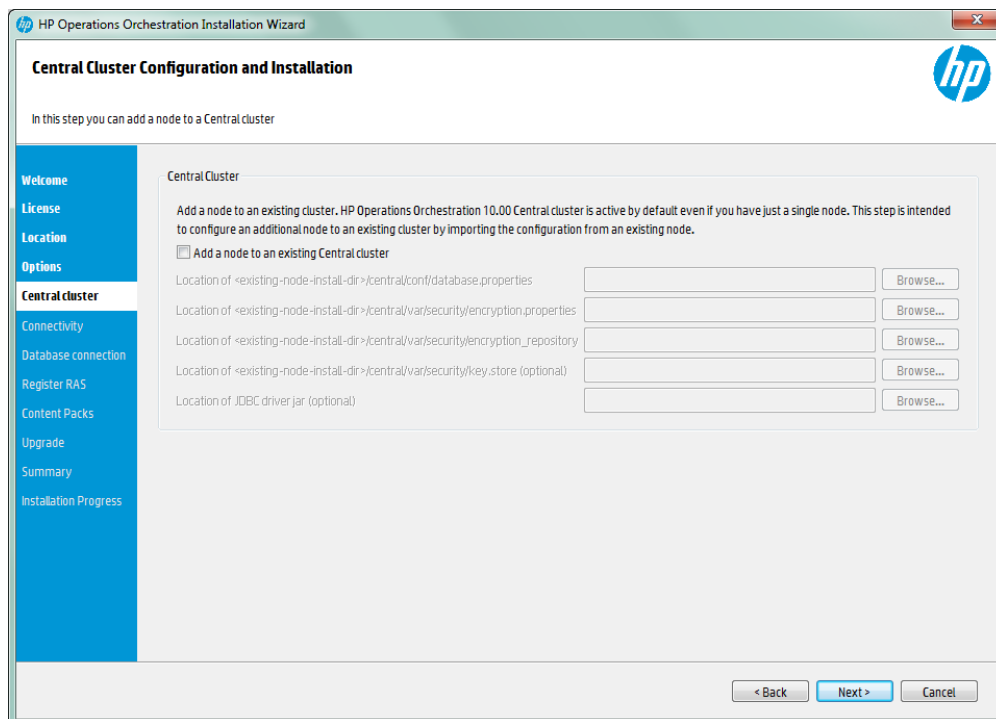


5. In the **Root Directory Location** step, select the location for the installation root directory, and then click **Next**. If the directory does not exist, the directory will be created automatically. You are prompted to confirm the creation of the new location.

**Note:** The default for Windows is C:\Program Files\Hewlett-Packard\HP Operations Orchestration and for Linux /opt/hp/oo.



6. In the **Central Cluster Configuration and Installation** step, you can add a node to an existing Central cluster. In HP OO 10.00, the Central cluster is active by default even if you have a single node.



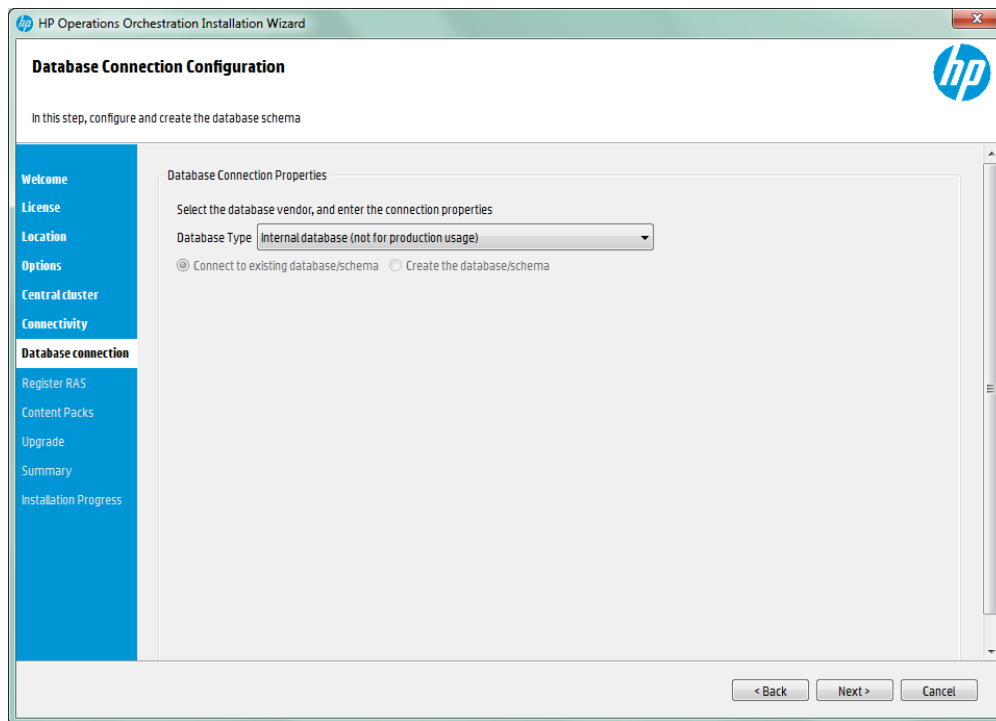
7. In the **Central Server Connectivity** step, configure the ports for the Central Server as required. The default values appear next to each port.
8. In the **Central Server Connectivity** step, you can import an SSL certificate. The default is a self-signed certificate that is valid for 10 years, or you can import another secure SSL certificate. If you select **Provide a secure SSL Certificate**, you need to import the root or chained file, and the certificate.

**Note:** Do not use a network path for the location of the root certificate.

9. Click **Test ports availability**. If the ports are available, a **Success** check mark appears. If you encounter an error, adjust the ports accordingly. When you are done, click **Next** to continue.

The screenshot shows the 'Central Server Connectivity' step of the HP Operations: Orchestration Installation Wizard. The window title is 'HP Operations: Orchestration Installation Wizard'. The left sidebar contains a list of steps: Welcome, License, Location, Options, Central cluster, **Connectivity** (highlighted), Database connection, Register RAS, Content Packs, Upgrade, Summary, and Installation Progress. The main content area is titled 'Central Server Connectivity' and includes the instruction 'In this step, configure the Central Server ports and SSL'. Below this, there is a 'Connectivity' section with the heading 'Configure the Central Server port numbers and SSL properties'. It contains two input fields: 'HTTP' with the value '8080' and 'HTTPS' with the value '8443'. There is a checkbox labeled 'Provide a secure SSL Certificate (when not provided a self-signed certificate is used)' which is currently unchecked. Below the checkbox, there is a 'Secure keystore' field with a 'Browse...' button. A note states: 'The secure keystore should be in PKCS12 format and include both certificate and private key. Usually this is a file with a .pfx or .p12 extension. Consult your Certificate Authority for more details.' Below this is a 'Keystore password' field. At the bottom of the main content area, there is a 'Test ports availability' button and a green checkmark followed by the word 'Success'. The bottom of the window has three buttons: '< Back', 'Next >', and 'Cancel'.

