

# HPE ALM Octane

Software Version: 12.53.20

## Synchronizer Installation Guide

Go to **HELP CENTER ONLINE**

<http://octane-help.saas.hpe.com/>



**Hewlett Packard**  
Enterprise

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# Overview

**Note:** The installation process will be automated in future releases.

In order to synchronize data between ALM Octane workspaces and ALM projects, or use the Call URL business rule to call a system which ALM Octane cannot directly access, you need to have the following components installed and configured:

- **Synchronizer Service.** This service handles synchronization of data between endpoints, in this case ALM Octane and ALM.
- **Integration Bridge Service.** This service handles general communication between endpoints, in this case between the Integration Bridge and the Synchronizer.
- **Integration Bridge.** This is an agent connector that enables ALM Octane to integrate with external applications.

This document describes how to install and set up the Synchronizer, which includes the Integration Bridge Service and the Synchronizer Service.

## General Workflow

To enable synchronization:

1. Download and install the Synchronizer services as described in this document.
2. Download and install the Integration Bridge as described in the [ALM Octane Help Center](#), in the section *Set up the Integration Bridge*.

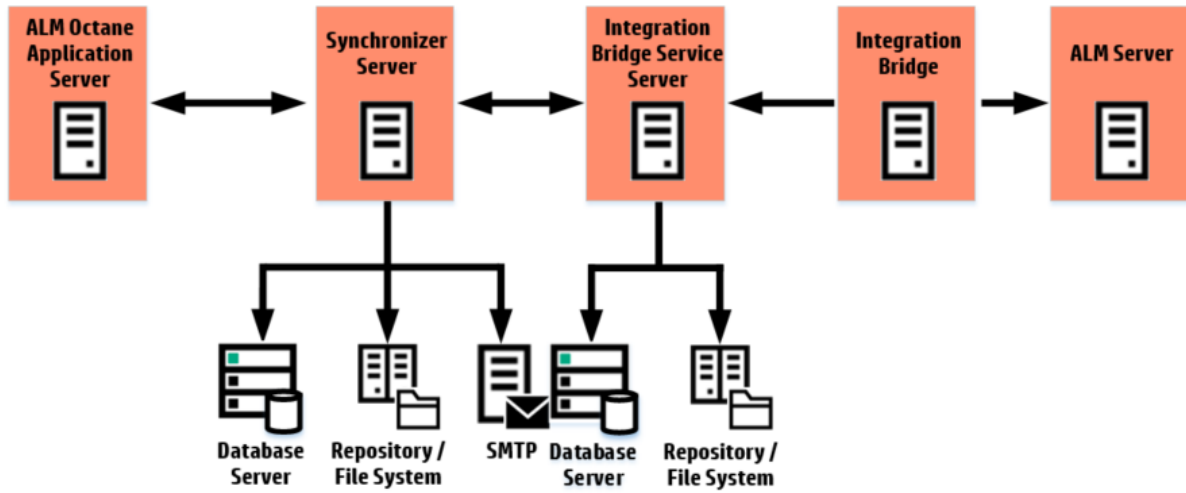
Note that you must set up the Synchronizer before installing the Integration Bridge.

## Deployment

We recommend installing the Integration Bridge Service, the Synchronizer service, and the Integration Bridge on separate dedicated nodes.

The Integration Bridge must be installed in an environment where it can connect to both ALM and the Integration Bridge Service. It can be installed on the same machine as the ALM server.

The following diagram illustrates the relationship between these components:



**Note:** For a comprehensive diagram showing how the synchronizer fits in together with all of the ALM Octane cluster components, refer to the ALM Octane Installation Guide (see *Enterprise Configuration*).

# Synchronizer prerequisites

## Hardware requirements

For each node (server/VM) where a service will be running:

CPU	Quad Core AMD64 processor or equivalent x86-compatible processor
Memory (RAM)	8 GB minimum
Free Disk Space	80 GB minimum
Operating System	Red Hat Enterprise Linux (RHEL) 6.5 or higher CentOS 6.5 or higher

## Database requirements

- Oracle 12C Standard or Enterprise edition, character set AL32UTF8
- MS SQL Server 2012 SP3 or 2014

## Software requirements

OpenJDK 1.8 update 65 or higher, or compliant with this version of OpenJDK.

