

WF2

WF2Change / WF2ChangeDirect

WF2Change (Replace)

WF2Sync

WF2Delete

WF2Check

WF2Visio

BPMN2WF / WF2BPMN

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1 Concept and features

WF2 is a java-based framework that provides add-on functionality to various schedulers. It includes different actions or tasks which are defined in XML-configuration files. WF2 can be fully integrated into any scheduler or a scripting language, as all functionality is also available on the command line.

Use the PHP-based graphical user interface to comfortably define the yet mentioned XML-configuration files as well as command-line-profiles, which then can be run or dry-run directly from the GUI.

1.1 Architecture

WF2 consists of the three main functions 'Loader' to extract data from the source defined, 'Converter' to make changes to the previously extracted data and 'Generator' to write the converted data to the target defined. Optional filters are used to either include or exclude objects on loading and generating data.

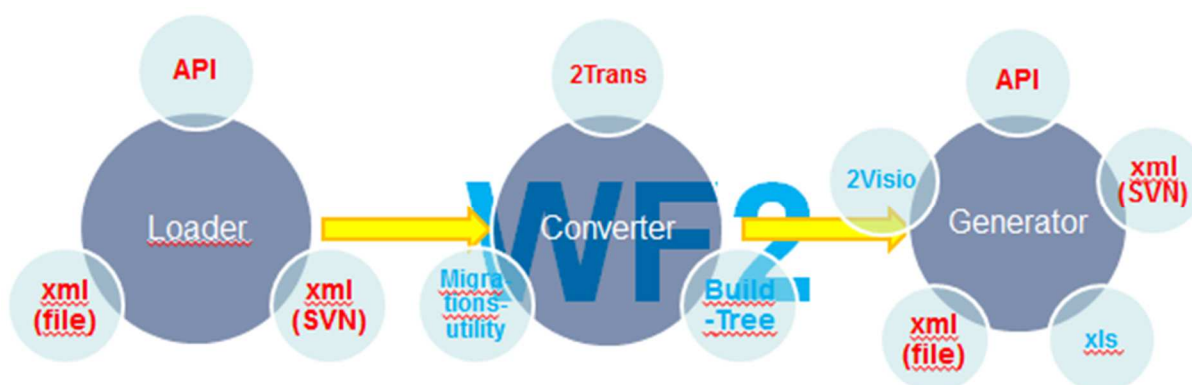
Data is extracted from one of the sources below and, after completing the conversions/transformations, generated to/on a target.

Possible data sources and/or targets are

- Scheduling systems (API/RDB connect)
- XML files previously extracted/converted/generated by the scheduler or by WF2)
- XML files managed by a version control system (e.g. Subversion)
- BPMN2.0-XML files

Target only can be:

- Using converter 2Check: ASCII representation of all references from and to a scheduling object that can be easily analysed by grep,awk,sed,excel
- Using converter 2Visio: Microsoft Visio graphical representation of the schedulers data



Possible converters are:

- 2ChangeDirect Pass data from source to target with minimal possible changes as e.g. – for Automatic – folderName
- 2Change Extract from source → apply extensive changes → generate to target. See *chapter 3.3.4.2 2Change* for details
- 2Sync Synchronize the content of source to target

- 2Delete Delete objects as defined by source on target
- 2Check do some checks on data extracted from source and report to log-file
- 2Visio visualize data from source by creating a Visio-.vsd-file
- 2BPMN Extract scheduler objects from any source and generate BPMN2.0 objects using BPMN2.0-compatible XML-files.
- BPMN2 Extract BPMN2.0 objects from XML-files, convert them to scheduler objects and write them to any target

1.2 Functionality Highlights

- ⇒ WF2Change and WF2Check are tools and technologies that can accelerate your application releases
- ⇒ API and XML is available as source- and target-system:
 - multistage conversions can easily be realized
 - the generated package can be used in several environments, e.g. DEV-> TEST -> PROD with a version control system as repository
 - excellent integration of xml-files in a version management tool (e.g. Subversion)
- ⇒ entirely usable as a command line-tool
 - easy integration into other tools
 - optional use of the WF2-frontend to generate WF2's xml-configuration-files
- ⇒ (Automatic) independent from the Automatic transport folder and the Automatic utilities
 - the transport folder can still be used for your manual purposes, whereas WF2 is used for organized transports
 - possible overlapping of transports by using the transport folder are no longer a risk
- ⇒ (Automatic) explorer:
 - WF2 exports and imports folder-structures
 - folder-structures can be changed in conversion
 - 'FOLD' as criteria in filters
- ⇒ Intelligent object-name replacement within Automatic-scripts, in context of the following functions:
 - (Automatic) activate_uc_object
 - (Automatic) get_var, put_var
 - (Automatic) get_sync, set_sync
 - (Automatic) Include
- ⇒ Easily find all relevant objects by using the option 'IncludeDownwards'
 - Find all used/referenced objects
 - ...including scripts
- ⇒ Replace/set status-values in Automatic's sync-objects and Cronacle's Events
 - No unexpected status after transporting and objects from e.g. DEV to PROD
- ⇒ Check naming-conventions by using WF2Check
- ⇒ Check existence of objects in in the target system by using WF2Check

- ⇒ Check for objects which are referenced by objects but do not exist on the system or client
- ⇒ Carry out mass-changes easily and transparently
- ⇒ Configure WF2 files by
 - using the WF2_GUI
 - editing existing XML-configuration-files with your preferred script editor
- ⇒ WF2 command line in batch scripts enables easy integration into change- and/or release-management tools
- ⇒ Filter objects by object-name and/or object-type
 - (Automatic) filter from folder, include/exclude sub-folders

2 Installation and configuration

The following section describes the installation and configuration of WF2 and frontend (WF2GUI).

2.1 WF2

2.1.1 Supported Platforms

2.1.1.1 Java

A java JRE - or optionally SDK - environment is needed. Supported Versions are:

- Java7
- Java8

2.1.1.2 PHP

WF2GUI requires PHP version 5.4 or higher. PHP should run on 'any' application server (e.g. Apache)

2.1.1.3 Scheduler

2.1.1.3.1 *Atomic One Automation*

Version	Service Pack	Remarks
V9	SP8	
V10	SP4	
V11	SP2	Planned for 16Q1

2.1.1.3.2 *Redwood Cronacle*

Version	Service Pack	Remarks
V8	NA	
V9	NA	
V10	NA	Planned for 16Q1

2.1.2 Installation

We recommend installing WF2 with an unprivileged user – e.g. WF2.

The software needs a base directory, in which the WF2.jar will be stored, a Config-directory for configuration files and a directory called WF2_lib for external Java-classes.

All other directories are optional but recommended.

```

./WF2 /WF2.jar
./WF2 /Config
      /DATAin
      /DATAout
      /Log
      /tmp
      /WF2_lib /java-getopt-1.0.13-sources.jar
              /uc4.jar

```


When extracting the delivered WF2.zip file, all above-mentioned directories are created. The zip-file contains the WF2-jar und the java-getopt-jar but due to licensing issues, not the scheduler's API (e.g. uc4.jar).

Obtain the API of your scheduling application from the relevant software delivery and copy it to the directory `./WF2/WF2_lib`.

2.1.3 Upgrade

In the situation of an upgrade it is only necessary to replace the WF2.jar.

2.1.4 Configuration

For configuration of WF2 it is necessary to create or modify different xml-files. They are explained in more detail in section 3.3 *Configuration-files*.

2.1.5 Dependencies

If you want to use Subversion, a locally installed SVN-client is required.¹

2.1.6 User-Configuration within Automic

If you want to use WF2 to connect to an Automic-system a User is required.

Please note, that for some actions (e.g. define a Backend-VARA) special user-rights are necessary.

2.2 WF2GUI

2.2.1 Installation

We recommend installing WF2 with an unprivileged user – e.g. WF2.

In addition to that it will make sense to add this user to the user group who is owner of the application server.

The WF2GUI-files have to be copied to the htdocs-directory or similar of a php-compliant application server.

Configuration-files and default-directories:

Application Server	Configuration file	default-directory
XAMPP	NA	\$INSTALLDIR/htdocs
apache2	in <code>/etc/apache2/httpd.conf</code> use variable DocumentRoot	<code>/srv/www/htdocs</code>

For example with Apache:

```
cd /srv/www/htdocs
unzip WF2GUI.zip
```

¹ Apache Subversion (SVN) is a product of the apache software foundation and licensed under the apache-license 2.0.

2.2.2 Upgrade

We recommend as first step to save the file `./WF2GUI/public/WF2GUICfg.xml` because it is the only file which contains customer-specific configurations.

After that the proceeding of an upgrade will be like a new-installation with restoration of the saved file `./WF2GUI/public/WF2GUICfg.xml`.

2.2.3 Configuration

Open the file `./WF2GUI/public/WF2GUICfg.xml` for two customer-specific definitions:

keyword	Optional default-value	type	explanation, value and examples
<code><BaseDir></code>	Mandatory no default	PATH_FILE	Base-directory of your WF2-installation (use forward slashed "/" for Windows) as absolute path <code><BaseDir>C:/WF2V/</BaseDir></code>
<code><ConfigDir></code>	optional Default: <code>../Config/</code>	PATH_FILE	Directory for WF2-configuration files (use forward slashed "/" for Windows); relative path will be applied on BaseDir
<code><WF2TempDir></code>	optional Default: <code>./tmp</code>	PATH_FILE	Directory to write temporary files to; relative path will be applied on BaseDir. See <i>Chapter 3.1 the command line</i> for further details.

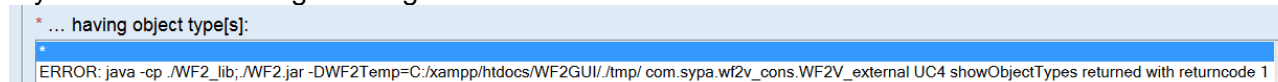
For example (standard installation):

```
<WF2GUI>
<BaseDir>/opt/WF2/</BaseDir>
<ConfigDir>./Config/</ConfigDir>
<WF2TempDir>./tmp/</WF2TempDir>
</WF2GUI>
```

2.2.4 Troubleshooting

2.2.4.1 ERRORS shown in the WF2GUI

If you see the following message:



then please make sure that you have a correct configuration as explained in *Chapter 2.1.4 Configuration*, as in this situation, usually the WF2 libraries are not found because `WF2_lib` is for any reason not available.

2.2.4.2 for apache

To analyze problems please have a look at the files `'error_log'` and `'access_log'` usually located in `/var/log/apache2`.

3 WF2

3.1 the command line

Call and Example	Explanation	Remarks
java -cp ./WF2_lib -jar ./WF2.jar	Start with classpath and jar	always use this
-c AppConfig.xml	Application configuration file	One file is needed (On multiple use: the last entry will be used.)
-l loader.xml	Loader configuration file	One file is needed (On multiple use: the last entry will be used.)
-g generator.xml	Generator configuration file	One file is needed (On multiple use: the last entry will be used.)
-v loaderfilter1.xml -v loaderfilter2.xml	Object filter definition of the generator	Random number of values; order doesn't matter
-w generatorfilter1.xml -w generatorfilter2.xml	Object filter definition of the generator	Random number of values; order doesn't matter
-k konvertor1.xml -k konvertor2.xml	Information about conversion	Random number of values, order matters
-n	No Action	after the conversion step, WF2 will stop processing and will not execute the generator step

Example:

```
java -cp ./WF2_lib -DWF2Temp="D:\tmp\WF2TEMP" -jar ./WF2.jar \
-c $APPCONFIG \
-l ./Config/Loader_UC4_API.xml \
-g ./Config/Generator_UC4_XML.xml \
-v ./Config/BJB_JSCH_SCR1.xml -v ./Config/BJB_JOBS.xml \
-w ./Config/BJB_ALL.xml -w ./Config/BJB_excl_CONN.xml \
-k konvertor1.xml -k konvertor2.xml \
-n
```

WF2 uses for certain tasks a temporary directory. In the above example this WF2Temp-Directory is explicitly set as a java property. There are several possibilities to specify the WF2Temp-Directory (in this order, whatever matches first):

1. Invoking java using -DWF2Temp="path" (if the WF2GUI is used this scenario applies and "path" is set to what is specified by the tag <WF2TempDir> within the file ./WF2GUI/public/WF2GUICfg.xml)
2. Invoking java using -DTemp="path"
3. system environment variable: WF2Temp="path" java ...
4. system environment variable: TEMP="path" java ... (Windows standard)
5. system environment variable: TMP="path" java ...
6. use the directory ./tmp if none of the above possibilities matches

3.2 Error handling and log file entries

WF2 will return a return code unequal to 0 only in situations of grave errors.

A situation like that can be if the data generated or to be generated by the generator is faulty or incomplete.

Due to this behavior it is possible to decide with help of analysis of the log-files if all proceedings are successfully or if some are faulty.

