

# HPE Integration Bridge

Software Version: 1.10

## Installation Guide for Linux



**Hewlett Packard**  
Enterprise

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# HPE Integration Bridge overview

The HPE Integration Bridge is a software component installed on the customer system to mediate between Agile Manager and on-premise applications located behind firewalls, such as HPE ALM, enabling two-way communication between the two.

When you install the Integration Bridge, you install both an Integration Bridge application, and a service that manages the application. The service makes sure that the Integration Bridge is automatically started when your system starts.

## Integration Bridge system requirements

Verify that your system has the following minimum system requirements for *each Integration Bridge* you install:

|                         |   |
|-------------------------|---|
| <b>Operating system</b> | One of the following: <ul style="list-style-type: none"><li>• Red Hat Enterprise Linux 6.2, 6.3, 6.4, 6.5, 6.7, or 7.2 (64 Bit)</li><li>• SUSE Linux Enterprise 11 Service Pack 3</li></ul> |
| <b>CPU</b>              | Quad Core CPU   |
| <b>Memory (RAM)</b>     | 8 GB  |
| <b>Free disk space</b>  | 80 GB   |
| <b>Heap size</b>        | Maximum 4 GB  |



### Note:

- The Integration Bridge must be installed to a path named only with ASCII characters.
- We recommend not installing the Integration Bridge on the same Linux server as Agile Manager or ALM. Installing the Integration Bridge on the same server as one of these would cause severe competition for the same resources, impacting stability and performance.
- If you install the Integration Bridge as a root user, the installation includes the service as well. If you install the bridge using a non-root user, you will need to manually install the service as a root user.

## Integration Bridge tasks

To start using NextGen Synchronizer, download and install the Integration Bridge, and then define credentials for connecting to ALM.

For details, see:

- ["Download and install the bridge" on page 7](#)
- ["Manage connection setup" on page 15](#)

Continue by creating synchronization links in Agile Manager. For details, see the Agile Manager Help Center (**Help > Help on This Page**).

See the following maintenance topics as needed.

- ["Integration Bridge security" on page 12](#)
- ["Start and stop the Integration Bridge" on page 28](#)
- ["Uninstall/Remove the Integration Bridge" on page 29](#)
- ["Integration Bridge troubleshooting" on page 34](#)

# Download and install the bridge

Download the Integration Bridge from Agile Manager and install it on a computer that can access both Agile Manager and ALM. The bridge communicates with both applications, enabling data synchronization between the two.

See also ["Installing multiple bridges" on page 10](#).

## Prerequisites


- Make sure that you are assigned to the **Integration Administrator** role (**Site > Users** or **Workspace > Users** configuration page).
- Obtain a client ID and secret to enter during the Integration Bridge installation. The bridge uses these credentials to access Agile Manager.

On the **Integrations > API** configuration page, add an Integration Bridge client. For details, see the *Agile Manager User Guide*.

**Note:** This step must be performed by a Site Administrator.

Agile Manager generates a **client ID** and **secret** for the bridge.

## Download the bridge from Agile Manager

Click **Configuration**  on the top right of the page, and select **Integrations** from the navigation menu on the left.

Tab: Integrations > Synchronizer. This tab is visible to **Integration Administrators** only.



**Tip:** If you have just assigned yourself to the Integration Administrator role, you do not need to log out and log in again. Simply refresh your browser window to access the **Integrations** configuration area.

On the **Integrations > Synchronizer** configuration page, do one of the following:

| Installation   | Instruction   |
|--|---|
| <b>If this is the first time you are installing the bridge</b>             | In the checklist, click the link in the second step to download the bridge, according to your operating system. |
| <b>If you are installing an additional bridge or performing an upgrade</b> | Select <b>More Actions &gt; Download Integration Bridge &gt; Linux</b>  |

## Install the Integration Bridge

1. On the computer where you want to install the bridge, extract the downloaded zip file (**hpe-**

**integration-bridge-linux.zip**). You must extract this zip file to a path named only with English characters.

The zip file contains the following:

- The installation executable file.
  - A configuration file (**server-connection.conf**) containing the URL and site ID that the bridge will use to connect to Agile Manager.
  - The HPE Integration Bridge Installation Guide, in which you can find installation instructions and more.
  - An integrity verifier (**.bin.sig** file), used by HPE for signature verification when packaging the installation files.
2. In the folder containing the extracted files, run **chmod +x hpe-integration-bridge.bin** to obtain execution permissions on the installation file.
  3. Run the **hpe-integration-bridge.bin** file to begin the installation (CLI only)
  4. Follow the instructions in the installation process to complete the installation.

When provided, accept the default values, which are configured to connect to your workspace.

**Note:**

- The Integration Bridge must be installed to a path named only with ASCII characters, and must not contain consecutive spaces.
- If you select the **Modify an Existing Instance** option, the bridge you select is uninstalled. After uninstalling, run the installation again to install a new instance.





**Tip:**

- You can cancel the installation at any step by typing **quit**.
- You can return to a previous step in the installation process by typing **back**.



