



## Tasktop Sync - Quick Start Guide

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# Tasktop Sync Quick Start Guide

This document will guide you through the initial installation and setup of Tasktop Sync in a Microsoft Windows environment. IBM Rational Team Concert and HP ALM are used as example endpoints in most examples, however the process is the same for setting up an integration between any system that we support.

## Tasktop Sync Server

You need a server environment (hardware or virtualized) to install Tasktop Sync. A user account must exist on the server that has sufficient privileges to allow the download and installation of executable files.

## Minimum Requirements

### System:

- 4 GB system memory
- Dual Core, 1 GHz processor
- 100 GB free disk space
- A supported operating system:
  - 32-bit or 64-bit Windows; Windows Server 2007, 2008 or 2012 are recommended.
  - Red Hat Enterprise Linux 5 & 6; GTK2 and X Windows are required.
  - SUSE Linux Enterprise Server 11; GTK2 and X Windows are required.

Note: For best results, it is strongly recommended to use a Windows Server. For a full and recent listing of the requirements and sizing, please see our FAQ entry online:

[https://sync-support.tasktop.com/customer/portal/articles/1794752-tasktop-sync-system-requirements-and-recommended-system-sizing?b\\_id=6021](https://sync-support.tasktop.com/customer/portal/articles/1794752-tasktop-sync-system-requirements-and-recommended-system-sizing?b_id=6021)

**Network Connectivity:** Please ensure prior to the Tasktop Sync install, that a browser session can be initiated by accessing the Landing/Login page for each endpoint within and outside the firewall to ensure connectivity between the Tasktop Sync server and the systems that are being

synchronized. It is not necessary (albeit useful) to be able to have functioning access to the endpoints.

## Sync installer and License

Your assigned Tasktop Solutions Architect will provide you the Tasktop Sync download link and license file after the kick-off call. You can download Tasktop Sync from the URL provided in the email and also download the license file onto the Sync server.

## Pre-Sync Installation Requirements

Before installing Tasktop Sync, ensure that locations (e.g. URL's, RDP access) and login credentials for the following user accounts are available:

- On the Tasktop Sync installation server
  - An account with administrative privileges that will be used to configure and run Tasktop Sync
- For each repository to be accessed by Tasktop Sync
  - An administrator account should exist on both target repository systems with sufficient privileges to create and alter Project Areas, User permissions, and Asset Types (schemas)
  - Minimally, the account used by Tasktop Sync must be able to create, query and modify assets in the target repositories

We highly recommend to have a dedicated user account on each endpoint as well as the Tasktop Sync installation server to use specifically for the configuration of Tasktop Sync.

If synchronizing from IBM RTC, download the RTC p2 repository that corresponds with your version of RTC from the following link:

[https://sync-support.tasktop.com/customer/portal/articles/1808058-where-can-i-download-a-p2-repository-to-install-ibm-rational-team-concert-?b\\_id=6021](https://sync-support.tasktop.com/customer/portal/articles/1808058-where-can-i-download-a-p2-repository-to-install-ibm-rational-team-concert-?b_id=6021)

If synchronizing Microsoft Team Foundation Server, you will need the Team Explorer Everywhere p2 repository from:

[https://sync-support.tasktop.com/customer/portal/articles/1805178-where-can-i-download-a-p2-repository-to-install-microsoft-team-foundation-server?b\\_id=6021](https://sync-support.tasktop.com/customer/portal/articles/1805178-where-can-i-download-a-p2-repository-to-install-microsoft-team-foundation-server?b_id=6021)

## Tasktop Sync Installation on Windows

Tasktop Sync installation is straight-forward. After downloading the Tasktop Sync installer on your Sync server machine, simply double-click on the Sync Installer to launch the installation wizard.



*Figure 1: Tasktop Sync Installer Welcome*

Accept the license agreement to proceed with the installation.

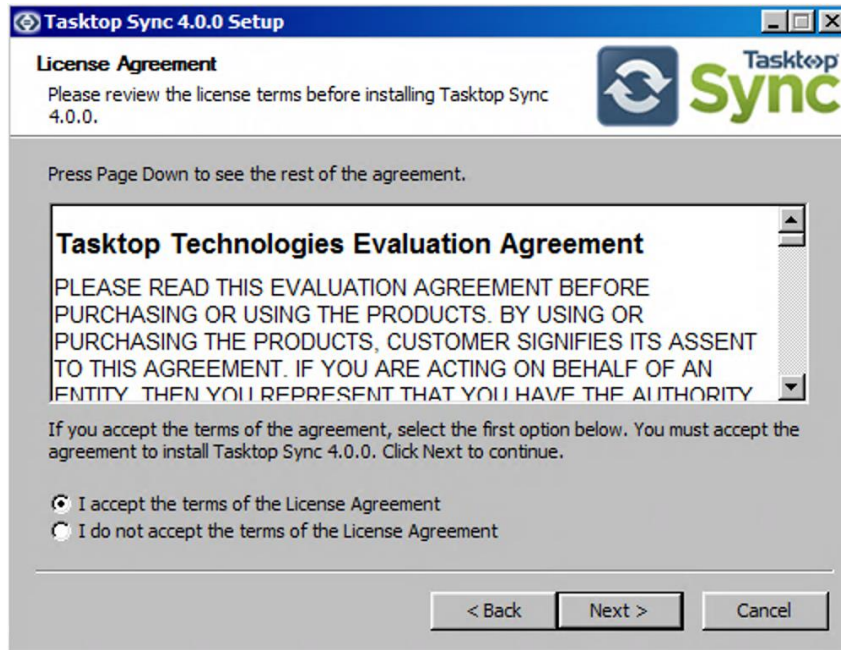


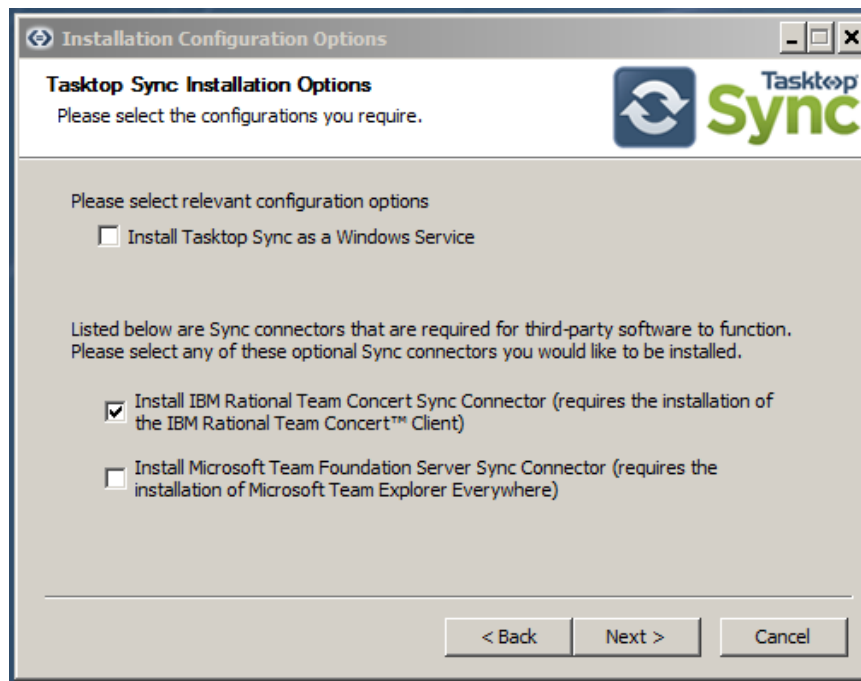
Figure 2: License Agreement

In the next screen, you have an option to install Tasktop Sync as a windows service or as an application. We strongly recommend to Install Tasktop Sync as an application (e.g. do not install as a service) until you have done your production deployment as there are a few less steps involved to access the user interface. To do this, simply leave the Install Tasktop Sync as a Windows Service option unchecked.

If you are using IBM Rational Team Concert, or Microsoft Team Foundation Server, you need to check the appropriate boxes here. If you do not check the boxes now and later decide to use one of these repositories, you will have to reinstall Tasktop Sync to install the appropriate connectors.



If you check any of the boxes, the next page will contain links to download the plugin for the repository you selected.



*Figure 3: Tasktop Sync Installation Options*

Click on the link for your repository to download it (if you have not done so previously). Ensure that the downloaded zip file has been extracted to a known folder so that you can point the installer to the directory where it was extracted. The installer will automatically install the required components from these downloads to enable synchronization with IBM RTC and/or Microsoft TFS.



**IMPORTANT:** Using the matching version of the p2 repository for IBM RTC is critical for proper connection. For example, select the 4.0.1 if you have a 4.0.1 server version otherwise the connection will not work. To change the version of the client library being used, you will need to uninstall and reinstall Tasktop Sync.

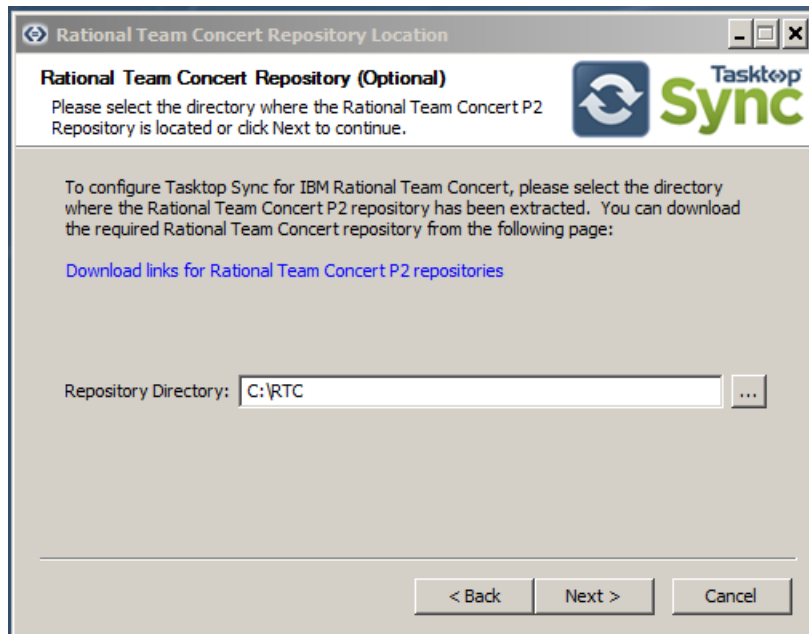


Figure 4: Rational Team Concert P2 Repository

In the next step, you will wait momentarily while Tasktop is being installed (if you selected to install the IBM RTC or Microsoft TFS connectors, you may see some windows appear and disappear during the installation process).

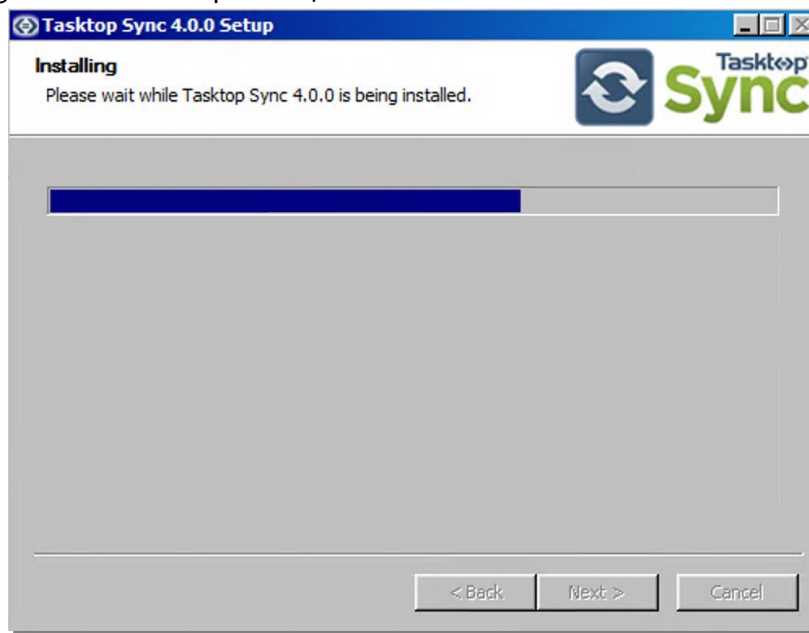


Figure 5: Tasktop Sync installation progress

Click Finish to complete the installation of Tasktop Sync.



*Figure 6: Tasktop Sync Installation Finish Page*

## Post Installation

Once you have completed installing Tasktop Sync, you can launch it by double-clicking the shortcut that has been automatically created on the Desktop of your system to open the Tasktop Sync Studio.

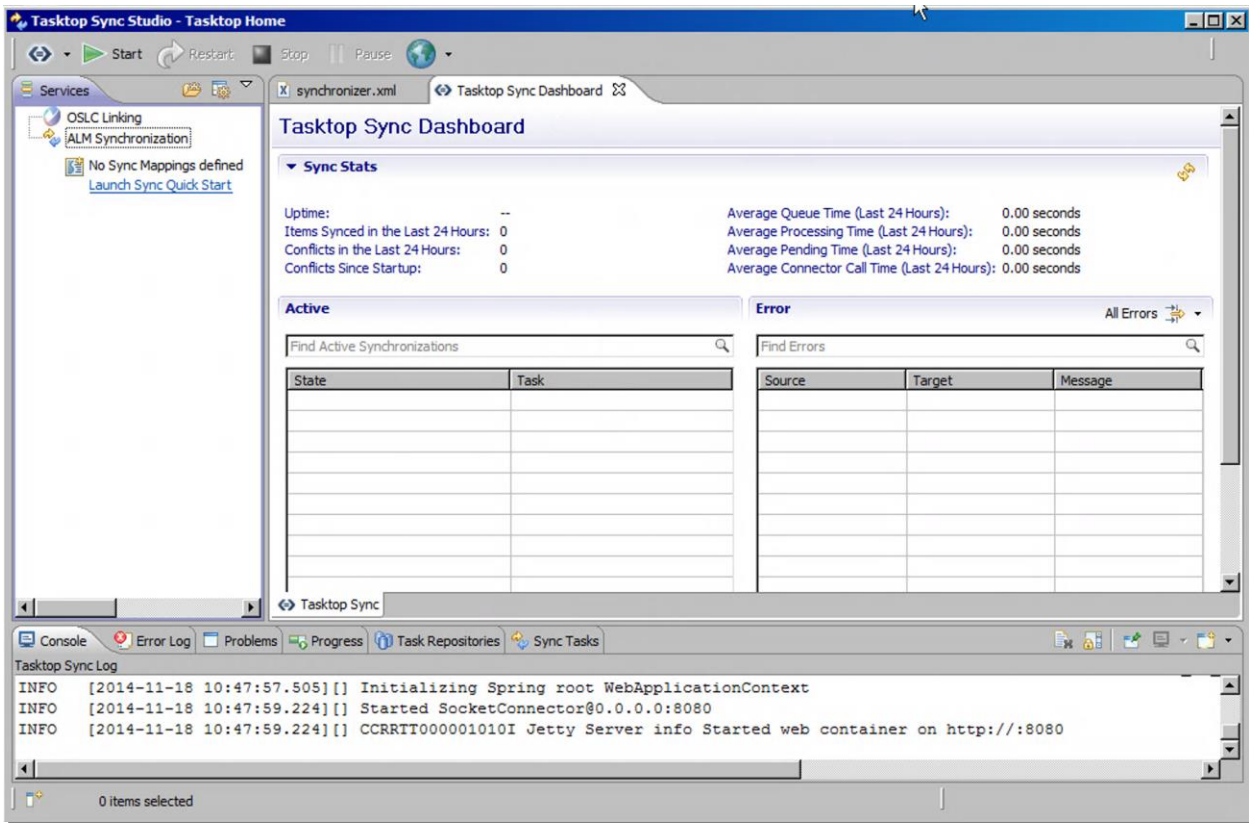


Figure 7: Tasktop Sync Studio

## License Activation

You need to import the license file you have been provided (e.g. `TasktopSync.license`). To import your license file, look for the Tasktop logo in the top left of your Tasktop Sync window. Select the down-arrow drop-down menu beside this icon and select "Preferences.." This will pop-up a dialog window which allows you to import your license file. Click the "Import from File..." button and select the license file you extracted from your installation package. This should populate the License dialog box with the details of your particular license. Finish the import by clicking the "OK" button.

