Test Plan

Signoff Test - b2xtranslator- Word/doc2x- Excel/xls2x- PowerPoint/ppt2x

Project	b2xtranslator (BINCONV)	
Poject manager	Wolfgang Keber	
Document ID	TP-MS-BINCONV	
Version	0.3	
Author	Markus Kölzer, Sascha Reichert	
Last update	26.06.2009	
Document status	X	In progress
		Revision
		Finilised
Revised by		
Document template	IEEE 829 test plan	

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Introduction

The specification of the binary Microsoft Word (Excel, PowerPoint) format has been published by Microsoft under the "Open Specification Promise". The Office Open XML format (OpenXML) is going to be published as ISO standard. A Command Line tool has been developed to convert such binary Word, Excel and PowerPoint documents to OpenXML. This tool is based the .NET Framework 2.0, that it is also possible to run it under the Mono Framework.

The project has been launched by Microsoft as an open source project. The main contributor DIaLOGIKa also designs and performs test cases which reflect typical scenarios.

Note: Microsoft already provides such a converter. It is integrated in Microsoft Word 2007. In addition, the "Microsoft Office Compatibility Pack for Word, Excel and Powerpoint 2007" allows the Microsoft converter to be used from within older Word versions.

Test Items

The following 2 software packages are subjects of the test:

- The command line tool (doc2x.exe, xls2x.exe, ppt2x.exe).
- The *DocFileFormat, XlsFileFormat and PptFileFormat* library which provide read-only access to binary Word, Excel and PowerPoint files.

Features to be Tested

The main objective of the Signoff Test is to assure that the delivered packages don't cause problems on typical usage.

Scenarios

We have to envisage and test the following two typical conversion and usage cases.

[S-CTC] Command Line Tool Conversion

A binary Word, Excel or PowerPoint document has been created in Microsoft Office or any other compatible application and is converted to an OpenXML document via doc2x.exe (xls2x.exe, ppt2x.exe) command line tool.

Example:

a) A company wants to migrate all its binary Word documents to the OpenXML standard. The conversion process shall run automatically on a Linux server.

[S-PEI] Parse and extract information

Information stored in a binary Word, Excel or PowerPoint file is extracted via a .NET or Mono compatible programming language.

Example:

a) A user wants to know all language attributes that were used in a binary Word document.
b) A user wants to know all authors that were involved in writing a document
c) A user wants to extract information from the styles in a binary Word document.
d) A user wants to extract a specified cell from a binary Excel document.
e) A user wants to extract all formulas from a binary Excel document.
f) A user wants to extract all pictures from a binary PowerPoint document.
g) A user wants to extract a range of pages from a binary PowerPoint document.

Priorities

We suggest applying the following priorities for the scenarios

Scenario	Priority
CTC	1
PEI	2

Requirements

[R-NOC]: no crash happens during conversion and the converted files can be opened.

[R-TCR]: all the textual content of the original document is retained.

[R-FOR]: the conceivable formatting, which is decisive for the document's structure and semantic is retained.

[R-PRO]: the document properties are retained.

[R-PAG]: the pagination is identical, when using the same printer.

[R-LAY]: the formatting, which is important for the layout only, is retained (e.g. text effects). The specific formatting features will be detailed in the test design specifications.

[R-NVE]: Retain non-visible elements such as macros or toolbars.

[R-PER]: the conversion of documents should finish in a time that is reasonable to the user.

[R-DFF]: the *DocFileFormat, XlsFileFormat and PptFileFormat* library should retrieve the correct information without crashing.

Features not to be Tested

The tests are restricted to files that have been created in the "Word 97-2003", "Excel 97-2003" and "PowerPoint 97-2003" format. Older file versions are not supported by bin2x. East Asian files are also not supported by doc2x, xls2x and ppt2x.

The conversion results will be opened in Microsoft Office 2007 and OpenOffice.org 3.0, there will be no extra check if the created xml files are well-formed or valid because an invalid file could not be opened by the applications.

Approach

Procedure

The testing is performed in the final test phase of every milestone. There will be separate tests for the command line tool and the *DocFileFormat, XlsFileFormat and PptFileFormat* library.

Test Documents

Each test will require a binary Word, Excel or PowerPoint file as input. These files will be provided by government institutions (like the EU), derived from the internet or created by DIaLOGIKa.

Test Execution

The test documents will be converted via the command line tool and opened in Word 2007, Excel 2007 or PowerPoint 2007. The resulting DOCX, XLSX or PPTX document will be analysed using Microsoft Office 2007 and compared with the original binary document. The tests for the *DocFileFormat, XlsFileFormat and PptFileFormat* library will be done with the .NET test tool *Nunit*.

Test Result Evaluation

[R-NOC]: Automated scripts will ensure that the converter will not crash, and all conversion results can be opened by the applications.

[R-TCR]: The completeness of the textual content is analyzed by automated scripts.

[R- FOR]: The formatting features in the conversion result are analysed manually.

[R- PRO]: The document properties of the binary document and the corresponding Office Open XML document are compared manually, because a few test documents are enough for testing this requirement.

[R-PAG]: The pagination could be compared by using a macro, which extracts the text of the first line of each page and compare them with each other.

[R-LAY]: The formatting, which are important for the layout only, are analysed manually.

[R-NVE]: Automated scripts will check if all non-visible elements are retained.

[R-PER]: Performance tests will be done by a batch script that takes the time of a conversion.

[R-DFF]: The *DocFileFormat, XlsFileFormat and PptFileFormat* library will be tested via automated *Nunit* test units. These test units will extract information via *DocFileFormat, XlsFileFormat or PptFileFormat* and the Microsoft Office object model. The results will be compared with each other.

Tools and Utilities

Several tools should facilitate the test result evaluation:

- Automating the conversion runs via batch conversion tools
- Several scripts for extracting information from the text files
- *Nunit* for testing the *DocFileFormat, XlsFileFormat and PptFileFormat* library

Test Environment

The translator runs under the .NET Framework on Windows platforms, but also on Mono 2.0 on Linux. Consequently one part of the test cases will be executed on Windows XP and Windows Server 2008, another part on Ubuntu 8.

Creating test documents will be done in OpenOffice.org 3.0, Microsoft Office 2003 and Microsoft Office 2007. Viewing the conversion results will be done in Microsoft Word, Excel and PowerPoint 2007.

Item Pass/Fail Criteria

All test cases designed for the requirements should pass successfully.

Suspension Criteria and Resumption Requirements

Testing might be suspended when

- Too many translator crashes are encountered, e.g. 10 % or more of the (not corrupt), test documents provoke a crash.
- The translator exhibits bugs which make the analyses and evaluation of the conversion result too difficult (time-consuming) or even impossible
- The translator is not delivered on-time

Test deliverables

The following items will be delivered for each Milestone Code Drop

- Test plan (this document)
- Test specification
- Test log and test summary

The test specification lists all the functionality that is to be tested, describe how the test cases have been identified, how the input documents have to be built, how the output documents have to be analysed and evaluated and which tools should help to do so.

All incidents, which are revealed by the tests, will be reported in the online ticket tracking system of the project.