The Snapshot Tool

Version no: 1.0

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Technologies concerned:

uniFLOW Output Manager

V3.1.9 and higher

NTware Systemprogrammierung GmbH

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1   Versioning Information

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Short Summary:

To perform a uniFLOW OM system backup a Snapshot Tool is provided to capture all the system and configuration files and store them for future restoration.

This document describes in detail the SnapShotGUI.exe and the SnapShotTool.exe.

2   Snapshot Tool

2.1   Introduction

To perform a uniFLOW OM system backup, a Snapshot Tool is provided to capture all the system and configuration files and store them for future restoration.

It is not possible to backup or restore cluster environments with the Snapshot Tool. The Snapshot tool was NOT created to make complete backups of the uniFLOW OM system.

The idea of the Snapshot Tool is to gather status information on a running uniFLOW OM system. This information can be used, to go back to the gathered status later on or copy the status to another uniFLOW OM system. For example, it can be used to create a snapshot of the uniFLOW OM configuration to have a reference file, once the project installation on the customer site has been done. With the Snapshot Tool you have the possibility to filter out exactly those files that have been changed for the customer during an installation.

To minimize the amount of data stored in a snapshot, a reference uniFLOW OM system state will be used to find out which relevant uniFLOW OM files have been changed or created, and only these files are stored in the backup/snapshot. The reference state is stored in an MD5 file containing the MD5 checksum and the path of all relevant files. After a uniFLOW OM system installation, the first reference file is created for the clean installation
(`%uniFLOW_OM_installation_folder%\SnapShot\MomSetup.md5`).

There are two different ways to create snapshots:

- Use the ***SnapShotGUI.exe*** to easily create or restore snapshots with a graphical user interface.
  The usage and possibilities of the ***SnapShotGUI.exe*** are described in detail in paragraph The SnapShotGUI.exe [3].

- Use the ***SnapShotTool.exe*** to create or restore snapshots from a command line interface, which can be useful if you want to run scheduled tasks to backup uniFLOW OM. The configuration of the ***SnapShotTool.exe*** cannot only be defined by command line parameters, but also by a configuration file.
  The usage and possibilities of the ***SnapShotTool.exe*** is described in detail in paragraph The SnapShotTool.exe [9].

Operational areas:

- Backup and restore of the uniFLOW OM system.

- Save the uniFLOW OM status in error situations to analyze the error.

- Transfer certification test states to NT-ware to analyze the certification test result. The test result can automatically be uploaded to the certification FTP server of NT-ware.

- Offers a limited COM interface to offer scripting functionalities. The COM interface exports the following methods:

- **GenerateMD5()** - to generate an MD5 file list.
- **StartGUI(SNAPSHOTFILENAME)** - to generate a snapshot file and upload it to the certification FTP server.
- **GetLastErrorString()** - to get the last error if one of the previous functions returned with an error.


Main features of the Snapshot Tool:

- Creates reference points as MD5 files

- Creates snapshots of the uniFLOW OM system in one single file

- The snapshot files are compressed by the Snapshot Tool

- Backup specific data like:

- files within the uniFLOW OM installation folder

- the system printer configuration

- the uniFLOW OM database (if running on the uniFLOW OM Server itself)

- the Windows registry hive of uniFLOW OM

2.2   The SnapShotGUI.exe

To simplify the use of the **SnapShotTool.exe**, which is the core component of the Snapshot Tool, there is a GUI **SnapShotGUI.exe** designed to configure the tool and optionally start it using the configuration made in the GUI.

The **SnapShotGUI.exe** is located in the `%uniFLOW_OM_installation_folder%` `\SnapShot\`.