- In the step for configuring the connection to Agile Manager:

| Settings                                  | Description  |
|---|--|
| <b>Bridge name</b>                        | Define a name for the bridge.  |
| <b>URL</b>                                | <p>The URL of your Agile Manager site.</p> <p><b>Format:</b> http(s)://&lt;hostname or IP address&gt;:&lt;port number&gt;/agm</p> <p>This URL will be used in email notifications, such as to Integration Administrators and when creating URL attachments in ALM.</p> <div style="background-color: #e0f2f1; padding: 5px; border: 1px solid #ccc;"> <p> <b>Tip:</b> We recommend ensuring that this URL is accessible to email recipients and from the ALM client.</p> </div> <p>By default, this URL is provided for you, from the downloaded <b>server-connection.conf</b> file.</p> <div style="background-color: #ffe0b2; padding: 5px; border: 1px solid #ccc;"> <p> <b>Caution:</b> If you modify this URL, make sure not to end it with a slash (/).</p> </div> <p>It is stored in the <b>&lt;HPE Integration Bridge installation folder&gt;/product/conf</b> folder.</p> |
| <b>Site ID</b><br>(Read only)             | <p>The site ID of the Agile Manager site.</p> <p>You can find the site ID in your Agile Manager's URL, in the tenant ID attribute. For example: <b>TENANTID=123456789</b>.</p> <p>This is also stored in the <b>server-connection.conf</b> file.</p>   |
| <b>Client ID and Client Secret fields</b> | <p>The client ID and secret that Agile Manager generated on the <b>Integration &gt; API</b> page.</p> <p>If you need to modify these credentials later on, see <a href="#">"Set Agile Manager credentials" on page 24</a>.</p>   |
| <b>Proxy server</b>                       | <p>If you will be using a proxy server to access Agile Manager, select <b>Use proxy server</b>.</p> <p>Enter details for the proxy server and the user who will be logging into the proxy server:</p> <ul style="list-style-type: none"> <li>○ <b>Host.</b> A valid address for the proxy server.</li> <li>○ <b>Port.</b> A valid port number (integer, between 1-65535)</li> </ul> <p>For details about modifying the proxy credentials later, see <a href="#">"Configure a proxy for Agile Manager connections" on page 25</a>.</p>  |

After you enter this information, the connection to Agile Manager is tested. If the test fails, you can reenter the connection settings or continue the bridge installation and modify the credentials later.

- In the step for configuring the HPE Integration Bridge service, accept the default daemon name and port number, or modify as needed.



**Tip:** If you install multiple bridges, use a name that will help you associate the daemon with the corresponding bridge.

The daemon name must contain only ASCII characters, and must not contain square brackets (**[** and **]**).

5. When the installation is finished, the **Installation complete** message is displayed. Press **ENTER** to quit the installer.
6. If you performed the installation as a non-root user, you must manually install the Integration Bridge service as a root user:

```
<Bridge_installation_directory>/product/bin/HPEIntegrationBridge.sh install
```

7. If your Linux system supports GUI, the Endpoint Credentials Manager application opens automatically. Define credentials for connecting to ALM, as described in "[Manage connection setup](#)" on page 15.



**Note:** You must configure ALM credentials before you configure your links.

If the credentials manager does not open automatically, you can open it manually or configure the credentials using the CLI. For details, see "[Manage connection setup](#)" on page 15.

In Agile Manager, the new bridge is identified within a few moments. If you do not see your new bridge, refresh the page. From there, click **Create synchronization links** to start creating your links.

## Installing multiple bridges

Installing multiple bridges is necessary only in certain cases. For example:

- If you need to synchronize Agile Manager with ALM projects that reside on different networks.
- If you define a large number of synchronization links and you want to distribute the load between multiple bridges.
- If you install bridges for multiple Agile Manager sites. Each bridge communicates with one site.

In this case, you must download each bridge separately, from the site with which it will communicate. The downloaded files contain the configuration necessary for the bridge to connect to the relevant site.

Recommendations if you install multiple bridges:

- Use a separate set of Agile Manager credentials (client ID and secret) for each bridge.
- Instead of using the default installation folder, provide a name that helps identify the bridge. For example, if you install multiple bridges to communicate with multiple Agile Manager sites, include the site name in the installation folder name.

# Integration Bridge security

The Integration Bridge does not expose any internal information. Additionally, HPE application JAR files are signed by HPE, helping to validate the code's origin.

In this topic:

- ["Communication with Agile Manager using OAuth authentication" below](#)
- ["Communication via SSL" below](#)
- ["Connections using a certificate that is not signed by a well-known Certificate Authority" below](#)
- ["Password encryption" on the next page](#)
- ["Security recommendations" on the next page](#)
- ["Integration Bridge automatic upgrades" on page 14](#)

## Communication with Agile Manager using OAuth authentication

The Integration Bridge can use OAuth authentication when connecting to Agile Manager, instead of using the credentials of an Agile Manager user.

All new Integration Bridge installations use OAuth authentication.

Existing bridges upgraded to version 1.03 or later continue to use Agile Manager user credentials until the password expires or until you manually update the bridge to use OAuth.

For details, see "Synchronizer Integration Bridge: New way to connect to Agile Manager", in the "What's New in 2.50" section of the *Agile Manager Help Center*.

## Communication via SSL

Communication between the Integration Bridge and Agile Manager is secured by SSL.

The bridge logs in to Agile Manager using the Agile Manager user credentials or client ID and secret provided during installation, or later as described in ["Set Agile Manager credentials" on page 24](#).

## Connections using a certificate that is not signed by a well-known Certificate Authority

If you connect to a secured ALM server using a certificate that is not signed by a well-known Certificate Authority, you must establish trust for the certificate.

To establish this trust, import the issuer's certificate to the JRE's truststore in the following directory:

**<Integration Bridge installation directory>/product/util/3rd-party/jre1.7.0\_51/jre/lib/security/**

Do the following:

1. With Agile Manager or ALM open in your browser window, export the certificate from the browser, and save it to a file named **server.cer**.

2. On the Integration Bridge machine, place the **server.cer** file in the **<Integration Bridge installation>/product/util/3rd-party/jre1.7.0\_51/jre/bin** directory.
3. Use the keytool command from the **<Integration Bridge installation>/product/util/3rd-party/jre1.7.0\_51/jre/bin** directory to import the **server.cer** file to the **<Integration Bridge installation>/product/util/3rd-party/jre1.7.0\_51/jre/lib/security/cacerts** directory.