Log-entry	Explanation
{Timestamp} FATAL: {.*}	

	Incorrect handling of a situation in WF2; report such errors to System Partners
{Timestamp} ERROR: {.*}	
	WF2 recognized an error in the current data set or in the handling of the data set that must be analyzed
{Timestamp} ERROR: UC4_Handler: loader_{api dom}: could not create object {.*} => will be skipped! {Timestamp} ERROR: UC4_Handler: loader_api: {.*} => will be skipped!	
	An error occurred while loading a data set. This data set will be skipped.
{Timestamp} ERROR: {.*} Open Ticket @Automic {.*}	
	Potential error in the implementation of xml or API within Automic; report such errors to Automic
{Timestamp} WARN: {.*} loader_{.*}	
	A minor error was encountered that should be analyzed.
{Timestamp} INFO: {.*}	
	Information about the status of the processing
{Timestamp} DEBUG? {.*}	
	Additional information, which will only be generated with a debug-level higher 0

In certain situations it is advisable to set the flag '-n' (no action) for the first use and evaluate the log-file before executing an important WF2 run.

3.3 Configuration-files

The following chapters explain in detail possible definitions in the various XML-configuration-files.

3.3.1 AppConfig

Keyword	Optional default-value	Type	explanation, value and examples
< AppConfig name="name">	Mandatory no Default	STRING	Name of the basic configuration
<LogFile>	optional Default: .\WF2.log	PATH_FILE	Name of the log-file
<DebugLevel>	Optional Default: 0	INTEGER	Quantity and quality of debug-information (minimum: 0, maximum: 9)
<Action>	Mandatory no Default	STRING	Supported values: see section 3.3.4 <i>Converter</i>
<Language>	Optional Default: de	de, en	Justification of the language (for future use)
<IncludeDownwards>	Optional FALSE	BOOL true/false	Include objects, which are not found by any filter but used in objects found by the filter. For a complete list of possible replacements see section 4.1.2 <i>Replacement in fields of other types</i> entnommen werden.
<IncludeActivates>	Optional FALSE	BOOL true/false	Include objects, which are called in scripts (e.g. activate_uc_object, sendevent, ...). For further details see section 4.1.3 <i>Replacement and follow-up in scripts</i> .

3.3.2 Connection (Loader/Generator)

	Keyword	Optional default-value	Type	explanation, value and examples
	<Connection name="name">	mandatory no default	STRING	Name of the configuration-file of the connection
	<ConnectionType>	mandatory No default	STRING	Connectiontype: API Connection to Scheduler FileXML XML-file or -directory SVNXML XML-file(s) from a Subversion-Repository BPMNXML XML-file for BPMN2.0 definitions
	<Tool>	mandatory no default	STRING	scheduler: CPS, OPS, UC4(AWA) BPMN: UC4(ASO)
	<Version>	mandatory no default	STRING	version of the data as specified by the scheduler
	<Slowdown>	Optional 0	INTEGER [ms]	Waiting time between two sequenced API-calls to reduce performance on server-side.
<ConnectionType> FileXML	<FileXML><DataFile>	mandatory no default	PATH_FILE	Name of the data-file(s) or directory; Wildcards (as known from your operating system) are possible (e.g. '*' zero or more characters, '?' any single character)
<ConnectionType> SVNXML	<SVNXML><URL>	mandatory no default	STRING	See subversion
	<SVNXML><Path>	Optional ""	STRING	See subversion
	<SVNXML><Revision>	Optional ""	STRING	See subversion
	<SVNXML><User>	Optional ""	STRING	See subversion
	<SVNXML><Passwort>	Optional ""	STRING	See subversion
	<SVNXML><Message>	Optional ""	STRING	See subversion
<ConnectionType> API <Tool> UC4	<API><Server>	mandatory no default	STRING	See Automic
	<API><Port>	mandatory no default	INTEGER	See Automic
	<API><Mandant>	mandatory no default	(STRING) INTEGER	See Automic
	<API><User>	mandatory no default	STRING	See Automic
	<API><Department>	optional empty string	STRING	See Automic
	<API><Passwort>	mandatory no default	STRING	encrypted password is possible (for further information see documentation of Automic)
	<API><Overwrite>	optional true	BOOL	See Automic
	<API><KeepLinks>	optional true	BOOL	See Automic
	<API><DefaultFolder>	optional /_WF2IMPORT	STRING (UC4 FOLDer)	to what FOLDer to write new objects to, if they have no folderName defined

3.3.2.1 <Version>

This field is of major importance as it defines how to interpret the data that is loaded.

If <ConnectionType>FileXML is used, the (major) release is also available in the XML-Files. WF2 does a double check on this information but runs accordingly to what is specified in the Connection-Configuration-file.

If <ConnectionType>SVNXML is used, the situation is similar.

If <ConnectionType>API is used, the Version information is taken from the Scheduler. This is doublechecked against the version information given by the tag <Version> and the version information from the API.

If the version information for Loader and Generator collected as explained above does not match on major release level, the conversion type defines if WF2 generates sound output. Continuation is in any case possible for WF2Delete, WF2Check, WF2Visio and *BPMN*, for WF2Change(Direct) an appropriate ERROR-message is generated.

How to correctly set the <Version> tag using UC4:

Tool	Version as shown by the scheduler	<Version>
UC4 <=9	In System Overview: 9.00A Build: 333-782 from server by API: 9.00A330-782 java-API: 9.00A330-782	9.00A333-782
UC4 >9	10.0.5+hf.1.build.480	

3.3.2.2 <ConnectionType>FileXML: about the files

3.3.2.2.1 Loader

If <DataFile> identifies a single file, this file is loaded.

If <DataFile> identifies a ZIP-File, the contents of this ZIP-file is loaded. Subdirectories are not supported and loading will end in error.

If <DataFile> identifies a directory, all files in this directory are loaded, subdirectories are ignored.

All Files to be loaded must use the suffix .xml, all other files are ignored.

3.3.2.2.2 Generator

The generated files comply to the naming schema {ObjectName}.xml .

If {ObjectName} contains the below characters, they get replaced accordingly:

character	is replaced by string	remark
\	BACKSLASH	
/	SLASH	
:	COLON	
*	ASTERISK	
?	QUESTIONMARK	
"	DOUBLEQUOTE	
<	GREATERTHAN	
>	LESSTHAN	
	PIPE	
#	HASH	
@	AT	due to special meaning in subversion

3.3.3 Filter

Keyword	Optional default-value	Type	explanation, value and examples
<Filter name="...">	mandatory no default	STRING	Name of the configuration-file of the filter

<Tool>	mandatory (Default only for call-situations possible)	STRING	scheduler: CPS, OPS, UC4
<Include>	Optional true	BOOL true,false	Include- or exclude-definition of a filter
<NameFilter>	optional no default	STRING	Searchstring with wildcards (such as know from the scheduler) which will define names of the objects. <NameFilter>AVA*</NameFilter>
<DescFilter>	optional no default	STRING	Searchstring with wildcards (such as know from the scheduler), which will define objects by using their description <DescFilter>*Avalog*</DescFilter>
<SearchArch>, <SearchDoku>, <SearchTitle>	Optional FALSE	BOOL true,false	The defined text in DescFilter will be applied to search in the archive-terms or the documentation. The used algorithm is setTextSearch() from the UC4-API. The used condition is "OR". This means, if the string defined in <DescFilter> in one of the activated search-objects is found, the object will be included.
<Types>	optional Default: ""	STRING	Objecttypes: AutoSys: box, cmd, fw CPS : chain, job, event UC4: Supported UC4-objecttypes plus string „FOLD“, ""*" ""*"" will search all supported objecttypes except FOLD FOLD will search all objects of defined types in folders with the given name. If <IncludeDownwards> is true all subfolder will be included.
<FolderName>	optional Default = „/“	STRING	Only search for objects in the defined folder. Make sure that you have “/” defined if you want to search independent of the folder.
<IncludeSubfolders>	optional true	BOOL true,false	Include subfolders to search the objects Make sure that you have true defined if you want to search independent of the folder.

Example:

```
<?xml version="1.0"?>
<Filter name="Filter_UC4_E1">
  <Tool>UC4</Tool>
  <Include>true</Include>
  <NameFilter>^ABC*</NameFilter>
  <DescFilter></DescFilter>
  <Types>*</Types>
  <SearchTitle>true</SearchTitle>
  <SearchDocu>true</SearchDocu>
  <SearchArch>true</SearchArch>
  <FolderName></FolderName>
  <IncludeSubfolders>true</IncludeSubfolders>
</Filter>
```

Important Remarks

If several filters are used in a run, first all include filters are applied and afterwards all exclude filter. Therefore the sequence of the filter files is not relevant.

Of course filter files specified for the loader (-v) and filter files for the generator (-w) are applied separately.

3.3.4 Converters

3.3.4.1 Functionalites

Delimiter	Functionality	NVF ²
2Change	Change objects as defined in the converter definitions	Yes
2ChangeDirect	Unmodified reading of specific scheduler-XML-definitions and unmodified – only folderName can be changed - passing to the generator including filtering	No
2Check	1. Verification of naming conventions (based on converter definitions)	No
	2. Verification of existence of referenced objects (based on generator definitions)	Yes
	3. Generating dependencies to and from all objects in a textual form	
2Sync	Synchronize the specified workflows of two environments	Yes
2Delete	Delete all objects in accordance with the generator definitions	No
2Pass	Normalize workflows in accordance with the loader filters	No
2Visio	Displaying objects in accordance with loader- and generator filters	Yes
BPMN2WF	Convert BPMN2.0 process definitions into scheduler specific workflows	Yes
WF2BPMN	Convert scheduler specific workflows into BPMN2.0 process definitions	Yes

3.3.4.2 2Change / 2ChangeDirect

Keyword	Optional default-value	Type	explanation, value and examples
<Convert Name="name" type="2Change">	Mandatory no default	String	Opening of converter-step with description
<Tool>	mandatory no default	STRING	scheduler: CPS, OPS, UC4
<TextFrom>"wert"</TextFrom>	Mandatory Default: "" (nothing)	Regular expressions	TextFrom: regex search term TextTo: regex replacement term
<TextTo>"wert"</TextTo>	Mandatory Default: "" (nothing)	Regular expressions	Multiple replacements will be executed in order of the configuration-files For the syntax please have a look at http://docs.oracle.com/javase/7/docs/api/java/util/regex/Pattern.html
<Fields>"name","Title"</Fields>	Mandatory Default: "" (nothing)	Fields in accordance with the list of replacements	Definition of fields for the replacements. "name" = describes the name of the object(s) For further details see section 4.1.2 Replacement in fields of other types
<Types>JOBFB,JOBS</ Types>	Mandatory Default: *	Types in accordance with the list of object types	Definition of object types [UC4]: the standard, usually 4-character abbreviations for specific object types; see also section 3.3.2.1 <Types>

Therefore the only (optional) possible change using 2ChangeDirect is *folderName*.

3.3.4.3 2Sync

2Sync helps you to keep things synchronized in different environments. This can start with some few jobs identified by a name-filter and ends with synchronizing entire clients.

Keyword	Optional default-value	Type	explanation, value and examples
<Convert Name="name" type="2Sync">	Mandatory no default	String	Opening of converter-step with description

² NVF (Follow-up-functionality): The definitions of <IncludeDownwards>,<IncludeActivates>, etc. will be considered

<Tool>	mandatory no default	STRING	scheduler: CPS, OPS, UC4
<TextFrom>"wert"</TextFrom>	Mandatory Default: "" (nothing)	Regular expressions	TextFrom: regex search term TextTo: regex replacement term
<TextTo>"wert"</TextTo>	Mandatory Default: "" (nothing)	Regular expressions	Multiple replacements will be executed in order of the configuration-files For the syntax please have a look at http://docs.oracle.com/javase/7/docs/api/java/util/regex/Pattern.html
<Fields>"folderName"</Fields>	Mandatory Default: "" (nothing)	Fields in accordance with the list of replacements	2Sync is part of the 2ChangeDirect. Therefore the only (optional) possible change is <i>folderName</i> .
<Types>*</Types>	Mandatory Default: *	Types in accordance with the list of object types	Definition of object types [UC4]: the standard, usually 4-character abbrevia- tions for specific object types ; see also section 3.3.2.1 <Types>

3.3.4.4 2Delete

The Generator removes all objects that pass the generator's filter.
Additionally all empty directories where an object was deleted are deleted as well.

A Converter-Configuration is not necessary.

3.3.4.5 2Check

2Check helps you to enforce standards and to analyze dependencies.