To install Java, use OpenJDK by running:

```
yum install -y java-1.8.0-openjdk-devel
```

If you can only use OpenJRE, see ["Running the Synchronizer Service on OpenJRE" on page 24](#).

## Permissions

### File system

- Regular user for installation process, or root
- Root for installing OS service
- Write permission to log folder specified in the property general/logFolder, in the .yml configuration file described in ["Service configuration parameters" on page 13](#)
- Write permission to repository folder specified in the property repository/rootFolder, in the .yml configuration file described in ["Service configuration parameters" on page 13](#)

### Oracle

- CREATE USER
- CREATE SESSION WITH ADMIN OPTION

- CREATE TABLE WITH ADMIN OPTION
- DROP USER
- CREATE TRIGGER WITH ADMIN OPTION
- CREATE SEQUENCE WITH ADMIN OPTION
- CREATE PROCEDURE WITH ADMIN OPTION
- CREATE VIEW WITH ADMIN OPTION
- SELECT on "SYS"."DBA\_USERS"

#### MSSQL

- dbcreator
- securityadmin

## Firewall requirements

On the Integration Bridge server and Synchronizer server, you must have an open inbound port. By default, the services use port 8080 for HTTP or port 8443 for HTTPS (SSL).

In addition, each of the service uses the following:

Purpose	Port (default)	Config property name in <code>ibs.yml</code> and <code>sync.yml</code>
Inbound communication to IBS or Sync service	8080 SSL: 8443	ibs/general/port sync/general/port
Outbound communication to DB	Oracle: 1521  MSSQL: 1433	ibs/database/connectionString sync/database/connectionString
Outbound communication to ALM Octane	8080	serviceLocations/octane
Communication between nodes in cluster configuration	5701	ibs/distributedCache/port sync/distributedCache/port
Outbound communication to IBS or Sync service	8080	ibs/general/port sync/general/port

# Install the Synchronizer services

- ["Step 1: Configure ALM Octane to enable the integration" below](#)
- ["Step 2: Install and configure the Integration Bridge service" on the next page](#)
- ["Step 3: Install the Synchronizer service" on page 10](#)
- ["Step 4: Enable the services in ALM Octane" on page 11](#)
- ["Service configuration parameters" on page 13](#)

## Step 1: Configure ALM Octane to enable the integration

To enable communication between ALM Octane and the Synchronizer services, perform the following steps within your ALM Octane environment. (In a cluster configuration, this must be done separately for each ALM Octane node.)

**Note:** If possible, we recommend doing this when upgrading ALM Octane, after applying the new RPM but before running `initserver.sh`.

1. Within `/opt/octane/webapps`, copy the `service.locator.properties.example` file to `service.locator.properties`:

```
cp service.locator.properties.example service.locator.properties
```

2. Edit the `service.locator.properties` file, and set the correct internal URLs of each service. Note that the URLs cannot start nor end with spaces.
3. Open the `/opt/octane/wrapper/wrapper.conf` file, and locate the section starting with `#on-prem` configuration. Uncomment the following lines:

```
wrapper.java.additional.38=-Dservice.locator.properties.location=<%DEPLOY_BASE_DIR%/webapps/service.locator.properties
wrapper.java.additional.39=-Denable_services_integration=true
```

4. If ALM Octane is configured behind a proxy, the Integration Bridge Service and Synchronizer Service must be listed in `nonProxyHosts`. Open the `/opt/octane/wrapper/wrapper.conf` file, and add the following:

```
wrapper.java.additional.<number>=-
Dhttp.nonProxyHosts=ibs.service.company.com|sync.service.company.com
```

where `<number>` is the next line number that is available in the file.

5. If you are performing this procedure outside of ALM Octane upgrade, restart the ALM Octane server. In a command line, enter: `service HPALM restart`.
6. Generate an API key and secret for the Integration Bridge and Synchronizer services:



- a. Go to `/opt/octane/install`.
- b. Run the following:

```
./generateadminapikey.sh <octane-server-url> <site-admin-name> <site-admin-  
password>
```

Example of output:



```
Example: "client_id": "micro-services-key_12qw97wx4wp8phrr4wwqzkore"  
  
"client_secret": "$00~7_djkrV~?vGF@ExMsFPn"
```

When you install and configure the Integration Bridge and Synchronizer services (as described in the next steps), within the `ibs.yml` and `sync.yml` files, enter the value of **client\_id** in the **serviceApiKey** property, and enter the value of **client\_secret** in the **serviceApiSecret** property.