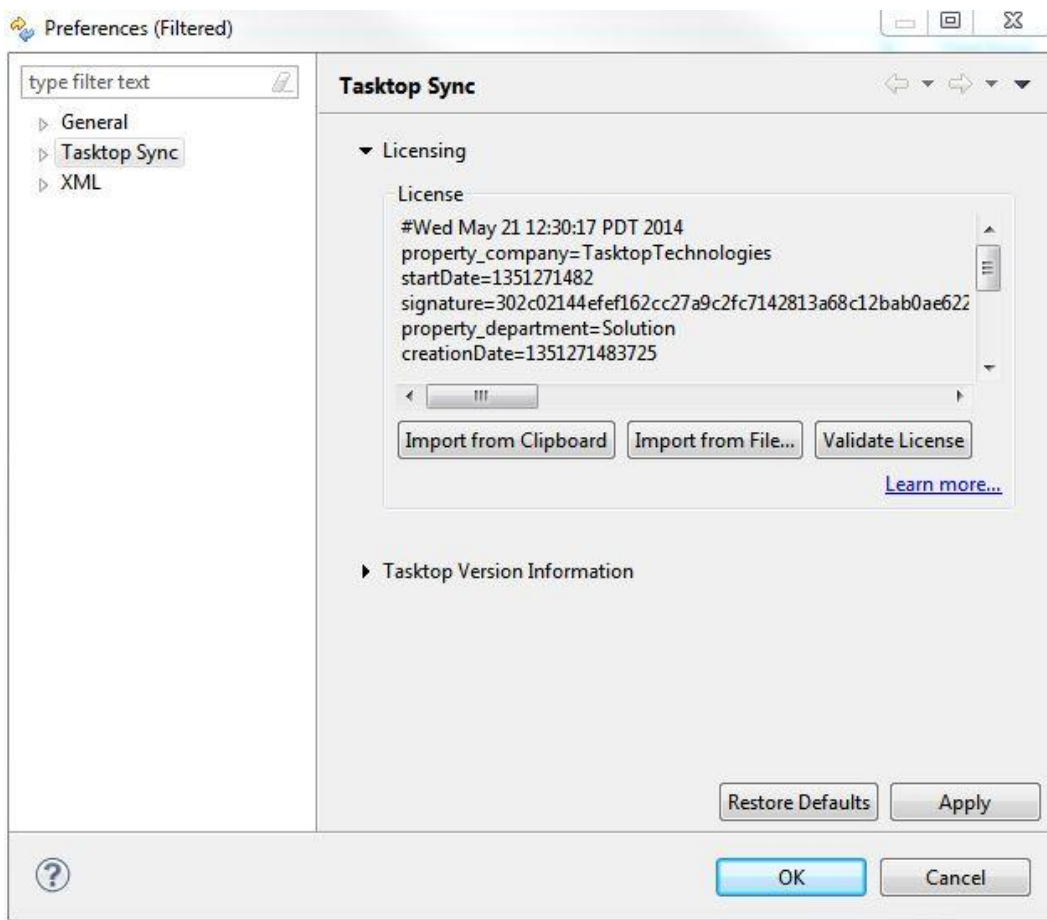


Figure 8: Tasktop Sync License Import

## Task Synchronization Configuration

### Creating a Task Mapping:

Creating a task mapping in Tasktop Sync requires three primary items to be configured: a connection to each participating repository, a set of queries defining the scope of the synchronization, and a mapping that defines how synchronization between two repositories should be handled.

In order to use the Quick Start Wizard, you will need to create a test task in both of the repositories that you want to sync (these tasks can be deleted after you are done with the Quick Start Wizard). You can use pre-existing tasks, but we generally recommend against this, especially when moving to a production system.

If you have not yet defined any mappings, you will see a link “Launch Sync Quick Start” in the upper left Services view:

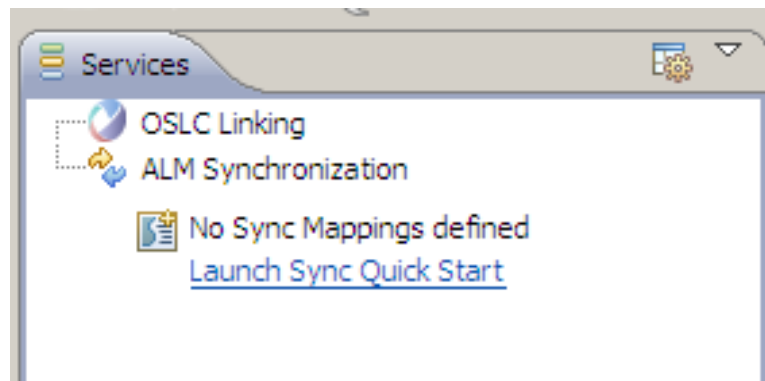


Figure 9: Launch Sync Quick Start

If you have defined a mapping before and you wish to add more mappings you can right-click on the ALM Synchronization and select “New Task Mapping” in the Services view:

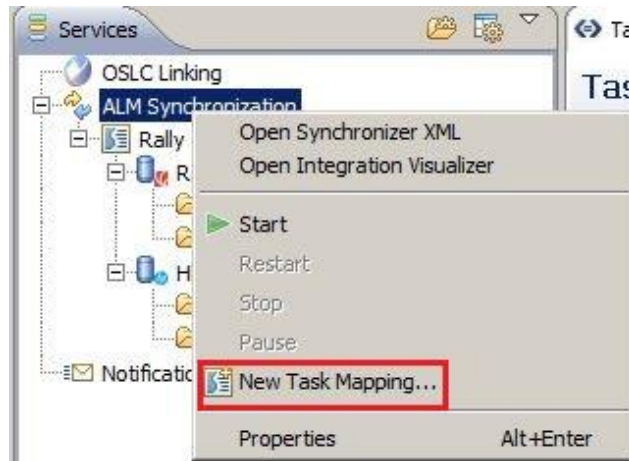
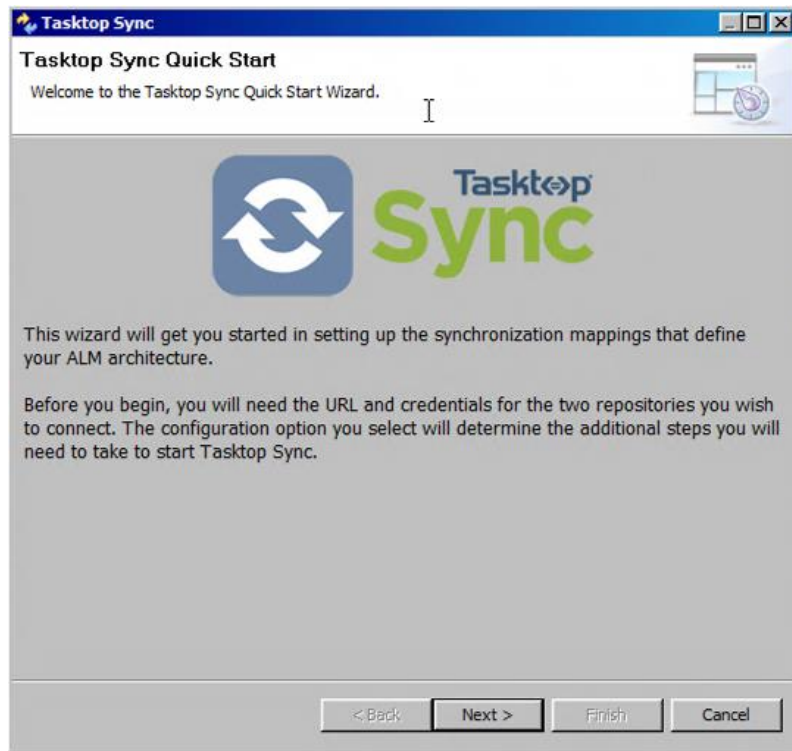


Figure 10: New Task Mapping

To add a first Task Mapping, click on the link “Launch Quick Start Wizard”. You will be presented with a welcome page that reminds you that you need credentials for the two repositories to sync and to create one task in each repository to synchronize. This page is skipped if you already have mappings defined.



*Figure 11: Tasktop Sync Quick Start*



## Mapping Details

The next page will ask you for details about the mapping to configure. In addition to the mapping name (used for display in the UI), you will be asked to choose your desired type of mapping.

A “Full Scope” mapping will apply your synchronization to all existing artifacts returned by your queries, replicating each existing artifacts from one repository in the other and creating any new artifact added to one in the other.

A “Limited Scope” mapping asks you to select only a single pair of existing artifacts returned from your queries to test your configuration between the two before applying your synchronization to all in-scope artifacts.



**TIP:** if you start with a scope limited to a single pair of tasks, you can later convert it to use queries to cover many tasks. We strongly recommend that to start creating your mapping by using the “Limited Scope” option since it gives you more power to work with a single pair of tasks to develop your mapping before moving to “Full Scope” at a later point when task creation on both sides should be performed.

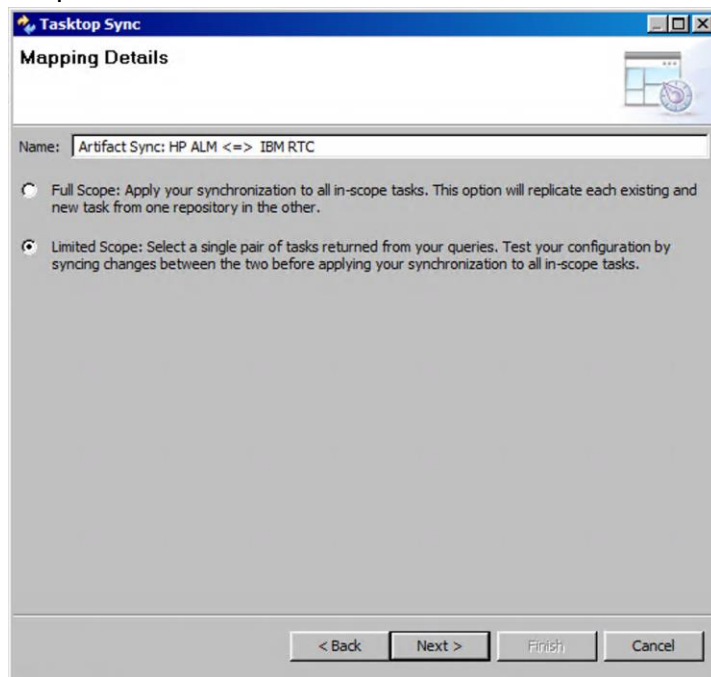


Figure 12: Tasktop Sync Mapping Details

## Select Repositories to Sync

Next, you will see a page that allows you to specify which type of repositories you would like to sync. The order in which you specify the two repositories doesn't affect the synchronization, just the order that it will show up in the resulting pages and mapping editor.

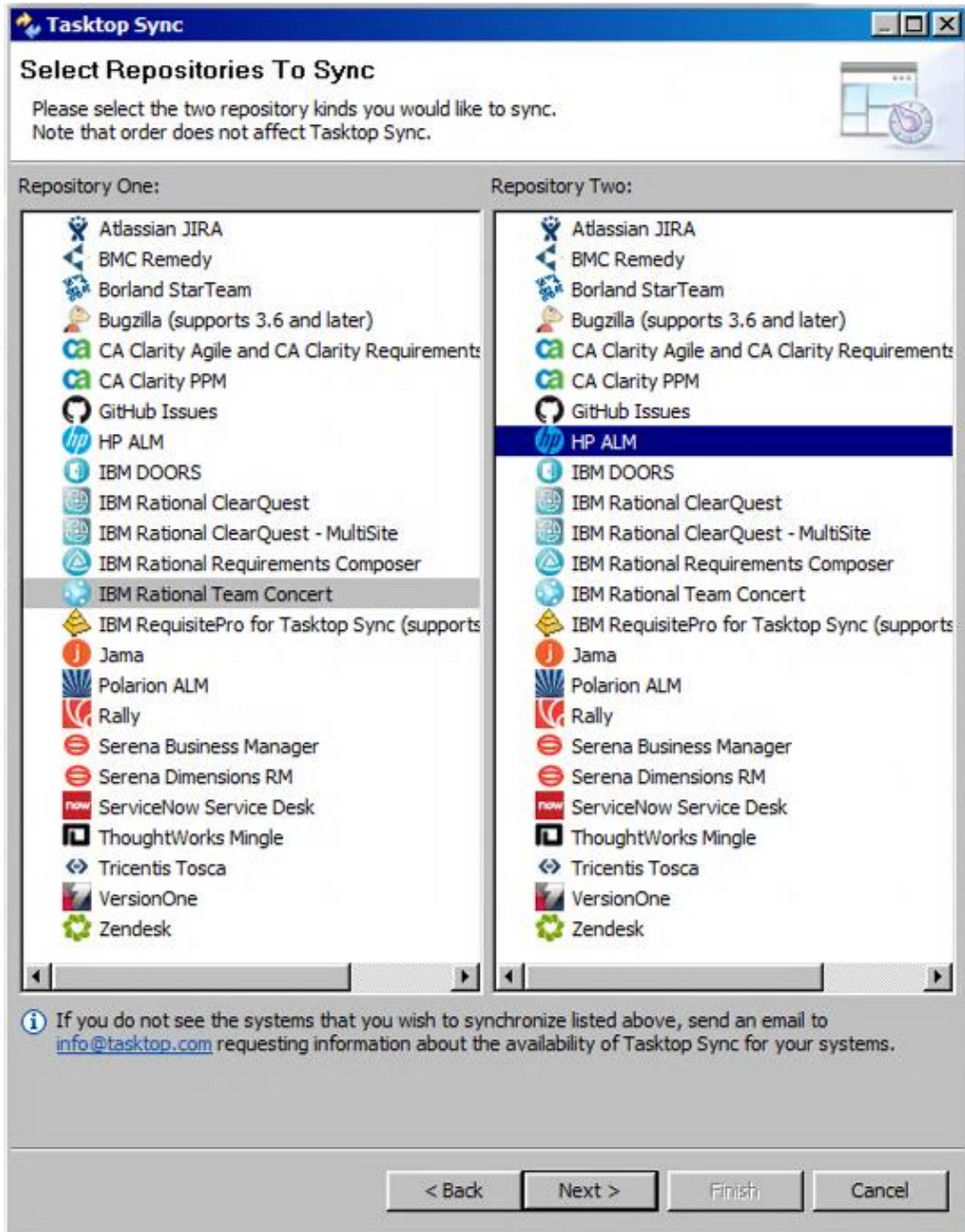
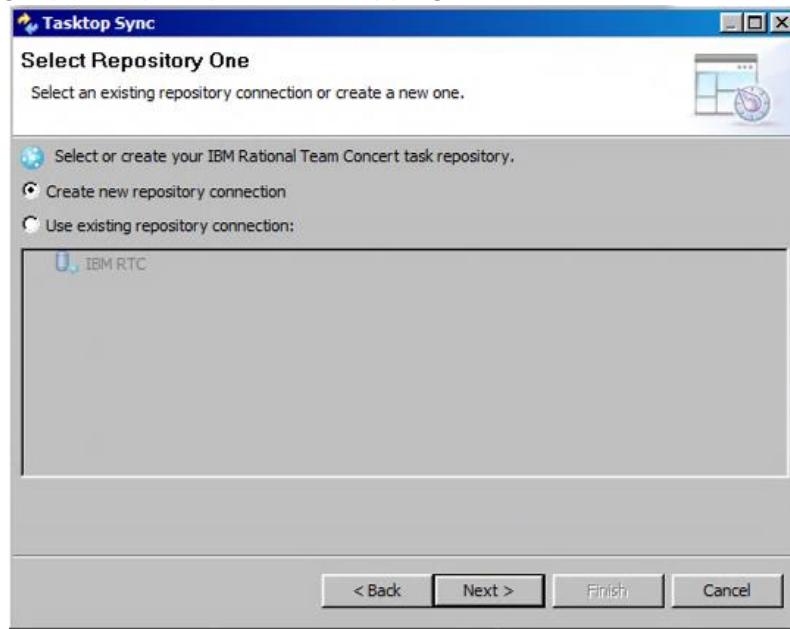


