



HP ALM Synchronizer for Agile Manager

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User Guide

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Note: This document is updated for each major release of Agile Manager. For interim updates, see the online Agile Manager Help Center.

Contents

HP ALM Synchronizer for Agile Manager	7
Synchronization steps	8
Install a Synchronizer system	10
System requirements	11
Synchronizer server system configurations	11
Synchronizer client system configurations	12
Supported ALM versions	13
Upgrade Synchronizer	14
Install Synchronizer	15
Install the Synchronizer server	15
Install the Synchronizer client	19
Uninstall Synchronizer	20
Uninstall the Synchronizer server	20
Uninstall the Synchronizer client	21
Uninstall PostgreSQL	21
Plan before you begin	23
Sample use cases	25
Develop and plan in Agile Manager; test in ALM	26
Develop in Agile Manager; test in ALM	27
Manage workload for both user stories and defects in Agile Manager	28
Synchronization links	28
Link filters	29
Link mapping data	30
Synchronization task types	30
Guidelines for specific types of fields	33

Guidelines for requirements and user stories, themes, and features	42
Perform an initial migration of ALM requirements to Agile Manager user stories	48
Guidelines for releases and sprints	49
Set up Synchronizer	53
Adapt your ALM project	53
Start the Synchronizer service and client	57
Connect a Synchronizer client to the server	57
Manage Synchronizer users	59
Configure server options	61
Configure an authentication proxy	63
Configure links	65
Create a synchronization link	66
Configure link properties	71
Map endpoint fields	77
Modify .csv map files in a text editor	86
Configuration for mapped attachment fields	88
Attachments with identical names in opposite endpoints	88
File-encoding for URL attachments created in ALM	88
Deleted attachments	89
Export and import link configuration and data	90
Export links	91
Create a link from an exported XML or .zip file	91
Maintain links	93
Run an integrity check	93
Enable or disable a link	98
Run synchronization tasks	100
Execution pane options	103
View run history, reports, or logs	104

- View task run history104
- View task run reports 105
- View task event logs 105
- Task run statuses 106
- Set link notification settings 107
- Reset a link time stamp or history 107
- Back up and restore the database 109
 - Restore the Synchronizer database109
 - Change the backup location 109
- Synchronizer Q&A 110
 - During synchronization 110
 - Connection settings 112
 - Filter definitions 113
 - Field mappings 113
 - Synchronizer service and installation 114
 - Synchronizer server configuration errors 117
- Glossary 119
- Send Documentation Feedback123

HP ALM Synchronizer for Agile Manager

HP ALM Synchronizer enables you to link ALM projects and Agile Manager workspaces, and synchronize their releases, requirements/user stories, and defects.

Synchronizer checks ALM and Agile Manager for recent updates in the synchronized items, and updates the other endpoint accordingly. You can configure the direction in which changes are synchronized between the endpoints: from ALM to Agile Manager, from Agile Manager to ALM, or in some cases, both ways.

Synchronization links and endpoints

Synchronization is defined by **links**, which you create and manage in the HP ALM Synchronizer Client.

Links are created between a pair of **endpoints**, namely an instance of ALM and an instance of Agile Manager. Links run **tasks** to synchronize records between the endpoints.

Each link defines the types of records that are synchronized, how often, and under what circumstances. Create a link for each type of entity (**releases**, **requirements/user stories**, or **defects**), for each pair of endpoints. The entity type being synchronized in a specific link determines the fields that you can map from each endpoint.

Synchronization tasks

The records in each endpoint are synchronized each time Synchronizer runs a synchronization task. You can schedule or manually run the following types of tasks:

- **Incremental synchronization tasks.** Synchronize records that were created or modified since the last synchronization task.

- **Full synchronization tasks.** Perform a full comparison of the records in each endpoint. This is useful for handling deleted records.

Note: Synchronizer does not use an ALM license when connecting to an ALM endpoint.

Synchronization steps

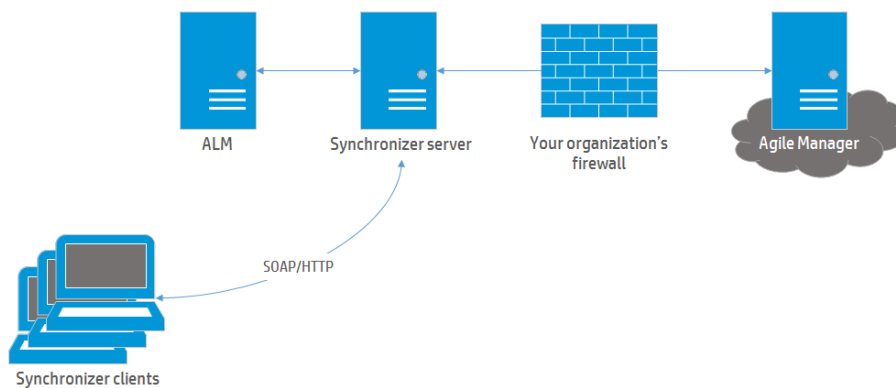
Working with Synchronizer involves the following steps:

"Install a Synchronizer system" on page 10	Install the Synchronizer server and client.
"Plan before you begin" on page 23	Begin by mapping your ALM and Agile Manager processes, looking for similar types of information. Plan the types of items that you want to synchronize, and in which directions.
"Set up Synchronizer" on page 53	Modify your ALM project for synchronization, add Synchronizer users, and configure server options, such as a proxy for authentication.
"Configure links" on page 65	Create and configure links, map specific fields and field values.
"Maintain links" on page 93	After configuring your links, run them manually or schedule automatic tasks. To troubleshoot, check the run history, report, or log files, reset links, or restore link data if you need to.
"Synchronizer Q&A" on page 110	Look for answers to some common questions and problems.

Install a Synchronizer system

This section describes how the Synchronizer system is structured, how synchronization link data is stored, and how to install or upgrade a Synchronizer server and client.

The following diagram illustrates the Synchronizer network configuration:



Synchronizer contains the following components, which can either reside on the same or separate machines:

- **Synchronizer Client.** Displays current links and provides a user interface for creating and managing links, and running link tasks. Sends user requests to the Synchronizer server using SOAP/HTTP.
- **Synchronizer Server.** Synchronizes data between ALM and Agile Manager. Manages synchronization and communication between endpoints, and retrieves and stores information in an integrated database.

The server connects to link endpoints using the endpoints' API, which must be installed on the server machine.

Note: Installing the Synchronizer server also installs the PostgreSQL 8.3 database management system. A database is created to store link data, such as a table of record IDs for mapped records.

Additional links

["Upgrade Synchronizer" on page 14](#)

["Install Synchronizer" on page 15](#)

["Uninstall Synchronizer" on page 20](#)

["System requirements" below](#)

Troubleshooting:

["Synchronizer service and installation" on page 114](#)

["Synchronizer server configuration errors" on page 117](#)

System requirements

This topic describes system requirements for ALM Synchronizer installations, as well as supported versions of HP ALM.

["Synchronizer server system configurations " below](#)

["Synchronizer client system configurations" on the next page](#)

["Supported ALM versions" on page 13](#)

Synchronizer server system configurations

Following are the minimum server system configurations for the Synchronizer server.

CPU	Quad-Core x86 compatible processor minimum
Memory (RAM)	4 GB minimum

Free disk space	500 MB minimum
Operating system	<ul style="list-style-type: none"> • Windows Vista 32 bit • Microsoft Windows Server 2008 32 bit • Microsoft Windows Server 2008 R2 64 bit (Not supported with ALM 11.50) • Microsoft Windows 2003 Server with Service Pack 2 • Microsoft Windows XP with Service Pack 2 <div style="background-color: #f0f0f0; padding: 10px; margin-top: 10px;"> <p>Note: In Windows 2003, the Synchronizer client cannot connect to the Synchronizerserver if the Windows Firewall is switched on.</p> <p>Workaround: Add HP-ALM-SyncService.exe manually to the Windows Firewall Exceptions list.</p> </div>

Note: The Synchronizer server installation also installs an instance of PostgreSQL, and Synchronizer works only with this instance.

You must install the Synchronizer on a machine that does not already have a separate PostgreSQL installation.

Synchronizer client system configurations

Following are the system requirements for the Synchronizer client.

CPU	Dual-Core x86 compatible processor minimum
Memory (RAM)	512 MB minimum
Free disk space	5 MB minimum

Operating system	<ul style="list-style-type: none">• Microsoft Windows 7 64 bit• Microsoft Windows Server 2008 R2 64 bit• Microsoft Windows Server 2008• Microsoft Windows Vista 32 bit• Microsoft Windows 2003 Server with Service Pack 2• Microsoft Windows XP with Service Pack 2• Microsoft Windows 2000 with Service Pack 4
Client software	Microsoft .NET Framework 2.0 or later

Supported ALM versions

You can synchronize Agile Manager with the following versions of ALM or Quality Center:

HP ALM	11.00, 11.50, 11.50 with Integration Enablement Pack, 12.0x
HP Quality Center	11.00, 11.50, 12.0x

Note:

- Synchronizer does not support SSO connections to ALM.
- You cannot configure multiple links on the same Synchronizer server that connect to ALM endpoints of different versions or patch levels.

Upgrade Synchronizer

If you are upgrading from a previous version of Synchronizer, you must upgrade both your server and client. The Synchronizer server and client versions must match.

Perform the following steps before installing the new version:

Back up the synchronization links you've already configured	In the Synchronizer client, select Link > Export > Link Data Into Backup File . You can use the backup file to restore links in case of any data loss. For more details about backup data, see " Back up and restore the database " on page 109.
Uninstall the previous version of the server and client	See " Uninstall Synchronizer " on page 20.
Restart the server machine	After uninstalling the Synchronizer server, restart the server machine.

Install the new versions of the Synchronizer server and client as described in "[Install Synchronizer](#)" on the next page.

Caution: To continue working with the existing database, including synchronization links and link data, be sure to select **Keep Existing Database** in the Database Configuration screen. For details, see "[Database Configuration screen](#)" on page 18.

Install Synchronizer

Install the Synchronizer server, and then install the client. The Synchronizer server and client versions must match.

This section includes the following topics:

["Install the Synchronizer server" below](#)

["Install the Synchronizer client" on page 19](#)

Install the Synchronizer server

Note:

- If you restart your computer during Synchronizer server installation, the Server Configuration Wizard will not run. If you are prompted to restart your computer, choose to restart at a later time.
- If you are upgrading, see ["Upgrade Synchronizer" on the previous page](#).

[Clear ports required by Synchronizer](#)

- Remove any applications that use ports 1098 or 1099.
- Remove any applications that use port 7064, or change this Synchronizer port. For details about changing this port, see the HP Software Self-solve knowledge base article [KM306335](#).

Copy the server installation file to a local directory

1. Open the following FTP directory:

ftp://agm_read@ftpast.saas.hp.com/users/agm_rnd/Synchronizer/ForAGM_2.10

Tip: Access the FTP directory by copying this path to Windows Explorer or an FTP client.

Note: The installation files located in this directory are engineered specifically for your version of Agile Manager.

Installation files located in other directories on this FTP server are incompatible with your version of Agile Manager and may result in errors.

2. Browse to the **Installation/Server** directory.
3. Copy the **setup.exe** file to your Synchronizer server machine.

Run the installation

Run the **setup.exe** file to install the Synchronizer server, following the instructions in the installation wizard.

1. Accept the terms of the license agreement, and click **Next** to start.
2. In the **Directory Name** field, specify the location where you want to install Synchronizer.
3. On the Summary Information screen, click **Next** to start the installation process.

4. When complete, click **Finish** to move on to installing and configuring the PostgreSQL database management system.

Install and configure the PostgreSQL database management system

If you are working with an earlier version of Synchronizer that uses PostgreSQL 8.1, the PostgreSQL database version is upgraded to PostgreSQL 8.3.

HP ALM Configuration screen	Select the version of ALM you want to synchronize with.
Service Configuration screen	<ul style="list-style-type: none">• To allow the service to run using the Windows Local System account, leave all fields empty.• To allow the service to run using a different Windows Administrator user account, enter your Windows Administrator login information. <p>Caution: Be careful to enter the correct login credentials, as the Server Configuration Wizard does not verify the user credentials that you provide.</p> <p>If the user credentials are incorrect, you will not be able to start the Synchronizer server.</p> <p>If you are unsure, see "Verify user permissions for service logon" on the next page for details.</p>

<p>Database Configuration screen</p> <p>This screen appears during upgrades only.</p>	<ul style="list-style-type: none">• To keep your existing database, select Keep Existing Database. <p>The database is backed up to a file in the C:\postgres directory. The file is named in the following format:</p> <p>SAVEDBACKUP<_yyyy_MM_dd_HH_mm_SynchronizerVersion>.backup</p> <p>For example: SAVEDBACKUP_2008_12_31_11_45_0.5.backup</p> <ul style="list-style-type: none">• To delete an existing database and create a new one, select Delete Existing Database instead. <div data-bbox="495 848 1365 982" style="background-color: #f0f0f0; padding: 5px;"><p>Caution: Selecting Delete Existing Database permanently deletes all Synchronizer link data.</p></div>
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Verify user permissions for service logon

1. From the **Start** menu, select **Run** and type **secpol.msc**.
2. In the Local Security Policy dialog box, select **Security Settings > Local Policies > User Rights Assignments**.
3. In the right pane, double-click **Log on as a service**.
4. In the Log on as a service Properties dialog box, verify that your user is listed, or click **Add User or Group** to add it to the list.

Exit and start the Synchronizer service

Click **Finish**.

To exit the wizard and start the Synchronizer service later, clear the Start Synchronizer Service checkbox.

In this case, you must start the service manually to begin working with Synchronizer. For details, see "[Start the Synchronizer service and client](#)" on page 57.

Install and run HP ALM Connectivity add-in

- Download the HP ALM Connectivity add-in from the **HP Application Lifecycle Management Tools** page. To install this tool, select **Tools > HP ALM Connectivity** in the HP ALM Options window or from the ALM Help menu.
- Configure the HP ALM Connectivity add-in to run as the **administrator** user.

Install the Synchronizer client

Install the Synchronizer client after installing the Synchronizer server.

Note: If you are upgrading, see "[Upgrade Synchronizer](#)" on page 14.

Copy the client installation file to a local directory

1. Open the following FTP directory:

ftp://agm_read@ftpast.saas.hp.com/users/agm_rnd/Synchronizer/ForAGM_2.10

Tip: Access the FTP directory by copying this path to Windows Explorer or an FTP client.