## Step 2: Install and configure the Integration Bridge service

1. Download and extract the Integration Bridge service installation package from HPE download sites.

Under `/opt/` extract the tar file:

```
tar -xzvf <installation file name>
```

2. Edit the file `/opt/ibs/conf/ibs.yml`, as described in ["Integration Bridge Service parameters" on page 13](#).

Note the following:

- a. The value of the **encryptionSeed** parameter must be the same as the value of the `initstring.txt` file of the ALM Octane installation, located in `/opt/octane/repo/storage/site`.
- b. The value of the **sso > initString** parameter must be the same as the value of the **initString** parameter in `hpssoconfig.xml`, located in `/opt/octane/webapps/root/WEB-INF/classes`.
3. *In a cluster deployment only:* Create a shared disk space which is accessible from all service nodes. For all nodes configure `repository/rootFolder` to point to this shared space (refer to the `ibs/repository/rootFolder` property value in the `.yml` configuration file described in ["Integration Bridge Service parameters" on page 13](#)).
4. Set the environment property `JAVA_HOME` to where the Java JDK is installed (and not the JRE).
5. Within `opt/ibs/install`, execute the `install.sh` script under a desired user. (You may need to set `install.sh` as executable.)



### Note:

- Make sure that Octane is running before you execute the `install.sh` script.

- ! If you need to connect to servers over a secure channel, configure trust before executing the install.sh script. For details, see "[Configure trust](#)" on page 22.

If the sudo command is used to run the script as root, make sure the root user has the necessary environment variables set (mainly JAVA\_HOME), or use the -E option in sudo command: `sudo -E ./install.sh`

This runs the setup tool which configures the database, and populates various configuration files inside the distribution. It will also register the service as an OS service if executed under root.

6. Start the service:

```
<install_dir>/wrapper/HPEOctaneIBS start
```

Alternatively, run the following:

```
service HPEOctaneIBS start
```

To verify success, look at the Sync service logs: `/opt/ibs/server/wrapper.log`. You can also run the following command and wait until you see a server boot complete message:

```
tail -f /opt/ibs/server/wrapper.log
```

## Step 3: Install the Synchronizer service

1. Download and extract the Synchronizer service installation package from HPE download sites. Under `/opt/` extract the tar file:

```
tar -xzf <installation file name>
```

2. Edit the file `/opt/sync/conf/sync.yml`, as described in "[Synchronizer Service parameters](#)" on page 16.

Note the following:

- a. The value of the **encryptionSeed** parameter must be the same as the value of the `initstring.txt` file of the ALM Octane installation, located in `/opt/octane/repo/storage/site`.
  - b. The value of the **sso > initString** parameter must be the same as the value of the **initString** parameter in `hpssoconfig.xml`, located in `/opt/octane/webapps/root/WEB-INF/classes`.
3. *In a cluster deployment only:* Create a shared disk space which is accessible from all service nodes. For all nodes configure `repository/rootFolder` to point to this shared space (refer to the `sync/repository/rootFolder` property value in the .yml configuration file described in "[Synchronizer Service parameters](#)" on page 16).
  4. Set the environment property `JAVA_HOME` to where the Java JDK is installed (and not the JRE).
  5. If the Synchronizer and Integration Bridge Services are on a different public URL than Octane and not behind a common firewall, perform the following:

- a. Edit the file `/opt/sync/conf/octane.site.params.properties`, as described in ["ALM Octane Site Parameters \(octane.site.params.properties\)" on page 20](#).  
Set the value of **SYNC\_BASE\_URL** and **EXTERNAL\_HELP\_URL**, and uncomment the lines.
  - b. Edit the file `/opt/sync/conf/sync.site.params.properties`, as described in ["Sync Site Parameters \(sync.site.params.properties\)" on page 20](#).  
Set the value of **IBS\_BASE\_URL**, and uncomment the line.
6. Within `/opt/sync/install`, execute the `install.sh` script under a desired user. (You may need to set `install.sh` as executable.)

