

HP Helion Codar

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Windows® and Linux operating systems

Installation and Configuration Guide

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Contents

- Overview 7
 - System requirements 7
- Oracle Database 8
 - Install Oracle Database 8
 - Download Oracle JDBC drivers 8
 - Configure Oracle 8
 - Create a database instance for embedded HP Operations Orchestration 8
 - Configure user and schema for embedded HP Operations Orchestration 9
 - Create a database instance for HP Helion Codar 9
 - Configure role and user for HP Helion Codar 9
 - Configure Oracle for localization 10
 - Create a tablespace for HP Helion Codar (Recommended) 10
- Microsoft SQL Server 12
 - Install Microsoft SQL Server 12
 - Configure Microsoft SQL Server 12
 - Enable TCP/IP 12
 - Configure a user for HP Helion Codar 12
 - Configure a user for HP Operations Orchestration 13
 - Create a filegroup 14
- PostgreSQL 15
 - Install PostgreSQL 15
 - Configure PostgreSQL 15
 - Configure users and database 15
- Install HP Operations Orchestration 17
 - Configure an internal user 17
 - Export the HP Operations Orchestration root certificate 17
- Install HP Helion Codar on Windows 19
- Install HP Helion Codar on Linux 25

- Configure a group and user25
- Install HP Helion Codar25
- Post-installation database configuration33**
 - Configure Oracle tablespace33
 - Configure Microsoft SQL Server filegroup33
- Configure HP Operations Orchestration34**
 - Configure embedded HP Operations Orchestration34
 - Add a JRE to the system path35
 - Configure internal users35
 - Deploy required content packs36
 - Verify deployed content packs37
 - Deploy the HP Operations Orchestration and component tool content packs38
 - Set up system accounts for the HP Helion Codar content pack39
 - Set up system properties for the HP Helion Codar content pack40
 - Configure external HP Operations Orchestration41
 - Add a JRE to the system path41
 - Install the HP Helion Codar content packs42
 - Configure internal users43
 - Deploy content packs required by HP Helion Codar44
 - Set up system accounts for the HP Helion Codar content pack45
 - Set up system properties for the HP Helion Codar content pack46
- Install VMware vCenter47**
- Install HP Server Automation48**
 - Configure HP Server Automation48
 - Create the HP Helion Codar service account48
 - Create the HP Helion Codar administrators group and assign permissions49
 - Validate the Helion Codar service account50
 - Validate the HP Server Automation client51
 - Prepare VMware template51
 - Template preparation overview52
 - Detailed process53
 - Provision an operating system on a virtual machine53
 - Sanitize the agent configuration on a template machine54
 - Basic customization55
 - Install the prepared template55

- Configure VMware vCenter 56
- Install HP SiteScope 58
 - Configure HP SiteScope 58
 - Enable HP Helion Codar to configure HP SiteScope monitors 58
 - Auto-deploy the HP Helion Codar templates and credential profiles 59
 - Manually import additional HP Helion Codar templates 59
 - Configure HP Helion Codar credential profiles 60
 - Configure HP SiteScope administrator credentials 60
- Configure resource providers 61
- Apply HP Helion Codar licenses 62
 - OSI capacity 62
- Jenkins 63
 - Install the JDK 63
 - Install Collabnet Subversion Edge 63
 - Install Tortoise 63
 - Install the Maven plugin 63
 - Install Jenkins 64
 - Install the HP Helion Codar Jenkins plug-in 64
 - Enable the plug-in 65
 - Configure the Pet Clinic sample application project 65
 - Configure the plug-in for the Pet Clinic sample application 66
 - Sample Pet Clinic extended properties file 68
 - Create a custom design 69
- Import and configure sample designs 70
 - Import sample designs 70
 - Configure sample designs 70
- Send Documentation Feedback 71

Overview

This guide provides information for installing the HP Helion Codar application. Successful implementation of the application requires knowledge of the integrated products, as well as the HP Helion Codar solution. Information in this guide augments information provided in the integrated products documentation but is not intended to replace that documentation. Primary product documentation contains the most up-to-date information. Cross-references are provided to those documents where appropriate.

System requirements

You should review the *HP Helion Codar System and Software Support Matrix* for version requirements.

You can get this document from the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Oracle Database

You must complete the following installation and configuration steps if you wish to use Oracle Database with HP Helion Codar.

Install Oracle Database

For a list of supported database versions, refer to the *HP Helion Codar System and Software Support Matrix*, which is available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Install the database according to the manufacturer's documentation. Database installation is typically done in partnership with a database administrator.

Download Oracle JDBC drivers

For a list of supported JDBC driver versions, refer to the *HP Helion Codar System and Software Support Matrix*, which is available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Download a supported version of the JDBC .jar file(s) and save them on the system on which HP Helion Codar will be installed. Record the location where you save the files, because this information must be provided when you install HP Helion Codar.

Configure Oracle

These tasks must be completed before HP Helion Codar is installed.

Create a database instance for embedded HP Operations Orchestration

Work with the database administrator to create a database that is used by the embedded HP Operations Orchestration.

Configure user and schema for embedded HP Operations Orchestration

A database user for embedded HP Operations Orchestration is required. Work with the database administrator to do the following (or refer to the manufacturer's documentation for more information):

Caution: The database name and user name cannot contain more than one dollar sign symbol (\$).

1. Create a schema for the embedded HP Operations Orchestration by creating a database user.
2. Grant the following privileges to the user:
 - CONNECT
 - CREATE VIEW
 - CREATE SEQUENCE
 - CREATE TABLE
 - CREATE PROCEDURE

For example, run the following commands to create the `codaroodbuser` user:

```
Create user codaroodbuser identified by codaroodbuser default tablespace system
temporary tablespace temp quota unlimited on system account unlock;
Grant CONNECT to codaroodbuser;
Grant CREATE VIEW, CREATE SEQUENCE, CREATE TABLE, CREATE PROCEDURE to
codaroodbuser;
Commit;
```

Create a database instance for HP Helion Codar

If the database instance used by HP Helion Codar has not already been created, work with the database administrator to create this database.

Configure role and user for HP Helion Codar

A database user is needed when installing HP Helion Codar. Work with the database administrator to do the following (or refer to the manufacturer's documentation for more information):

Caution: The database name and username cannot contain more than one dollar sign symbol (\$).

1. Create a schema for HP Helion Codar by creating a database user (for example, `codardbuser`).
2. Create a role for this HP Helion Codar database user (for example, `codardbrole`) and grant the following privileges to the role:

- CREATE SESSION
 - CREATE TABLE
 - CREATE VIEW
 - CREATE SEQUENCE
 - CREATE ANY SYNONYM
3. Grant the role to the HP Helion Codar database user.
 4. Alter the HP Helion Codar database user by setting this role as the user's default role.

For example, run the following commands to create codardbrole and codardbuser:

```
Create user codardbuser identified by codardbuser;  
Create role codardbrole;  
Grant CREATE SESSION, CREATE TABLE, CREATE VIEW, CREATE SEQUENCE, CREATE ANY  
SYNONYM to codardbuser;  
Grant codardbrole to codardbuser;  
Alter user codardbuser default role codardbrole;
```

You must provide this user name and password when prompted for the HP Helion Codar database user during installation.

If you configure this user, you must provide this user name and password when prompted for the Helion Codar reporting database user during the installation of HP Helion Codar.

Configure Oracle for localization

If you need to support localization, the Oracle database instance must support UTF-8 character encoding and multi-byte characters. Work with the database administrator to set the following parameters to the specified values (or refer to the manufacturer's documentation for more information):

- NLS_CHARACTERSET = AL32UTF8
- NLS_LENGTH_SEMANTICS = CHAR

Create a tablespace for HP Helion Codar (Recommended)

For performance reasons, HP recommends that you create a new tablespace which stores LOBs for the CSA_DOCUMENT table. Work with the database administrator to create a tablespace to be used by HP Helion Codar (or refer to the manufacturer's documentation for more information). HP recommends that the initial tablespace size should be at least 3 GB.

The tablespace must be created before installing HP Helion Codar and then must be configured immediately after HP Helion Codar is installed.

Microsoft SQL Server

You must complete the following installation and configuration steps if you wish to use MS-SQL with HP Helion Codar.

Install Microsoft SQL Server

Refer to *HP Helion Codar System and Software Support Matrix* for a list of supported database versions, available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Database installation is typically done in partnership with a database administrator. Microsoft SQL Server must be installed with mixed mode authentication. During the installation of Microsoft SQL Server, from the Database Engine Configuration dialog, for the authentication mode, select **Mixed Mode (SQL Server authentication and Windows authentication)**.

Configure Microsoft SQL Server

These tasks must be completed before hp Helion Codar is installed. Work with the database administrator to complete the following tasks, or refer to the manufacturer's documentation for more information.

Enable TCP/IP

TCP/IP must be enabled on the Microsoft SQL Server in order for HP Helion Codar to access the database. By default, TCP/IP may be disabled on the Microsoft SQL Server. Verify the TCP/IP configuration.

From the SQL Server Configuration Manager:

1. Select **SQL Server Network Configuration > Protocols for <instance_name>**.
2. Double-Click **TCP/IP** to open the TCP/IP Properties dialog.
3. From the TCP/IP Properties dialog, select the **IP Addresses** tab.
4. Verify that TCP/IP is active and enabled, and verify that the TCP port is set to 1433. Update any properties that are not set correctly.

Configure a user for HP Helion Codar

An HP Helion Codar database user is needed when installing HP Helion Codar.

Caution: The database name and user name cannot contain more than one dollar sign symbol (\$).

To create a database user for HP Helion Codar, do the following:

1. Create a new database for HP Helion Codar.

Caution: Use the default database option collation value of SQL_Latin1_General_CP1_CI_AS.

Do NOT use the collation value SQL_Latin1_General_CP1_CS_AS. HP Helion Codar does not work with a database that is configured with this collation value.

2. Add a database user with the following roles:
 - db_datareader
 - db_datawriter
 - db_owner

You must provide this user name and password when prompted for the HP Helion Codar database user during installation.

Configure a user for HP Operations Orchestration

An HP Operations Orchestration database user, used by the embedded HP Operations Orchestration, is needed when installing HP Helion Codar.

Caution: The database name and user name cannot contain more than one dollar sign symbol (\$).

To create an HP Operations Orchestration database user for HP Helion Codar, do the following:

1. Create a new database for HP Operations Orchestration.

As of the release date of the HP Helion Codar software (found at the beginning of this guide), the mandatory database options for the Microsoft SQL Server for HP Operations Orchestration are:

- **Allow Snapshot Isolation:** True
- **Is Read Committed Snapshot On:** True
- **Auto Shrink:** False
- **Auto Create Statistics:** True

Caution: You should verify the latest mandatory options and follow the instructions in the *HP Operations Orchestration Database Guide*.

Note: HP Operations Orchestration recommends using the database option collation value of SQL_Latin1_General_CP1_CS_AS. When creating the database used by HP Operations Orchestration, this collation value is valid.

2. Add an HP Operations Orchestration database user with the following roles:
 - db_datareader

 - db_datawriter

 - db_owner

You must provide this user name and password when prompted for the HP Operations Orchestration database user during the installation of HP Helion Codar.

Create a filegroup

For performance reasons, HP recommends that you associate a new filegroup with the CSA_DOCUMENT table. Work with the database administrator to configure a filegroup to be used by HP Helion Codar (or refer to the manufacturer's documentation for more information). HP recommends that the initial filegroup size should be at least 3 GB.

The filegroup is configured after HP Helion Codar is installed.

PostgreSQL

You must complete the following installation and configuration steps if you wish to use PostgreSQL with HP Helion Codar.