After starting the **SnapShotGUI.exe**, the following window opens.
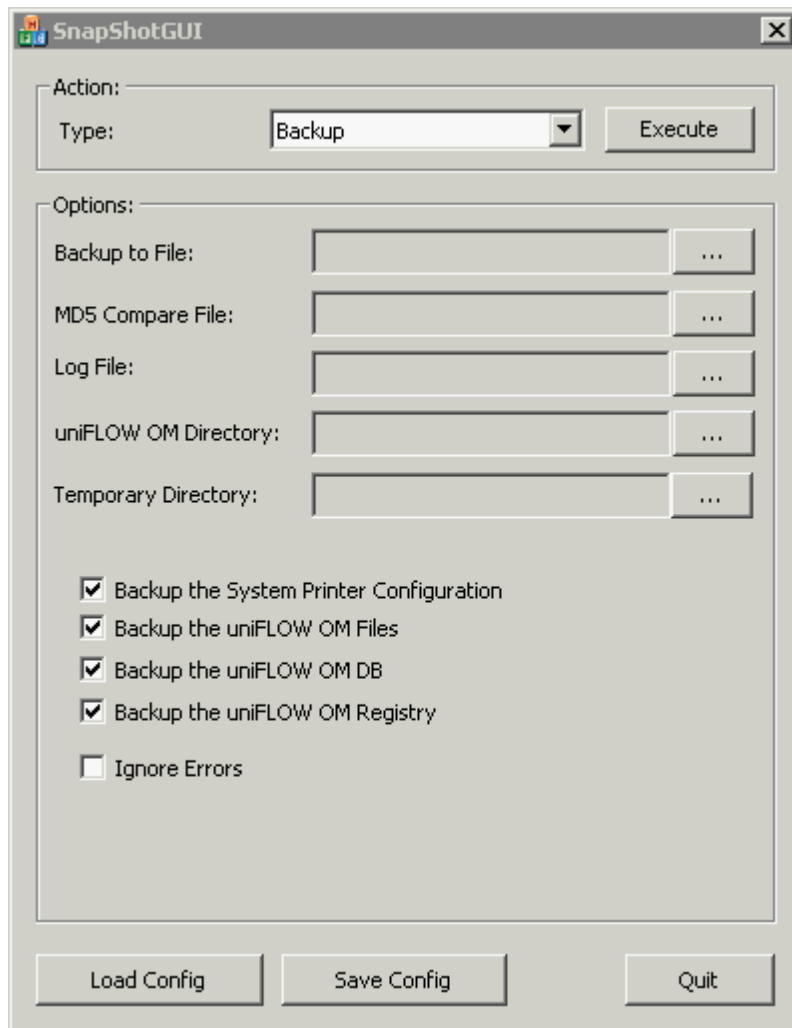
The GUI is divided in two sections, *Action* and *Options*.

Under Action, you can choose one of the three tasks:
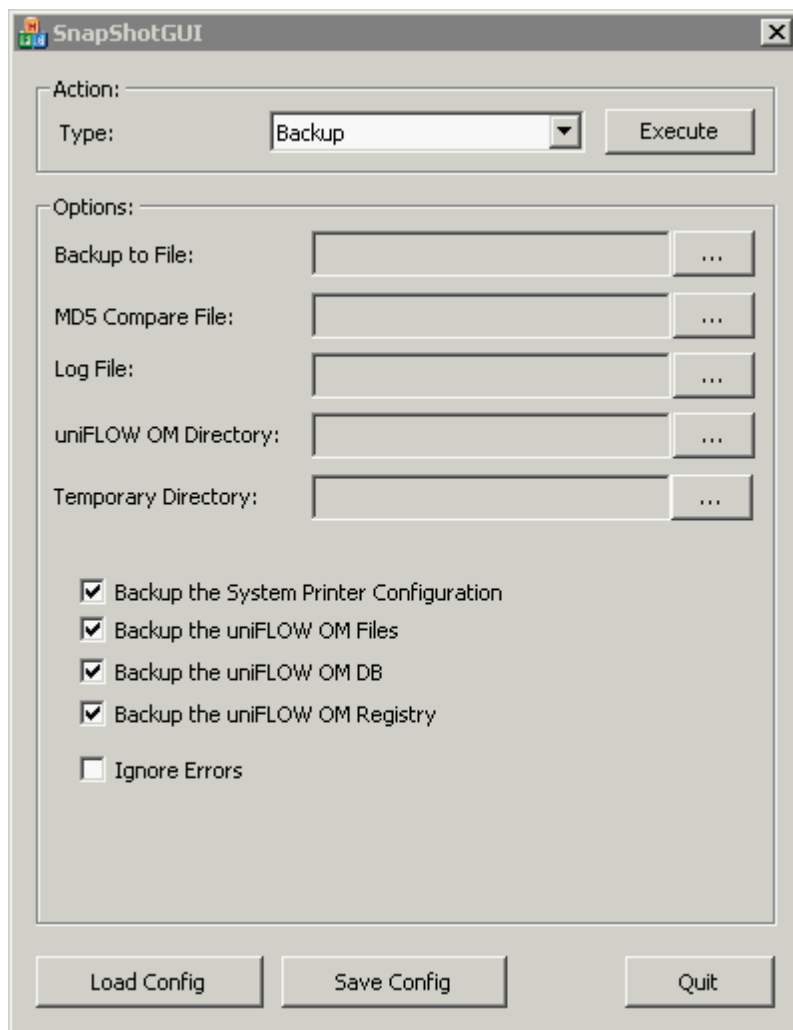
- *Backup*
- *Restore*
- *Certificate*

