

FlexTest Installation Guide

Audience: Administrators

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1 Introduction

FlexTest is a set of extensions to the HP Quick Test Professional .NET Add-in. It enables the user of HP Quick Test Professional (QTP) or HP Unified Functional Testing (UFT) to test Microsoft .Net Windows Forms based controls which are not supported by QTP/UFT out-of-the-box.

Especially controls from

- Developer Express Inc. (DevExpress) and
- DevComponents LLC (DevComponents)

are supported by FlexTest.

It is also possible to implement support for additional controls even if they are based on other technologies as listed below.

- Delphi Visual Component Library (VCL)
- Microsoft Windows Presentation Foundation (WPF)
- Java Standard Widget Toolkit (SWT), Abstract Window Toolkit (AWT), Swing
- Web 2.0 Frameworks

2 Delivery Content

FlexTest is shipped as ZIP archive and applies to the following naming convention.

„FlexTest_[Id]_[YYYY]_[MM]_[DD]_[NNNNN].zip“

| | |
|--------------|--|
| Id | A value which ensures the identification of the delivered package. Commonly it is your company's name. |
| YYYY | A four-digit value indicating the year of packaging date |
| MM | A two-digit value indicating the month of packaging date |
| DD | A two-digit value indicating the day of packaging date |
| NNNNN | A five-digit value indicating the seconds of the day of packaging date |

Table 1: Parts of the naming conventions for the delivered package

The zipped package contains all necessary files to use FlexTest and to enable test automation with of the included controls with QTP/UFT. The folder structure is created to make the installation as easy as possible.

| | |
|-------------------------------|--|
| FlexTest | This folder contains the main files needed to extend QTP/UFT. That are MS .Net Framework 2.0 Assemblies, a license file and a Windows registry file. |
| Help | The Help folder contains necessary documents for speeding up the implementation of your test automation with FlexTest |
| Quicktest Professional | The sub folders and files in this folder are required to configure QTP/UFT that it works with FlexTest. |

Table 2: Folders of the delivered ZIP archive

2.1 FlexTest Microsoft .Net Assemblies



The FlexTest folder contains the main files of this product. It is a bundle of **dll** files that are Microsoft .Net 2.0 Assemblies. Each file that starts with ProfiCom.FlexTest.<ControlManufacturerName> in the name (where <ControlManufacturerName> is a placeholder for the manufacturer of the control which is supported) implements an extension to the QTP/UFT .Net Add In based on the QTP/UFT .Net Add In Extensibility interfaces for one control. It is not necessary to register these files in the Global Assembly Cache (GAC).

2.2 FlexTest license file



The license is an essential part of a delivery. The obtained license is described in the file **FxTLicense.xml**. This file must be accessible (read permission) for FlexTest. You can

open it as text file and can validate the contained information.

| | |
|-------------------------------------|---|
| LicenseGuid | A unique id for the FlexTest license. The value changes with each new license. |
| LicensedTo | The owner of the license. This value should be equal to your company's name. |
| ExpirationDate | The date of expiration at which the license will become invalid. |
| OwnerId | Depending on the type of license this is a more or less unique id for the environment where FlexTest is used. |
| OwnerIdGeneratorAssemblyname | (Internal) |
| OwnerIdGeneratorTypename | (Internal) |
| AddIns | A list of Add Ins which can be used with the license. |
| Hash | (Internal) |
| RSAVerificationData | (Internal) |

Table 3: Details of the FlexTest license file

If a license has expired, if a renewal is required or if you want to get a trial license please contact us per mail (info@proficom.de, contact@proficom-llc.com).

2.3 FlexTest registry file



The FlexTest folder in the ZIP archive contains the Windows Registry file **FlexTest.reg**. This file is used to configure FlexTest. By adding the contained information to the registry the following changes are made.

Created paths and values:

- **HKEY_CURRENT_USER\Software\ProfiCom\FlexTest**
 - o **Type=REG_SZ; Name=LicensePath; Value=C:\FlexTest\FxTLicense.xml**
 - o **Type=REG_SZ; Name=TraceLevel; Value=All**
 - o **Type=REG_SZ; Name=TracePath; Value=C:\FlexTest**

For changing the pre configured values and to get an overview of possible values refer to chapter "6 Configuration".

2.4 Help



The folder **Help** contains this installation guide document and the file **Manual.pdf**. The manual describes how FlexTest can be used with QTP/UFT. It contains methods and properties which are exposed by FlexTest and example scripts.

2.5 Quick Test Professional SwfConfig file



The structure of the folder **Quicktest Professional** is built up on the structure of the installation directory of Quicktest Professional. The sub folder **dat** contains the file **SwfConfig.xml**. The **SwfConfig.xml** file is a configuration file of QTP/UFT. It contains a mapping between the recognized controls in the Application Under Test (AUT) and Microsoft .Net Assemblies which handle record and replay support for controls.

