

# 01-Requirements.xls

## Purpose of the tool

If you want to create a lot of requirements in TestLink easily, the easiest way is to use tables.

TestLink is able to use XML to import /export requirements. This document explains how to create and edit TestLink requirements using XML files. Excel is used as XML editor to edit requirements.

## Works with

- ✓ TestLink 1.9.3 ➔ TestLink 1.9.17
- ✓ Attachments are handled through XML files since TestLink 1.9.17

## Summary

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## Requirements declaration using Excel

To declare requirements, the excel pattern named “01-Requirements.xls” must be used. This file could be used to update existing tests or to create new tests.

### Excel pattern overview

Requirement Path (folders)			Requirement Content						
Folder Name	Folder ID	Folder Type	Requirement ID	Requirement Title	Requirement Description	Req Status	Req Type	Requirement expected_coverage	
parent1	parent1	1							
sub folder 1	sub1	2							
			Req-SandBox-1	The title of the requirement Req-SandBox-1	Description of the Requirement. Could be on multiline, but import will display it without Carriage Return	F	3	1	
			Req-SandBox-2	The title of the requirement Req-SandBox-2	A requirement title has a max length. You could edit const.inc.php to modify the max length	F	3	1	
parent1	parent1	1							
sub folder 2	sub2	3							
			Req-SandBox-3	The title of the requirement Req-SandBox-3	The requirement will be placed in a different subfolder, in the same parent folder	F	3	1	
			Req-SandBox-4	The title of the requirement Req-SandBox-4	The requirement must be covered by 2 testcases	F	3	2	

Figure 1 : Excel pattern information overview

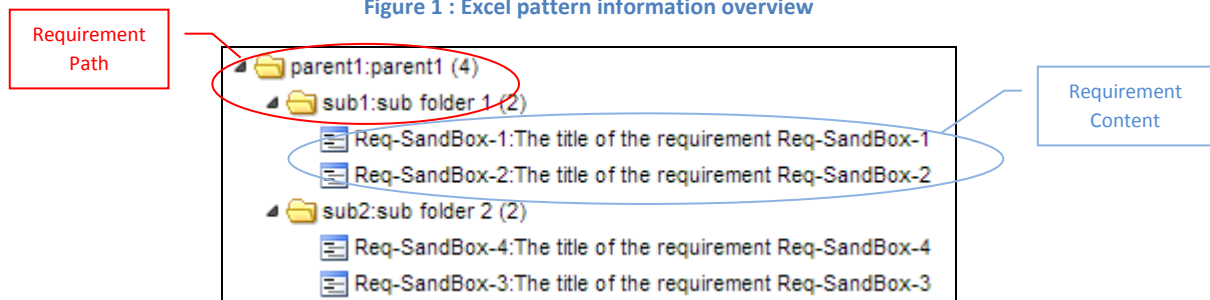


Figure 2 : imported results overview

- The “Requirement Path” section (Yellow columns headers) can be used to declare folders trees in TestLink (folders are named “Requirement Specification Operations” in TestLink GUI).
- The “Requirement Content” section (Blue columns headers) can be used to declare requirements in TestLink (requirements are named “Requirement Operations” in TestLink GUI).
- The “Custom Fields” section (dark pink columns header) is hidden by default. This section can be used to declare several Custom Fields in TestLink, by adding new columns if needed.
- The “Relation between Requirements” section (orange columns header) is hidden by default. This section can be used to declare relations between requirements.
- The “Attachments” section (light green columns header) is used to list the number of already linked attachments.

- The “Requirement Path” section and the “Requirement Content” section **must not** be filled on the same line.
- All “Requirement Content” provided after a “Requirement Path” section will be inserted in the last declared “Requirement Path” folder.
- Consecutive lines in the “Requirement Path” section are considered as a “subfolders” (tree) declaration.
- The “Requirement Path” **must provide the path from the root directory** each time a folder path is declared in the file. “Folder Name” and “Folder ID” **must be** declared several times in the same file if the same folder is used for several sub-folders (see “parent1” example in figures above).
- Attachment can be added to Requirements Specs and/or Requirements. To add a new attachment, just use the hotkey “Ctrl+j” and select the file to join. The file is added to the Requirement or Requirement Specification selected when using the hotkey.