Install PostgreSQL

Refer to *HP Helion Codar System and Software Support Matrix* for a list of supported database versions, available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Install the database according to the manufacturer's documentation. Database installation is typically done in partnership with a database administrator.

Configure PostgreSQL

These tasks must be completed before HP Helion Codar is installed. Work with the database administrator to complete the following tasks (or refer to the manufacturer's documentation for more information).

Configure users and database

At least two database users are needed when installing HP Helion Codar. Do the following:

1. On the system hosting the database, install `postgresql-client` if it is not already installed. As the root user, enter the following:

```
apt-get install postgresql-client -y
```

2. Set the shared library path to include the PostgreSQL libraries (`<postgresql_installation>/lib`). For example, if you installed PostgreSQL in `/opt/PostgreSQL/9.2/`, run the following command:

```
export LD_LIBRARY_PATH=/opt/PostgreSQL/9.2/lib:$LD_LIBRARY_PATH
```

3. Log in to `psql` as the `postgres` user. Enter the following:

```
psql -h localhost -U postgres -d template1
```

When prompted, enter the password for the `postgres` user.

4. Create an HP Helion Codar database user (for example, `csadbuser`). The HP Helion Codar database user is required. This user should inherit rights from parent roles and be a superuser.

Caution: The user name cannot contain more than one dollar sign symbol (\$).

From the psql prompt, enter the following:

```
create role codardbuser login password '<codardbuser_password>' superuser  
inherit;
```

You must provide this user name and password when prompted for the HP Helion Codar database user during installation.

Install HP Operations Orchestration

Install HP Operations Orchestration to the correct version and patch level. See *HP Helion Codar System and Software Support Matrix* for version requirements, available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

If you are using an existing installation of HP Operations Orchestration, you should verify that the correct versions of patches and updates have been applied.

Configure an internal user

This internal user is used to configure HP Operations Orchestration for HP Helion Codar. This step is required if you are going to integrate HP Operations Orchestration with HP Helion Codar using the installer.

1. Log in to HP Operations Orchestration Central.
2. Click the **System Configuration** button.
3. Select **Security > Internal Users**.
4. Enter the following information:

Field	Recommended value
User Name	admin
Password	cloud
Roles	ADMINISTRATOR, SYSTEM_ADMIN

5. Click **Save**.
6. Enable authentication by selecting **Enable Authentication**.
7. Click **OK** in the confirmation dialog.

Export the HP Operations Orchestration root certificate

Export the HP Operations Orchestration certificate from the HP Operations Orchestration truststore and, if HP Operations Orchestration and HP Helion Codar are not installed on the same system, copy

the certificate to the HP Helion Codar system. This certificate will be imported into the HP Helion Codar truststore by the HP Helion Codar installer. SSL must be configured between HP Helion Codar and HP Operations Orchestration.

For example, do the following:

1. On the system running HP Operations Orchestration, open a command prompt and change to the directory where HP Operations Orchestration is installed.

2. Run the following command:

For HP Operations Orchestration 10.20 on Windows:

```
.\java\bin\keytool -export -alias tomcat -file C:\oo.crt -  
keystore .\Central\var\security\key.store -storepass changeit
```

For HP Operations Orchestration 9.07 on Windows:

```
.\jre1.6\bin\keytool -exportcert -alias pas -file C:\oo.crt -  
keystore .\Central\conf\rc_keystore -storepass bran507025
```

For HP Operations Orchestration 10.20 on Linux:

```
./java/bin/keytool -export -alias tomcat -file /tmp/oo.crt -  
keystore ./Central/var/security/key.store -storepass changeit
```

For HP Operations Orchestration 9.07 on Linux:

```
./jre1.6/bin/keytool -exportcert -alias pas -file /tmp/oo.crt -  
keystore ./Central/conf/rc_keystore -storepass bran507025
```

where C:\oo.crt and /tmp/oo.crt are examples of filenames and locations used to store the exported root certificate (you can choose a different filename and location).

3. If HP Operations Orchestration is not running on the same system as HP Helion Codar, copy oo.crt from the HP Operations Orchestration system to the system running HP Helion Codar.

Install HP Helion Codar on Windows

Note: Installation log files are written to the %CODAR_HOME%_HELION_Codar_1_00_0_installation\Logs\ folder.

To install HP Helion Codar, complete the following steps.

1. Close all instances of Windows Explorer and command prompts and exit all programs that are running on the system.
2. Run the setup.exe installation file.
3. On the Introduction screen, read the information and click **Next**.
4. Read the license agreement and select **I accept the terms of the License Agreement**. Click **Next** to continue with the installation.

If the following error message is displayed:

Another version of HP Helion Codar is configured in the registry. However, HP Helion Codar has been uninstalled (the HP Helion Codar installation folder %CODAR_HOME% does not exist). You must exit the installer and delete the entry in the registry before installing HP Helion Codar. Refer to the *HP Helion Codar Installation Guide* for more information about deleting the registry entry.

exit the installer. Locate the C:\Program Files\Zero G Registry\.com.zerog.registry.xml file (you may need to show hidden files), make a backup copy, delete all HP Helion Codar entries from the .com.zerog.registry.xml file, and restart the installer.

5. Select **HP Helion Codar** and click **Next**.
6. Choose a location in which to install HP Helion Codar and click **Next** (%CODAR_HOME% is set to this location).

The default location is C:\Program Files\Hewlett-Packard\Codar.

Note: If the folder in which you choose to install HP Helion Codar is not empty, existing content in the folder may be overwritten or deleted when HP Helion Codar is installed, upgraded, or uninstalled.

Caution: The entire folder path cannot contain more than one dollar sign symbol (\$).

7. Choose the JRE that will be used by HP Helion Codar.

In this documentation, the folder in which the JRE is installed will be referred to as `<codar_jre>`.

For a list of supported JREs, refer to the *HP Helion Codar System and Software Support Matrix*, available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

OpenJDK JRE

The OpenJDK JRE is bundled with HP Helion Codar. If you want to use the OpenJDK JRE, click **Open JRE** and click **Next**.

The default location in which the OpenJDK JRE is installed is `C:\Program Files\Hewlett-Packard\Codar\openjre`.

Oracle JRE

If you have installed a supported version of Oracle JRE to be used by HP Helion Codar, click **Oracle JRE**, select the location in which you installed this JRE, and click **Next**.

The default location displayed for the Oracle JRE Home is either a supported JRE that is configured in the system registry or a supported JRE in a path that is defined in the system path variable. If this is not the JRE that should be used by HP Helion Codar, click **Choose** and select the location in which you installed the JRE that will be used by HP Helion Codar.

8. Select the type of database installed and click **Next**.

For an Oracle database, you must also enter the **JDBC Driver Directory**. This is the absolute folder path to the location of the JDBC drivers (these are the JDBC drivers you downloaded onto the HP Helion Codar system). For a list of supported JDBC driver versions, refer to the *HP Helion Codar System and Software Support Matrix*, available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

9. Define the database instance on which the HP Helion Codar database components should be installed or where the HP Helion Codar database schema already exists. Enter the following database information and click **Next**.

Field	Description
Database Host	The host name or IP address of the server where the database is located. When specifying an IPv6 address, it must be enclosed in square brackets. For example, <code>[f000:253c::9c10:b4b4]</code> or <code>[::1]</code> .
Database Port	The database port number, such as 1433 (Microsoft SQL Server), 1521 (Oracle), or 5432 (PostgreSQL).

Field	Description
Database Name Oracle SID	The name of the database instance on which the HP Helion Codar database schema will be installed. If you are creating a new HP Helion Codar database schema, this is the name of the database instance on which the HP Helion Codar database components will be installed. If you are using an existing HP Helion Codar database schema that was created as part of a prior successful installation of HP Helion Codar version HP 1.00, this is the name of the database instance on which the HP Helion Codar database schema exists. For an Oracle database, this is the System ID (SID).
Database Username	The user name of the database user you configured for HP Helion Codar in the database (for example, codarbususer).
Database Password	The password for the database user.

10. Install HP Helion Codar database components onto the database instance to create the database schema, if it does not exist.

Click **Yes** to install HP Helion Codar database components and create the database schema. When you select this option, the HP Helion Codar service automatically starts when you exit the installer.

Click **No** if you are using an existing HP Helion Codar database schema that was created as part of a prior successful installation of HP Helion Codar version 1.00. When you select this option, the HP Helion Codar service does not start when you exit the installer. Refer to the end of this section for information on how to start and stop the service.

11. From the Enter host name screen, enter the **fully-qualified domain name of the system on which you are installing HP Helion Codar**. The fully-qualified domain name is used to generate the self-signed SSL certificate which is used when https browser requests are issued for HP Helion Codar. This self-signed certificate expires 120 days after HP Helion Codar is installed.
12. By default, HP Single Sign-On (HP SSO) is included with HP Helion Codar and is enabled. The HP SSO that is included can only be used when launching an application, such as HP Operations Orchestration, from the Management Console. Refer to the *HP Cloud Service Automation Configuration Guide* the HP SSO documentation for more information on integrating HP SSO with an application.

If you do not want to use HP SSO, you can disable it.

You **MUST** disable HP Single Sign-On if you are installing HP Helion Codar in a FIPS 140-2 compliant environment.

If enabled, enter the domain name of the network to which the server on which you are installing HP Helion Codar belongs and click **Next**.

Note: You must enter the full domain name of the server. For example, if you are installing HP Helion Codar on a system whose fully-qualified domain name is machine1.development.xyz.com, you must enter development.xyz.com. If you enter only xyz.com, you will not be able to log in to the Management Console.

Applications launched from the Management Console with which you want to use HP SSO must be installed on systems that belong to this domain.

13. Specify if you want to install the embedded (new) HP Operations Orchestration instance with HP Helion Codar or if you are integrating with an external (existing) instance of HP Operations Orchestration.

Select **Use external OO** and click **Next** and select **Enter** to integrate with an external (existing) instance of HP Operations Orchestration.

Select **Install embedded OO** and click **Next** and select **Enter** to install the embedded HP Operations Orchestration.

14. Define the HP Operations Orchestration instance with which HP Helion Codar is to be integrated. Enter the following information and click **Next**.

Field	Description
HP OO Hostname	<p>The fully-qualified domain name or IP address of the server where HP Operations Orchestration is located. Specify the hostname that was used to generate HP Operations Orchestration's certificate. The hostname is used for SSL validation and to build the URL that the Management Console uses to interact with HP Operations Orchestration (for example, in the subscription event overview section of the Operations area in HP Helion Codar, selecting the Process ID opens HP Operations Orchestration to the detailed page of the selected process when these properties are configured).</p> <p>When specifying an IPv6 address, it must be enclosed in square brackets. For example, [f000:253c::9c10:b4b4] or [::1].</p>
HP OO Port	<p>The port number used to communicate with HP Operations Orchestration, such as 8443. By default, HP Operations Orchestration uses this port and port 8080.</p> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;"> <p>Caution: You should ensure that port 8080 is not being used on the system where you install HP Helion Codar and the embedded HP Operations Orchestration. If this port is used, then HP Operations Orchestration flows will not work properly.</p> </div>

Field	Description
HP OO User	The name of the user who logs in to HP Operations Orchestration Central. HP recommends that you use the <code>admin</code> user. If you followed all the steps documented in the <i>Install HP Operations Orchestration</i> section of this guide, this is the <code>admin</code> user.
HP OO Password	The password used to log in to HP Operations Orchestration Central.
HP OO Certificate File	The file name and location of HP Operations Orchestration's certificate from HP Operations Orchestration's truststore on the HP Helion Codar system. If you have not already done so, export HP Operations Orchestration's certificate and copy it to the HP Helion Codar system.