10. In the **Database Connection Configuration** step, configure and create the database schema.



- a. The first step is to select the database vendor, and then enter the connection properties. You can select from the following database types:

**Note:** Special characters, except the underscore (\_), cannot be used for the database name or SID field. In addition, you can enter up to 30 characters for the database name or SID.

**Note:** For all the database vendors, if you select to create a new database, the database is case-sensitive as follows:

- **utf8\_bin collation** for MySQL
- **Latin1\_General\_100\_CS\_AS collation** for MSSQL

However, if you already have a database installed, OO creates the tables using the database specific collation.

- **Oracle:** To connect to an Oracle database, enter a regular user role for the **Oracle** user name. Do not connect using the SYSusers, SYSMGR or SYSOPER.
- **Microsoft SQL Server:** This uses the user name and password fields, and does not create them during installation.

- **Oracle MySQL**
- **PostgreSQL**: For **PostgreSQL**, the user name `Admin` must have a database setup with the same name.

**Note:** The PostgreSQL database name is case-sensitive.

- **Internal database** : This uses an H2 local database. This should not be used for production.
- **Other database** (use to enable advanced features in supported databases). If you select Other database, you can only use a database type that is supported for use with HP OO. See the System Requirements for more information.

**Note:** Other database also supports any valid JDBC URL.

- Select the database type and then select one of the following:
  - **Connect to existing database/schema**: Connect to an existing schema, user, or database created by the user. The installer does verify that the schema, user or database contain existing information.
  - **Create the database/schema**: Enables you to create a new database or schema. Enter the required information.
- Click **Test Connection**. If you are unable to connect to the database, you will not be able to proceed to the next steps in the wizard.

**Note:** This only verifies the connection between OO and the selected database, and does not verify the conditions required by the database.

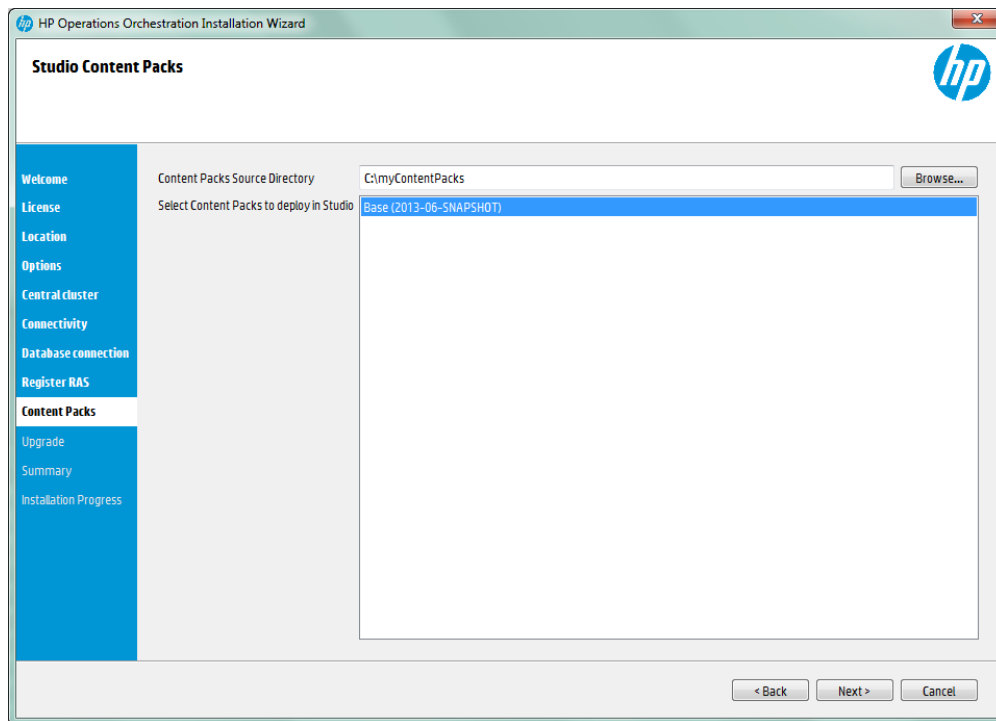
The following table includes the options that you need to set with the following databases:

**Note:** When the database/schema is created using the wizard these features are configured.

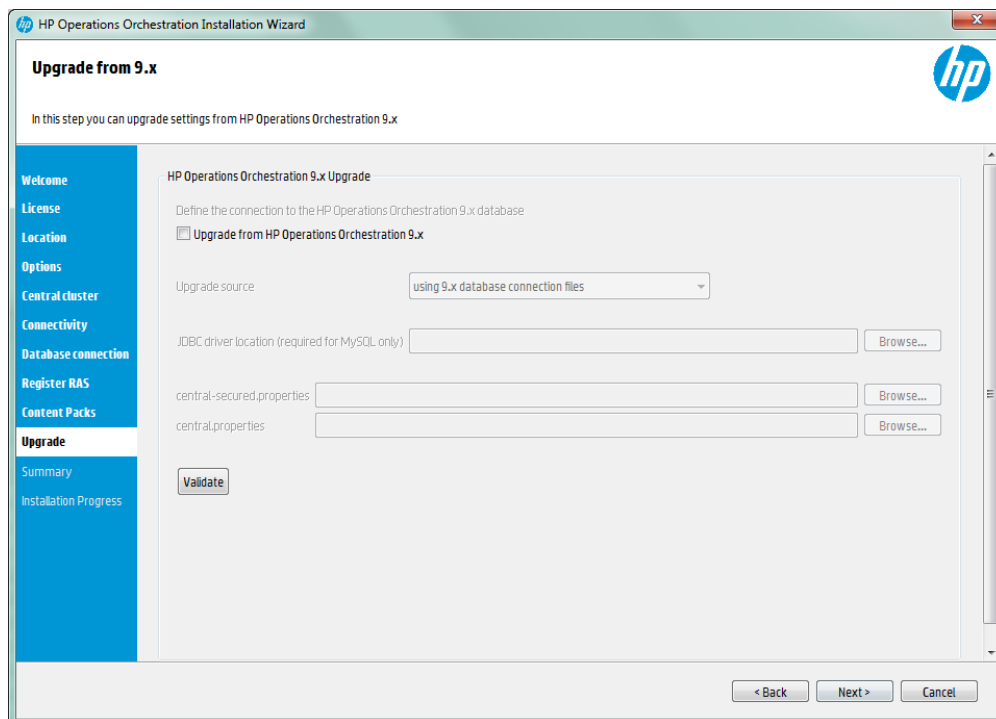
Type	Additional Options	Additional Information
MySQL	max_allowed_packet	Controls the maximum packet length to send or receive from Central. Effectively, it determines the maximum size of the deployed content pack.  <b>Note:</b> When installing OO 10.00 with a MySQL database, make sure that before the installation, the max_allowed_packet variable has a value of minimum 100M.
	global transaction isolation	Prevents deadlocks.
	Unicode	Used for globalization (multi-language support), supporting-English characters.
		Provide the location for the <code>connector-j</code> jar file.
SQLServer (any)	ALLOW_SNAPSHOT_ISOLATION	Prevents deadlocks.
	READ_COMMITTED_SNAPSHOT	Prevents deadlocks.
	collation	Used for globalization. Specifies the characters set.
	Unicode in the JDBC URL	Used for globalization.