1. Verification of naming conventions, based on converter definitions
2. Verification of existence of referenced objects, based on (optional) generator definitions
3. Generating dependencies to and from all objects in a textual form

Keyword	Optional default- value	Type	explanation, value and examples
<Convert Name="name" type="2Check">	Mandatory no default	STRING	Opening of converter-step with description
<Tool>	mandatory no default	STRING	scheduler: CPS, OPS, UC4
<Types>*</Types>	Mandatory Default: *		Definition of object types [UC4]: JOB = Filetransfer See also section 3.3.2.1 <Types>
<Fields>			is not used
<TextTo>			is not used
<TextFrom>"wert"</TextFrom>	Mandatory Default: "" (nothing)	Regular ex- pressions	TextFrom: regex search term For the syntax please have a look at http://docs.oracle.com/javase/7/docs/api/java/util/regex/Pattern.html
<Types>*</Types>	Mandatory Default: *	Types in ac- cordance with the list of object types	Definition of object types [UC4]: the standard, usually 4-character abbreviations for specific object types; see also section 3.3.2.1 <Types>

3.3.4.6 2BPMN

Keyword	Optional default- value	Type	explanation, value and examples
<Convert Name="name" type="2BPMN">	Mandatory no default	STRING	Opening of converter-step with description
<Tool>	mandatory no default	STRING	BPMN2.0-Tools: BPMN:UC4 (ASO), BPMN:Signavio

<RasterHeight> <RasterWidth>	mandatory no default	INTEGER	Dimension of the used drawing patterns <RasterHeight>20</RasterHeight>
---------------------------------	-------------------------	---------	---

3.3.4.7 2Visio

Keyword	Optional default-value	Type	explanation, value and examples
<RasterHeight> <RasterWidth>	mandatory no default	INTEGER	Dimension of the used drawing patterns <RasterHeight>20</RasterHeight>
<RasterUnit>	mandatory no default	STRING	Unit of measurement of the used drawing patterns <RasterUnit>mm</RasterUnit>
<MasterVss>	mandatory no default	PATH_FILE	Defined Visio-Stencil-File <MasterVss>..\Vorlagen\UC4_V0.6.04.vsx</MasterVss>
<ShapeJobPlanHeader> <ShapeJobPlanBody> <ShapeJobPlan> <ShapeJob> <ShapeJSCH> <ShapeJOBF> <ShapeJOBG> <ShapeCALL> <ShapeSCRI> <ShapeXTRL> <ShapeEVNTFile> <ShapeEVNTTime>	mandatory no default	WF2Visio	Unique name of the stencil for objects
<ShapeConnectorAnyAbend> <ShapeConnectorAnyAbendExceptFault> <ShapeConnectorAnyExceptFault> <ShapeConnectorAnySkipped> <ShapeConnectorAnyOk> <ShapeConnectorEndedCancel> <ShapeConnectorEndedEmpty> <ShapeConnectorEndedInactive> <ShapeConnectorEndedNotOk> <ShapeConnectorEndedOk> <ShapeConnectorEndedOkOrEmpty> <ShapeConnectorEndedOkOrInactive> <ShapeConnectorEndedSkipped> <ShapeConnectorEndedTimeout> <ShapeConnectorEndedUndefined> <ShapeConnectorEndedVanished> <ShapeConnectorFaultAlreadyRunning> <ShapeConnectorFaultNoHost> <ShapeConnectorFaultOther> <ShapeConnectorUser100200> <ShapeConnectorUser147> <ShapeConnectorUser201299> <ShapeConnectorUser300> <ShapeConnectorUser500600> <ShapeConnectorDepAUCOWait> <ShapeConnectorDepAUCONoWait>	mandatory no default	STRING	Unique name of the stencil for connections
<ZeichnungsArt>	mandatory no default	STRING	Name of the algorithm for printing [UC4Classic][UC4Recursive] <ZeichnungsArt>UC4Classic</ZeichnungsArt>
<JobNamenShortCut>			ShowNames TruncateNamesPrefix TruncateNamesSuffix KeepFirstLetters KeepLastLetters CutTheMiddle
<RefNamenShortCut>			ShowNames TruncateNamesPrefix TruncateNamesSuffix KeepFirstLetters KeepLastLetters CutTheMiddle

3.3.5 Profiles (applies only to WF2GUI)

A profile represents a WF2's java invocation string.

Keyword	Optional default-value	Type	explanation, value and examples
<Profile><AppConfig>	mandatory	FILE_NAME	Name of the AppConfig-file
<Profile><Loader>	mandatory	FILE_NAME	Name of the connection-file for the source (all file-names will be recursively analyzed according to the path in the AppConfig-file)
<Profile><Loader><Filter>	Optional, including multi-selection	FILE_NAME	Name(s) of filter-file(s) for reading
<Profile><Converter><Conversion>	Optional, including multi-selection	FILE_NAME	Name(s) of the converter-file(s)
<Profile><Generator>	Mandatory	FILE_NAME	Name of the connection-file for a destination
<Profile><Generator><Filter>	Optional, including multi-selection	FILE_NAME	Name(s) of the filter-file(s)

3.3.6 License

Please note, that the license-file has a fix location and name: ./Config/Licenses.xml

Keyword	Optional default-value	Type	explanation, value and examples
<LicenseManagement> <License>			
<Type>	mandatory no default	STRING	For Converters : One out of a combination of: {UC4, CPS, OPS} x {WF2ChangeDirect, WF2Change, WF2Check, WF2Visio} The license for WF2ChangeDirect includes licenses for WF2Sync and WF2Delete. For Connections : One out of a combination of: {UC4, CPS, OPS} x {FileXML, SVNXML, API}
<Code>	mandatory no default	STRING	For Converters : identical to <Type> For Connections : depending on <Type>: *FileXML: {EMPTY} *BPMNXML: {EMPTY} *SVNXML {URL}: svn://svnprd.company.com *API: {Server:Client}: UC4prd.company.com:0100
<LicenseKey>	mandatory no default	STRING	The license key 8DC7BC3DAA4598DED120D38628D8ED
<ValidTill>	mandatory no default	DATE YYYYMMDD	The ending date for the validity of the license key 20991231

3.4 Important notes

Some functionality is possibly different from expectations:

- (Automatic) Passwords cannot be read, because neither the UC4-XML-Interface nor the UC4-JAVA-API provides this functionality. Therefore whenever a password is passed, an empty string is used.

4 Converter functionality

4.1 WF2Change for Automic

An object read by the loader can be changed before it is written by the Generator. The possible changes are explained in this chapter.

WF2Change works in two runs:

The first run does all replacements of object names, including all their references. E.g. if you have an Event that you rename, the name of the event itself is changed but also all objects referencing this event are changed as well reflecting the changed name.

The second run does the replacements in the defined other fields.

4.1.1 Replacement in fields referenced by object names

Necessary condition for a replacement of object names is, that "name" is defined in <Field> in the xml-file:

```
<Convert Name="name" type="2Change">
...
<Fields>"name"...</Fields>
...
```

Pursuant to the following table the replacements of object names is done within the field labels:

Object type	Additional information	Field label (XML)
UC4_CALE	GroupRow	CaleName
	CollisionsRow	CaleName
		RCaleName
	UC4_RollCaleKeyword	RCaleName
RRCaleName		
UC4_CALL	UC4_CALLCondRow	CaleName
		USR_Idnr
		StartType
		Queue
		TZ
UC4_citPanel	used in: UC4_CONN_CIT UC4_CONN_R3 UC4_JOBS_CIT	value: xmlName=Login xmlName=uc4user xmlName=rfcLogin ³
UC4_CONN_CIT		agentname
UC4_dynvalues	<DYNVALUES> <dynvalues> <dyntree> <node...name="AB"...	name
UC4_EVNT	UC4_CALE5_row	CaleName

³ Possible other references in field value (e.g.:

```
<cit ... <component ... value="UC4.OS.UC4.LOGIN" xmlName="Login" />...</cit> )
```

will not be solved, because they might not be unique. If you want to do replacements within this field value, please use the replacement with "xmlName:NAME" in <Fields>.

		StartType
		Queue
		TZ
UC4_EVNT_CONS		HostDst
		LoginDst
UC4_EVNT_DB		Op1_host
		Op1_login
		Op1_vara
		Op2_host
		Op2_login
		Op2_vara
UC4_EVNT_FILE		HostDst
UC4_HOSTG		Name
UC4_JOB		StartType
		Queue
		TZ
		HostSrc
		CodeNameSrc
		LoginSrc
		HostDst
		CodeNameDst
	LoginDst	
UC4_JOBG		Queue
		ChildQueue
		TZ
UC4_JOB		StartType
		Queue
		ChildQueue
		TZ
UC4_JOBQ		RExecute
		Queue
		HostDst
		TZ
UC4_JOB		RExecute
		Queue
		HostDst
		CodeName
UC4_JOBS		Login
		TZ
		agentname
		Connection
UC4_JOBS_CIT		Queue
UC4_JOBS_SQL		ChildQueue
UC4_JSCH		StartType
		TZ
		RExecute
		Host
UC4_LOGIN		Host
UC4_outputscan	UC4_filterobjects <OUTPUTSCAN... <filterobjects> <row...	execute
		filter
	UC4_outputscan	HostFsc

	<OUTPUTSCAN...	LoginFsc
UC4_PRPT	Replacement will be VALUE from reference	<entry name="reference">VALUE/> ...
	Replacement will be VALUE from calendar	<entry name="calendar"> VALUE/>
UC4_QUEUE	UC4_CALE8_row	CaleName
		TZ
UC4_rollback	<ROLLBACK...	CBackupObj
		CRollbackObj
UC4_runtime	<RUNTIME...	MrcExecute
		MrtTZ
		MrtExecuteObj
UC4_script	In whole script all changes of names will be done analogously to DBChange (case-insensitive).	Whole script-text
UC4_SCRI	This includes PRE-,POST-,IPOST- and SCRIPT	StartType
		Queue
		TZ
UC4_task	UC4_taskCaleRow	CaleName
		ParentObject
UC4_task_condition (Task-Pre- und Postconditions)	UC4_task_cond_param	Replacement of all relevant fields. (depending on ID)
UC4_task_JOBP		TcpATimeTZ
		TcpExecute
		LtstTimeTZ
		WhenExecute
UC4_task_JOBP_FE		source_name
UC4_task_JOBP_XTRNL		ExtExecute
UC4_task_JSJP	used in: UC4_JSCH_task UC4_JOBP_task	ErlstStTimeTZ
		MrtExecuteObj
		MrtTZ
		RExecute
UC4_USER	UC4_USERMembers	v0
		Login
		CboTimeZone
		CaleName
UC4_VARA_BACKEND		HostDst
		Login
UC4_VARA_FILELIST		HostDst
		Login
UC4_VARA_MULTI		Vara1
		Vara2
UC4_VARA_SQL		Conn
		Login

4.1.2 Replacement in fields of other types

Other than the mentioned replacement in object names, these are the possible fields for replacements (regular expressions) of 2Change.

All replacements will be done case-sensitive (except name).

Object type	Field ⁴	Additional information
UC4 => all UC4 Objects	name	Using the keyword „name“ the replacements of object names will be controlled. See section 4.1.1
	Title	
UC4_CALL	Text	
	Subject	
	AttachReports	
	AttachFile	
UC4_citPanel	xmlName :NAME	For <cit...> -entries with this xmlName the value will be replaced. Used in: UC4_CONN_CIT UC4_CONN_R3 UC4_JOBS_CIT
UC4_CONN_SQL	connection.settings.name:NAME	For <row...>-entries with this name the value will be replaced. ⁵
UC4_DOCU_Allgemein	DocuReplace	Replacement in all Docu-Tabs in accordance with the regular expression. (für CDATA und XML unterschiedliches Verhalten einer regex...) Used in: UC4_nontask
UC4_EVNT_DB	Op1_server	
	Op1_db	
	Op1_file	
	Op1_static	
	Op2_server	
	Op2_db	
	Op2_file	
	Op2_static	
UC4_EVNT_FILE	Path	
UC4_header	ArchiveKey1	
	ArchiveKey2	
UC4_HOSTG	Archive1	
	Archive2	
UC4_JOB	FileNameSrc	
	FileNameDst	
UC4_JOB	AppName	

⁴ Used with the same name in WF2Change configuration field <Fields> and within the Automic-XML.