Note: This information is used to set the HP Operations Orchestration properties in the `codar.properties` file and import HP Operations Orchestration's certificate into HP Helion Codar's truststore.

- If you are installing embedded HP Operations Orchestration, choose a location and click **Next**.
- Configure an internal HP Operations Orchestration user and click **Next**. This user is used for provisioning topology designs.

Field name	Description
HP OO User Name	The name of the user for provisioning topology designs. This user is given the <code>ADMINISTRATOR</code> and <code>SYSTEM_ADMIN</code> roles.
HP OO User Password	The password used by HP Operations Orchestration for the user who provisions topology designs.

- Enter the database information for the database used by the embedded HP Operations Orchestration and click **Next**. The database used by the embedded HP Operations Orchestration must be the same type of database used by HP Helion Codar.

Field name	Description
MSSQL, Oracle, or PostgreSQL Database Host	The hostname or IP address of the server where the embedded HP Operations Orchestration database is located.
MSSQL, Oracle, or PostgreSQL Database Port	The embedded HP Operations Orchestration database port number, such as 1433 (Microsoft SQL Server), 1521 (Oracle), or 5432 (PostgreSQL).

Field name	Description
HP OO Database Name or Oracle HP Operations Orchestration SID	The name of the database instance used by the embedded HP Operations Orchestration. For an Oracle database, this is the System ID (SID).
HP OO Database Username	The user name of the database user you configured for the HP Operations Orchestration database in appropriate database configuration section of this guide.
HP OO Database Password	The password for the HP Operations Orchestration database user.

18. Review your selections and click **Install** to complete the installation.

19. You may be asked to restart your system.

Click **Yes, restart my system** to restart your system when you exit the installer.

Click **No, I will restart my system myself** to restart your system at a more convenient time.

20. Click **Done** to exit the installer.

21. Verify that the HP Helion Codar services have started by navigating to **Control Panel > Administrative Tools > Services**. The service may take up to five minutes to start. If the service has not started, right-click on the service and select **Start**.

The installer creates the HP Helion Codar services. If you opted to install the HP Helion Codar database components, the installer also starts these services. The HP Helion Codar service must be running before you can access the Management Console.

Install HP Helion Codar on Linux

Configure a group and user

Configure a group and user for HP Helion Codar:

1. Log in to the system as the root user.
2. Create a group called codargrp. Enter the following:

```
addgroup codargrp (Ubuntu)
groupadd codargrp (Red Hat Enterprise Linux)
```

3. Create a user called codaruser and assign this user to the codargrp. Enter the following:

```
adduser -g codargrp-m codaruser (Ubuntu)
useradd -g codargrp-m codaruser -s /bin/bash (Red Hat Enterprise Linux)
```

4. Assign a password to the codaruser. Enter the following:

```
passwd codaruser
```

When prompted, enter the password.

Install HP Helion Codar

Note: Installation log files are written to the `$CODAR_HOME/_HELION_Codar_1_00_0_installation/Logs/` directory and are named `codar_*.txt`.

To install HP Helion Codar, complete the following steps.

1. Log in to the system as the root user.
2. Install the unzip utility if it is not already installed. Enter the following:

```
apt-get install unzip
```

3. Create an installation directory for HP Helion Codar (this document assumes that you will install the product in `/usr/local/hp/codar` and all examples used in this document are based on this assumption). Enter the following:

```
mkdir -p /usr/local/hp/codar
```

4. For the installation directory, set the owner to codaruser and the group to codargrp. Enter the following:

```
chown -R codaruser:codargrp /usr/local/hp/codar
```

5. Log out as the root user and log in as codaruser.
6. Copy the HP Helion Codar installation file (`setup.bin`) to the system and go to the directory in which it has been copied.
7. Verify that `setup.bin` is owned by codaruser and that this user has full permissions for the file. If necessary, do the following:

- a. Log in as the root user

- b. Enter one or both of the following commands:

```
chown codaruser setup.bin  
chmod u+rx setup.bin
```

- c. Log out as the root user and log in as codaruser.

- d. Check the values of the `CODAR_HOME`, `PS1`, and `TITLEBAR` environment variables. If they are set, verify that they do not contain any escape sequences. If any of these variables contain an escape sequence, the variable will cause the installer to fail. The variable must either be reset to a value that does not contain an escape sequence or must be unset.

8. Run the `setup.bin` installation file.

Note: You must run `setup.bin` as the codaruser. If you install as another user, you may not be able to run HP Helion Codar.

As the codaruser, enter the following:

```
./setup.bin
```

9. Read the Introduction and press **Enter** to continue with the installation.
10. Read the license agreement. Press **Enter** to scroll through the entire agreement.
11. Select **Y** and **Enter** to accept the license agreement and continue with the installation. Select **N** press **Enter** to exit the installation.

If the following error message displays:

```
Another version of HP Helion Codar is configured in the registry. However,  
HP Helion Codar has been uninstalled (the HP Helion Codar installation
```

directory `$CODAR_HOME` does not exist). You must exit the installer and delete the entry in the registry before installing HP Helion Codar. Refer to the *HP Helion Codar Installation Guide* for more information about deleting the registry entry.

exit the installer. Locate the `$HOME/.com.zerog.registry.xml` file (for example, `/home/codaruser/.com.zerog.registry.xml`), make a backup copy, delete all HP Helion Codar entries from the `.com.zerog.registry.xml` file, and restart the installer.

12. Select HP Helion Codar and press **Enter**.
13. Enter a location in which to install HP Helion Codar (enter the absolute path to the location) and press **Enter**. Or, press **Enter** to accept the default location.

The default location is `/usr/local/hp/codar`.

Note: If the directory in which you choose to install HP Helion Codar is not empty, existing content in the directory may be overwritten or deleted when HP Helion Codar is installed, upgraded, or uninstalled.

If prompted, verify the installation folder. If the folder is correct, select **Y** and **Enter** to continue with the installation. If the folder is not correct, select **N** and **Enter** to re-enter the installation folder.

14. Choose the JRE that will be used by HP Helion Codar.

In this documentation, the directory in which the JRE is installed will be referred to as `$CODAR_JRE_HOME`.

For a list of supported JREs, refer to the *HP Helion Codar System and Software Support Matrix*, available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

OpenJDK JRE

The OpenJDK JRE is bundled with HP Helion Codar. If you want to use the OpenJDK JRE, type **1** and press **Enter**.

The default location in which the OpenJDK JRE is installed is `/usr/local/hp/codar/openjre`.

Oracle JRE

If you have installed a supported version of Oracle JRE to be used by HP Helion Codar, type **2** and press **Enter**. Type the location in which you installed this JRE and press **Enter**.

The default location displayed for the Oracle JRE Home is either a supported JRE that is configured in the system registry or a supported JRE in a path that is defined in the system path

variable. If this is not the JRE that should be used by HP Helion Codar, type in the location in which you installed the JRE that will be used by HP Helion Codar and press **Enter**.

15. Define the database instance on which the HP Helion Codar database components should be installed. Enter the following database information (press **Enter** after each entry).

- a. Enter the type of database you have installed: MSSql (Microsoft SQL Server), Oracle, or Postgres (PostgreSQL).

For an Oracle database, you must also enter the **JDBC Driver Directory**. This is the absolute directory path to the location of the JDBC drivers (these are the JDBC drivers you downloaded onto the HP Helion Codar system). For a list of supported JDBC driver versions, refer to the *HP Helion Codar System and Software Support Matrix*, available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

- b. Enter the database hostname. This is the hostname or IP address of the server where the database is located. When specifying an IPv6 address, it must be enclosed in square brackets. For example, `[f000:253c::9c10:b4b4]` or `[::1]`. The default value is the IP address of the localhost (127.0.0.1).
- c. Enter the database port. This is the database port number, such as 1433 (Microsoft SQL Server), 1521 (Oracle), or 5432 (PostgreSQL).
- d. Enter the database name. This is the name of the database instance on which the HP Helion Codar database schema will be installed. If you are creating a new HP Helion Codar database schema, this is the name of the database instance on which the HP Helion Codar database components will be installed. If you are using an existing HP Helion Codar database schema that was created as part of a prior successful installation of HP Helion Codar version HP 1.00, this is the name of the database instance on which the HP Helion Codar database schema already exists.

If you followed the examples in this document, enter **codardb**.

- e. Enter the Helion Codar database user name. This is the user name of the database user you configured for HP Helion Codar in the appropriate database configuration section of this guide.

If you followed the examples in this document, enter **codardbuser**.

- f. Enter the Helion Codar database password. This is the password for the Helion Codar database user.

16. Install HP Helion Codar database components onto the database instance to create the HP Helion Codar database schema, if it does not already exist.

Type **yes** to install HP Helion Codar database components and create the HP Helion Codar database schema. When you select this option, the HP Helion Codar process automatically starts when you exit the installer.

Type **no** if you are using an existing HP Helion Codar database schema that was created as part of a prior successful installation of HP Helion Codar version 1.00. When you select this option, the HP Helion Codar process does not start when you exit the installer. Refer to the end of this section for information on how to start and stop the HP Helion Codar service.

17. Enter the HP Helion Codar server host name. This is the **fully-qualified domain name of the system on which you are installing HP Helion Codar**. The fully-qualified domain name is used to generate the self-signed SSL certificate which is used when https browser requests are issued for HP Helion Codar. This self-signed certificate expires 120 days after HP Helion Codar is installed.

Caution: If you enter an IP address, after installation completes, you must manually generate a self-signed certificate using the fully-qualified domain name of the system on which you installed HP Helion Codar and manually reconfigure HP Helion Codar to use this certificate.

18. By default, HP Single Sign-On (HP SSO) is included with HP CSA and is enabled. The HP SSO that is included with HP CSA can only be used when launching an application, such as HP Operations Orchestration or HP IT Executive Scorecard, from the Cloud Service Management Console. Refer to the HP Cloud Service Automation Configuration Guide and HP SSO documentation for more information on integrating HP SSO with an application.

If you do not want to use HP SSO, you can disable it. Type 2 and select Enter.

To enable HP SSO, type 1 and select Enter. Enter the Domain name of the network to which the server belongs (the server on which you are installing HP CSA) and select Enter.

Note: You must enter the full domain name of the server. For example, if you are installing HP CSA on a system whose fully-qualified domain name is machine1.marketing.xyz.com, you must enter marketing.xyz.com. If you enter only xyz.com, you will not be able to log in to the Cloud Service Management Console.

Applications launched from the Cloud Service Management Console with which you want to use HP SSO must be installed on systems that belong to this domain.

19. Specify if you want to install the embedded (new) HP Operations Orchestration instance with HP Helion Codar or if you are integrating with an external (existing) instance of HP Operations Orchestration.

Select **1** and **Enter** to integrate with an external (existing) instance of HP Operations Orchestration. Select **2** and **Enter** to install the embedded HP Operations Orchestration.

20. Define the HP Operations Orchestration instance with which HP Helion Codar is to be integrated. Enter the following information (press **Enter** after each entry).

- a. Enter the HP OO host name. This is the fully-qualified domain name or IP address of the server where HP Operations Orchestration is located. Specify the hostname that was used to generate the HP Operations Orchestration certificate. The hostname is used for SSL validation and to build the URL that the Management Console uses to interact with HP Operations Orchestration (for example, in the subscription event overview section of the **Operations** area in HP Helion Codar, selecting the Process ID opens HP Operations Orchestration to the detailed page of the selected process when these properties are configured).

When specifying an IPv6 address, it must be enclosed in square brackets. For example, [f000:253c::9c10:b4b4] or [::1].

- b. Enter the HP Operations Orchestration port. This is the port number used to communicate with HP Operations Orchestration, such as 8443. By default, HP Operations Orchestration uses this port and port 8080.