Figure 13: Select Repositories To Sync

After you select which type of repositories you wish to synchronize, the next screen allows you to setup a connection to the repositories (via URL and credentials). If you already created a

repository connection (e.g. from a previous mapping), you may see a dialog like the following to select the existing repository for your task mapping or create a new one:



*Figure 14: Select Repositories Connection Preference*

If you don't have any repositories of the type defined or you select to create a new connection, you will be presented with a dialog where you can configure a new connection. Creating a repository connection will be different depending upon which repository type you select, however, you will need the URL to your system and credentials to connect. Before going to the next page, please ensure that "Save Password" is selected and press "Validate Settings" to ensure that your connection information is correct. You will need to setup a connection to each of the systems that you want to synchronize. Below is a screen shot of the credentials page for the IBM RTC and HP ALM connectors as an example.

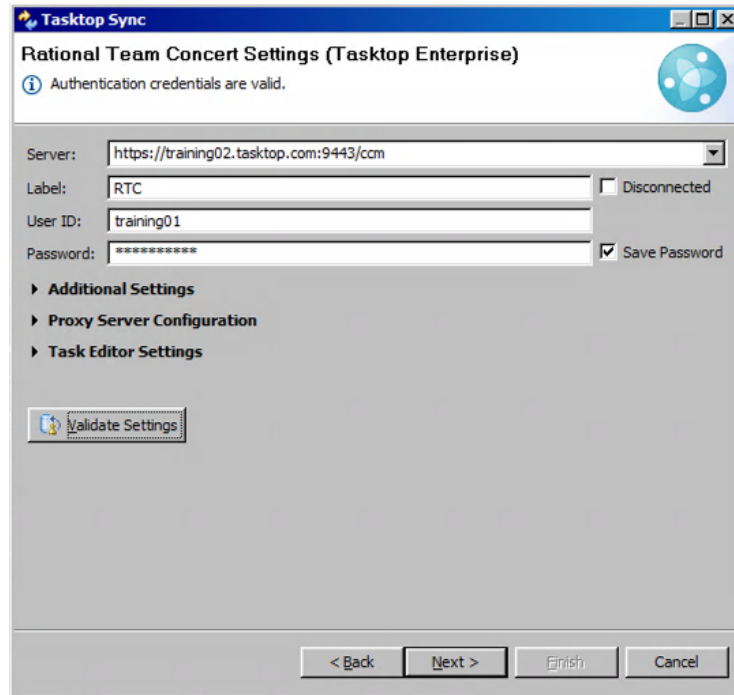


Figure 15: Rational Team Concert Connection Details

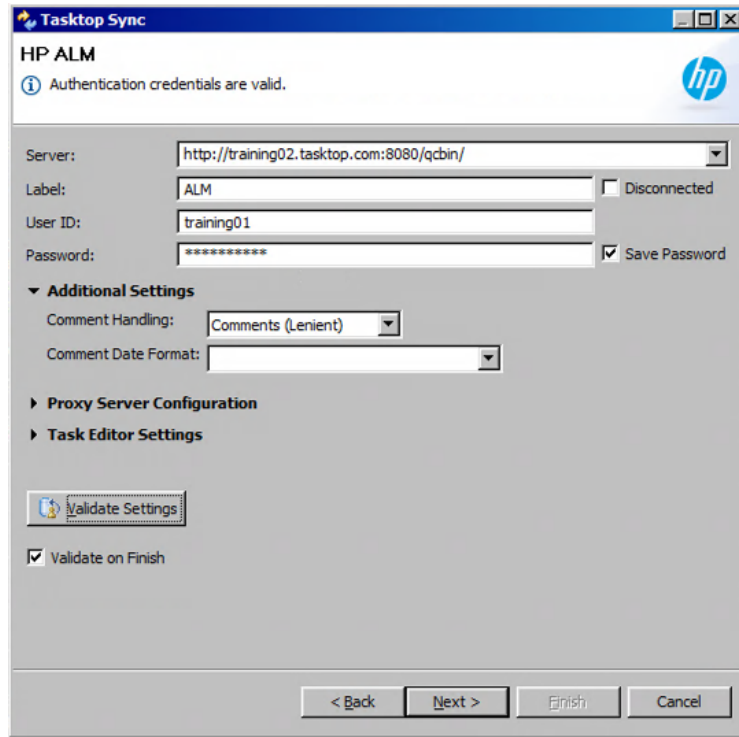


Figure 16: HP ALM Connection Details



**IMPORTANT:** If you are using HP ALM and Quality center, please choose the strict option for the comment handling.



**IMPORTANT:** If you are using Microsoft TFS, the repository URL must point to the collection (e.g. <server>/tfs/CollectionNameHere). Other special cases will be documented with tool tips or warnings on the Connection Details screen

## Configure Mapping Source and Scope

On the "Configure Mapping Source and Scope" screen, create or select the existing "Initialization Query" and "Changes Query". Depending on the repository, you'll need to fill out other information about the project, task type, etc. Make sure to choose the same settings as you used in your query. You'll also need to choose a "Proxy attribute" for the sync: ideally, there's already a choice in the drop-down menu that has the word "proxy" somewhere in its name. If not, leave it as "<Not Set>" and fill it in later in the Mapping Editor.

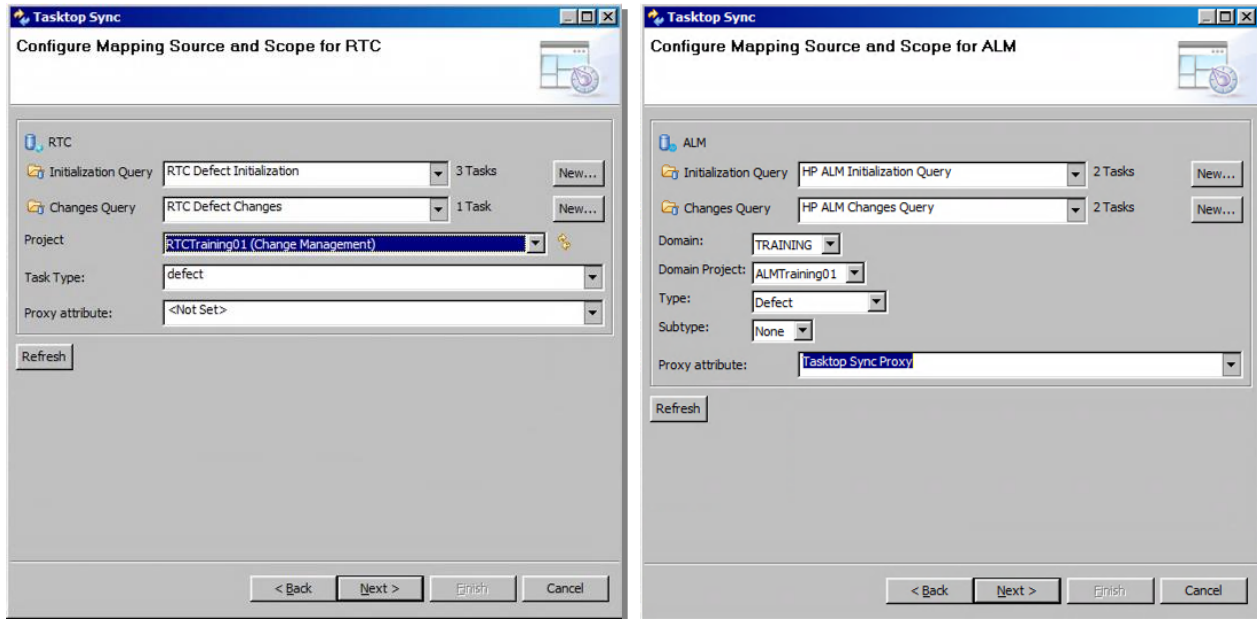
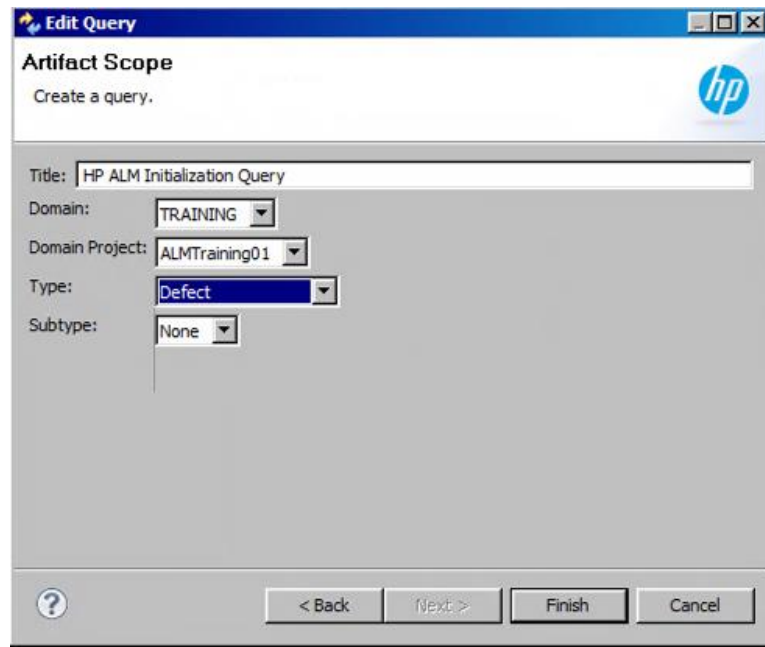


Figure 17: Configure Mapping Scope



**IMPORTANT:** Tasktop Sync needs to keep track of the association between a task and its proxy task. The association is persisted in a proxy store. There are different types of proxy stores available and each repository element must specify the store type through a proxy-storage element.

NOTE: Adding queries for different connectors could be slightly different from each other. The screen shot below shows the query options for HP ALM:



*Figure 18: Create Query*

When using the “Limited Scope”, after defining your queries and configuring your mapping scope, click next, you must choose a task from each repository. The results of each initialization query are shown on the screen; click on a single task in each list. To help you locate the desired task, you can enter some filter criteria to narrow down the list. Selecting a task from each side will “force” these 2 tasks to be in synchronization and will be the only 2 items that Tasktop Sync will process while it is in this mode. Once you move to full scope mode, all items that are contained within the initialization and changes queries will be considered in scope.



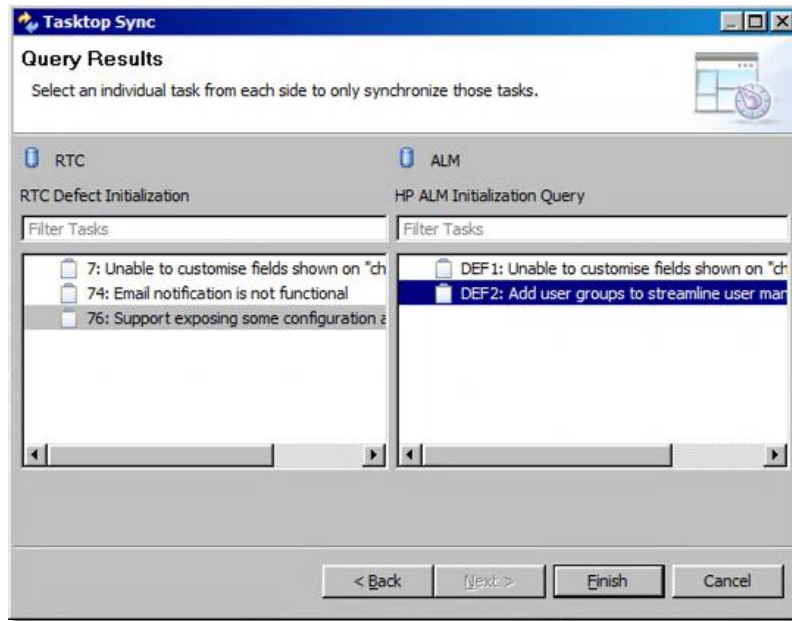


Figure 19: Limited Scope Task Selection

After you click Finish, Tasktop Sync will open the task mapping editor for your new mapping. The mapping will be configured to synchronize only the summary attribute between the two test tasks that you created. Note: the first repository selected in the wizard will be chosen as dominating repository for the conflict resolution policy for the summary to ensure that this simple synchronization will not result in errors. This can be changed in the advanced section of the attribute mapping editor page at a later point.

Tasktop Sync must be started by pressing the “Start” button in the toolbar to begin synchronizing the tasks. Tasktop Sync will begin synchronizing tasks between the configured repositories. Tasktop Sync maintains a persistent store of all tasks that have incoming changes that have not yet been synchronized (including those with errors). When the server is restarted it will reload the queue and continue where it left off.