Note: The installation files located in this directory are engineered specifically for your version of Agile Manager.

Installation files located in other directories on this FTP server are incompatible with your version of Agile Manager and may result in errors.

2. Browse to the **Installation/Client** directory.
3. Copy the **HP-ALM-Sync-Client.msi** file to your Synchronizer server machine.

Install the client

Run the **HP-ALM-Sync-Client.msi** file. Follow the instructions in the installation wizard.

Uninstall Synchronizer

Uninstall the Synchronizer server and client before upgrading. The Synchronizer server and client versions must match.

Caution: Do not uninstall PostgreSQL if you are uninstalling the Synchronizer server as part of an upgrade process. During the server installation you can choose to upgrade the existing database or delete it and create a new database.

Uninstall the Synchronizer server

Stop the Synchronizer service	See "Stop the Synchronizer service" on page 59.
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Uninstall ALM Synchronizer	On the Synchronizer server machine, navigate to Add or Remove Programs . Remove ALM Synchronizer , and follow the instructions on your screen.
Uninstall PostgreSQL	If you have no other applications that use PostgreSQL, uninstall PostgreSQL. For details, see " Uninstall PostgreSQL " below.

Uninstall the Synchronizer client

On the Synchronizerclient machine, uninstall the **ALM Synchronizer Client**.

Uninstall PostgreSQL

Caution:

- Uninstalling the PostgreSQL database deletes all Synchronizer link data.
- You should only uninstall PostgreSQL if there are no other applications that are dependent on it.

Uninstall PostgreSQL	On the Synchronizer server machine, uninstall the relevant PostgreSQL version.
Delete the PostgreSQL installation directory	Delete this directory in Windows Explorer. By default, this is C:\postgres .

Delete the PostgreSQL user	<ol style="list-style-type: none">1. On the Synchronizerserver machine, right-click My Computer and select Manage.2. In the Computer Management utility, browse to System Tools > Local Users and Groups > Users.3. Select the postgres user.4. Select Action > Delete. Click Yes to confirm.
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Plan before you begin

Begin by planning your synchronization, and mapping your ALM and Agile Manager processes.

Define where each type of entity should be managed, and what types of information should be synchronized. This may depend on how ALM and Agile Manager are used by different members of your group, such as developers, product owners, Scrum Masters, and so on.

Synchronizer does not support workflow procedures while creating and updating synchronized data.

Caution: Once a record in one endpoint is mapped to a record in the other endpoint, it is always synchronized when there is new data.

Therefore, before you start synchronizing, it is highly recommended that you read the topics that describe the various types of configurations available and the guidelines for specific types of synchronizations.

Sample synchronization plan

Many teams will use ALM to manage defects and Agile Manager to manage user stories. If you do this, you can set up defects to synchronize from ALM to Agile Manager, and user stories to update from Agile Manager to requirements in ALM.

The following table shows a basic and simple synchronization plan using this model.

<p>Assumptions</p>	<p>Agile Manager is used to manage backlog items and defects.</p> <p>Tests are defined in ALM and are developed using the backlog context in ALM.</p> <p>Defects are created in Agile Manager, but can also be created during a test execution in ALM.</p> <p>All defects should be visible in Agile Manager for a complete view of the product backlog.</p> <p>Before moving to Agile Manager, all backlog items and defects were fully managed in ALM. Relevant product backlog items and defects must be migrated from ALM to Agile Manager, including:</p> <ul style="list-style-type: none"> • Defects that do not have Closed status • Requirements that do not have Done status, and any related themes and features
<p>Synchronization includes</p>	<p>An initial migration of all relevant items from ALM to Agile Manager.</p> <p>Ongoing user story synchronization from Agile Manager to requirements in ALM.</p> <p>Ongoing bi-directional synchronization of relevant defects between Agile Manager and ALM.</p>

Read through the following guidelines for the specific types of synchronizations you need.

Sample use cases 25

Synchronization links 28

Synchronization task types 30

Guidelines for specific types of fields	33
Guidelines for requirements and user stories, themes, and features	42
Guidelines for releases and sprints	49

Note: Perform the procedures described in ["Set up Synchronizer" on page 53](#) to prepare your ALM project and Synchronizer server and client for synchronization.

Sample use cases

The following diagrams illustrate some sample use cases where Synchronizer is used to manage both ALM projects and Agile Manager workspaces.

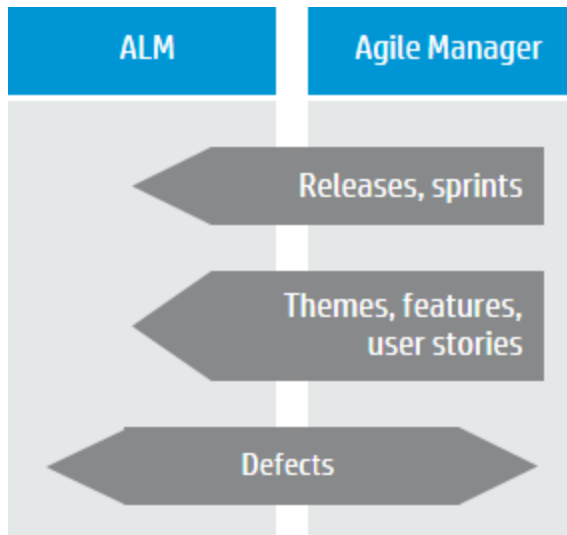
Note: Releases, requirements, and defects are all synchronized in separate links.

["Develop and plan in Agile Manager; test in ALM" on the next page](#)

["Develop in Agile Manager; test in ALM" on page 27](#)

["Manage workload for both user stories and defects in Agile Manager" on page 28](#)

Develop and plan in Agile Manager; test in ALM



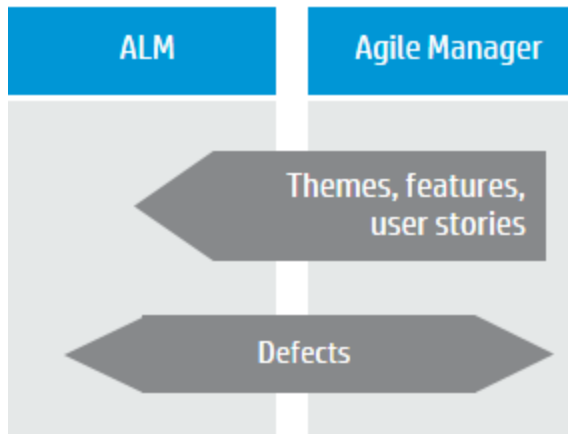
Releases and sprints are created and updated in Agile Manager, enabling teams to schedule work according to Agile methodologies.

Additionally, requirements are managed as user stories in Agile Manager, together with themes and features. Themes, features, and user stories are scheduled within releases and sprints.

All the entities created and managed in Agile Manager are synchronized to ALM, including releases and sprints, themes and features, and user stories. These entities are used in ALM to indicate test coverage.

Defects are created in ALM, where teams can utilize ALM's full testing features. To ensure that defects are included in team workloads, they are synchronized with Agile Manager, where they can be assigned to sprints. Developers can update the defect details in Agile Manager, and testers can see these updates in ALM.

Develop in Agile Manager; test in ALM



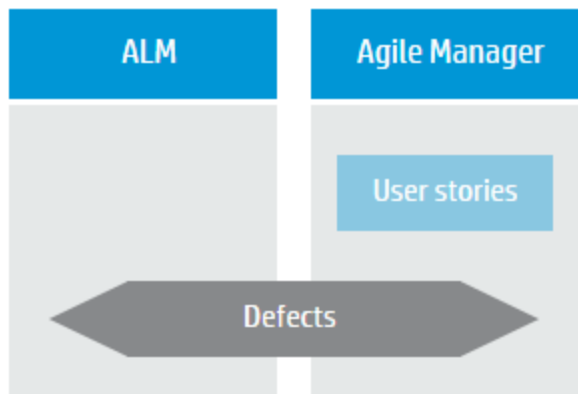
Requirements are managed as user stories in Agile Manager, together with themes and features, and are scheduled within releases and sprints.

User stories are synchronized with ALM, together with any relevant themes and features, where they can be used to indicate test coverage.

Defects are created in ALM, where teams can utilize ALM's full testing features.

To ensure that defects are included in team workloads, they are synchronized with Agile Manager, where they can be assigned to sprints. Developers can update the defect details in Agile Manager, and testers can see these updates in ALM.

Manage workload for both user stories and defects in Agile Manager



User stories are managed in Agile Manager, providing development teams with a robust Agile environment.

Defects are created in ALM, where teams can utilize ALM's full testing features.

To ensure that defects are included in team workloads, they are synchronized with Agile Manager, where they can be assigned to sprints. Developers can update the defect details in Agile Manager, and testers can see these updates in ALM.

Synchronization links

In each synchronization link, you define the entities that are linked, the directions in which the endpoints are updated, and the filters used to find entities with new data.

Each link can synchronize only one type of entity (either releases-releases, defects-defects or requirements-user stories), and only one link between the same type of entities is supported for the same pair of endpoints.

Additionally, each link must have unique connection data. This means you can create as many links as needed to one ALM project or one Agile Manager workspace, as long as the other endpoints are unique.

Link filters

Synchronizer looks for new records in ALM or Agile Manager based on the filter defined for the link task. If no filter is defined, all records are considered for synchronization.

Filters are based on ALM or Agile Manager favorites, and must be available in the endpoint to the user defined for the current link. You can select from a maximum of 50 filters for a specific endpoint.

Tip: When first setting up Synchronizer, synchronize a filter that contains only one defect or requirement to verify that the synchronization works as you expect. Enlarge the filter slowly, verifying that the synchronization continues to update information as you expect, until you've covered the variety of scenarios in which you need to synchronize data.

Once a record in one endpoint is mapped to a record in the other endpoint, it is always synchronized if there is new data, regardless of whether the record still matches the link's filter. Be sure that you want to synchronize data in a specific record or type of record before including it in your filter.

In the Agile Manager endpoint...	In the ALM endpoint...
Filters must be defined as favorites in the Product Backlog > Backlog page.	Filters must be defined in the ALM Requirements Tree view, and not the Requirements Grid view.

For more details, see "[View or update link filters \(defects or requirements\)](#)" on page 72.

Link mapping data

Each synchronization link includes definitions for field mapping, which specifies the pairs of mapped fields and the direction in which each pair of fields is mapped. You can also map specific values for a field in one endpoint to specific values of a field in the other endpoint.

Example

You might map a field named `Priority` in one endpoint to a field named `Criticality` in the other endpoint. You might also have `Priority` values of 1, 2, and 3 in one endpoint mapped to `Criticality` values of Low, Medium, and High in the other endpoint.

For task details, see ["Map endpoint fields" on page 77](#).

Synchronization task types

The following table describes details about the types of synchronization tasks available: **Incremental**, and **Full**.

For details about how to schedule or manually run specific types of tasks, see ["Run synchronization tasks" on page 100](#).

	Incremental synchronizations*	Full synchronizations
General description	<p>Finds records in each endpoint that were created or modified since the previous synchronization task.</p> <p>Synchronizes data between the two endpoints according to the mapping and settings you defined for the link.</p>	<p>Performs a full comparison of the records in each endpoint.</p> <p>This is useful if you want to handle records that were deleted from one of the endpoints, or if you want to synchronize records that were not synchronized in an incremental synchronization.</p>
List of relevant records	<p>Each endpoint supplies a list of records that were <i>created</i> or <i>modified</i> since the last synchronization task was run.</p> <p>The list is compiled by comparing the synchronization task time stamp (the time the last synchronization task was started) to the last time that each record was modified.</p> <p>Records that were modified after the last synchronization task are included in the list.</p>	<p>Each endpoint supplies a list of <i>all</i> records in that endpoint, and compares the list to the list of records included in the identity mapping table, which lists the records that are already synchronized.</p>

	Incremental synchronizations*	Full synchronizations
Updated records	<p>If a record in the list has already been synchronized (is listed in the identity mapping table), and the version of the record in the source endpoint is different than the version of the record in the destination endpoint, Synchronizer considers the record to have been <i>updated</i> since the last synchronization.</p> <p>Synchronizer performs a cycle redundancy check to determine if the changes include mapped fields, and therefore require synchronization.</p> <p>If the changes appear in mapped fields, Synchronizer updates the corresponding record in the destination endpoint, depending on the settings defined for the link.</p>	<p>If a record appears in both an endpoint and the identity mapping table for the link, Synchronizer synchronizes the record as it would in an incremental synchronization, based on the link's time stamp, the record version, and cycle redundancy checks.</p> <p>Some records may be synchronized in a full synchronization that would not be synchronized in an incremental synchronization. This is because all records are requested from each endpoint, and not just those modified since the previous synchronization task.</p>
Deleted records	<p>Incremental synchronizations do not handle deleted records. To handle deleted records, run a full synchronization.</p>	<p>Records that appear in the identity mapping table but no longer appear in an endpoint are considered to have been deleted in that endpoint, and are handled according to the settings defined for the link, for deleted records.</p>

	Incremental synchronizations*	Full synchronizations
New records	<p>Records that had not been previously synchronized are considered to be newly created records.</p> <p>If you enabled Synchronizer to create records in the destination endpoint based on new records in the source endpoint, Synchronizer creates a new corresponding record in the destination endpoint, and updates the identity map to pair these records.</p> <p>New records are handled in the same way in both incremental and full synchronizations.</p>	

Note: * Incremental synchronizations can sometimes cause data consistency issues. For example, if Synchronizer tries to update a record but is unable to do so, such as if the record was locked in the destination endpoint, the time stamp is updated for the link, although the records have not been synchronized. (Time stamps are updated only when a synchronization task begins.)

Because the time stamp is updated, future incremental synchronizations will not detect that the records in the filter still need to be synchronized.

To handle any data consistency issues, run a full synchronization.

Guidelines for specific types of fields

Read through the following sections for guidelines on Synchronizer treats specific types of fields, and tips for mapping them.

Note: Record history data is not synchronized.

For task details, see ["Map endpoint fields" on page 77](#).

Guidelines for mapping user list fields

Agile Manager and ALM maintain separate lists of user fields, such as the **Assigned To** field.

If a user has multiple email addresses defined in ALM, only the first email address is synchronized with Agile Manager.