**Note:**

- Make sure that Octane is running before you execute the `install.sh` script.
- If you need to connect to servers over a secure channel, configure trust before executing the `install.sh` script. For details, see ["Configure trust" on page 22](#).

If the `sudo` command is used to run the script as root, make sure the root user has the necessary environment variables set (mainly `JAVA_HOME`), or use the `-E` option in `sudo` command: `sudo -E ./install.sh`.

This runs the setup tool which configures the database, and populates various configuration files inside the distribution. It will also register the service as an OS service if executed under root.

7. Start the service:

```
<install_dir>/wrapper/HPEOctaneSync start
```

Alternatively, run the following:

```
service HPEOctaneSync start
```

To verify success, look at the Sync service logs: `/opt/sync/server/wrapper.log`. You can also run the following command and wait until you see a server boot complete message:

```
tail -f /opt/sync/server/wrapper.log
```

## Step 4: Enable the services in ALM Octane

1. Open ALM Octane as a site admin, and click the settings icon.
2. Select the **Site Admin > Shared Spaces** tab.
3. Select the shared space for which you want to enable the Bridge and Synchronizer services.
4. Click **Enable Bridge Service**. This will take several seconds to run.
5. Click **Enable Synchronizer Service**. This will take several seconds to run.  
After successfully enabling each service you will see the service version in its relevant column.
6. In user management, assign a dedicated user the Synchronizer Admin role.

7. Log in as Synchronizer Admin. Click the arrow next to the Settings icon, and click the Synchronizer link to access the Synchronizer UI.

You can now perform synchronization as described in the [ALM Octane Help Center](#), in the section *Synchronize ALM Octane with ALM*.

## Service configuration parameters

The following section describes the parameters used in the `ibs.yml` and `sync.yml` files. This section includes:

- "Integration Bridge Service parameters" below
- "Synchronizer Service parameters" on page 16
- "ALM Octane Site Parameters (`octane.site.params.properties`)" on page 20
- "Sync Site Parameters (`sync.site.params.properties`)" on page 20

Sensitive data such as passwords or `initString` (excluding `encryptionSeed`) are written in plain text. When the installation script is executed ("service start"), the plain text values are replaced by encrypted values. The encryption seed (`sync|ibs/firstTimeInit/encryptionSeed`) is removed from the `.yml` file.

### Integration Bridge Service parameters

<b>serviceLocations:</b>	<b>Section with URLs of services and ALM Octane</b>
octane	Base URL of ALM Octane(or its load balancer for multi-node deployment)  Example: <code>http://octane.company.com:8080</code>
opb	Base URL of Integration Bridge service (or its load balancer for multi-node deployment)  Example: <code>http://octane.company.com:8080/opb</code>
sync	Base URL of Synchronizer service (or its load balancer for multi-node deployment)  Example: <code>http://octane.company.com:8080/sync</code>
<b>firstTimeInit</b>	<b>Values from this section are deleted after the service is run for the first time.</b>
encryptionSeed	The value of this property is used to encrypt all sensitive data such as passwords. This value must be same for all services.  Note: After the <code>encryptionSeed</code> is configured, it cannot be modified.  Example: <code>some_very_long_string</code>
<b>general</b>	<b>Section of service-specific properties</b>

logFolder	Folder where Integration Bridge Service logs will be located.  Example: /opt/ibs/logs
port	HTTP port where the Integration Bridge Service listens.  Example: 8080
<b>database</b>	<b>Section of database-related properties</b>
action	Enter one of the following: <ul style="list-style-type: none"> <li>• CREATE_NEW for a new installation (first execution of installation script). This creates the site admin schema.</li> <li>• CONNECT_TO_EXISTING_AND_UPGRADE for an existing deployment or upgrade, or for another run of install.sh. This updates the site admin schema if needed.</li> </ul>
type	The supported database types are: <ul style="list-style-type: none"> <li>• ORACLE</li> <li>• MSSQL</li> </ul>
connectionString	The Java Database Connectivity (JDBC) database connection string required to connect to the database. It includes the following details: database type, database server name, and database server port number.  Examples:  jdbc:mercury:sqlserver://dbserver1:1433  jdbc:mercury:oracle://db_sever_ host:1521;servicename:ORCL
adminUser	The name of the database admin user.
adminPassword	The password of the database admin user (DBAdminUser).
saSchemaUser	The name of the site schema that is created by the DBAdminUser during the installation, or supplied by the organization's DBA.  Example: ibs_sa
saSchemaPassword	The plain-text password of the site schema.
schemaPassword	Password of a user created by the service for each attached sharedspace.
<b>oracle:</b>	<b>Section for Oracle DB only</b>