Caution: You should ensure that port 8080 is not being used on the system where you install HP Helion Codar and the embedded HP Operations Orchestration. If this port is used, then HP Operations Orchestration flows will not work properly.

- c. Enter the HP Operations Orchestration user name. This is the name of the user who logs in to HP Operations Orchestration Central. HP recommends that you use the `admin` user. If you followed all the steps documented in the *Install HP Operations Orchestration* section of this guide, this is the `admin` user.
- d. Enter the HP Operations Orchestration password. This is the password used to log in to HP Operations Orchestration Central.
- e. Re-enter the HP Operations Orchestration password.
- f. Enter the HP Operations Orchestration certificate file. This is the file name and location of HP Operations Orchestration's certificate from HP Operations Orchestration's truststore on the HP Helion Codar system. If you have not already done so, export the HP Operations Orchestration certificate and copy it to the HP Helion Codar system (see the *Install HP Operations Orchestration Initial Setup* section in this guide for more information).

Note: This information is used to set the HP Operations Orchestration properties in the `codar.properties` file and import HP Operations Orchestration's certificate into HP Helion Codar's truststore. Refer to the *HP Helion Codar Configuration Guide* for more information about these properties.

21. Enter a location in which to install the embedded HP Operations Orchestration.
22. Enter the database information for the database used by the embedded HP Operations Orchestration (press **Enter** after each entry). The database used by the embedded HP Operations

Orchestration must be the same type of database used by HP Helion Codar (Microsoft SQL Server, Oracle, or PostgreSQL).

- a. Enter the database hostname. This is the hostname or IP address of the server where the embedded HP Operations Orchestration database is located.
 - b. Enter the database port. This is the embedded HP Operations Orchestration database port number, such as 1433 (Microsoft SQL Server), 1521 (Oracle), or 5432 (PostgreSQL).
 - c. Enter the HP OO database name or Oracle HP OO SID. This is the name of the database instance used by the embedded HP Operations Orchestration. For an Oracle database, this is the System ID (SID).
 - d. Enter the database user name. This is the user name of the database user you configured for the HP Operations Orchestration database.
 - e. Enter the database password. This is the password for the HP Operations Orchestration database user.
23. Configure an internal HP Operations Orchestration user (select **Enter** after each entry). This user is used for provisioning topology designs.
- a. Enter the HP Operations Orchestration user name. This is the name of the user used for provisioning topology designs. This user is given the ADMINISTRATOR and SYSTEM_ADMIN roles. The recommended user name is **admin**.
 - b. Enter the HP Operations Orchestration password. This is the password used by HP Operations Orchestration for the user who provisions topology designs. The recommended password is **cloud**.
24. Review your selections and press **Enter** to complete the installation or **Ctrl-C** to exit the installation.
25. When the installation completes, press **Enter** to exit the installer.
26. If you selected to use the OpenJDK JRE with HP Helion Codar and installed HP Helion Codar on a system running a headless Ubuntu Linux version 14, install the **Standard Java or Java-compatible Runtime** package. Enter the following:

```
apt-get install default-jre
```

27. Define the CODAR_HOME and JAVA_HOME environment variables and add /sbin to the PATH variable for the codaruser user. Set CODAR_HOME to the location where HP Helion Codar is installed. In a startup script for the codaruser user (for example, .profile (Ubuntu) or .bash_profile (Red Hat Enterprise Linux)), add the following:

```
export CODAR_HOME=/usr/local/hp/codar
export JAVA_HOME=$CODAR_JRE_HOME
export PATH=$PATH:/sbin
```

where `$CODAR_JRE_HOME` is the directory where the JRE used by HP Helion Codar is installed.

28. Source the startup file in which you set the `CODAR_HOME`, `JAVA_HOME`, and `PATH` environment variables. If you edited `.bashrc` (Ubuntu) or `.bash_profile` (Red Hat Enterprise Linux), enter the following:

```
. ~/.bashrc (Ubuntu)
. ~/.bash_profile (Red Hat Enterprise Linux)
```

29. Create an HP Helion Codar service to start and stop the HP Helion Codar processes.

- a. Log in as the root user.
- b. Go to the directory in which HP Helion Codar is installed. For example:

```
cd /usr/local/hp/codar
```

- c. Copy the `codar` script to the `/etc/init.d` directory. Enter the following:

```
cp ./scripts/codar /etc/init.d
```

- d. Change permissions of the scripts. Enter the following:

```
chmod 755 /etc/init.d/codar
```

- e. Log out as the root user.

30. Log in as `codaruser` and start the HP Helion Codar service. Enter the following:

```
service codar start
```

The HP Helion Codar service must be running in order to access HP Helion Codar. You can use the following commands:

```
service codar start
```

```
service codar restart
```

```
service codar stop
```

```
service codar status
```


Post-installation database configuration

The following steps are required for either Oracle or Microsoft SQL Server, after you have installed HP Helion Codar.

Configure Oracle tablespace

Configure the Oracle tablespace you created for HP Helion Codar only if you are installing HP Helion Codar for the first time and there is no data in the CSA_DOCUMENT table. The tablespace must have been created before HP Helion Codar is installed and then must be configured immediately after HP Helion Codar is installed.

Work with the database administrator to perform the following (or refer to the manufacturer's documentation for more information):

Modify the CSA_DOCUMENT table such that LOB segments are stored in the tablespace. For example:

```
ALTER TABLE CSA_DOCUMENT
  MOVE LOB(content)
  STORE AS (TABLESPACE <new_tablespace>);
```

Configure Microsoft SQL Server filegroup

Configure the Microsoft SQL server filegroup you created for HP Helion Codar only if you are installing HP Helion Codar for the first time and there is no data in the CSA_DOCUMENT table. The filegroup must have been created before HP Helion Codar is installed and then must be configured immediately after HP Helion Codar is installed.

Work with the database administrator to perform the following (or refer to the manufacturer's documentation for more information):

1. Drop all constraints from the CSA_DOCUMENT table.
2. Drop the CSA_DOCUMENT table.
3. Recreate the CSA_DOCUMENT table and associate it with the filegroup.
4. Recreate the constraints for the CSA_DOCUMENT table.

Configure HP Operations Orchestration

The HP Helion Codar solution includes a number of HP Operations Orchestration flows that perform HP Helion Codar operations.

- If you installed embedded HP Operations Orchestration, see "[Configure embedded HP Operations Orchestration](#)" below.
- If you installed external HP Operations Orchestration, see "[Configure external HP Operations Orchestration](#)" on page 41.

Configure embedded HP Operations Orchestration

Complete the following tasks to configure the embedded HP Operations Orchestration to integrate successfully with HP Helion Codar (if you are configuring an exclusive stand-alone HP Operations Orchestration, you do not need to complete these tasks):

- "[Add a JRE to the system path](#)" on the next page
- "[Configure internal users](#)" on the next page
- "[Deploy required content packs](#)" on page 36
- "[Verify deployed content packs](#)" on page 37
- "[Deploy the HP Operations Orchestration and component tool content packs](#)" on page 38
- "[Set up system accounts for the HP Helion Codar content pack](#)" on page 39
- "[Set up system properties for the HP Helion Codar content pack](#)" on page 40

Note: In the following instructions, %CODAR_HOME% is the directory in which HP Helion Codar is installed and %ICONCLUDE_HOME% or \$ICONCLUDE_HOME is where you installed HP Operations Orchestration.

Be sure all the latest patches for HP Operations Orchestration have been installed. See the *HP Helion Codar System and Software Support Matrix* for more information, available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Add a JRE to the system path

The HP Helion Codar flows that are imported require that a JRE be included in the system path on the system running HP Helion Codar.

1. Open the **Environment Variables** dialog:
 - a. Right-click **Computer** and select **Properties**.
 - b. Select **Advanced System Settings**.
 - c. Click **Environment Variables**.
2. Select the **Path** system variable.
3. Click **Edit**.
4. At the end of the value for **Variable value**, add a semicolon (;) and the following path:

```
$CODAR_JRE_HOME\bin
```

where \$CODAR_JRE_HOME is the folder where the JRE used by HP Helion Codar is installed. .

5. Click **OK** and close all windows.

Open a shell and enter the following command:

```
export PATH=$PATH:$CODAR_JRE_HOME/bin
```

where \$CODAR_JRE_HOME is the folder where the JRE used by HP Helion Codar is installed.

Note: By setting the system path, all applications (that require a JRE) use the JRE that is installed with HP Helion Codar (if it is the only path or the first path set to a JRE in the system path). If you need to run another JRE with an application, you must type in the relative path to that JRE in order to run it (for example, when you configure SSL).

Configure internal users

Internal users can be used to configure HP Operations Orchestration for HP Helion Codar.

1. Log in to HP Operations Orchestration Central.
2. Click the **System Configuration** button.
3. Select **Security > Internal Users**.

4. Click **Add**.
5. Enter the following information:

Field	Recommended Value
User Name	codarouser
Password	cloud
Roles	ADMINISTRATOR, SYSTEM_ADMIN

The codarouser user is used to import the HP Operations Orchestration flows. When importing flows, this user is configured in the HP Operations Orchestration input file used by the process definition tool.

6. Click **Save**.
7. Enable authentication by selecting the **Enable Authentication** check box.
8. Click **OK** in the confirmation dialog.
9. Verify that the admin user has been configured. If the admin user is not configured, do the following:
 - a. Enter the following information:

Field	Recommended value
User Name	admin
Password	cloud
Roles	ADMINISTRATOR, SYSTEM_ADMIN

- b. Click **Save**.
 - c. Enable authentication by selecting **Enable Authentication**.
 - d. Click **OK** in the confirmation dialog.
10. Log out of HP Operations Orchestration Central and log back in as the codarouser.

Deploy required content packs

There are three sets of content packs that should be deployed for HP Helion Codar: the base HP Operations Orchestration content packs, the HP Helion Codar component tool content packs, and the HP Helion Codar content pack.

The base HP Operations Orchestration and HP Helion Codar component tool content packs were

deployed automatically when you installed HP Helion Codar. If these content packs failed to deploy during installation, you must deploy them manually.

The HP Helion Codar content pack **MUST** be manually deployed. The HP Helion Codar content pack must be deployed after the base HP Operations Orchestration content packs have been deployed.

Verify deployed content packs

To verify that the HP Operations Orchestration and component tool content packs were successfully deployed during installation, do the following:

1. Log in to HP Operations Orchestration Central.
2. Click the **Content Management** button.
3. Click the **Content Packs** tab.
4. Look for the names and versions of content packs in the list. If a content pack is missing, follow the instructions below to manually deploy it.

The content packs that should have been automatically deployed are:

- CSA-VMWARE
- CSA-SITESCOPE
- CSA-SA
- CSA-HP-HELION-PUBLIC-CLOUD
- CSA-HP-CONFIG
- CSA-CHEF
- CSA-AMAZON
- SM
- SA
- Virtualization
- HP Solutions
- Cloud
- Base
- EXISTING-INFRASTRUCTURE
- CSA-Docker

Deploy the HP Operations Orchestration and component tool content packs

If one or more of the base HP Operations Orchestration or HP Helion Codar component tool content packs are not deployed, you must deploy them manually:

1. Log in to HP Operations Orchestration Central.
2. Click the **Content Management** button.
3. Click the **Content Packs** tab.
4. From HP Operations Orchestration Central, click the **Content Management** button.
5. Click the **Content Packs** tab.
6. Click the **Deploy New Content** icon.
7. In the Deploy New Content dialog, click the **Add files for deployment** icon.
8. Navigate to the %CODAR_HOME%/oo/ooContentPack/ directory. From the subdirectories, select a content pack and click **Open** then **Deploy**. Select, open, and deploy the following base content packs in the order shown below:
 - oo10-base-cp-1.1.1
 - oo10-cloud-cp-1.1.0
 - oo10-hp-solutions-cp-1.1.2
 - oo10-virtualization-cp-1.1.0
 - oo10-sa-cp-1.0.2
 - oo10-sm-cp-1.0.1

Note: Do not deploy the HP Helion Codar content pack until after you have deployed the base content packs. The HP Helion Codar content pack must be deployed separately and after you have deployed the base content packs.

