TESSY Polarion plugin

1 Abstract

This application note provides information about a Polarion import and export function for TESSY that is available as an optional plugin. This document covers the installation of the plugin, the workflow of the Polarion import and export and advanced configuration options.

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2 Introduction

The purpose of the TESSY Polarion Plugin is to import requirement from Polarion to TESSY and export test cases and its results into a Polarion project. The plugin is compatible with TESSY versions 4.3 and higher. Starting with version 1.3.0 of the Polarion plugin the compatible TESSY version needs to be 4.3.16 or higher.

The import transfers Polarion modules containing requirements from Polarion to TESSY. Each module will be transferred into one document. Repeated imports are supported.

The export transfers the TESSY elements test collection, folder, module, test object, and test case into Polarion and creates a document with heading and test case elements there including the requirement links. It supports repeated exports to update and modify an existing document in Polarion. It is possible to filter the elements in TESSY. Test steps and execution results are supported.

The plugin uses the Polarion Web Service API of a Polarion server that should be accessible via HTTP if not deactivated. It requires a Polarion user with all necessary access rights to read, create and update the existing Polarion elements. The Export was tested with the Polarion 21r1 release.

3 Installation

3.1 Download

The latest version of the Polarion plugin can be downloaded via the following link:

https://www.razorcat.com/files/files/tessy/polarion/plugin.zip

It contains the latest version of this document and a “Release Notes.txt” file listing the changes between each version.

3.2 Installation in the user directory

Starting with version 1.2.0 of the Polarion plugin the installation is simpler than before. All required parts are contained in the “polarion-plugin-1.2.X.zip”.

There are two different options of installing the Polarion plugin for TESSY. The first option is to install the plugin in the user directory “%Userprofile%”. This is a method that any user can do without special user rights. But this installation has to be done again for another minor version of TESSY and the installation is only visible for the current user. This is our recommended variant to install the plugin.

Unzip the whole content of the “polarion-plugin.zip file” into a folder in the “dropins” folder within the “.tessy_vX.X.X” folder with the correct version of your current TESSY installation. You may have to create the “dropins” folder first.

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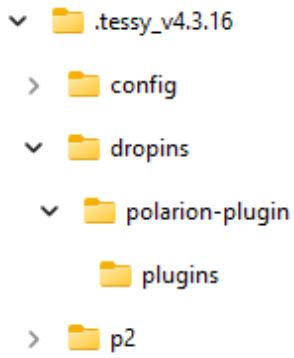
The “dropins” folder should now contain the following file structure:



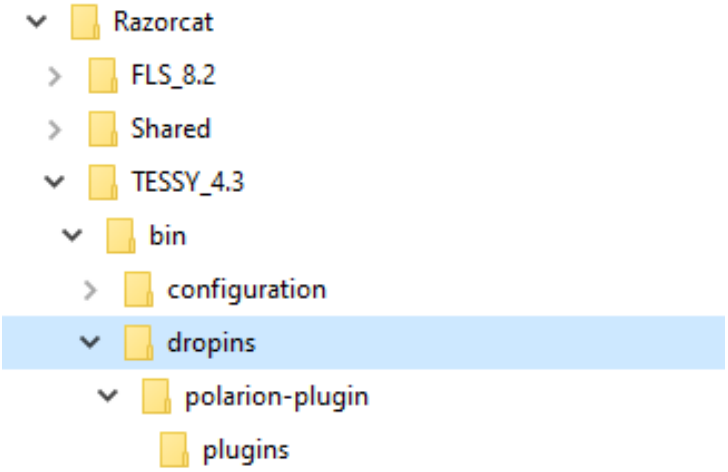
After starting TESSY, a new Polarion menu is available in the main menu bar of the application.

3.3 Installation in the TESSY install directory

The second option is to install the plugin into the TESSY installation directory. This method may require local administrator rights, but the installation is available for all users on a computer. This installation may survive a minor update of TESSY.

Unzip the whole content of the “polarion-plugin.zip file” into the “dropins” folder within the “TESSY_x.x\bin” folder of your current TESSY installation. The dropins folder contains a “readme.txt” file.

The “dropins” folder should now contain the following file structure:



After starting TESSY, a new button with the Polarion icon is available in the main menu bar of the application.

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3.4 Define SSL certificate for HTTPS access

To access an encrypted Polarion server via a HTTPS connection it may be necessary to import the public certificate of the server or a private root certificate.

The following command will add a certificate named public.cer for the Java virtual machine of TESSY 5.1:

```
C:\ProgramFiles\Razorcat\TESSY_5.1\bin\plugins\org.eclipse.justj.openjdk.hotspot.jre.minimal.stripped.win32.x86_64_17.0.8.v20230801-1951\jre\bin>keytool -import -noprompt -trustcacerts -alias public -file public.cer -keystore "C:/ProgramFiles/Razorcat/TESSY_5.1/bin/plugins/org.eclipse.justj.openjdk.hotspot.jre.minimal.stripped.win32.x86_64_17.0.8.v20230801-1951/jre/lib/security/cacerts" -storepass changeit
```

The exact version number inside the jre folder can differ, but the general pattern will be the same. Please adjust the path containing the openjdk part according to the path present in your TESSY 5.1 installation. This step has to be repeated after each TESSY update.