⁵ Context:

```
<connection.settings>
<tab.conn.string>
<conn.string OCV_Type="1">
  <row OCV_Type="1" id="1212007" name="param1_abc" value="wert_abc"/>
  ..
</conn.string>
</tab.conn.string>
<tab.conn.properties>
<conn.properties OCV_Type="1">
  <row OCV_Type="1" id="1212007" name="verbindung_param_1" value="wert_abc"/>
  ..
</conn.properties>
</tab.conn.properties>
</connection.settings>
```

	WFName	
	ComponentName	
UC4_JOBS_R3	JobName	
	TargetSystem	
UC4_JOBS_SIEBEL	GatewaySrv	
	EnterprSrv	
	SiebelSrvs	
UC4_JOBS_SQL	ServerPort	
	DatabaseName	
	DataSource	
UC4_JOBS_UNIX	Shell	
	ShellOptions	
	Com	
UC4_JOBS_VMS	JobName	
	QueueName	
UC4_JOBS_WINDOWS	WorkingDirectory	
	Command	
UC4_nontask => all UC4 Objects	folderName	
UC4_outputscan	statustext	since V10
	tooltip	
UC4_PRPT	text	Replacement of VALUE: <entry name="text">VALUE/>
UC4_runtime	Ert	If the Ert is set to a value <0, Ert is not used by the generator. Therefore the Ert of an existing object "reloaded" by WF2 is kept and not changed.
UC4_script ⁶	PRE ScriptReplace ScriptReplace POST ScriptReplace IPOST ScriptReplace	Replacement in specific script in accordance with the regular expression.
UC4_SYNC	CurrState	
	Value	
The definition which <i>tasks</i> are taken into account for changes is based on your filter selection for JOBP and JSCH. The changes will be applied to all tasks of those selected objects.		
UC4_task	Alias	
	ParentAlias	
UC4_task_JSJP	ActFlg	valid values are [0,1]
used in: UC4_JSCH_task UC4_JOBP_task	HoldFlg	valid values are [0,1]
UC4_task_condition used in UC4-task-pre- & - postcondition	Alias	Replacement of all relevant fields VALUE (depending on ID)

⁶ PRESCRIPT for: EVNT, JOBS
 SCRIPT for: all activatable objects, JOBI
 POSTSCRIPT for: JOBF, JOBQ, JOBS
 IPOSTSCRIPT for: JOBQ, JOBS_R3

4.1.3 Replacement and follow-up in scripts

The following AUTOMIC-Script-functionalities will be included by following up the dependencies:

```
:INC[LUDE] Include-Object [StringOLD = StringNEW]
[,NOFOUND=IGNORE][,EXT_REPORT=OFF]

:GET_SYNC(Sync, Typ)
:SET_SYNC(Sync, Aktion)

:DELETE_VAR Variable [,Key]
:PUT[_VAR] Variable,[Key], Wert [, Wert [, Wert [, Wert [, Wert] ] ] ]
:PUT_VAR_COL Variable, [Key], Spalte, Wert

:GET_VAR(Variable [, [ Key ] [, Spalte] ])
:PREP_PROCESS_VAR(Variable [, Key [, Wert [, Spalte]]])

:activate_uc_object(...)
```

Mandatory parameters:

```
<includeDownwards>true</includeDownwards>
<IncludeActivates>true</IncludeActivates>
```

4.1.4 Remarks

1. If you want to replace all references of the object OBJREF, you have to ensure that OBJREF is part of the data set identified by the filter(s), as referenced objects can only be changed if the referential object is changed as well. If you don't want to change OBJREF itself but only all references to OBJREF, then just define a (exclusion) filter for the generator that excludes OBJREF but lets pass all other – the referenced – objects.
2. If an object added or updated does exist in another FOLDer than defined within the object itself, a link is generated within the FOLDer as indicated by the added or updated object to the existing object. (This is standard UC4 behavior.)
3. The sequence of replacing is important. First all replacement in fields referenced by object names are done, after that the replacement in fields of other types takes place. If e.g. you (1) replace the name of a JOB that is also used in activate_uc_object with name ABC by XYZ and (2) do a ScriptReplace XXY to XXZ, as first all replacement in fields referenced by object names are done, the activate_uc_object(ABC) will become activate_uc_object(XYZ) and XXY is afterwards replaced by XXZ, so activate_uc_object(XXZZ) is the result. (This is quite a hypothetical example, but we know that it will take place!)

4.2 WF2ChangeDirect

This basically works like WF2Change, but the read data is not loaded into memory but directly passed through to the generator to ensure that no changes in the data provided by the scheduler can take place and therefore what the scheduler provides is 1:1 written by the generator.

For UC4 there is one change possible, the folderName identifying to what FOLDer the data is written.

4.3 WF2Sync

WF2Sync helps you to keep workflows in sync between environment A identified by the Loader and environment B identified by the Generator. Filters can be applied independently as usual for

Loader (environment A) and Generator (environment B), but usually it makes sense to apply the same filter/s to both connections to ensure that the same data set is considered by WF2Sync.

WF2Sync first shows on object level what the differences between the two environments are:

```
INFO: UC4_Handler: toSyncDelta: JOBS: common objects: [JOBS.UNIX.NEW.5]
INFO: UC4_Handler: toSyncDelta: JOBS: added objects: [JOBS.UNIX.NEW.7, JOBS.UNIX.NEW.6]
INFO: UC4_Handler: toSyncDelta: JOBS: removed objects: [JOBS.UNIX.NEW.4]
```

This example shows for JOBS that environment A and B both have JOBS.UNIX.NEW.5 defined, that after the sync environment B will additionally have JOBS.UNIX.NEW.7, JOBS.UNIX.NEW.6 defined and that JOBS.UNIX.NEW.4 will get removed from environment B.

WF2Sync works with connections API, FileXML and SVNXML.

With a generator connection defined as API the sync is directly executed on the generator connection.

With FileXML two subdirectories are generated in the location where Generator:<FileXML><Data-File>{{FILENAME}} is pointing to: {FILENAME}_additions, {FILENAME}_deletions

With SVNXML the changes are taken into SVN, but not the deletions, they must be done manually.

For UC4: The only thing that can be changed during a 2Sync-transfer is – if provided by an appropriate conversion-configuration-file – to what FOLDER additional objects are written.

For UC4: If an object added or updated does exist in another FOLDER than defined within the object itself, a link is generated in the FOLDER as indicated by the added or updated object to the existing object. (This is standard UC4 behavior.)

Remember that you can use WF2Sync as a delta-reporting tool by using a dryrun (flag -n), as then the data just gets analyzed but not changed.

4.4 WF2Delete

WF2Delete deletes all objects identified by the loader-connection in the environment identified by the generator-connection. It only works if as generator an API-Connection is defined, else it will end in error.

With UC4, all empty FOLDers where an object was deleted by WF2Delete will get removed.

Example:

To delete objects with a special name you have to define a filter:

```
<?xml version="1.0" standalone="yes"?>
<Filter name="testfilter">
  <Tool>UC4</Tool>
  <Include>true</Include>
  <Types>*</Types>
  <NameFilter>*PAT*</NameFilter>
  <DescFilter/>
  <SearchTitle>>false</SearchTitle>
  <SearchDocu>>false</SearchDocu>
  <SearchArch>>false</SearchArch>
  <FolderName>/TEST/PAT/TEMP</FolderName>
  <IncludeSubfolders>true</IncludeSubfolders>
</Filter>
```

In this example the filter is searching for object in the folder /TEST/PAT/TEMP with a name like *PAT*.

After running WF2Check you can check the log-file for results:

INFO: UC4_Handler: sendRequestAndWait<DeleteObject>: object
 <<<SCRI.NEW.PAT.IRGENDWAS>>> deleted

In this example an object SCRI.NEW.PAT.IRGENDWAS which matches the filter-definition was deleted.

4.5 WF2Check

WF2Check helps you to enforce standards and to analyze dependencies.

1. Verification of naming conventions, based on converter definitions.
 The converter regex definitions <TextFrom> are used sequentially to check against the name of the objects defined by the Loader.
2. Verification of existence of referenced objects, based on (optional) generator definitions.
 If a Generator definition is available, this connection is used to check if the objects referenced by the objects defined by the Loader are available there.
3. Generating dependencies to and from all objects in a textual form.

Example:

To check the naming convention define a converter:

```
<?xml version="1.0" standalone="yes"?>
<Convert name="pat_converter_2check_test1" type="2Check">
  <Tool>UC4</Tool>
  <Types>*</Types>
  <Fields>*</Fields>
  <TextFrom>(.)PAT(.)</TextFrom>
  <TextTo></TextTo>
</Convert>
```

With this example the naming convention of all objects will be verified. All objectnames should contain the string "PAT" (please take note of the regular expressions in section **Fehler! Verweisquelle konnte nicht gefunden werden. Fehler! Verweisquelle konnte nicht gefunden werden.**)

After running WF2Check you can check the log-file for results:

- Objects who does not match any naming convention are described as an error:
 ERROR: WFObj: convert2CheckNC: object <<<CALL.NEW.4>>> of type <<<UC4_CALL>>>: does not match any naming conventions
 ERROR: WFObj: convert2CheckNC: object <<<UU_CALL.NEW.4>>> of type <<<UC4_CALL>>>: does not match any naming conventions
- Objects who does match the naming convention are described as an info-message:
 INFO: WFObj: convert2CheckNC: object <<<UU_PAT_3>>> of type <<<UC4_JOBP>>>: does match naming conventions <<<(.)PAT(.)>>>
 INFO: WFObj: convert2CheckNC: object <<<UU_PAT_2>>> of type <<<UC4_JOBP>>>: does match naming conventions <<<(.)PAT(.)>>>

4.6 WF2Visio

WF2Visio generates Microsoft Visio drawings from the data provided by the loader-connection.

4.7 BPMN2WF / WF2BPMN

WF2BPMN generates BPMN2.0-XML definitions from the scheduler data provided by the loader definition.

BPMN2WF generates scheduler specific definitions taken from standard BPMN2.0-XML-data provided by the loader definition.

5 Usage examples

5.1 Regular Expressions (REGEX)

A regular expression (abbreviated regex) is a sequence of characters that defines a search pattern, mainly for use in pattern matching with strings, or string matching, i.e. "find and replace"-like operations. Regex is very powerful, clear and a little bit complicated. That's why we give some good examples here:

purpose	<Fields>	<TextFrom>	<TextTo>
Replace for all Folders the starting string /261_FC/261_ by /PMS	"folderName"	^/261_FC/261_(.*)	/PMS\$1
Replace the string SRP in name by the string {JOB.04_100#VA_S_&\$CLIENT#,AGENT_PMS,1}	"name"	SRP	{JOB.04_100#VA_S_&\$CLIENT#,AGENT_PMS,1}
For svn: replace an empty DOCU-tab entry by the svn-relevant \$id\$	"DocuReplace"	^\$	\\$id\$
Add the string \$PLACEHOLDER\$ at the beginning of every Script	"ScriptReplace"	^	\\$PLACEHOLDER\$
Remove line for include ending on _0001X_IN if there are 3 characters in front of _0001X_IN	"ScriptReplace"	:INC(LUDE)? ..._0001X_IN	
Replace the String :SET &UNIX_CMD# = .. where the equal sign can be surrounded by white spaces and the command itself can be quoted or not, by the command itself	"ScriptReplace"	:SET &UNIX_CMD#\s+=\s+[""](.*)[""]	\$1

5.2 Connections

5.2.1 Connecting a Automic-system via API

Using the Automic user WF2 of undefined/empty department. Objects will be overwritten, links will be kept and if newly added objects have no FOLDER defined, they will be placed into /_WF2IMPORT.

```
<?xml version="1.0" standalone="yes"?>
<Connection name="connection_automicV9_userWF2_clnt1000">
  <ConnectionType>API</ConnectionType>
  <Tool>UC4</Tool>
  <Version>9.101</Version>
  <SlowDown>0</SlowDown>
  <API>
    <Server>192.168.68.165</Server>
    <Port>2217</Port>
    <Mandant>1000</Mandant>
    <User>WF2</User>
    <Department/>
    <Password>password</Password>
    <Overwrite>true</Overwrite>
    <KeepLinks>true</KeepLinks>
    <DefaultFolder>/_WF2IMPORT</DefaultFolder>
  </API>
</Connection>
```

5.2.2 Connection using xml-files

Take all files C:/development/automic/xml/devfiles*.xml as input.

```
<?xml version="1.0" standalone="yes"?>
<Connection name="connection_devdirectory">
  <ConnectionType>FileXML</ConnectionType>
  <Tool>UC4</Tool>
  <Version>9.101</Version>
  <SlowDown>0</SlowDown>
  <FileXML>
    <DataFile>C:/development/automic/xml/devfiles*</DataFile>
  </FileXML>
</Connection>
```

5.3 Filters

5.3.1 Filter for *all* objects of a client

```
<?xml version="1.0" standalone="yes"?>
<Filter name="testfilter_allobjects">
  <Tool>UC4</Tool>
  <Include>true</Include>
  <Types>*</Types>
  <NameFilter>*</NameFilter>
  <DescFilter/>
  <SearchTitle>>false</SearchTitle>
  <SearchDocu>>false</SearchDocu>
  <SearchArch>>false</SearchArch>
  <FolderName>/</FolderName>
  <IncludeSubfolders>true</IncludeSubfolders>
</Filter>
```

5.3.2 Filter for all objects in a specific folder including subfolders

```
<?xml version="1.0" standalone="yes"?>
<Filter name="testfilter_allobjects">
  <Tool>UC4</Tool>
  <Include>true</Include>
  <Types>*</Types>
  <NameFilter>*</NameFilter>
  <DescFilter/>
  <SearchTitle>>false</SearchTitle>
  <SearchDocu>>false</SearchDocu>
  <SearchArch>>false</SearchArch>
  <FolderName>/DEVELOPMENT/SAP/PROJECTS/FSCD</FolderName>
  <IncludeSubfolders>true</IncludeSubfolders>
</Filter>
```