11. In the next step, you can import an existing Content Pack. Browse to the location where the Content Pack is located, and then click **OK**.

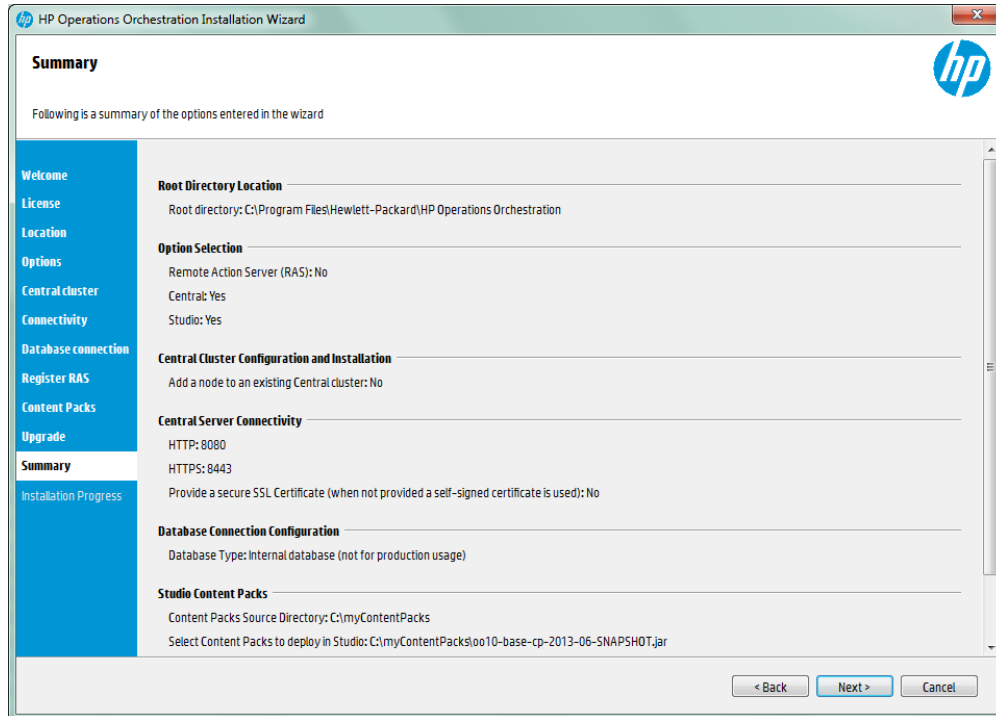
The available Content Packs located in the selected folder appear in the list. Select the Content Pack that you want to import, and then click **Next**.



12. In the Upgrade from 9.x step, you can upgrade settings from HP OO version 9.x. This option is not selected by default. If you select this option, click **Validate** to verify your 9.x version.



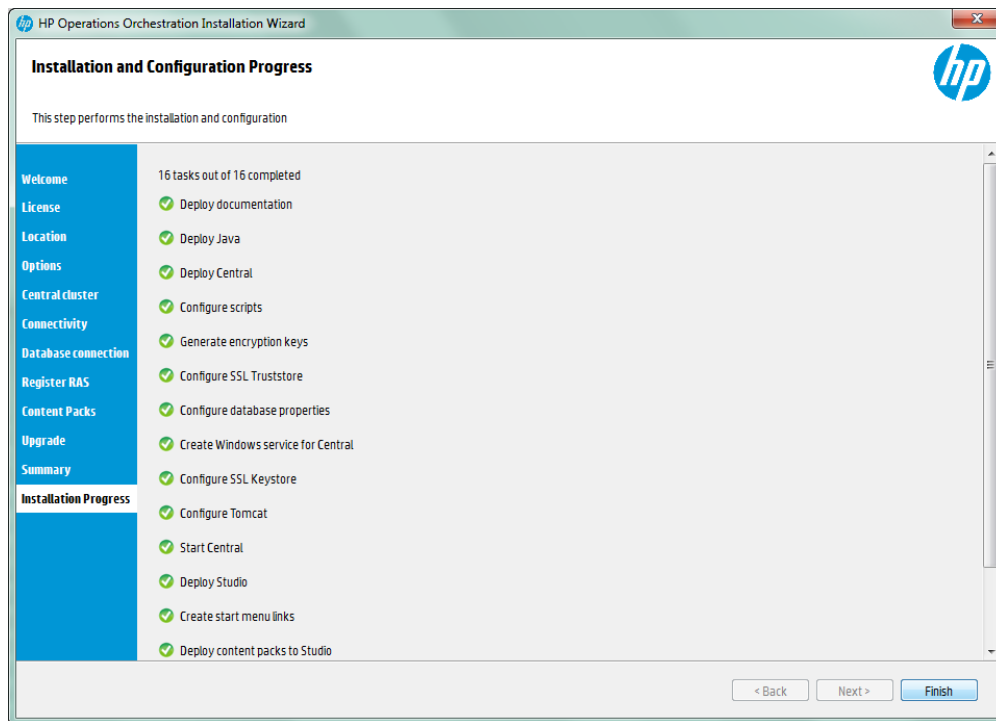
13. The **Summary** section displays the installation and configuration settings that you selected and entered in the wizard. Check the settings are correct, if you want to correct one of the items, click **Back**.



14. Click **Next**. The installation begins, and displays a check mark next to each successfully installed item.

**Note:** If there is a problem with one of the installation or configuration items, the installation attempts to continue with the rest of the items regardless of that error. Check the `installer.log` file, located in `C:\HP\oo` (or selected installation folder), to check for errors.





15. HP Operations Orchestration is successfully installed. Click **Finish** to close the Installation and Configuration wizard.

## How to Start HP Operations Orchestration:

- Central:
  - Windows: After installing Central, the Windows service is started automatically. Open a browser window, and enter the URL to the Central server set in the Installation and Configuration wizard.
  - Linux: . In order to run the Central user interface, you need an X server.