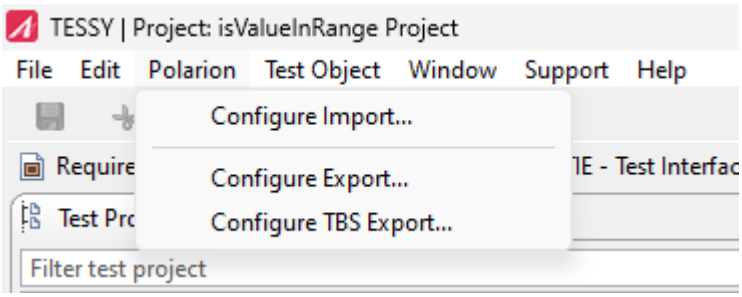
Additional information about the Java keystore can be found here: https://docs.oracle.com/javase/8/docs/technotes/tools/unix/keytool.html#keytool_option_importcert

For TESSY 4.3 the location of the Java runtime environment is inside the shared folder of the TESSY installation.

```
C:\Program Files\Razorcat\Shared\1.3\JRE_1.8
```

4 Workflow description

To start the Polarion Import or Export select the Polarion button in the main menu bar of TESSY. After that select one of the three available options.



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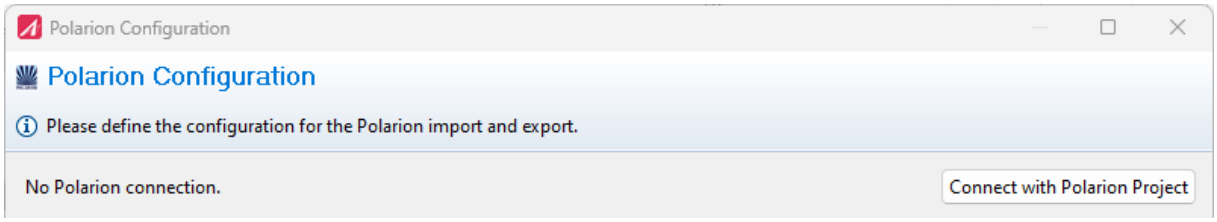
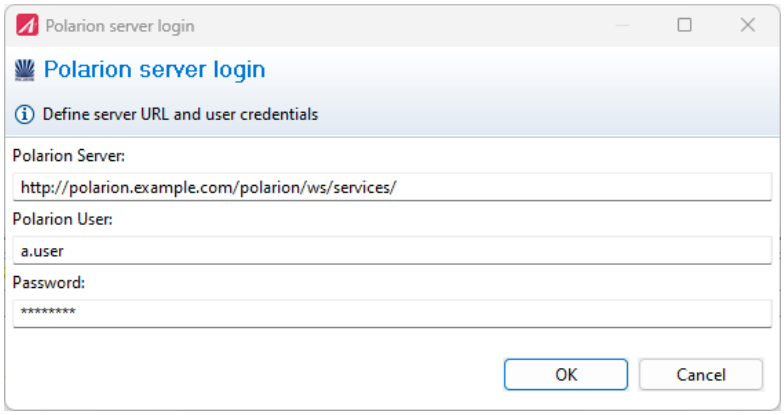
4.1 Connect to a Polarion server

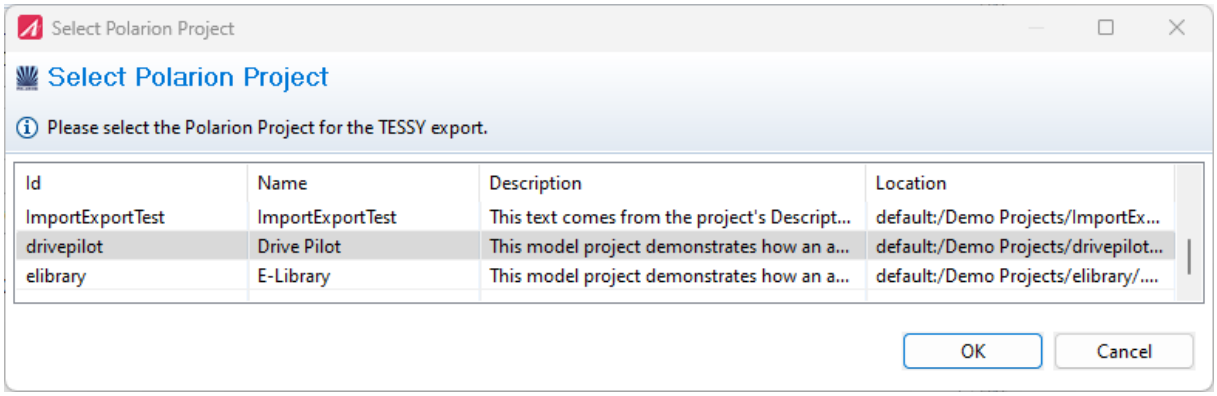
Regardless of the selected action the following dialog will show the state of the current Polarion connection at the top. Click the “Connect with Polarion Project” button to connect TESSY with a running Polarion server instance.