The deployment may take a few minutes and the dialog will show a progress bar.

When the deployment succeeds, click **Close** to close the dialog.

9. Click the **Deploy New Content** icon.
10. Click the **Add files for deployment** icon.

11. Navigate to the %CODAR_HOME%/Tools/ComponentTool/contentpacks/ folder, select all the content packs, and click **Open**.

12. Click **Deploy**.

The deployment may take a few minutes and the dialog will show a progress bar.

13. When the deployment succeeds, click **Close** to close the dialog.

Deploy the HP Helion Codar content pack

The HP Helion Codar content pack must be deployed after you have deployed the HP Operations Orchestration content packs.

1. Log in to HP Operations Orchestration Central.
2. Click the **Content Management** button.
3. Click the **Content Packs** tab.
4. Click the **Deploy New Content** icon.
5. Click the **Add files for deployment** icon.
6. Navigate to the %CODAR_HOME%\CSAKit-4.2\00 Flow Content\10X directory and select the following content packs:
 - CODAR-cp-1.00.0000.jar
 - CSA-HPOO-cp-4.20.0000.jar
 - oo10-csa-cp-4.20.0000.jar
7. Click **Open**.
8. Click **Deploy**.

The deployment may take a few minutes and the dialog will show a progress bar.

9. When the deployment succeeds, click **Close** to close the dialog.

Set up system accounts for the HP Helion Codar content pack

Set up system accounts for the HP Helion Codar content pack:

1. Log in to HP Operations Orchestration Central.
2. Click the **Content Management** button.
3. Select **Configuration Items > System Accounts**.
4. Click the **Add** icon.
5. Enter the following information if it is not already configured:

Field	Recommended value
System Account Name	CODAR_REST_CREDENTIALS
User Name	oolnboundUser
Password	cloud

Note: The **User Name** configured for the CODAR_REST_CREDENTIALS System Account setting must match the **Property Value** (HP Operations Orchestration version 9.07) or **Override Value**(HP Operations Orchestration version 10.20) configured for the CODAR_OO_USER System Property setting.

6. Click **Save**.

Set up system properties for the HP Helion Codar content pack

Set up the following system properties for the HP Helion Codar content pack:

1. Log in to HP Operations Orchestration Central.
2. Click the **Content Management** button.
3. Select **Configuration Items > System Properties**.
4. Click the **Add** icon.
5. Enter the following information if it is not already configured:

Field	Recommended Value
Name	CODAR_REST_URI
Override Value	https://<codar_hostname>:8444/csa/rest

6. Click **Save**.

Configure external HP Operations Orchestration

Complete the following tasks to configure HP Operations Orchestration to integrate with HP Helion Codar:

- "Add a JRE to the system path" below
- "Install the HP Helion Codar content packs" on the next page
- "Configure internal users" on page 43
- "Deploy content packs required by HP Helion Codar" on page 44
- "Set up system accounts for the HP Helion Codar content pack" on page 45
- "Set up system properties for the HP Helion Codar content pack" on page 46

Note: In the following instructions, %CODAR_HOME% is the directory in which HP Helion Codar is installed and %ICONCLUDE_HOME% or \$ICONCLUDE_HOME is where you installed HP Operations Orchestration.

Be sure all the latest patches for HP Operations Orchestration have been installed. See the *HP Helion Codar System and Software Support Matrix* for more information, available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Add a JRE to the system path

The HP Helion Codar flows that are imported require that a JRE be included in the system path on the system running HP Helion Codar.

For Windows:

1. Open the **Environment Variables** dialog:
 - a. Right-click **Computer** and select **Properties**.
 - b. Select **Advanced System Settings**.
 - c. Click **Environment Variables**.
2. Select the **Path** system variable.
3. Click **Edit**.

4. At the end of the value for **Variable value**, add a semicolon (;) and the following path:

If HP Operations Orchestration and HP Helion Codar are installed on the same system:

```
%ICONCLUDE_HOME%\java\bin
```

or

If HP Operations Orchestration and HP Helion Codar are installed on different systems:

```
<codar_jre>\bin
```

5. Click **OK** and close all windows.

For Linux:

Open a shell and enter the following command:

If HP Operations Orchestration and HP Helion Codar are installed on the same system:

```
export PATH=$PATH:$ICONCLUDE_HOME/java/bin
```

or

If HP Operations Orchestration and HP Helion Codar are installed on different systems:

```
export PATH=$PATH:$CODAR_JRE_HOME/bin
```

Note: By setting the system path, all applications (that require a JRE) use the JRE that is installed with HP Operations Orchestration or HP Helion Codar (depending on the path you configured and if it is the only path or the first path set to a JRE in the system path). If you need to run another JRE with an application, you must type in the relative path to that JRE in order to run it (for example, when you configure SSL).

Install the HP Helion Codar content packs

- Copy the %CODAR_HOME%\OO Flow Content\10X\oo10-csa-cp-4.20.0000-uuids.txt file to:

Windows

```
%ICONCLUDE_HOME%\central\cmu\exclusions
```

Linux

```
$ICONCLUDE_HOME/central/cmu/exclusions
```

- If HP Helion Codar and HP Operations Orchestration are running on different systems, copy the following content packs from %CODAR_HOME%\OO Flow Content\10X\ on the HP Helion Codar system to the HP Operations Orchestration system, where %CODAR_HOME% is the directory in which HP Helion Codar is installed:

- CODAR-cp-1.00.0000.jar
- CSA-HPOO-cp-4.20.0000.jar
- oo10-csa-cp-4.20.0000.jar

Configure internal users

Internal users can be used to configure HP Operations Orchestration for HP Helion Codar.

1. Log in to HP Operations Orchestration Central.
2. Click the **System Configuration** button.
3. Select **Security > Internal Users**.
4. Click the **Add** button.
5. Enter the following information:

Field	Recommended value
User Name	codarouser
Password	cloud
Roles	ADMINISTRATOR, SYSTEM_ADMIN

The codarouser user is used to import the HP Operations Orchestration flows. When importing flows, this user is configured in the HP Operations Orchestration input file used by the process definition tool.

6. Click **Save**.
7. Enable authentication by selecting the **Enable Authentication** check box.
8. Select **OK** in the confirmation dialog.
9. Enter the following information:

Field	Recommended value
User Name	admin
Password	cloud
Roles	ADMINISTRATOR, SYSTEM_ADMIN

10. Click **Save**.
11. Enable authentication by selecting **Enable Authentication**.
12. Click **OK** in the confirmation dialog.
13. Log out of HP Operations Orchestration Central and log back in as the codarouser.

1. Log in to HP Operations Orchestration Central.
2. Click the **System Configuration** button.
3. Select **Security > Internal Users**.
4. Click the **Add** button.
5. Enter the following information:

Field	Recommended Value
User Name	codarouser
Password	cloud
Roles	ADMINISTRATOR, SYSTEM_ADMIN

The codarouser user is used to import the HP Operations Orchestration flows. When importing flows, this user is configured in the HP Operations Orchestration input file used by the process definition tool.

6. Click **Save**.
7. Enable authentication by selecting the **Enable Authentication** check box.
8. Select **OK** in the confirmation dialog.
9. Log out of HP Operations Orchestration Central and log back in as the codarouser.

Deploy content packs required by HP Helion Codar

The HP Helion Codar content packs must be deployed after you have deployed the base HP Operations Orchestration content packs.

1. From HP Operations Orchestration Central, click the **Content Management** button.
2. Click the **Content Packs** tab.
3. Click the **Deploy New Content** icon.

4. In the Deploy New Content dialog, click the **Add files for deployment** icon.
5. Click the **Deploy New Content** icon.
6. Click the **Add files for deployment** icon.
7. Navigate to the %CODAR_HOME%\CSAKit-4.2\OO Flow Content\ 10X directory and select the following content packs:
 - CODAR-cp-1.00.0000.jar
 - CSA-HPOO-cp-4.20.0000.jar
 - oo10-csa-cp-4.20.0000.jar
8. Click **Open**.
9. Click **Deploy**.

The deployment may take a few minutes and the dialog will show a progress bar.

10. When the deployment succeeds, click **Close** to close the dialog.

Set up system accounts for the HP Helion Codar content pack

Set up system accounts for the HP Helion Codar content pack:

1. Log in to HP Operations Orchestration Central.
2. Click the **Content Management** button.
3. Select **Configuration Items > System Accounts**.
4. Click the **Add** icon.
5. Enter the following information if it is not already configured:

Field	Recommended value
System Account Name	CODAR_REST_CREDENTIALS
User Name	oolnboundUser
Password	cloud

Note: The **User Name** configured for the CODAR_REST_CREDENTIALS System Account setting must match the **Property Value** (HP Operations Orchestration version 9.07) or **Override Value**(HP Operations Orchestration version 10.20) configured for the CODAR_OO_USER System Property setting.

6. Click **Save**.

Set up system properties for the HP Helion Codar content pack

Set up the following system properties for the HP Helion Codar content pack:

1. Log in to HP Operations Orchestration Central.
2. Click the **Content Management** button.
3. Select **Configuration Items > System Properties**.
4. Click the **Add** icon.
5. Enter the following information if it is not already configured:

Field	Recommended Value
Name	CODAR_REST_URI
Override Value	https://<codar_hostname>:8444/csa/rest

6. Click **Save**.

Install VMware vCenter

Install vCenter according to the manufacturer's recommendations. For example, follow the VMware best practices for managing individual ESX servers from a vCenter instance. You can find the VMware documentation at <http://www.vmware.com/support/pubs/>.

You must have a vCenter instance that can support the flows that actuate vSphere VMs. See *HP Helion Codar System and Software Support Matrix* for version requirements.

Both the *HP Helion Codar Management Console Help*, which is available in a printable PDF format, and the *HP Helion Codar System and Software Support Matrix* are available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Install HP Server Automation

Install HP Server Automation to the correct version and patch level. See *HP Helion Codar System and Software Support Matrix* for version requirements.

You can determine your version and patch level by using the HP Server Automation Client and selecting **Help > About**.

Installation notes:

- You can use the DHCP services included with HP Server Automation. For information on configuring a DHCP server with HP Server Automation, see *HP Server Automation Simple/Advanced Installation Guide*.
- The HP Server Automation Client should be installed on the HP Operations Orchestration server.
- The HP Server Automation Client does not register right away after installation. A delay occurs before you can continue with configuration.

HP software product documentation is available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Configure HP Server Automation

The following tasks are required to configure HP Server Automation to allow read and write access to the required areas:

- ["Create the HP Helion Codar service account" below](#)
- ["Create the HP Helion Codar administrators group and assign permissions" on the next page](#)
- ["Validate the Helion Codar service account" on page 50](#)
- ["Validate the HP Server Automation client" on page 51](#)

Create the HP Helion Codar service account

1. Open the HP Server Automation Web Client in a browser.
2. Log in using the HP Server Automation Administrator user name and password (created when the HP Server Automation server was installed).
3. Click **Administration > Users & Groups**.