To start or stop Central:

```
<Install-dir>/central/bin/linux64/central start
```

```
<Install-dir>/central/bin/linux64/central stop
```

- Studio:
  - Windows: From the **Start** menu, select **All Programs > HP Operations Orchestration > Studio**.
- RAS

- Windows: After installing RAS, the Windows service is started automatically.
- Linux:

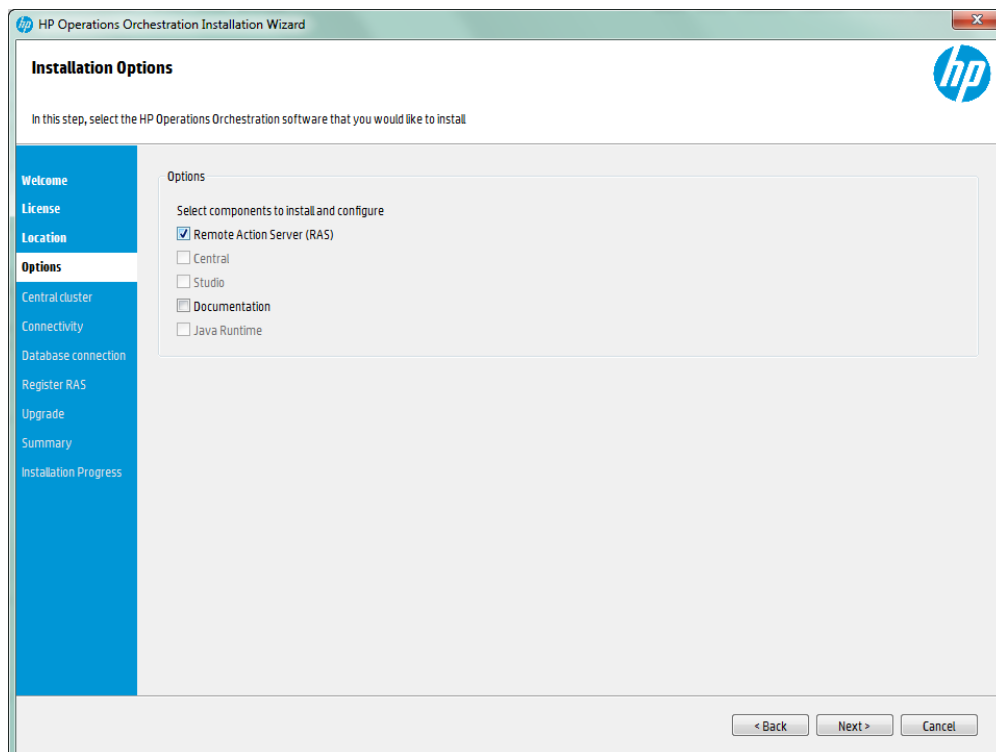
To start or stop the RAS service:

```
<Install-dir>/ras/bin/linux64/ras start
```

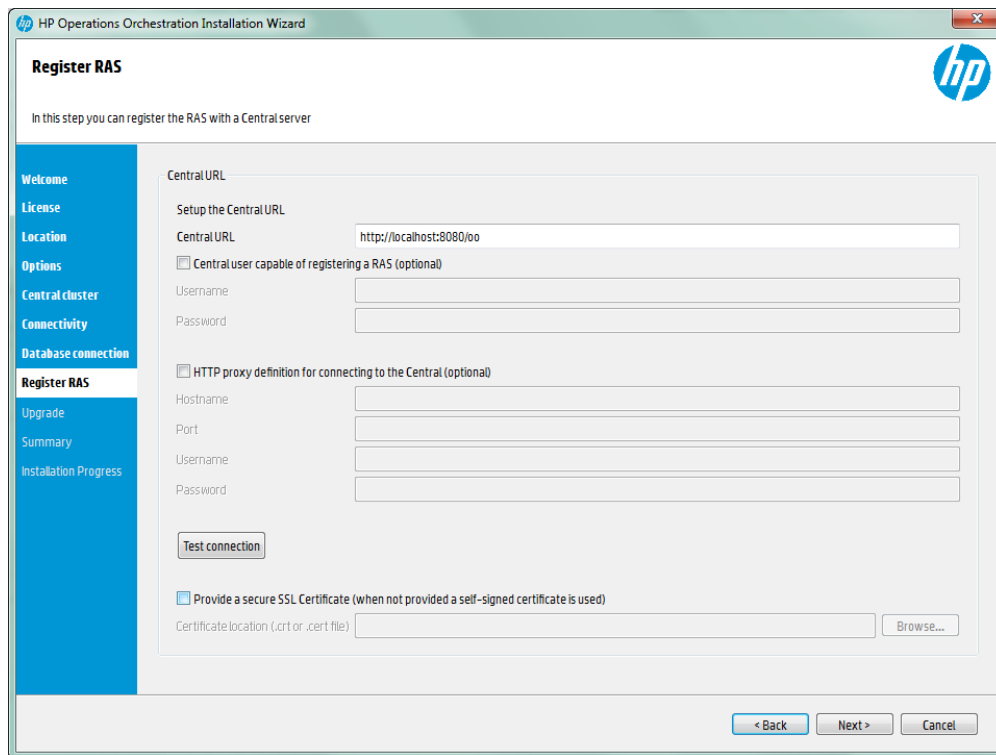
```
<Install-dir>/ras/bin/linux64/ras stop
```

## Installing a RAS Server

1. Run the Installation Wizard as described in the Installing [HP Operations Orchestration](#) section.
2. In the **Installation Options** step, select **Remote Access Server (RAS)**, and then click **Next**.



3. In the **Register RAS** step, enter the properties and location of Central, and then click **Test Connection**. If required, select the SSL certificate.

