

HP Unified Functional Testing

For the Windows[®] operating systems

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Installation Guide

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Welcome to Unified Functional Testing

Welcome to HP Unified Functional Testing, the advanced keyword-driven testing solution for functional test and regression test automation. UFT is part of HP ALM. This guide describes everything you need to know to install UFT on a standalone computer.

UFT Installation Packages

You can install UFT from one of the following packages:

- A full installation package (available on DVD, as well as in E-media). This provides the UFT Setup program as well as independent installations of the following programs:
 - UFT Add-in for ALM
 - Run Results Viewer
 - License Server Setup
 - Setup programs for Extensibility Accelerator, the Extensibility SDKs, and the Web 2.0 add-ins.
- A compressed, downloadable UFT installation package from the Web. It is smaller and faster to download than the full installation package

This installation package installs the same features as the UFT installation setup program but does not include options to perform independent installations of the Unified Functional Testing Add-in for ALM, the Run Results Viewer, Extensibility SDKs, or the HP Functional Testing License Server.

IMPORTANT: When installing UFT from the compressed package, you must have an internet connection to download the prerequisite software.

UFT Installation Content

The table below describes the programs you can install.

- If you are installing the Compressed Package for the Web, the installation runs only the UFT Setup program.
- If you are installing the full installation package, the Setup Screen enables you to select the program you want to install.

Program	Description
Unified Functional Testing Setup	<ul style="list-style-type: none">• Core UFT Features. These features include the core GUI testing and API testing functionality that enables you to open UFT, create GUI or API tests, and run the tests. These features are installed by default, in both the regular and silent installations. The Run Results Viewer is automatically included with the core UFT features.• UFT GUI Testing Add-ins. By default, UFT installs the Web and Standard Windows add-ins as a core part of the installation. These add-ins cannot be uninstalled or cleared from the installation. You can install additional add-ins (such as the Active X, Java, or Visual Basic Add-ins) in the Custom Setup screen of the installation wizard. The Custom Setup screen also enables you to install the UFT Add-in for ALM. If you want to use the Web 2.0 Add-ins, you must install them independently. For details, see "Installing the Web 2.0 add-ins or extensibility toolkits" on page 15. Note: If you need to install the UFT Add-in for ALM at a later time after performing the full installation, you must run the installation wizard again and perform a Change when prompted at the start of the installation wizard. Then, you must select the ALM Plugin option in the Custom Setup screen of the installation wizard.
UFT Add-in for ALM	<p>The UFT Add-in for ALM enables UFT to communicate with ALM and run tests or components from ALM.</p> <p>Note: This option should be used only when UFT is not installed on the computer.</p>

Add-in Extensibility and Web 2.0 Toolkits	<p>This program enables you to install:</p> <ul style="list-style-type: none">• Extensibility Accelerator for HP Functional Testing. This program is an IDE which facilitates the development of Web Add-in Extensibility support toolkits.• Extensibility SDKs. These SDKs are used to develop support for Java, .NET, WPF, Silverlight, or Web objects not supported out of the box by UFT.• Web 2.0 Toolkit Support. These toolkits enable you to recognize and use objects in your tests from Web 2.0 technologies, including ASP .NET Ajax, Dojo, GWT (Google Web Toolkit), and YahooUI. <p>The extensibility and Web 2.0 installations are optional and independent. They can be installed without a full UFT installation, or after the installation is complete.</p> <p>To install the Web 2.0 add-ins, follow the instructions on "Installing the Web 2.0 add-ins or extensibility toolkits" on page 15.</p> <p>After installation, the Web 2.0 toolkits appear as child add-ins of the Web Add-in inside the Add-in Manager dialog box.</p>
License Server Setup	<p>This program enables you to install an HP Functional Testing Concurrent License Server. Using this server, you can install concurrent licenses for your UFT installations.</p> <p>For full details on the Concurrent License Server installation, see the <i>HP Functional Testing Concurrent License Server Installation Guide</i>.</p>
Run Results Viewer Setup	<p>The Run Results Viewer enables you to view the test or component run results after the run session is complete.</p> <div data-bbox="457 1270 1367 1381" style="background-color: #f0f0f0; padding: 5px;"><p>Note: This option should be used only when UFT is not installed the computer.</p></div>

This guide includes the following chapters:

["Before You Install" on page 6](#)

["Installing UFT" on page 12](#)

["Working with UFT Licenses" on page 28](#)

["Additional Installation Information" on page 50](#)

Chapter 1: Before You Install

Note: Unless otherwise specified, references to **Application Lifecycle Management** or **ALM** in this guide apply to all currently supported versions of ALM and Quality Center. Note that some features and options may not be supported in the specific edition of ALM or Quality Center that you are using.

For a list of the supported versions of ALM or Quality Center, see the *HP Unified Functional Testing Product Availability Matrix*, available from the UFT Help or the root folder of the Unified Functional Testing DVD. The most up-to-date product availability matrix is available from the HP Software Product Manuals site, at <http://h20230.www2.hp.com/selfsolve/manuals> (requires an HP Passport).

For details on ALM or Quality Center editions, see the *HP Application Lifecycle Management User Guide* or the *HP Quality Center User Guide*.

Before you install UFT, confirm that your computer meets all system requirements. For details on the system requirements, see the *HP Unified Functional Testing Readme*.

This chapter includes:

Setting Required Access Permissions	7
Upgrading from QuickTest, Service Test, or Earlier Versions of UFT	8
Enterprise Deployment of UFT	9

Setting Required Access Permissions

Make sure the following access permissions are set to run UFT or to work with ALM.

Permissions Required When Working with UFT

You must have the following file system permissions:

- Full read and write permissions to the Temp folder
- Read permissions to the Windows folder and to the System folder
- Full read and write permissions to the folder on which you are saving solutions, tests, or run results
- Full read and write permissions to the <Program Files>\Common Files\Mercury Interactive folder
- If you are working on Windows 7 or Windows Server 2008 operating systems: Full read and write permissions to the <Program Data>\HP folder
- Full read and write permissions to the User Profile folders
- Full read and write permissions to the <Windows>\mercury.ini file
- Full read and write permissions to the following AppData folders:
 - %userprofile%\AppData\Local\HP
 - %appdata%\Hewlett-Packard\UFT
 - %appdata%\HP\API Testing

Note: Read/write permissions to these folders should also enable permission to any subfolders contained in the folders listed above. If not, the system administrator must grant administrative permissions to the subfolders contained in these folders.