4. Click **New User** in the Users tab toolbar and complete the following fields using the values listed in the following table:

Field Name	Value
Last Name	Service Account
First Name	CSA
Full Name	CSA Service Account
Email Address	<your email address>
User Name	hpcsa
Password	<password>

5. Select **Superusers** from the Group Membership list to enable this option.
6. Click **Save**.
7. Click **Log Out**.

Create the HP Helion Codar administrators group and assign permissions

1. Open the HP Server Automation Web Client in a browser.
2. Log in using the HP Server Automation Administrator user name and password.
3. Click **Administration > Users & Groups**.
4. Select the **Groups** tab.
5. Click **New Group** and complete the following fields using the values listed in the following table:

Field Name	Value
Group Name	hpcsa-admin
Group Description	HPCSA Administrators
Not Assigned	Read & Write
Opware	Read

6. Click **Save**.

7. Select **hpsca-admin** in the list of groups.
8. Select the **Users** tab and add the **admin** and **hpsca** users to the hpsca-admin group.
9. Click **Save**.
10. Select the **Facilities** tab and select **Read & Write** to the appropriate facility.
If only one facility exists, select **Read & Write** for it.
11. Click **Save**.
12. Select the **Features** tab and click **Select All** in the header row to select all features.
13. Click **Save**.
14. Select the **Client Features** tab and change all values to **Read & Write** and **Yes** where applicable.
15. Click **Save**.
16. Select the **Other** tab and select all options *except* **Generate Security Reports**.
17. Click **Save**.
18. Select the **OGFS Permissions** tab, click **Add Permissions**, and enter the following permissions:
 - **Features:** Select **Run Command on Server**.
 - **Servers:** Click the **Customers** option and select **Not Assigned** from the list.
 - **Login Names:** Select **Opware user name**, and select **Log in as** and enter root.
19. Click **Grant**.
20. Click **Add Permissions** and enter the following permissions:
 - **Features:** Select **Launch Global Shell**.
21. Click **Grant**.
22. Click **Log Out**.

Validate the Helion Codar service account

1. Open the HP Server Automation Web Client in a browser and verify that the login screen appears.
2. Log in using the Helion Codar Service Account credentials you created in the previous steps.

3. Verify that the HP Server Automation Web Client home page is displayed. A list of tasks and jobs is shown.
4. Click the **Managed Servers** option on the left side of the screen and verify that a list of servers with their IP addresses and operating system information is displayed.
5. Click **Log Out** and close the Web browser.

Validate the HP Server Automation client

1. Connect to the system where HP Operations Orchestration is installed.
2. Verify that the client is installed.
 - If an icon appears on the desktop labeled HP Server Automation Client or a link appears in the Start Menu, the client is installed. Continue to step 3.
 - If neither the icon nor the Start Menu link appear, then you need to install the client by performing the following steps:
 - i. Open the HP Server Automation Web Client in a browser and select **Download Opsware Launcher** at the login screen.
 - ii. Install the client using the default parameters.

You must have a JRE installed in order to use the Opsware Launcher on a Windows system.

3. Launch the client with the following credentials:
 - **Username:** hpcsa
 - **Password:** <hpcsa password>
 - **Core Server:** <SA Server Host Name>

The above login information may vary depending on your installation.

4. Verify that the HP Server Automation application starts and Device Groups appear in the left hand navigation pane.
5. Click **All Managed Servers** and verify that a list of servers with their names, IP addresses, and operating system information is displayed.
6. Exit the client.

Prepare VMware template

These steps prepare a VMware template to self-register with HP Server Automation.

Virtual machines (VMs) created by the HP Helion Codar solution are created based on virtual machine templates. The HP Helion Codar flows reference a vSphere template name, and perform a clone operation to provision new virtual machines. These templates would generally provide an operating system image only, with no application software installed.

To allow applications (such as Apache) to be deployed to the image, you must install and configure HP Server Automation and create a template that includes the HP Server Automation Agent software. That is, in order to manage the virtual server and to install application software, the clones are configured to self-register upon power-on with an HP Server Automation system. Once registered as a managed server, software policies are applied to the server in order to install and configure the correct applications. Refer to the *HP Server Automation Policy Setter Guide* and the *HP Server Automation Application Deployment User Guide* in the HP Server Automation documentation for more information on managing servers and configuring software policies. HP software product documentation is available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Template preparation overview

For cloned virtual machines to register with the HP Server Automation system upon power-on, prepare a template with an HP Server Automation agent. The following is a general outline of the steps to be performed:

- First, create a virtual machine with the appropriate operating system image that you would like to template. Provision the VM with an operating system through any method supported by vSphere:
 - Manually install the operating system on a prepared, configured VM.
 - Provision the operating system through a network boot operation from the HP Server Automation system.

Refer to the appropriate vSphere documentation to create a new virtual machine with an installed operating system image.

- When preparing a virtual machine as a template to be used to clone many new virtual machines, leave the configuration as generic as possible. No hostname can be configured, and the network configuration can be obtained via DHCP.
- Install and test the appropriate VMware Tools on the virtual machine.
- Install the HP Server Automation agent. The agent registers the template with the HP Server Automation system so that this machine is in a Managed state for the next step.
- An APX utility in the HP Server Automation system library is run to prepare the agent on the virtual machine to re-install and register with the HP Server Automation system on the next bootup.
- The virtual machine is shut down and converted to a template.
- Delete the virtual machine server record from the HP Server Automation system.

Detailed process

Refer to the vSphere documentation set for detailed information on the creation, configuration, and operating system installation for a new virtual machine. There are several options to install an operating system onto a new virtual machine. One of the options available is to use the PXE network boot facility from the HP Server Automation server, with an operating system installation profile that integrates the installation of an HP Server Automation agent. A virtual machine which is provisioned using this method starts the agent upon bootup, and attempts to register it with the HP Server Automation system.

If you use another method to provision an operating system on the virtual machine, the HP Server Automation agent can be installed from the HP Server Automation system. You can refer to the product documentation for an expanded discussion of this process; the following instructions describe one method.

Provision an operating system on a virtual machine

1. Boot the virtual machine and make sure that it is connected to the network. Verify that the HP Server Automation (HP SA) system can be reached.
2. Discover the virtual machine in the **Unmanaged Servers** (HP SA 9.x) or **SA Agent Installation** (HP SA 10.x) window in HP Server Automation. You can scan an entire subnet or enter the IP address for the virtual machine and initiate a scan to discover it.
3. Select the virtual machine, right-click, and then select **Manage Server** (HP SA 9.x) or **Install SA Agent** (HP SA 10.x). A new dialog opens.
4. Provide the appropriate login credentials, and select the action to verify prerequisites, copy installer, and install the agent. Set any desired Installer Options at this time, referring to the HP Server Automation documentation for details.
5. Click **OK**.

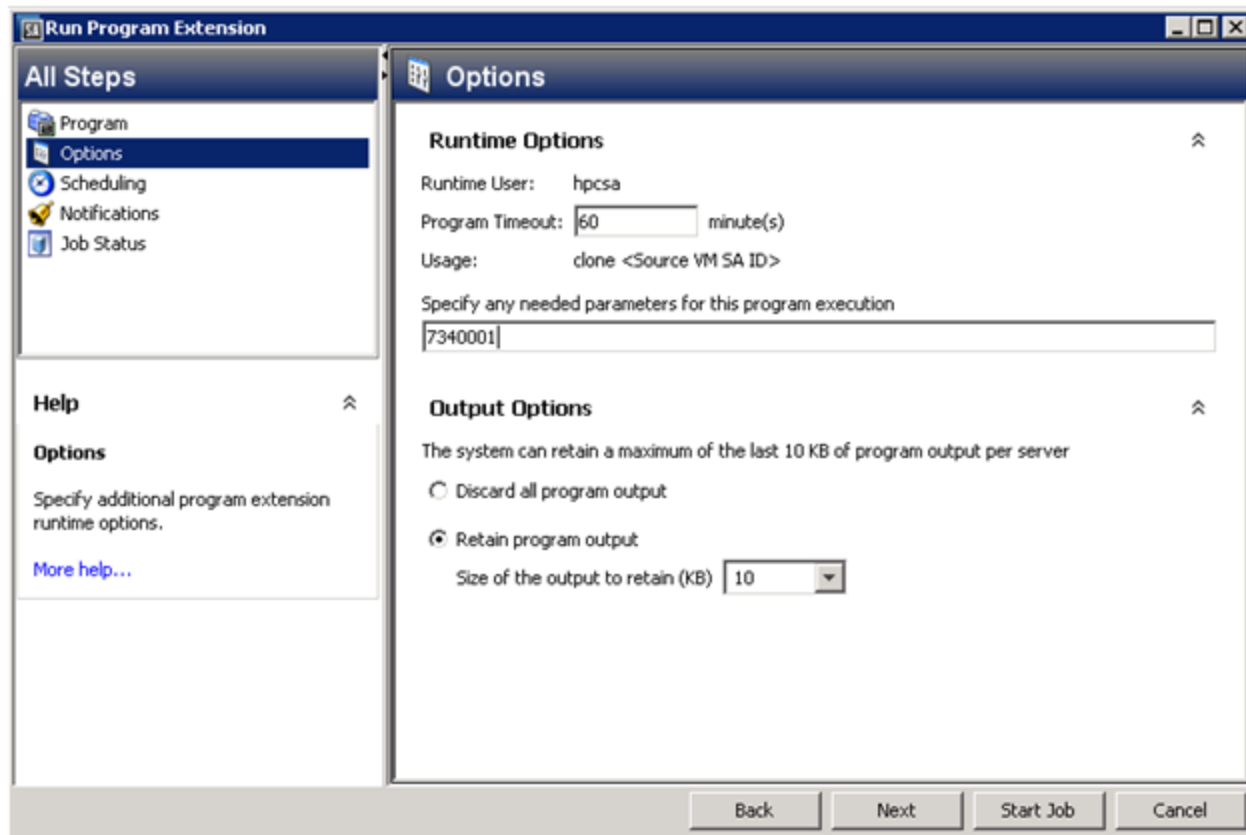
When the installation process completes successfully, the agent is installed, and the virtual machine is visible in the **All Managed Servers** tab. The hostname has not been set, as we plan to convert this virtual machine to a generic template. So, the default host name is used for the virtual machine.

6. From the **Server Information Properties** tab, select the virtual machine and press **Enter**.
7. Select **Properties**.
8. Record the **Object ID** of the virtual machine, which can be found in the Management Information section of the Properties panel.

Sanitize the agent configuration on a template machine

The agent on our virtual machine template must be prepared to install and register a new machine server with HP Server Automation each time we create a new clone. To prepare the agent we must sanitize the agent configuration on our template machine by doing the following:

1. Switch to the **Library** tab in the HP Server Automation client.
2. Expand the **Extensions** folder.
3. Select **Program**.
4. Locate the **BRDC HPSA agent sanitizer** Automation Platform Extension (APX).
5. Execute the BRDC HPSA agent sanitizer APX:
 - a. Right-click the APX and select **Run**.
 - b. Select the **Options** tab in the Run Program Extensions dialog.
 - c. In the **Specify any needed parameters for this program execution** field, enter the **Object ID**, which you previously obtained for the virtual server template:



- d. Click **Start Job**.

- e. Shut down the virtual machine after the job completes successfully and the agent has been prepared.

Do not reboot this virtual machine again until after it has been converted to a vSphere template.

- f. Using the vSphere client, convert this virtual machine to a template.
- g. The last step is to clean up the server records for the virtual machine template from HP Server Automation. In the All Managed Servers tab:
 - i. Deactivate the server.
 - ii. Delete the server.

The template is now ready to use to clone new virtual machines. HP Helion Codar uses a simple customization template that sets the hostname equal to the VM name. Additional customization is possible during the clone operation. See the *Basic Customization* section below.