**For example:**

```
./keytool -import -v -trustcacerts -alias tomcat -file s123.cer -storepass  
changeit -keystore <Integration Bridge installation>/product/util/3rd-  
party/jre1.7.0_51/jre/lib/security/cacerts
```

**Note:** You may need to repeat this command for the rest of the certificate chain, using a different alias each time.

4. Restart the Integration Bridge.

### Password encryption

Passwords for connecting to endpoints are encrypted and saved on the customer's machine, preventing credentials from being transferred to another machine.

The encryption method uses keys that are randomly generated during installation. The bridge uses AES 128 as the main encryption method.

### Security recommendations

| Security recommendations          |   |
|-----------------------------------|---|
| <b>Download sources</b>           | Do not download the Integration Bridge installation file or updates from unknown sources.   |
| <b>Integration Bridge machine</b> | Install the Integration Bridge on a dedicated, hardened machine.  |
| <b>Integration Bridge network</b> | Deploy the Integration Bridge in an isolated network, with a firewall between the bridge and the target on-premise application. <ul style="list-style-type: none"><li>• Port 443 must be open for communication with Agile Manager.</li><li>• Additional ports may be required to be opened for internal communications with other on-premise applications.</li></ul> |

| <b>Security recommendations</b>                |   |
|--|---|
| <b>Integration Bridge permissions</b>          | <p>The Integration Bridge runs using the permissions of the Linux user that installed it, and this user will have full read, write, and execute permissions on all of the folders and files installed with the bridge.</p> <p>Therefore, you may want to consider installing the Integration Bridge as a non-root user. If you do:</p> <ol style="list-style-type: none"><li>1. We recommend creating a dedicated user for managing the Integration Bridge. Use this user to <a href="#">install the bridge</a>, and to <a href="#">manage the bridge activation manually</a> when necessary.</li><li>2. Protect the following files by changing their owner to <b>root</b>:<ul style="list-style-type: none"><li>• <b>&lt;Integration Bridge installation&gt;/product/bin/HPEIntegrationBridge.sh</b></li><li>• <b>&lt;Integration Bridge installation&gt;/product/conf/wrapper.properties</b></li></ul></li></ol> |
| <b>Installing multiple Integration Bridges</b> | <p>If you install multiple bridges, we recommend that you use a separate set of Agile Manager credentials (client ID and secret) for each bridge.</p>   |
| <b>Integration Bridge user</b>                 | <p>The Agile Manager user with the Integration Bridge role should not have any other additional roles.</p>  |
| <b>On-premise application users</b>            | <p>When defining permissions for users of on-premise applications that communicate with Agile Manager, such as ALM users, limit permissions to specifically required operations only.</p>   |

### **Integration Bridge automatic upgrades**

When a new version of the Integration Bridge is available, it is automatically downloaded from Agile Manager. The HPE signature on the downloaded file is verified before the new version is installed.

# Manage connection setup

Credentials are used to provide secure, two-way communication between the Integration Bridge and Agile Manager or ALM.

## Endpoint Credentials Manager

If your Linux system supports GUI, the Endpoint Credentials Manager application opens automatically after installing the Integration Bridge. This application is used to manage ALM credentials.

**Note:**

You must set ALM credentials before synchronizing entities between Agile Manager and ALM, and modify them later on if these credentials change.

If the Endpoint Credentials Manager application does not open automatically, or if you need to modify credentials again later:

Navigate to the **<Bridge\_installation\_directory>/product/util/opb** directory.

- If your system supports GUI, run the following script to open the application manually: `credentials_mng_ui.sh`
- Otherwise, run the following script to modify the credentials using the console: `credentials_mng_console.sh`

This section includes the following:

## Set ALM credentials (Endpoint Credentials Manager)

Perform this procedure as a root user, or as the user who installed the Integration Bridge.



If you are working on a Linux machine that does not support GUI, set the ALM credentials using the Command Line Interface (CLI).

1. On the Integration Bridge machine, open the Endpoint Credentials Manager application as described above.
2. Click **\* New** to create a set of credentials.
3. Enter the credentials on the right, and then click **Save** .

| Field        | Description  |
|--------------|--|
| Display name | The name used to identify this particular credentials record when configuring a link in Agile Manager. |

| Field            | Description                                     |
|------------------|---|
| User             | The name of the user connecting to ALM.         |
| Password         | The password used to connect to ALM.            |
| Confirm password | Enter the password a second time to confirm it. |

Credentials are encrypted and stored on your system in the **credentialsStore.xml** and **bridgeCredentialStore.xml** files, located in the **<Bridge\_installation\_directory>/product/conf** folder.

- To update a credential record, select it and make your changes on the right. Then click  **Save**.
- To delete a credential record, select it, and click  **Delete**.

### Connecting to ALM using SiteMinder single sign-on (SSO)

If the Integration Bridge needs to connect to ALM using SiteMinder single sign-on (SSO):

- Configure SiteMinder to support basic authentication.
- You may need to change the CSSChecking parameter in the SiteMinder settings to allow the characters **>**, **<**, and **'** in URLs. Otherwise, SiteMinder may reject communication messages sent by NextGen Synchronizer and synchronizations may fail.

See also: ["Integration Bridge security" on page 12](#).

## Set ALM credentials (CLI)

Use the **credentials\_mng\_console** command line tool to set the credentials used to connect to ALM.

You must set ALM credentials before synchronizing entities between Agile Manager and ALM, and later on if these credentials change.

**Note:** Alternatively, set ALM credentials using the Endpoint Credentials Manager. For details, see ["Manage connection setup" on the previous page](#).

To open the **credentials\_mng\_console** command line tool:

1. Navigate to the **<Bridge\_installation\_directory>/product/util/opb** directory.
2. Run the **credentials\_mng\_console.sh** file.