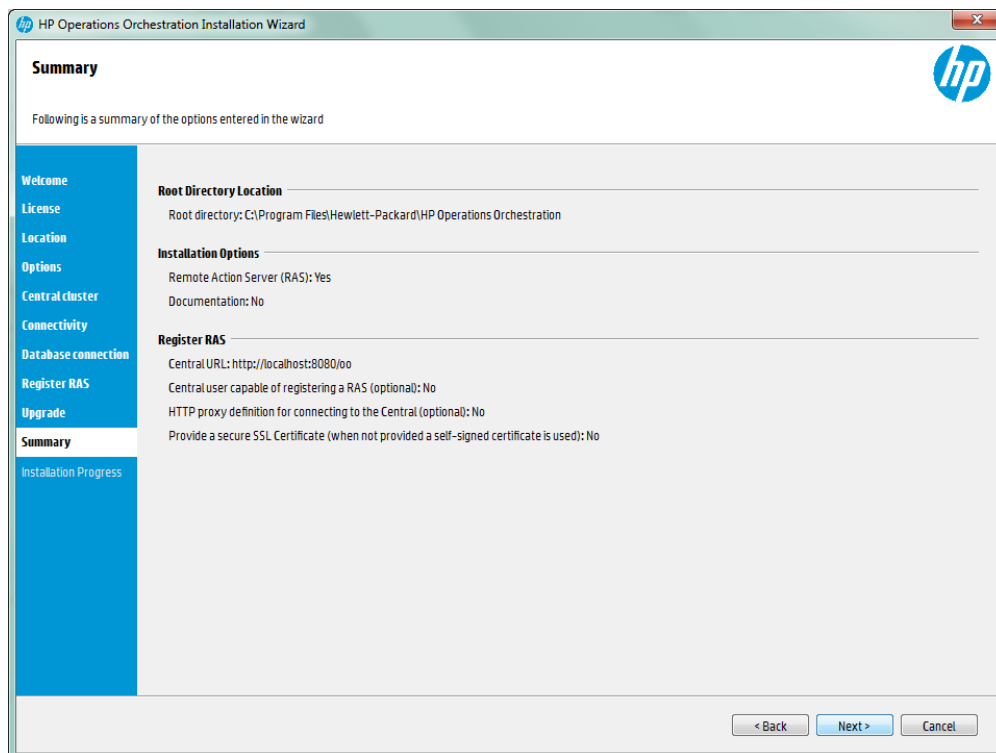


The screenshot shows the 'Register RAS' step of the HP Operations: Orchestration Installation Wizard. The left sidebar contains a list of steps: Welcome, License, Location, Options, Central cluster, Connectivity, Database connection, Register RAS (highlighted), Upgrade, Summary, and Installation Progress. The main area is titled 'Central URL' and contains the following fields and options:

- Central URL**: A text box containing 'http://localhost:8080/oo'.
- ☐ **Central user capable of registering a RAS (optional)**: An unchecked checkbox.
- Username**: A text box.
- Password**: A text box.
- ☐ **HTTP proxy definition for connecting to the Central (optional)**: An unchecked checkbox.
- Hostname**: A text box.
- Port**: A text box.
- Username**: A text box.
- Password**: A text box.
- Test connection**: A button.
- ☐ **Provide a secure SSL Certificate (when not provided a self-signed certificate is used)**: An unchecked checkbox.
- Certificate location (.crt or .cer file)**: A text box with a 'Browse...' button next to it.

At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

4. Click **Next**. A summary of the installation is displayed. Click **Next**.

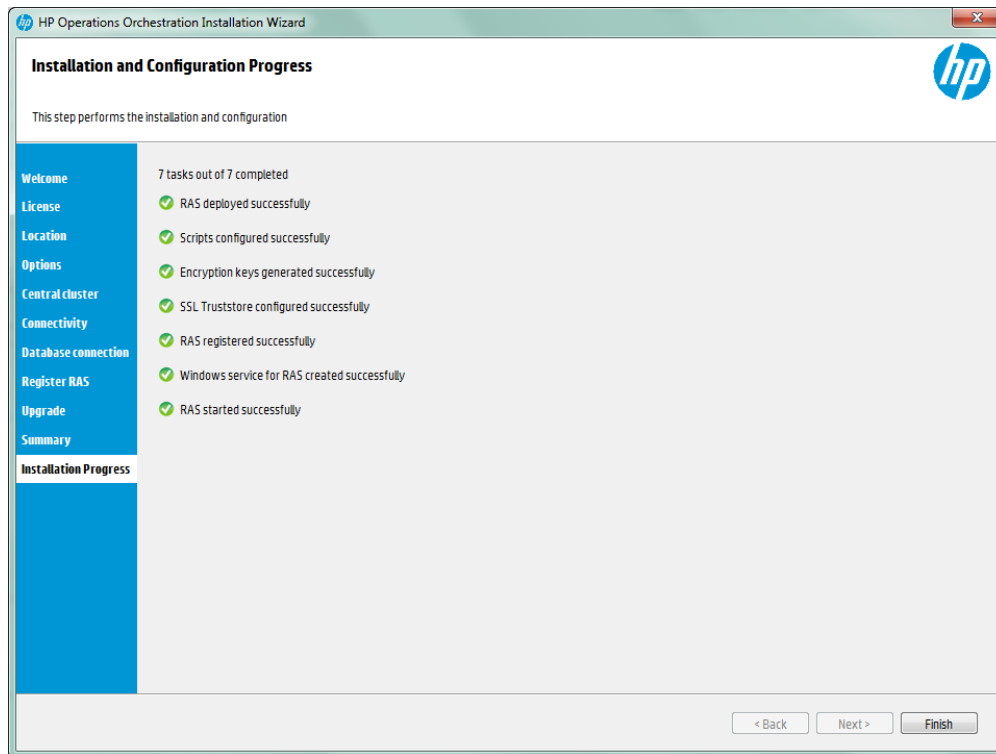


The screenshot shows the 'Summary' step of the HP Operations: Orchestration Installation Wizard. The left sidebar is the same as in the previous screen, with 'Summary' highlighted. The main area is titled 'Summary' and contains the following information:

- Root Directory Location**: Root directory: C:\Program Files\Hewlett-Packard\HP Operations Orchestration
- Installation Options**: Remote Action Server (RAS): Yes; Documentation: No
- Register RAS**: Central URL: http://localhost:8080/oo; Central user capable of registering a RAS (optional): No; HTTP proxy definition for connecting to the Central (optional): No; Provide a secure SSL Certificate (when not provided a self-signed certificate is used): No

At the bottom right, there are three buttons: '< Back', 'Next >', and 'Cancel'.

5. Click **Finish** to complete the installation.



# Silent Installation

A silent installation is one that is started from the command line and completes without any input from the person who started it. A normal (non-silent) installation requires the user to provide input through a wizard or dialog boxes. A silent installation receives its input from a text input file.

You can install and configure HP Operations Orchestration silently from a command line.

To install HP Operations Orchestration silently:

1. Edit the `silent.properties` text file with the required installation and configuration settings.
2. From a command line, type the following:

```
installer-win64.exe -s c:\\temp\\my-silent.properties
```

**Note:** The `-s` property accepts either a full or relative path depending on the operating system:

- Windows: Relative to the location of the `.exe` file.

For example: `dirA`, is the current directory, and `dirB`, is located under `dirA` and contains the installer. Open a Command window in `dirA` and enter the following:

```
dirB\\installer.exe -s silent.properties
```

**Important:** Make sure you add two backslashes `\\` and not one backslash `\`. The installation folder where you download the installation file to does not contain any spaces in the name.

- Linux: Relative to the location of the directory where the installer is launched.

For Windows and Linux, the `silent.properties` file must be in the same directory as the installer.