tableSpace	The tablespace in the Oracle database where the site schema segment will be created. Case-sensitive.  Example: USERS
tempTableSpace	The temporary tablespace in the Oracle database. Case-sensitive.  Example: TEMP
<b>repository:</b>	<b>Section of file repository related properties</b>
rootFolder	Root folder for file repository. This folder must be located on disk space which is shared among all service nodes.  Example: /opt/ibs/repo
<b>integration:</b>	<b>Section of integration specific properties</b>
serviceApiKey	Integration user name or API key
serviceApiSecret	Integration user password or API key secret
<b>distributedCache:</b>	<b>Cluster configuration section</b>
password	Password of the cache. Must be the same on all of the service's distributed cache nodes.
clusterNodes	<p>.. <i>Optional</i> (not needed in single-node deployment)</p> <p>List of nodes where the Integration Bridge Service's distributed cache is running.</p> <p>Example:</p> <ul style="list-style-type: none"> <li>- "node1"</li> <li>- "node2"</li> <li>- "10.0.0.23"</li> </ul> <p>Alternative notations could be in single line:</p> <p>Nodes: ["node1", "node2", "10.0.0.23"]</p> <p>.. By default, the cluster is not configured, and the default value is: localhost.</p>
port	Default cache port  Example: 5701
<b>sso:</b>	<b>Section of HP SSO related properties</b>

initString:	The private key used to encrypt the authentication token.
redirectToAuthPageUrl	Authentication provider sign-in page
<b>master:</b>	<b>SSO provider properties</b>
domain	The user-facing domain name used for accessing the application.  Example: If the user-facing address is almoctane.mydomain.com, the domain should be written as mydomain.com.
loginUrl	Authentication provider sign-in URL  Example: http://octane.company.com:8080/authentication-point/web-ui-login.jsp
logoutUrl	Authentication provider sign-out URL  Example: http://octane.company.com:8080/authentication/sign_out

## Synchronizer Service parameters

<b>serviceLocations:</b>	<b>Section with URLs of services and ALM Octane</b>
octane	Base URL of ALM Octane(or its load balancer for multi-node deployment)  Example: http://octane.company.com:8080
opb	Base URL of Integration Bridge service (or its load balancer for multi-node deployment)  Example: http://octane.company.com:8080/opb
sync	Base URL of Synchronizer service (or its load balancer for multi-node deployment)  Example: http://octane.company.com:8080/sync
<b>firstTimeInit</b>	<b>Values from this section are deleted after the service is run for the first time.</b>



encryptionSeed	<p>The value of this property is used to encrypt all sensitive data such as passwords. This value must be same for all services.</p> <p>Note: After the encryptionSeed is configured, it cannot be modified.</p> <p>Example: some_very_long_string</p>
<b>general</b>	<b>Section of service-specific properties</b>
logFolder	<p>Folder where Synchronizer Service logs will be located.</p> <p>Example: /opt/sync/logs</p>
port	<p>HTTP port where the Synchronizer Service listens.</p> <p>Example: 8080</p>
<b>synchronization</b>	<b>Section related to synchronization of entities.</b>
publicOctaneUrl	Public (base) URL of ALM Octane.
<b>database</b>	<b>Section of database-related properties</b>
action	<p>Enter one of the following:</p> <ul style="list-style-type: none"> <li>• CREATE_NEW for a new installation (first execution of installation script). This creates the site admin schema.</li> <li>• CONNECT_TO_EXISTING_AND_UPGRADE for an existing deployment or upgrade, or for another run of install.sh. This updates the site admin schema if needed.</li> </ul>
type	<p>The supported database types are:</p> <ul style="list-style-type: none"> <li>• ORACLE</li> <li>• MSSQL</li> </ul>
connectionString	<p>The Java Database Connectivity (JDBC) database connection string required to connect to the database. It includes the following details: database type, database server name, and database server port number.</p> <p>Examples:</p> <pre>jdbc:mercury:sqlserver://dbserver1:1433</pre> <pre>jdbc:mercury:oracle://db_sever_ host:1521;servicename:ORCL</pre>
adminUser	The name of the database admin user.