The **credentials\_mng\_console** tool supports the following commands:

|                          |                     |                     |
|--------------------------|---------------------|---------------------|
| "list"                   | "listEndpointTypes" | "listCredentialIds" |
| "listEndpointTypeParams" | "create"            | "update"            |
| "delete"                 | "help"              |                     |



## list

Lists available credential records for connecting to ALM from the Integration Bridge.

### Usage

```
./credentials_mng_console.sh list -endpoint <ENDPOINT TYPE>
```

### Parameters

|  |   |
|--|---|
| <code>-endpoint &lt;ENDPOINT TYPE&gt;</code> | Endpoint type name, such as an ALM version (optional).<br><br>This type name must be a value available in the <code>"listEndpointTypes"</code> command. |
|--|---|

### Sample Results

```
=====  
Endpoint type : sample-endpoint-type-11.5  
ID : 9460b7  
Name : sample credentials record  
User : sample username  
Password : *****  
Parameters :  
Key | Value  
-----  
sample.secret.property | *****  
sample.url.property | 123
```

## listEndpointTypes

Lists available ALM endpoint types accessible to the Integration Bridge, such as ALM versions. You can filter the endpoints by type name.

### Usage

```
./credentials_mng_console.sh listEndpointTypes -endpoint <ENDPOINT TYPE>
```

### Parameters

|  |                               |
|--|-------------------------------|
| <code>-endpoint &lt;ENDPOINT TYPE&gt;</code> | Endpoint type name (optional) |
|--|-------------------------------|

## Sample Results

```
Endpoint types :  
1. alm
```

## listCredentialIds

Lists all ALM credential record IDs and the ALM endpoint type related to each credential ID.

## Usage

```
./credentials_mng_console.sh listCredentialIds -endpoint <ENDPOINT TYPE>
```

## Parameters

|  |   |
|--|---|
| <code>-endpoint &lt;ENDPOINT TYPE&gt;</code> | Endpoint type name, such as the ALM version (optional).<br><br>This type name must be a value available in the <a href="#">"listEndpointTypes"</a> command. |
|--|---|

## Sample Results

```
Endpoint type : alm-11.5  
Name | ID :  
1. sample credentials record name | 11e7  
=====
```

```
Endpoint type : sample-endpoint-type-11.5  
Name | ID :  
1. sample credentials record name | 21e0  
2. sample credentials record #2 name | 7e0
```

```
Endpoint type : alm-11.5  
Name | ID :  
1. sample credentials record name | 11e7  
=====
```

```
Endpoint type : sample-endpoint-type-11.5  
Name | ID :  
1. sample credentials record name | 21e0  
2. sample credentials record #2 name | 7e0
```

## listEndpointTypeParams

Lists the specific parameters required for saving credentials for each ALM endpoint type.

### Usage

```
./credentials_mng_console.sh listEndpointTypeParams -endpoint <ENDPOINT TYPE>
```

### Parameters

|  |  |
|--|--|
| <code>-endpoint &lt;ENDPOINT TYPE&gt;</code> | Endpoint type name, such as an ALM version (optional).<br><br>This type name must be a value available in the <a href="#">"listEndpointTypes"</a> command. |
|--|--|

### Sample Results

```
=====
Endpoint type   : sample-endpoint-type-11.5
Output format:
Parameter:
Label:
Description:
Mandatory:
-----
Endpoint type specific parameters:
Parameter: sample.url.property
Label: Server URL
Description: URL address for sample server
Mandatory: true
Parameter: sample.secret.property
Label: Secret key
Description: Secret key for sample server
Mandatory: false
```

## create

Creates a credentials record for accessing ALM from the Integration Bridge.

### Usage

```
./credentials_mng_console.sh create -file <path to data file> -user <USER> -pass  
<PASSWORD> -endpoint <ENDPOINT TYPE> -name <CREDENTIALS RECORD NAME> -param <KEY>  
<VALUE> -param <KEY> <VALUE>
```


### Usage example - generic

```
./credentials_mng_console.sh create -user <USER> -pass <PASSWORD> -endpoint sample-  
endpoint-type-11.5 -name <CREDENTIALS NAME> -param sample.url.property <PARAMETER_  
VALUE> -param sample.url.property <PARAMETER_VALUE>
```

### Usage example - ALM specific

```
./credentials_mng_console.sh create -user <USER> -pass <PASSWORD> -endpoint alm-11.5  
-name <CREDENTIALS NAME>
```

### Parameters

|   |   |
|---|---|
| <code>-file &lt;FILE&gt;</code>               | Read parameters from the <a href="#">property</a> file (optional).<br>Parameters will be overwritten if they are specified in the console.  |
| <code>-user &lt;USER&gt;</code>               | User name<br><br> <b>Tip:</b><br>Use an escape character (^ or \) before any non-ASCII characters in the name. |
| <code>-pass &lt;PASSWORD&gt;</code>           | Password  |
| <code>-endpoint &lt;ENDPOINT TYPE&gt;</code>  | Endpoint type name, such as an ALM version.<br>This type name must be a value available in the <a href="#">"listEndpointTypes"</a> command.   |
| <code>-name &lt;CREDENTIALS NAME&gt;</code>   | Credentials record name   |
| <code>-param &lt;KEY&gt; &lt;VALUE&gt;</code> | Custom parameters (optional)  |
| <code>-replace</code>                         | Replace all existing parameters with input parameters (optional)  |

The property file is a text file that describes the credential's properties. The file format is:

```
endpoint=<ENDPOINT TYPE>
name=<NAME>
user=<USER>
pass=<PASSWORD>
customParam1=value1
customParam2=value2
```

### Sample Results

```
endpoint=<ENDPOINT TYPE>
name=<NAME>
customParam1=value1
customParam2=value2
```

### update

Updates an existing credentials record for accessing ALM from the Integration Bridge.