## Excel columns content explanations

(Red = mandatory, Black = Optional)

- Columns used for a Requirement Path declaration
  - **Folder Name** : requirement Spec title
  - **Folder ID** : requirement Spec identifier (must be unique)
  - **Folder Type** : requirement specification type

Type in TestLink	Section	User Requirement Specification	System Requirement Specification
Number to use in Excel	1	2	3

- Columns used for a Requirement Content declaration
  - **Requirement ID** : requirement identifier (must be unique)
  - **Requirement Title** : requirement title (must be unique)
  - **Node\_order** : Number used to display requirement tree. If not filled, automatically generated by TestLink during import.
  - **Requirement Description** : Requirement content description
  - **Req Status** : Requirement Status. If not filled, automatically set to « Draft » by TestLink during import. Has to be filled with one of the following value :

Status in TestLink	Draft	Review	Rework	Finish	Implemented	Valid	Not Testable	Obsolete
Letter to use in Excel	D	R	W	F	I	V	N	O

- **Req Type** : Requirement Type. If not filled, automatically set to « Use Case » by testlink during import. Has to be filled with one of the following value :

Type in TestLink	Informational	Feature	Use Case	User Interface	Non functional	Constraint	System Function
Number to use in Excel	1	2	3	4	5	6	7

- **Requirement Expected Coverage** : Number of tests (in testcases) that must be attached to the requirement to cover the requirement. If not filled, automatically set to 0 by TestLink during import. 0 is a valid value during import but is invalid if requirement is edited in TestLink GUI later.

- Columns used for Custom Fields declaration
  - User defined fields, according to Project definition
  - **Column title**: Custom field Name

- **Cell content** : Custom field Value for each test case
- Columns used to declare relation between requirements
  - **Linked Requirement(s) Type and ID**<sup>1</sup> : to define the relation type between current requirement and listed requirements
  - Format : {Type}:Linked Requirement ID
  - The following values has to be used for Type information :

Type in TestLink	Parent Of	Blocks	Related To	Child Of	Depends On
Number to use in Excel	1	2	3	4	5

- If multi-Relations are listed for the same requirement, must be separated by ';'
  - Example : {3}:Req-SandBox-2
- Columns related to attachments
  - **Number of Attachments**: Inform on how many attachments are known for the current Req/Req Specs. The number is automatically updated during XML Import and during the addition of a new attachment using “Ctrl + j” Hotkey.

## Excel text length validation

Some TestLink fields are length limited. Each limit is configured in Excel file to inform the user when the limit is reached. When the limit is reached, the XML generation still works, but TestLink will truncate the value during import.

Each cell that contains too many characters is displayed with a red background.

- Requirement Specification Operation Doc ID (Folder ID) : 32 characters maximum
- Requirement Specification Operation Doc Title (Folder Name) : 75 characters maximum
- Requirement Specification Doc ID (Requirement ID) : 64 characters maximum
- Requirement Specification Doc Title (Requirement Title) : 75 characters maximum

Requirement Path (folders)		Requirement Generation			Requirement Content
Folder Name	Folder ID	Requirement ID	Requirement Title	Requirement Description	
parent1	parent1-is-an-ID-that-is-too-long				
sub folder 1	sub1				
		Req-SandBox-1	The title of the requirement Req-SandBox-1	Description of the Requirement. Could be on multiline, but import with display it without Carriage Return	
		Req-SandBox-2	The title of the requirement Req-SandBox-2. The title is too long to be imported by testlink.	A requirement title has a max length. You could edit const.inc.php to modify the max length	

Figure 3 : Excel text length validation

<sup>1</sup> The section is optional, but information is mandatory if section is used

## XML file generation

When all Requirements have been written in Excel, just click on 'Requirement Generation' button to execute the Excel Macro. Of course, macro execution must be allowed for the '01-ImportRequirementsIntoTestLink.xls' file.