You must have the following registry key permissions:

- Full read and write permissions to the keys under HKEY_CURRENT_USER\Software\Mercury Interactive or [HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Hewlett-Packard]
- Full read and write permissions to all the keys under HKEY_CURRENT_USER\SOFTWARE\Hewlett Packard
- Read and Query Value permissions to all the HKEY_LOCAL_MACHINE and HKEY_CLASSES_ROOT keys

Permissions Required When Working with ALM

You must have the following permissions to use UFT with ALM:

- Full read and write permissions to the ALM cache folder
- Full read and write permissions to the <Program Data>\HP folder
- Full read and write permissions to the UFT Add-in for ALM installation folder
- Administrative permissions for the first connection to ALM

Note: If you do not have administrative permissions, you can turn off the UAC for your user account instead in order to perform the first connection to ALM.

Permissions Required When Working with BPT

The ALM Project Administrator can control access to a project by defining which users can log into it and by specifying the types of tasks each user may perform. The ALM Project Administrator can assign permissions for adding, modifying, and deleting folders, components, steps, and parameters in the Business Components module of an ALM project.

You need to make sure you have the required ALM permissions before working with business components and application areas.

- To work with component steps in ALM, you must have the appropriate **Add Step**, **Modify Step**, or **Delete Step** permissions set. You do not need **Modify Component** permission to work with component steps. The **Modify Component** permission enables you to work with component properties (the fields in the component Details tab).
- To work with parameters in ALM or in a testing tool, you must have all the parameter task permissions set in ALM.
- To modify application areas, you must have the separate permissions for resources required for modifying components, and adding, modifying, and deleting steps. All four permissions are required. If one of these permissions is not assigned, you can open application areas only in read-only format.

For more information on setting user group permissions in the Business Components module, see the *HP Business Process Testing User Guide*.

Upgrading from QuickTest, Service Test, or Earlier Versions of UFT

- If you are upgrading from an earlier version of UFT or the UFT Add-in for ALM, or from Service Test 11.50, the installation program can automatically uninstall the earlier version.

If you are upgrading from QuickTest or the QuickTest Add-in for ALM/QC, or from a Service Test version earlier than 11.50, you must first manually uninstall the older program.

- UFT supports the Sentinel RMS License Manager version 8.4.0 as its concurrent license server. If you are upgrading to UFT with a concurrent license, you must also upgrade your concurrent license server. For details on setting up a concurrent license server, see the *HP Functional Testing Concurrent License Server Installation Guide*. This guide is available in the **License Server Setup** link on the UFT setup screen that runs at the beginning of the installation from the DVD or from the **<UFT installation>/help** folder.

Note: If you are installing UFT from the compressed package for the Web, this option is not available. If you need to install UFT and the Concurrent License Server, you must install UFT from the DVD.

- License data is retained when upgrading from UFT, QuickTest Professional 11 or Service Test 10.00 or later.
- All GUI Testing add-ins that were installed with QuickTest or UFT are identified during the upgrade. You can add or remove add-ins during the installation.
- The run session options and startup options of the **Tools > Options** dialog box, are retained. No other options are retained when you upgrade.

In QuickTest, these options can be found in **Tools > Options > General/Run** nodes. In UFT, these options can be found in **Tools > Options > General tab > Run sessions/Startup Options** nodes

- Connection settings to ALM are not retained when you upgrade. If required, you must reconnect to ALM after the installation.

Enterprise Deployment of UFT

When installing UFT in an enterprise business model across many computers in a network or company, note the following:

- Ensure you have administrator permissions on each of the computers on which you are installing UFT.
- Make sure you have access to the necessary folders and registry keys. For a list of the necessary access permissions, see ["Setting Required Access Permissions" on page 7](#).
- You can install UFT (either through the wizard or silently) without turning off the computer's User Account Control (UAC).

For details on installing UFT through the installation wizard, see ["Installing UFT" on page 13](#). For details on the silent installation, see ["Installing UFT Silently" on page 16](#).

- If the user of the UFT computer needs to connect to ALM through UFT, you can install the UFT Add-in for ALM as part of the installation, in the **Custom Setup** screen, or the **ADDLOCAL** silent installation parameter.
- For users to connect to ALM from UFT for the first time without turning off the UAC, you must also install the ALM client MSI file on each user's machine. You can generate a custom MSI for all your users by using the HP ALM Client MSI Generator. This tool enables you to configure the settings for your ALM servers before installing the client-side MSI.

You can download the ALM Client MSI Generator and User Guide from <https://hpln.hp.com/page/hp-alm-client-msi-generator>. Instructions for configuring the settings for a custom MSI are provided in the user guide.

IMPORTANT: When configuring the settings, you must select the **Check Include Component Registration** and **Use Shared Deployment Mode** options.

After the custom MSI is installed on each user's machine, they can connect to ALM without temporarily deactivating the UAC for their user account.

- If your users are using either the Stingray or Terminal Emulator add-ins, there are additional configurations you or the user must perform:
 - Run the Additional Installation Requirements after the main installation on each computer. This tool is found in the **Start** menu (**Start > All Programs > HP Software > HP Unified Functional Testing > Tools > Additional Installation Requirements**).

In the Additional Installation Requirements, select the **Run Stingray Wizard** and/or **Run Terminal Emulator Wizard** options, and follow the configuration wizard steps to set up the add-ins.

- If you want your users to perform the configurations:
 - For the Stingray add-in, the user runs the Stingray Support Configuration Wizard in the **Stingray** pane of the Options dialog box (**Tools > Options > GUI Testing tab > Stingray pane > Select Version**). This configuration requires no administrative permissions.
 - For the Terminal Emulator add-in, you can run the configuration one time with administrator permissions, and save the settings to a registry file which can be deployed on all the computers.