### Usage

```
./credentials_mng_console.sh update -user <USER> -pass <PASSWORD> -credentialsId
<CREDENTIALS ID> -endpoint <ENDPOINT TYPE> -param <KEY> <VALUE> -param <KEY> <VALUE>
-replace
```

### Usage example

```
./credentials_mng_console.sh update -user <USER> -pass <PASSWORD> -credentialsId
<CREDENTIALS ID> -endpoint alm-11.5 -replace
```

### Parameters

|                           |  |
|---------------------------|--|
| <b>-file &lt;FILE&gt;</b> | Reads parameters from the <a href="#">property</a> file (optional).<br>Parameters will be overwritten if they are specified in the console.  |
| <b>-user &lt;USER&gt;</b> | New user name<br> <b>Tip:</b> Use an escape character (^ or \) before any non-ASCII characters in the name. |

|  |  |
|--|--|
| <code>-pass &lt;PASSWORD&gt;</code>                | New password   |
| <code>-credentialsId &lt;CREDENTIALS ID&gt;</code> | The credentials record ID you want to update   |
| <code>-endpoint &lt;ENDPOINT TYPE&gt;</code>       | New endpoint name, such as an ALM version.<br>This type name must be a value available in the " <a href="#">listEndpointTypes</a> " command. |
| <code>-param &lt;KEY&gt; &lt;VALUE&gt;</code>      | Custom parameters (optional)   |
| <code>-replace</code>                              | Replace all existing parameters with input parameters (optional)   |

### delete

Deletes an ALM credential record.

**Note:** You cannot delete a single parameter from a credential record. You can only delete an entire credential record.

### Usage

```
./credentials_mng_console.sh delete -endpoint <ENDPOINT TYPE> -credentialsId <CREDENTIALS ID>
```

### Parameters

|   |  |
|---|--|
| <code>-endpoint &lt;ENDPOINT TYPE&gt;</code>      | Endpoint type name, such as the ALM version.<br>This type name must be a value available in the " <a href="#">listEndpointTypes</a> " command. |
| <code>-credentialId &lt;CREDENTIALS ID&gt;</code> | The credentials record ID  |

### help

Provides help for the current command when configuring ALM credentials for the Integration Bridge.

### Usage

```
./credentials_mng_console.sh help
```

## Configure a proxy for ALM connections

By default, the connection between the Integration Bridge and ALM is not authenticated by proxy. To configure a proxy, do the following:

**Note:**

Perform this procedure as a root user, or as the user who installed the Integration Bridge.

1. In the **<Integration Bridge installation directory>/product/domain/alm/conf** folder, open the **proxy.properties** file.
2. To use a proxy, change the **setProxy** value to **true**.  
If this value is **false**, proxy settings are ignored and no proxy is used.
3. Set the proxy host and port values:
  - a. Change the **proxyHost** value to the proxy IP address or server name.
  - b. Change the **proxyPort** value to the relevant port for the proxy.  
When **proxyHost** has a value, **proxyPort** is mandatory.

**Example**

```
setProxy=true  
proxyHost=123.45.6.7  
proxyPort=1234  
proxyUser=  
proxyPass=
```

4. If the proxy requires authentication:
  - a. Change the **proxyUser** value to the proxy user name.
  - b. Change the **proxyPass** value to the proxy password.  
When **proxyUser** has a value, **proxyPass** is mandatory.

**Example**

```
setProxy=true  
proxyHost=123.45.6.7  
proxyPort=1234  
proxyUser=MyUserName  
proxyPass=MyPassword
```

5. Save the **proxy.properties** file.
6. Restart the Integration Bridge. For details, see ["Start and stop the Integration Bridge" on page 28](#).



**Tip:** If authentication fails, verify that the contents of the **proxy.properties** file are syntactically correct and contain valid values.

## Set Agile Manager credentials

Use the **bridgeAuthentication** command line tool to set the credentials used to connect to Agile Manager.

The credentials consist of a client ID and secret generated by Agile Manager. To obtain a client ID and secret, add an Integration Bridge client on the **Integrations > API** configuration page.



**Note:** If you are not a Site Administrator on your Agile Manager system, have your administrator add the Integration Bridge client and provide you with the generated client ID and secret .

Use this tool in the following cases:

- You want to use credentials other than the ones you entered when you first installed the Integration Bridge.
- You need to update your bridge so that it connects to Agile Manager using OAuth authentication. The Integration Bridge bridge now uses a client ID and secret to connect to Agile Manager instead of Agile Manager user credentials.

### Run the **bridgeAuthentication** command line tool

As a root user, or as the user who installed the Integration Bridge:

1. Navigate to the **<Bridge\_installation\_directory>/product/util/opb** directory.
2. Run the **bridgeAuthentication.sh** file.

The **bridgeAuthentication** tool supports the following commands:

"setAuth" below

"help" on the next page

#### **setAuth**

Sets credentials for connecting to Agile Manager from the Integration Bridge.

#### **Usage**

```
./bridgeAuthentication.sh setAuth -clientId <CLIENT_ID> -secret <SECRET>
```

#### **Parameters**

-clientId <CLIENT\_ID>

The client ID to use when connecting to Agile Manager.



|                                     |  |
|-------------------------------------|--|
| <code>-secret &lt;SECRET&gt;</code> | The secret for the client that is connecting to Agile Manager. |
|-------------------------------------|--|

### help

Provides help for the current command when configuring Agile Manager credentials for the Integration Bridge.

### Usage

```
./bridgeAuthentication.sh help
```

## Configure a proxy for Agile Manager connections

Use the **proxyConfiguration** command line tool to set credentials for accessing Agile Manager through a proxy server.

1. Navigate to the **<Bridge\_installation\_directory>/product/util/opb** directory.
2. Run the **proxyConfiguration.sh** file.