User list field values are mapped in the following ways:

Automatic mapping	ALM users defined with an email address that is identical to the one used to log in to Agile Manager are automatically mapped for all user list fields. Note: If a user already exists in a bulk mapping .csv file, the user continues to be mapped via the .csv file.
Manual mapping	Map ALM and Agile Manager users manually if the email addresses are not identical, or if the ALM user is not defined with an email address. Do this using the same process you use to map other specific field values in the Value Mapping tab. For details, see "Map specific field values" on page 83 .
Bulk mapping	Map ALM and Agile Manager users in bulk if you have many values to map manually. Use a .csv file, which you can create and edit directly in the Synchronizer client or any text editor. For details, see "Map user list fields using a .csv file" on page 84 .

If you have users that exist in one endpoint but not in the other, you must map them to a Default user in the opposite endpoint. This may happen, for example, if a user once

existed in an endpoint's user list, and is therefore listed as a value, but has since been deleted from the other endpoint's user list.

Note: When you map the Default user, the direction must be unidirectional. Otherwise, using the Default user can potentially cause data loss in the same way that mapping any specific value in one endpoint to multiple values in the other endpoint can.

Guidelines for mapping attachments

If you map attachment fields for a specific link, when a file is attached to the record in the source endpoint, Synchronizer generates a URL for that file, and passes it to the corresponding record in the destination endpoint. If a URL is attached to the record in the source endpoint, Synchronizer simply passes it to the destination.

From then on:

Updated attachments	Synchronizer updates an attachment if <i>both</i> of the following have changed: <ul style="list-style-type: none">• The record to which the file is attached• The attachment name, size, or last modified property The attachment description is synchronized only during the initial attachment synchronization, and is never updated.
Deleted attachments in the source endpoint	If an attachment is deleted from the record in the source endpoint, Synchronizer also deletes it from the corresponding record in the destination endpoint.

Deleted attachments in the destination endpoint	<p>If an attachment is deleted from a destination endpoint, and changes are later made to the attachment in the source endpoint, the attachment is recreated in the destination endpoint.</p> <p>You can modify this behavior in the server.properties file.</p>
--	--

Notes for new attachments

Separate attachments in opposite endpoints with the identical file names	<p>You cannot synchronize attachments for the same entity that have identical file names. If this happens, the task report may display a failed status, depending on the configuration set in the server.properties file.</p>
File encoding	<p>URL attachments created in ALM use the file encoding configured in the server.properties file. If Synchronizer cannot determine the encoding, it cannot synchronize the URL attachments to Agile Manager.</p>

Opening attachments

Permissions	<p>Users must have appropriate permissions in both endpoints to open the synchronized attachment.</p>
ALM System Info attachments	<p>ALM System Info attachments (.tsi files) are opened from ALM in a built-in ALM viewer. They are opened from Agile Manager as XML files.</p>

Guidelines for mapping string values

If you map a string field that has a maximum length in the destination endpoint, and a synchronized value exceeds this maximum, the string value will be truncated as necessary in the source endpoint during synchronization.

Guidelines for mapping links between entities

Map links between entities, such as links between defects and requirements, the same way you map other fields.

Once you've mapped link fields, entity links between two synchronized entities are synchronized together with the rest of the record. However, if one of the linked entities is not synchronized, the link between them is not synchronized either.

When mapping entity links between defects and requirements:

- You must be synchronizing both defects and requirements by the same Synchronizer server.
- The link fields are mapped using the same direction as is used by the link synchronizing defects on that Synchronizer server.

Note:

- It is important to distinguish between Synchronizer *endpoint* links (such as those between ALM and Agile Manager) and *entity* links between entities, such as defects and requirements.
- Synchronization of entity links is supported for ALM versions 11.50 and later.
- Synchronization links for *defects* will synchronize links between defects as well as from defects to user stories.

Synchronization links for *requirements* will synchronize links only between two user stories.

Examples

Basic link synchronization	<p>If defect A and defect B are both being synchronized, and there is a link between them, the entity link is also synchronized with the rest of the record.</p> <p>However, if defect B is not being synchronized, the link from defect A to B is not synchronized together with defect A.</p>
Synchronizing links between defects and requirements	<p>Assume that there are two endpoint links between ALM and Agile Manager on one Synchronizer server:</p> <ul style="list-style-type: none">• One endpoint link synchronizes defects from ALM to Agile Manager.• The other endpoint link is mapped as bidirectional, synchronizing requirements. <p>In this case, because the defects are synchronized from ALM to Agile Manager, any entity links between defects and requirements are synchronized only from ALM to Agile Manager.</p>

Notes for synchronizing Product and Application fields

When synchronizing from Agile Manager to ALM, map the ALM Product field to the Agile Manager Application field.

If a new Application is added to a user story or defect in Agile Manager, the new Product value is not automatically created in ALM. To synchronize these new Product and Application values, add the new Product value in ALM.

Guidelines for mapping Feature and Theme fields

- Team, theme, and feature names must be unique in both ALM and Agile Manager. If a duplicate value is found during synchronization, that defect or requirement is not synchronized.

Caution: Agile Manager considers strings that are capitalized differently as different strings. Synchronizer does not always make this distinction, and values that are the same string but are capitalized differently might be considered as duplicate, non-unique values by Synchronizer.

- In Agile Manager, records assigned to a specific feature must also have a Theme defined. If you map the Feature field to be synchronized from ALM to Agile Manager (or in a bi-directional synchronization), you must also map the Theme field.

Synchronizer generates an error if it finds a record in ALM that is assigned to a Feature, but no Theme.

Tip: If you are mapping Feature and Theme fields, it is recommended to make them required fields in ALM to avoid synchronization errors.

Guidelines for mapping Release and/or Cycle fields in defect and requirement links

The following ALM release and cycle fields are available for mapping in defect and requirement links:

- Requirements: **Target Release, Target Cycle**
- Defects: **Target Release, Target Cycle, Detected in Release, Detected in Cycle**

Note: For guidelines about configuring links to synchronize releases and sprints, see ["Guidelines for releases and sprints" on page 49](#).

To map a cycle field, you must also map the corresponding release field. For example, if you map the **Target Cycle** field, you must also map the **Target Release** field.

Additional notes:

Release and cycle or sprint names	Must be identical, with the same name and capitalization, in both endpoints.
Release names	Must be unique in both endpoints. If they are not, and you map release fields, an error is written to the task report and the relevant records are not synchronized.
Target release for requirements	Must have a single target release in ALM. Synchronizing requirements from ALM with multiple target releases will fail.

Tip: If you cannot modify these release names but you want to map these fields:

Map specific field values to define the full path of the release. For example, you can map each value of the **Target Release** field to a value in a corresponding field in the other endpoint.

Define the full path of the ALM release in the format `\<Release_Folder_Name>\<Release_Name>`. For example, `\Flight Application\Release_2`.

You do not need to include the root **Releases** folder in the path.

[Guidelines for mapping specific field values](#)

Synchronizer enables you to map specific field values in one endpoint to specific values for the corresponding field in the other endpoint.

This is supported only for the following types of fields: **String**, **Single value list**, **Multi value list**, and **User list**

For task details, see ["Map specific field values" on page 83](#).

Caution: If you have a different number of values for the field in each endpoint, select uni-directional mapping. Only one value can be synchronized back to the original endpoint, and if this field has a bi-directional mapping, Synchronizer may select the incorrect value in the original endpoint.

In uni-directional mapping, occurrences of the value in the source endpoint are mapped to the value in the destination endpoint. Occurrences of the value in the destination endpoint are *not* mapped to the value in the source endpoint.

Examples

- You have an ALM Priority field, with values of Low, Medium, High, and Critical.

You map the Priority field to an Agile Manager Importance field, with values of 1, 2, 3, and 4.

In this case, map Low to 1, Medium to 2, and so on. When the ALM Priority value changes from Medium to High, Synchronizer changes the Agile Manager Importance value from 2 to 3.

- If however, suppose the Agile Manager Importance field had only three values, of 1, 2, and 3.

If you map both Priority fields Medium and High to the Importance value 2, Synchronizer changes both Medium and High values to 2 during synchronization.

When synchronizing the same record back to ALM, the Priority field may be given a value of High, when it was actually originally Medium.

Guidelines for records with no corresponding fields in the other endpoint

Assign constant values to fields instead of mapping them to a corresponding field in the other endpoint, such as when there is no corresponding field. The constant value is assigned to the field when Synchronizer creates new entities, and is not updated in subsequent synchronizations. Multi value list fields support multiple constant values.

For task details, see "[Map constant values](#)" on page 85.

For example, you may want to do this if:

- You have a required field in ALM, but no corresponding field in Agile Manager. Assign a constant value so the required field is considered to be mapped, and integrity links can pass.
- You want to distinguish between defects created directly in ALM and those synchronized from Agile Manager. Create a defects field in ALM named **Creation Method**, and assign a constant value of **created by Synchronizer**.

Guidelines for requirements and user stories, themes, and features

To view user stories in ALM as requirements, you must synchronize them between Agile Manager and ALM. Themes and features you create in Agile Manager are also synchronized as requirements in ALM.

Before you begin to synchronize requirements (including user stories, themes or features), you must modify your ALM project with additional requirement types in a specific hierarchy. For details, see ["Adapt your ALM project" on page 53](#).

After creating a new link and selecting the requirements entity type, define other link properties, such as filter options, rules, and field mapping, as described in ["Configure link properties" on page 71](#) and ["Map endpoint fields" on page 77](#).

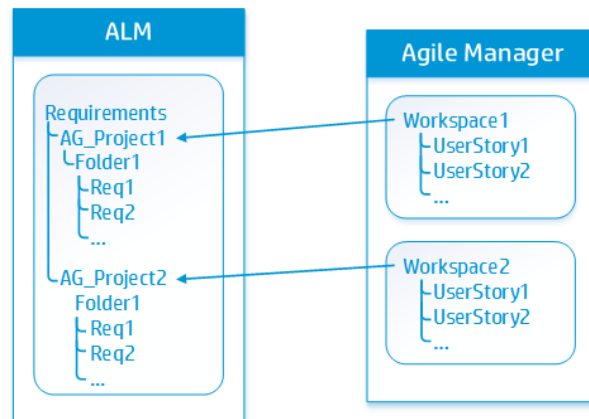
Specifically, define whether ALM or Agile Manager is the Master for the link. The Master endpoint is the endpoint that defines both the structure of your requirements tree in ALM, and similarly, the themes and features of a specific user story in Agile Manager.

Synchronizing requirements in alternate root folders

By default, Synchronizer synchronizes all requirements in the ALM Requirements root folder. Specify an alternate root folder to synchronize only a subset of the requirements in your ALM project.

For example, you may want to synchronize multiple workspaces from Agile Manager to separate folders in ALM, as shown in the image on the side.

In this example, the user stories in the Agile Manager Workspace2 are synchronized with the requirements in the ALM **AG_Project2** folder instead of the **Requirements** folder.



Guidelines for specifying an alternate root folder

Specifying an alternate root folder for synchronization can cause unexpected behavior.

Consider the following:

- The path to the alternate folder defined in Synchronizer must replicate the exact hierarchy in ALM. For example: **Requirements\MyProject**. Note that when defining this folder, the **Requirements** folder is already defined for you in the dialog box path.
- The path to the alternate root folder must be completely unique from the path to any other link. If you specify an alternate folder for one link, you can specify a sibling folder for a different link.
- If you reorganize the Requirements module in ALM after having run a synchronization task, carefully **move** the records while retaining the same hierarchy to retain the synchronization. Do *not* delete records and create new ones in the new location, as Synchronizer recognizes records according to their ALM ID.

When you move records, make sure to retain the same hierarchy as is defined for the link in Synchronizer.

Guidelines for mapping ALM requirement subtypes

- Each new requirement type in ALM can be mapped only once, to either theme, features, or user stories in Agile Manager.
- If you do not map a specific ALM requirement type, requirements of that type are not synchronized.
- For each mapped pair, you can only define one endpoint as a source for newly created requirements. For example, if you manage your requirements as user stories in Agile Manager, new records created in Agile Manager will be synchronized

to ALM, but new records created in ALM will not be synchronized to Agile Manager.

Notes about ALM subtypes defined for synchronized requirements

- Synchronization fails if synchronized requirements are not located in the correct location in the ALM root hierarchy, according to the requirement type (theme, feature, or user story). See ["Adapt your ALM project" on page 53](#) for details.
- Synchronization of a specific requirement fails if the type of requirement changes. For example, a requirement that is mapped to a theme cannot be subsequently mapped to a user story.
- Requirements in the hierarchy defined as types other than theme, feature, or user story may exist, but are ignored during bidirectional synchronization.
- When synchronizing requirements defined as features, any ALM Product field that is mapped to an Application field in Agile Manager is reflected in synchronized user stories associated with that feature.

Guidelines for defining synchronization rules for requirements

For each requirement type mapping, one endpoint is selected as *master* for the record synchronization. Which endpoint is the master defines many of the rules for the master and non-master endpoint.

Synchronizer maintains the hierarchical requirements tree structure during synchronization, based on the master endpoint:

New parent requirements	When a new requirement is created in the master endpoint, and the requirement is the child of requirements that were not previously synchronized, the parent requirements are also created in the other endpoint. If a filter is defined, the parent requirements are synchronized even if they do not match the filter.
Moved requirements	If a requirement is moved within the requirements tree of the master endpoint, it is moved accordingly in the other endpoint.
Alternate root folders	If you selected an alternate root folder in the Connectivity tab, requirements moved out of the specified folder are handled as deleted requirements.
Deleted parent requirements	<p>If a parent requirement is deleted in the master endpoint, and the option to delete corresponding records in the other endpoint is selected, the parent requirement and all child requirements are deleted in the other endpoint.</p> <p>When a deleted parent requirement is recreated in an endpoint, the child requirements are also recreated.</p>

Guidelines for synchronizing with ALM Version Control

- When a requirement is created in the ALM endpoint during synchronization, it is created with a **Checked In** status. A comment is added to the requirement's version history specifying that this requirement was created automatically.
- When a requirement is updated in the ALM endpoint during synchronization, Synchronizer creates and checks in a new version of the requirement. A comment is added to the requirement's version history specifying that the requirement was modified by the Synchronizer.
- When synchronizing a requirement that is checked out by the ALM user defined for

the link, the requirement is updated and the new version of the requirement is checked in.

Caution: Requirements that are checked out by an ALM user other than the user defined for the synchronization link are not synchronized.

Notes about Agile Manager Group Stories and Synchronizer

Group stories are not reflected in the ALM requirements tree. Therefore, Synchronizer does not automatically recognize Agile Manager Group Stories, and does not synchronize any group (parent/child) relationship between stories.