The Options area changes depending on the chosen action type and gives you the possibility to set up the specific parameters.

The buttons *Load Config* and *Save Config* offer the possibility to store the configuration settings in an XML file. The default folder for the XML file is:
`%uniFLOW_OM_installation_folder%\SnapShot\.`

2.2.1 Backup

This paragraph describes the options for the backup process. If you do not change any settings, SnapShotGUI uses its default settings to execute the backup.
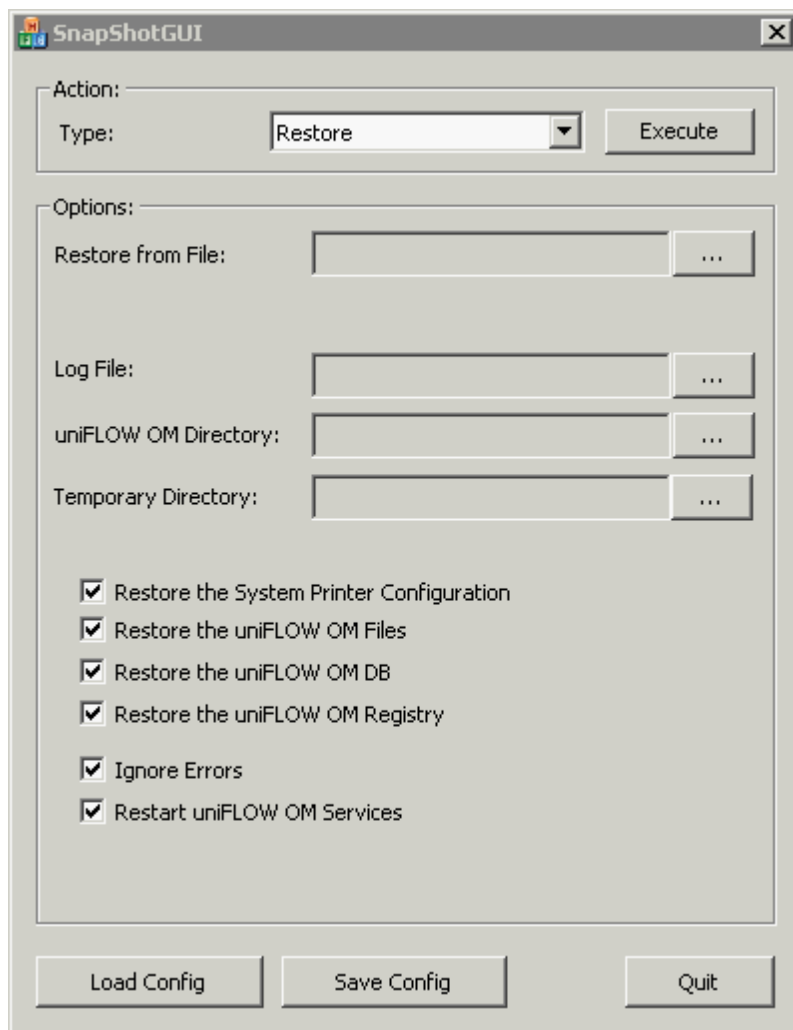
Option:	Description:
Backup to File:	Specifies the file name and the location of the backup file. The file name is by default u*niFLOW-Backup-YYYY-MM-DD_unique_Number.bup* (Backup Files). The default folder to store the backup file is `%uniFLOW_OM_installation_folder% \SnapShot\`. The backup file is a compressed file which contains all changes made in uniFLOW OM, compared with the last MD5 compare file.
MD5 Compare File:	Specifies the file name and the location of the MD5 compare file. The file name extension is by default ***MomSetup.MD5***. The default folder of the MD5 file is `%uniFLOW_OM_installation_folder% \SnapShot\`.