Enter the login information about the Polarion server into the appearing dialog. The server URL can contain a port number and usually ends with “polarion/ws/services/”. A user with the rights to create and modify documents, work items and test runs in Polarion is necessary.



The next appearing dialog provides the list of projects available at the Polarion server. Select the project for the TESSY export.



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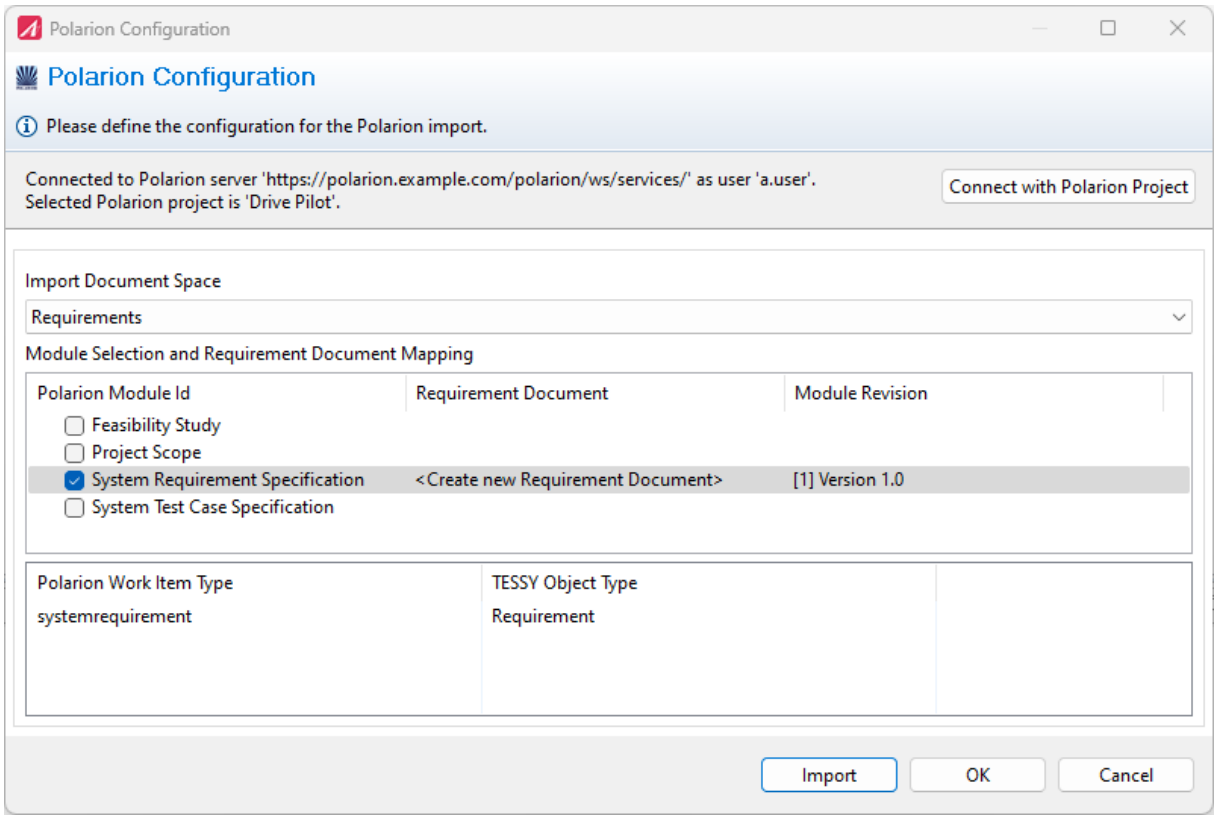
4.2 Requirement import from Polarion

In TESSY, it is possible to import requirements from Polarion to facilitate testing activities. This can be done by selecting one or more input documents, along with a baseline if needed. The requirements can then be linked and evaluated within TESSY, providing a comprehensive testing framework that is fully integrated with the project's requirements.

To import requirements from Polarion, users can navigate to the "Configure Import" action in the Polarion menu bar inside TESSY. First click establish a connection as described in the previous chapter. Then select the document space in Polarion where the requirement modules are located. Then select the Polarion modules that the user wants to import. In the second column it is possible to define if a new document should be created or if an in TESSY already existing document should be modified. In the “Module Revision” column the relevant baseline to import can be select. Press the “Import” button to execute the import. The “OK” button will save the changes inside the dialog and close it. Once the import process is complete, the requirements will be available for use in TESSY, where they can be linked to modules, test objects and test cases.