The copy of the **SwfConfig.xml** file in the FlexTest delivery is specially tailored to the content (the supported controls) of the FlexTest delivery. That means, only controls which are subject of the obtained FlexTest license are referenced in the **SwfConfig.xml** file.

2.6 Quick Test Professional TypeInformation files



TypeInformation files are XML files which enable the QTP/UFT script editor to provide the auto complete feature. For controls which are not recognized from QTP/UFT out-of-the-box these TypeInformation files must be present if auto complete is required. In common, FlexTest comes with one TypeInformation file for each supported control. The file name of such a file consists of the prefix „**TypeInformation.**“, followed by the namespace of the control, followed by the controls name and the file extension „**.xml**“.

3 System Requirements

Please make sure that the computer on which you plan to install and use FlexTest meets the requirements described below.

3.1 HP Quick Test Professional, HP Unified Functional Testing

FlexTest is designed and tested for the use with HP Quick Test Professional 11 (QTP) and HP Unified Function Testing 11.5 (UFT). It extends the core functionality of QTP/UFT. Therefore QTP/UFT and its .NET Add-in have to be installed on the computer.

Additionally, the following QTP/UFT patches have to be installed:

| HP QTP 11, 32 Bit Operating System | |
|---|-------------------------|
| 1 | QTPNET_00113 |
| 2 | QTPNET_00116 |
| 3 | QTPNET_00120 |
| HP QTP 11, 64 Bit Operating System | |
| 1 | QTP_00699_64BIT_Support |
| 2 | QTPNET_00113 |
| 3 | QTPNET_00116 |
| 4 | QTPNET_00120 |
| 5 | QTPNET_00127 |
| HP UFT 11.5, 32 Bit Operating System | |
| 1 | Service Pack 2 |
| HP UFT 11.5, 64 Bit Operating System | |
| 1 | Service Pack 2 |

3.2 Supported Controls

FlexTest supports automated UI testing of controls which are not supported by QTP/UFT out-of-the-box. These controls must be present on the system where QTP/UFT and FlexTest are executed. FlexTest does not ship with the third party components which it supports.

3.3 Microsoft .Net Framework

FlexTest supports controls which are developed under the Microsoft .Net Framework 2.0. FlexTest its self also uses Microsoft .Net Framework 2.0. Therefore Microsoft .Net Framework 2.0 has to be installed.

The setup procedure of QTP/UFT prepares the computer for testing MS .Net controls if the .NET Add-in is selected for installation.

3.4 Operating System

FlexTest is an extension to QTP/UFT and supports operating systems which are supported by QTP/UFT.

3.5 Architecture

FlexTest is an extension to QTP/UFT and supports processor architectures which are supported by QTP/UFT.

4 Quick Install

The quick installation describes the minimum count of steps getting FlexTest installed. For detailed installation instructions please refer to chapter “5 Installation”

- Extract the content of the **FlexTest** folder to **C:\FlexTest**
- Copy all framework libraries (DevExpress, DevComponents, ...) to **C:\FlexTest** if they are not registered in the Global Assembly Cache (GAC)
- Double click on the registry file under **C:\FlexTest\FlexTest.reg**
- Ensure that the QTP/UFT user account (tester) has read and write access to **C:\FlexTest**
- Extract the content of the **QuickTest Professional** folder to your QTP/UFT installation directory **C:\Program Files\HP\Quicktest Professional**

5 Installation

Assuming that either QTP 11 with .NET Add-in or or UFT11.5 with .NET Add-in and the third party controls are installed on the computer you can prepare the system to use FlexTest.

5.1 Creating the program folder

FlexTest is only a bundle of Microsoft .Net assemblies (dll files). Thus, a so called xcopy deployment is possible. That means you can install FlexTest by only copying files. By default you have to use the path **C:\FlexTest** as program folder.

If the framework libraries (DevExpress, DevComponents), your application under test depends on, are not registered in the Global Assembly Cache, you need to copy them to **C:\FlexTest**, too.

It is possible to choose another path but that requires some changes in QTP/UFT configuration files (see “5.1.1 Choose a different program folder”, “6.1 Configure Quick Test Professional“ and “6.3 Configure FlexTest logging”).

If the program folder is created and read and write access permissions are granted the files which are contained in the FlexTest folder of the ZIP archive can be copied to the program folder (default **C:\FlexTest**). Granting write access permission is required, because FlexTest can create log files. By default the log file creation is enabled and points to the FlexTest default path **C:\FlexTest**.