adminPassword	The password of the database admin user (DBAdminUser).
saSchemaUser	The name of the site schema that is created by the DBAdminUser during the installation, or supplied by the organization's DBA.  Example: sync_sa
saSchemaPassword	The plain-text password of the site schema.
schemaPassword	Password of a user created by the service for each attached sharedspace.
<b>oracle:</b>	<b>Section for Oracle DB only</b>
tableSpace	The tablespace in the Oracle database where the site schema segment will be created. Case-sensitive.  Example: USERS
tempTableSpace	The temporary tablespace in the Oracle database. Case-sensitive.  Example: TEMP
<b>repository:</b>	<b>Section of file repository related properties</b>
rootFolder	Root folder for file repository. This folder must be located on disk space which is shared among all service nodes.  Example: /opt/sync/repo
<b>integration:</b>	<b>Section of integration specific properties</b>
serviceApiKey	Integration user name or API key
serviceApiSecret	Integration user password or API key secret
<b>distributedCache:</b>	<b>Cluster configuration section</b>
password	Password of the cache. Must be the same on all of the service's distributed cache nodes.

clusterNodes	<p><i>Optional</i> (not needed in single-node deployment)</p> <p>List of nodes where the Synchronizer service's distributed cache is running.</p> <p>Example:</p> <ul style="list-style-type: none"> <li>- "node1"</li> <li>- "node2"</li> <li>- "10.0.0.23"</li> </ul> <p>Alternative notations could be in single line:</p> <p>Nodes: ["node1", "node2", "10.0.0.23"]</p> <p>By default, the cluster is not configured, and the default value is: localhost.</p>
port	<p>Default cache port</p> <p>Example: 5701</p>
<b>sso:</b>	<b>Section of HP SSO related properties</b>
initString:	The private key used to encrypt the authentication token.
redirectToAuthPageUrl	Authentication provider sign-in page
<b>master:</b>	<b>SSO provider properties</b>
domain	<p>The user-facing domain name used for accessing the application.</p> <p>Example: If the user-facing address is almoctane.mydomain.com, the domain should be written as mydomain.com.</p>
loginUrl	<p>Authentication provider sign-in URL</p> <p>Example:</p> <p>http://octane.company.com:8080/authentication-point/web-ui-login.jsp</p>
logoutUrl	<p>Authentication provider sign-out URL</p> <p>Example:</p> <p>http://octane.company.com:8080/authentication/sign_out</p>

## ALM Octane Site Parameters (octane.site.params.properties)

Parameter Name	Description
EXCLUDE_MICRO_SERVICE_ROLES	This parameter enables ALM Octane Synchronizer roles in ALM Octane. Default: false
ATTACHMENTS_URL_ENABLE_DOMAIN_WHITE_LIST	This parameters disables validation URLs of attachments coming from the synchronized ALM. Default: false
EXTERNAL_HELP_URL	If the Synchronizer service is running on a different public URL than ALM Octane (and not behind a common firewall), update and uncomment <b>EXTERNAL_HELP_URL</b> containing the online help source on the ALM Octane server.  Example: http://octane-server.company.net:8080/Help/WebUI/Online
SYNC_BASE_URL	If the Synchronizer service is running on a different public URL than ALM Octane (and not behind a common firewall) update and uncomment <b>SYNC_BASE_URL</b> containing the Synchronizer service server.  Example: http://sync-server.company.net:8080

## Sync Site Parameters (sync.site.params.properties)

Parameter Name	Description
FROM_EMAIL_ADDRESS	The email address of sender in Synchronizer notification. Default: synchronizer@company.com
MAIL_SERVER_HOST	The mail server host. Default: smtp.company.com
MAIL_MESSAGE_CHARSET	The encoding of mail message. Default: UTF-8
MAIL_PROTOCOL	The default mail protocol. Default: smtp
MAIL_SERVER_PORT	The default mail port. Default: 25