Option:	Description:
	The MD5 compare file is required as a reference file for the Snapshot Tool, to determine which files need to be backed up. It contains the MD5 checksum and the path of all relevant files. To make a snapshot compared to the standard installation of uniFLOW OM without any configuration, please leave the default setting, which is the **MomSetup.md5** file.
Log File:	Specifies the location and file name for the log file. The log file default name is **SnapShot.txt**. The default folder is `%uniFLOW_OM_installation_folder% \SnapShot\`
uniFLOW OM Directory:	Specifies the uniFLOW OM directory. If you leave the field empty, the default uniFLOW OM installation folder will be taken for the snapshot.
Temporary Directory:	Specifies the temporary directory which is used by the Snapshot Tool during the snapshot process. By default, the user's TEMP folder will be taken.
Backup the System Printer Configuration:	If enabled, the Snapshot Tool uses the Microsoft Print Migrator tool, to backup the printer environment of the uniFLOW OM Server. A detailed description about the Print Migrator tool can be found in Microsoft's knowledge base. http://www.microsoft.com/ WindowsServer2003/techinfo/overview/ printmigrator3.1.mspx
Backup the uniFLOW OM Files:	Specifies if the uniFLOW OM files are backed up.
Backup the uniFLOW OM DB:	Specifies if the uniFLOW OM database is backed up.
Backup the uniFLOW OM Registry:	Specifies if the Windows registry hive for uniFLOW OM is backed up.
Ignore Errors:	Specifies if errors during the backup process are ignored.

2.2.2 Restore

This paragraph describes the options for the restore process. If you do not change any settings, SnapShotGUI uses its default settings to execute the restore process.

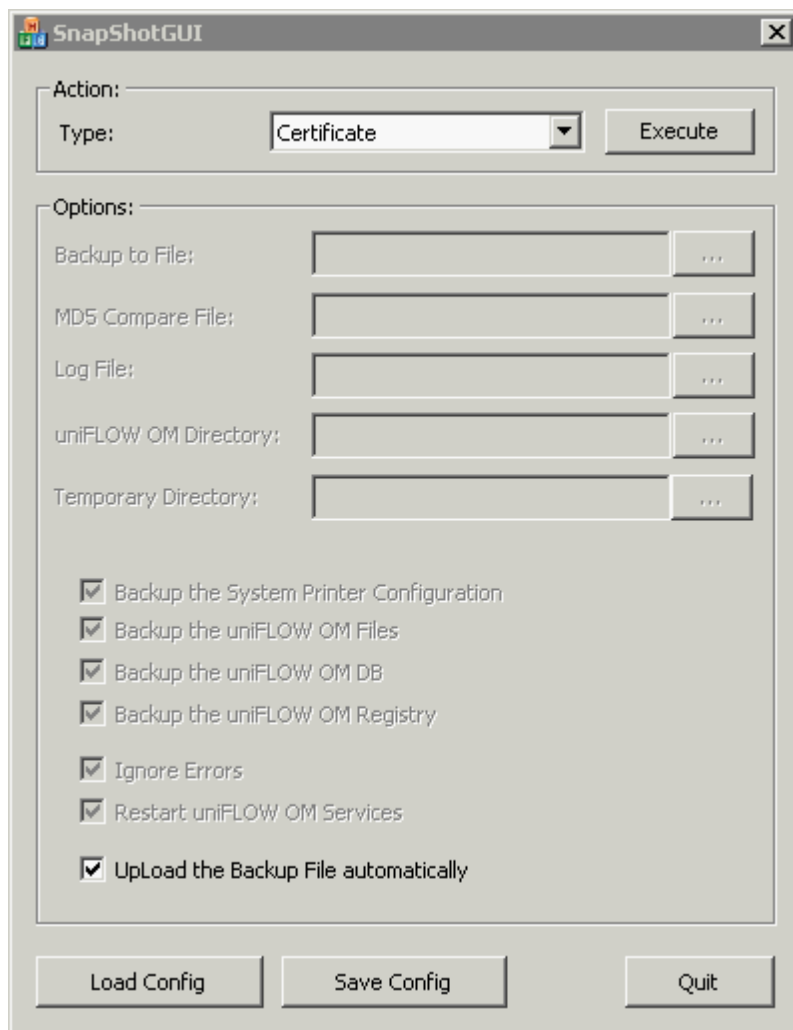| Option:	Description:
Restore from File:	Choose the backup file you want to restore.
Log File:	Specifies the location and file name for the log file. The log file's default name is **SnapShot.txt**. The default folder is `%uniFLOW_OM_installation_folder% \SnapShot\`
uniFLOW OM Directory:	Choose the uniFLOW OM installation folder, to restore the files to. In general you can leave the default settings here, depending whether you have installed uniFLOW OM in the default folder or not.
Temporary Directory:	Specifies the temporary directory, which is used by the Snapshot Tool during the restore process. By default, the user's TEMP folder will be taken.