When exporting test results from TESSY, the links to the imported requirements are automatically included, providing a clear and traceable path from the test results back to the original requirements in Polarion. This allows for more accurate and efficient testing, as well as better visibility and control over the entire testing process.

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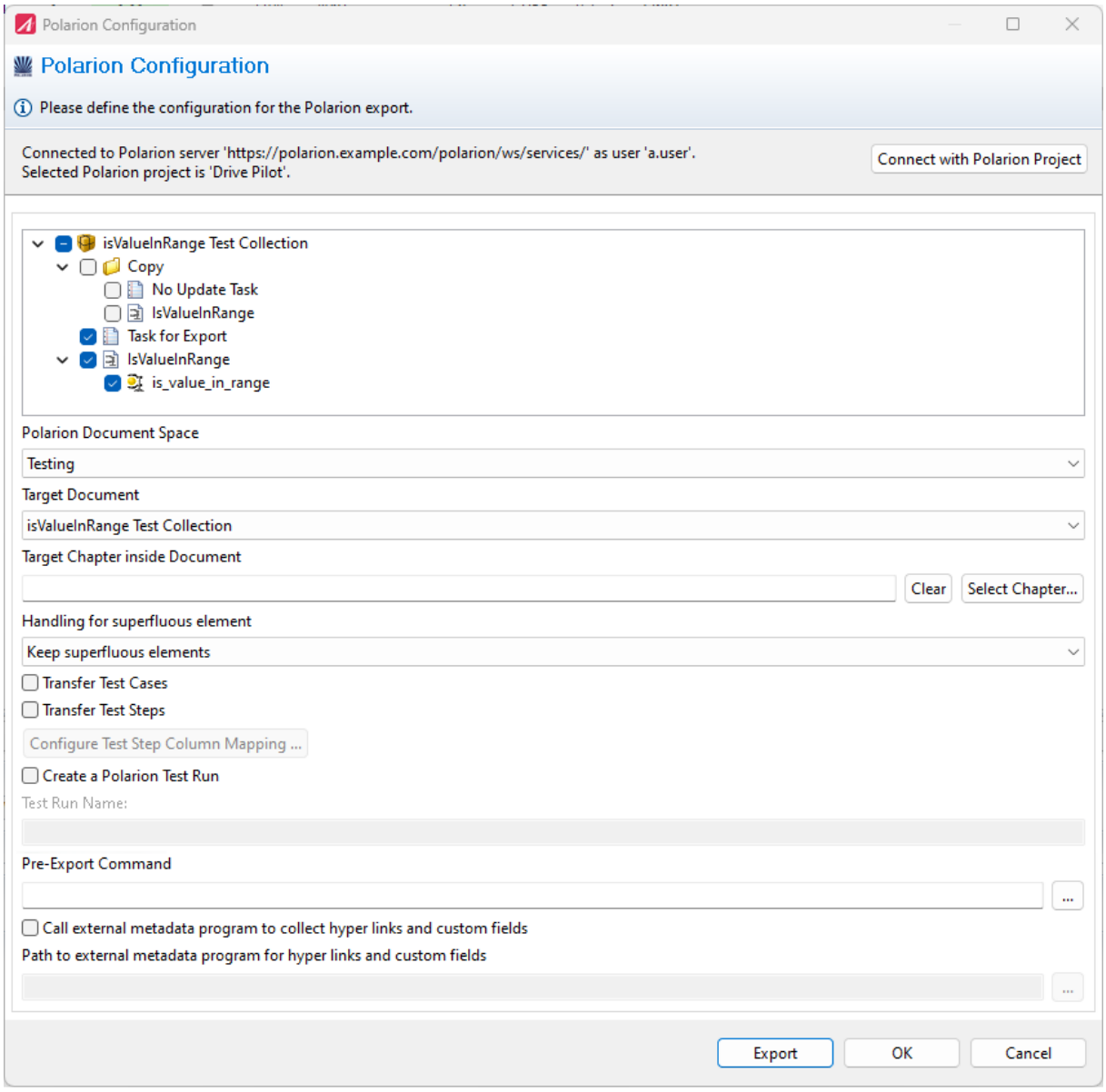
4.3 Test export to Polarion

The plugin provides two different options for the export. The “simple” export provides the possibility to export the already in TESSY available results to Polarion. The TBS export combines the steps test execution, report generation and Polarion export.

4.3.1 Export



The following dialog provides all possible options for the export. At this point a cancel click will leave the Polarion system unchanged. Only a click on the Export button will cause TESSY to modify the Polarion project. Selecting the OK button will save the changes from the dialog but not execute the export.

