TASKTOP

Tasktop Sync - Cheat Sheet

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Tasktop Sync Server – Application Maintenance

Basic Installation

To perform the basic installation, follow the steps that are provided in the "Tasktop Sync - Self Deployment User Guide" that has been provided.

When installing Tasktop Sync, it is recommended that it be installed as the user that it will be run as for a service as well as for day-to-day configuration and maintenance. This is generally a shared "service" account (e.g. tasktop_sync) to ease the installation and maintenance of the tool.

If you cannot use a shared service account for installation, configuration and maintenance, please see the section below regarding multiple user accounts and moving a workspace.

Most users will configure Tasktop Sync to have the workspace in a shared location or separate drive instead of in the default user based location. To configure this, please see the moving a workspace section for more details.

Additionally, it is heavily recommended to set the TasktopSync.exe file to "Run as Administrator" for all users to reduce the chances of any file permissions errors when running under windows. This can be done from the Windows properties of the TasktopSync.exe file and at the bottom of the compatibility tab.

Upgrading Sync

The Tasktop Sync upgrade process is a simple uninstall and re-install (following the steps above). You should backup the TasktopSync.ini file from the installation directory prior to uninstallation to preserve any configuration changes that may have been made. Additionally, ensure to take a backup of the workspace folder so that you can roll back the installation and configuration if needed.

After installation of the new version of Tasktop Sync, you will restore the TasktopSync.ini file changes that were made before starting the application. Once all customizations have been restored, you can start Tasktop Sync and follow any prompts related to upgrading the schema, configuration, etc.

Additionally, if Tasktop Sync was installed as a service, you will need to re-configure the service as this information is overwritten as a part of the installation.

Upgrading an Endpoint

When upgrading one of the endpoints that Tasktop Sync is synchronizing data between, it is recommended to stop Tasktop Sync while the system is down. Additionally, it is recommended to take a backup of the workspace folder in case there is any reason to roll back. If upgrading IBM Rational Team Concert, you will need to re-install Tasktop Sync with the matching version of the IBM RTC p2 repository.

Once the endpoint has been restored, it is recommended to check the connectivity via validating the Task Repository settings in the Task Repositories view as well as ensuring that the queries can be refreshed from the Sync Tasks view. Many customers also take this time to perform a schema refresh from the repository which will validate these operations. After the schema refresh is complete, please check that the mappings still appear correct (e.g. that none of the fields changed) and then Tasktop Sync can be started.

Moving a Workspace

Same Machine

If you are using the same account, but wish to change the location of the workspace, the operation is simple. By default, the workspace is put into the current users AppData directory under the TasktopSync folder. To change the workspace location, perform the following:

- Ensure Tasktop Sync is stopped
- Copy the workspace to the new location
- Edit the TasktopSync.ini file and add (or modify) the following at the top of the file:
  -data
  <path to workspace folder>
- Start Tasktop Sync and see that the new workspace location is being used

Different Machine or User Account

To move a workspace between accounts or machines, begin by following the steps above for moving the workspace to a different location on the same system. If moving the workspace to a different system or when using a different user account, it is recommended to only move the workspace directory and ensure that the eclipse.keyring and tasktop.keyring files are deleted. By default, these files are in the <app data>/TasktopSync directory and referenced via the TasktopSync.ini file in the installation location (please check the TasktopSync.ini as this may be different on your system). These files need to be deleted as the credentials are generally encrypted using Windows user account information. If you are moving to a different user account and the installation is remaining the same, you will want to change the path that the –eclipse.keyring and –keyring parameters in the TasktopSync.ini file reference as the default

location is located in the AppData directory of the user that installed Tasktop Sync (which may not be accessible by all users).

Multiple User Accounts

Generally, Tasktop Sync is installed, configured and maintained using a single user account (e.g. tasktop_sync). However, if this is not possible, some changes to the configuration of the product will be required to ensure successful operation of the system when multiple users are attempting to administer Tasktop Sync:

- Place your license in the root of the installation directory and name it tasktop.license (if applicable)

- Move the workspace to a location that is shared by all users (following the steps in this document to move a workspace)

- Ensure that the Tasktop Sync application is set to "Run as Administrator" for all users (as mentioned in the installation section above)

- Create a file called eclipse.pass next to the Tasktop Sync workspace (referred to as the shared directory) and enter 1 line of text in it. This will be used as the shared encryption key for credentials

- Add the following to the TasktopSync.ini file in the installation directory, ensuring to remove any duplicate arguments that may already exist in the file:
  -data
  <path to shared directory>/workspace
  -eclipse.pass
  <path to shared directory>/eclipse.pass
  -eclipse.keyring
  <path to shared directory>/eclipse.keyring
  -keyring
  <path to shared directory>/tasktop.keyring

Provided that all users have access to Tasktop Sync, they will now be able to start up the application under their own user account to run, configure and maintain Tasktop Sync. Note that only 1 instance of Tasktop Sync can be running at any time, so it will need to be managed between the administrators as to who is running the instance currently.