If a requirement in ALM is synchronized with a user story in Agile Manager, and that user story is later broken into a group story (in Agile Manager), Synchronizer considers the user story to have been deleted.

If the link is configured to recreate deleted user stories in Agile Manager based on the corresponding requirements in ALM, the original user story is recreated as a duplicate in Agile Manager.

Tip: Synchronize the group story by creating a user defined field in ALM and mapping it to the Agile Manager Group Story field. The name of the group (parent) story is synchronized to the mapped ALM user defined field.

This synchronization is always unidirectional, from Agile Manager to ALM.

For details about creating user defined fields in ALM for Synchronizer, see "[Create user defined fields for additional Agile Manager fields.](#)" on page 55

Perform an initial migration of ALM requirements to Agile Manager user stories

Tip: For a brand new ALM project, there is no need to migrate requirements to Agile Manager.

Perform a one-time synchronization to migrate ALM requirements into Agile Manager:

1. [Create a link](#). In the **Subtype Mapping > Rules** tab, define ALM as the "[View or update rules and mapped fields \(requirements\)](#)" on page 73.
2. Create [filters](#) to migrate only the relevant information to Agile Manager.

For example, historical information and closed defects may well not be relevant.

Tip: You may want to first create a small filter to verify that the synchronization works as you expect it to, and enlarge it bit by bit until all your requirements are included in the synchronization.

These filters should also be used for ongoing synchronization.

3. [Run an integrity check](#), [enable the link](#), and synchronize [manually](#).
4. Once your ALM requirements are created in Agile Manager, assuming you choose to manage your backlog in Agile Manager, modify the link so that Agile Manager is the Master of this link.

Guidelines for releases and sprints

Synchronize releases to manage, view, and analyze release data in both Agile Manager and ALM. When you synchronize a release, all related Agile Manager sprints are synchronized with cycles in ALM.

Synchronized data includes:

- **Releases:** Names, start and end dates, descriptions, and attachments
- **Sprints/cycles:** Names, start and end dates

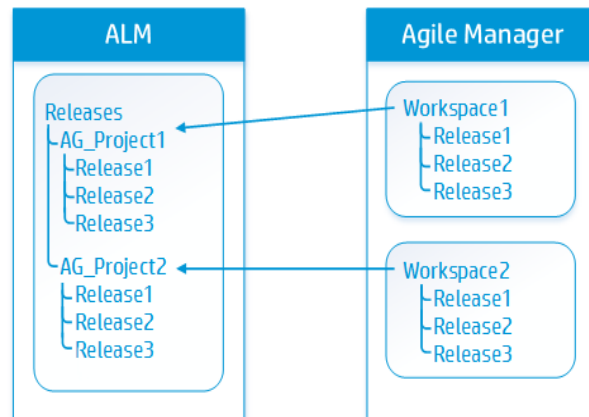
Caution: Agile Manager does not support custom release fields. If you have custom release fields that are mandatory in ALM, synchronize release data only from ALM to Agile Manager, and *not* from Agile Manager to ALM.

Synchronizing releases in alternate root folders

By default, Synchronizer synchronizes all current releases (with an end date that has not yet passed) in the ALM Releases root folder. Specify an alternate root folder to synchronize only a subset of the releases in your ALM project.

For example, you may want to synchronize multiple workspaces from Agile Manager to separate folders in ALM, as shown in the image on the side.

In this example, the releases in the Agile Manager Workspace2 are synchronized with the releases in the ALM **AG_Project2** folder instead of the **Releases** folder.



Guidelines for specifying an alternate root folder

Specifying an alternate root folder for synchronization can cause unexpected behavior.

Consider the following:

- The path to the alternate folder defined in the Synchronizer **Connectivity** tab must replicate the exact hierarchy in ALM.
- The path to the alternate root folder must be completely unique from the path to any other link. If you specify an alternate folder for one link, you can specify a sibling folder for a different link.

Guidelines for synchronizing releases that already exist in both endpoints

If you already have releases defined in both ALM and Agile Manager, compare the names of releases and sprints/cycles in both endpoints before synchronizing these releases.

If there are any pairs of releases or sprints with identical names in both endpoints, determine whether you want Synchronizer to map these pairs. Mapping pairs of releases and sprints with identical names uses data from the dominant endpoint for all fields, overriding any data in the other endpoint.

To automatically map these pairs, on the Rules tab, select the **Map pairs of new releases or sprints found with identical names** option. Clear this option if you want to retain the current release data in each endpoint.

If identically named releases or sprints are found and are not automatically mapped, these releases or sprints are not synchronized at all and an error is generated in the Run Report. If you later change the name of one of the releases or sprints, Synchronizer handles the release as a new record, and re-creates it in the destination endpoint.

For example:

If...	Then...
<ul style="list-style-type: none">• You have an ALM release named Project_1.3, as well as an Agile Manager release named Release_1.3• You define Agile Manager as the dominant endpoint for the release link fields (in the Field Mapping tab)• You select the Map pairs of new releases or sprints found with identical names option in the Rules tab	<ul style="list-style-type: none">• The two releases are mapped.• All data in the ALM release Project_1.3 is overwritten by the data in the Agile Manager release Release_1.3.

[Guidelines for deleting a sprint/cycle](#)

If you delete a sprint or cycle in one endpoint, the deletion is not synchronized to the other endpoint during incremental synchronization tasks. Run a full synchronization task to update the sprints and cycles in the other endpoint.

Set up Synchronizer

This section includes details about how to set up your Synchronizer server, client, and users, as well as important information about how to modify your ALM project before you can synchronize it with an Agile Manager workspace.

Adapt your ALM project	53
Start the Synchronizer service and client	57
Manage Synchronizer users	59
Configure server options	61
Configure an authentication proxy	63

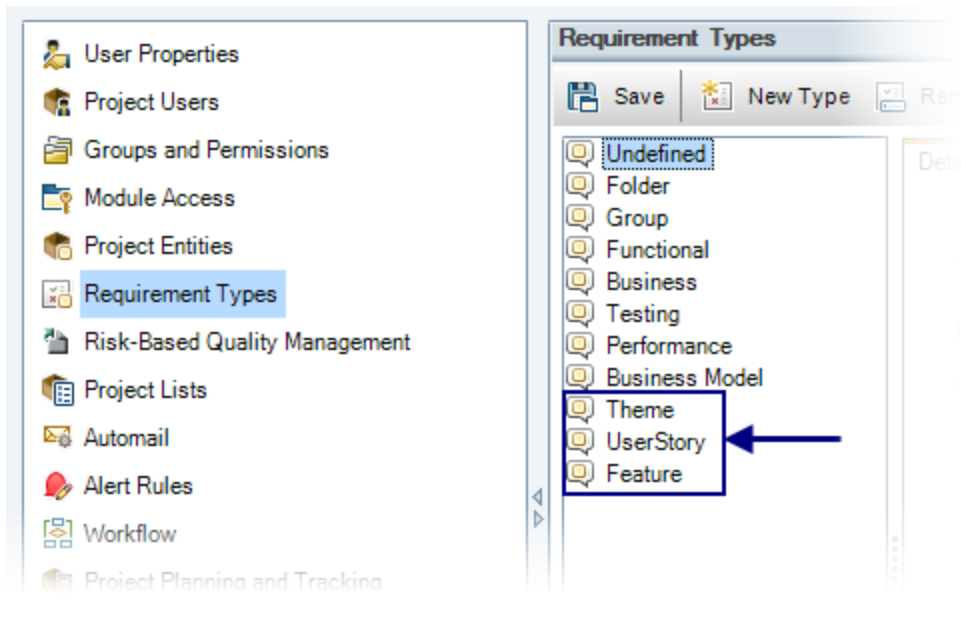
Adapt your ALM project

Before synchronizing records between Agile Manager and ALM, you must adapt your ALM project to match the various fields supported for user stories and defects in Agile Manager.

For example, Agile Manager defects can also have a feature and theme defined. To synchronize these fields, you must create corresponding fields in ALM.

1. **Create new requirement types.**

In ALM Customization, create new, user-defined requirement types that represent HP Agile Manager themes, features, and user stories.



Note: Do not base new requirement types on the **Folder** type.

2. Create or modify the requirement tree.

In ALM, create a requirement tree with a maximum of three levels (representing themes, features, and user stories).

- Requirements in the first level under the root are mapped to Agile Manager themes.
- Requirements in the second level under the root are mapped to Agile Manager features.
- Requirements in the third level under the root are mapped to Agile Manager user stories.

Synchronizer retains the hierarchy during synchronization, and by default synchronizes the entire ALM Requirements root folder.

Name	Requirement Type	Req ID	Direct Cover Status	Author
Requirements	Folder	0	---	
ALM_Req1_Theme1	Theme	1	Not Covered	admin
ALM_Req2_Feature1	Feature	2	Not Covered	admin
ALM_Req3_UserStory1	UserStory	3	Not Covered	admin
ALM_Req5_UserStory2	UserStory	5	Not Covered	admin
ALM_Req6_UserStory3	UserStory	6	Not Covered	admin
ALM_Req7_Feature2	Feature	7	Not Covered	admin
ALM_Req8_UserStory4	UserStory	8	Not Covered	admin
ALM_Req4_Theme2	Theme	4	Not Covered	admin
ALM_Req9_Feature3	Feature	9	Not Covered	admin
ALM_Req0_UserStory5	UserStory	10	Not Covered	admin

Caution: Synchronization may fail if you do not map all requirement types, including Theme, Feature, and User Story.

Note: You can also configure a link to synchronize only a subset of the requirements tree, such as if you want to synchronize multiple workspaces from Agile Manager to different folders in a single ALM project. However, doing this can cause unexpected behavior. See ["View or update connection settings for each endpoint"](#) on page 70 for some considerations.

3. Create user defined fields for additional Agile Manager fields.

In ALM, create user-defined fields to synchronize with fields that do not exist by default in ALM, but are used in Agile Manager, such as themes, features, and teams.

For defects	Create user defined fields in ALM for the Theme , Feature , and Team fields.
--------------------	---

For requirements	<ul style="list-style-type: none">■ Create a user defined field in ALM for the Team field.■ If you use group stories, create a user defined field in ALM for the Story Group field.■ To synchronize ranking, create a user defined field in ALM for the Rank field. This field must be a Number field, and have read-write permissions. <p>Note: For user stories, the theme and feature is represented in ALM by the requirement's location in the tree.</p> <p>For more details about synchronizing group stories, see "Notes about Agile Manager Group Stories and Synchronizer" on page 47.</p>
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When do you do this, consider the following:

- Team, theme, and feature names must be unique in both ALM and Agile Manager. If a duplicate value is found during synchronization, that defect or requirement is not synchronized.

Caution: Agile Manager considers strings that are capitalized differently as different strings. Synchronizer does not always make this distinction, and values that are the same string but are capitalized differently might be considered as duplicate, non-unique values by Synchronizer.

- In Agile Manager, records assigned to a specific feature must also have a Theme defined. If you map the Feature field to be synchronized from ALM to Agile Manager (or in a bi-directional synchronization), you must also map the Theme field.

Synchronizer generates an error if it finds a record in ALM that is assigned to a Feature, but no Theme.

Start the Synchronizer service and client

To start the Synchronizer service, on the Synchronizer server machine, select **Start > Programs > HP ALM Synchronizer > Start Synchronizer**. The Synchronizer service is started in the background.

Note: You may need to wait a few minutes before you can connect a client to the service.

The service times out and stops after a period of inactivity. Start it again to reconnect.

Connect a Synchronizer client to the server

1. On the Synchronizer client machine, select **Start > Programs > ALM Synchronizer Client > ALM Synchronizer Client**.
2. Enter the server name and your Synchronizer authentication details, and click **Connect**.

Server Name	The name of the server running the Synchronizer service. The server name can be the full domain name, the IP address, or localhost . If this is the local machine, enter localhost .
--------------------	---

User Name	The first time you connect, you must log in as the Synchronizer administrator (admin). Administrators can create additional users. For details, see "Manage Synchronizer users" on the next page .
Password	The admin user's initial password is blank. You can change your password after you log in. For details, see "Change your password." on the next page


Tip: Multiple clients can connect to the Synchronizer server at the same time. If you work with multiple clients, verify that you work on links from only one client at a time.

What do you want to do?

[Disconnect from or reconnect to the Synchronizer server](#)

The Synchronizer client is automatically disconnected from the Synchronizer server after an extended period of inactivity. In such cases, you are notified that the client is not connected to a server, and you must manually disconnect and reconnect.

You may also want to disconnect from the current server and reconnect to a different one.

1. In the ALM Synchronizer client, select **Connection > Disconnect**, or click the **Disconnect**  button.
2. In the Connect to Synchronizer Server dialog box, click **Disconnect**.

3. To reconnect, or to connect to a different server, enter your login credentials, and click **Connect**.

Change your password.

1. In the Synchronizer client, select **Connection > Change Password**.
2. In the Change Password dialog box, enter the old and new passwords, and click **OK**.

Note: The initial password is blank.

Close the Synchronizer client

To close the Synchronizer client, select **Connection > Exit**.

Stop the Synchronizer service

On the Synchronizer server machine, select **Start > Programs > ALM Synchronizer > Stop Synchronizer**.

Manage Synchronizer users

To access: Connect to the Synchronizer as the **admin** user, and select **Tools > User Management**.

The User Management dialog box enables administrators to add and delete users, modify the links visible to specific users, as well as reset user passwords.

Note: By default, user passwords are blank, and users change them when they first log in to the client.

Caution: When you define visible links for users, consider the following:

- If a link is visible to a user, the user has full privileges and can run, edit, and delete the link.
- By default, all links are visible to the **admin** user.
- When you create a new user, no links are visible to the user by default. You can assign existing links to the user.
- When a user creates a new link, the link is visible to the user and to the **admin** user by default.

What do you want to do?

Add a new user

1. Click **Add**. In the New User dialog box, define the new user name.
 - If the user is also an ALM user, use the email address defined in ALM as the Synchronizer user name.

Note: If an ALM user is defined with an email address, and that email address is identical to the one used to log in to Agile Manager, the users on the two lists are automatically mapped.

- User names have a maximum length of 60 characters, and cannot include any of the following:

`()@ \ / : * ? " ` < > | + = ; , %.`

2. Define the visible links for the new user by moving links from the **Available Links** list to the **Visible Links** list.