To copy and deploy the settings, do the following:

- In the final screen of the Terminal Emulator Wizard, select the **Save terminal emulator settings to file** option.

Note: Before you copy the saved configuration, make sure you know the vendor name and the emulator name assigned to the configuration, and the exact name

and location of the file. The file has a .reg extension.

- Copy the file to the <UFT installation folder>\dat folder on your computer.
- Double-click the registry file to open the Registry Editor message box.
- Click **Yes** to add the information into the registry. A message opens confirming that the information has been copied into the registry.
- Click **OK**. The emulator name assigned to this configuration is added to the list of available terminal emulators for your UFT installation.
- For the Terminal Emulator, the user must have administrator permissions. Each user can run the Terminal Emulator configuration wizard from the Terminal Emulator pane of the Options dialog box (**Tools > Options > GUI Testing** tab > **Terminal Emulator** pane > **Open Wizard**).

Chapter 2: Installing UFT

The standard installation process (using the installation wizard) automatically installs UFT and the Web, Visual Basic, and ActiveX Add-ins. In the installation wizard, you can also select additional add-ins to install. You can install UFT silently in the background and on remote computers.

You should know which type of license you want to install. A **Seat** license is a permanent license that is specific to the computer on which the license is installed; a **Concurrent** license is a per session license that is available only if your company has an HP Functional Testing Concurrent License Server. For more details, see "[Working with UFT Licenses](#)" on page 28.

You must not run any other installation at the same time as you run the UFT installation. In addition, before you install UFT, ensure that your computer is not in a state that requires a restart.

This chapter includes:

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Installing UFT

Your setup program includes an installation wizard that guides you through the installation process.

This task includes the following items:

- ["Prerequisites" below](#)
- ["Installing a localized version of UFT" below](#)
- ["Installing UFT" on the next page](#)
- ["Installing the Web 2.0 add-ins or extensibility toolkits" on page 15](#)

Prerequisites

1. Make sure you are logged on with the appropriate privileges. For details on the required privileges, see ["Setting Required Access Permissions" on page 7](#).
2. Select a local drive on which to install UFT. Do not install UFT on a network drive.
3. If you are installing UFT from the UFT Compressed Package for the Web, you must have access to the Internet to download the necessary prerequisite software.
4. If you plan to run tests of a Web service with security settings that was created using Service Test or earlier versions of UFT, you must have the .NET Framework 3.5, WSE 2.0sp3 package, and WSE 3.0 package installed on your computer.

These prerequisites are not provided with the UFT installation. If they are not installed on your computer, you can install them from the following locations on the DVD:

- **NET 3.5 Framework:** DVD/prerequisites/dotnet35_1/dotnetfx35_sp1.exe
- **WSE 2.0 sp3:** DVD/prerequisites/wse20sp3/MicrosoftWSE2.0SP3Runtime.msi
- **WSE 3.0:** DVD/prerequisites/wse30/MicrosoftWSE3.0Runtime.msi

Installing a localized version of UFT

If you are installing UFT on a computer using a language other than English, your installation setup and wizard automatically runs in the language of your computer.

By default, UFT is installed in the same language as your computer's operating system. If you want to install UFT in English instead of the language of your operating system, you can do so in the **License Agreement** screen of the installation.

You can install UFT in the following languages: **Brazilian Portuguese, Chinese, Dutch, French, German, Italian, Japanese, Korean, Russian, or Spanish.**

Installing UFT

1. The Unified Functional Testing Installation Wizard opens.
2. Follow the steps in the wizard to complete your installation.

Note the following considerations as you run through the installation wizard:

Installation Wizard Screen	Considerations
License Agreement	If you are installing UFT on a computer with an operating system in one of the supported languages, but you want to install UFT in English, select the English option at the bottom of this screen.
Custom Setup	<p>Do the following as needed:</p> <p>Select the GUI Testing add-ins or the UFT Add-in for ALM to install. Choose from the following options to install these features:</p> <ul style="list-style-type: none"> ■ <input type="checkbox"/> Will be installed on local hard drive. Installs the selected feature on your local hard drive. Sub-features of the selected feature are not installed. ■ <input checked="" type="checkbox"/> Entire feature will be installed on local hard drive. Installs the entire selected feature and its sub-features on your local hard drive. For example, you can instruct UFT to install the .NET Add-in with its sub add-ins, Silverlight and Windows Presentation Foundation. ■ <input type="checkbox"/> Entire feature will be unavailable. Excludes the feature from the installation and will not be available in UFT. <p>If you are using Web 2.0 add-ins (ASP .NET AJAX, Dojo, Google Web Tools (GWT), jQueryUI, or YahooUI), you need to perform an additional installation after the full installation. For details, see "Installing the Web 2.0 add-ins or extensibility toolkits" on the next page.</p> <div style="background-color: #f0f0f0; padding: 10px; border: 1px solid #ccc;"> <p>IMPORTANT: If you install the UFT Add-in for ALM as part of the installation and you plan to work with ALM 11.52, you must also install the Microsoft Visual C++ 2005 SP1 Redistributable Package on your computer. You can download this file from http://www.microsoft.com/en-us/download/details.aspx?id=5638.</p> </div>
UFT Configuration	<p>Select the necessary configuration options:</p> <ul style="list-style-type: none"> ■ Configure Internet Explorer settings. Select this check box to automatically configure the Internet Explorer options that enable UFT to