Service Configuration

To configure Tasktop Sync as a service, you first need to ensure that the application was installed with the service option. If it was not, you will need to uninstall and reinstall the application before proceeding with the service configuration. After installing as a service, please ensure to configure the service immediately to prevent any problems with permissions if it accidentally starts. Once the service is configured (as below), please test that the service starts and synchronizes as expected and that the application can still be started and used before deeming the configuration complete.

Shared Account

When using a shared account, the configuration that needs to be performed is to set the user account that Tasktop Sync will run as when running as an administrator. You do not want to run as the "Local System Account", which is the default. To do this:

- Go to the Windows services view and find the Tasktop Sync service.

- Right-click the Tasktop Sync service and select "Properties"

- Ensure the service startup type is set to "Automatic"

- Switch to the "Log On" tab

- Update to use "This account" and enter the username and password for the shared account

- Click OK

Multiple Accounts

When using multiple accounts or a different account to run the service than what is used for configuration, you can follow the same steps as using the shared account, but ensure that the Multiple User Accounts setup as described above has been followed as well.

Managing Tasktop Sync as a Service

When running Tasktop Sync as a service, you can only run either the service or the application at the same time. To modify the configuration or manage errors, you will need to stop the service and then start the application. When the application starts, synchronization will automatically start. When done working with the studio, you can close the application and then start the service again.

If you are using multiple accounts, you will need to ensure that only one user is running the application/service at any time. This will need to be coordinated between the admins of the application.

When running as a service, it is highly recommended to configure the web UI to allow you to monitor the state of the system without starting the application. See the help documentation for more information.

Tasktop Sync – Configuration

New Mappings

A new Task Mapping can be created by right-clicking on the ALM Synchronization node and walking through the provided wizard. When setting up new integrations (not using a template), it is suggested to use the limited scope mode initially to reduce the number of errors until the mapping is built out. Once built out, it can be converted to full operational mode from the Overview tab of the mapping editor. If you are extending within a known synchronization, the full scope mode can be used instead and once implemented, no changes will be required to synchronize all existing items.

Prior to setting up a new mapping, you will want to have the following in place:

- Tasktop Sync Proxy custom field created in both systems (if required)

- Initialization and Changes queries defined in both systems

- At least 1 artifact for each of the types that you wish to synchronize. Note that these must be included in either the changes or initialization query to ensure that schema generation succeeds

Once the above items are complete, you can follow the wizard to choose the endpoints, setup the necessary connections (if not already available from other integrations) and then define the scope of synchronization.

Templates

Task Mapping Templates are an excellent mechanism to allow for expanding the scope of integrations when the desired result is the same (or very similar) behavior. It is recommended that the projects used in each endpoint are also based off of the same template to ensure success with this approach. Templates can also be useful as a starting point for integrations that may have customizations and therefore you may want to "disconnect" a mapping from the template, at which point, it will be a standalone task mapping that can be modified to suit the needs of the project. Existing Task Mappings cannot be attached to a template easily, however, if this is needed, please reach out to support.

Create New Template

To create a template, you first need a mapping that meets your business needs (the master task mapping). From this mapping, you can right-click from the Services view and select "Create New Template…". This will prompt you to name the template. Once complete, the new template will be listed under the Templates node in the Services view.

Create New Mapping from Template

To create a new mapping from a template, right-click on the template that you wish to use and select "New Mapping from Template…". This will open a wizard to select or create the endpoints and define the scope of the synchronization. Once complete, a new mapping editor will be opened with a full scope synchronization created based on that template. At this point, you should be able to restart the synchronization process to pick up the new mapping and begin processing the changes.

Updating mappings based on a Template

If changes need to be made to a template, a new template will need to be created and applied to the mappings. To do this:

- Modify the master task mapping with the changes that are required

- Validate that the changes work as expected for the master task mapping

- Create a new template from the master task mapping and provide a new name

- Switch mappings from the template they are currently associated with to the new template via the "Use another template" menu option on the mapping in question or the "Switch mappings to another Template" menu option on the original template to move all mappings.