Edit an existing user's visible links

Select the user name, and move links from the **Available Links** list to the **Visible Links** list.

Delete a user

Select the user name and click **Delete**. ALM Synchronizer warns you before deleting a user.

Reset a user password

Resetting a user password changes it to the initial blank password.

Select a user name and click **Reset Password**.

Configure server options

Connect to the Synchronizer client as the **admin** user.

Select **Tools > Server Options** and set any of the following options:

General tab	
Run history	Enter the number of days for which you want to keep run task history. View history from a link's General tab.
HP ALM Settings	Define the ALM version you are working with.

Adapter Settings	<p>Modify the adapter log level to help you debug adapter errors.</p> <p>Adapter logs are located the <Synchronizerinstallation>log directory on the Synchronizer Server machine, and have a prefix of adapter_act.</p>
Server Backup Location	<p>The location on the server machine to which you want to save backup data.</p> <p>Backup files include those created during automatic backups and those created when you export link data manually.</p> <p>If you do not define this location, backups are saved to the <Synchronizerinstallation>\backup directory on the Synchronizer Server machine.</p> <p>Note: If you define the backup directory to a location that is not on the Synchronizer Server machine, the user that logs in as a service must have permissions to write to the specified location.</p>
Log settings	<p>Select Enable advanced logging to store extended log information for each link task run.</p> <p>Advanced logs are located the <Synchronizerinstallation>log directory on the Synchronizer Server machine, and are named with the following syntax:</p> <pre>run_<Run ID>_link_<Link ID>.log</pre> <p>Tip: Identify run IDs in the Run History dialog box. Identify link IDs in the left column of the links grid.</p> <p>Caution: Advanced logs can use a significant amount of disk space and are not generated by default. For details about the logs generated by default, see "View task event logs" on page 105.</p>

Email tab	
Email settings	<p>Define the SMTP mail server you want to use to send notifications of link task run failures. For details about mail notifications, see "Set link notification settings" on page 107.</p> <p>SMTP Server. The SMTP server host name</p> <p>User name/Password. The authentication details for the user specified to connect to the mail server.</p>

Configure an authentication proxy

By default, the connection between the Synchronizer server to Agile Manager is not authenticated by proxy.

If you configure an authentication proxy for connecting to Agile Manager, clicking **Check Connectivity** in the Create Link wizard or the link's Connectivity tab uses the values specified in the **proxy.properties** file for authentication.

Tip: If authentication fails and errors 401 and 407 display in the **restClient.log**, verify that the contents of the **proxy.properties** file are syntactically correct and contain valid values.

1. In the **<ALM Synchronizer installation directory>\adapters\dat\HP-Agile-Manager** 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 Agile Manager IP address or server name.
- b. Change the **proxyPort** value to the relevant port for Agile Manager.

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 Agile Manager user name.
 - b. Change the **proxyPass** value to the Agile Manager 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 Synchronizer server.

Configure links

Create and configure links to synchronize data between an instance of ALM and an instance of Agile Manager.

Create separate links to synchronize between releases, requirements/user stories, and defects.

Tip: Once a record in one endpoint is mapped to a record in the other endpoint, it is always synchronized if there is new data, regardless of whether the record still matches the link's filter.

When first setting up Synchronizer, synchronize a filter that contains only one defect or requirement to verify that the synchronization works as you expect. Enlarge the filter slowly, verifying that the synchronization continues to update information as you expect, until you've covered the variety of scenarios in which you need to synchronize data.

For details about supported filters, see ["Plan before you begin" on page 23](#).

Create a synchronization link	66
Configure link properties	71
Map endpoint fields	77
Export and import link configuration and data	90

Create a synchronization link

Select **Link > Create** or click **Create Link**  to open the Create Link wizard.

Each link must have unique connection data. This means you can create as many links as needed to one ALM project or one Agile Manager workspace, as long as the other endpoints are unique.

Note:

- Create separate links to synchronize between releases, requirements/user stories, and defects.
- Connection property values for both ALM and Agile Manager endpoints are case sensitive.

Navigate through the Create Link wizard to do the following:

1. [Assign general properties](#)

In the General Properties page, define a name and description for the link.

The ALM and Agile Manager endpoint types are pre-defined for you.

2. [Assign HP-ALM endpoint connection properties](#)

In the HP-ALM Endpoint page, do the following:

- a. Specify authentication details for the ALM user name you want to use to connect to the ALM endpoint.

Note: The ALM user defined for the synchronization link must have create, modify, and delete permissions for the entity being synchronized (defect or requirement) in the ALM project.

- b. Define the settings for the ALM project you want to connect to.

To select a project from a list of available projects, click **Set Connection**. In the HP ALM Connection dialog box, enter the connection settings for the ALM server you want to connect to, and then enter the user and project details.

To connect to a project manually, populate the **ServerURL**, **Domain**, and **Project** fields for the ALM project you want to connect to. Enter ALM server paths using the following syntax: `http://<ALM server name>[:port number]/qcbn`

Tip: You can later define an alternate root ALM folder for synchronizing requirements. However, do this with caution, as it may cause unexpected behavior. For details, see "[View or update connection settings for each endpoint](#)" on page 70.

For more details on ALM servers, domains, and projects, refer to the *HP Application Lifecycle Management Administrator Guide*.

- c. Click **Check Connectivity** to verify the connection to the ALM project. You may want to test connectivity to several projects before finalizing a project for the link.

3. [Assign HP-Agile Manager endpoint connection properties](#)

In the HP-Agile Manager Endpoint page, do the following:

- a. Specify authentication details for the Agile Manager user name you want to use to connect to the Agile Manager endpoint.
- b. Define the settings for the Agile Manager site and workspace you want to connect to.

ProductGroup Id	The workspace ID, as displayed in the Workspaces configuration page (Site > Workspaces).
TenantID	You can find the tenant (site) ID in the Agile Manager URL. For example: TENANTID=123456789 .
ServerURL	Use the following syntax: http(s)://<server name>:<port number>/agm
Domain	You can find the server URL in the Agile Manager URL. For example: https://myserver.mycorp.com/agm/webui/alm/<Domain>...
Project	Always defined as Main .

- c. Click **Check Connectivity** to verify the connection to the Agile Manager workspace.

Tip: By default, the connection between the Synchronizer server to the Agile Manager endpoint is not authenticated by proxy. To work with proxies, see ["Configure an authentication proxy" on page 63](#).

4. [Select the entity type](#)

In the Entity Types page, select the name of the entity you want to synchronize from each endpoint.

- Each link can synchronize only one entity type in each endpoint (defects, requirements, or releases).
- The entities you select here define the tabs that are displayed in the Synchronizer Client window.

At the prompt, click **Yes** to configure the link now, or **No** to open it in read-only mode and [edit the link later](#).

Tip: You can also create a link using another link as a base. For details, see "[Export and import link configuration and data](#)" on page 90

What do you want to do?

[Refresh link data](#)

The Synchronizer client is not always automatically updated when changes are made by the Synchronizer server. This can affect the actions available to perform on a link.

For example, when a task runs automatically on a link, the client is not updated to display that a task is running on the link.

Click **Refresh** to update the data.

[View or update general link properties](#)

1. Click the **General** tab.
2. In edit mode, modify the link name and description, and endpoint names. All other information in the General tab is read-only.

View or update connection settings for each endpoint

1. Click the **Connectivity** tab.
2. In edit mode, update the connection settings as needed. For example, you may need to do this if log-in credentials change.

To define an alternate root ALM folder for synchronizing requirements or releases, select **Use alternate root folder** and enter the path of the root folder you want to synchronize.

Delete synchronization links

In the links grid or navigation tree, select the link you want to delete, and select **Link > Delete**.

Caution: Consider carefully before you delete a synchronization link, as deleting links can have unintended consequences. If you create and run a synchronization link, run an updated record synchronization, delete the link, and create the same link again, the next updated record synchronization you perform duplicates the records in both endpoints.

For example, suppose you synchronized your records so that defects Bug 1 and Bug 2 exist in both your ALM project and your other endpoint. After deleting the synchronization link, creating the same link again, and performing another record synchronization, Bug 1 and Bug 2 will each appear twice in both ALM and the other endpoint.

Configure link properties

Link properties include all information about the link. Some main properties are displayed for all links in a sortable grid, and additional properties are displayed for a specific link in a series of tabs.

Open a link from the main grid or the navigation tree on the left to view or edit link properties. Tabs differ for each link, depending on whether you are synchronizing releases, defects, or user stories in the selected link.

Click **Refresh**  or select **Link > Refresh** to refresh the data displayed in the grid or the link details tabs.

Caution: Once a record in one endpoint is mapped to a record in the other endpoint, it is always synchronized when there is new data.


Therefore, before you start synchronizing, it is highly recommended that you read the topics that describe the various types of configurations available and the guidelines for specific types of synchronizations.

See "[Plan before you begin](#)" on page 23 for details.

What do you want to do?

Edit a link

Open the link and click **Edit** .

You can have unsaved changes in multiple links. Unsaved changes are indicated by a red asterisk  next to the link's icon in the navigation tree.

Caution: Editing a link disables the link, and changes the link's status to **Unvalidated**. You must save your changes and enable the link again before you can run synchronization tasks on it, as described in ["Enable or disable a link" on page 98](#).

Before editing a link, verify that you do not need to run synchronization tasks.

[View or update link filters \(defects or requirements\)](#)

Tip: Once a record in one endpoint is mapped to a record in the other endpoint, it is always synchronized if there is new data, regardless of whether the record still matches the link's filter.

When first setting up Synchronizer, synchronize a filter that contains only one defect or requirement to verify that the synchronization works as you expect. Enlarge the filter slowly, verifying that the synchronization continues to update information as you expect, until you've covered the variety of scenarios in which you need to synchronize data.

For other guidelines about link filters, see ["Link filters" on page 29](#).

1. Click the **Filters** tab.
2. In edit mode, click **Refresh Filter Lists** to display the current list of filters for each endpoint.

For each endpoint, select one of the following options:

No Filter	All records are considered for synchronization.
Use filters (for creation events)	<p>Only enabled if there are filters in the endpoint available for the user.</p> <ul style="list-style-type: none">■ Defect links support only one filter per endpoint.■ Requirement links support multiple filters for each endpoint. <p>If you define multiple filters for a requirement link, Synchronizer creates new records for any items that contain any or all of the combined filter criteria.</p>

[View or update rules and mapped fields \(requirements\)](#)

Click the **Subtype Mapping** tab.

Tip:

If you do not see the **Subtype Mapping** tab, verify that you are editing a requirement link. To edit defects, see "[View or update synchronization rules \(defects\)](#)" on page 75 or "[View or update mapped fields \(defects or releases\)](#)" on page 77.

Synchronizing requirements involves many details. Read through "[Guidelines for requirements and user stories, themes, and features](#)" on page 42 before you begin.

In edit mode:

1. Select a type for each endpoint, and click **Add Mapping**. The mapped pair is added to the Mapped Subtypes list.

For example, select the **Feature** type in the HP-ALM list, and then the **Feature** type in the HP-Agile-Manager list to map these requirements as a pair.

2. In the Mapped Subtypes list or the navigation tree, select a pair, and click **Configure** to define field mapping and synchronization rules for that pair.

Caution: Deleting a requirement type mapping deletes all identity mapping data for the selected pair. For additional important information, see "[Delete synchronization links](#)" on page 70.

3. In the Rules tab, configure synchronization rules for the selected mapped pair of requirement types. You can verify which pair you are configuring by checking the highlighted pair in the navigation tree. Define the following options:

Master and Creation	Define which endpoint you want to define as the Master endpoint. For example, if you plan to manage requirements as user stories in Agile Manager, select Master in the HP-Agile-Manager column. Rules for newly created records are automatically set.
Update	For updated records, define rules in the <i>non-master</i> endpoint only.
Deletion	For deleted records, define rules in both endpoints. Tip: For the <i>non-master</i> endpoint, ensure that synchronized records are not accidentally deleted by selecting Recreate based on its corresponding record in the other endpoint .

4. In the Field Mapping tab, map fields for the selected mapped pair of requirement types. You can verify which pair you are configuring by checking the highlighted pair in the navigation tree. For details, see "[Map endpoint fields](#)" on page 77 and "[Modify .csv map files in a text editor](#)" on page 86.

[View or update synchronization rules \(defects\)](#)

Configuration rules direct Synchronizer how to handle the creation, update, and deletion of defects in each endpoint.

1. Click the **Rules** tab.
2. In edit mode, set rules for each endpoint, for the following scenarios:

Creation	Define what happens in the other endpoint when Synchronizer detects a new record in this endpoint.
Update	Define what happens in the other endpoint when Synchronizer detects an updated record in this endpoint. If you selected Create a corresponding record in the other endpoint , you must also select Update its corresponding record in the other endpoint for the same endpoint.
Deletion	Define what happens in the other endpoint when Synchronizer detects that a record was deleted in this endpoint. The Recreate based on its corresponding record in the other endpoint option is enabled only when the Create a corresponding record in the other endpoint option is selected for the other endpoint. Synchronizer handles deleted records only during full synchronization tasks, and not during incremental synchronization tasks.

[View or update synchronization rules \(releases\)](#)

Configuration rules direct Synchronizer how to handle the creation, update, and deletion of releases or sprints in each endpoint. When synchronizing releases, a synchronized

record refers to a synchronized release.

1. Click the **Rules** tab.
2. In edit mode, set rules as follows:
 - Select **Map pairs of new releases or sprints found with identical names** if you want to automatically map new releases or sprints found in both endpoints with identical names.

Note: If this field is cleared and Synchronizer encounters a pair of identically named releases or sprints, the pair is not synchronized, and an error is generated in the run report.

If you do not see this option, verify that you are configuring a releases link.

- Set rules for each endpoint, for the following scenarios:

Creation	Define what happens in the other endpoint when Synchronizer detects a new record in this endpoint.
Update	Define what happens in the other endpoint when Synchronizer detects an updated record in this endpoint. If you selected Create a corresponding record in the other endpoint , you must also select Update its corresponding record in the other endpoint for the same endpoint.

Deletion	<p>Define what happens in the other endpoint when Synchronizer detects that a record was deleted in this endpoint.</p> <p>The Recreate based on its corresponding record in the other endpoint option is enabled only when the Create a corresponding record in the other endpoint option is selected for the other endpoint.</p> <p>Synchronizer handles deleted records only during full synchronization tasks, and not during incremental synchronization tasks.</p>
----------	---

[View or update mapped fields \(defects or releases\)](#)

Click the **Field Mapping** tab.