When a newly cloned virtual machine powers up, the HP Server Automation Agent installs and then contacts the HP Server Automation system to self-register. Shortly after power on, you can refresh the All Managed Servers view in the HP Server Automation client to locate the new virtual machine record.

Basic customization

Perform the following basic customizations:

1. On the vCenter environment click **View > Management > Customization Specifications Manager**.
2. Click the **New** icon.
3. Select Windows or Linux for your Target Virtual Machine OS. You can create one of each.
4. If you are creating a Windows target, name it useVmName_Windows. If you are creating a Unix target, name it useVmName_Linux.
5. Customize as appropriate, noting two important items:
 - On the screen with the NetBIOS Name you must choose **Use the virtual machine name**.
 - If the virtual machine name exceeds 15 characters, it will be truncated.

Install the prepared template

The template must be installed on the system containing the vSphere client software. See *Configure VMware vCenter* for more information.

Consult the vSphere documentation for additional details. You can find the VMware documentation at <http://www.vmware.com/support/pubs/>.

Configure VMware vCenter

Configure VMware vCenter by installing prepared templates. In the vSphere environment, a template is a master copy of a virtual machine that can be used to create many clones. A clone is a copy of a virtual machine.

You can learn more about creating templates and working with clones in vSphere by referring to VMware's *vSphere Virtual Machine Administration Guide for vCenter Server* (EN-000312-02), available in the VMware documentation. You can find the VMware documentation at <http://www.vmware.com/support/pubs/>.

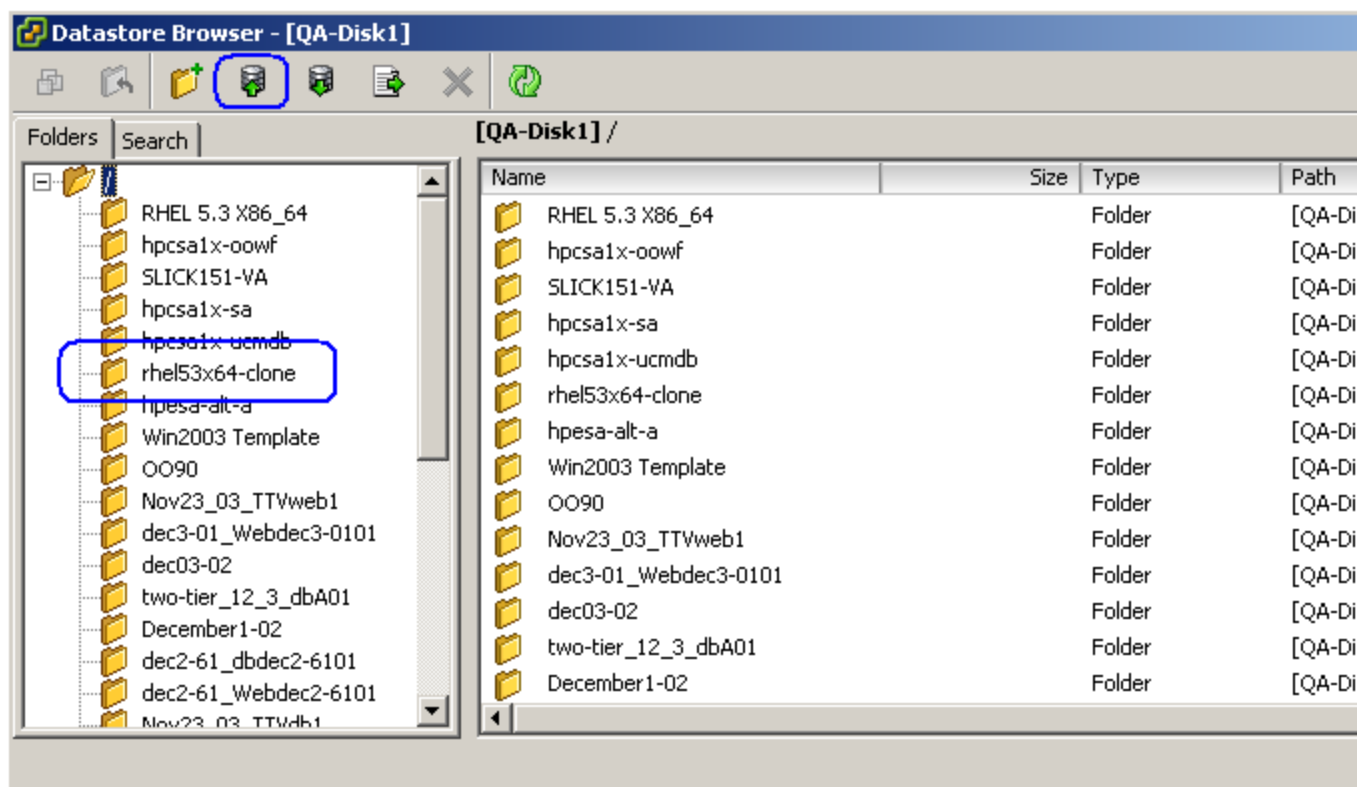
Virtual machines created by the HP Helion Codar solution are created based on virtual machine templates. To allow applications (such as Apache) to be deployed to the image, you must create a template that includes HP Server Automation Agent software. See *Prepare a VMware Template to Self-Register with HP Server Automation* for more information.

To install a prepared template, do the following:

1. Locate a prepared template.
2. Copy the template folder to the system containing the vSphere client software.
3. From your vSphere client software menu, select **View > Inventory > Datastores** to see a list of available datastores on your vCenter server.
4. Right-click one of the available datastores and select **Browse Datastore** to see the directory structure of that datastore.
5. Copy the template folder to the datastore by clicking on the **Upload files to this datastore** button.

The following image shows the Datastore Browser window with **Upload files to this datastore**

highlighted. It also shows a `rhel53x64-clone` folder that was uploaded to this datastore:



Consult the vSphere documentation for additional details. You can find the VMware documentation at <http://www.vmware.com/support/pubs/>.

Install HP SiteScope

Install HP SiteScope to the correct version and patch level. See *HP Helion Codar System and Software Support Matrix* for version requirements.

Installation notes:

- Do not install HP SiteScope on the HP Operations Orchestration server. It must be on its own server.
- Calculate the resources needed for the HP SiteScope server using the information in the HP SiteScope documentation. This calculation should include the number of target servers that you expect Helion Codar to monitor.
- During installation, you can change the port for the HP SiteScope service to avoid potential conflicts with other web servers that use the default port value of 8080. Select any available port on the system and keep track of the port number that you select.

HP software product documentation is available on the HP Software Support web site at <http://h20230.www2.hp.com/selfsolve/manuals/>. This site requires that you register with HP Passport.

Configure HP SiteScope

The following tasks are required to configure HP SiteScope to integrate successfully with HP Helion Codar:

- ["Enable HP Helion Codar to configure HP SiteScope monitors" below](#)
- ["Auto-deploy the HP Helion Codar templates and credential profiles" on the next page](#)
- ["Manually import additional HP Helion Codar templates" on the next page](#)
- ["Configure HP Helion Codar credential profiles" on page 60](#)
- ["Configure HP SiteScope administrator credentials" on page 60](#)

Enable HP Helion Codar to configure HP SiteScope monitors

HP SiteScope is installed with a default of secured API calls required for configuring monitors. HP Helion Codar does not support secured API calls; therefore, you must change this setting. To re-configure HP SiteScope so it does not use secure APIs, you must make the following change to the configuration:

1. Stop the HP SiteScope service by typing the following command in a console window:

```
net stop SiteScope
```

2. Open the HP SiteScope <sitescopeInstallDir>\groups\master.config file in a text editor.
3. Change the _accessControlled=true property value to _accessControlled=false.
4. Restart the HP SiteScope service by typing the following command in a console window:

```
net start SiteScope
```

Auto-deploy the HP Helion Codar templates and credential profiles

1. Log in to the HP SiteScope server as Administrator.
2. Log in to the HP Helion Codar server.
3. From the HP Helion Codar server, copy the %CODAR_HOME%\CSAKit-4.2\Lib\sitescope\CSA templates autoimport.tpl file to the <sitescopeInstallDir>\persistency\import directory on the HP SiteScope server. When the CSA templates autoimport.tpl file is processed, HP SiteScope creates a template container (CSA templates) and two credential profiles (WINDOWS-CSA-TARGETS and LINUX-CSA-TARGETS).
4. Log in to the HP SiteScope Dashboard.
5. Select the **Templates** context. In the template tree, look for the CSA templates container. You must wait for the HP SiteScope server to finish processing the CSA templates autoimport.tpl file before the CSA templates template container is displayed.
6. Select **Preferences** context > **Credential Preferences** and look for the WINDOWS-CSA-TARGETS and LINUX-CSA-TARGETS credential profiles, which you will configure in [Step 4: Configure HP Helion Codar Credential Profiles](#).

Manually import additional HP Helion Codar templates

Two additional HP Helion Codar templates, CSA templates Silver and CSA templates Gold, must be manually imported. These templates are used by the CSA_BP_VCENTER_COMPUTE_SITESCOPE_MODIFY_v1.00.00 service design.

1. Log in to the HP SiteScope Dashboard.

Note: You must be able to access files in the %CODAR_HOME%\CSAKit-4.2\Lib\sitescope directory from the HP SiteScope Dashboard. If necessary, copy this directory to the system from which you are launching the HP SiteScope Dashboard.

2. Select the **Templates** context.
3. In the template tree, right-click **SiteScope** and select **Import**.
4. Browse to %CODAR_HOME%\CSAKit-4.2\Lib\sitescope (or the directory to which this directory was copied) and import CSA templates Silver.tpl.
5. Repeat steps 3 and 4, but import CSA templates Gold.tpl.

Configure HP Helion Codar credential profiles

Configure the credentials used to log in to every Windows system and every Linux system monitored by HP SiteScope. The credentials to all Windows systems must be the same. Likewise, the credentials to all Linux systems must be the same.

1. Log in to the HP SiteScope Dashboard.
2. Select **Preferences** context > **Credential Preferences**.
3. Edit the **LINUX-CSA-TARGETS** credential profile and supply login credentials for your Linux environment.
4. Edit the **WINDOWS-CSA-TARGETS** credential profile and supply login credentials for your Windows environment.

Configure HP SiteScope administrator credentials

Configure the credentials used to log in as the administrator of HP SiteScope. These credentials are used by HP Helion Codar when configuring HP SiteScope resource providers from the Management Console.

1. Log in to the HP SiteScope Dashboard.
2. Select **Preferences** context > **User Management Preferences**.
3. Right-click **SiteScope Administrator** and select **Edit User**.
4. If not already specified, enter a login name and password for the HP SiteScope administrator.

Configure resource providers

HP recommends that you follow this procedure to create two resource providers. These resource providers should be associated with two different data centers which are associated with two different environments, likely named Development and Testing.

To configure a resource provider,

1. Open HP Helion Codar at `https://<ipaddress>:<port>/csa`

Where <ipaddress> is the IP address or host name of the HP Helion Codar server, and <port> is the port number, which is 8444 by default.

2. Log in as the administrator. The default user name is **admin** and the default password is **cloud**.
3. Click the Providers tile.
4. Under All Providers on the left, select the provider type that will be used for application deployment.
5. Click **Create** and enter details for the resource provider you will use for application deployment.
6. After the provider has been created, select the Properties tab and provide the values for the properties that are defined for the provider type.

For example, if the provider chosen is the vCenter provider, you might create a property named `DATACENTERNAME` with the value `DEVELOPMENT`.

7. Return to the main Providers screen and choose By Environment in the drop-down field in the upper right corner of the screen.
8. Click **Create your first Resource Environment**.
9. Enter details for the resource environment.