	<p>use the Microsoft Script Debugger application during test runs.</p> <p>You can also configure these options manually before running UFT. In Internet Explorer, select Tools > Internet Options > Advanced. Then select Disable script debugging and Enable third-party browser extensions.</p> <ul style="list-style-type: none">■ Configure DCOM settings for ALM Integration. Select this check box to automatically change DCOM permissions and security settings and open a firewall port on your UFT computer. These configurations are only required if you want to run UFT tests remotely from ALM, and are running UFT on Windows 7. <p>If you need to set these options manually, see "Modifying DCOM Permissions Manually to Enable Remote UFT Execution" on page 52.</p> <p>You can also automatically configure DCOM later by running the Additional Installation Requirements tool (Start > All Programs > HP Software > HP Unified Functional Testing > Tools > Additional Installation Requirements) or running the Remote Agent (<installation directory>\bin\AQTRmtAgent.exe).</p> <ul style="list-style-type: none">■ Configure DCOM settings for Automation Scripts. Select this check box to automatically change DCOM permissions and security settings to enable another computer to remotely control UFT using automation scripts. <div style="background-color: #f0f0f0; padding: 5px;"><p>Caution: Selecting this option enables remote users to control UFT on this machine, exposing the UFT computer to security risks.</p></div> <p>For information on how to configure this option manually, see "To disable group-wide remote DCOM execution of UFT scripts:" on page 56.</p> <ul style="list-style-type: none">■ Download and Install Microsoft Script Debugger. Provides the debugging environment that UFT uses during test runs. This item is displayed only when not currently installed.
--	---

When the UFT installation is complete, the installation wizard gives you the option to view the Readme file and a log of all installation details.

In some situations, you may be prompted to restart your computer after you have installed UFT. It is recommended that you restart your computer as soon as possible if you are prompted to do so. Delaying the system restart may result in unexpected UFT behavior.

Installing the Web 2.0 add-ins or extensibility toolkits

If you plan to use the Web 2.0 add-ins (ASP .NET Ajax, Dojo, GWT (Google Web Tools), jQueryUI, or YahooUI), or use extensibility to develop support for add-in objects not currently supported by

UFT add-ins, you need to perform an additional installation.

If you are using the UFT full installation package:

1. In the UFT installation start screen, select the **Add-in Extensibility and Web 2.0 Toolkits** option.

Note: You must install the Web Add-in as part of the main installation to use Web 2.0 add-ins.

2. In the Unified Functional Testing Add-in Extensibility and Web 2.0 Toolkit support page, select the Extensibility SDK or Web 2.0 Toolkits installation option that you want.
3. Follow the steps in the wizard to complete your installation.

After your installation, the Extensibility SDKs are found in the <UFT installation>\help\Extensibility folder. The Web 2.0 add-ins are displayed as child add-ins to the Web Add-in in the Add-in Manager when starting UFT.

If you are installing the UFT Compressed Package for the Web:

1. After performing the UFT installation, navigate to the <UFT installation>\Installations\Web2AddinSetup folder.

Note: You must install the Web Add-in as part of the main installation to use Web 2.0 add-ins.

2. In the Web2AddinSetup folder, run the Web2AddinSetup.exe file.
3. Follow the steps in the wizard to complete your installation.

After your installation, the Web 2.0 add-ins are displayed as child add-ins to the Web Add-in in the Add-in Manager when starting UFT.

Installing UFT Silently

A *silent installation* (or *quiet installation*) is an installation that is performed in the background. You can install UFT and the ALM Add-in silently on your computer or a remote computer.

You must have administrator privileges to install UFT and the ALM Add-in silently.

This task includes the following steps:

- ["Prerequisites" on the next page](#)
- ["Install UFT silently" on page 18](#)
- ["Installing UFT add-ins" on page 19](#)

- "Installing the UFT Add-in for ALM silently" on page 20
- "Installing localized versions of UFT" on page 20
- "Setting UFT configuration options" on page 21
- "Specifying a concurrent license server" on page 21
- "Silent installation command examples" on page 21

Prerequisites

- Save any open files and close all open applications before running the silent installation.
- Install the prerequisite software for UFT:
 - To install **all prerequisites silently**, run the following command in the command line:

```
DVD\Unified Functional Testing\EN\setup.exe /InstallOnlyPrerequisite /s  
(if you are installing from a DVD)
```

or

```
<installation download directory>\Unified Functional  
Testing\EN\setup.exe /InstallOnlyPrerequisite /s (if you are installing from the  
Web download)
```

- To install **individual prerequisites silently**, use the following syntax:

Note: If you are installing UFT from the Web download, make sure to change DVD to the download directory you used.

For UFT	
Prerequisite	Silent Command Line Syntax
.NET Framework 4.5	DVD\prerequisites\dotnet45\dotnetfx45_full_x86_x64.exe /q /norestart
Microsoft Access database engine 2010	DVD\prerequisites\msade2010\AccessDatabaseEngine.exe /quiet
Microsoft WSE 2.0 SP3 Runtime	DVD\prerequisites\wse20sp3\MicrosoftWSE2.0SP3Runtime.msi /quiet /norestart ALLUSERS=1

Microsoft WSE 3.0 Runtime	DVD\prerequisites\wse30\MicrosoftWSE3.0Runtime.msi /quiet /norestart ALLUSERS=1
Microsoft Visual C++ 2010 Runtime Components for 32/64 bit Operating Systems	DVD\prerequisites\vc2010_redist\vc_redist_x86.exe /q (for 32-bit machines) DVD\prerequisites\vc2010_X64_redist\vc_redist_x86.exe /q (for 64-bit machines)
Microsoft C++ 2012 Redistributable	DVD\prerequisites\vc2012_redist_x86\vc_redist_x86.exe /quiet /norestart (for 32-bit machines) DVD\prerequisites\vc2012_redist_x64\vc_redist_x64.exe /quiet /norestart (for 64-bit machines)

For the UFT Add-in for ALM:	
Prerequisite	Silent Command Line Syntax
.NET Framework 4.5	DVD\prerequisites\dotnet45\dotnetfx45_full_x86_x64.exe /q /norestart
Microsoft Visual C++ 2012 Redistributable	DVD\prerequisites\vc2012_redist_x86\vc_redist_x86.exe /quiet /norestart (for 32-bit machines) DVD\prerequisites\vc2012_redist_x64\vc_redist_x64.exe /quiet /norestart (for 64-bit machines)

Install UFT silently

In the command line, run the `msiexec` command to install UFT, using the following syntax:

```
msiexec /i "<UFT_DVD_PATH>\Unified Functional Testing\MSI\Unified_Functional_Testing_x64.msi" /qb (for 64-bit machines)
```

```
msiexec /i "<installation_download_directory>\Unified Functional Testing\MSI\Unified_Functional_Testing_x64.msi" /qb (for 64-bit machines)
```

or

```
msiexec /i "<UFT_DVD_PATH>\Unified Functional Testing\MSI\Unified_Functional_Testing_x86.msi" /qb (for 32-bit machines)
```

```
msiexec /i "<installation_download_directory>\Unified Functional Testing\MSI\Unified_Functional_Testing_x86.msi" /qb (for 32-bit machines)
```

Note: If you do not specify an installation folder, UFT is installed in the default installation folder.