#### Note:

- Set proxy server credentials only if the credentials change from when you first installed the Integration Bridge.
- After making any changes, restart the Integration Bridge. For details, see ["Start and stop the Integration Bridge" on page 28](#).

The **proxyConfiguration** tool supports the following commands:

- "setAddress"
- "setAuth"
- "help" on the next page
- "removeProxyConfiguration "
- "removeAuth"

### setAddress

Sets a host and port for accessing Agile Manager through a proxy server.

### Usage

```
./proxyConfiguration.sh setAddress -host <PROXY HOST> -port <PROXY PORT>
```

### Parameters

|                                       |                                       |
|---------------------------------------|---------------------------------------|
| <code>-host &lt;PROXY HOST&gt;</code> | The address of the proxy server host. |
|---------------------------------------|---------------------------------------|

|                                       |                                      |
|---------------------------------------|--------------------------------------|
| <code>-port &lt;PROXY PORT&gt;</code> | The port number of the proxy server. |
|---------------------------------------|--------------------------------------|

### **removeProxyConfiguration**

Configures the Integration Bridge to access Agile Manager without a proxy server.

#### **Usage**

```
./proxyConfiguration.sh removeProxyConfiguration
```

### **setAuth**

Saves credentials for connecting to a proxy server, when accessing Agile Manager through a proxy server.

#### **Usage**

```
./proxyConfiguration.sh setAuth -user <USER> -pass <PASSWORD>
```

#### **Parameters**

|                                      |   |
|--------------------------------------|---|
| <code>-user &lt;USER NAME&gt;</code> | The name of the user connecting to the proxy server.  |
| <code>-pass &lt;PASSWORD&gt;</code>  | The password of the user connecting the proxy server. |

### **removeAuth**

Deletes a set of credentials previously used to connect to Agile Manager through a proxy server.

#### **Usage**

```
./proxyConfiguration.sh removeAuth
```

### **help**

Provides help for the current command when configuring access to Agile Manager through a proxy server.

#### **Usage**

```
./proxyConfiguration.sh help
```

## **NextGen Synchronizer proxy support**

NextGen Synchronizer supports the following types of proxy authentication:

|  |                      |            |
|--|----------------------|------------|
| <b>Between the Integration Bridge and...</b> | <b>Agile Manager</b> | <b>ALM</b> |
|--|----------------------|------------|

|                |                             |   |   |
|----------------|-----------------------------|---|---|
| <b>Forward</b> | <b>No authentication</b>    | √ | √ |
|                | <b>Basic authentication</b> | √ | √ |
| <b>Reverse</b> | <b>No authentication</b>    | √ | √ |
|                | <b>Basic authentication</b> | x | x |

**Note:** NTLM authentication is not supported for any types of proxy.

# Start and stop the Integration Bridge

If the Integration Bridge service is installed, the Integration Bridge is automatically started when your system starts.

This topic describes how to manage the bridge activation manually.

Perform this procedure as a root user, or as the user who installed the Integration Bridge.

## Note:

- The Integration Bridge service is installed as part of the Integration Bridge installation, unless you performed the installation as a non-root user. In this case you must manually install the Integration Bridge service as a root user:

```
<Bridge_installation_directory>/product/bin/HPEIntegrationBridge.sh install
```

- The bridge must be running for Agile Manager to communicate with on-premise applications such as ALM.
- If you have upgraded your ALM projects, you'll need to restart the bridge manually after upgrade to continue synchronizing data between ALM and Agile Manager.

Use the **HPEIntegrationBridge** command line tool:

1. Navigate to the **<Bridge\_installation\_directory>/product/bin** directory.
2. Run the **HPEIntegrationBridge.sh** file.

Use the following commands:


| Task  | Command  |
|---|--|
| <b>Start the bridge</b>                       | <code>./HPEIntegrationBridge.sh start</code>   |
| <b>Stop the bridge</b>                        | <code>./HPEIntegrationBridge.sh stop</code>    |
| <b>Restart the bridge</b>                     | <code>./HPEIntegrationBridge.sh restart</code> |
| <b>Install the Integration Bridge service</b> | <code>./HPEIntegrationBridge.sh install</code> |
| <b>Remove the Integration Bridge service</b>  | <code>./HPEIntegrationBridge.sh remove</code>  |

# Uninstall/Remove the Integration Bridge

Uninstall a bridge if you no longer need it, or before upgrading.

Remove a bridge from the Link Configuration navigation tree if you no longer need it, or are no longer using it.

## To uninstall a bridge permanently


1. In the Agile Manager **Integrations** >  **Link Configuration** page, expand the navigation tree on the left.  
Verify that no synchronizations are currently running on the bridge's links.  
Right-click on any links that are in automatic mode and select **Stop Automatic Mode**. Wait for the completion of any current synchronization runs before uninstalling the bridge.
2. Close all tools, folders, and files related to the Integration Bridge, such as the Endpoint Credentials Manager.
3. Do the following:

| Task                        | Description  |
|-----------------------------|--|
| <b>Uninstall the bridge</b> | <p>As a root user, navigate to the <b>&lt;Integration Bridge installation directory&gt;/install</b> directory and run the <b>hpe-integration-bridge-uninstall</b> script.</p> <div data-bbox="634 1131 1411 1297" style="background-color: #e6f2e6; padding: 10px;"><p><b>Note:</b> Uninstalling as a root user ensures a clean removal of both the Integration Bridge application and the Integration Bridge service.</p></div> <p>During the uninstall process, select <b>Remove credentials</b> if you also want to remove any associated credentials. By default, credentials are kept, and you can use them in a subsequent installation.</p> |