The resource environment you enter here should be the same as the Environment you entered in Configure the plug-in.

10. Click **Select Resource Providers**.
11. Add the provider you created and then click **Save**.

Apply HP Helion Codar licenses

After installation is complete, apply a HP Helion Codar permanent license. You can then apply a HP Cloud Service Automation permanent license, if desired. After a HP Cloud Service Automation license is installed, you would be able to use all of HP Helion Codar and HP Cloud Service Automation features.

The following license types are available:

- HP Helion Codar permanent license only.
- HP Cloud Service Automation permanent license only.

If you install HP Cloud Service Automation, then you must add an HP Cloud Service Automation license first; if you install HP Helion Codar, then you must install an HP Helion Codar license first.

OSI capacity

The number of operating systems you can use in active applications or subscriptions is known as the OSI capacity. If you have HP Cloud Service Automation and HP Helion Codar licenses, then the OSI capacity is the lowest of the two. Here's an example: I have an HP Cloud Service Automation license with 100 OSI and an HP Helion Codar license with 50 OSI, so my OSI capacity is 50.

Jenkins

Jenkins is optional, but you must install Jenkins and dependencies if you intend to use the sample design, and it is required for .

You should consult product documentation for installation and usage instructions.

Using Jenkins with HP Helion Codar requires the following dependencies:

- Collabnet Subversion Edge: collab.net/support/documentation
- TortoiseSVN: tortoisesvn.net/support.html
- Maven: maven.apache.org/guides/index.html
- Jenkins: jenkins-ci.org/

Install the JDK

Install the JDK version 1.7x on the Jenkins server.

Install Collabnet Subversion Edge

Download and install a version appropriate to your system from collab.net/downloads/subversion.

Install Tortoise

Download and install the latest version from tortoisesvn.net. Use the default settings.

After installation, you will see new options when you right-click a file or folder in Windows Explorer.

Install the Maven plugin

Download and install Maven from maven.apache.org.

The following steps are for Jenkins version 1.583:

1. Make sure the JDK and Maven are installed.
2. Go to the Jenkins URL.

3. Click **Manage Jenkins**.
4. Click **Configure System**.
5. In the JDK section, click **Add JDK**.
6. Enter the name and path for JAVA_HOME.
7. Deselect **Install automatically**.
8. In the Maven section, click **Add Maven**.
9. Enter the name and path for MAVEN_HOME.
10. Deselect **Install automatically**.
11. Enter the value for MAVEN_OPTS.
12. Click **Save**.

Install Jenkins

Download the Windows installer for Jenkins from jenkins-ci.org.

After installation, you should access the Jenkins server at <http://localhost:8080> to validate the installation.

Install the HP Helion Codar Jenkins plug-in

1. Log in to the Jenkins Dashboard in a browser at <http://<host>:<port>/>, substituting the host and port information appropriate for your Jenkins environment.
2. Click **Manage Jenkins** from the Dashboard
3. Click the **Manage Plugins**.
4. Select the Advanced tab.
5. In the Upload Plugin section, browse to select the following file:

Hewlett-Packard\Codar\CSAKit-4.2\Content Archives\topology\Jenkins plugin\HP_Helion_Codar.hpi
6. Click **Upload**.
7. Select the Installed tab and verify that the HP Helion Codar plug-in was installed.

Enable the plug-in

1. Click **Manage Jenkins** from the Dashboard.
2. Click **Configure System**.
3. Scroll down to the HP Codar Application Deployment section of the Configure System page and select the **Enable** checkbox.
4. Click **Save**.

Configure the Pet Clinic sample application project

1. Check in the source code for the Pet Clinic project into the SVN server.

You can download the PetClinic folder from the HP Helion Codar FTP site. See Downloading HP Helion Codar for information on how to access the site. The file is in the HP Helion CODAR Beta 1.0.0\Content\4_Sample_Content_Source_Code directory at the FTP site.
2. Create a new PetClinic project in the Jenkins server using option **Build a maven2/3 project**.
3. Click the **PetClinic** link on the Jenkins Dashboard, and then click the **Configure** link on the page that opens.
4. Configure SVN for Source Code Management for the PetClinic project by choosing the **Subversion Modules** option and adding the SVN PetClinic source code URL in the Repository URL field.
5. After saving, update the SVN credentials like this:

Source Code Management

- CVS
 CVS Projectset
 None
 Subversion

Modules

Repository URL
Local module directory (optional)
Repository depth
Ignore externals

Check-out Strategy

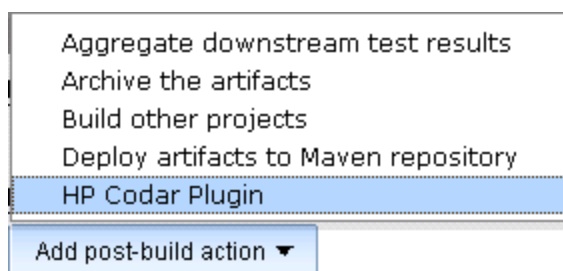
Repository browser

6. Configure Jenkins to automatically trigger a build if any code is checked-in by selecting the **Poll SCM** checkbox and adding `*/* * * * *` as the schedule.
7. 6. Scroll down to and click Add post-build action, select **Archive the artifacts**, and then enter `*/*.war, target/classes/*/*.sh` in the Files to archive text box.

Configure the plug-in for the Pet Clinic sample application

Configure the plugin for Pet Clinic projects:

1. Click the PetClinic link on the Jenkins Dashboard, and then click the Configure link on the page that appears.
2. Click **Add post build action** and select **HP Codar Plugin**.



3. Enter the HP Helion Codar plug-in properties as is applicable:
 - **HostName** – The host name or IP address of the server on which HP Helion Codar is installed.
 - **Port** – The port number on which the HP Helion Codar application is listening.
 - **Username** – The name of a user that has HP Helion Codar administrative privileges.
 - **Password** – The password for the HP Helion Codar user.

Caution: Do not use the default HP Helion Codar admin user because this might be a security issue. After installing Codar and configuring LDAP, add a user to the Application Architect role. Use the credentials for that user here.

- **Application Design Location** – The relative path and file name, from the source repository URL, of the application design JSON file for the application to be deployed by HP Helion Codar (for example, `designs\PetClinicApp.json`).

Note: See Access REST APIs for steps to get the JSON using REST APIs that will be checked into the Application Design Location as files.

- **Environment** – The environment in HP Helion Codar in which the provider that is to be used for deployment is contained.

Note: The environment value is mandatory if you want to use HP Helion Codar for continuous deployment.

- Package properties – Specify the component properties of the design that will be parameterized within the Build. The input to this field should be specified in the format component1id:property1id:property1value,component1id:property2id:property2value,component2id:property3id:property3value where
 - componentxid – The id of the component in the application design. This can be obtained from the Application design Json's file. For e.g for a Petclinic application component it could be : PetClinic_Application__VERSION__1__GROUPEID__com.hp.csa.type0001.
 - propertyxid – The id of the property within the component. This can be obtained from the Application design Json's file. For e.g for a artifacturl property within Petclinic application it could be : artifacturl_a36 .
 - propertyxvalue – The value of the property that need to be parameterized. If its a jenkins build output artifact the url of the artifact will be automatically computed and value will represent the complete http url from which this artifact can be downloaded. For e.g to specify the Jenkins build artifact for petclinic it could be : petclinic.war.
 - For example: PetClinic_Application__VERSION__1__GROUPEID__com.hp.csa.type0001:artifacturl_a36:petclinic.war
- Extended Properties File – Optionally enter the name of the properties file. This property need to be specified only when the user wants to specify a different CI process than what is provided by default. This properties file can specify a different OO flow containing necessary CI logic . User can specify a different flow id by creating a property file with key as uuid and value as the uuid of OO flow. For example, uuid=asdaasdasdsdasdad99f.

You can also specify the required properties to this flow as key value pairs in this property file.

- NodeId – Enter the component ID for which you want to extract component properties. These component ids can be obtained from the Application design JSON file which has been exported. Multiple components are specified by seperating those with comma.

For example, you may want to retrieve an IP address and host name of the VCenter component (VcenterServerType__VERSION__04.20.0000__GROUPEID__com.hp.csa.type0002) to run tests on the provisioned server

- Httpusername – Enter the user name for accessing artifacts from HTTP location. For ex it can be username of Jenkins Server
- HttpPassword – Enter the password for accessing artifacts from HTTP location. For ex it can be password of Jenkins Server
- SSLCertificatePath – Enter SSL Certificate Path for Codar and pickup the certificate from CODAR setup. It will be in the machine where Codar is installed in the path - \Hewlett-Packard\Codar\IA-openjre\lib\security\cacerts

- CertificatePassword – Enter SSL Certificate Keystore Password for Codar. By default it is "changeit"

Sample Pet Clinic extended properties file

This has to be changed to following

```
## Properties accessed by the ARA API to invoke OO flows.

##This properties file contains the oo flow id(uuid) as well as the relevant
parameters to be passed to the oo flow.

##Dynamic properties can be specified by <<propert>> prefixing and suffixing
with angular brackets. These properties

## will be substituted with the value passed in JSON input.

csaTruststore=C:/codar/cacerts

#uuid of the oo flow. This flow contains the necessary logic for the Continuous
integration process.

#uuid=377898bc-d92e-4e6a-b542-718539fdbcb9a

#Specify the artifacts that are built by jenkins to manage it within ARA. These
artifacts would be dynamically obtained from jenkins and deployed via ARA.

##Format is
component1id:property1id:property1value,component1id:property2id:property2value,
component2id:property3id:property3value where

##where COMPONENT1id - represents the id of the component as displayed in the
design

## property1id - represents the property of the component which needs to be
dynamically replaced

##property1value - will represent the artifacts which need to be deployed.

##Sample

##Pet_Clinic_DB_Configuration_87424824_fdfd_485d_b392_7e5b58cadb1a_
320fb4ee61694fd9a4ea347537d08fcb__VERSION__1__GROUPEID__com.hp.csa.type.VMWARE_
VCENTER0001:artifacturl:petclinic.war

#The server node which needs to be queried for obtaining ip address. This is
relevant for Continuous Delivery where tests can be run against the provisioned
virtual machine via ip address.

#serverNodeId=VcenterServerType__VERSION__04.10.00000002

#componentid:propertyname:jenkinsout,componentid:propertyname:jenkinsout
```

Create a custom design

You can configure continuous deployment for custom applications by creating custom HP Operations Orchestration flows.

If a custom application in an enterprise needs continuous deployment users can create deployment scripts using Chef or HP Operations Orchestration. Those flows can be embraced (imported) as components in HP Helion Codar and used in the creation of an application design, which can then be exported from HP Helion Codar in JSON format and checked into the source repository. Jenkins can be configured for continuous build. When an application developer checks in the code, a Jenkins build is triggered and the application is deployed using an application model on a specific environment.

Import and configure sample designs

Sample application designs are installed with HP Helion Codar and must be imported before you can use them. You can find the designs in

\\Hewlett-Packard\Codar\CSAKit-4.2\Content Archives\topology\Codar

Import sample designs

Complete the following steps to import each of these designs:

1. Click the Designs tile in the Management Console to go to the main Topology Designs screen.
2. Click **Import**.
3. Select a sample application zip file and click **Import**.
4. Repeat these steps to import the other sample design zip files.

The topology designs for these applications should now be listed under All Designs in the main Topology Designs screen.

Configure sample designs

Each design includes a readme file with configuration instructions. These readme files can be found in the directory with the sample designs.

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Feedback on Installation and Configuration Guide (Helion Codar 1.00)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to CSAdocs@hp.com.

We appreciate your feedback!