MAIL_FORMAT	The default mail format, only supporting HTML or TEXT format.  Default: HTML
SMTP_AUTHENTICATION	Enable or disable to enforce authentication by user name and password to SMTP server.  Default: false
SMTP_USER	User name to connect to SMTP server.
SMTP_PASSWORD	Password to connect to SMTP server.
SMTP_ADMIN_MAIL	The admin email of SMTP server.
IBS_BASE_URL	If the Integration Bridge service will be on a different public URL than the Synchronizer service (and not behind a common firewall), update and uncomment <b>IBS_BASE_URL</b> . It represents the public base URL of the Integration Bridge service server.  Example: http://ibs-server.company.com:8080

# Management

- ["Configure trust" below](#)
- ["Configure a secure connection to the Synchronizer service and Integration Bridge service \(IBS\)" below](#)
- ["Running the Synchronizer Service on OpenJRE" on page 24](#)
- ["Uninstall the Synchronizer Services" on page 24](#)

## Configure trust

Configure trust on the Integration Bridge Service server and Synchronizer Service server, when you need to connect to any other server over a secure channel.

1. Obtain the certificate of the root and any intermediate Certificate Authority that issued the remote server certificate.
2. Import each certificate into the java truststore using a keytool command. For example:

```
cd $JAVA_HOME/bin  
  
./keytool -import -trustcacerts -alias <CA> -keystore ../jre/lib/security/cacerts  
-file <path to the CA certificate file>
```

## Configure a secure connection to the Synchronizer service and Integration Bridge service (IBS)

The following procedure is identical for the Synchronizer service and Integration Bridge service (IBS). The example given is for the IBS. For the Synchronizer service, replace **ibs** with **sync**.

1. Prepare a java keystore file with your server certificate using the file name keystore.jks, and copy it to /opt/ibs/conf.
2. Copy the file /opt/octane/server/conf/jetty-ssl.xml from your ALM Octane server to /opt/ibs/server/conf/jetty-ssl.xml. The ALM Octane configuration file is already set up for security requirements.
3. Set the keystore password in jetty-ssl.xml. Note that if the IBS keystore password is the same as in ALM Octane, you can skip this step.

Edit /opt/ibs/server/conf/jetty-ssl.xml, and change all the passwords to the password of your keystore:

- a. To avoid entering plain-text passwords, obfuscate the password:
  - i. Run the following:

```
java -cp /opt/ibs/server/lib/jetty-util-9.2.9.v20150224.jar  
org.eclipse.jetty.util.security.Password <password>
```

- ii. Copy the entire string of the line starting with OBF. For example:

```
OBF:1vn21ugu1saj1v9i1v941sar1ugw1vo0
```

- b. Paste your keystore password in the **default** attribute of the following property names: **jetty.keystore.password**, **jetty.keymanager.password**, and **jetty.truststore.password** (replacing the old password there).

For example:

```
<Set name="KeyStorePassword"><Property  
name="jetty.keystore.password"  
default="OBF:1vn21ugu1saj1v9i1v941sar1ugw1vo0"/></Set>
```

4. Configure a secure port:

- a. In `/opt/ibs/server/conf/jetty.xml`, set the value of the **default** attribute for the **jetty.secure.port** property.

For example:

```
<Property name="jetty.secure.port" default="8443" /></Set>
```

- b. In `/opt/ibs/server/conf/jetty-https.xml`, set the value of the **default** attribute for the **https.port** property.

For example:

```
<Property name="https.port" default="8443" /></Set>
```

5. Edit `/opt/ibs/server/conf/start.ini` and uncomment the lines with `jetty-ssl.xml` and `jetty-https.xml` (remove the `#` character from the beginning of the line).

6. Restart the service:

```
service HPEOctaneIBS restart
```

7. When using secure endpoints, each service must trust the certificates of the other services. Add your certification authority certificate to all machines, if it is not trusted by default.

- a. ALM Octane must trust itself, the Synchronizer service, and the IBS.
- b. The Synchronizer service must trust ALM Octane and the IBS.
- c. The IBS must trust ALM Octane and the Synchronizer service.
- d. The Integration Bridge must trust the IBS. The truststore of the JDK used by the Integration Bridge is located in `<Integration Bridge install folder>/product/util/3rd-party/openjre1.8.0_65/jre/lib/security/cacerts`.