Option:	Description:
Restore the System Printer Configuration:	If enabled, the Snapshot Tool uses the Microsoft Print Migrator tool, to restore the printer environment of the uniFLOW OM Server. A detailed description about the Print Migrator tool can be found in Microsoft's knowledge base. http://www.microsoft.com/ WindowsServer2003/techinfo/overview/ printmigrator3.1.mspx
Restore the uniFLOW OM Files:	Specifies if the uniFLOW OM files are restored.
Restore the uniFLOW OM DB:	Specifies if the uniFLOW OM database is restored.
Restore the uniFLOW OM Registry:	Specifies if the Windows registry hive for uniFLOW OM is restored.
Ignore Errors:	Specifies if errors during the backup process are ignored.
Restart uniFLOW OM Services:	In general, a restart of the uniFLOW OM Services is required after restoring a backup. If you want to restart uniFLOW OM later, disable this option.

2.2.3   Certificate

This paragraph describes the options for the certificate process. If you do not change any settings, SnapShotGUI uses its default settings to execute the certificate task.

The certificate action should only be used by customers, who completed an NT-ware training and participated in a uniFLOW OM certification test. During the uniFLOW OM certification test, the customers are asked to upload their uniFLOW OM configuration to NT-ware's certification server. This process works fully automated and the users do not need to start the *SnapShotGUI.exe* themselves.

Only if the user has problems with an internet connection, or if the FTP file transfer to NT-ware's certification server fails, it can occur that the users have to start the *SnapShotGUI. exe* themselves to transfer the files manually. But this is explained in detail in the appropriate documentations for the uniFLOW OM certification test.

Option:	Description:
Upload	Uploads the uniFLOW OM snapshot with all required files after a certification test for uniFLOW OM, via FTP to an NT-ware's web server.

2.3   The SnapShotTool.exe

The SnapShotTool.exe can be used to create or restore snapshots with a command line interface, which can be useful if you want to run scheduled tasks to backup uniFLOW OM. The configuration of the *SnapShotTool.exe* cannot only be defined by command line parameters, but also by a configuration file. You can simply create a configuration file by using the *SnapShotGUI.exe.* Configure the parameters for each action type with the *SnapShotGUI.exe* and click on *Save Config*. Choose a location and file name for your XML configuration file and click on *Save*.

To use the XML configuration file with the *SnapShotTool.exe* you have to run the *SnapShotTool.exe* with the parameter `-c <XML configuration file name>`.

It is also possible, to execute the ***SnapShotTool.exe*** without a configuration file, but you have to set up each parameter separately. The following list explains each parameter in detail.