5.3.3 Filter for all workflows (JOBP) with a names like ‘*FSCD*’

```
<?xml version="1.0" standalone="yes"?>
<Filter name="testfilter_onlyJOBP_nameFSCD">
  <Tool>UC4</Tool>
  <Include>true</Include>
  <Types>JOBP</Types>
  <NameFilter>*FSCD*</NameFilter>
```

```

<DescFilter/>
<SearchTitle>>false</SearchTitle>
<SearchDocu>>false</SearchDocu>
<SearchArch>>false</SearchArch>
<FolderName></FolderName>
<IncludeSubfolders>>true</IncludeSubfolders>
</Filter>

```

5.3.4 Filter for all objects with object-title like **“*DEV*”**

```

<?xml version="1.0" standalone="yes"?>
<Filter name="testfilter_allObjects_titleDEV">
  <Tool>UC4</Tool>
  <Include>>true</Include>
  <Types>*</Types>
  <NameFilter>*</NameFilter>
  <DescFilter>*DEV*</DescFilter>
  <SearchTitle>>true</SearchTitle>
  <SearchDocu>>false</SearchDocu>
  <SearchArch>>false</SearchArch>
  <FolderName></FolderName>
  <IncludeSubfolders>>true</IncludeSubfolders>
</Filter>

```

5.4 Converter

5.4.1 Replace in all objects the name and the title from **“*DEV*”** to **“*PROD*”**

```

<?xml version="1.0" standalone="yes"?>
<Convert name="converter_change_DEV2PROD" type="2Change">
  <Tool>UC4</Tool>
  <Types>*</Types>
  <Fields>"name", "title"</Fields>
  <TextFrom>(.*>DEV(.*)</TextFrom>
  <TextTo>$1PROD$2*</TextTo>
</Convert>

```

5.4.2 Rename only workflows (JOBP): add **“TT_”** at the beginning

```

<?xml version="1.0" standalone="yes"?>
<Convert name="converter_change_nameTT" type="2Change">
  <Tool>UC4</Tool>
  <Types>JOBP</Types>
  <Fields>"name"</Fields>
  <TextFrom>(^.*$)</TextFrom>
  <TextTo>TT_<math>\$1</math></TextTo>
</Convert>

```

5.4.3 Change folder name from anywhere to a specific folder

```
<?xml version="1.0" standalone="yes"?>
<Convert name="converter_change_folder" type="2Change">
  <Tool>UC4</Tool>
  <Types>*</Types>
  <Fields>"folderName"</Fields>
  <TextFrom>(^.*$)</TextFrom>
  <TextTo>WF2TESTS/TESTER1</TextTo>
</Convert>
```

5.5 Delete all objects of a folder (and subfolders)

AppConfig-file:

```
<?xml version="1.0" standalone="yes"?>
<AppConfig name="wf2delete">
  <LogFile>./Log/WF2.log</LogFile>
  <DebugLevel>0</DebugLevel>
  <Action>2Delete</Action>
  <IncludeDownwards>>false</IncludeDownwards>
  <IncludeActivates>>false</IncludeActivates>
</AppConfig>
```

Filter:

```
<Filter name="testfilter_allobjects">
  <Tool>UC4</Tool>
  <Include>>true</Include>
  <Types>*</Types>
  <NameFilter>*</NameFilter>
  <DescFilter/>
  <SearchTitle>>false</SearchTitle>
  <SearchDocu>>false</SearchDocu>
  <SearchArch>>false</SearchArch>
  <FolderName>/DEVELOPMENT/SAP/PROJECTS/FSCD</FolderName>
  <IncludeSubfolders>>true</IncludeSubfolders>
</Filter>
```

5.6 Transport all objects of a folder to another client

AppConfig-file:

```
<?xml version="1.0" standalone="yes"?>
<AppConfig name="wf2pass">
  <LogFile>./Log/WF2.log</LogFile>
  <DebugLevel>0</DebugLevel>
  <Action>2Pass</Action>
  <IncludeDownwards>>false</IncludeDownwards>
  <IncludeActivates>>false</IncludeActivates>
</AppConfig>
```

Filter:

```
<Filter name="testfilter_allobjects">
```

```

<Tool>UC4</Tool>
<Include>true</Include>
<Types>*</Types>
<NameFilter>*</NameFilter>
<DescFilter/>
<SearchTitle>>false</SearchTitle>
<SearchDocu>>false</SearchDocu>
<SearchArch>>false</SearchArch>
<FolderName>/DEVELOPMENT/SAP/PROJECTS/FSCD</FolderName>
<IncludeSubfolders>>true</IncludeSubfolders>
</Filter>

```

Connection-file 1:

```

<?xml version="1.0" standalone="yes"?>
<Connection name="connection_automicV9_userWF2_clnt1000">
  <ConnectionType>API</ConnectionType>
  <Tool>UC4</Tool>
  <Version>9.101</Version>
  <SlowDown>0</SlowDown>
  <API>
    <Server>uc4server.company.com</Server>
    <Port>2217</Port>
    <Mandant>1000</Mandant>
    <User>DEVELOPER</User>
    <Department/>
    <Password>password</Password>
    <Overwrite>>true</Overwrite>
    <KeepLinks>>true</KeepLinks>
    <DefaultFolder>/_WF2IMPORT</DefaultFolder>
  </API>
</Connection>

```

Connection-file 2:

```

<?xml version="1.0" standalone="yes"?>
<Connection name="connection_automicV9_userWF2_clnt1000">
  <ConnectionType>API</ConnectionType>
  <Tool>UC4</Tool>
  <Version>9.101</Version>
  <SlowDown>0</SlowDown>
  <API>
    <Server>uc4server.company.com</Server>
    <Port>2217</Port>
    <Mandant>2000</Mandant>
    <User>PRODUCTIONUSER</User>
    <Department/>
    <Password>password</Password>
    <Overwrite>>true</Overwrite>
    <KeepLinks>>true</KeepLinks>
    <DefaultFolder>/_WF2IMPORT</DefaultFolder>
  </API>
</Connection>

```


5.7 Export all objects of a client to XML

AppConfig-file:

```
<?xml version="1.0" standalone="yes"?>
<AppConfig name="wf2CHANGE">
  <LogFile>./Log/WF2.log</LogFile>
  <DebugLevel>0</DebugLevel>
  <Action>2ChangeDirect</Action>
  <IncludeDownwards>>false</IncludeDownwards>
  <IncludeActivates> false </IncludeActivates>
</AppConfig>
```

Filter:

```
<Filter name="testfilter_allobjects">
  <Tool>UC4</Tool>
  <Include>>true</Include>
  <Types>*</Types>
  <NameFilter>*</NameFilter>
  <DescFilter/>
  <SearchTitle>>false</SearchTitle>
  <SearchDocu>>false</SearchDocu>
  <SearchArch>>false</SearchArch>
  <FolderName>/</FolderName>
  <IncludeSubfolders>>true</IncludeSubfolders>
</Filter>
```

Connection-file 1:

```
<?xml version="1.0" standalone="yes"?>
<Connection name="connection_automicV9_userWF2_clnt1000">
  <ConnectionType>API</ConnectionType>
  <Tool>UC4</Tool>
  <Version>9.101</Version>
  <SlowDown>0</SlowDown>
  <API>
    <Server>uc4server.company.com</Server>
    <Port>2217</Port>
    <Mandant>1000</Mandant>
    <User>DEVELOPER</User>
    <Department/>
    <Password>password</Password>
    <Overwrite>>true</Overwrite>
    <KeepLinks>>true</KeepLinks>
    <DefaultFolder>/_WF2IMPORT</DefaultFolder>
  </API>
</Connection>
```

Connection-file 2:

```
<?xml version="1.0" standalone="yes"?>
<Connection name="connection_devdirectory">
  <ConnectionType>FileXML</ConnectionType>
  <Tool>UC4</Tool>
  <Version>9.101</Version>
  <SlowDown>0</SlowDown>
```

```
<FileXML>
  <DataFile>C:/development/automic/xml/devfiles/</DataFile>
</FileXML>
</Connection>
```

5.8 Replace the fields host and login as String instead of as referenced object

If you want to do „standard“ replacement by changing e.g. the field host or login, usually you replace the name of the host- or login-object by:

```
<?xml version="1.0" standalone="yes"?>
<Convert name="converter_change_login" type="2Change">
  <Tool>UC4</Tool>
  <Types>*</Types>
  <Fields>"Login", "LoginSrc", "LoginDst"</Fields>
  <TextFrom>^LOGI_ABC_TST$</TextFrom>
  <TextTo>LOGI_ABC_PROD</TextTo>
</Convert>
```

Therefore the replacement takes place, you have to ensure that the object LOGI_ABC_TST is part of the data set identified by the filter referenced objects can only be changed if the referential object is changed as well!

6 WF2: GUI

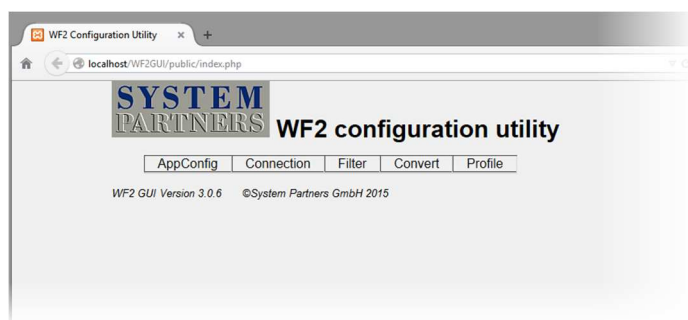
The WF2 GUI allows users to carry out various actions, such as to create new configurations files, to load existing files for making amendments, to copy existing files or to delete files which are no longer used.

For the description of the different field values, please refer to the appropriate sections *in chapter 3.3 Configuration-files*.

6.1 Calling the WF2 GUI

Start the WF2 GUI in your browser by typing in the address according to the installation of the GUI, e.g. `http://[localhost|IP-address]/WF2GUI/`.

You are forwarded to the index page and the selection panel as illustrated below is displayed.

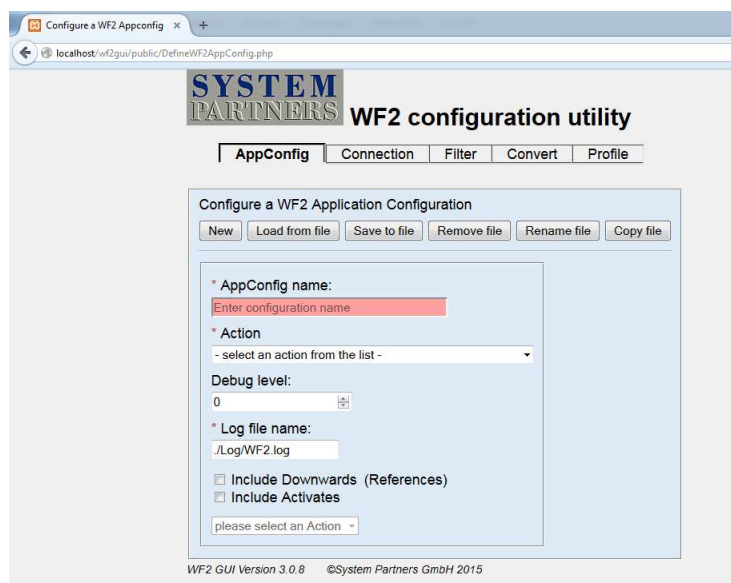


You may now choose from the selection panel to carry out the appropriate configuration actions.

6.2 AppConfig

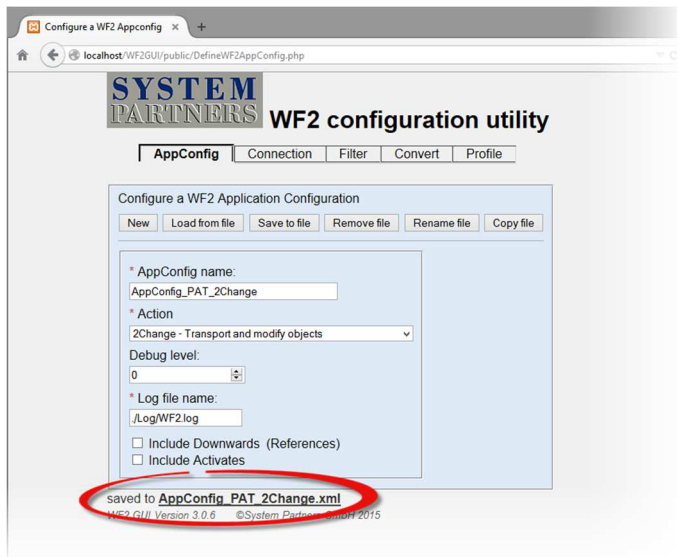
Create or amend basic configuration files.