If there is a problem with the content, the popup should explain why the generation failed.

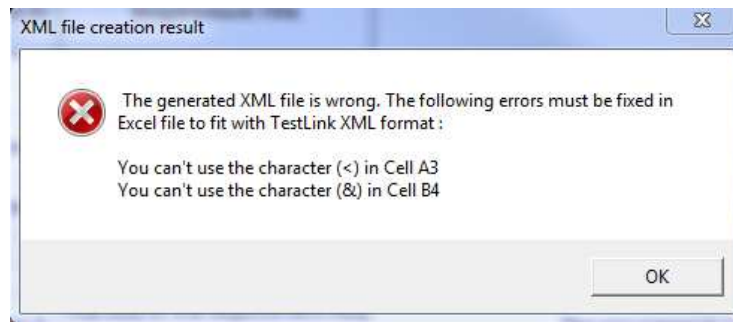


Figure 4 : XML file generation result KO

A log file containing all errors can be created if needed.

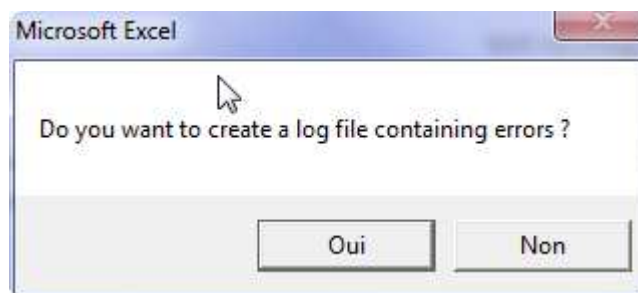


Figure 5 : Save the log file

The log file is created in the same Excel file folder, with the Excel file name (with a .log suffix).

If everything is OK with the file content, a popup will appear with the following text displayed



Figure 6 : XML file generation result OK

The XML file is created in the same Excel file folder, with the Excel file name (the .xls suffix is replaced by a .xml suffix).

## Requirements Import into TestLink

XML file generated by the macro must be used during the import process.

- 1) Select the folder representing the root directory where all folders and requirements will be inserted. This can be the root directory or a folder in the folder tree.



Figure 7 : select destination folder for requirements import

- 2) Select the import button

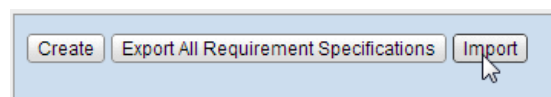


Figure 8 : Select import menu when the root directory is selected

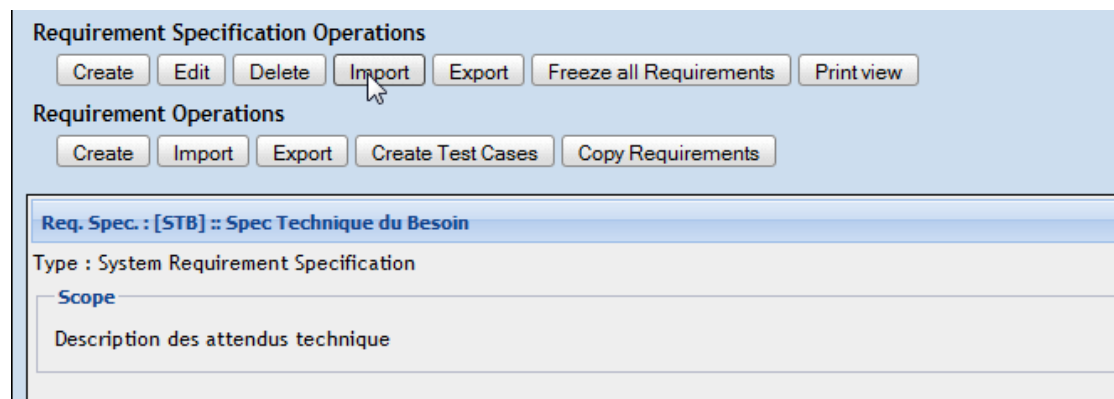


Figure 9 : Select import menu when a folder is selected

- 3) Configure the import options

**test import : Import Req. Specs**

File type: XML (View file formats documentation)

File: C:\importFile.xml Parcourir...