For a description of possible silent installation commands, see "[Silent Installation Commands](#)" on [page 51](#).

Installing UFT add-ins

You can use the ADDLOCAL MSI property in the silent installation command line to specify the UFT features and add-ins that you want to install. If you want to install only the UFT core components, you do not need to use this option.

If you use this command, the following mandatory options must be included:

- `Core_Components` (parent: `Unified_Functional_Testing`)
- `Samples` (parent: `Unified_Functional_Testing`)

Note: When installing a feature using the ADDLOCAL property, its parent always is installed as well.

In addition to the mandatory options, you can install the following UFT features and add-ins:

Note: The silent installation commands are case-sensitive and should be entered exactly as listed below.

- `ALM_Plugin`
- `ActiveX_Add_in`
- `Visual_Basic_Add_in`
- `Delphi_Add_in`
- `Flex_Add_in`
- `Java_Add_in`
- `_Net_Add_in`
- `Silverlight_Add_in`
- `WPF_Add_in`
- `Oracle_Add_in`
- `PeopleSoft_Add_in`
- `PowerBuilder_Add_in`

- Qt_Add_in
- SAP_Solutions_Add_in
- SAP_eCATT_integration
- Siebel_Add_in
- Stingray_Add_in
- TE_Add_in
- VisualAge_Add_in

Installing the UFT Add-in for ALM silently

In the command line, run the `msiexec` command to install the UFT Add-in for ALM, using the following syntax:

```
msiexec /i "<UFT_DVD_Path>\ALMPlugin\MSI\<ALM_Plugin_File>" /qn
```

Note: If you install the UFT Add-in for ALM as part of the regular UFT installation, you cannot install it independently.

For a description of possible silent installation commands, see ["Silent Installation Commands" on page 51](#).

Example

```
msiexec /i "<UFT_DVD_Path>\ALMPlugin\MSI>\Unified_Functional_Testing_Add-in_for_ALM.msi" /qn
```

Installing localized versions of UFT

You can also perform a silent installation of a localized version of UFT.

In the command line, add the `PRODUCT_LOCALE` property to the `msiexec` command to install the following localized versions:

- Brazilian Portuguese: `PRODUCT_LOCALE="PTB"`
- Chinese: `PRODUCT_LOCALE="CHS"`
- Dutch: `PRODUCT_LOCALE="NLD"`
- French: `PRODUCT_LOCALE="FRA"`
- German: `PRODUCT_LOCALE="DEU"`

- Italian: `PRODUCT_LOCALE="ITA"`
- Japanese: `PRODUCT_LOCALE="JPN"`
- Korean: `PRODUCT_LOCALE="KOR"`
- Russian: `PRODUCT_LOCALE="RUS"`
- Spanish: `PRODUCT_LOCALE="ESP"`

Setting UFT configuration options

By default, the following configuration options are included in the silent installation:

- **Configure Internet Explorer settings** (to exclude this option from the installation, use `CONF_MSIE=0`)
- **Configure DCOM settings for ALM Integration** (to exclude this option from the installation, `CONF_DICOM=0`)
- **Download and install Microsoft Script Debugger** (to exclude this option from the installation, set `DLWN_SCRIPT_DBGR=0`)

The **Configure DCOM Settings for Automation Scripts** option is not included by default. To set this option for a silent installation, use `CONF_DICOM_UFT=1`.

Caution: Setting this option enables remote users to control UFT on this machine, exposing the UFT computer to security risks.

Specifying a concurrent license server

You can specify a specific license server during the silent installation. Use the `LICSVR` command as follows:

```
LICSVR=<server name>
```

Silent installation command examples

The following examples illustrate different possible commands for a silent installation of UFT.

- **Standard installation:** `msiexec /i "<UFT_DVD_PATH>\Unified Functional Testing\MSI\Unified_Functional_Testing_x64.msi" /qb`
- **Standard installation with the Java Add-in, installed from a DVD** `msiexec /i "<UFT_DVD_PATH>\Unified Functional Testing\MSI\Unified_Functional_Testing_x64.msi" /qb ADDLOCAL="Core_Components,Samples,Java_Add_in" TARGETDIR="<UFT_Folder>"`

- **Standard installation from the Web download with the Web and Java Add-ins installed, DCOM configurations set, the Microsoft Script Debugger not downloaded:** `msiexec /i "<installation_download_directory>\Unified Functional Testing\MSI\Unified_Functional_Testing_x64.msi" /qb ADDLOCAL="Core_Components,Samples,Java_Add_in" DLWN_SCRIPT_DBGR=0 CONF_DICOM=1 TARGETDIR="<UFT_Folder>"`
- **Standard installation of the localized German version of UFT with the .NET Add-in:** `msiexec /i "<UFT_DVD_PATH>\Unified Functional Testing\MSI\Unified_Functional_Testing_x64.msi" /qb ADDLOCAL="Core_Components,Samples,_Net_Add_in" PRODUCT_LOCALE="DEU" TARGETDIR="<UFT_Folder>"`

UFT Program Folder Structure

After the UFT installation is complete, the following items are added to your UFT program folder (**Start > All Programs > HP Software > HP Unified Functional Testing**):

- **Documentation.** Provides the following links to commonly used documentation files:

Option	Description
HP Unified Functional Testing Code Samples Plus	<p>Opens the Unified Functional Testing Code Samples Plus Help, which provides sample function libraries, code, and SDK samples with accompanying explanations.</p> <p>Note: These samples are relevant for GUI testing only.</p>
HP UFT Help	<p>Opens the UFT Help, which displays links to commonly used topics and movies that describe how to use UFT, as well as additional links to HPSoftware Websites.</p> <p>The UFT Help provides access to all guides available for UFT, such as Getting Started guides, Helps, reference files, and links to printer-friendly (PDF format) documentation. It contains various navigation options to help you find the information you need.</p>
Unified Functional Testing Automation Reference	<p>Opens the Unified Functional Testing Automation Object Model Reference for GUI Testing. The object model assists you in automating GUI test management, by providing objects, methods and properties that enable you to control UFT features and configurations. The Object Model Reference provides syntax, descriptive information, and examples for the objects, methods, and properties. It also contains a detailed overview to help you get started writing GUI test scripts.</p>
UFT Tutorials	<p>Opens the GUI testing and API testing tutorials, which teach you basic skills and shows you how to start testing your applications.</p>

- **Sample Applications.** Contains the following links to sample applications that you can use to practice testing with UFT:

Option	Description
Flight API	<p>Opens a GUI-less flight service application, used in conjunction with an API test.</p> <p>Note: You must have administrator privileges to use this application.</p>

Option	Description
Flight GUI	Opens a sample flight reservation Windows application. To access the application, enter any username and the password mercury .
Mercury Tours Web site	Opens a sample flight reservation Web application. This Web application is used as a basis for the UFT GUI Testing tutorial. For details, see the <i>HP Unified Functional Testing Tutorial for GUI Testing</i> .

- **Tools.** Contains the following utilities and tools that assist you with the testing process:

Note: The available tools depend on the installed UFT add-ins.

Option	Description
Activity Wizard	Opens the API Testing Activity Wizard, which enables you to create custom API activities that will be visible in the Toolbox pane.
Additional Installation Requirements	Opens the Additional Installation Requirements Utility, which displays any prerequisite software that you must install or configure to work with UFT. For details, see the
Commuter License Tool	Opens the Commuter Licensing utility, to check in or check out concurrent licenses when working at a remote location.
HP Micro Player	Opens the HP Micro Player, which enables you to view captured movies of a run session without opening UFT. For details, click the Help button in the HP Micro Player window.
Java Add-in JRE Support Tool (GUI testing only)	<p>Opens the Java Add-in JRE Support Tool, which adjusts the JVM Runtime Parameters of your JRE to enable the Java Add-in to recognize Java applets and the Java objects within them.</p> <p>This tool is necessary only for certain operating systems, browsers, and JRE versions. For details, see the Java section of the <i>HP Unified Functional Testing Add-ins Guide</i>. This tool is only available when the Java add-in is installed with UFT.</p>
License Validation Utility	Opens the License Validation utility, which enables you to retrieve and validate license information. For details, click the Help button in the License Validation Utility window.
Password Encoder (GUI testing only)	Opens the Password Encoder tool, which enables you to encode passwords. You can use the resulting strings as method arguments or Data pane parameter values.

Option	Description
Register New Browser Control (GUI testing only)	Opens the Register Browser Control Utility, which enables you to register your browser control application so that UFT recognizes your Web objects when recording or running GUI tests. For details, see the section on registering browser controls in the <i>HP Unified Functional Testing Add-ins Guide</i> .
Remote Agent	Activates the UFT Remote Agent, which enables you to configure how UFT behaves when a GUI test or component is run by a remote application such as ALM.
Silent Test Runner (GUI testing only)	Opens the Silent Test Runner. This enables you to run a test in the manner in which it is run from LoadRunner or Business Availability Center.
soapUI to API Test Converter (API Testing only)	Converts soapUI tests to a UFT API Test.
Stingray Support Configuration Wizard (GUI testing only)	Opens the Stingray Support Configuration Wizard which enables UFT to recognize Stingray objects in your application. This tool is only available when the Stingray add-in is installed with UFT.
Test Batch Runner	Opens the Test Batch Runner application, which enables you to set up UFT to run several tests in succession.

- **HP Unified Functional Testing Product Availability Matrix.** Provides a complete list of all environments, programs, and versions that are supported for UFT and its add-ins.
- **HP Unified Functional Testing.** Opens the UFT application.
- **Readme.** Opens the *HP Unified Functional Testing Readme*, which provides the latest news and information on UFT and the UFT add-ins.

Note:

- If you uninstalled a previous version of UFT before installing this version, you may have additional (outdated) items in your UFT program folder. In addition, if you have UFT add-ins or extensibility SDKs installed, you may have items in your program folder that relate specifically to these items.

- For details on accessing UFT and UFT tools and files in Windows 8, see ["Accessing UFT in Windows 8 Operating Systems" on page 60](#).

Troubleshooting and Limitations - Installing/Uninstalling UFT

This section describes troubleshooting and limitations for installing UFT. It contains the following sections:

- ["General Limitations" below](#)
- ["Upgrading from QuickTest Professional" below](#)
- ["Uninstalling UFT" on the next page](#)

General Limitations

- If the HP UFT Files in Use dialog box is displayed during the installation process:
 - Select the **Close the application and attempt to restart them option**. UFT automatically closes the applications and continues the installation.
 - If after restarting, the HP UFT Files in Use dialog box lists Explorer as the open application, do one of the following:
 - **Close the applications and attempt to restart them:** Instructs UFT to automatically close the applications that are needed for the installation.
 - **Do not close application.** Instructs UFT to continue the installation. You must restart your computer after the installation if you select this option.

- You cannot install a previous version of UFT after installing UFT 12.00 or higher.

Workaround: Manually uninstall UFT before installing the older version.

- After uninstalling LoadRunner 11.50, UFT does not work.

Workaround: After uninstalling LoadRunner 11.50, perform a repair installation for UFT.

Upgrading from QuickTest Professional

- When upgrading from QuickTest Professional 11.00 and installing UFT into the same directory as Quick Test, certain files will be missing from the installation.

Workaround: After the upgrade, run the UFT installation again and select the **Repair Installation** option.

- When upgrading from QuickTest Professional, the installation may repeatedly prompt you for confirmation to continue.

Workaround: Click **Continue** when prompted.

Uninstalling UFT

When an ALM client is installed on the same computer as UFT, uninstalling UFT may remove the association of movie (.fbr) files. This may prevent you from viewing movies associated with defects in ALM using the HP Micro Player.