Figure 20: Tasktop Sync Start Button



**IMPORTANT:** Every change made to your configuration requires a restart of Tasktop Sync from this toolbar.

## Task Mapping Editor

The Task Mapping Editor displays the configuration in a user-friendly format. It shows you information about the repositories, queries, and mappings. The editor also provides direct links for viewing repository schemas, editing repository properties, and editing query parameters. To access the Task Mapping Editor, double click on the mapping title in the Services view or right-click the mapping title and select Properties.

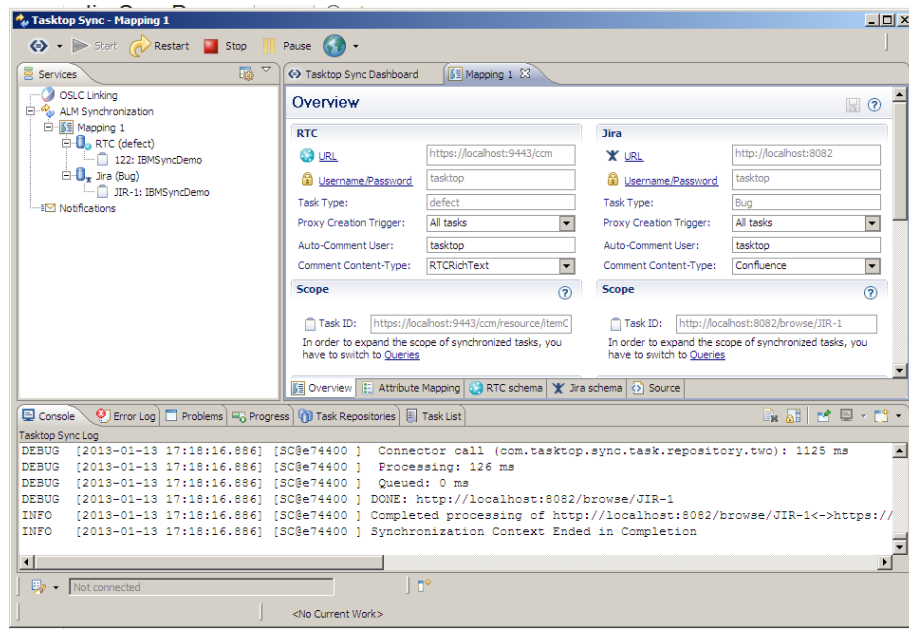


Figure 21: Task Mapping Editor

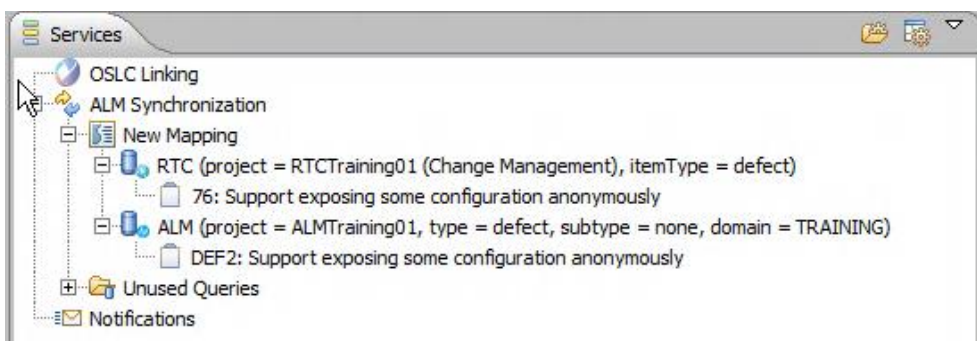


Figure 22: Tasktop Sync Services View



## Overview Tab

### Repository

General repository information is displayed in the upper sections of the Task Mapping editor. The repository information includes the repository URL, credentials, type, connector kind, and proxy creation trigger. The name of the repository type will be in the header of this section, and the icon for the repository type will be next to the URL link.

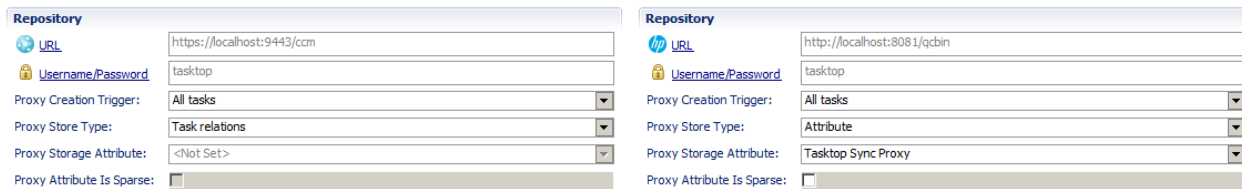


Figure 23: Mapping Overview Tab: Repository Section

**URL:** This section of the editor links to the repository properties editor through the URL and Username/Password links. If a username or password has not been supplied a yellow warning sign will be displayed next to the text box as shown.

**Proxy Creation Trigger:** This specifies when a new incoming artifact should have a proxy artifact created in the other tool. You can set this option to “All” or “None”. If you select “All” you will have a new artifact created in other repository whenever a new item is detected. If set to “None”, new artifacts will not get created. For example, you may have one system for the origination of new artifacts, in this case you would set the proxy creation trigger to “All” for the origination system and “None” for the other system.

**Proxy Storage Type:** Tasktop Sync keeps track of the association between an artifact and its proxy artifact in the defined proxy store. There are different types of proxy stores available and each repository element must specify the store type. Below is a list of the different proxy store types:

#### Attribute Proxy Store

This store is what typically should be used when configuring Tasktop Sync. This store sets an attribute on each task to the URL of its proxy so that traceability is maintained in the repositories. The attribute is specified through attribute-id property on the proxy-storage element. Please note that this attribute should be a custom field of type String, 255 characters.

#### Database Proxy Store

The database store stores proxy association information in Tasktop Sync’s internal database. This should only be used when there is no option to use an attribute (e.g. Folder synchronization for IBM Doors Next Generation) as there is no fail-safe backup if the internal database is corrupted.

#### Task relations Proxy Store

Some connectors have a built-in way of storing links to other tasks, and for those connectors it's possible to use the task relations store. This is most commonly used for IBM Rational Team Concert and Microsoft Visual Studio on Demand.

It is recommended to use the attribute based proxy store as it allows Tasktop Sync to store additional information together with the proxy association that cannot be stored using the built-in linking mechanism or the internal database. This additional information allows Tasktop Sync to detect when a task has been copied and avoids the possibility duplicate records being created.

**Proxy Attribute Is Sparse:** Some systems do not provide all of the fields that are available and therefore the attribute is considered sparse. This should only be set under the direction of a Tasktop Solutions Architect.

### Repository Scope

The scope section defines the set of tasks that are candidates for synchronization between the two repositories. If you created your mapping with the Quick Start Wizard's Limited Scope mode, the scope will initially be a single task for each repository. The URL of this task will be displayed in the Task field shown in this section.

To expand the scope of your synchronization you will have to configure Tasktop Sync to use a set of queries as its definition of the scope. You can convert to using queries as the defining scope by clicking on the "Switch to Full Scope" hyperlink shown underneath the Task field.



Figure 24: Mapping Overview Tab: Scope Section – Limited Scope Mode

Once you have expanded the scope to use queries, this section will be replaced by two fields for selecting queries that will be pre-populated with the values selected as a part of the Quick Start wizard.



**IMPORTANT:** Before moving to Full Scope mode, ensure that the mapping defined is correct and that all required fields are mapped to ensure no errors when started.



Figure 25: Mapping Overview Tab: Scope Section - Full Scope Mode

The **initialization query** is used to initialize or reinitialize the synchronization between tasks. This query should capture all of the tasks that you wish to synchronize from each of the repositories as well as all tasks that have. It is designed to include all of the tasks you are interested in synchronizing in a repository so that you can easily synchronize all existing tasks of interest in a new installation of Tasktop Sync, or to reinitialize synchronization between two repositories if you change your synchronization mappings. As such, the initialization query is only run manually, not ever automatically.

The **changes query** is used to capture a subset of tasks that you would like to synchronize (a subset of the initialization query) which Tasktop Sync should check for changes that required synchronization. This query is run by Tasktop Sync frequently and so should capture a smaller set of tasks than the initialization query. Typically this query captures tasks that have been modified in the last few days. The initialization query may be very large and Tasktop Sync will not automatically run this query after it is created. While the initialization query is run manually and only a small number of times, the changes query is run frequently to determine which tasks have been created or changed recently and thus require synchronization. The changes query is run automatically at a configurable time interval.

### Artifact Scope

The Artifact Scope section displays the fields used to match your tasks within the repository. When tasks are received from your source queries, their attributes must match the scope field values defined here; otherwise, they will be ignored. Each repository will have its defined list of scope fields, and their values. These can be defined by using Quick Start, or they can be edited by clicking the Edit button.

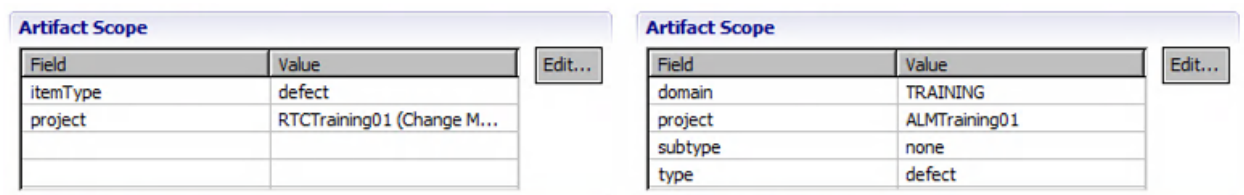


Figure 26: Artifact Scope

## Mapping Preferences

The Mapping Preferences section defines per-repository mapping configuration options including attachment, comment, and time worked synchronization.

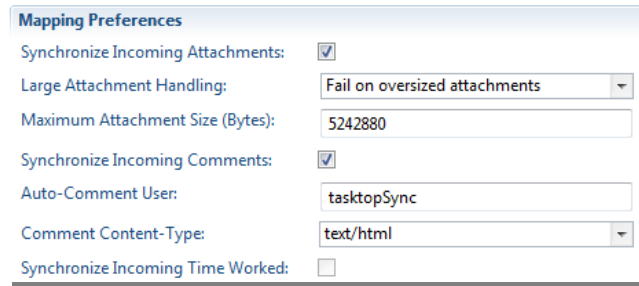


Figure 27: Mapping Preferences

Beyond enabling or disabling attachment synchronization, an attachment file size filter may be defined for this repository. Defining an attachment file size filter will place an upper limit on the size of attachments that will be synchronized into the repository. The attachment filter is configurable with a custom maximum file size and a handling strategy, either to fail when an attachment is oversized or to skip the synchronization of the oversized attachments allowing the rest of the synchronization to proceed.

Aside from enabling or disabling comment synchronization, the auto-comment user and comment content-type can also be defined for this repository. The auto-comment user is the user who will appear as the author of Tasktop Sync's automatically generated comments based on synchronization settings (i.e. conflict notification policy), this user is not used for any other purposes. The comment content-type will be used during comment synchronization to convert rich text comments (e.g. "text/html") from the format used in the source repository to the format used in the target repository.



**IMPORTANT:** Ensure that the [comment content type](#) for each one of your repositories is set to the correct type prior to starting Sync for the first time.

## Properties

The Properties section defines the repository properties, such as force-proxy-store-update-from-db. These properties can be added, edited, or removed through the buttons on the right, however, there is generally no reason to manually edit the properties. To view or edit, click the Properties header to expand.

▼ Properties		
Name	Value	
		Add...
		Edit...
		Remove

▼ Properties		
Name	Value	
force-proxy-store-update-from-db	true	
		Add...
		Edit...
		Remove

Figure 28: Mapping Overview Tab: Properties Section





## Mapping Settings

The Mapping Settings defines configuration options that apply to the entire task mapping. These options include an optional person mapping file and conflict resolution and notification policies.



Figure 29: Mapping Overview Tab: Mapping Settings Section

The filename found in the Person Mapping box will also display at the top of the Services view as a link to the person mapping file.

Conflict notification can either be set as Log or Comment. If “Comment” is selected, when Tasktop Sync detects a conflict it will be reported as a comment in the target task where the conflict was detected. If Log is selected, detected conflicts will be reported in the Tasktop Sync console and on-disk logs.



**TIP:** It is recommended that you use Log for conflict notification.

The Conflict Resolution Policy box will display the default conflict resolution policy of this task mapping. When a conflict is detected, Tasktop Sync uses this policy to determine what value should be recorded to the attribute in question. If Do not synchronize is specified then no action is taken to resolve the conflict, and each repository will keep its own value and will end up in error queue?. Otherwise, one of the repositories can be specified as the dominate repository. In this case, the value from the dominant repository will take precedence in resolving the conflict. The conflict resolution policy can be overridden on an attribute-by-attribute basis in the attribute mapping editor.

### Notifications

The Notifications section allows the configuration of email addresses that can be configured to receive statistics, error reports, and/or usage metrics emails from Tasktop Sync. Clicking on the check boxes will determine which type of reports the recipient receives. Notification emails will not be sent without a valid email address provided in the mail preferences.

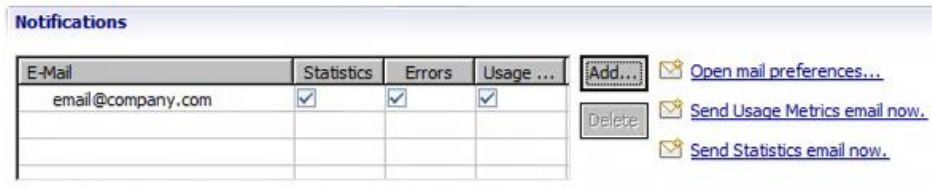


Figure 30: Mapping Overview Tab: Notification Section

There are three kinds of notification emails:

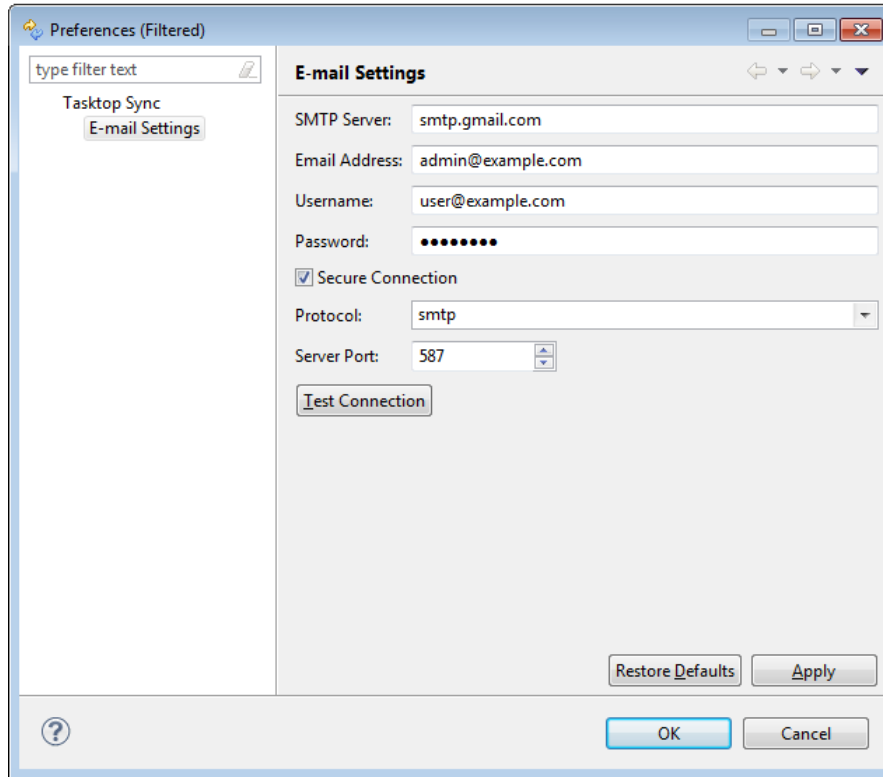
**Statistics** emails are sent daily and show detailed information about how much activity there has been in the last 24 hours.