Skip frozen requirements: ☐

Consider Requirement as duplicate if: has same DOC ID

Action for duplicates: Update data on Latest version

Max. file size 1000 KB

Upload file Cancel

Figure 10 : Requirements import options

#### 4) Upload the file to import data

Doc ID	Title	Result
parent1	parent1	Created - Req. Spec. - Doc ID:parent1
sub1	sub folder 1	Created - Req. Spec. - Doc ID:sub1
Req-SandBox-1	The title of the requirement Req-SandBox-1	Created - Requirement - Doc ID:Req-SandBox-1
Req-SandBox-2	The title of the requirement Req-SandBox-2	Created - Requirement - Doc ID:Req-SandBox-2
parent1	parent1	Updated - Req. Spec. - Doc ID:parent1
sub2	sub folder 2	Created - Req. Spec. - Doc ID:sub2
Req-SandBox-3	The title of the requirement Req-SandBox-3	Created - Requirement - Doc ID:Req-SandBox-3
Req-SandBox-4	The title of the requirement Req-SandBox-4	Created - Requirement - Doc ID:Req-SandBox-4

Figure 11 : import Requirements result

Doc ID	Title	Result
parent1	parent1	Created - Req. Spec. - Doc ID:parent1
sub1	sub folder 1	Created - Req. Spec. - Doc ID:sub1
Req-SandBox-1	The title of the requirement Req-SandBox-1	Created - Requirement - Doc ID:Req-SandBox-1
Req-SandBox-2	The title of the requirement Req-SandBox-2	Created - Requirement - Doc ID:Req-SandBox-2
parent1	parent1	Updated - Req. Spec. - Doc ID:parent1
sub2	sub folder 2	Created - Req. Spec. - Doc ID:sub2
Req-SandBox-3	The title of the requirement Req-SandBox-3	Created - Requirement - Doc ID:Req-SandBox-3
Req-SandBox-4	The title of the requirement Req-SandBox-4	Created - Requirement - Doc ID:Req-SandBox-4
parent1	parent1	Updated - Req. Spec. - Doc ID:parent1
Req-SandBox-1 - Req-SandBox-4	Type : parent_child	New relation was added successfully.
Req-SandBox-3 - Req-SandBox-4	Type : related_to	New relation was added successfully.

Figure 12 : import Requirements with relations between requirements

## Import into Excel Requirements Exported from TestLink

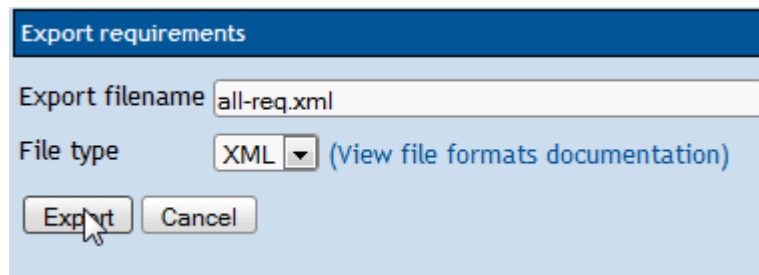
To export from TestLink, use the Export Function provided by TestLink :

**Test Project : SandBox : Requirement Specifications**

Create Export All Requirement Specifications Import



Figure 13 : Requirements Export function



The dialog box titled "Export requirements" has a text input field for "Export filename" containing "all-req.xml". Below it is a "File type" dropdown menu set to "XML" with a link "(View file formats documentation)". At the bottom are "Export" and "Cancel" buttons.