In the first area of the dialog, it is possible to select what TESSY elements should be transferred to Polarion. If necessary, select only the modules or test objects that should be exported.

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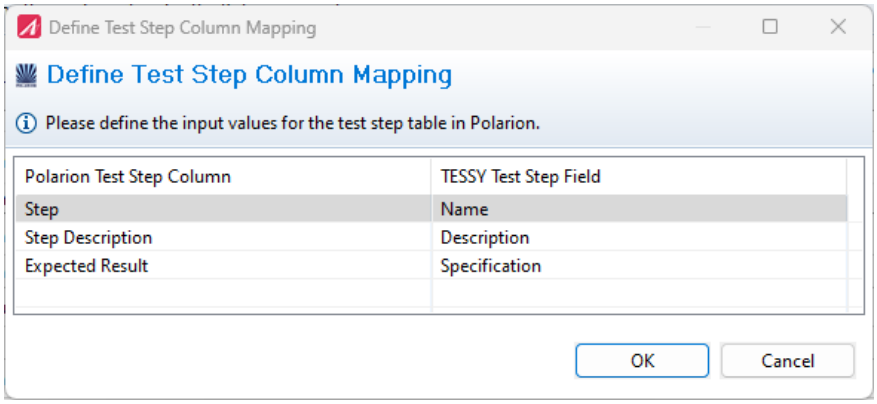
The “Polarion Document Space” drop down list contains all document spaces in the Polarion project. Please select the appropriate space for a new created document. The target document dropdown field provides the possibility to create a new document in Polarion or update an already existing document. To export into a specific chapter of an existing document use the target chapter selector. The TESSY export will recreate the hierarchical structure of modules, test objects, tasks, and test cases. Test cases will be transferred if the “Transfer Test Cases” checkbox is selected.

The export will write the TESSY UUID into a Polarion custom field. Repeated exports into the same project will use this information to reuse already existing elements.

The “Handling for superfluous element” drop-down list controls the behaviour of a subsequent export when elements were moved or deleted in TESSY or not select for the export. Three different approaches are possible. The option “Keep superfluous elements” prevents the modification of these elements. This is the preferred option if only a subset of elements is selected because only these elements were added or updated. The “Move superfluous elements to trash document” will not modify superfluous work items and move them to an additionally created “TESSY trash” document, where they can be inspected and removed inside Polarion. The “Rename superfluous elements with TO DELETE prefix” will not move the work items and instead rename them with the “TO DELETE” prefix. It is then possible to search for these elements in Polarion and inspect and remove them.

If the test steps in TESSY contain valuable information that should be transferred to Polarion select the check box with the title „Transfer Test Steps“. Because the test steps in Polarion can be a generic table it is necessary to define a test step column mapping. In the corresponding dialog it is possible to define a TESSY test case field for all available columns of the Polarion test step table.



The check box “Create a Polarion Test Run” defines whether the test results are part of the data transfer. It is possible and, in some cases, meaningful to transfer only the test cases and the test collection structure. If the test results should be transferred to Polarion it is necessary to select this check box and choose a name for a new test run in Polarion. For every export run one test run will be created. The current result for every selected test case will be added to this test run. The name of the test run cannot contain many special characters.

The Pre-Export Command is the possibility to execute a batch script similar to the Post-Execute batch script and is executed directly before the export to Polarion.

The external metadata program for hyperlinks and custom fields provides the possibility to transfer additional information for each work item that will be exported to