To disable the extracting installation files progress bar, add to the command line `-gm2`.

**Note:** `gm2` is not supported with Linux.

## Important Notes:

- **Oracle:** To connect to an Oracle database, enter a regular user with `dba` role for the Oracle `db` user name. Do not connect using `SYS` or `SYSTEM` users.
- **Microsoft SQL Server:** This uses the user name and password fields, and does not create them during installation.

- **Oracle MySQL**
- **PostgreSQL:** For **PostgreSQL**, the user name Admin must have a database setup with the same name.

**Note:** The PostgreSQL database name is case-sensitive.

- **Internal database:** This uses an H2 local database. This should not be used for production.
- **Other database:** Use to enable advanced features in supported databases). If you select Other database, you can only use a database type that is supported for use with HP OO. See the System Requirements for more information.
- Special characters, except the underscore (\_), cannot be used for the database name or SID field. In addition, you can enter up to 30 characters for the database name or SID.

## Silent Installer Parameters

Parameter	Description	Default Value
<code>root.dir</code>	Root directory of installation target, for example: <code>c:/Program Files/Hewlett-Packard/Operations Orchestration (Windows)</code> or <code>/usr/local/hp/oo (Linux)</code>	
<code>central.url</code>	Central server URL, for example: Enter either <code>http://&lt;server-url&gt;</code> or <code>&lt;ip address&gt;:&lt;HTTP_PORT&gt;/oo</code>	
<code>central.proxy</code>	Whether or not access to Central requires an HTTP proxy.  Available values: <code>no</code> , <code>manual</code>	<code>no</code>
<code>central.proxy-hostname</code>	The HTTP proxy host name for connecting to Central, for example: <code>myhost</code> .	
<code>central.proxy-port</code>	The HTTP proxy port for connecting to Central, for example: <code>880</code> .	
<code>central.proxy-username</code>	The HTTP proxy user name for connecting to Central, for example: <code>joe</code> .	
<code>central.proxy-password</code>	The HTTP proxy password for connecting to Central, for example: <code>pass</code>	

Parameter	Description	Default Value
<code>central.secured</code>	Whether or not the Central is password protected.	<code>true</code>
<code>central.username</code>	Central user name, for example: joe	
<code>central.password</code>	Central password, for example: pass	
<code>ssl.certificate.type</code>	User-provided or self-signed	
<code>ssl.user-provided-root-certificate.location</code>	Location of the root certificate (.cer format). Import the certificate. For example c:/tmp/my.cer or c:\\tmp\\my.cer in windows and /tmp/my.cer on linux.	
<code>ssl.user-keystore.location</code>	Location of user provided keystore with the server certificate (PKCS12 format)	
<code>ssl.user-keystore.password</code>	Password fo the user provided keystore with service certificate	
<code>central.cluster</code>	Determines if this is a cluster installation.	<code>false</code>
<code>central.cluster.database.properties</code>	Absolute path of the database.properties on the local machine taken from an existing node, for example: c:/tmp/database.properties	
<code>central.cluster.encryption.properties</code>	Absolute path of the encryption.properties on the local machine taken from an existing node, for example: c:/tmp/encryption.properties	
<code>central.cluster.encryption_repository</code>	Absolute path of the encryption_repository on the local machine taken from an existing node, for example: c:/tmp/encryption_repository.	
<code>central.cluster.key.store</code>	absolute path of the keystore on the local machine taken from an existing node, for example: c:/tmp/key.store.	
<code>central.cluster.keystore.p12</code>	Absolute path of the keystore.p12 on the local machine taken from an existing node. This is optional.	
<code>install.ras</code>	Whether or not to install RAS.	<code>false</code>
<code>install.central</code>	Whether or not to install the Central.	<code>true</code>

Parameter	Description	Default Value
<code>install.studio</code>	Whether or not to install the Studio.	false
<code>install.docs</code>	Whether or not to install the documentation.	true
<code>install.java</code>	Install Java Runtime.	true
<code>db.url</code>	The database JDBC URL (when used the <code>db.host</code> , <code>db.port</code> and <code>db.name</code> are ignored), for example: jdbc:oracle:thin:@localhost:1521:orcl	
<code>db.type</code>	Select one of the following database types: oracle, postgresql, mysql, mssql, h2 and other.	h2
<code>db.create-schema</code>	Whether or not to create the database schema during installation.	false
<code>db.host</code>	Database host name, for example: myhost.	
<code>db.port</code>	Database port, for example: 1521.	
<code>db.name</code>	Database name/SID (depending on the type of database), for example: ORCL	
<code>db.username</code>	Database user name, for example: joe	
<code>db.password</code>	Database password, for example: pass	
<code>db.driver</code>	Resolved automatically from <code>db.type</code> , but can be overridden. If <code>db.type</code> is "other" this property is required.	
<code>db.admin.username</code>	Admin user of the database. Used to create a schema/database/user, for example: adminjoe.	
<code>db.admin.password</code>	Database admin user password - used to create a schema/database/user, for example: adminpass.	
<code>db.tablespace</code>	Default tablespace name for the created user (Oracle only), for example: USERS.	
<code>db.driver.location</code>	Database driver location, available when using <code>db.type=other</code> , for example: c:/tmp/mydriver.jar	
<code>http.port</code>	HTTP port number.	8080



Parameter	Description	Default Value
<code>https.port</code>	HTTPS port number.	8443
<code>upgrade.required</code>	Whether or not upgrade is required. Available options: <code>true</code> or <code>false</code> .	<code>false</code>
<code>upgrade.source</code>	<p>determines the upgrade source from where to perform the upgrade. The following options are available:</p> <ul style="list-style-type: none"> <li><code>files</code>: The user provides files from the 9.x installation regardless if it is installed on the same computer as 10.00.</li> <li><code>directory</code>: The user provides the 9.x installation directory. This can be on the same computer or shared (SMB, NFS) and mounted on the 10.00 computer.</li> <li><code>database</code>: The user only needs to provide the 9.x database properties.</li> </ul>	
<code>upgrade.central-secure.properties.location</code>	Location of <code>central-secure.properties</code> , for example, <code>c:/temp/central-secure.properties</code> (Windows) / <code>/opt/tmp/central-secure.properties</code> (Linux).	
<code>upgrade.central.properties.location</code>	Location of the <code>central.properties</code> file, for example, <code>c:/temp/central.properties</code>	
<code>upgrade.9x.home.location</code>	9.x installation home directory, valid when <code>upgrade.source=directory</code> , for example: <code>c:/Program Files/Hewlett-Packard/Operations Orchestration</code> .	
<code>upgrade.db.type</code>	9.x database type, valid when <code>upgrade.source=database</code> , select one of the following: <code>oracle</code> , <code>mssql</code> , or <code>mysql</code> .	
<code>upgrade.db.host</code>	9.x database host name, valid when <code>upgrade.source=database</code> , for example: <code>ninexdb</code> .	
<code>upgrade.db.port</code>	9.x database port number, valid when <code>upgrade.source=database</code> , for example: 1521.	