For changing the preferences for logging see “6.3 Configure FlexTest logging”.

5.1.1 Choose a different program folder

If installing FlexTest to the default location (C:\FlexTest) is not wanted or not possible, a different location can be used. The installation process does not fundamentally change, except copying the FlexTest files to a different directory and granting read and write access permission on that directory. Also the configuration process needs to be customized. The settings for licensing, logging and QTP/UFT have to be tuned (see chapter “6 Configuration”).

5.2 Setting up the Windows Registry

FlexTest needs access to the license file and needs a directory to write its log files to. Therefore, a Windows Registry file is contained under the FlexTest program folder (default **C:\FlexTest**). Please add the necessary data to the Windows Registry by double clicking the the file **FlexTest.reg**.

Ensure that you have administrative privileges to make changes to the registry. Also the user who uses QTP/UFT needs read access to this Windows Registry keys.

For adjusting the added values please refer to chapter “6 Configuration”.

5.3 Setting up Quick Test Professional

HP QTP/UFT needs to know which component realizes record and replay for a recognized control. This is done by defining mappings between the controls and .Net assemblies. This

information is stored in the **SwfConfig.xml** file (see “2.5 Quick Test Professional SwfConfig file”).

Before the **SwfConfig.xml** file is copied to the **dat** sub directory of your QTP/UFT installation directory (default **C:\Program Files\HP\Quicktest Professional\dat**) check if the SwfConfig.xml file of the QTP/UFT installation already has control mapping entries. If it has no entries the file can be overwritten with that from the FlexTest delivery, otherwise merge the content of the **SwfConfig.xml** files.

Furthermore, QTP/UFT needs to know which information is displayed when using functionality of QTP/UFT .Net Add In's in the QTP/UFT script editor. To enable auto complete QTP/UFT reads TypeInformation files which are located in the **dat\Extensibility\DotNet** folder under the QTP/UFT program folder. Just copy the content of the corresponding directory of the FlexTest delivery to the subjected path in the QTP/UFT installation folder. It is not required to check if files are overwritten because the file names are unique.

If you use “*HP Quicktest Add-in for ALM-QC*” the TypeInformation files have to be copied to the **dat\Extensibility\DotNet** directory under the program folder of the “*HP Quicktest Add-in for ALM-QC*” installation (default: **C:\Program Files\HP\QuickTest Add-in For ALM-QC\dat\Extensibility\DotNet**). If the sub directory **DotNet** does not exist it has to be created manually.

The TypeInformation files have to be copied twice, if you use both QTP/UFT and “*HP Quicktest Add-in for ALM-QC*”,.

5.4 Setting up the Windows Firewall

If the underlying operating system is Microsoft Windows Vista or newer it may be that the Windows Firewall recognizes operations between Windows processes. A warning is shown that your AUT is blocked through the firewall. It is possible to accept the access so that Windows Firewall creates an allow rule. Alternatively, this allow rule can be created manually.

6 Configuration

To customize the behavior and functionality of QTP/UFT and FlexTest you can modify some files which are subject of this chapter.

6.1 Configure Quick Test Professional

6.1.1 SwfConfig file

It is recommended that only the paths in the [SwfConfig.xml](#) file are adjusted by end users. If a FlexTest program folder is chosen which is different from the default FlexTest program folder [C:\FlexTest](#), it is necessary to adjust the paths to the FlexTest assemblies in the [SwfConfig.xml](#) file.

Please do not change other parameters in [SwfConfig.xml](#) file. If other parameters than the path are changed the FlexTest support is not valid.

6.2 Configure licensing

To use FlexTest the license file [FxtLicense.xml](#) is required. It is part of the FlexTest delivery and by default it's located in the FlexTest program folder. Choosing another location for the license file is possible and requires changes to the values under the path [HKEY_CURRENT_USER\Software\ProfiCom\FlexTest](#) of the Windows Registry.

6.3 Configure FlexTest logging

To change the amount of information that is written to log files or to change the location where log files are created the following settings under the path [HKEY_CURRENT_USER\Software\ProfiCom\FlexTest](#) in the Windows Registry can be changed. The following values are added through the installation of FlexTest (see "5.2 Setting up the Windows Registry")

| | |
|--------------------------|--|
| <p>TracePath</p> | <p>This is the path where the log files of FlexTest are created.</p> <p>The log files name is just the total value of ticks of the current date of your computer followed by the file extension txt.</p> <p>By default the value point to the FlexTest default program folder (C:\FlexTest)</p> |
| <p>TraceLevel</p> | <p>This parameter defines which type of information should be written in the log files. By default the value is set to "All".</p> <p>The parameter can have one of the following values.</p> <p>Off No log file should be created and no information is logged.</p> <p>Critical Only critical events are logged.</p> |