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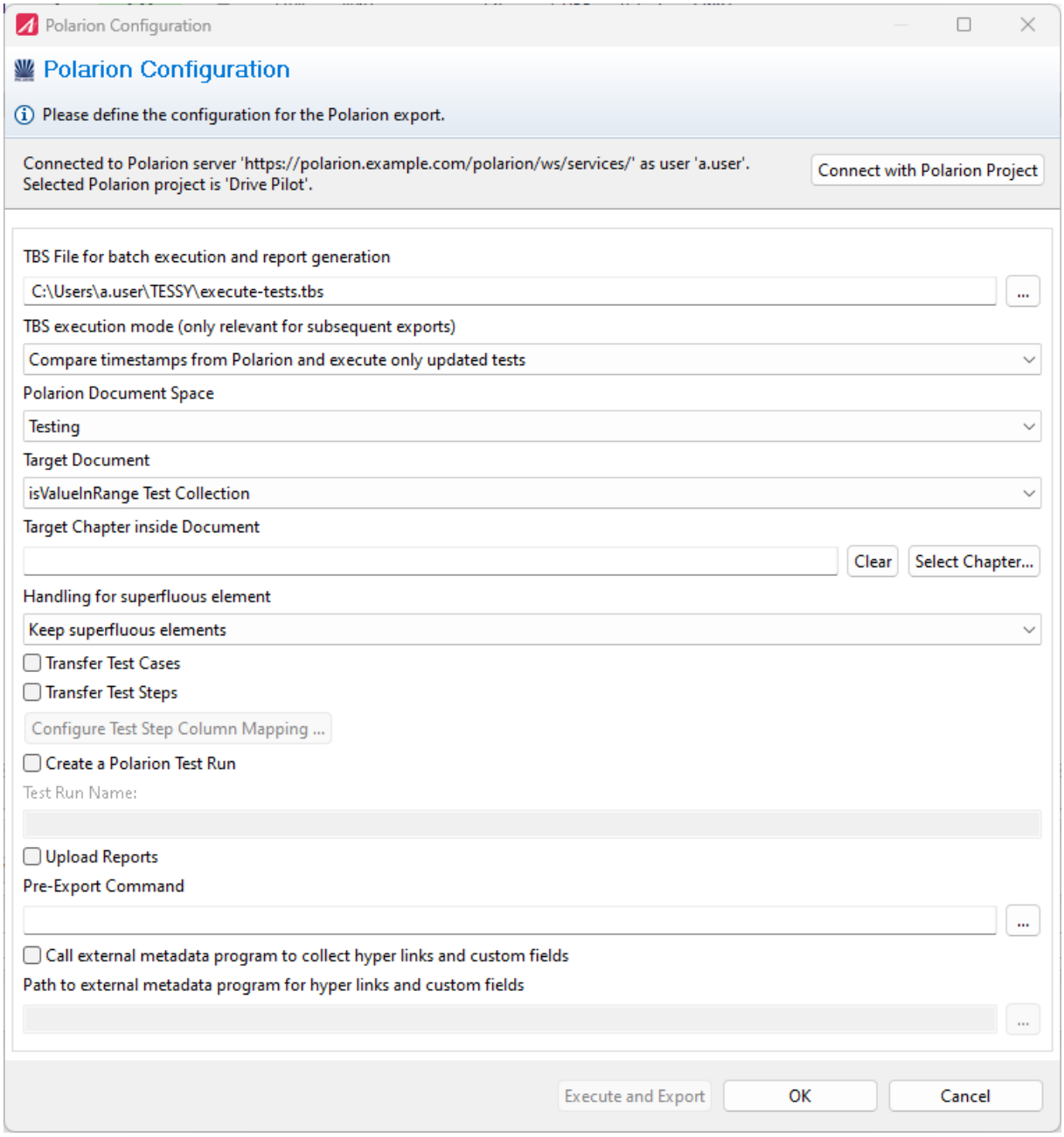
Polarion. For example, this can be used to extract information from a version control system.

4.3.2 TBS Export



Instead of using the already existing results inside TESSY the TBS export uses a TBS file to execute tests and generate reports before transferring the results to Polarion. A TBS file can be created in TESSY by clicking the button “Define Batch Operation…” inside the Overview perspective.

For subsequent exports there is an option to skip the execution of unchanged tests. All other configuration options behave like in the simple export.

If the checkbox “Upload Reports” is selected report PDF file are uploaded as an attachment to Polarion. The upload of reports is only supported during a TBS Export and not during the default export. Any generated details report will be attached to their

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corresponding Test Object or Task. A generated overview reports will be attached to all modules by default. This can be changed to the test run with the help of an advanced configuration option.

5 Advanced Configuration

In this section, we will be listing additional properties that can only be configured in the preferences.xml file. The preferences.xml file of a project is used to store user-specific and project specific settings.

It is worth mentioning that the preferences.xml file is specific to each project and should only be modified by users with knowledge of the internal configuration of the Polarion project. These properties offer greater flexibility and customization options, but they should be modified with caution and only by users with a good understanding of the project's inner workings.

The perferences.xml File contains a list of key value pairs containing configuration values. To add one of the following configuration options replace the value of the preference with the same key or if the key is not already part of the file add an additional line with the provided key and the explained value:

```
<preference key="polarion.connection.ignoreCertificate" value="true"/>
```

Each one of the following chapters represents one possible key. Every other preference property starting with “polarion”, but not listed here, can be defined using the Polarion import or export dialog.

5.1 Generic connection properties

5.1.1 polarion.connection.ignoreCertificate

Possible values: `true` or `false`, Default `false`

Provides the possibility to ignore the server certificate check. Alternatively store the certificate in the Java key store of the Java installation provided by TESSY as described in the chapter Define SSL certificate for HTTPS access.

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5.2 Import properties

5.2.1 polarion.import.contentMapping

Default Value:

```
ATTRIBUTE[Outline Number/false]=OUTLINE_NUMBER,
ATTRIBUTE[Status/false]=STATUS,
DOCUMENT[DESCRIPTION]=DESCRIPTION,DOCUMENT[TITLE]=TITLE,
CHAPTER[NAME]=TITLE,CHAPTER[ID]=ID,TEXT[ID]=ID,TEXT[TEXT]=TITLE,
REQUIREMENT[ID]=ID,REQUIREMENT[REQUIREMENT_TEXT]=DESCRIPTION
```

A comma separated list of import mappings. Each mapping must contain an equal character. The first part of each mapping defines the TESSY side and the second part the Polarion side. The TESSY side always defines a type first and inside brackets the field definition.