Scripts

Tasktop Sync supports additional and advanced synchronization use cases via groovy scripts. These scripts are generally provided by the Tasktop Solutions team. There are 2 different types of scripts: Casters and Attribute Handlers. Both types of scripts must be added directly to the synchronizer.xml file in the correct location.

Casters are defined outside of the task-mapping elements and are shared between the mappings. Once installed, they can be used by attribute mappings in the mapping editor via the Custom Script caster and then selecting the desired custom caster.

Attribute handlers are more advanced and are implemented as a part of the task mapping in place of an attribute mapping. The script is run when the attribute with the id defined in the XML file is changed. Fields that are synchronized using scripts are not visible within the mapping

editor, so if you are aware that you use scripts, please check the xml file to understand the synchronization that is in place.

Adding a New Field to an Endpoint

When adding a new field to either endpoint, generally no changes need to be made to the Tasktop Sync configuration. Changes to Tasktop Sync are required when you want to have the new field synchronized or if the field is required for creation of a new item in one of the endpoints. If you wish to synchronize a field, follow the steps below on adding a new field to be synchronized.

Adding a New Field to be Synchronized

When a new field is required to be synchronized, it must be added to the Task Mapping for the synchronization that it affects. To have the field show up properly as a part of the mapping editor, you will need to refresh your schema from the schema tab of the mapping editor before it is available. Once refreshed, the new field should be available in the schema and from the dropdown for the attributes to synchronize. Once both fields are available in the mapping editor, configure the synchronization as needed, ensuring to select the correct caster or script as needed.

If the new field to be synchronized should be updated for all items (e.g. severity was added to IBM RTC and you want to have it show the proper severity that is set in Atlassian JIRA for all items), you will need to re-synchronize all items. Simply adding the mapping will allow for the field to be synchronized on any new items and when that field is changed in the system, however, not all items are updated as Tasktop Sync performs field level change detection on the fields to synchronize. To synchronize all historical tasks, open the Sync Tasks view, refresh the Initialization and Changes queries for the endpoint that contains the data that you want to send to the other system. Once completed, right-click on the initialization query and "Mark all for synchronization". Tasktop Sync will pick up all of the items and assume that all fields have been modified and therefore synchronize the values to the new field that was created.

Adding a New Value to a Field that is Synchronized

When adding a new value to a field that is synchronized, you will need to update the task mapping to ensure that the value is properly mapped. If you are using a declarative mapping (e.g. value mapping caster), you will want to refresh the schema and once complete, update the mapping in the mapping editor or synchronizer.xml and then restart the synchronization process. Alternatively, if you are using a script, you will want to update the repository configuration via the context menu on the repository in question from the Task Repositories view. A schema

refresh will achieve the same goal but will take longer to run. If any items ended in the error queue due to the new value being added, you will need to re-queue these items to have them retried.

Changing Query Interval

Tasktop Sync performs synchronizations based on polling the endpoint systems. The default interval that is use is 0.05 minutes (3 seconds). If this needs to be changed for business or use case reasons, it can be edited in the synchronizer.xml file. This file can be opened by right-clicking on the ALM Synchronization node in the Services view and selecting "Open Synchronizer.xml". If this opens in the design view, it is recommended to switch to the Source view at the bottom. At the top of the file, there will be an attribute on the <sync-model> XML element like default-query-interval-minutes="0.05". Change the 0.05 to the desired time in minutes (e.g. 0.5 is equivalent to 30 seconds) and restart the synchronization process to have this change applied.

Tasktop Sync – Moving to Production

High Level Process

Moving Tasktop Sync to production generally requires re-implementation of the Task Mappings based on the configuration that was created in the test environment. The reason for this is that many repositories use the internal id of values and attributes which are server dependent, however, are consistent across the projects on a server. To move mappings to production, it is recommended to follow the steps below:

- Install Tasktop Sync

- Apply any customizations for location of workspace, etc.