| Task   | Description   |
|--|---|
| <b>Remove the bridge from the Agile Manager user interface</b><br>(optional) | <p>In Agile Manager:</p> <ol style="list-style-type: none"><li>Verify that the bridge has no links configured. If there are any existing links, remove them:<br/>Select the link in the tree and then select <b>More Actions &gt; Remove</b>.</li></ol> <div data-bbox="683 478 1414 684" style="border: 1px solid #ccc; background-color: #fff9e6; padding: 10px;"><p><b>Caution:</b> You cannot recover a link removed from the NextGen Synchronizer. Only remove a link if you no longer need to synchronize its data between the endpoints.</p></div> <ol style="list-style-type: none"><li>Select the bridge name and either select <b>Remove Bridge</b> from the context menu, or select <b>More Actions &gt; Remove</b>.</li></ol> <div data-bbox="683 810 1414 1052" style="border: 1px solid #ccc; background-color: #fff9e6; padding: 10px;"><p><b>Caution:</b> Only remove the bridge from the user interface if you have no intention of recovering it.</p><p>You cannot recover a bridge removed from the NextGen Synchronizer, even if you have not yet uninstalled it.</p></div> |

When you uninstall the Integration Bridge, properties customized in the **server-connection.conf** file are deleted. The information in the **server-connection.conf** file is backed up in the **server-connection.bak** file.

## To uninstall a bridge in order to upgrade or move it

- In the Agile Manager **Integrations >  Link Configuration** page, expand the navigation tree on the left.  
Verify that no synchronizations are currently running on the bridge's links.  
Right-click on any links that are in automatic mode and select **Stop Automatic Mode**. Wait for the completion of any current synchronization runs before uninstalling the bridge.
- Close all tools, folders, and files related to the Integration Bridge, such as the Endpoint Credentials Manager.
- As a root user, navigate to the **<Integration Bridge installation directory>/install** directory and run the **hpe-integration-bridge-uninstall** script.

**Note:** Uninstalling as a root user ensures a clean removal of both the Integration Bridge application and the Integration Bridge service.

During the uninstall process, do not select **Remove credentials**. When you install the upgraded version, you can use the existing credentials.

Properties customized in the **server-connection.conf** file are deleted. The information in the **server-connection.conf** file is backed up in the **server-connection.bak** file. Use this file when you install the upgraded version.

For more details, see ["Upgrade the Integration Bridge" on the next page.](#)

# Upgrade the Integration Bridge

When a new Agile Manager version includes a new version of the Integration Bridge, any existing bridges automatically detect the need for upgrade.

The following process takes place without user intervention:

- The existing bridge is disabled.
- The new version of the Integration Bridge is downloaded and verified.
- The new bridge is installed in place of the existing one and then enabled. Any previous configuration settings and security certificates are retained.

Email notifications are sent at the beginning and end of the upgrade. Upgrade notifications are sent to the Integration Administrator users that you specify on the bridge's Notification tab (**Integrations > Synchronizer** configuration page). For details, see the *Agile Manager Synchronization Guide*.

If, for some reason, you need to manually upgrade the Integration Bridge, use one of the following methods:


- ["Upgrade an existing bridge on the same server as the previous bridge" below](#)
- ["Upgrade the Integration Bridge, and install it in new location" on the next page](#)

Both upgrade methods retain the configured endpoint credentials.

When performing a manual upgrade, if your Integration Bridge communicates with ALM using a certificate that is not signed by a well-known Certificate Authority, you need to reinstall the certificate after upgrading the bridge. For details, see ["Connections using a certificate that is not signed by a well-known Certificate Authority" on page 12](#).

## Upgrade an existing bridge on the same server as the previous bridge

This procedure registers the upgraded bridge as an existing bridge.

1. Uninstall the Integration Bridge, as described in ["Uninstall/Remove the Integration Bridge" on page 29](#). During the uninstall process, do *not* select **Remove credentials**.
2. Download the new version of the Integration Bridge from the **Integrations >  Link Configuration** page.  
Select **More Actions > Download Integration Bridge > Linux**
3. Extract the downloaded zip file (**hpe-integration-bridge-linux.zip**) to a new folder.
4. Copy values from the previous installation to the new installation. Do the following:
  - a. In the installation directory of the previous version, access the **/product/conf/server-connection.bak** file.



**Tip:** By default, the installation directory is **/root/HPE/HPE Integration Bridge**.

- b. In a parallel window, browse to the **server-connection.conf** file downloaded with the new




version of the Integration Bridge, and open it for editing.

- c. Copy the **agent.guid** property and its value from the previous installation file, and append it to the new file. Save the new file.
5. Run the newly downloaded **hpe-integration-bridge.bin** to begin the installation.  
During the installation, select the installation folder that was used for the previous version.  
For more details, see ["Download and install the bridge" on page 7](#).

### Upgrade the Integration Bridge, and install it in new location

This procedure installs the upgraded Integration Bridge in a new directory on the same server as the previous version, or on an entirely new machine.

1. Uninstall the Integration Bridge, as described in ["Uninstall/Remove the Integration Bridge" on page 29](#). During the uninstall process, do *not* select **Remove credentials**.
2. Download the new version of the Integration Bridge from the **Integrations** >  **Link Configuration** page.  
Select **More Actions** > **Download Integration Bridge** > **Linux**
3. Extract the downloaded zip file (**hpe-integration-bridge-linux.zip**) to a new folder.
4. Copy files and values from the previous installation to the new installation. Do the following:
  - a. In the directory where you want to install the new version, create the following folder structure:**product/conf**
  - b. Copy the following files from the installation directory of the previous version to the **conf** directory you created in the previous step.
    - **credentialsStore.xml**
    - **key.bin**
  - c. In the installation directory of the previous version, access the **/product/conf/server-connection.bak** file.



**Tip:** By default, the installation directory is **/root/HPE/HPE Integration Bridge**.

- d. In a parallel window, browse to the **server-connection.conf** file downloaded with the new version of the Integration Bridge, and open it for editing.
- e. Copy the **agent.guid** property and its value from the previous installation file, and append it to the new file. Save the new file.
5. Run the **hpe-integration-bridge.bin** to begin the installation.  
During the installation, select the directory where you want to install the new version.  
For more details, see ["Download and install the bridge" on page 7](#).