The type options are: `DOCUMENT`, `CHAPTER`, `REQUIREMENT`, `TEXT` and `ATTRIBUTE`. The `ATTRIBUTE` type requires an additional separator to split the attribute name and if the attribute is versioned or not.

The following field definitions are possible:

`DOCUMENT`: `TITLE`, `DESCRIPTION`, `ALIAS`

`CHAPTER`: `NAME`, `ID`

`REQUIREMENT`: `ID`, `REQUIREMENT_TEXT`, `REQUIREMENT_ISSUE`, `SHORT_DESCRIPTION`, `VERIFICATION_DESCRIPTION_TEXT`

`TEXT`: `NAME`, `ID`

For the Polarion mapping the following static values are possible:

`ID`, `TITLE`, `DESCRIPTION`, `OUTLINE_NUMBER`, `STATUS`

Additionally it is possible to use custom work item fields through the keyword `CUSTOM[fieldname]`.

5.2.2 polarion.import.mergeLoggingActive

Possible values: `true` or `false`, Default `false`

Only activate this property if requested by the TESSY support.

5.2.3 polarion.import.disableHeadBaseline

Possible values: `true` or `false`, Default `true`

Change this value to `false` to see the Head baseline as an option inside the import dialog.

5.2.4 polarion.import.loggingActive

Possible values: `true` or `false`, Default `false`

Only activate this property if requested by the TESSY support.

5.2.5 polarion.import.mergeRootElement

Possible values: `true` or `false`, Default `true`

If the import of a requirement document fails or results in an empty document in TESSY it is an option to change this value. If you are unsure, please contact the TESSY support.

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5.2.6 polarion.import.avoidUriQuery

Possible values: `true` or `false`, Default `false`

If the import of a requirement document fails or results in an empty document in TESSY it is an option to change this value. If you are unsure, please contact the TESSY support.

5.3 Export properties

5.3.1 polarion.export.customFieldEnumMapping

Default empty.

If values are mapped onto a Polarion custom field enum it is possible to convert between the TESSY and Polarion values. The field contains a comma separated list of mappings. Each mapping entry needs to contain two separators, first an equal character and after that a colon. The first part is the name of a Polarion custom field, the middle part is the value inside TESSY and can be empty. The last part is the id of the Polarion enum.

5.3.2 polarion.export.lastModifiedCustomFieldKey

Default `Last Modified Date`

This is the name of the Polarion custom field used to store the last modified date of a TESSY element.

5.3.3 polarion.export.module.attributeCustomFieldMapping

Default empty.

A comma separated list of mappings between TESSY attributes and Polarion custom fields. Each mapping must contain an equal character. The first part of each mapping defines the TESSY side and the second part the Polarion side.

5.3.4 polarion.export.module.targetStatusId

Default `initial`

The export tries to set this status for the Polarion work item representing a TESSY module.

5.3.5 polarion.export.module.valueCustomFieldMapping

Default empty.

A comma separated list of mappings between TESSY fields and Polarion custom fields. Each mapping must contain an equal character. The first part of each mapping defines the TESSY side and the second part the Polarion side. The possible values for the TESSY keys are `NAME`, `DESCRIPTION`, `COMMENT`, `RESULT`, `SPECIFICATION`.

5.3.6 polarion.export.module.workItemType

Default `heading`

Defines the work item type a TESSY module is mapped onto.

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5.3.7 polarion.export.task.targetStatusId

Default `initial`

The export tries to set this status for the Polarion work item representing a TESSY task.

5.3.8 polarion.export.task.valueCustomFieldMapping

Default empty.

A comma separated list of mappings between TESSY fields and Polarion custom fields. Each mapping must contain an equal character. The first part of each mapping defines the TESSY side and the second part the Polarion side. The possible values for the TESSY keys are `NAME`, `DESCRIPTION`, `COMMENT`, `RESULT`, `SPECIFICATION`, `TYPE`, `ACTIONS`.

5.3.9 polarion.export.task.workItemType

Default `heading`

Defines the work item type a TESSY task is mapped onto.

5.3.10 polarion.export.testCase.targetStatusId

Default `implemented`

The export tries to set this status for the Polarion work item representing a TESSY test case.

5.3.11 polarion.export.testCase.valueCustomFieldMapping

Default empty.

A comma separated list of mappings between TESSY fields and Polarion custom fields. Each mapping must contain an equal character. The first part of each mapping defines the TESSY side and the second part the Polarion side. The possible values for the TESSY keys are `NAME`, `DESCRIPTION`, `COMMENT`, `RESULT`, `SPECIFICATION`, `MODULE_NAME`, `TESTCASENUMBER`, `TESTOBJECT_NAME`.