**Error** emails are sent whenever an error condition happens while synchronizing two tasks. This allows administrators to be notified immediately of conditions that prevent a synchronization from completing, such as when a proxy task has been deleted, a repository is offline, or a task submission failed for some other reason. If there are multiple errors they will be batched up and no more than one email will be sent within a ten-minute period.

**Usage Metrics** emails sent monthly that provide visibility into the synchronization usage occurring in your organization's integrations.

If an error happens while connecting to a repository, an additional error email will be sent. These will only be sent once per repository in error. These errors should be resolved as quickly as possible since they will block Tasktop Sync from operating correctly; Tasktop Sync will not attempt synchronizations involving repositories in error.

To configure the mail preferences, click on Open mail preferences.



*Figure 31: Mapping Overview Tab: Email Settings*

Enter the details of your email to the dialog that pops up. Tasktop Sync notifications will be sent from the address configured here.

## Attribute Mapping Tab

The attribute mapping editor is used to configure the specific attribute-level mappings that are used when synchronizing tasks between the repositories. Before you can configure attribute mappings, you must have a refreshed schema for each repository. Each part of the attribute mapping editor is described below.

**Attribute Mappings**

**Mappings**

HP QC	RTC 3.0.1.1
Summary	Summary
Priority	Priority
Severity	Severity
Detected By *	Reporter
Modified	Modified
Detected on ...	Created
Description	Description
Assigned To	Owner

**Mapping**

HP QC Attribute: Severity      Direction: ↔ (Bidirectional)      RTC 3.0.1.1 Attribute: Severity

**Caster**

Value mapping

HP QC	RTC 3.0.1.1	RTC 3.0.1.1	HP QC
1-Low	Minor	Blocker	5-Urgent
2-Medium	Normal	Critical	4-Very High
3-High	Major	Major	3-High
4-Very High	Critical	Minor	1-Low
5-Urgent	Blocker	Normal	2-Medium
		Unclassified	2-Medium

**Advanced**

**Notes**

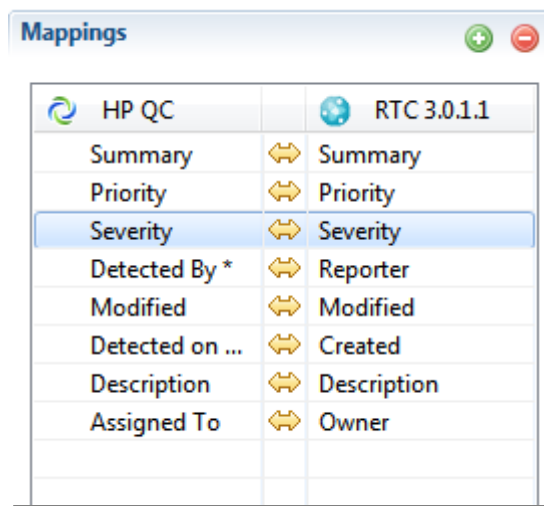
Overview | Attribute Mapping | HP QC schema | RTC 3.0.1.1 schema | Source

Figure 32: Tasktop Sync Attribute Mapping Tab

### Mappings table

The Mappings table displays all the attributes currently being synchronized. The arrows between the attributes being displayed visualize the directions that the attributes are synced. They can be unidirectional from one repository to another, bidirectional, or non-existent if the mapping should not be applied. The plus and minus buttons on the top right allow the addition and removal of attribute mappings.

You can simply add a new attribute by clicking on the green + icon.

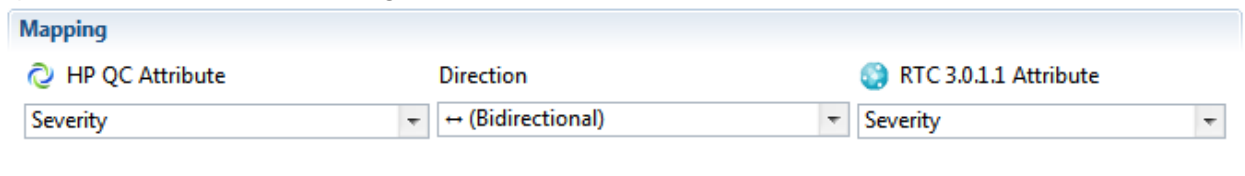


HP QC		RTC 3.0.1.1
Summary	↔	Summary
Priority	↔	Priority
Severity	↔	Severity
Detected By *	↔	Reporter
Modified	↔	Modified
Detected on ...	↔	Created
Description	↔	Description
Assigned To	↔	Owner

Figure 33: Tasktop Sync Mapping Table

### Mapping

This area allows you to define the attributes being mapped. The direction of the synchronizations can be configured in the Direction box.



HP QC Attribute	Direction	RTC 3.0.1.1 Attribute
Severity	↔ (Bidirectional)	Severity

Figure 34: Mapping Direction

### Caster

Similar attributes on different repositories often come in different formats resulting in the need for values to be transformed to the proper format for a given repository. The caster section allows you to configure casters that can perform these transformations.

Once you have selected the attributes being mapped, and the desired direction of the synchronization, the list of casters will be presented. This list is dependent on these mapping details, and will vary depending on the attribute types.

Tasktop Sync provides several different casters by default. This section will explain how to configure and use these casters.

### No Caster

The simplest cases, such as syncing Summary, require no casters at all, and this is the default value.

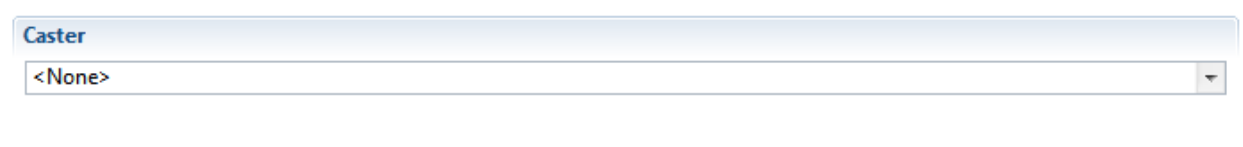


Figure 35: Tasktop Sync Caster

### Value Mapping

Some enumeration attributes, such as severity and priority attributes, often have different values between repositories. To map a finite set of values to another finite set of values, such as with enumeration attributes, use the value mapping caster.

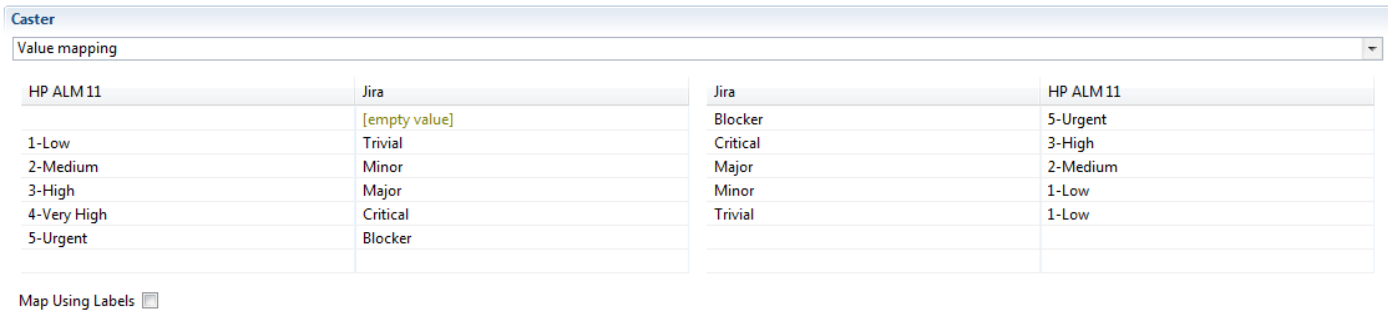
The value mapping casters allows you to provide a mapping for each direction of the value because each attribute may have a different number of values. Use the tables provided to configure the mappings between the repositories. Note that you should take care to not confuse which direction applies to which table. In the example below, the table on the left shows the mapping of HP QC values to IBM Rational Team Concert values, and the table on the right shows the mapping of IBM Rational Team Concert values to HP QC values.

So, for example. “2-medium” in HP QC becomes “Normal” in IBM Rational Team Concert. But “Unclassified” in IBM Rational Team Concert becomes “2-Medium” in HP QC.

The value mapping caster can also be configured to map using labels. This setting can be enabled by checking the “Map Using Labels” checkbox. When this setting is enabled the caster will consider only the user facing labels on the attribute and not the internal IDs. This can be useful for sharing value mappings between configuration templates for systems whose IDs are project or type specific.

For example. If a field in Jira has an option “Normal” with ID “1” and IBM RTC has an option “Medium” with ID “\_FggUIOfEEeG6psipjwbkrQ” the value mapping caster can be configured to map “Normal” to “Medium” instead of mapping “1” to “\_FggUIOfEEeG6psipjwbkrQ” when the map by labels attribute is enabled. The value mapping caster may then be stored in a configuration template which can be re-used to create multiple task mappings involving multiple Jira and RTC projects even if the option IDs change, as long as the labels are consistent across all projects. This is especially useful when the labels of the attributes are the same in both systems as it can automatically map values which have the same label.

For example. If a field in Jira has an option “Normal” with ID “1” and IBM RTC has an option “Normal” with ID “\_FggUIOfEEeG6psipjwbkrQ” the value mapping caster will map these automatically without an explicit mapping when set to map using labels. However if an explicit mapping exists for this option it will be applied instead of the implicit label mapping.



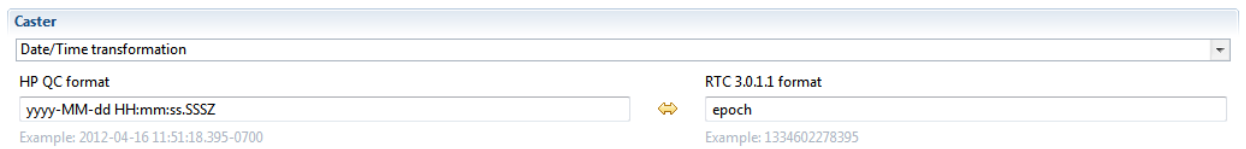
HP ALM 11	Jira	Jira	HP ALM 11
	[empty value]	Blocker	5-Urgent
1-Low	Trivial	Critical	3-High
2-Medium	Minor	Major	2-Medium
3-High	Major	Minor	1-Low
4-Very High	Critical	Trivial	1-Low
5-Urgent	Blocker		

Map Using Labels ☒

Figure 36: Value Mapping Caster

### Date/Time Transformation

For repositories with different date/time formats with attributes such as Date Modified or Date Created, a Date/Time Transformation may need to be used. Pressing Ctrl-space will enable content assist when filling out the formats



Caster

Date/Time transformation

HP QC format: yyyy-MM-dd HH:mm:ss.SSSZ  
Example: 2012-04-16 11:51:18.395-0700

RTC 3.0.1.1 format: epoch  
Example: 1334602278395

Figure 37: Date/Time transformation Caster

### Person Mapping

For fields such as Assignee, Reporter or any other fields involving the user identity of a person, use the Person Mapping caster can be used if the user ids are different in each repository. This caster must be used in conjunction with the person mapping file defined in the Mapping Settings.

Clicking on Go to person mapping settings goes to the Mapping Settings section of the task mapping editor, to define which person mapping file is being used.

Clicking on Go to person mapping file will go to the Person mapping file currently being used.

The person mapping caster uses mapping specified in this file. Read about person mapping files to learn how it is configured.



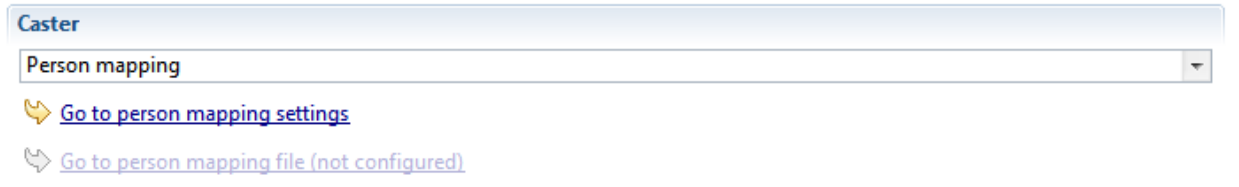


Figure 38: Person Mapping Caster

### Text Markup Transformation

For fields such as Description, different repositories may use different markup to store formatting. In this case use the Text Markup Transformation. Select from the drop down menu to specify the text content type of each repository.

In the case that a repository does not support a rich text, we suggest setting the format to Textile, as it is a rich text format that is easily readable as plain text.

If both repositories use html markup, we suggest using the Text Markup Transformation with HTML selected for the text content type for both repositories. This will enable a transformation that handles differences in html generated by repositories from different vendors.

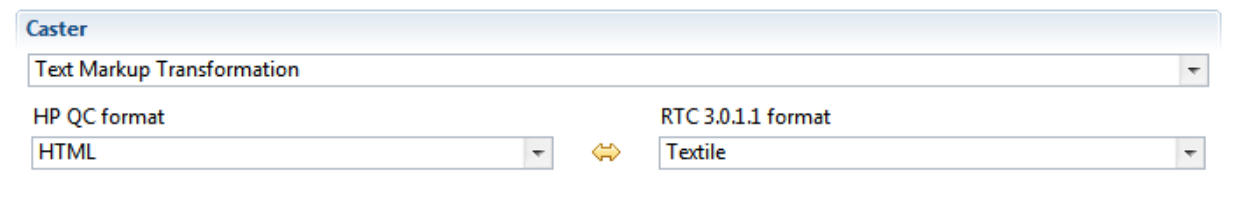


Figure 39: Text Markup Transformation Caster

### Literal Value

If you want attributes to be set to an arbitrary fixed value, use the Literal Value caster.

If the attribute being written to with a literal caster is an enumeration, then contest assist, available via Ctrl-space, is available to get a list of options to select from. This can be useful for setting defaults on enumerated types when syncing repositories with required fields which do not conveniently map to a field in the other repository.



Figure 40: Literal Value Caster

### Custom Script

If you have defined custom casters, then you can assign them as casters to your attributes. To assign your custom caster, first select the caster “Custom Script”. You can then assign a custom caster to each attribute. These casters will be performed when writing to the associated attribute.