You must define field mappings for each link. For details, see "[Map endpoint fields](#)" below and "[Modify .csv map files in a text editor](#)" on page 86.

Tip: If you do not see the **Field Mapping** tab, verify that you are editing a defect or release link. To map fields for requirements, see "[View or update rules and mapped fields \(requirements\)](#)" on page 73.

Note: Before you can run synchronizations tasks on a link, you must [run integrity checks](#) and [enable the link](#).

Map endpoint fields




For defects or releases: **Field Mapping** tab

For requirements: **Subtype Mapping** tab> Select a mapped pair and click **Configure** > **Field Mapping** tab

The Field Mapping tab displays requirement type, field type, and permission type for each field available in the endpoints, as well as the mapping direction and other properties for each pair of mapped fields.

Field type icons

Icons indicate whether the field is mandatory for the endpoint, strongly recommended, or optional for you to map.

	Description
	<p>Mandatory fields must be mapped as a destination of a field in the other endpoint, or configured with a constant value.</p> <p><i>Errors</i> occur during integrity checks if records can be created in the endpoint and synchronized to the other endpoint, but mandatory fields are not mapped.</p> <p>Fields are set as Mandatory if they are required in ALM, but not given a default value in ALM when a record is created.</p>
	<p>Recommended fields should be mapped as the destination of a field in the other endpoint, although you are still able to run synchronization tasks on this link without mapping this field.</p> <p><i>Warnings</i> occur during integrity checks if records can be created in the endpoint and synchronized to the other endpoint, but recommended fields are not mapped.</p> <p>Fields are set as Recommended if they are required in ALM and are given a default value in ALM when a record is created.</p>
	<p>Fields are set as Optional if they are not required in ALM, and are not given a default value in ALM when a new record is created.</p>

Read-write attributes

Synchronizer indicates whether the field is read-only (**R**), or has read- and write-permissions (**RW**). You cannot map read-only fields.

Mapping directions

- **Bidirectional.** (Default) Changes made to data in either endpoint are always updated in the other endpoint. Always define a **Dominant side** in case of conflicts.
- **Uni-directional.** Changes made in the destination endpoint may be overridden by changes made in the source endpoint, even if they were made later.

What do you want to do?

Caution: Before mapping endpoint fields, read through the following topics for the data you want to map:


- ["Guidelines for specific types of fields" on page 33](#)
- ["Guidelines for requirements and user stories, themes, and features" on page 42](#)
- ["Guidelines for releases and sprints" on page 49](#)

Incorrect mapping can cause errors in synchronization, or incorrectly synchronized data.


Modify the fields displayed for a specific endpoint

- *Sort* the fields by the data in a particular column by clicking the column header.

- *Filter* the fields to display only fields with a specific requirement level by clicking the icons above the grid.

For example, to show only Mandatory fields, click the **Mandatory**  button.

View field properties

- To view the properties of a *specific field*, select the field and click **View field properties** .
- To view properties for *both fields in a mapped pair*, select the pair in the Mapped Fields list, and click the **Mapping Properties** tab on the right.



Map a pair of fields

Note: Each field in one endpoint can be mapped to only one field in the other endpoint.

Different types of fields and mapping directions require various types of property settings. For details, see "[Edit the properties for a specific pair of mapped fields](#)" on the next page.

Additionally, see "[Guidelines for specific types of fields](#)" on page 33 for the specific type of field you want to map.

In each endpoint's grid, select the fields you want to map and click **Map Selected Fields** at the top of the tab.

- To delete a mapping, select the pair and click **Delete Field Mapping** .
- To verify a mapping, select a pair and click **Check Field Mapping** . Reports include errors that will cause the link to fail, warnings that may prevent the link

from running correctly, and other information. For details, see "[Checks performed on link field mappings](#)" on page 96.

Edit the properties for a specific pair of mapped fields

Select the pair in the Mapped Fields list, and then click the **Mapping Properties** tab.

Specifically, update the following properties in specific situations:

Property	Description
Dominant side	<p>Relevant for bidirectional mapping. Defines which endpoint overrides the other endpoint if there are changes made to the same record in both endpoints.</p> <p>By default, ALM (Endpoint 1) is the dominant endpoint.</p> <p>Example</p> <p>Agile Manager (Endpoint 2) is set as the dominant endpoint.</p> <p>Since the last synchronization, a field value was changed in both Agile Manager and ALM, to different values. In Agile Manager, the value was changed to 20, and in ALM, the value was changed to 10.</p> <p>During the next synchronization, Synchronizer changes the value in ALM to 20, as defined in Agile Manager, the dominant endpoint.</p>

Property	Description
Synchronize back on create	<p>Relevant for a single directional mapping. Defines whether Synchronizer sends any new field values created in a destination endpoint (during synchronization) back to the source endpoint.</p> <div data-bbox="451 485 1369 806"><p>Example</p><p>A new record was created in ALM. During synchronization, that new record is added to Agile Manager, which generates an Agile Manager ID. Synchronizer now recognizes this new ID field value, and sends it back to ALM, adding it to the source record.</p></div> <p>This property helps to ensure that both endpoints contain exactly the same data.</p>
Require matching field types	<p>Defines whether the types of fields must match in a pair.</p> <p>Yes. Mapping fields of different field types is not permitted and the integrity check will fail.</p> <p>No. Set when you are mapping a String field with a Number or Double field. In this case, integrity checks will fail if this property is set to Yes.</p> <div data-bbox="451 1314 1369 1612"><p>Example</p><p>To map the Agile Manager Req ID field, which is a Number field, you might create a user-defined string field in ALM.</p><p>When you map these fields, you must set the Require matching field types property to No.</p></div>



Property	Description
Mapping method	Relevant for User list fields. Defines whether the field values are defined by: Default. The field is mapped manually, in the Value Mapping tab. File. The field is mapped using a user list mapping csv file. Files for mapping user list fields are located in the <Synchronizer installation directory>\dat\Mappings folder.
Mapping method value	Relevant for User list fields, when the Mapping method is set to File . Defines the name of the csv file that contains user list mapping. Files are stored in the <Synchronizer installation directory>\dat\Mappings folder.
Value	Defines a constant value for a field. For Multi list fields, separate values by semi-colons.

Map specific field values

Note: You can also use this procedure to map individual user list field values. However, if you have many users to map, you might want to use a .csv file, as described [below](#).


If your ALM users are defined with email addresses, and those email addresses are identical to those used to log in to Agile Manager, the users are mapped automatically.

See "[Guidelines for mapping user list fields](#)" on page 34 and "[Guidelines for mapping specific field values](#)" on page 40.

1. In the Mapped Fields list, select the pair of mapped fields for which you want to map specific values, and click the Value Mapping tab on the right.
2. Click **Add Value Mapping**  or **Edit Value Mapping** .



In the Add Value Mapping dialog box, select the field values in each endpoint that you want to map, as well as the mapping direction for this field value.


Tip: Endpoint 1 is ALM and Endpoint 2 is Agile Manager.

3. To remove a mapping between field values, in the Value Mapping tab, select the mapped pair of values and click **Delete Value Mapping** .

Map user list fields using a .csv file

Note: See "[Guidelines for mapping user list fields](#)" on page 34.

1. In the Field Mapping tab, select and map a pair of User list fields (such as an **Assigned to** field), and then select the mapped pair in the Mapped Fields list below.
2. In the Mapping Properties tab on the right, set the Mapping Method property to **File**.
3. Click the **Value Mapping** tab, and then click **Add Value Mapping** .
4. In the Value Mapping dialog box, select your mapping file from the **Existing mapping files** list, and then click **Load**. Click **Refresh**  if you do not see your file.
5. Select user values for each endpoint, and use the direction selector and arrow buttons to add pairs to the list of mapped values.

6. In each endpoint, click **Add**  to add a Default user, and map a user in each endpoint to the Default user in the other endpoint.

Caution: If the Default user is not mapped, synchronization fails for non-mapped user records.

When you map the Default user, the direction must be unidirectional.

7. Click **Save** to save changes to the currently selected file or **Save As** to save the mappings to a new .csv file.

You cannot save the mapping file unless the Status message at the bottom of the dialog box reads **OK**.


8. To use this .csv file for mapping field values, click **Set as mapping** before closing the file.

Map constant values

Note: See ["Guidelines for records with no corresponding fields in the other endpoint"](#) on page 42.

1. Select the field to which you want to map a constant value, for new records created in the endpoint.

For example, if you want to define a constant value for a field in ALM for records that were added in Agile Manager and created during synchronization in ALM, select the field in the column listing ALM fields.

2. Click **Add Constant Value**  above that endpoint's field grid, and enter the value

you want to use as a constant.

To add multiple constant values for **Multi value list** fields, select multiple values from the **Value** selection list.

Export or import field mappings

- To export the currently configured field mappings, click **Export**. The mappings are exported to an XML file.
- To import field mappings, click **Import**.

Browse to either a previously exported XML file, or a sample file, stored in **<ALM Synchronizer Client directory>\samples**.

When importing mappings from a sample file, select the file for the type of entity link you are configuring.

Modify .csv map files in a text editor

.csv files used to map users for user list field values can be modified in any text editor.

Save the map files on the Synchronizer server machine, in the **<Synchronizer installatio directory>\modules\server\dat\Mappings** directory.

Note: If your ALM users are defined with email addresses, and those email addresses are identical to those used to log in to Agile Manager, the users are mapped automatically.

You can also edit .csv files [directly in the Synchronizer Client](#), or map individual user list field values [manually](#).

When you specify the mapping file while creating or editing a link in Synchronizer, Synchronizer validates the contents of the mapping file to make sure it is formatted correctly.

When editing a mapping file in a text editor, verify that:

- No header row is specified.
- The first value is the user list field value in ALM.
- The second value is the direction for synchronization:
 - < Unidirectional, from Agile Manager to ALM.
 - > Unidirectional, from ALM to Agile Manager.
 - <> Bidirectional.
- The third value is the user list field value in Agile Manager.

Example

```
maria,<>,maria@maincompany.com  
charley,<>,charles@maincompany.com  
rafelo,<>,rafelo@maincompany.com  
timmy,<>,tim_smith@maincompany.com  
angela,<,ang@maincompany.com  
admin,>admin@maincompany.com  
leroy,<>,leroy@maincompany.com  
veronique,>,vlr@maincompany.com
```

Configuration for mapped attachment fields

Some Synchronizer behavior for synchronizing mapped attachment fields depends on the settings configured in the **server.properties** file.

The **server.properties** file is located in the **Synchronizer installation directory>\dat** directory on the Synchronizer server machine.

Attachments with identical names in opposite endpoints

Parameter name	<code>pass.entity.sync.on.attach.conflict</code>
Description and values	<p>Defines whether the task run report displays a failed or passed status, when Synchronizer attempts to synchronize and entity with attachments in each endpoint that have identical names.</p> <p>Default value. N</p> <p>Note: Irrespective of the status of the <code>pass.entity.sync.on.attach.conflict</code> parameter, such attachments cannot be synchronized.</p>

File-encoding for URL attachments created in ALM

Parameter name	<code>alm.file.encoding</code>
----------------	--------------------------------

Description and values	<p>Defines the encoding used by ALM for URL attachments created in ALM.</p> <p>Enter a list of comma separated values. For example: <code>alm.file.encoding=UTF-8,UTF-16</code></p> <p>Default value. <Null>. By default, Synchronizer attempts to match the default encoding defined on the machine on which it is installed, as well as UFT-8 and UTF-16.</p> <p>If ALM uses a different encoding and it is not defined here, Synchronizer cannot determine the encoding used, and cannot synchronize the URL attachments to Agile Manager.</p>
------------------------	--

Deleted attachments

Parameter name	<code>delete.source.attachment.on.url.deletion</code>
Description and values	<p>Determines how Synchronizer handles attachments that were deleted in the destination endpoint, but were modified in the source endpoint.</p> <p>Values:</p> <ul style="list-style-type: none">• Y = The attachment in the source endpoint is deleted.• N = (Default) The attachment in the source endpoint is kept, and the attachment in the destination endpoint is recreated.

Export and import link configuration and data

Export link configurations and or mapping data to files that you can import and reuse to create new links.

When you export link configurations only, the mapping data is not exported for the link, and you must remap the link fields in the new link. Configurations are exported to an XML file saved in a location you define.

When you export both link configurations and mapping data, the exported information is saved in a **<link name>.zip** file, in the **<HP ALM Synchronizer installation directory>\backup** directory on the Synchronizer server. This location is defined per server. For details about changing this location, see ["Configure server options" on page 61](#).

Tip:

- To move Synchronizer to a different machine, you can export link data, install Synchronizer on the new machine, and then import the link data to the new machine.
- To export and import only field mappings for a specific link, see ["Map endpoint fields" on page 77](#).

Export links

1. In the links grid or navigation tree, select the link whose configuration and/or mapping data you want to export.
2. Select one of the following:
 - **Link > Export > Link Configuration Into XML File**
 - **Link > Export > Link Data Into Backup File**

Caution: The name of the exported .zip file is not editable and is based on the name of the link. If you have already backed up data for the link or a link with the same name, exporting link data will overwrite the existing backup file.

Create a link from an exported XML or .zip file

1. Select one of the following:
 - **Link > Create From > Link Configuration XML File**
 - **Link > Create From > Link Backup File**
2. Select the XML or zip file that contains the data you want to import.

A new link is displayed in the links grid and navigation tree based on the settings you imported. If you created a new link based on a .zip file, the new link also includes the imported mapping data.

Note: You cannot import a file to create a new link that will have the same name or

connections to the same pair of endpoints as an existing link.

Maintain links

Run an integrity check	93
Enable or disable a link	98
Run synchronization tasks	100
View run history, reports, or logs	104
Set link notification settings	107
Reset a link time stamp or history	107
Back up and restore the database	109

Run an integrity check


Integrity checks identify possible problems that can occur during the synchronization process.

You must run an integrity check after making changes to a link and before you can enable the link and run synchronization tasks on it. Run integrity checks after creating a new link, modifying a link, or modifying the schema for one of the link's endpoints.

Integrity checks verify both general settings for the link, and the field mappings defined for the link. Each individual check within the integrity check can **pass** or **fail**. The integrity check passes only if *none* of the individual checks within it fail.

Caution: If you do not run an integrity check, or if the integrity check does not pass,

the link remains **unvalidated** and cannot be enabled for synchronization. For more information about link states, see ["Enable or disable a link" on page 98](#).