5.3.12 polarion.export.testCase.workItemType

Default empty.

Defines the work item type a TESSY test case is mapped onto. If the value is empty the default test case work item from Polarion is used.

5.3.13 polarion.export.testObject.attributeCustomFieldMapping

Default empty.

A comma separated list of mappings between TESSY attributes and Polarion custom fields. Each mapping must contain an equal character. The first part of each mapping defines the TESSY side and the second part the Polarion side.

5.3.14 polarion.export.testObject.targetStatusId

Default `initial`

The export tries to set this status for the Polarion work item representing a TESSY test object.

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5.3.15 polarion.export.testObject.valueCustomFieldMapping

Default empty.

A comma separated list of mappings between TESSY fields and Polarion custom fields. Each mapping must contain an equal character. The first part of each mapping defines the TESSY side and the second part the Polarion side. The possible values for the TESSY keys are `NAME`, `DESCRIPTION`, `COMMENT`, `RESULT`, `SPECIFICATION`, `MODULE_NAME`.

5.3.16 polarion.export.testObject.workItemType

Default `heading`

Defines the work item type a TESSY test object is mapped onto.

5.3.17 polarion.export.uuidCustomFieldKey

Default `TESSY UUID`

This is the name of the Polarion custom field used to store the UUID of a TESSY element.

5.3.18 polarion.export.useWorkflowAction

Possible values: `true` or `false`, Default `true`

Change this value to `false` to avoid using workflow actions to change the status of a work item.

5.3.19 polarion.export.disableEmptyChapter

Possible values: `true` or `false`, Default `false`

Set this value to `true` to disable the possibility to select no chapter inside a document in the export dialog.

5.3.20 polarion.export.deepLoggingActive

Possible values: `true` or `false`, Default `false`

Only activate this property if requested by the TESSY support.

5.3.21 polarion.export.executeExternalMetadata

Possible values: `true` or `false`, Default `false`

If this value is set to `true` the script behind the externalMetadataCommand will be executed. Otherwise it will be ignored.

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5.3.22 polarion.export.externalMetadataCommand

Default empty.

Path to an executable or script that will be executed during the export to Polarion. For each element that will be exported the command will be called once. It's meant to extract information from the file system or a version control system about the elements and provide additional information for Polarion.

The following arguments are provided to the command:

- The path of the project root
- The type of the element: Module, TestObject, Task or TestCase
- If the type is task or module the path to the backup file of this element
- If during TBS execution a report was generated for this element, the path to the report pdf.

The script should return lines with additional information for the export. The lines can start with the identifier `CUSTOMFIELD:` or `HYPERLINK:`. Each line must contain a key value pair separated by an additional colon.

5.3.23 polarion.export.linkRequirements

Possible values: `true` or `false`, Default `true`

If this value is set to `true` the export will export and overwrite requirement links in Polarion. If the complete requirement mapping is done inside Polarion this value should be set to `false`.

5.3.24 polarion.export.module.initialStatusId

Default empty.

The export tries to set this status for the Polarion work item representing a TESSY test object.

5.3.25 polarion.export.task.initialStatusId

Default empty.

The export tries to set this status for the Polarion work item representing a TESSY test object.

5.3.26 polarion.export.testCase.initialStatusId

Default empty.

The export tries to set this status for the Polarion work item representing a TESSY test object.

5.3.27 polarion.export.testObject.initialStatusId

Default empty.

The export tries to set this status for the Polarion work item representing a TESSY test object.

5.3.28 polarion.export.preExportCommand

Default empty.

Path to an executable or script that will be executed before the export to Polarion.

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5.3.29 polarion.export.preExecuteCommand

Default empty.

Path to an executable or script that will be executed before the execution part of a TBS export to Polarion.

5.3.30 polarion.export.saveModifiedTBS

Possible values: `true` or `false`, Default `false`

If this property is set to `true` during the TBS export the temporary TBS file will be saved into an file containing the current timestamp in its name. This is meant to help debug problems.

5.3.31 polarion.export.testrun.template

Default empty.

Set this property to define a template to create new test runs through the Polarion plugin. No template is used if the value is empty. An invalid value can cause an exception from Polarion.

5.3.32 polarion.export.uploadOverviewReportAtModules

Possible values: `true` or `false`, Default `true`

If this property is set to `true` during the TBS export and the TBS file contains the generation of an overview report, this report will be attached to every module. The “Upload Reports” checkbox needs to be selected for this.

5.3.33 polarion.export.uploadOverviewReportAtTestRun

Possible values: `true` or `false`, Default `false`

If this property is set to `true` during the TBS export and the TBS file contains the generation of an overview report, this report will be attached to the generated test run. The “Upload Reports” and “Create a Polarion Test Run” checkbox needs to be selected for this.

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