| | |
|-----------------------|---|
| | <p>Error Critical and Error events are logged.</p> <p>Warning Warning, Critical and Error events are logged.</p> <p>Information Information, Warning, Critical and Error Events are logged.</p> <p>Verbose Verbose, Information Warning, Critical and Error Events are logged.</p> <p>All All events are logged.</p> <p>These values are standard values of the MS .Net System.Diagnostics.SourceLevels enumeration.</p> |
| TraceListeners | <p>This parameter defines the type of storages which are used or created to save the log information. The value is a comma separated list of the following possible values.</p> <p>txt The log information is saved in a text file</p> <p>xml The log information is saved in a xml file</p> |
| TraceOptions | <p>This parameters defines which data is logged for each log entry. The value is a comma separated list of the following possible values.</p> <p>DateTime Writes the current date and time for an entry Example: 2012-04-12T07:19:01.6253039Z</p> <p>TimeStamp Writes the current date and time for an entry Example: 9944297377</p> <p>ProcessId Writes the identity of the process</p> <p>ThreadId Writes the identity of the thread</p> <p>Callstack Writes the call stack</p> <p>LogicalOperationStack Not used</p> <p>None Does not write any element</p> |

Table 4: Available values to configure FlexTest logging

7 Troubleshooting

If you encounter problems during use, please check the following points first before you contact support. The most problems are, that QTP/UFT does not record or replay functions as described in the FlexTest manual ([Manual.pdf](#)).

| | |
|----------|---|
| 1 | <p>Check the SwfConfig.xml file (C:\Program Files\HP\Quicktest Professional\dat)</p> <ul style="list-style-type: none"> - Check if the SwfConfig.xml file in the QTP/UFT Install directory () is present - Check if the content of the file contains the content of the SwfConfig.xml file which was packaged with your FlexTest delivery - Check if the Control-Tags point to the dll files and if the dll files are present at that location |
| 2 | <p>Check FlexTest log files</p> <ul style="list-style-type: none"> - Check if log files are created in the FlexTest directory (C:\FlexTest, Format: <GUID>_CS.txt) - Check log file content for errors |
| 3 | <p>Check Windows Registry values</p> <ul style="list-style-type: none"> - Check if the values equal the given ones in the FlexTest.reg file - Check if the values point to the correct FlexTest license file (C:\FlexTest\FxTLicense.xml) - Check if the path for creating log files is correct (C:\FlexTest) |
| 4 | <p>Check FlexTest license file (C:\FlexTest\FxTLicense.xml)</p> <ul style="list-style-type: none"> - Check if the Control you want to automate is contained in the FlexTest license file - Check the license's expiry date |

Table 5: Troubleshooting check list

If you processed the previous steps and QTP/UFT still does not record and replay correctly, then we recommend you to gather the following information and contact support.

| | |
|----------|--|
| 1 | <p>System information</p> <ul style="list-style-type: none"> - <u>Operating System</u>: version, architecture (32/64Bit) - <u>Environment</u>: physical machine, virtual machine, virtual desktop - <u>QTP/UFT</u>: version, installed patches - <u>Application under test (AUT)</u>: .Net Framework version, architecture (32/64Bit), DevExpress/DevComponents version used |
|----------|--|

| | |
|---|---|
| 2 | <p>FlexTest log files (C:\FlexTest\<guid>_<?>.txt)< p=""> <ul style="list-style-type: none"> - Use this files for sending them to FlexTest support </guid>_<?>.txt)<></p> |
| 3 | <p>FusionLog files</p> <ul style="list-style-type: none"> - FusionLog is is part of the MS.Net Framework and creates log about searching and loading assemblies → therefore: searching and loading FlexTest dll files through QTP/UFT and the AUT - To enable FusionLog make the following changes in the Windows Registry (if the values do not exist, then create them): Path: HKLM\SOFTWARE\Microsoft\Fusion <ul style="list-style-type: none"> • Name: ForceLog; Type: REG_DWORD; Value: 1 • Name: LogPath; Type:REG_SZ; Value: C:\MyLogDir <u>Attention:</u> ensure that the directory under LogPath exists and that the value does not have a backslash \ at the end - After activating the FusionLog, start QTP/UFT and begin interacting with your AUT (press Record and interact with the DevExpress/DevComponents control) - While Interacting with the controls FusionLog creates Log-Files in the directory given through the registry value “LogPath” → use them for sending to FlexTest support - After that you can disable the FusionLog by setting the Windows Registry Value ForceLog to 0. |
| 4 | <p>To clarify what you’ve done, create a short textual description or video</p> |

Table 6: Information needed by FlexTest support

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