1. Select **Run Task > Run Integrity Check** or click **Run**  **> Integrity Check**.
2. View details about the integrity check in the Execution pane at the bottom of the Synchronizer Client window. Click **View Report** to view the full, detailed report, with any extra error messages. You might want to view the detailed report if your integrity check failed, to determine specifically which checks failed and how to fix the link.
3. After you fix the link, run the integrity check again.

Click below for details about the checks performed during integrity checks, as displayed in the run report.

Checks performed on general link settings

Name, as listed in report	Description
Endpoint Connection	Checks that Synchronizer can successfully connect to the endpoint using the settings defined.
User permission check	Checks that the user connecting to the endpoint has sufficient permissions to perform the required tasks.

Name, as listed in report	Description
Endpoint parameters check	<p>Checks and validates additional parameters that may be defined for the endpoint.</p> <p>For example, if an alternate root folder is defined for requirements synchronization, checks that the folder exists in ALM. For details and guidelines for defining alternate root folders, see "Configure link properties" on page 71</p>
Fetching endpoint schema	<p>Checks that Synchronizer can obtain the database schema for the endpoint.</p>
<requirement type> Subtype: Mapped fields check	<p>Performs checks on fields that are mapped for the endpoint.</p>
Specified filter exists	<p>If a filter is defined for the endpoint in the link, checks that the filter exists in the endpoint.</p>
Subtype exists check	<p>Checks that the mapped requirement type exists in the endpoint.</p>
Endpoint events check	<p>Checks the following:</p> <ul style="list-style-type: none"> • If the endpoint is set to handle record creation in the other endpoint, that it is also set to update the other endpoint. • If the endpoint is set to recreate records, that the other endpoint is set to handle record creation. • That one endpoint only is set to handle record creation for the mapped requirement type.

Name, as listed in report	Description
Fields mapping defined	Checks that a field mapping is defined between the endpoints and that it can be obtained by the Synchronizer.
Consistency of mapping and endpoint events	Checks that if a field mapping is defined from the endpoint, the link is set to handle record creation or updates in the other endpoint. Also checks that if the link is set to handle record creation or updates in the endpoint, a field mapping is defined to the endpoint.

Checks performed on link field mappings

An integrity check performs the following checks on the field mappings you define for the link. Synchronizer also performs these checks when you check the field mappings when you create or configure a link. Depending on the type of field mapped, not all of these checks are performed for every identity mapping.

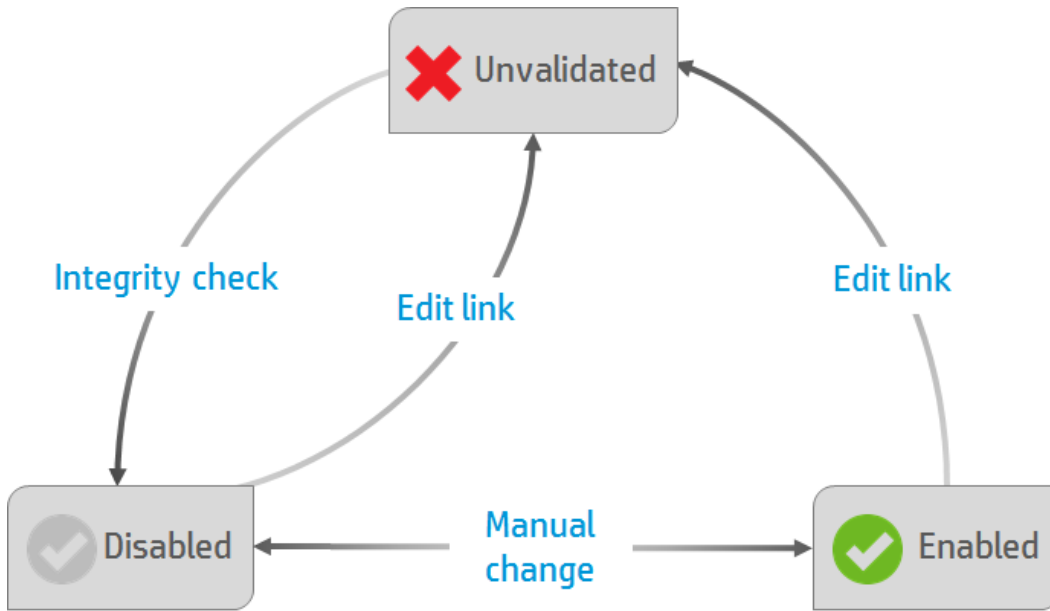
Name, as listed in report	Description
Required fields check	<p>Checks that required fields in the destination endpoint are mapped to a field in the source endpoint, or are assigned a constant value. If this is not the case, the check fails.</p> <p>In addition, checks that recommended fields in the destination endpoint are mapped to a field in the source endpoint, or are assigned a constant value. If this is not the case, the check passes with a warning.</p>

Name, as listed in report	Description
Field existence check	Checks that the field exists in the endpoint.
Field types match check	Checks that if a mapping exists between fields of different types, the values can be converted between the types.
Fields length match check	For string type fields (String , Multi value list , Single value list , User list), checks that the maximum length for values for each of the fields in a mapping is the same. If the maximum length is different, the check passes with a warning that some values may be truncated.
Fixed list mapping check	Checks whether the source field of a mapping is not a verified list field, whereas the destination field is a verified list field. In such a case, the check passes with a warning as it is possible that values will be mapped to the destination that are not in its list.
User list check	Checks whether the source field of a mapping is not a user list field, whereas the destination field is a user list field. In such a case, the check passes with a warning as it is possible that values will be mapped to the destination that are not in its user list.
Value mapping types check	Checks that it is possible to convert between the type of the value mapped to a field and the type of the field.

Name, as listed in report	Description
Values length match check	For string type fields (String , Multi value list , Single value list , User list), checks that the length of values mapped to the field in a field value mapping is not greater than the maximum length for the field. If a value is mapped that is longer than the maximum length, the check passes with a warning that the value will be truncated.
Values mapping in mandatory field check	Checks that no field value mapping maps an empty string to a mandatory field.
Fixed list values mapping check	Checks that no field value mapping exists that maps values to a verified list field that are not in the list associated with the destination field.
Read only check	Checks that there is no mapping to read-only fields.

Enable or disable a link

Each synchronization link can be in one of the following states: **Unvalidated**, **Disabled**, and **Enabled**.



State	Description
Unvalidated	<p>The link's configuration has not been verified. You cannot run tasks for the link.</p> <p>A link's state begins at Unvalidated, and also returns to Unvalidated if you modify the link configuration.</p> <p>Change an Unvalidated link status to Disabled by running an integrity check.</p>
Disabled	<p>An integrity check has verified the link's configuration, but you cannot run tasks on the link.</p> <p>A link's state changes from Unvalidated to Disabled after you successfully run an integrity check, or if you manually disable it. For details, see "Enable or disable a link" on the next page.</p>
Enabled	<p>The link's configuration has been validated, and you can run tasks on the link.</p> <p>You must manually change a link's state from Disabled to Enabled. For details, see "Enable or disable a link" on the next page.</p>



For details about integrity checks, see ["Run an integrity check" on page 93](#).

Enable or disable a link

1. In the links grid or navigation tree, select the link you want to enable or disable.

Note: Before you enable a link, verify that the link is **Disabled**. If the link is in an **Unvalidated** state, you must run an integrity check to change its state to **Disabled**, as described in ["Run link tasks manually" on page 103](#).

2. Do one of the following:

- Click **Enable Link**  or select **Link > Enable**.
- Click the **Disable Link**  or select **Link > Disable**.

Run synchronization tasks

Synchronizer can run only one task at a time for a particular link. When you have multiple links configured, Synchronizer can run only one full synchronization task at a time, or five incremental tasks from different links.

If a task is scheduled to start automatically and another task is still running, Synchronizer resolves the conflict as follows:

- The second task waits in a queue and runs immediately after the first task is completed.

If the second task is of the same type (for example, both are incremental tasks), the second task does not run at all.

- If both an incremental task and a full task are scheduled to run at the same time, the full task runs first. The incremental task enters a queue and runs when the full task is completed.
- If the maximum number of tasks is already running, any additionally scheduled task waits in a queue, and runs as soon as one of the currently running tasks is completed.

If the maximum number of tasks is already running, you cannot start running a manual task.

Note: Records that are locked in a specific endpoint are not synchronized. Check the report at the end of any task to determine if any records were not synchronized, and why. If mapped records were not synchronized because they were locked during the run, you can update them by doing one of the following:

- Running another incremental synchronization task after the record is modified again.
- Resetting the link time stamp, as described in "[Reset a link time stamp or history](#)" on page 107.
- Running a full synchronization task.

For details about how records are handled in incremental and full synchronizations, see "[Synchronization task types](#)" on page 30.

What do you want to do?

Run link tasks automatically


Note: If you do not specifically schedule synchronizations, you must [run synchronizations manually](#).

1. Run an [integrity check](#).
2. Configure the task schedule in the link's Scheduling tab:

From the navigation tree or the links grid, open the link, and click **Edit**.



Click the **Scheduling** tab, and then select **Enable scheduling**.

Schedule synchronization tasks to run in one of the following modes:

Schedule every:	Schedule synchronization tasks to run at regular intervals, either hours, minutes, or for full synchronizations, days.
Run task at:	Schedule synchronization tasks to run at a specific time every day, or at a specific time on specific days. Click Browse  to select specific days of the week.


For details about the differences between incremental and full synchronizations, see "[Synchronization task types](#)" on page 30.

3. [Enable the link](#). The link's tasks run as scheduled, and the progress is shown in the [Execution pane](#) below.

If a task is currently running for a specific link, a green arrow  is added to the link's icon in the navigation tree. Click **Refresh Selected**  to update the information displayed.

Run link tasks manually

Use the following steps to run integrity tests, incremental synchronization tasks, and full synchronization tasks.

1. [Enable the link](#).
2. Select the link on which you want to run the task and run the task using the Run toolbar button  or the **Run Task** menu commands. The task progress is displayed in the [Execution pane](#) below.

Monitor the progress of a currently running task

In the navigation tree, right-click the link on which the task is running, and select **View Run**.

The task's progress is displayed in the [Execution pane](#) below.

Execution pane options

While a task is running, the Execution pane at the bottom of the Synchronizer Client window enables you to do the following:

Cancel Current Task	Cancel the task execution at any stage.
---------------------	---

View Report	When the task is completed, click to view a summary of the task run. For details about the data shown in the report, see " View run history, reports, or logs " below.
Refresh Progress	Enabled only when Auto Refresh is not selected. Click at any stage to display the next information message in the task progress.
Auto Refresh	Click to have the Synchronizer Client periodically display information messages in the Execution pane. Clear to prevent the automatic display of these information messages.

View run history, reports, or logs

Synchronizer stores the history of the tasks run for a specific link, as well as detailed reports about the task progress.

See "[Task run statuses](#)" on page 106 for details about the implications of specific task run statuses.

View task run history

The Run History dialog box displays the task run details in a sortable grid.

1. From the navigation tree or the links grid, open the relevant link.
2. In the General tab, click **Get History** for the type of task for which you want to view run history.

Tip: To modify the number of runs displayed in the Run History dialog box, select

Tools > Local Client Options, and enter the number of runs you want to display.

View task run reports

Reports display details about the selected task run, including information about the relevant link, details about checks performed and any records synchronized during the run, and endpoint connection information.

In the [Execution](#) pane at the end of a run or in the Run History dialog box, click **View Report**.

View task event logs

Event logs list all events processed by the Synchronizer Server during a task execution.

In a task run report, click **View Log** in the bottom left corner.

Log levels display the following types of errors.

FATAL	
ERROR	<p>Indicates a critical problem with the link.</p> <ul style="list-style-type: none">• In an integrity check: The integrity check fails and you cannot run tasks on the link.• In a synchronization task: If the error indicates a general problem with the link, the synchronization task fails. If the error indicates a problem with synchronizing a specific record, the synchronization passes with errors.

WARN	<p>A warning of an issue of which you should be aware.</p> <ul style="list-style-type: none">• In an integrity check: The integrity check does not fail, so tasks on the link can run, but it may cause unexpected results.• In a synchronization task: May indicate that the synchronization had unexpected or undesired results.
INFO	<p>A message displayed for information only. No action is necessary.</p>
DEBUG	

Note: You must have JavaScript enabled to filter the log by log level.

Task run statuses

Statuses listed in the Run History dialog box and the task run report include the following:

Passed	All records were synchronized successfully, or there were no changed records to be synchronized.
Failed	No records synchronized successfully.
Passed with errors	At least one record synchronized successfully. (Not relevant for integrity check task runs.)
Error	System error occurred preventing synchronization
Cancelled	User canceled the synchronization task.

Set link notification settings

Synchronizer can send email notifications when a link task fails or when a link task passes with errors.

1. Select **Tools > Server Options**. In the Email tab, specify or verify the email settings used to send notifications.
2. From the navigation tree or the links grid, open the link for which you want to modify notification settings.
3. Click the **Advanced** tab, and define the notification settings for the selected link. Only one email address can be specified for each link.

Reset a link time stamp or history


Each synchronization link in the Synchronizer has an associated time stamp, and each record mapping within a link has a version. The time stamp represents the time the link was last handled by Synchronizer. The version enables Synchronizer to identify the records that can be synchronized.

When Synchronizer runs a synchronization task for a link, it updates the time stamp for the link at the start of the task's execution. In addition, when Synchronizer handles the successful synchronization of a paired record mapping, it adds a record containing the versions of each pair of synchronized records to the database.

Synchronizer uses the time stamp and versions when it determines which records to synchronize. In some circumstances, you may want to override the automatic time stamp and the record version history:

- **Time stamp.** Override the automatic time stamp and reset the time stamp to a time prior to the last synchronization. This is useful if there were issues with the latest synchronization of some records, and you want to revert to an earlier version of these records so that you can run a synchronization task again.
- **Synchronization history.** Perform a complete reset to clear both the time stamp and the version history for the mapped records. This is useful when a field mapping changes, and you want to synchronize the mapped entities as if you created a new link.

Tip: You can sometimes achieve the same outcome as resetting the link's time stamp by running a full synchronization task. For details, see "[Synchronization task types](#)" on page 30.

1. In the links grid or navigation tree, select the link, and then select **Link > Reset** or click the **Reset Link** button  .
2. Reset the link using one of the following options:

Reset to specific time stamp	Reset the link to the time stamp you specify.
Complete link reset	Clear all synchronization version history for mapped records in addition to completely resetting the time stamp for this link.