# Integration Bridge troubleshooting

This topic covers the following scenarios:

- ["Bridge is not identified after installation" below](#)
- ["Bridge name is displayed in red in Agile Manager" below](#)
- ["Integration Bridge remains Offline even after stopping and starting the bridge" below](#)
- ["Bridge connection status displayed as Unknown in Agile Manager" on the next page](#)
- ["Bridge cannot log in to Agile Manager or ALM" on the next page](#)
- ["A '403' or 'Authorization Exception' error occurs" on the next page](#)
- ["Integration Bridge installation process implies an old one exists" on the next page](#)
- ["Errors during synchronization: "Missing required field"" on page 36](#)
- ["How do I modify the URL that the Integration Bridge uses to connect to Agile Manager?" on page 36](#)

## Bridge is not identified after installation

If the bridge does not appear on the **Integrations > Synchronizer** or  **Link Configuration** page in Agile Manager after installation is complete, click **Refresh**, or refresh the browser page.

- If the bridge still does not appear, make sure the bridge is running. For details, see ["Start and stop the Integration Bridge" on page 28](#).

The Integration Bridge service attempts to start the bridge several times. If it is not successful, the application shuts down and the service stops.

- If the bridge does not start, make sure the value of the **Drmi.server.port** in the **<installation folder>/product/log/controller/wrapper.log** file is set to an available port.
- If the defined port is in use by another application when the Integration Bridge service attempts to start the bridge, the following errors are printed to log files:

|                                   |   |
|-----------------------------------|---|
| In the <b>wrapper</b> log file    | java.rmi.server.ExportException: Port already in use:<br><port> |
| In the <b>controller</b> log file | java.rmi.NotBoundException: ControllerAPI                       |

## Bridge name is displayed in red in Agile Manager

The Integration Bridge is down. In Agile Manager, click the bridge name to view the last time the bridge accessed the server.

## Integration Bridge remains Offline even after stopping and starting the bridge

If the connection status of your bridge is displayed as **Offline** in Agile Manager, try restarting the bridge. For details, see ["Start and stop the Integration Bridge" on page 28](#).

If the bridge remains offline, the Integration Bridge user's Agile Manager password may have expired.

Modify your bridge to connect to Agile Manager using OAuth and no longer depend on user credentials:

1. On the , add an Integration Bridge client. Agile Manager generates a client ID and secret for the bridge. For details, see the *Agile Manager User Guide*.

**Note:** If you are not a Site Administrator on your Agile Manager system, have your administrator add the Integration Bridge API client and provide you with the generated client ID and secret.

2. Use the generated client ID and secret for the credentials that the bridge uses to connect to Agile Manager. For details, see "[Manage connection setup](#)" on page 15.

### Bridge connection status displayed as Unknown in Agile Manager

Check the following log files in the Integration Bridge log folder (<Bridge\_installation\_directory>/product/log/controller):

- **controller.log**
- **wrapper.log**

Additionally, check the <Endpoint type name>.log file located in the <Bridge\_installation\_directory>/product/log/<Endpoint type name> directory.

### Bridge cannot log in to Agile Manager or ALM

Check the connection setup defined for the endpoint:

- Check the credentials defined for the endpoint.
- Check proxy configuration if relevant.
- If ALM is configured to require HTTPS for logging in, configure the bridge to connect to ALM using HTTPS.

For details, see "[Manage connection setup](#)" on page 15 and "[Integration Bridge security](#)" on page 12.

### A '403' or 'Authorization Exception' error occurs

The user accessing Agile Manager from the Integration Bridge is not defined with the **Integration Bridge** role.

Modify this user's role in the Agile Manager configuration area (**Site > Users**).

**Note:** For security purposes, the **Integration Bridge** user should not have any additional roles.

### Integration Bridge installation process implies an old one exists

**Issue:** You uninstalled the Integration Bridge, but the next time you install a bridge, the suggested

default name implies that a bridge already exists.

**Cause:** You might have performed the uninstall using a non-root user.

**Solution:**

- You can ignore the listed existing bridge, and install a new one.
- Locate and remove the init scripts that were left over from the Integration Bridge service installation.

**Errors during synchronization: "Missing required field"**

**Issue:** During a synchronization run, some entities fail to synchronize. The errors indicate that a required field is missing. However, in the Link Configuration page, I do not see any mandatory fields that are not mapped.

**Cause:**

A field that is currently mandatory in ALM is not mapped, or it is mapped to an Agile Manager field that does not contain a value.

- The field in question may have been marked as mandatory in ALM after the link or entity itself was created.
- The field might be mandatory in ALM only when other fields contain certain values.

**Solution:**

Map the field to an Agile Manager field that contains a value, or manually enter a value in Agile Manager for the relevant field.

**How do I modify the URL that the Integration Bridge uses to connect to Agile Manager?**

The URL that the Integration Bridge uses to connect to Agile Manager is downloaded from Agile Manager with the Integration Bridge. In most cases, you should not need to modify this URL.

If the URL for your Agile Manager changed, do the following:

1. Navigate to the **<HPE Integration Bridge installation folder>\product\conf** folder.
2. Open the **server-connection.conf** file for editing.
3. Update the **agm.base.url** property with the new URL.

Format: `http(s)://<server hostname or IP address>:<port number>/agm`



**Tip:** If you can login to the Agile Manager that you want the Integration Bridge to use, login and then use the URL from your address bar. Take the URL from the beginning up to **/agm**. Ignore the rest.

4. Restart the bridge.

# Send Us Feedback



Let us know how we can improve your experience with the Installation Guide for Linux.

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