Workaround: Re-associate the movie files with the HP Micro Player, as follows:

1. Select **Start > All Programs > HP Software > HP Unified Functional Testing > Tools > HP Micro Player** to open the HP Micro Player.
2. Select **File > Options** to open the HP Micro Player Options dialog box. Then select the **Associate FBR files with this Player** check box to associate the files with the HP Micro Player.

Chapter 3: Working with UFT Licenses

You can install UFT using a **seat** license (formerly known as a local or standalone license) or a **concurrent** license (formerly known as a floating license).

Your UFT license enables all UFT features, including the use of all UFT add-ins. When upgrading from a previous version, only previously licensed add-ins will be available.

This chapter includes:

Understanding UFT License Types	29
Requesting a Seat License Key	30
Requesting a License Key via the HP Software Licensing Portal	30
Installing a Seat License Key	32
Installing a Concurrent License	34
Working with Commuter Licenses	36
Checking Out a Commuter License	36
Checking In a Commuter License	38
Obtaining a Commuter License Remotely	39
Troubleshooting and Limitations - Working with Licenses	46

Understanding UFT License Types

To use UFT, you must have a valid license. There are two types of licenses: **seat** and **concurrent**. The table below summarizes the differences between the two license types.

Topic	Seat License	Concurrent License
General description	The license is specific to the computer on which the license is installed.	Each license entitles the organization to one additional concurrent user.
Number of installations per license key	Each installation of UFT requires a distinct license key.	There is no limit to the number of UFT installations on the network, but a special concurrent license server regulates the number of computers that can run a copy of UFT at any time.
Maintenance number	The license key is based partially on the maintenance number. The maintenance number identifies the customer.	The license key is based partially on the maintenance number. The maintenance number identifies the customer and indicates how many concurrent users the license supports.
Other issues	<p>The license key is based partially on the locking code, which is a code that identifies the computer on which UFT is installed. The supplied license key works only for the computer on which the locking code was generated.</p> <p>Note: A computer with multiple bootable partitions may generate a different locking code for each partition. If a different locking code is generated for a partition, you need to request a unique license key for it.</p>	<p>Not supported for Unix networks.</p> <p>It is recommended that the concurrent license server has a fixed IP address.</p> <p>UFT client computers must have TCP/IP installed.</p> <p>To use concurrent licenses across networks, UDP port 5093 must be open on the server.</p>

Topic	Seat License	Concurrent License
Entering license key	<p>At the end of the installation, UFT automatically uses the demo license. You can install your license key when opening UFT in the license time notification window.</p> <p>After the initial entering of the license key, there is no need to re-enter the license information.</p>	<p>At the end of the installation procedure, UFT automatically uses the demo license. You can install your license key when opening UFT in the license time notification window.</p> <p>Each subsequent time UFT opens, it automatically searches the same subnet for the concurrent license server. You do not need to enter a license key for your UFT client installation.</p>

Requesting a Seat License Key

When you install UFT with a seat license for the first time, it includes a 30-day demo license. To use UFT beyond the 30-day period, you must request and activate a license key for your copy of UFT.

To request a seat license key:

1. Perform one of the following:
 - From the license warning message displayed when you start UFT, click **Install License**.
 - From within UFT, select **Help > License Wizard**. The Unified Functional Testing License Wizard dialog box opens.

Select **Seat license** and click **Next**. Click **Yes** to install a new license key. The Welcome screen opens.
2. Make a record of the displayed locking code for your computer. You will need the locking code to request your license key. Click the link on the Unified Functional Testing License Installation - Welcome screen for the **HP Webware License Key Delivery Service** to request your license key. Follow the instructions as described in "[Requesting a License Key via the HP Software Licensing Portal](#)" below.

Requesting a License Key via the HP Software Licensing Portal

The HP Software Licensing Portal assists you in requesting a license key.

For details on the various areas of the portal, see the links under the **Resources** section on the left side of the Web page, such as the tutorial or the how-to demos.

Request your license key as described in the HP Software License Activation Quick Start Guide, available from the **Resources** area of the HP Software Licensing Portal.

Installing a Seat License Key

In the License Key screen, you enter the license key you received from HP. The license key is included in the .dat file attached to the e-mail containing your Permanent Password Certificate.

Caution:

- You must have Administrator privileges to install a license key.
- After installing the seat license key, do not change your computer's date or time. This triggers a **Clock Tamper** lock on the license information, preventing you from using the license.

To install a seat license key:

1. Perform one of the following:
 - From the warning message displayed when you start UFT, click **Install License**.
 - From within UFT, select **Help > License Wizard**.

Note: You can also activate the seat license as part of the UFT installation. After you click **Finish** in the final installation screen, the Unified Functional Testing License Installation - Welcome screen opens, as described below.

The License Type screen opens.

2. In the License Type screen, elect **Seat license** and click **Next**. In the confirmation box, click **Yes** to install a new license key. The Welcome screen opens.

Tip: Check that the locking code in the License Key screen matches the locking code you sent to HP when you requested a license key.


Click **Next**. The License Key Screen opens.

3. In the License Key screen, enter your license key.

Notes:

- The license key is valid only for the computer with the locking code that you entered in the HP Software Support license request form.
- A computer with multiple bootable partitions may generate a different locking code for each partition. If a different locking code is generated for a partition, you need to request

a unique license key for it.

- i. Open the .dat file attached to the email containing your Permanent Password Certificate using any text editor. The license key is also included in the Permanent Password Certificate.
- ii. Copy the license key (with or without the # character) from the .dat file to the clipboard.
- iii. Paste the key into the License Installation - License Key screen by clicking the **Paste From Clipboard** button  .

Click **Next**. The Install Summary Screen opens.

7. In the Install Summary screen, verify your license details and click **Next** to install the license..
8. If you entered a valid license key, the Finish screen confirms that your license key was successfully installed.