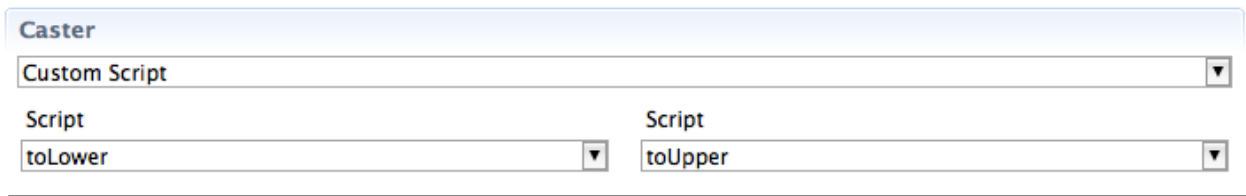


Figure 41: Custom Script Caster

### Task Link to Task Link

When synchronizing task relationships, use the Task Link to Task Link caster. This caster will copy the relationship from one repository to the other, mirroring the task hierarchy in each. For example, if you are synchronizing both test cases and defects between two repositories, you can maintain the link between them in both repositories.

This caster can only be selected for a mapping that meets the following condition:

- Both attributes in the mapping must be of the type “taskDependency”. (To determine the attribute type, click on the repository schema, and click on the desired attribute.)

If this condition is not met, the caster will not appear in the Caster selection list.

Note: The relationship can only be synchronized if the tasks on both sides of the relationship are being synchronized between the two repositories. If only one of the tasks is being synchronized, the synchronization will result in an error.

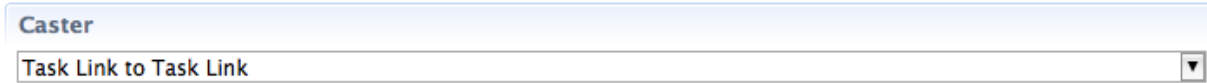


Figure 42: Task Link to Task Link Caster

#### Task Link to Task Link Group

To synchronize multiple task relation attributes from one repository to a single task relation attribute in another repository, use the Task Link to Task Link Group caster. For example, if one repository defines many different forms of relationships in different attributes, such as “blocked by” and “duplicates”, and your target repository has only a single attribute for these relationships, “links”, you can use the Task Link to Task Link Group caster to combine all relationships in both “blocked by” and “duplicates” into the target of “links”.

This caster works as a compliment to the Task Link to Task Link caster, allowing you to combine two or more attribute into a single mapping to a target attribute. This caster can only be used to combine the mapping with an existing mapping with the Task Link to Task Link caster, so you must define this mapping first. To continue the previous example, you would first define a mapping between “blocked by” and “links” with a Task Link to Task Link caster. You then create a second mapping between “duplicates” and “links” using the Task Link to Task Link Group caster. In a final step, in the configuration of the Task Link to Task Link Group caster, you combine the two mappings by assigning “blocked by” as the default attribute.

An important feature of the Task Link to Task Link Group caster is that it only supports unidirectional mappings. The associated Task Link to Task Link caster can be bidirectional. This directs Sync on which attribute to add new task relations found in the target repository attribute. To once again continue on the example, if a new task relation was added to “links”, this task relation would be synced to “blocked by”, since it was mapped with the bidirectional Task Link to Task Link caster.

This caster can only be selected for a mapping that meets the following conditions:

1. Both attributes in the mapping must be of the type “taskDependency”. (To determine the attribute type, click on the repository schema, and click on the desired attribute.)
2. The mapping must be unidirectional from the repository with multiple attributes to the repository with the single attribute.

If these conditions are not met, the caster will not appear in the Caster selection list.

Note: The relationship can only be synchronized if the tasks on both sides of the relationship are being synchronized between the two repositories. If only one of the tasks is being synchronized, the synchronization will result in an error.

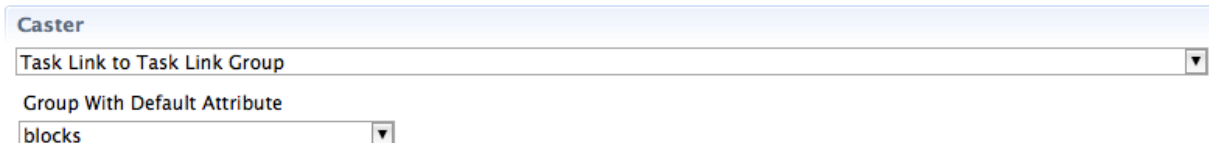


Figure 43: Task Link to Task Link Group Caster

#### Task Link to Web Link

To synchronize an internally referenced task as a web URL, use the Task Link to Web Link caster. With this caster, you can synchronize the association to referenced tasks, without synchronizing the referenced tasks themselves. What will be synchronized to the target task will be a web URL, which can be opened in a browser to view the referenced task.

This caster can only be selected for a mapping that meets the following conditions:

1. One attribute in the mapping must be of the type “taskDependency”. (To determine the attribute type, click on the repository schema page, and click on the desired attribute.)
2. One attribute in the mapping must be of the type “externalLink”.
3. The mapping must be unidirectional from the “taskDependency” attribute to the “externalLink” attribute.

If these conditions are not met, the caster will not appear in the Caster selection list.

Note: This caster will not remove web URLs from the target attribute. It will merge any new associations from the source attribute with existing web URLs on the target attribute.

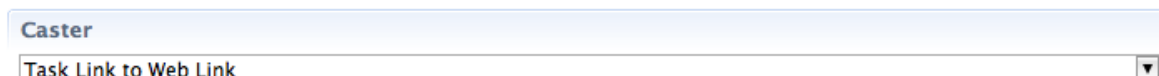


Figure 44: Task Link to Web Link Caster

### Task Link to Web Link Group

To synchronize multiple internal task relation attributes from one repository to a single web URL attribute in another repository, use the Task Link to Web Link Group caster. For example, if one repository defines many different forms of relationships in different attributes, such as “blocked by” and “duplicates”, and your target repository has only a single attribute for storing web URL link, “web links”, you can use the Task Link to Web Link Group caster to combine all internal relationships in both “blocked by” and “duplicates” as URLs into the target of “web links”. What will be synchronized to the target task will be web URLs, which can be opened in a browser to view the referenced task.

This caster works as a compliment to the Task Link to Web Link caster, allowing you to combine two or more attribute into a single mapping to a target attribute. This caster can only be used to combine the mapping with an existing mapping with the Task Link to Web Link caster, so you must define this mapping first. To continue the previous example, you would first define a mapping between “blocked by” and “web links” with a Task Link to Web Link caster. You then create a second mapping between “duplicates” and “web links” using the Task Link to Web Link Group caster. In a final step, in the configuration of the Task Link to Web Link Group caster, you combine the two mappings by assigning “blocked by” as the default attribute.

This caster can only be selected for a mapping that meets the following conditions:

1. The source attribute in the mapping must be of the type “taskDependency”. (To determine the attribute type, click on the repository schema, and click on the desired attribute.)
2. The target attribute in the mapping must be of the type “externalLink”.
3. The mapping must be unidirectional from the “taskDependency” attribute to the “externalLink” attribute.

If these conditions are not met, the caster will not appear in the Caster selection list.

Note: This caster will not remove web URLs from the target attribute. It will merge any new associations from the source attribute(s) with existing web URLs on the target attribute.

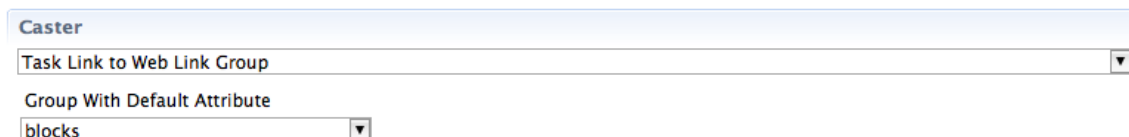


Figure 45: Task Link to Web Link Group Caster

### Task Link to String

If you need to synchronize an internally referenced task as a web URL, but your target repository does not support attached web URLs, use the Task Link to String caster. With this caster, you can synchronize one or more associations to referenced tasks as web URLs, formatted into text attributes, in your target repository.

This caster also supports formatting of the target text attribute. Pressing Ctrl-space will enable content-assist when filling out the format.

This caster can only be selected for a mapping that meets the following conditions:

1. One attribute in the mapping must be of the type “taskDependency”. (To determine the attribute type, click on the repository schema page, and click on the desired attribute.)
2. One attribute in the mapping must support text entry.
3. The mapping must be unidirectional from the “taskDependency” attribute to the text attribute. If these conditions are not met, the caster will not appear in the Caster selection list.

Note: Since the resulting text will concatenate multiple web URLs, it can be quite large. It is recommended that the target text attribute support strings of at least 1024 characters.

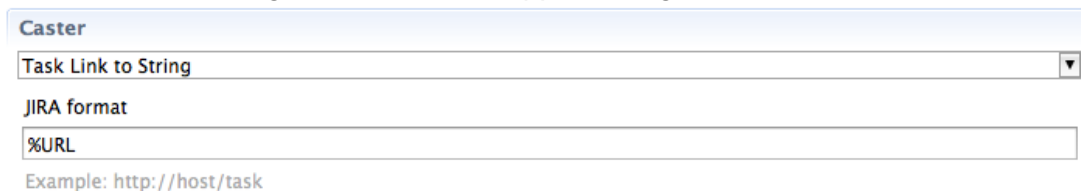


Figure 46: Task Link to String Caster

### Web Link to Web Link

To synchronize referenced web URLs between repositories, use the Web Link to Web Link caster. With this caster, you can synchronize one or more attached web URLs between two tasks. This synchronization can be either bidirectional (web URLs attached to either task will be synchronized to the other) or unidirectional (only web URLs attached to the task in one of the repositories will be added to the other).

This caster can only be selected for a mapping that meets the following condition:

- Both attributes in the mapping must be of the type “externalLink”. (To determine the attribute type, click on the repository schema, and click on the desired attribute.)

If this condition is not met, the caster will not appear in the Caster selection list.

Note: This caster will not remove web URLs from either attribute. It will merge any new associations from the source attribute with existing web URLs on the target attribute.

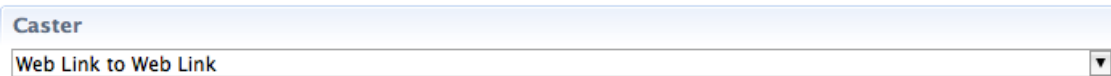


Figure 47: Web Link to Web Link Caster

### Web Link to String

If you need to synchronize web URLs from one repository to another, but your target repository does not support attached web URLs, use the Web Link to String caster. With this caster, you can synchronize one or more web URLs, formatted into text attributes, into your target repository.

This caster also supports formatting of the target text attribute. Pressing Ctrl-space will enable content-assist when filling out the format.

This caster can only be selected for a mapping that meets the following conditions:

One attribute in the mapping must be of the type “externalLink”. (To determine the attribute type, click on the repository schema page, and click on the desired attribute.)

1. One attribute in the mapping must support text entry.
2. The mapping must be unidirectional from the “externalLink” attribute to the text attribute.
3. If these conditions are not met, the caster will not appear in the Caster selection list.

Note: Since the resulting text will concatenate multiple web URLs, it can be quite large. It is recommended that the target text attribute support strings of at least 1024 characters.

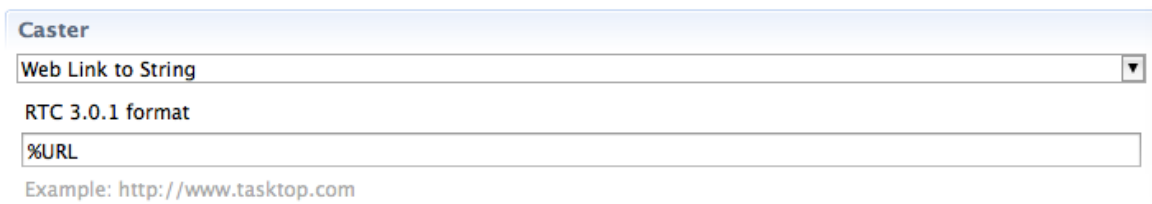


Figure 48: Web Link to String Caster

### Advanced

The Conflict Resolution Policy box specifies which the behavior for synchronizations of this attribute to take in case of a conflict. If Default behavior is selected, the policy defined in the

task mapping will take effect. Otherwise selecting any other option will override the mapping-wide default behavior.

The Attribute mapping strategy box specifies when this attribute should be synchronized. The default behavior is Copy if target attribute exists, which only synchronizes the attribute if it exists in the other repository, so undefined attributes will not be created. Initialize will only create the attribute on the creation of a new proxy task, and will not synchronize in subsequent synchronizations.

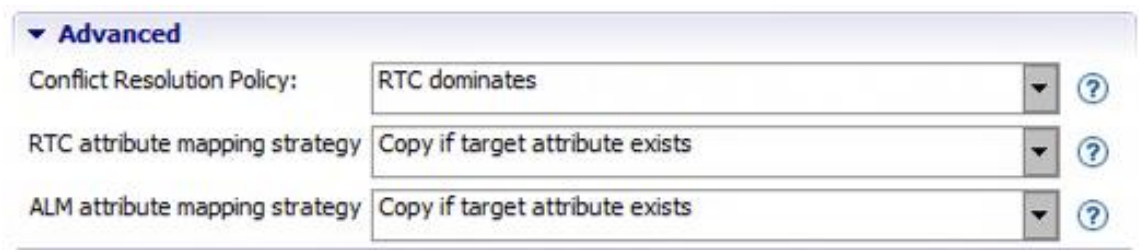


Figure 49: Attribute Mapping Advanced Section

### Attribute Mapping Notes

This section allows the entry of any documentation or special details that may provide documentation with the attribute mapping; the value of this field is not used by Tasktop Sync directly. Note that comments are not supported directly in the configuration xml, so this is the best way to make notes to describe the purpose of the mapping.

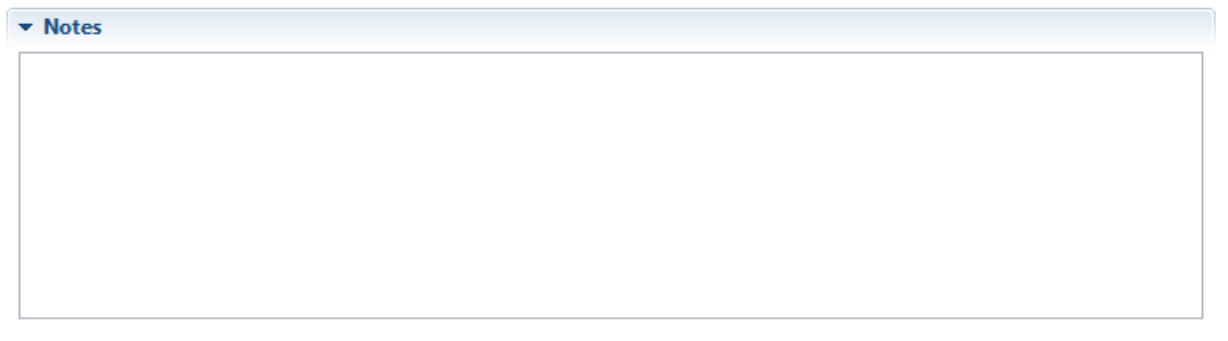


Figure 50: Attribute Mapping Note Section

## Schema views

The Schema View can be accessed by selecting the corresponding tab at the bottom of the Task Mapping Editor. Tasktop Sync inspects both repositories to determine their schemas, including the attribute IDs, their labels, and their types. The Attribute Mapping Editor uses these schemas



to populate the options for many attributes, including enumerated types used when producing value map casters and literal casters.