- Click on “AppConfig” on the selection panel
→ by default, the window for creating a new configuration is displayed



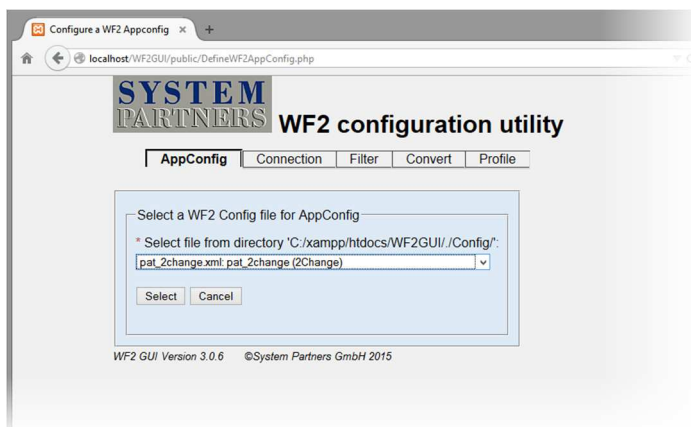
6.2.1 Create a new AppConfig-file

- Click on “New”-button
- Fill in values or select from combobox
 - mandatory fields are marked with a red asterisk
 - for fields-descriptions see chapter 3.3 *Configuration-files*
- Click on “Save to file”-button
 - the newly created file is saved to [...]htdocs\WF2GUI\Config.
 - Confirmation is shown at the bottom of the GUI.

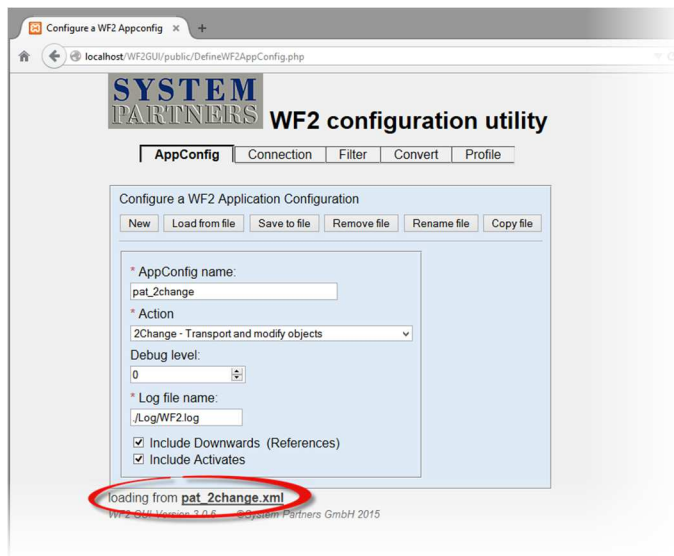


6.2.2 Modify an existing AppConfig-file

- Click on “Load from file”-button
- Choose the appropriate file from the list
 - the chosen file shows in the “Select file from...” field



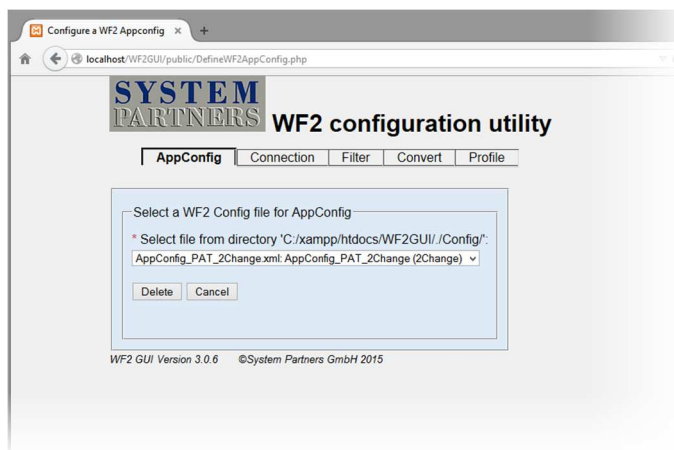
- Confirm by clicking on the “Select” button
- The actual values of the chosen file are displayed as shown in the example below



- Make amendments as desired
→ for fields-descriptions see chapter 3.3 *Configuration-files*
- Click “Save to file” button to save the amendments
→ Changes to ‘AppConfig name’ will result in the creation of a new file
→ Confirmation is shown at the bottom of the GUI.

6.2.3 Remove an AppConfig-file

- Click on “Remove file”-button
- Choose the appropriate file from the list
→ the chosen file shows in the “Select file from...” field

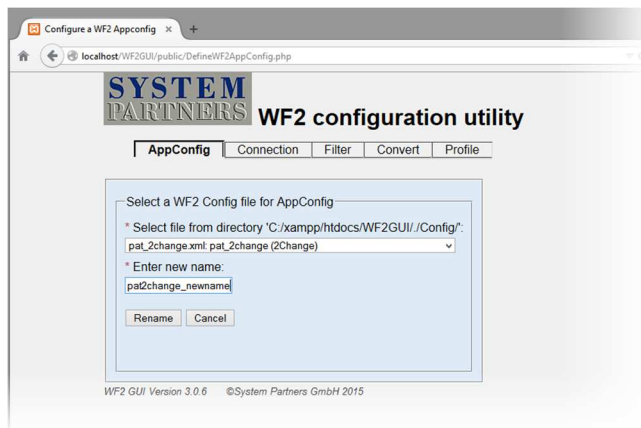


- Click on “Delete”-button
→ File to be deleted is displayed at the bottom of the GUI
- Press “Confirm” button to delete the file
→ The deletion is confirmed at the bottom of the GUI

6.2.4 Rename an AppConfig-file

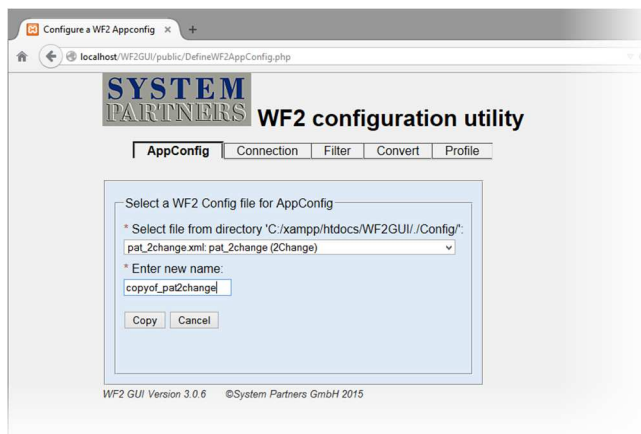
- Click on “Rename file”-button

- Choose the appropriate file from the list
→ the chosen file shows in the “Select file from...” field
- Enter the new file name (without file extension as it is added automatically)
- Click on “Rename”-button
→ The renaming is confirmed at the bottom of the GUI



6.2.5 Copy an AppConfig-file

- Click on “Copy file”-button
- Choose the appropriate file from the list
→ the chosen file shows in the “Select file from...” field
- Enter the new file name (without file extension as it is added automatically)
- Click on “Copy”-button
→ The copying is confirmed at the bottom of the GUI



6.3 Connection

Create or amend connection files.

This chapter is limited to describing the creation of new files. However, all other functions (load from existing file, rename, delete, copy) are available in the same way as stated before.

6.3.1 General

- Click on “Connection” on the selection panel
 - by default, the form for creating a new configuration is displayed
 - the form is subdivided into a ‘General’ section and a section which is specific to a connection-type
 - the form for the connection-type depends on the selection made in the ‘General’ section
 - See also chapter 3.3 *Configuration-files* for detailed field descriptions

- Fill in values or select from combobox in the ‘General’ form
 - mandatory fields are marked with a red asterisk
- Fill in values or select from combobox in the form related to the connection-type as described hereafter

6.3.2 Configure a connection to an AUTOMIC System (API Connection)

- Fill in values or select from combobox in the ‘API Connection’ form
 - mandatory fields are marked with a red asterisk
- Click on “Save to file”-button
 - The newly created file is saved under the name entered in the ‘General’ form to [...]htdocs\WF2GUI\Config.
 - Confirmation is shown at the bottom of the GUI.

Configure a WF2 Connection

General

* Connection name: pat_connectionAUTOMICV9

* Connection Type: ApplicationInterface

* Scheduler: UC4 - Automatic ONE Automation

MajorRelease Number: 9

MinorRelease Number: 101

Slow down[ms]: 0

API Connection

* Server: 192.168.68.165

* Port: 2217

* Mandant: 1000

Department: sypa

* Username: WF2

* Password: *****
can be encrypted by ucpasswid

Overwrite existing objects

Folderlinks will not be kept

DefaultFolder: /_WF2IMPORT

WF2 GUI Version 3.0.6 ©System Partners GmbH 2015

6.3.3 Configure a connection to one or more xml-files (FileXML)

- Fill in values or select from combobox in the 'XML File' form
 - mandatory fields are marked with a red asterisk
 - for fields-descriptions see chapter 3.3 Configuration-files
- Field 'Enter data file name pattern'
 - shows by default the path to the WF2GUI home-directory
 - may be altered manually to an alternative path and a specific file
 - wildcards ('*', '?') may be used to select multiple files
- Field '...or select one from list'
 - click on "down arrow" lists all objects in the directory defined in the previous field only if wildcards are used
 - '..*' moves up one level in the folder-structure and enables listing of all objects

Configure a WF2 Connection

General

* Connection name: pat_connectionAUTOMIC_XMLtest

* Connection Type: XML file or directory

* Scheduler: UC4 - Automatic ONE Automation

MajorRelease Number: 9

MinorRelease Number: 101

Slow down[ms]: 0

XML File

Enter data file name pattern: C:\DEV\xmlfiles*

...or select one from list:

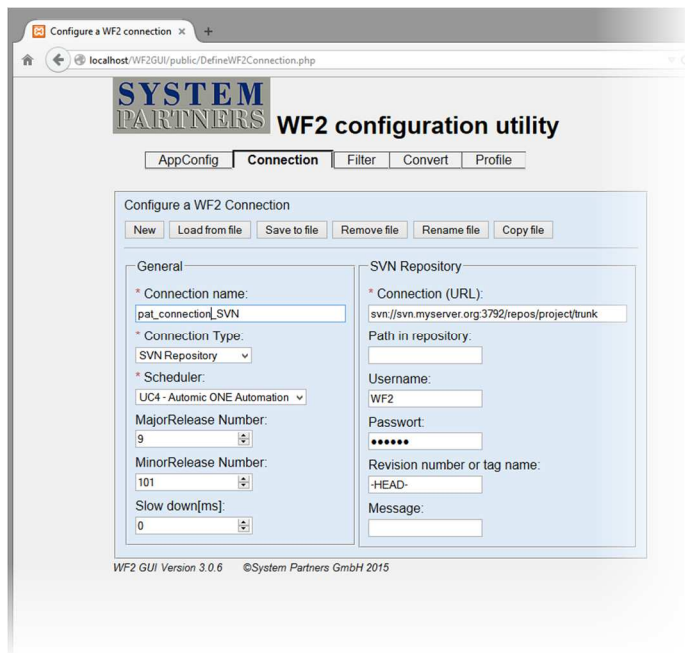
▼

WF2 GUI Version 3.0.6 ©System Partners GmbH 2015

- Click on “Save to file”-button
 - The newly created file is saved under the name entered in the ‘General’ form to [...]htdocs\WF2GUI\Config.
 - Confirmation is shown at the bottom of the GUI.

6.3.4 Configure a connection to a SVN repository (SVNXML)

- Fill in values or select from combobox in the ‘SVN Repository’ form
 - mandatory fields are marked with a red asterisk
 - for fields-descriptions see chapter 3.3 *Configuration-files*



- Click on “Save to file”-button
 - The newly created file is saved under the name entered in the ‘General’ form to [...]htdocs\WF2GUI\Config.
 - Confirmation is shown at the bottom of the GUI.

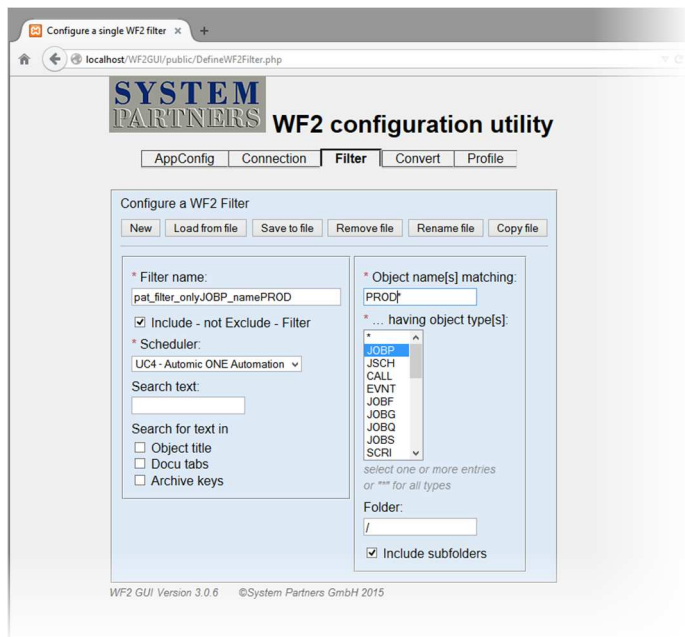
6.4 Filter

Create or amend filter files.