Parameter	Description	Default Value
<code>upgrade.db.name</code>	9.x database name/SID, valid when <code>upgrade.source=database</code> , for example: ORCL.	
<code>upgrade.db.username</code>	9.x database user name, valid when <code>upgrade.source=database</code> , for example: joe.	
<code>upgrade.db.password</code>	9.x database password, valid when <code>upgrade.source=database</code> , for example: pass.	
<code>upgrade.db.driver.location</code>	The location of JDBC driver	
<code>studio.content.packs</code>	A comma separated list of absolute paths to content packs to deploy in Studio.	

## Sample silent.properties Files

When you create the `silent.properties` file, the hash sign `#` is a comment. Everything in the file is optional except for the `root.dir` (root directory). To set a property you must delete the hash sign `#`.

**Note:** Properties that appear in the silent properties file as uncommented, are used unless some other property is specified. In order not to use a certain property you must comment the line of that property instead of making the value of that property empty.

In the following example, the `db.username` property is not used:

```
#db.username=admin
```

In the following case, `db.username` is used with blank value:

```
db.username=
```

```
#### root directory of the installation
root.dir=c:/Program Files/Hewlett-Packard/Operations Orchestration
```

```
#### what to install
install.java=true
install.ras=false
install.central=true
install.studio=false
```

```
#### central server ports
#http.port=9090
#https.port=9443
```

```
#### central server database properties
```

```

# valid values for db.type: oracle, postgresql, mysql, mssql, h2 and other. Default value: h2
#db.type=postgresql

# db.driver is optional - only if you want to override the default driver. The default driver is determined by the
# db.type when possible (for db.type=other no driver will be resolved by default)
#db.driver=

#db.host=
#db.port=
#db.name=

# db.url is optional - set this value if you want advanced features supported by the driver. If you set this property
# then the db.host, db.port and db.name properties are ignored
#db.url=

#db.username=
#db.password=

# to create the database schema you must provide the admin user credentials - this is a database user capable of
# creating a schema/database, usually this is a DBA user or a system user
#db.create-schema=false
#db.admin.username=postgres
#db.admin.password=manager

# db.tablespace and db.temp.tablespace are only used when create a schema (user) in an Oracle database
#db.tablespace=
#db.temp.tablespace=

#### central connection properties - used to connect the RAS to the central
#central.url=http://<server-url or ip address>/oo
#valid values for central.secured: true, false
#central.secured=
#central.username=
#central.password=
#### valid values for central.proxy: no, manual
#central.proxy=no
#central.proxy-hostname=
#central.proxy-port=
#central.proxy-username=
#central.proxy-password=

```

## Sample Silent Cluster Install

```

root.dir=
install.java=true
install.ras=
install.central=
install.studio=
central.cluster=
central.cluster.database.properties=
central.cluster.encryption.properties=
central.cluster.encryption_repository=
central.cluster.key.store=

```

### Sample Remote Silent Install

```

root.dir=${posix.install.dir}
install.java=true
install.ras=${install.ras}
install.central=${install.central}
install.studio=${install.studio}
http.port=${http.port}
https.port=${https.port}
jmx.http.port=${jmx.http.port}
jmx.remote.port=${jmx.remote.port}
db.type=${db.type}
db.driver=${jdbc.driver.class}
db.driver.location=
db.url=${jdbc.url}${jdbc.url.addition}
db.name=${db.name}
db.username=${db.user}
db.password=${db.password}
db.create-schema=true
db.admin.username=${db.admin.user}
db.admin.password=${db.admin.password}
db.tablespace=users
db.temp.tablespace=temp
should.start.central=${should.start.central}
should.start.ras=${should.start.ras}
central.url=${remote.ce

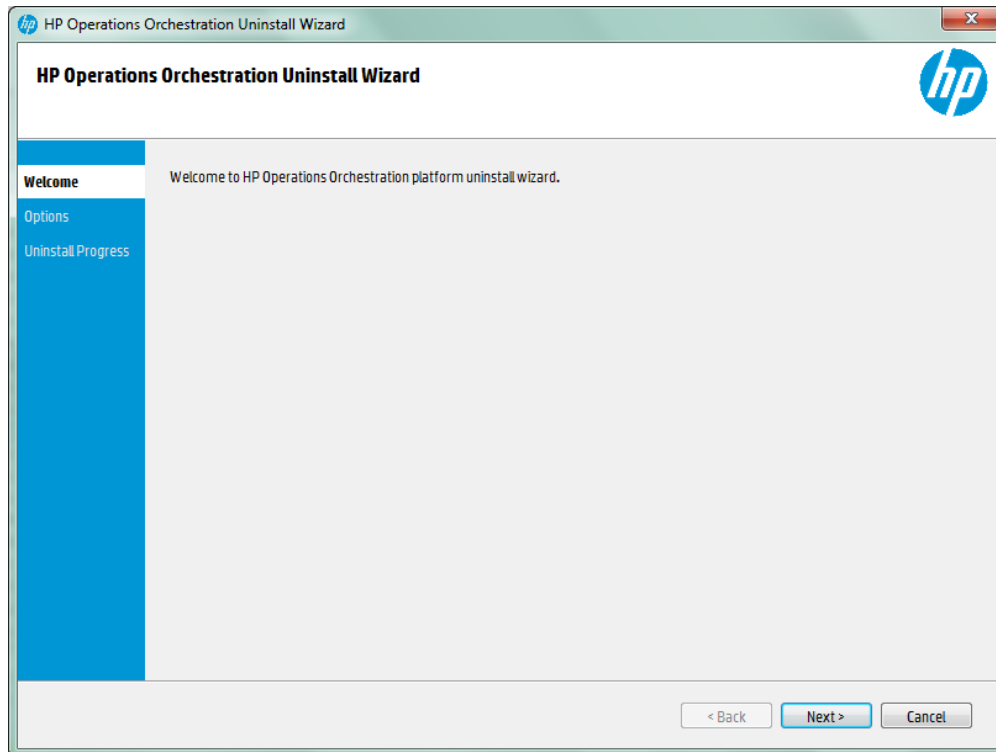
```