**Schema for HP ALM 11**

ID	Label	Type
BG_ACTUAL_FIX_TIME	Actual Fix Time	long
BG_BUG_VER_STAMP	Version Stamp	shortText
BG_CLOSING_DATE	Closing Date	date
BG_CLOSING_VERSION	Closed in Version	singleSelect
BG_DESCRIPTION	Description	longRichText
BG_DETECTED_BY	Submitter	person
BG_DETECTED_IN_RCYC	Found in Build	singleSelect
BG_DETECTED_IN_REL	Found in Phase	singleSelect
BG_DETECTION_DATE	Submit Date	date
BG_DETECTION_VERSION	Detected in Version	singleSelect
BG_ESTIMATED_FIX_TIME	Estimated Fix Time	long
BG_PLANNED_CLOSING_VER	Planned Closing Version	singleSelect
BG_PRIORITY	Priority	singleSelect
BG_PROJECT	Project	singleSelect
BG_REPRODUCIBLE	Reproducible	singleSelect
BG_RESPONSIBLE	Assigned To	person
BG_SEVERITY	Severity	singleSelect
BG_STATUS	Status	singleSelect
BG_SUBJECT	Subject	shortText
BG_SUMMARY	Headline	shortRichText

**Selected Attribute Details**

Attribute ID: BG\_PRIORITY  
Label: Priority  
Key: task.common.priority  
Kind: task.common.kind.default  
Type: singleSelect

**Attachments**

Supported: true  
File Size: Enabled, Identifier  
File Name: Enabled, Required  
Description: Enabled  
Title: Disabled

**Comments**

Supported: true  
Content Type: text/html

**Actions**

Refresh Schema

Last Updated: 1 week 2 days ago

Overview | Attribute Mapping | HP ALM 11 schema | Rally schema | Source

Figure 51: Tasktop Sync Repository Schema



**IMPORTANT:** If a change is made to the repositories, you need to click on the Refresh Schema button in the Actions section of the Schema View to update the repository schema to reflect the changes made. The button will be disabled if a schema refresh is already in progress. Additionally, refreshing the schema will run queries from the task repository. If the synchronizer is running when the schema is refreshed, any changes found may be synchronized. Refreshing the schema may take some time. Additionally, refreshing the schema will run queries from the task repository and refresh each individual task. If the synchronizer is running, any changes found may be synchronized. Refresh progress can be checked in the Progress view of Tasktop Sync. After refreshing the schema, the synchronization process must be restarted for the changes to take effect.

## Source Tab

The Source Tab allows access to the XML that is generated by the editor. It will display only the XML pertinent to the current configuration; this includes all the XML for the current task-

mapping element being configured as well as the shared configuration of the enclosing sync-model element. Advanced configuration such as scripted attribute casters must be configured directly in the XML.

If you wish to make any changes in Synchronizer.xml, we recommend that you use the full XML editor (available via the toolbar button in the Services view), shown as below:

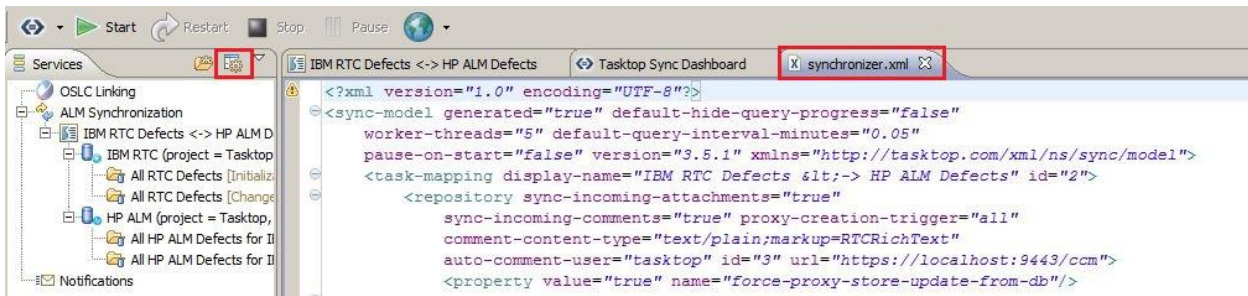


Figure 52: Synchronize.XML

## Configuration and Debugging Tools

### Task Data

If you're having trouble with a mapping (e.g. finding a proxyStorageAttribute that works, or getting the Attribute Mappings configured correctly) it can help to take a look at what the task data for an item from a repository looks like.

You can use Sync Tasks view and double-click on any task from that repository (look under the query you're using for that repo).

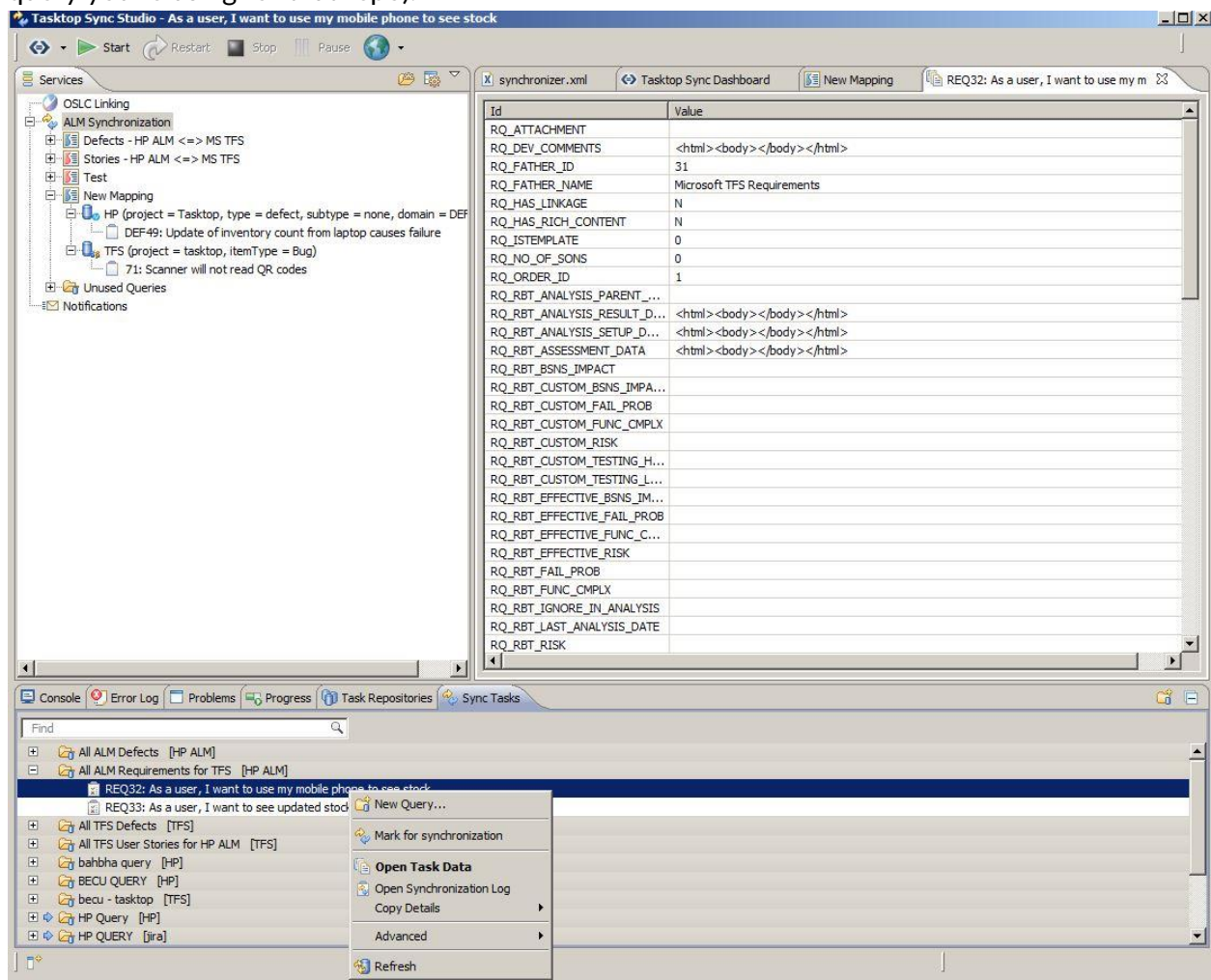


Figure 53: Tasktop Sync Task Data Editor



## Repository Configuration Changes

If you make a change in the Web UI for a repository, Sync needs to be aware of the new configuration. In the Task Repositories view, right-click on the repo that's changed and choose "Update Repository Configuration" from the drop-down menu.

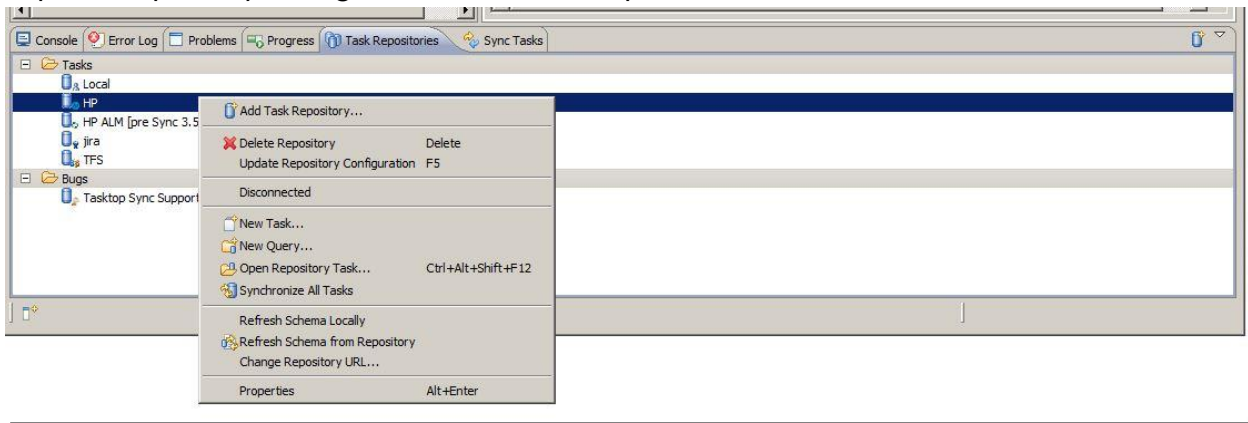
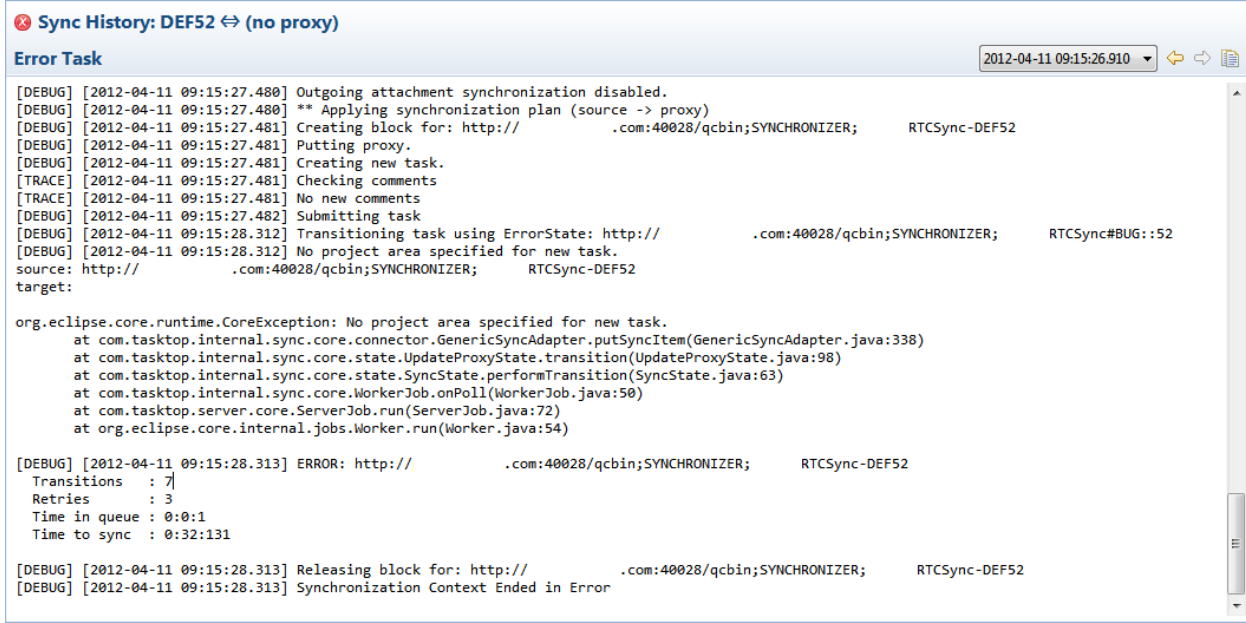


Figure 54: Update Repository Configuration

## Synchronization Log Viewer

The Sync Log displays logged console messages per synchronization activity for every task. It provides information that is easily accessible for debugging and may provide information in determining why synchronization may have been unsuccessful.



```

Sync History: DEF52 ⇌ (no proxy)
Error Task
2012-04-11 09:15:26.910

[DEBUG] [2012-04-11 09:15:27.480] Outgoing attachment synchronization disabled.
[DEBUG] [2012-04-11 09:15:27.480] ** Applying synchronization plan (source -> proxy)
[DEBUG] [2012-04-11 09:15:27.481] Creating block for: http://.com:40028/qcbin;SYNCHRONIZER; RTCSync-DEF52
[DEBUG] [2012-04-11 09:15:27.481] Putting proxy.
[DEBUG] [2012-04-11 09:15:27.481] Creating new task.
[TRACE] [2012-04-11 09:15:27.481] Checking comments
[TRACE] [2012-04-11 09:15:27.481] No new comments
[DEBUG] [2012-04-11 09:15:27.482] Submitting task
[DEBUG] [2012-04-11 09:15:28.312] Transitioning task using ErrorState: http://.com:40028/qcbin;SYNCHRONIZER; RTCSync#BUG::52
[DEBUG] [2012-04-11 09:15:28.312] No project area specified for new task.
source: http://.com:40028/qcbin;SYNCHRONIZER; RTCSync-DEF52
target:

org.eclipse.core.runtime.CoreException: No project area specified for new task.
    at com.tasktop.internal.sync.core.connector.GenericSyncAdapter.putSyncItem(GenericSyncAdapter.java:338)
    at com.tasktop.internal.sync.core.state.UpdateProxyState.transition(UpdateProxyState.java:98)
    at com.tasktop.internal.sync.core.state.SyncState.performTransition(SyncState.java:63)
    at com.tasktop.internal.sync.core.WorkerJob.onPoll(WorkerJob.java:50)
    at com.tasktop.server.core.ServerJob.run(ServerJob.java:72)
    at org.eclipse.core.internal.jobs.Worker.run(Worker.java:54)

[DEBUG] [2012-04-11 09:15:28.313] ERROR: http://.com:40028/qcbin;SYNCHRONIZER; RTCSync-DEF52
Transitions : 7
Retries : 3
Time in queue : 0:0:1
Time to sync : 0:32:131

[DEBUG] [2012-04-11 09:15:28.313] Releasing block for: http://.com:40028/qcbin;SYNCHRONIZER; RTCSync-DEF52
[DEBUG] [2012-04-11 09:15:28.313] Synchronization Context Ended in Error
    
```

Figure 55: Synchronization Log Viewer

There are two ways of accessing the Sync Log, either by right clicking a task under a query in the Sync Tasks view and selecting Open Sync Log, or by double clicking a failed synchronization in the Error Queue of the Sync Dashboard.