Figure 14 : Requirements Export options

**WARNING :**

Test case content is depending of the text editor that you use when you write Test cases (CKEditor, FCKEditor, ...). The provided function should be used to import requirements **ONLY WHEN NO ADVANCED EDITOR IS USED** :

```
$tlCfg->gui->text_editor['requirement'] = array( 'type' => 'none');
$tlCfg->gui->text_editor['requirement_spec'] = array( 'type' => 'none');
```

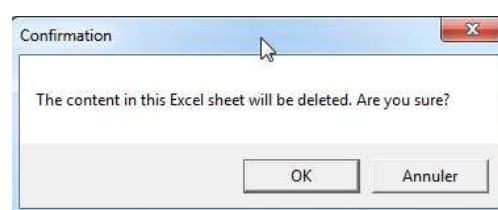
Editor internal information (HTML tags) will be showed if an advanced editor has been used, and Requirements content could be altered when importing back to TestLink.

If you want to import Requirements exported from TestLink, just click on 'Import Requirements From TestLink' button to execute the Excel Macro. Of course, macro execution must be allowed for the '01-ImportRequirements.xls' file.

Requirement Path (folders)			Import Requirements From TestLink		Requirement Content	Export Requirements To TestLink		
Folder Name	Folder ID	Folder Type	Requirement ID	Requirement Title	Requirement Description	Req Status	Req Type	Requirement Expected Coverage
parent1 sub folder 1	parent1 sub1	1 2						
			Req-SandBox-1	The title of the requirement Req-SandBox-1	Description of the Requirement. Could be on multiline, but import will display it without Carriage Return	F	3	1
			Req-SandBox-2	The title of the requirement Req-SandBox-2	A requirement title has a max length. You could edit const.inc.php to modify the max length	F	3	1
parent1 sub folder 2	parent1 sub2	1 3						
			Req-SandBox-3	The title of the requirement Req-SandBox-3	The requirement will be placed in a different subfolder, in the same parent folder	F	3	1
			Req-SandBox-4	The title of the requirement Req-SandBox-4	The requirement must be covered by 2 testcases	F	3	2

Figure 15 : Requirements Import button in Excel

A confirmation message is displayed; the user must acknowledge that all current data in the spreadsheet will be lost.



A "Confirmation" dialog box with the text "The content in this Excel sheet will be deleted. Are you sure?". It has "OK" and "Annuler" buttons at the bottom.

Figure 16 : Confirmation message

The file generated by TestLink during export must be provided.

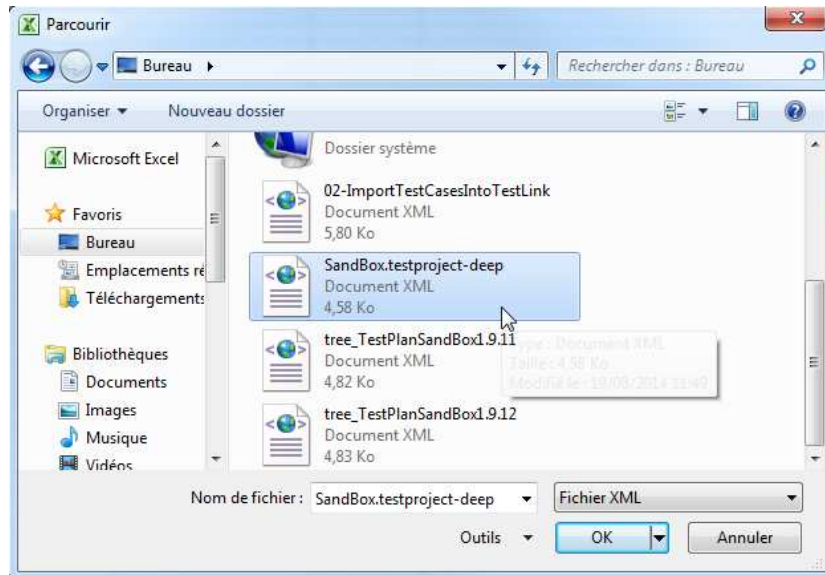


Figure 17 : XML File Selection

The file generated by TestLink is parsed by the Excel macro. Depending of the content, this analyze can be time-consuming. A GUI inform user about import progression.