- Create a New Task Mapping with the scope for the production projects (generally start with limited scope to reduce chances of error when performing initial setup)

- Setup all attribute mappings to match those in the test environment

    o Ensure all directionality, casters and synchronization strategy are correct

    o Ensure to copy across and update all scripts with correct ids

    o Ensure to copy synchronizer.xml configuration for attribute handlers and casters, updating the ids of the fields

- Test that synchronization works as expected in the production environment with a small scope (could use a specialized initialization and changes query that only picks up a few special items)

- Once validated, configure the full initialization and changes queries and restart Tasktop Sync

- Expand the implementation as required to other projects and types

Tasktop Sync – Troubleshooting

High Level Process

When an error occurs during synchronization or the synchronization is not working as expected, the best form of debugging is to use the Tasktop Sync log files. The log files are located on disk in the <workspace>/logs folder. If you are testing the synchronization or re-synchronizing the items, you can use the Console View as well as the Sync Log view (detailed below) to assist. When an error occurs, the following is the best path to determine the problem:

- Before beginning debugging any issues, re-queuing the item can be useful to have the synchronization log be within the Console View as well as the most recent log file (tasktop-sync.log)

- If there as an error during synchronization, open the Sync Log view by double clicking the item in the Error Queue on the Tasktop Sync Dashboard to analyze the log file (format described below)

- If you are unable to determine the cause of the error from the Sync Log view or there is a message about the log being truncated, then you will want to look at the Console View (if the synchronization was recent) or the log files that are located on disk.

- Once the cause of the error has been determined and corrected, restart the synchronization process and re-queue the item for synchronization. If there are multiple items that failed with the same problem, re-queue all items in the error queue.

- If the cause of the error could not be determined, please contact support for assistance

Console View

The Console View will show log output in real-time as Tasktop Sync is running, however, the console view is cleared each time Tasktop Sync is restarted. For this reason, the console view is

useful for quickly determining if a problem has just occurred by looking through the view. The Console View is useful when looking at a Tasktop Sync instance that is not very busy (as this view is real-time). If the instance is very busy, then the best option is to use the log files from disk.

Sync Log

The Sync Log displays log messages per synchronization and not interleaved as the standard log file is. It provides information that is easily accessible for debugging and may provide information in determining why a synchronization may have been unsuccessful. There are two ways of accessing the Sync Log, either by right clicking a task under a query in the Task List view and selecting Open Sync Log, or by double clicking a failed synchronization in the Error Queue of the Sync Dashboard.

How to Read a Tasktop Sync Log file

When looking for the cause of an error in synchronization, the first step is to search for the log messages for the synchronization in question. Once the log messages are found, the best way to read is from the bottom up. The last line of the synchronization will display the state of the synchronization (e.g. in ERROR or in DONE). If there was an error, the message provided by Tasktop Sync or the endpoint will be above this. Additionally, the section of the log providing information about what synchronization operations Tasktop Sync performed can be very useful in determining if there was a problem with a mapping, script or if the endpoint repository may be the problem.

Basic Structure of a log for synchronization:

- Incoming Task

- Matching for Task Mappings

- Source and target Task Data

- Synchronization plan for source -> target

- Synchronization plan for target -> source

- Resulting Task Data or error messages

Log File Format

Tasktop Sync log files contain all logging output from a synchronization as well as any logging from scripts. A line in the log file represents a unique log message from the Tasktop Sync. As Tasktop Sync can process multiple items at a time, the log can be difficult to read in its raw form as the messages from many synchronizations may be interleaved (therefore the previous and

next log messages may not be related to the current synchronization that you are interested in). Understanding the log file format will assist you in being able to analyze your synchronizations properly. Below is the basic format or a log message:

Log Level [Date Time] [Thread Id] [Context Id] Message

As an example:

DEBUG [2014-09-12 15:58:12.035/-0400] [SyncWorker-3:com.tasktop.internal.sync.core.state.SyncState] [com.tasktop.internal.sync.core.state.SyncContext@2180c5f2] Transitioning task (1) using PostSynchronizationState PROCESSING: https://server?RecordId=12693 (I0003355)

To easily separate the synchronization of a single task from the rest, tools like grep are useful to search for the Context Id of the synchronization that you are interested in to get just the log lines related to the synchronization in question. Some text editors (e.g. Notepad++) can handle large files efficiently and highlight text based on a selection to aid in the reading of the log files as well, making them ideal for debugging Tasktop Sync errors.

See our help docs for further information on the format and content of log files (http://help.tasktop.com/help/index.jsp?topic=%2Fcom.tasktop.sync.help%2Fuserguide%2FApp endix-Troubleshooting.html&cp=1_0_11_1&anchor=AccessingandUnderstandingtheTasktopSyncLogs)

Useful Documentation

The Tasktop Sync user guide is available in tool (from the <=> menu > Help). Additionally Tasktop Sync documentation for the latest release is provided online:

- User Guide (http://help.tasktop.com)
- FAQ and Knowledge Base (http://support.tasktop.com)