Usage: `SnapShotTool.exe [argument] <parameter>...`

Argument:	Parameter and description:
`-i`	IgnoreErrors: BOOL value TRUE means errors do not abort the process FALSE (DEFAULT) means errors abort the process
`-rb`	restorefile: String value Start restore of file restorefile
`-rs`	sourcedir: String value directory where the backup files are stored is sourcedir.
`-bf`	backupfile: String value start the backup to file backupfile (by default unique filename starting with uniFLOW-Backup)
`-cb`	MD5FileList: String value file containing the MD5 sum of all relevant uniFLOW OM files
`-l`	logfile: String value set the log file name (by default logging is done only to stderr)
`-t`	tempdir: String value set the temp dir name (by default the temp dir of the user)
`-p`	backuppath: String value set the backup path name (by default temp path)
`-c`	conffile: String value load the config file conffile (overwrite all properties defined in this file)
`-cleanup`	clean: BOOL value TRUE (DEFAULT) means to cleanup after process FALSE means to keep temporary files
`-backupAndRestore`	bool: BOOL value TRUE means do a full test run of backup and restore (do not use -r with this)

Argument:	Parameter and description:
	FALSE (DEFAULT) no test run
`-printConfig`	print: BOOL value TRUE means to print configuration before process starts FALSE (DEFAULT) means not to print configuration before process starts
`-restartServices`	value: BOOL value TRUE (DEFAULT) means to restart the services FALSE means NOT to restart the services
`-saveConfig`	filename: String value save the current configuration to file filename
`-c`	dir: String value extract the files to directory dir (and exit)
`--uploadServer`	server: String value server name to upload to
`--uploadPath`	path: String value path to upload to
`--uploadUser`	user: String value the user name to log on to the ftp server
`--uploadPasswd`	passwd: String value the password to log onto the server
`-v`	verbosity: Integer value set the verbosity: 1: DEBUG - debug info 2: INFO - very verbose 3: WARNING - warnings and errors 4: ERROR - errors only 5: FATAL - just fatal errors 6: NONE - nothing
	Parameters and description concerning files:
`--FileModuleAddDirectoryToSkip`	dir: String value dir is the directory name to be skipped

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Argument:	Parameter and description:
`--FileModuleAddExtensionToSkip`	extension: String value dir is the extension to be skipped (including the '.')
`-cs`	filename: String value create the file containing the MD5 list of all relevant uniFLOW OM files (and exit)
`-cf`	filename: String value create the MD5 of filename (and exit)
`--FileModuleMD5File`	extension: String value the MD5 file to get MD5 sums of files from
`--FileModuleSkipStandardDirs`	flag: BOOL value YES: skip the standard directories for uF NO: do not skip standard directories
`--FileModuleSkipStandardEstensions`	flag: BOOL value YES: skip the standard extensions for uF NO: do not skip standard extensions
`--FileModuleBackupUniFLOWFiles`	flag: BOOL value YES: backup uF files NO: do not backup uF files
	Parameters and description concerning the Windows registry:
`--RegistryModuleBackupUniFLOWRegistry`	backup: BOOL value YES: (default) backup uF registry NO: do not backup uF registry
`--RegistryModuleAddRegistryKey`	key: BOOL value key: add a registry key (including sub keys) to be backed up
	Parameters and description concerning printmig:
`-bp`	bool: BOOL value YES: (default) backup printer configuration NO: do not backup printer configuration
`-rp`	bool: BOOL value YES: (default) restore printer configuration

Argument:	Parameter and description:
	NO: do not restore printer configuration
	Parameters and description concerning database:
`--noDB`	value: BOOL value no db backup
`--DBModuleAddTable`	table: String value table is the name of the table to be added
`-bd`	all: BOOL value YES: (default) backup the whole Dspcdb-DB NO: backup only listed tables
`-s`	server: String value server: the server the database is kept on (default is '(local)')
`-u`	user: String value user: the user to connect to DB(default is 'pbaip')
`-p`	password: String value password: the password to connect to DB (default is 'ntwsqlpwd')
`-c`	codepage: String value codepage: the codepage used for the backup (default is '1250')

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