This chapter is limited to describing the creation of new files. However, all other functions (load from existing file, rename, delete, copy) are available in the same way as stated before.

6.4.1 Create a new Filter-file

- Click on “Filter” on the selection panel
 - by default, the window for creating a new configuration is displayed
- Fill in values or select from combobox
 - mandatory fields are marked with a red asterisk
 - for field-descriptions see chapter 3.3 *Configuration-files*



Click on “Save to file”-button

→ The newly created file is saved to [...]htdocs\WF2GUI\Config.

→ Confirmation is shown at the bottom of the GUI.

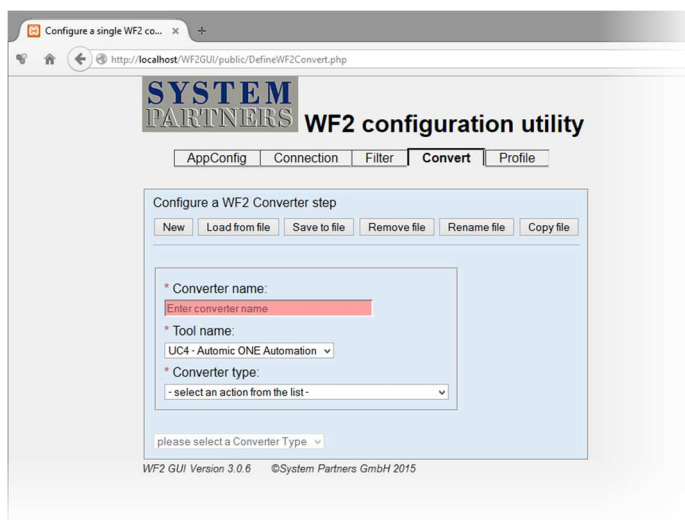
6.5 Converter

Create or amend converter files.

This chapter is limited to describing the creation of new files. However, all other functions (load from existing file, rename, delete, copy) are available in the same way as stated before.

6.5.1 Create a new Converter-file

- Click on “Converter” on the selection panel
→ by default, the window for creating a new configuration is displayed
- Fill in values or select from combobox
→ mandatory fields are marked with a red asterisk
→ for field-descriptions see chapter 3.3 *Configuration-files*



Converter-files are only used for the actions

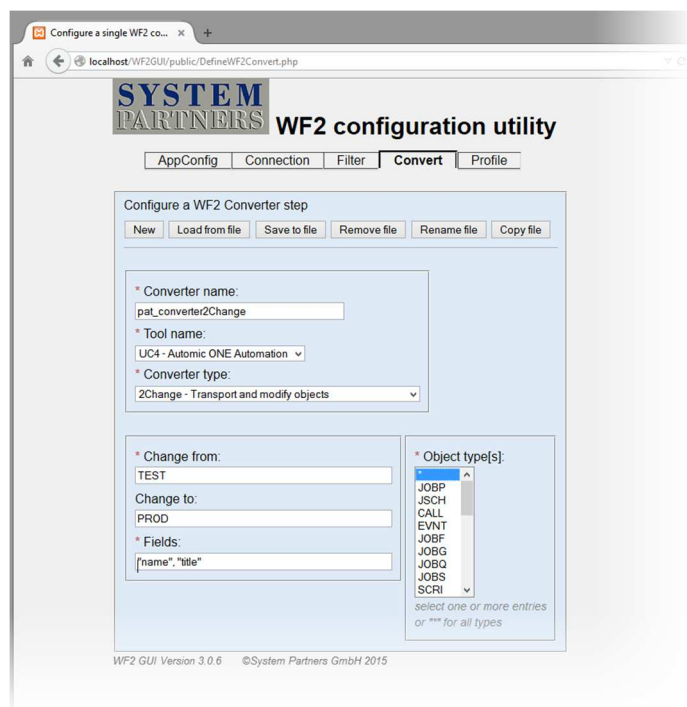
- 2Change – Transport and modify objects
- 2ChangeDirect – Transport and basically modify objects
- 2Check – do various checks on objects

Do not create such files for actions other than that, regardless the fact that all WF2-actions are displayed in the combobox-listing.

After choosing a converter type from the dropdown menu a specific sub-form opens below the main form for the entry of the configuration required.

6.5.2 Configuration for action ‘2Change’

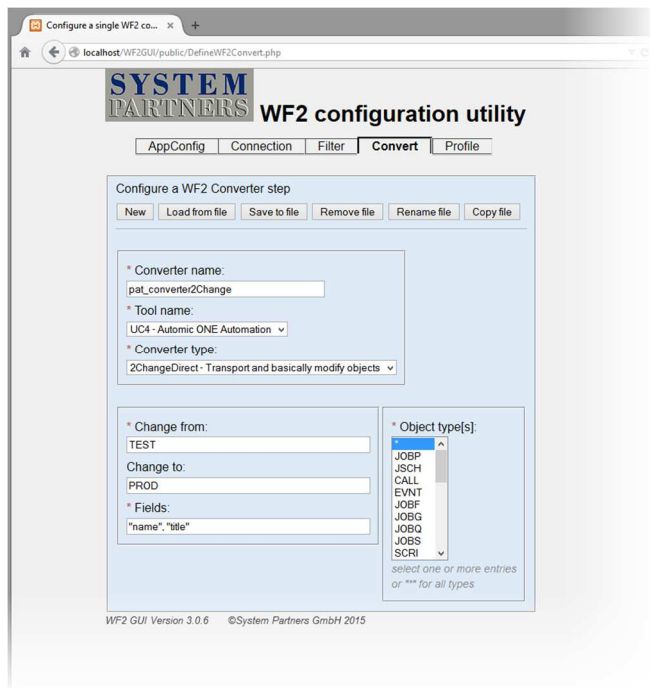
- Fill in values to the relevant fields or select from combobox
 - mandatory fields are marked with a red asterisk
 - for field-descriptions see chapter 3.3 *Configuration-files*
- Click on “Save to file”-button
 - The newly created file is saved under the name entered in the main form to [...]htdocs\WF2GUI\Config.
 - Confirmation is shown at the bottom of the GUI.



6.5.3 Configuration for action ‘2ChangeDirect’

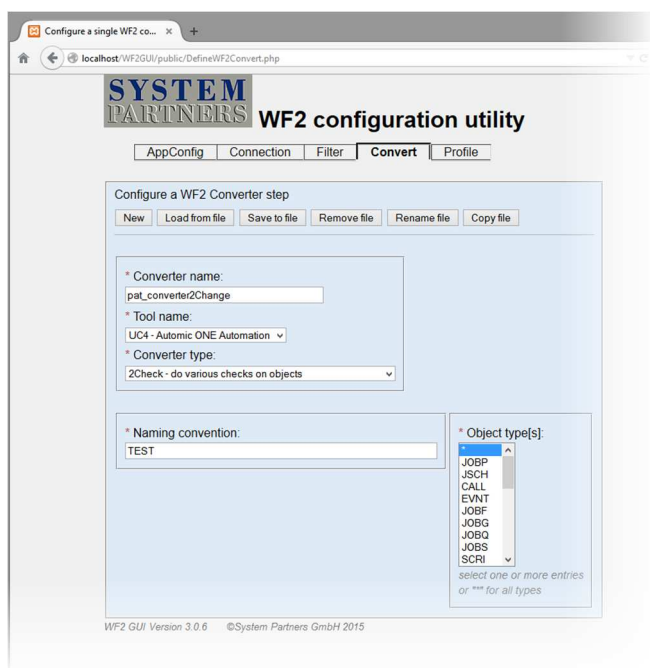
- Fill in values to the relevant fields or select from combobox
 - mandatory fields are marked with a red asterisk
 - for field-descriptions see chapter 3.3 *Configuration-files*

- Click on “Save to file”-button
 - The newly created file is saved under the name entered in the main form to [...]htdocs\WF2GUI\Config.
 - Confirmation is shown at the bottom of the GUI.



6.5.4 Configuration for action ‘2Check’

- Fill in values to the relevant fields or select from combobox
 - mandatory fields are marked with a red asterisk
 - for field-descriptions see chapter 3.3 *Configuration-files*



-
- Click on “Save to file”-button
 - The newly created file is saved under the name entered in the main form to [...]htdocs\WF2GUI\Config

6.5.5 Sync

No converter file is required for this action.

6.5.6 2Delete

No converter file is required for this action.

6.6 Profile

Create or amend profile files.

Profile is used to create the command line for any WF2-action to be executed. It allows selecting from a variety of configuration file to build the relevant command.

The following configuration files are needed to create a profile file.

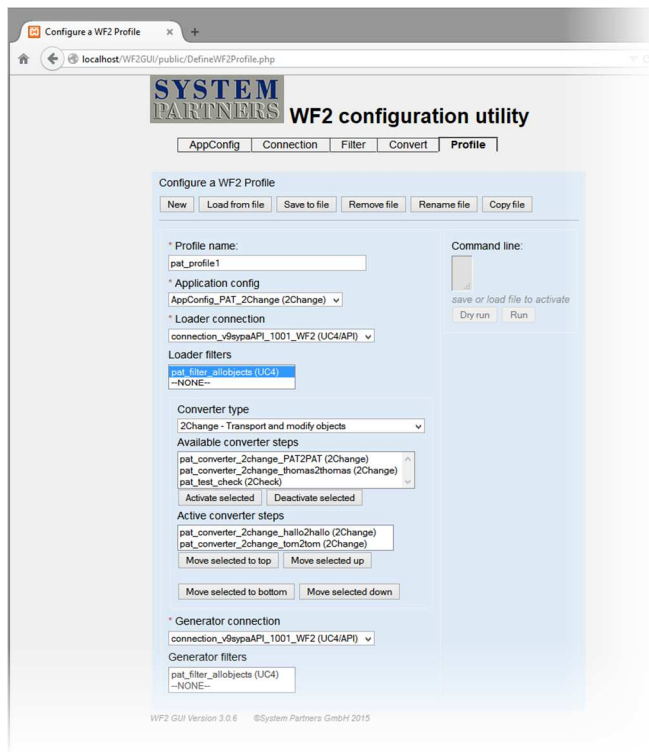
- ApplicationConfig
- Connection file (Extract)
- Connection file (Load)
- Filter files (Extract and Load)
- Converter files (Transform)

This chapter is limited to describing the creation of new files. However, all other functions (load from existing file, rename, delete and copy) are available in the same way as stated before.

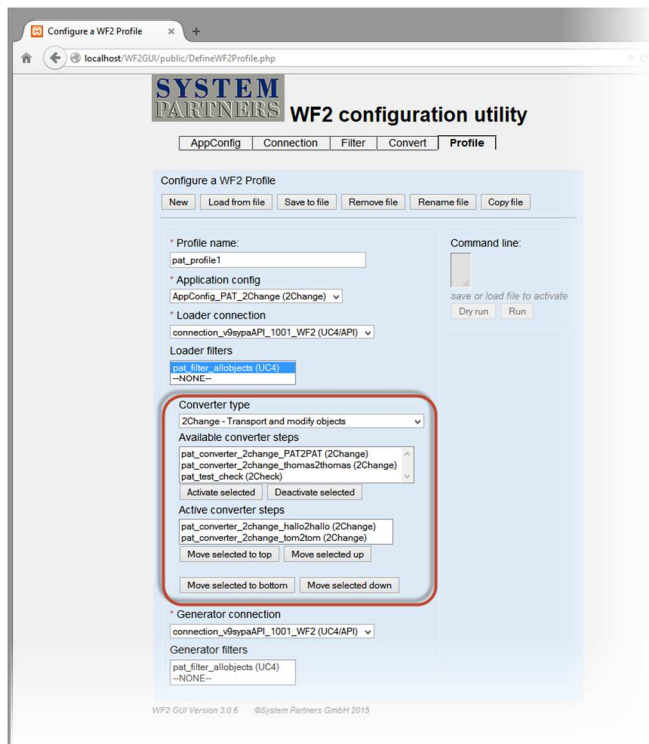
Although it is possible to load previously created files and run the corresponding WF2-actions, it is advised to use this function with care to avoid unwanted results.