## Uninstalling HP Operations Orchestration

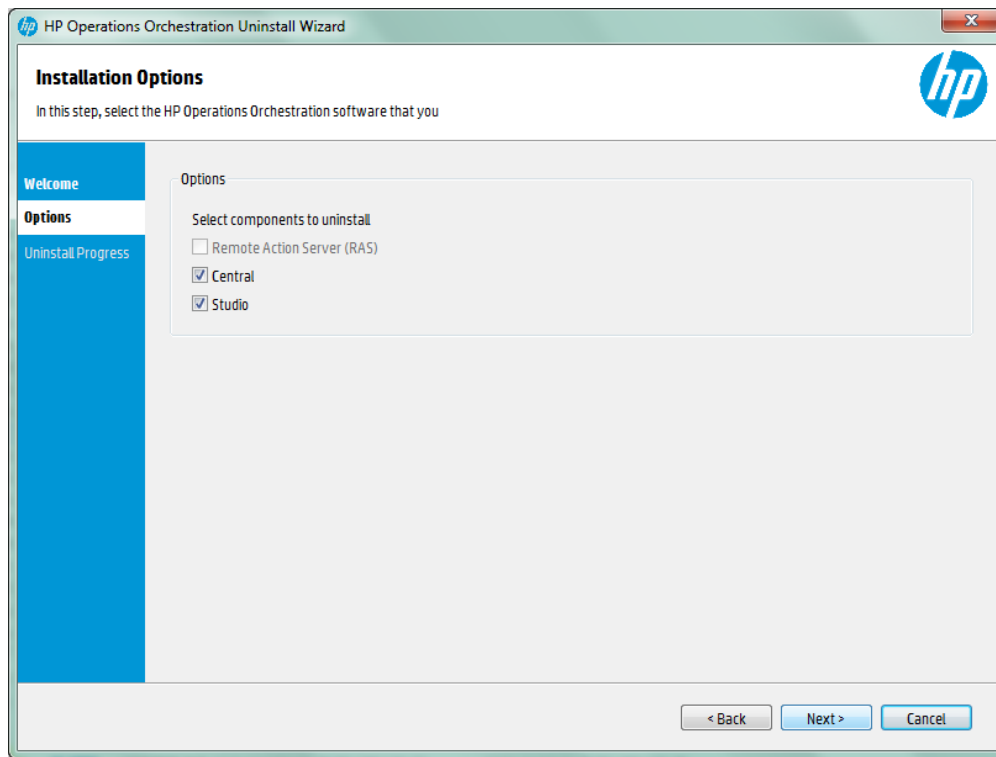
Before uninstalling HP OO, make sure you back up your version of HP OO.

## Windows

1. In the HP OO installation directory, for example, C:\Program Files\Hewlett-Packard\HP Operations Orchestration, double-click on **uninstall.exe**, and then click **Next**.

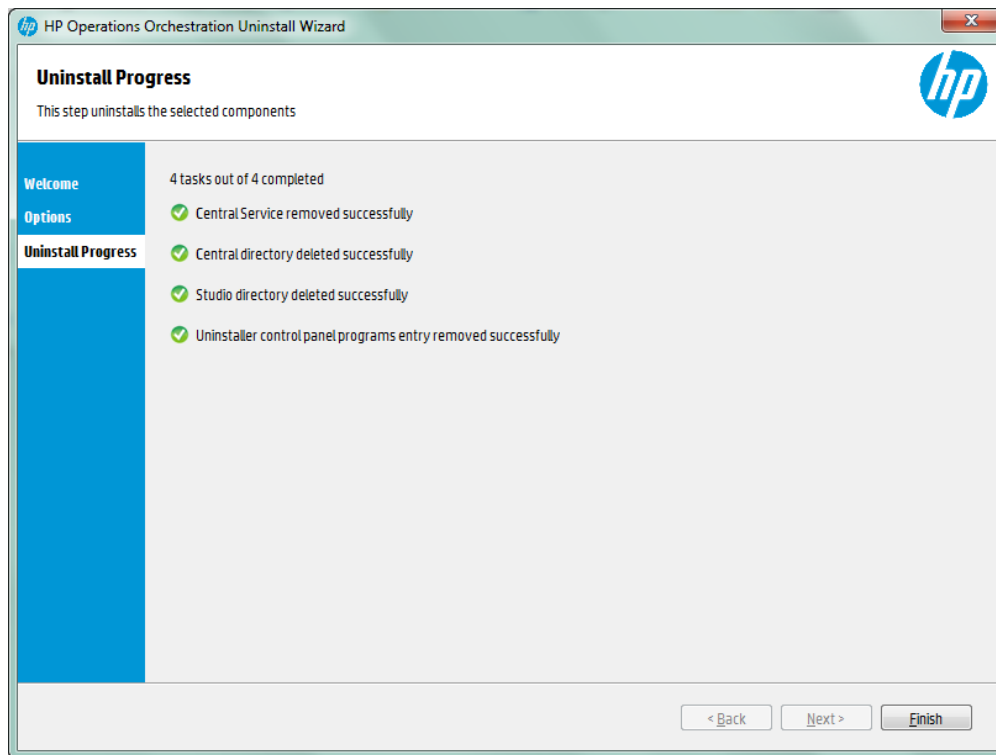


2. Select the HP OO options that you want to uninstall, and then click **Next**. you are prompted if you are sure you want to continue, click **Yes**.



3. During the uninstall process, the following items are deleted and removed:

- Remove Central Service
- Delete Central directory
- Delete Studio directory
- Remove uninstaller control panel programs entry



4. Click **Finish**, the HP Operations Orchestration selected options are removed from your computer.

## Linux

To uninstall HP Operations Orchestration in Linux, enter the following:

```
export DISPLAY=1.2.3.4:0.0
./uninstall
```

After the uninstall completes successfully, you can delete the installation directory.

## Appendix

### Changing the Database Settings

1. Stop the Central cluster, or single node.
2. (Optional) generate an encrypted password using the following command:

```
<install-dir>/central/bin/encrypt-password --password <plain-text-pass>
```

3. For each node edit the following and change the user name and password. If the password is in plain text just type it in the right field, if it's encrypted make sure you also copy the {ENCRYPTED} prefix:

```
<install-dir>/central/conf/database.properties and
```

4. Restart the Central cluster.

## Starting HP OO As a Service on Linux

To start HP OO Central/RAS as a daemon on Linux server, you need to add the control script to the startup sequence of that server.

The control script is located in `<install-dir>/central/bin/central` and `<install-dir>/ras/bin/ras` respectively.

Each nix distribution has a different procedure to perform this. Following are two examples, RHEL and Ubuntu. For more detailed information consult with your system administrator. The following information is for example only, and may vary from one server to another, according to server-specific policies.

- RHEL, this is an example for Central (for RAS, replace Central for RAS):

As root:

```
$ ln -s /full/path/to/oo/central /etc/init.d/central
$ chkconfig --add central
```

- Ubuntu:

As root:

```
$ ln -s /full/path/to/oo/central /etc/init.d/central
$ update-rc.d central defaults
```