Back up and restore the database

The Synchronizer database is automatically backed up every eight hours, by default to the **<Synchronizer installation>\backup** directory on the Synchronizer server.

Backup files are named **qcsync_db.backup**. The last three backup files are kept and overwritten, as new backups are created.

Tip: It is recommended that you back up this directory regularly, or change the default backup location to a network drive that is regularly backed up. This will ease data restoration in the event of local hard disk failure.

Restore the Synchronizer database

From the Windows Command Prompt, navigate to the **<Synchronizer server installation>\backup** directory, or another path where the backup files are stored, and enter:

```
restore_data.bat <backup filename>
```

Change the backup location

Select **Tools > Server Options**, and enter a path in the **Server Backup Location** setting.

Synchronizer Q&A

This section describes common problems or troubleshooting issues and relevant workarounds for the following topics:

["During synchronization" below](#)

["Connection settings" on page 112](#)

["Field mappings" on page 113](#)

["Synchronizer service and installation" on page 114](#)

["Synchronizer server configuration errors" on page 117](#)

During synchronization

[How many synchronization tasks can I run simultaneously?](#)

Synchronizer can run only one task at a time for a particular link. When you have multiple links configured, Synchronizer can run only one full synchronization task at a time, or five incremental tasks from different links.

[I'm experiencing Agile Manager timeouts during synchronizations.](#)

Increase the number of seconds before a timeout occurs. The default is 200 seconds.

1. On the Synchronizer server machine, navigate to the **<Synchronizer installation directory>\adapters\dat\HP-Agile-Manager** directory.
2. In a text editor, create a file named **adapter.properties**, or open this file if it exists.

3. Define the following property:

connection.timeout=<timeout per request to Agile Manager in milliseconds>

Example

connection.timeout =300000

4. Restart the Synchronizer server.

I have a new Application field value in Agile Manager, but I don't see any changed Product values in ALM when I synchronize relevant defects and requirements.

If a new Application is added to a user story or defect in Agile Manager, the new Product value is not automatically created in ALM. To synchronize these new Product and Application values, add the new Product value in ALM.

Error: Mandatory User Fields with Blank Values

This error may occur if you have a mandatory user field in one endpoint mapped to an optional user field in the opposite endpoint, and the optional field has a blank value.

User fields that are mapped to mandatory fields in the other endpoint cannot be blank. Enter values for these fields and synchronize again.

Error: User Fields with no Mapping

This error may occur if there is a user field in either endpoint that is not mapped to a corresponding field in the other endpoint. In such cases, do one of the following:

- Add the corresponding user field to the other endpoint, and map the two fields.
- Define a default user for any user fields without mapped values. For details, see

["Map user list fields using a .csv file" on page 84.](#)

Connection settings

I've configured an authentication proxy for connecting Synchronizer to Agile Manager, but the connection is not using the proxy.

You must restart the Synchronizer service after configuring the proxy.

If authentication fails and errors 401 and 407 display in the **restClient.log**, verify that the contents of the **proxy.properties** file are syntactically correct and contain valid values.

When connecting the Synchronizer Client to my server, I receive a message notifying me that my client and server versions don't match. What does that mean?

If your Synchronizer administrator has updated the server version, you must also update your client version to match.

Synchronizer cannot connect to ALM

If Synchronizer cannot connect to ALM, you can use a script file to check that the ALM endpoint's API is functioning properly.

1. On the Synchronizer server machine, open the Navigator to the **<Synchronizer installation directory>\bin** directory and locate the **checkQcConnectivity.vbs** file.
2. Edit the script file to include the connection properties for the endpoint. For details, see ["Assign HP-ALM endpoint connection properties" on page 66.](#)

3. Double-click the script file. If connection is successful, a confirmation message displays.

Filter definitions

I renamed a filter in one of my endpoints, and now Synchronizer lists the filter under the old name as well as the new name.

Simply remove the filter's previous name from the list of filters for the selected link.

Field mappings

I have multiple ALM releases with the same name. How can I map my target release and target cycle fields for synchronized defects and releases?

Map specific field values to define the full path of the release. For example, you can map each value of the **Target Release** field to a value in a corresponding field in the other endpoint.

Define the full path of the ALM release in the format `\<Release_Folder_Name>\<Release_Name>`. For example, `\Flight Application\Release_2`.

You do not need to include the root **Releases** folder in the path.

Synchronizer service and installation

Synchronizer server generates errors in a non-English locale

Problem: The Synchronizer server may have errors when installed on a computer that uses a locale other than an English-based locale.

Workaround:

1. On the Synchronizer server, create a user account with an English locale setting, such as **United States**.
2. Copy the locale settings to the System Local account using the Windows Copy settings functionality (**Control Panel > Region and Language > Administrative tab**).
3. Restart the Synchronizer server.

Synchronizer service does not start

If the Synchronizer service does not start, verify the following:

Description	Action
The service was installed with appropriate permissions.	To verify service properties: <ol style="list-style-type: none">1. Select Start > Run, and then enter services.msc.2. Right-click ALM Synchronizer and select Properties.3. In the Log On tab, verify that the account listed is an administrator user.4. Verify that the password was typed correctly.
The service account has appropriate permissions.	Verify that the user account you entered during server configuration has permissions to log on as a service. For details, see " Verify user permissions for service logon " on page 18
PostgreSQL is installed.	Verify that PostgreSQL is listed in Windows Add or Remove Programs.
PostgreSQL is running.	To verify that the PostgreSQL service is running: <ol style="list-style-type: none">1. Select Start > Run, and then enter services.msc.2. Verify that PostgreSQL Database Server 8.3 is listed.

ALM Synchronizer service installation did not complete successfully.

Verify the following:

- The user account you enter during server configuration has administrator permissions.

- The user account you enter during server configuration has permissions to log on as a service. For details, see ["Verify user permissions for service logon" on page 18](#)
- The user running the installation has administrator permissions on the machine on which the Synchronizer is being installed.

Then on the Synchronizer server machine, run the following files located in the **<ALM Synchronizer installation directory>\bin** folder:

1. To uninstall any previous version of the service, run **stop_and_remove_synchronizer_service.bat**.
2. To install the service, run **sync_service_install.bat**.

[Previous Synchronizer version did not completely uninstall](#)

During installation, an error message indicates that the previous Synchronizer version was not uninstalled. This can occur even when **ALM Synchronizer** is not listed in the Windows Add or Remove Programs Control Panel.

This error indicates that references to the previous installation may remain in the **vpd.properties** file, located in the Windows system root folder.

To remove all remaining references to a previous installation:

1. Verify that the Synchronizer was uninstalled by checking that it is not listed in Windows Add or Remove Programs Control Panel.
2. Navigate to the Windows system root (**%systemroot%**) folder and backup the **vpd.properties** file.
3. In a text editor, open the **vpd.properties** file and delete all rows containing references to Synchronizer.

Error: Could not load the Java Virtual Machine

The Synchronizer service fails to start if the **msvcr71.dll** file is not in the system path.

Workaround: Add **<Synchronizer-Install-Dir>/java/bin** to the system PATH variable.

Synchronizer server configuration errors

During installation of the Synchronizer server, the Synchronizer Server Configuration wizard installs and configures the PostgreSQL database management system, and creates a service on the Synchronizer server machine. If a problem is encountered during server configuration, an error message displays in the configuration results dialog box. This section lists problems that may occur and suggestions for handling them.

PostgreSQL installation did not complete successfully

If you uninstalled a previous installation of PostgreSQL, verify that it was removed completely, and rerun the server configuration.

For more information on uninstalling PostgreSQL, see ["Install Synchronizer" on page 15](#).

To rerun the server configuration, on the Synchronizer server machine, navigate to the **<ALM Synchronizer installation directory>\bin** folder, and run the **run_config_tool.bat** file.

Note: If this step does not resolve the problem, run **install_postgre.bat** instead, which is located in the same directory. Then, rerun the server configuration.

Unable to create the Synchronizer schema on the PostgreSQL database management system

Verify that PostgreSQL access is not locked by another user, and rerun the server configuration.

To rerun the server configuration, on the Synchronizer server machine, navigate to the **<ALM Synchronizer installation directory>\bin** folder, and run the **run_config_tool.bat** file.

Glossary

A

Acceptance test

A test defined by the developer or customer to verify that the application as delivered meets the conditions of a user story.

Action item

In Sprint Closure, a specific activity that is called for at the end of a sprint. Action items can be generated automatically from the sprint retrospective, and can be converted in turn to user stories that are added to the backlog.

Actual effort

The total number of hours invested and remaining for all tasks in a backlog item.

ALI Dev Bridge

The ALI Dev Bridge is a simple mini-web application that connects HP Agile Manager hosted in a SaaS environment to Source Code Management systems and Build Management systems hosted in your local development environment.

Application

One of the components being developed in the framework of your project. An application is defined by the features you assign to it.

Archive

Backlog items removed from the product backlog. Administrators can archive themes and features, or remove items from the archive. Archiving an item also archives any related child items.

B

Backlog

A list of work items planned to be handled during a specific stage of the product development life cycle. Can refer to the product, release, or sprint backlog.

Backlog item

A work item that is listed in the product, release, or sprint backlog. A backlog item can be either a user story or defect.

Build

A process to produce the key deliverables of software development.

Build Agent

A Build Agent is a set of scripts or proprietary applications installed on a Build Server configured for listening on a Build System. When appropriate, changes on the Build Server are pushed to ALI.

Build configuration

A build configuration specifies how and with what tools the build is to be built.

Build server

A computer used to create a build. The server automatically runs the unit tests periodically or even after every commit and reports the results to the developers.

C

Closed defects (ALI)

ALI metric that measures the number of defects closed in a build.

Code change

Any change made to the code that was committed to the SCM repository. ALI metrics count the number of lines of code changed in a build. Code changes are often grouped by their association with user stories, defects, or neither.

Code coverage

ALI metric that measures the percentage of code in a build that is covered by unit tests.

Committer

A developer who committed code changes.

Custom field

A field added to items in your project. Custom fields are defined in the configuration area, and can be displayed in grids and item details, and included in filters.

Cycle redundancy checks (Synchronizer)

Verify whether the updates detected in synchronized records were made in fields specifically mapped for the selected link. If the changes were made in fields that are not mapped, the record is not synchronized.

D**Defect**

A fault or bug detected in the application under development. Defects are included in the product backlog as backlog items along with user stories. Defects can be linked to user stories, and can be associated with features.

Detected defects

ALI metric that measures the number of defects detected in a build.

E**Endpoint**

An instance of ALM or Agile Manager connected that is synchronized with another endpoint using HP ALM Synchronizer. ALM endpoints can only connect to Agile Manager endpoints, and Agile Manager endpoints can only connect to ALM endpoints.

Entity (Synchronizer)

The type of data synchronized in a Synchronizer link. Entity types include

releases, requirements/user stories, and defects.

F**Feature**

A functional area in an application. Several features can be grouped together under a theme. A feature is fulfilled by the user stories associated with it.

Full synchronization

A full comparison and update of the records in each endpoint, including deleted records.

G**Group story**

After you break a user story it is converted to a group story. The group story contains the parts that you define when breaking the original story. To view group stories, on the Product Backlog > Backlog page, select the Group Stories View.

I**Identity mappings (Synchronizer)**

Unique IDs that are stored in a mapping table for records in each endpoint. This mapping table records the correspondence between each pair of records.

Incremental synchronization

Synchronizes data between two endpoints for records that were created or modified since the last synchronization task.

K**KLOC**

Thousand Lines Of Code. Used to measure the amount of effort used in the item being measured.

L

Link destination endpoint

The Synchronizer link endpoint to which data is synchronized. Data in the destination endpoint is updated according to the data in the source endpoint and the mapping's settings.

Link source endpoint

The Synchronizer link endpoint from which data is synchronized. Data in the source endpoint for the mapping remains unchanged

P

Planned effort

The total number of hours estimated for all tasks in a backlog item.

R

Release

A group of changes to the application that will be available for distribution at the same time. You can assign user stories and defects to the release.

Role

Each user in the project is assigned a role. The role defines the user's read/write permissions in different areas of Agile Manager.

S

SCM

Source Code Management is the management of changes to documents, computer programs, large web sites, and other collections of information.

SCM agent

An SCM agent is a set of scripts or proprietary applications installed on a SCM server configured for listening on a SCM

system. When appropriate, changes on the SCM server are pushed to AGM.

SCM branch

A set of files under version control may be branched or forked at a point in time so that, from that time forward, two copies of those files may develop at different speeds or in different ways independently of each other.

SCM repository

A database used to enable the collaborative development of large projects by multiple engineers.

Sprint

A time period, measured in days or weeks, in which teams work on a set of backlog items planned to that sprint and team.

Sprint capacity

1. The number of hours a team member is available to work in a sprint. The sprint capacity is based on the team member's daily work hours multiplied by the number of his/her work days in the sprint. 2. The sum of all team velocities, in story points, of teams participating in a sprint.

Story points

A method for estimating the size of a user story or defect. Story points compare one story to another to determine a relative size and then assign points denoting that size. A team's estimated sprint velocity is then used to estimate how many story points the team can deliver in a sprint.

Synchronization link

Connects an ALM endpoint and an Agile Manager endpoint and synchronizes data between them.

T

Task

One of the work items that should be carried out in order to implement a user story or

defect. A user story or defect is considered done when all its tasks are completed.

Team

A group of people that work together on a sprint. Teams are defined at the release level. A team can include members from different departments (such as development, QA and technical writers) who work together on the same backlog items. The amount of work a team can deliver in a sprint is estimated in story points.

Team member

A user that is assigned to a team. A user can be a member on a number teams simultaneously. This can represent a shared resource that contributes to several teams, such as a technical writer.

Test success

ALI metric that measures the success rate of unit tests run on a build.

Theme

A top-level objective or a high-level functional area that is fulfilled by the features associated with it. A theme may span several applications.

U

User story

A basic action that a user should be able to carry out in the application. User stories are added to the product backlog and estimated in story points. User stories are typically written using the following format: 'As a <role>, I want <goal/desire>'.

V

Velocity

The number of story points a team is estimated to complete or has completed in a sprint. The estimated team velocity is used as a basis to calculate the total sprint or release capacity.

W

Widget

A graph or mini application that can be displayed in a dashboard. Widgets are available from the Widget Gallery.

Worked on defects

ALI metric that measures the number of defects worked on in a build.

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