6.6.1 Create a new Profile-file

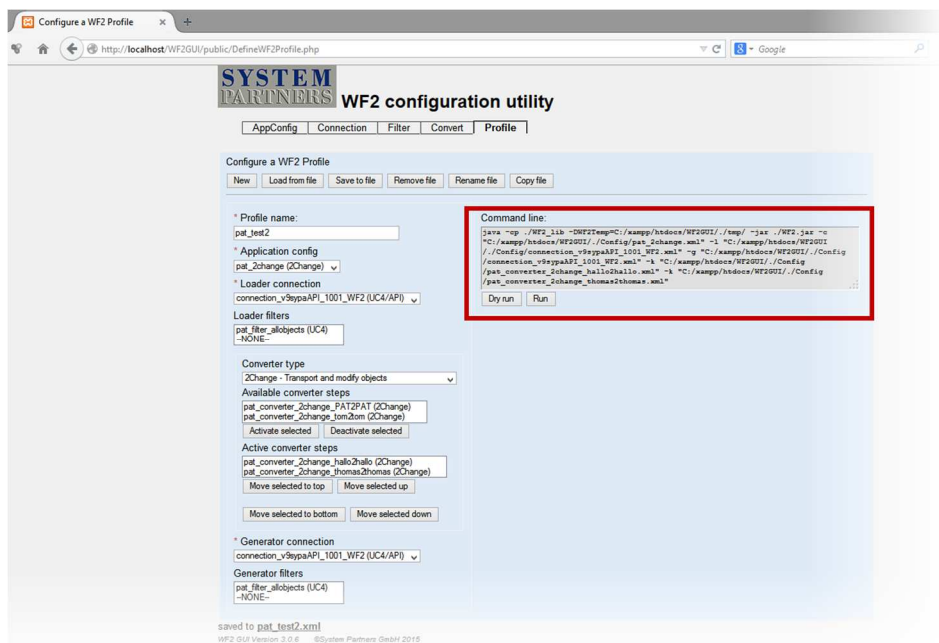
- Click on “Profile” on the selection panel
 - by default, the window for creating a new configuration is displayed
- Fill in values or select from combobox
 - mandatory fields are marked with a red asterisk
 - for field-descriptions see chapter 3.3 *Configuration-files*



- Choose action in field Converter Type
 - Depending on choice different configurations are possible
 - '2Change', '2ChangeDirekt' an '2Check' allow the use of one or more converter steps
 - Select the converter steps required in 'Available converter steps' and press the "Activate selected"-button
 - The activated converter files are now shown in 'Active converter steps'
 - The converter files are processed in the sequence shown in 'Active converter steps'.
 - The order of the files can be changed to ensure correct processing.



- Click on “Save to file”-button
 - The newly created file is saved under the name entered in the main form to [...]htdocs\WF2GUI\Config.
 - Confirmation is shown at the bottom of the GUI.
 - The command line generated is displayed in field ‘Command line’.
 - The command line generated may be copied to a script-file or to an AUTOMIC job-object.
 - The execution of the WF2 task can take place any time and according to your requirements.
 - Alternatively, run the WF2 task directly from the GUI (see next chapter).



6.6.2 Running WF2 from the GUI

Use the WF2 GUI anytime to run a newly or previously created profile-file. The execution is based on the command line shown in the respective field.

- Click on “Profile” on the selection panel
 - by default, the window for creating a new configuration is displayed
- Create a new profile or load a previously created profile.
 - check the correctness of the reused profile and make amendments if needed
 - save amendments to get the updated command line
- Click the ‘Run’ or the ‘Dry run’-button to execute WF2
 - Run: Full ETL (Extract – Transform – Load) processing
 - Dry run: runs WF2 with parameter ‘-n’. Processing stops after ‘Extract’. ‘Transform’ and ‘Load’ are skipped.

Configure a WF2 Profile

http://localhost/WF2GUI/public/DefineWF2Profile.php

SYSTEM PARTNERS WF2 configuration utility

AppConfig | Connection | Filter | Convert | Profile

Running pat_test1 (Last modified: 2015-07-12 14:25:50) from C:\xampp\htdocs\WF2GUI:

```
java -cp /WF2/lib -DWF2Temp=C:\xampp\htdocs\WF2GUI\temp/ -jar /WF2.jar -c "C:\xampp\htdocs\WF2GUI\./Config/pat_change.xml" -l "C:\xampp\htdocs\WF2GUI\./Config/connection_vsyspaf1_1001_WF2.xml" -g "C:\xampp\htdocs\WF2GUI\./Config/connection_vsyspaf1_1001_WF2.xml" -v "C:\xampp\htdocs\WF2GUI\./Config/pat_filter_allobjects.xml" -k "C:\xampp\htdocs\WF2GUI\./Config/pat_converter_change_thomas2thomas.xml" -w "C:\xampp\htdocs\WF2GUI\./Config/pat_filter_allobjects.xml"
```

INFO: Reading Configfile for Logfile C:\xampp\htdocs\WF2GUI\./Config/pat_change.xml
INFO: Output written to Logfile ./Log/WF2.log
Command returned unsuccessfully with status 55

Close and go back to profiles

Contents of ./Log/WF2.log

```
20150717.092807.488 WF2 Release 3.0.6
20150717.092807.503 INFO: Starting...
20150717.092807.503 INFO: Using C:\xampp\htdocs\WF2GUI\./Config/pat_change.xml
20150717.092807.503 INFO: Using C:\xampp\htdocs\WF2GUI\./Config/connection_vsyspaf1_1001_WF2.xml
20150717.092807.503 INFO: Using C:\xampp\htdocs\WF2GUI\./Config/connection_vsyspaf1_1001_WF2.xml
20150717.092807.503 INFO: AppConfig name : pat_change
20150717.092807.503 INFO: AppConfig logfile : ./Log/WF2.log
20150717.092807.503 INFO: AppConfig DebugLevel : 0
20150717.092807.503 INFO: AppConfig Action : Change
20150717.092807.503 INFO: AppConfig IncludeDownwards : true
20150717.092807.503 INFO: Read Loader WFV_Connection:--
20150717.092807.503 INFO: Reading WFV_Connection File C:\xampp\htdocs\WF2GUI\./Config/connection_vsyspaf1_1001_WF2.xml
20150717.092807.503 INFO: WFV_Connection: <Connection name> is set to: connection_vsyspaf1_1001_WF2
20150717.092807.503 INFO: WFV_Connection: <ConnType> is set to: API
20150717.092807.503 INFO: WFV_Connection: <URL> is set to: 0x4
20150717.092807.503 INFO: WFV_Connection: <Version> is set to: 0.101
20150717.092807.503 INFO: WFV_Connection: <IPDomain> is set to: 0
20150717.092807.503 INFO: WFV_Connection_API: <Server> is set to: 192.168.68.165
20150717.092807.503 INFO: WFV_Connection_API: <Port> is set to: 2217
20150717.092807.503 INFO: WFV_Connection_API: <Method> is set to: 1005
20150717.092807.503 INFO: WFV_Connection_API: <Department> is set to: WF2
20150717.092807.503 INFO: WFV_Connection_API: <Password> is read:
20150717.092807.503 INFO: WFV_Connection_API: <Certificate> is set to: true
20150717.092807.503 INFO: WFV_Connection_API: <ServerLink> is set to: true
20150717.092807.503 INFO: WFV_Connection_API: <DefaultFolder> is set to: /WF2IMPORT
20150717.092807.503 INFO: Read Generator WFV_Connection:--
20150717.092807.503 INFO: Reading WFV_Connection File C:\xampp\htdocs\WF2GUI\./Config/connection_vsyspaf1_1001_WF2.xml
20150717.092807.519 INFO: WFV_Connection: <Connection name> is set to: connection_vsyspaf1_1001_WF2
20150717.092807.519 INFO: WFV_Connection: <ConnType> is set to: API
20150717.092807.519 INFO: WFV_Connection: <URL> is set to: 0x4
20150717.092807.519 INFO: WFV_Connection: <Version> is set to: 0.101
20150717.092807.519 INFO: WFV_Connection: <IPDomain> is set to: 0
20150717.092807.519 INFO: WFV_Connection_API: <Server> is set to: 192.168.68.165
20150717.092807.519 INFO: WFV_Connection_API: <Port> is set to: 2217
20150717.092807.519 INFO: WFV_Connection_API: <Method> is set to: 1005
20150717.092807.519 INFO: WFV_Connection_API: <Department> is set to: WF2
20150717.092807.519 INFO: WFV_Connection_API: <Password> is read:
20150717.092807.519 INFO: WFV_Connection_API: <Certificate> is set to: true
20150717.092807.519 INFO: WFV_Connection_API: <ServerLink> is set to: true
20150717.092807.519 INFO: WFV_Connection_API: <DefaultFolder> is set to: /WF2IMPORT
20150717.092807.519 INFO: Starting Loader:--
20150717.092807.519 INFO: Closing Logfile
**END OF FILE**
```

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The details of the execution are displayed in your browser. This includes information about the profile used, the command line executed, relevant messages (infos, warnings, errors) and the return code.

In addition to that, the run-log is displayed in a separate field.

7 Troubleshooting

7.1 Interpreting Exit-Codes

exitcode	Message	Interpretation
1	E.g.: ERROR: Parameters -c -l -g are mandatory.	The commandline-parameters are not correct
20	ERROR: Log: Could not parse Configfile	Check if config-file exists or is readable.
21	ERROR: Log.open: tag <AppConfig> not found in Configfile"	Check if the configuration file is an xml-file for WF2
22	E.g.: ERROR: Log.open: Could not read information for 'name' in '<AppConfig name=...>'. ERROR: readInputFile: node.getNodeType() for <Parameter>: Probably tag <Parameter> not found	Check if the configuration file is an xml-file for WF2
23	ERROR: Log: open: BufferedWriter Logfile-name could not be opened	Cannot create logfile
30	ERROR: Reading Loader WF2V_Connection File loaderfile.xml failed. Exiting...	Check if the xml-file for the loader-connection exists and is readable
31	E.g.: FATAL: Loader FileXML for Tool UC4 not yet implemented	The given loader-connection in the xml-file is not yet implemented in WF2.
32	E.g.: ERROR: Loader: unknown ConnectionType	Check the definition in the xml-file
33	FATAL: Loader: unknown Tool FATAL: Generator: unknown Tool	Check the definition in the xml-file
34	ERROR: Loader: failed	Something during the execution of the Loader went wrong that could lead to severe errors. Check your WF2-log for details.
40	ERROR: Reading Generator WF2V_Connection File failed. Exiting...	Check if the xml-file for the generator-connection exists or is readable
41	E.g.: ERROR: "2Change": "UC4" to "CPS" is not permitted. ERROR: 2Delete: "UC4" to "CPS": 2Delete is only valid for Generator-ConnectionType API.	Check the xml-files for appropriate connection-attributes
43	ERROR: Converter: unknown action	Check the xml-file for appropriate action-definition
44	ERROR: Converter: failed	Something during the execution of the Converter went wrong that could lead to severe errors. Check your WF2-log for details.
50	ERROR: Loader license check failed. Exiting...	License-check failed
51	FATAL: Generator for Tool not yet implemented	The given generator-connection in the xml-file is not yet implemented in WF2.
52	ERROR: Generator: unknown Connection-	Check the definition in the xml-file

	Type	
53	FATAL: Generator: unknown Tool	Check the definition in the xml-file
54	ERROR: Generator: failed	Something during the execution of the Generator went wrong that could lead to severe errors. Check your WF2-log for details.
55	FATAL: WF2V_cons: main: UNEXPECTED PROBLEM(1):	Technical problem: contact WF2-Support
90	ERROR: Problems closing Logfile	Technical problem

7.2 Interpreting Log-Messages

7.2.1 UNEXPECTED PROBLEM(1): || java.lang.NoClassDefFoundError

Example:

FATAL: WF2V_cons: main: UNEXPECTED PROBLEM(1): || java.lang.NoClassDefFoundError:...

Interpretation:

The libraries are not found. Please make sure that WF2_lib is at the right place holding all necessary libraries like e.g. UC4.jar.

7.2.2 ERROR: UC4_Handler: loader_dom: Object "... " already processed

Example:

20150806.133821.714 ERROR: UC4_Handler: loader_dom: Object "UU_LCC" already processed

Interpretation:

The object UU_LCC was read before from the loader connection. As the same object can only be processed once, consecutive loadings are ignored with this error. This happens if the same object is defined e.g. in more than one XML-File.

7.3 Debugging

The entry <DebugLevel> within an AppConfig-configurationfile defines the debug level that is used for writing additional information into the Log. The nine possible levels are:

	Basic information: what are we doing at the moment
DEBUG1	If java-exceptions are thrown and DebugLevel one or higher is set, the entire java-exception-stack – and not only the header line - is reported in the log which helps tracking problems.
DEBUG2	Some more basic information
DEBUG3	Even some more basic information
DEBUG4	Again some more basic information
DEBUG5	Show details for configuration files on init if you are looking for calls using passwords you have to set at least this debuglevel
DEBUG6	Information about the object we are working on
DEBUG7	Detailed information about the object we are working on
DEBUG8	Very detailed information about the object we are working on
DEBUG9	All information is additionally written to standard out
INFO	Important information
WARN	In general everything is ok, but you might want to check this log entry
ERROR	Something went wrong; whenever possible WF2 tries to continue its work until the end

FATAL	Open a ticket @systempartners
TODO	Open a ticket @systempartners

7.4 Known Problems

Problem	Cause	Additional information
If a JOBS 'SAP_JAVA' is loaded to UC4, this will not be loaded as 'SAP_JAVA' but as SAP_ABAP	Bug in Automic: INC0339633	No workaround possible! According to Automic solved in: V9SP12 V10SP6 V11SP1.

8 Contributions and Acknowledgements

8.1 Subversion/SVN

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