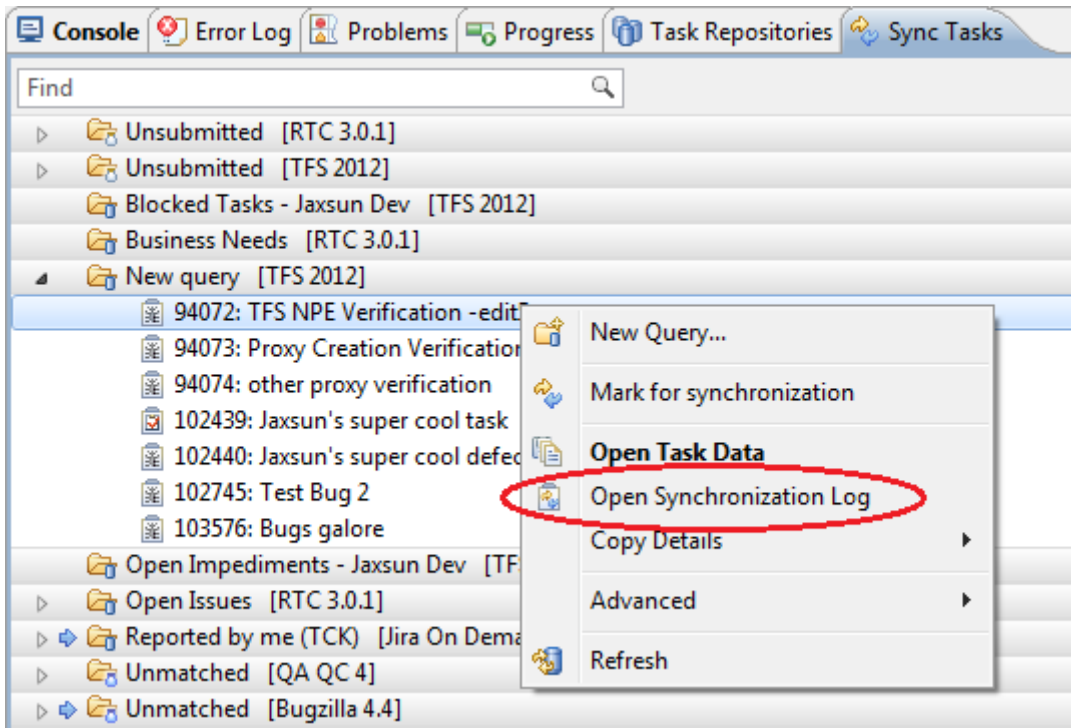


Figure 56: Open Synchronization Log

Error		
Source	Target	Message
DEF52: Error Task		No project area specified f...

Figure 57: Error Queue

The title is displayed in the top left of the Sync Log, this area displays ids of the tasks being synchronized as well as their summary. Note that in this example a red x icon is present in the upper left corner. The presence of this icon denotes that something went wrong during this synchronization, and manual intervention is required in order to successfully proceed. When viewing the log of a successful synchronization, this icon is absent.



Figure 58: Error Task - No Proxy

## Workspace, Configuration and Log File Paths

The Tasktop Sync application workspace and working directories contain a number of files and folders that are needed for the correct operation of Tasktop Sync. To understand the difference between the workspace and working directories, see the Workspace, Configuration and Log File Paths section of the Maintenance and Inspection area in our online help documents. The default workspace/working directory is located in the following locations:

On all supported versions of Windows:

\$TASKTOPSYNC\_HOME = C:\Users\<User>\AppData\Roaming\TasktopSync

Linux: <user.home>/tasktopSync

Note that the workspace can be configured to be a different location than the default via the -data option in the TasktopSync.ini file located in the installation folder. The easiest way to determine the location of your workspace is to open Tasktop Sync, click the folder icon in the services view to open the Working Directory and navigate up 2 directories.

All of the files in these directories are critical to the proper operation of Tasktop Sync and should not be deleted unless directed by support personnel. Below is a brief overview of some of the items:

tasktop.license - license file for the Tasktop Sync product enabling the Tasktop Sync features  
eclipse.keyring - encrypted password store for Task Repository credentials



workspace - folder containing all of the Tasktop Sync configuration and cache files

workspace/.metadata - folder containing cache information about repositories, queries and tasks

workspace/tasktop - folder containing Tasktop Sync configuration files and logs (Tasktop Sync working directory)

workspace/tasktop/data - folder containing cache information about tasks

workspace/tasktop/db - folder containing the file based database used by Tasktop Sync for a local cache of metadata and synchronization information

workspace/tasktop/log - folder containing all detailed synchronization and web monitoring UI logs

workspace/tasktop/schemas - folder containing a cache of the repository schemas

workspace/tasktop/synchronizer.xml - Tasktop Sync mapping configuration file

workspace/tasktop/log4j.xml - logging configuration file

workspace/tasktop/web.properties - properties file for configuring the OSLC and the web monitoring UI

workspace/tasktop/oslc.properties - properties file for configuring OSLC

workspace/tasktop/.project - metadata used by Tasktop Sync Studio to be aware of these files and folders

In addition to these files, there may be some backups of the synchronizer.xml and examples for the web and OSLC properties files.

Another way to access the working directory is via the open folder icon in the Services pane as shown below.



Figure 59: Tasktop Sync Workspace

## Getting Help

When requesting assistance from your assigned Solutions Architect or Tasktop Support, it is best to include as much information as possible to ensure that they can best assist you. The most important information to provide is an error report and if not included will generally be requested.

## Generating an Error Report

In the event of an error while using Tasktop Sync, Tasktop Sync can generate an error report in .zip format for sending to Tasktop support. To generate the report, follow these steps:

1. In the top-left corner of the Tasktop Sync Studio UI, click on the arrow next to the Tasktop Sync logo to open a menu.

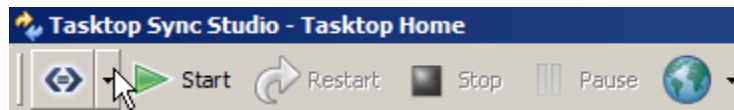


Figure 60: Generating Error Report

2. Select the “Create Error Report...” option from the menu that appears.

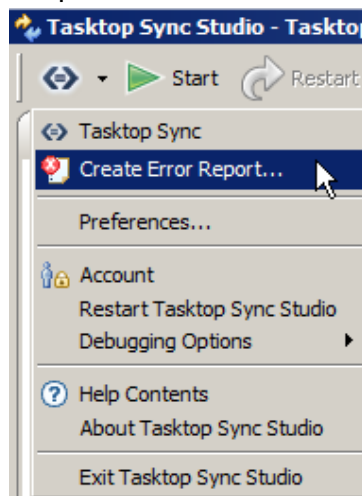
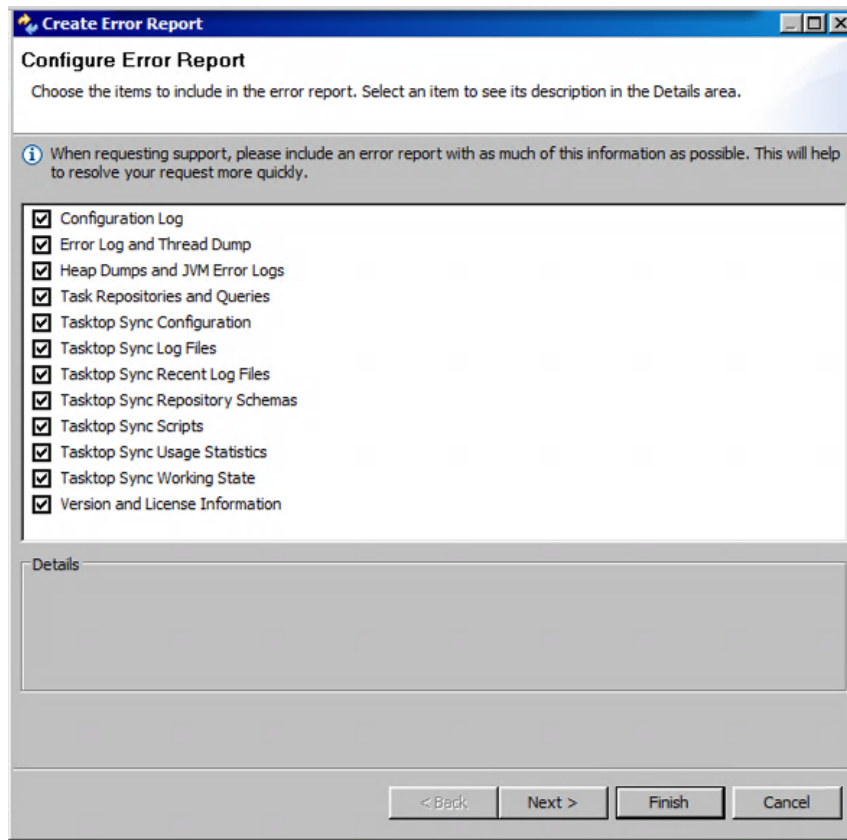


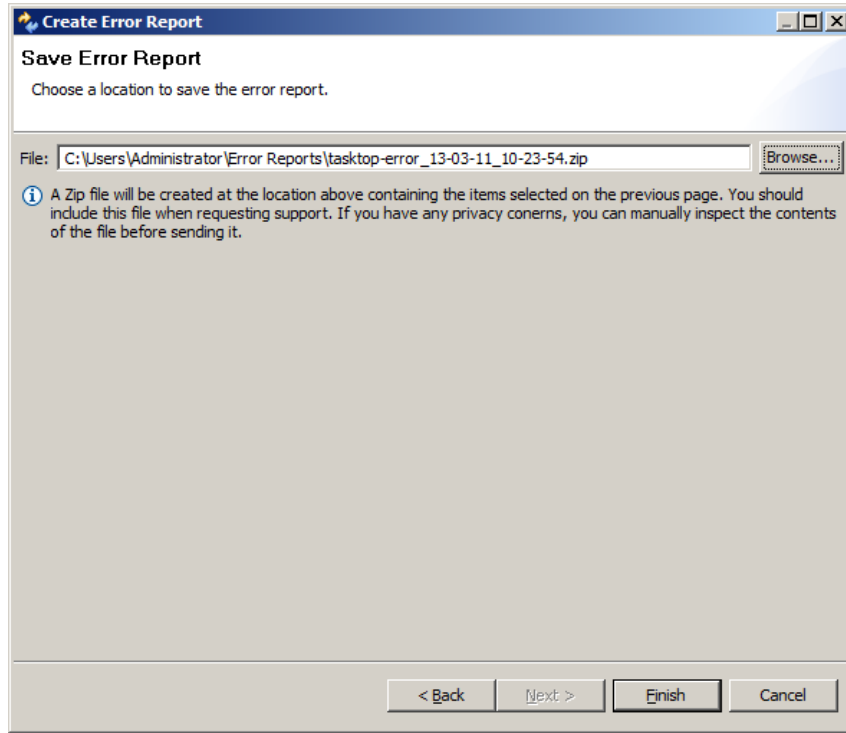
Figure 61 Create Error Report

3. In the dialog that appears, select which components of the error report that should be included. Each component can be selected, and a summary of the information included in that component will be shown. Click “Next” once the desired components to include have been selected.



*Figure 62: Configure Error Report*

4. Choose a location to save the report. Click “Finish” to generate the error report.



*Figure 63: Save Error Report*

5. The error report can now be sent to Tasktop support as a .zip file, found in the aforementioned location.

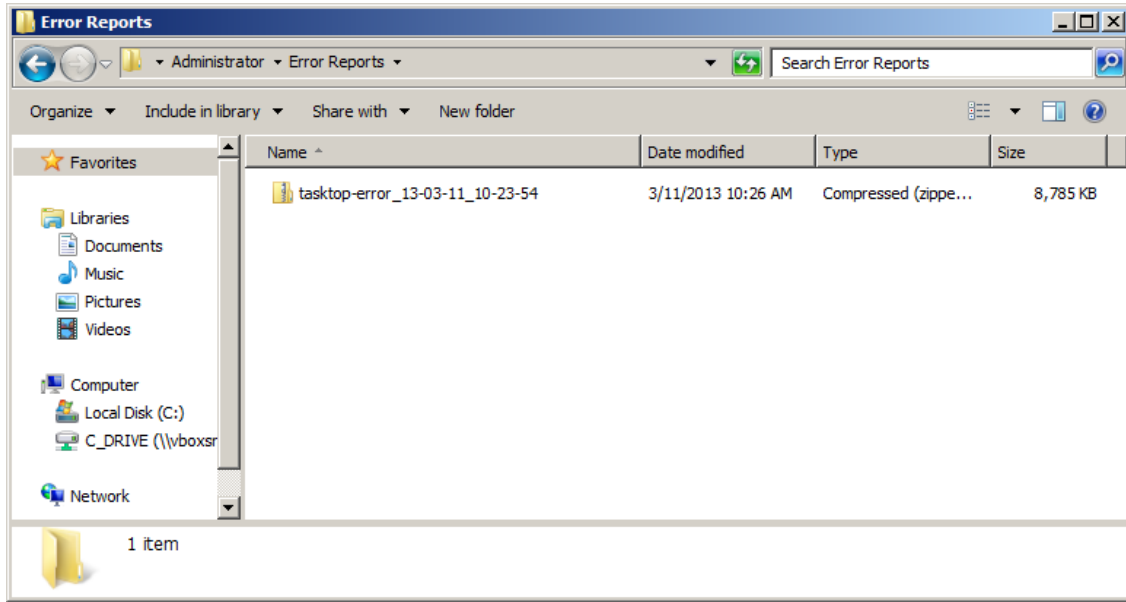


Figure 64: Error Report File



**TIP** Error reports may contain confidential information. Please ensure when handling or transmitting the error report that these procedures are in compliance with your organization's policy regarding sensitive and confidential information.

## Tasktop Sync Additional Resources

If you need any additional resources you can use the following links:

<http://help.tasktop.com>

<http://support.tasktop.com>

Email [support@tasktop.com](mailto:support@tasktop.com) for technical support