For details on configuring trust, see ["Configure trust" on the previous page](#).

8. Enable secure ports on firewalls as described in ["Firewall requirements" on page 7](#).

9. If you are configuring secure connections after all services are already configured and running, you also need to reconfigure endpoints in the following locations:

a. ALM Octane:

- i. File `/opt/octane/webapps/service.locator.properties`
- ii. `SYNC_BASE_URL` and `EXTERNAL_HELP_URL` site parameters

You can update these in the PARAMS table of the ALM Octane site admin database, or edit `/opt/sync/conf/octane.site.params.properties` and run the following:

```
/opt/sync/install/set-site-parameters-to-octane.sh <ALM Octane url> <site admin username> <site admin password> /opt/sync/conf/octane.site.params.properties
```

b. Synchronizer service:

- i. File `/opt/sync/conf/sync.yml`
- ii. File `/opt/sync/webapps/service.locator.properties`
- iii. `IBS_BASE_URL` site parameter in the PARAMS table of the Synchronizer service site admin database

c. Integration Bridge service:

- i. File `/opt/ibs/conf/ibs.yml`
- ii. File `/opt/ibs/webapps/service.locator.properties`

d. Integration Bridge:

- i. File `<Integration Bridge install folder>/product/conf/server-connection.conf`

Restart each service after modifying its parameters.

## Running the Synchronizer Service on OpenJRE

If running OpenJDK is not possible in your environment, you need to reconfigure the Synchronizer Service.

1. Within `<sync_install_dir>/wrapper`, edit the **wrapper-common.conf** file.
2. Add a new line:

```
wrapper.java.additional.<number>=-Dorg.apache.jasper.compiler.disablejsr199=true
```

where `<number>` is the next line number that is available in the file.

Example:

```
wrapper.java.additional.43=-  
Dorg.apache.jasper.compiler.disablejsr199=true
```

3. Restart the Synchronizer service.

## Uninstall the Synchronizer Services

From `/opt`:



1. Run: `/opt/ibs/install/uninstall.sh` or `/opt/sync/install/uninstall.sh`
2. Run: `rm -rf /opt/ibs` or `rm -rf /opt/sync`

# Synchronizer troubleshooting

## Logs

Logs are found in the logFolder location specified in the ["Service configuration parameters" on page 13](#).

**Note:** The following logs relate to the Synchronizer Service. Similar log files can be found in the parallel locations for the Integration Bridge Service.

- Synchronizer Application logs: <logFolder>/sync/app/app.log
- Audit logs: <logFolder>/sync/Audit/Audit.log
- SSO logs: <logFolder>/sync/Hpsso/hpsso.log
- REST interface logs: <logFolder>/sync/rest/rest.log
- Synchronizer service logs: <logFolder>/sync/wrapper/wrapper.log

## Error when enabling a service

### ALM Octane site log

Check the ALM Octane site log for an error. This is usually located in /opt/octane/logs/nga/site/site.log.

### Unexpected error

If you receive the message **Unexpected exception occurs, contact administrator for support**, while enabling the Bridge Service or Synchronizer Service from the ALM Octane UI (displayed in the logs and UI), make sure the user running ALM Octane has read permissions to the service.locator.properties file which resides by default in <octane\_install\_dir>/webapps/service.locator.properties.

### HTTP status code 502

If you receive an error saying HTTP status code is 502, this means ALM Octane is configured to use a proxy and it cannot connect to the Synchronizer or IBS. Make sure the proxy can connect to the Synchronizer or IBS machines.

### Authentication 401 error

If the Integration Bridge Service or Synchronizer Service receives an authentication 401 error (displayed in the Synchronizer Service or IBS logs), the service cannot authenticate to ALM Octane. Check that the **sso > initString** parameter value is identical in the configuration parameters of ALM Octane, the Synchronizer Service, and the Integration Bridge Service.

## **PWC6345: There is an error in invoking javac. A full JDK (not just JRE) is required**

If you receive the message **“org.apache.jasper.JasperException: PWC6345: There is an error in invoking javac. A full JDK (not just JRE) is required”** when using the ALM Octane Synchronizer UI, make sure the service is running on OpenJDK,

If this is not possible, see ["Running the Synchronizer Service on OpenJRE" on page 24](#).



# Send Us Feedback



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

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