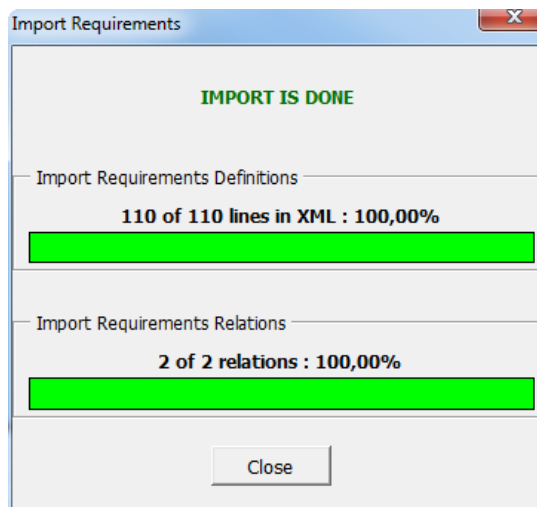


Figure 18 : XML Import Progression GUI

When finished, the Excel content represents the content of each test case.

Requirement Path (folders)			Import Requirements From TestLink		Requirement Content			Export Requirements To TestLink		
Folder Name	Folder ID	Folder Type	Requirement ID	Requirement Title	Requirement Description			Req Status	Req Type	Requirement Expected Coverage
parent1	parent1	1								
sub folder 1	sub1	2								
			Req-SandBox-1	The title of the requirement Req-SandBox-1	Description of the Requirement. Could be on multiline, but import will display it without Carriage Return			F	3	1
			Req-SandBox-2	The title of the requirement Req-SandBox-2	A requirement title has a max length. You could edit const.inc.php to modify the max length			F	3	1
parent1	parent1	1								
sub folder 2	sub2	3								
			Req-SandBox-3	The title of the requirement Req-SandBox-3	The requirement will be placed in a different subfolder, in the same parent folder			F	3	1
			Req-SandBox-4	The title of the requirement Req-SandBox-4	The requirement must be covered by 2 testcases			F	3	2

Figure 19 : Result after Import into Excel

If you want to edit “advanced” information about requirements (custom fields, execution type, External ID, Keywords), you have to display hidden columns.

You can now edit requirements information and import content back to TestLink to create a new version or update the last version.

After an export, Requirement Specification ID and Requirement ID are correct in the Excel file, the best configuration to Import back into TestLink is to use DOC ID as identifier. With this provided configuration, you can modify the Requirement name if needed :

SandBox : Import Req. Specs

File type

XML (View file formats documentation)

File

Parcourir... Aucun fichier sélectionné.

Skip frozen requirements

☐

Consider Requirement as duplicate if

has same DOC ID

Action for duplicates

Update data on Latest version

Max. file size 20000 KB

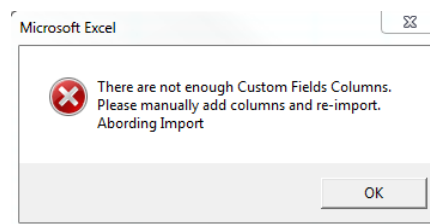
Upload file

Cancel

Figure 20 : Import Test cases update – preconized configuration

## Tips and problems

- **Generate a Requirements XML file** with Excel has been tested with Excel 2003, Excel 2007, 2010 and 2013 versions.
- **Relations are imported at the end of the XML file** to avoid the risk of “unknown requirement” if a requirement is linked to an undefined (yet) requirement.
- In **Relation between Requirements** column, if more than one value is provided, each value can be provided on its own row (Alt + Enter to add a Carriage Return in the cell), separator between each value is semi-comma (;)
- If your **requirements titles** are longer than 100 characters, titles will be reduced by TestLink during import. You have to modify const.inc.php to reconsider the value of title field size (max is 255 characters)
- If your **XML requirement file** is bigger than 400Kb, you have to edit custom\_cfg.inc.php to change “\$tLCfg->import\_file\_max\_size\_bytes” parameter. To set new limit file size to 1Mb, modify this parameter from ‘409600’ to ‘1024000’.
- During **import into Testlink**, don’t use “Import” function from “Requirement Operation” section but use only “Import” function from “Requirement Specifications Operation”. If not, a mysql error message will be displayed.
- The **Requirement Specification Node Order** is not saved by TestLink during import. You cannot use Node Order in Excel to reorder your Requirements Specification into TestLink. You have to drag and drop your folders in Web Page.
- During import from TestLink, if XML file presents more **Custom Fields** values that Custom Fields Columns exists in excel, import is cancelled to let user add more columns.



- In **Custom Fields columns**, if more than one value has to be provided (Multi Selection List type), each value has to be separated by | character.
- **Attachments** are stored on the File System in the same folder than 01-Requirements.xls file. All attachments are stored in “Req” and “ReqSpecs” folders, depending of the linked item. Each “Req” and “ReqSpecs” with attachment has his own folder to store attachments, using “Req-ID” or “Folder-ID” value as identifier.

- **Attachments** storages are based on “Req-ID” and “Folder-ID” values. If you rename one of these values, you’ll lost your linked attachments except if you rename the File System folder accordingly.
- During Import, **Attachments IDs** are concatenated to attachments names because IDs are needed during import back to avoid duplicates in TestLink. The chosen format is #ID#AttachmentName. If the ID isn’t set or if it is different than the already known in database, TestLink will create a new attachment during XML import.
- In **Number of Attachments column** , the number is based on real number of attachments copied to File System in the right directory, not only an increment. This is done to avoid mistakes introduced by duplicates attachments.
- In **Number of Attachments column** , the value is informational, Export to XML will use all known attachments even if this number is wrong. You can manually add new attachments to “Req” or “ReqSpecs” in dedicated folder if needed.
- In **import result log view**, you can search for “ok”, “skipped”, “updated” or “duplicate” keywords to verify that TestLink import comportment is coherent with your needs.

# Document Changelog

Excel File Version	Major Changes
20120314	Initial Release
20130530	Import has been successfully tested within TestLink 1.9.7
20130916	Update How To information
20140129	Update How To information
20140403	<p>The XML generation is now done by a macro, not anymore via the Excel “save As” function.</p> <p>Update How To information to explain the use of the new “requirement path” columns</p> <p>Delete Export from TestLink explanations cause the macro based solution forbids the use of exported data.</p>
20140415	<p>Update How To information to explain how Excel is used to validate text length</p> <p>Import has been successfully tested within TestLink 1.9.8 and 1.9.9</p>
20140724	<p>Update How To information to explain how Excel is used to validate content during generation</p> <p>Import has been successfully tested within TestLink 1.9.10</p>
20140827	Import has been successfully tested within TestLink 1.9.11

Excel File Version	Major Changes
20141214	Content Adaptation to fit with macro comportment Import has been successfully tested within TestLink 1.9.12
20150331	Import has been successfully tested within TestLink 1.9.13
20160209	Add relation between requirements explanation Update package version information
20160229	Delete tip about requirement title (TestLink now accepts that two requirements have the same name) Import has been successfully tested within TestLink 1.9.14 Update package version information
20160321	Add Requirement Specification Type column Update package version information
20160331	Update How To information to explain how to use the "Import Requirement From TestLink" button. Update package version information
20160731	Update package version information
20170430	Folder ID and Name explanations were wrong Tested with Excel 2013 and with TestLink 1.9.17-dev Update information based on excel file in version 20170424
20180512	Add attachments explanation