If the license could not be installed successfully, a message is displayed describing why. For example, if a seat license was previously installed on your computer, and you try to install a seat license again using the same license key, the license installation will not succeed. If the license could not be installed, a **Send to Support** button is displayed. You can click **Send to Support** to create an e-mail with licensing information and send the email to your nearest HP Software Support location. Make sure that you fill in the required information in the e-mail so that Software Support can assist you.

Tip: You can install another license by selecting the **Install another license** check box, clicking **Finish** and performing this task again.

9. If you do not want to install another UFT license, click **Finish** to complete the license activation process and close the wizard.

Note: If you need to modify your license type at a later date, you can do so by selecting Help > License Wizard or click Install License when opening UFT.

Installing a Concurrent License

If there is an accessible concurrent license server on your network with an available license, you can connect to it. This enables you to use a concurrent license instead of a seat license. For more details on working with concurrent license servers, and the supported versions, see the *HP Functional Testing Concurrent License Server Installation Guide*.

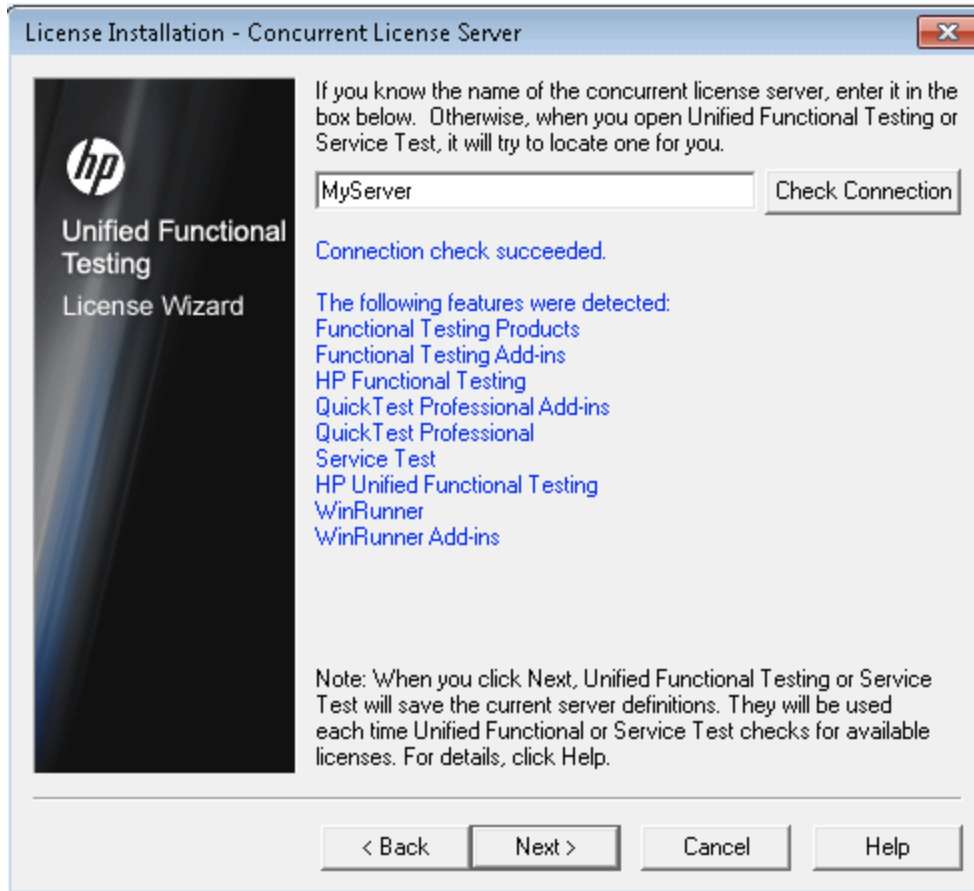
To work with a concurrent license:

1. Perform one of the following:
 - From the license warning message displayed when you start UFT, click **Install License**.
 - From within UFT, select **Help > License Wizard**.

The License Type screen opens.
2. Select **Concurrent license** and click **Next**. The Concurrent License Server screen opens.
3. In the edit box or the Concurrent License Server screen, either enter the name or IP address of the concurrent license server to which you want to connect, or leave the box blank to instruct UFT to search for an available server on your local network.

Tip: When you activate a concurrent license using the License Wizard and specify a single server name, the LSFORCEHOST user variable is automatically defined with the concurrent license server you specified. You can modify the concurrent license server either by running the License Wizard or by setting the LSHOST or LSFORCEHOST user variable. For more details, see the *HP Functional Testing Concurrent License Server Installation Guide*.

4. Click **Check Connection**. If UFT can connect to the concurrent license server, a success message is displayed



Tip: If you want to specify the name of a concurrent license server that is currently unavailable, but will be available later, you can enter the name of the concurrent license server in the edit box. Even though the Concurrent License Server screen informs you that the specified server is not available for connection, the next time you open UFT, UFT will try to locate the server you specified.

5. Click **Next**. The installation informs you that the concurrent license activation was successful.
6. Click **Finish** to close the wizard. If UFT is open, you must close and restart to use the concurrent license server.

Note: If you need to modify your license type at a later date, you can do so by selecting **Help > License Wizard** or click **Install License** when opening UFT.

Working with Commuter Licenses

If you use UFT with a concurrent license, but cannot connect your computer to your network (for example, during a business trip), you can install a commuter license. Commuter licenses are available in companies that have only concurrent licenses (not seat licenses).

For example, suppose you need to travel on business with your laptop computer and you want to use UFT while you are away. You can check out a UFT license from the concurrent license server to use for the duration of your trip, and then check the license back in upon your return. Commuter licenses are valid for up to 180 days, according to your requirements.

Tip: If you have a concurrent license and are located far from the concurrent license server, you can also use a commuter license if you encounter network traffic.

For more details, see ["Checking Out a Commuter License" below](#) , and ["Checking In a Commuter License" on page 38](#).

Note: Installing a commuter license requires administrator permissions for the computer on which you want to use the license.

In addition, if you are unable to check out a license before you disconnect from the network (that is, leave for your trip), or if you checked out a license but it expired because your return was delayed, you can ask a local network user to check out a commuter license and send it to you remotely. For more details, see ["Obtaining a Commuter License Remotely" on page 39](#).

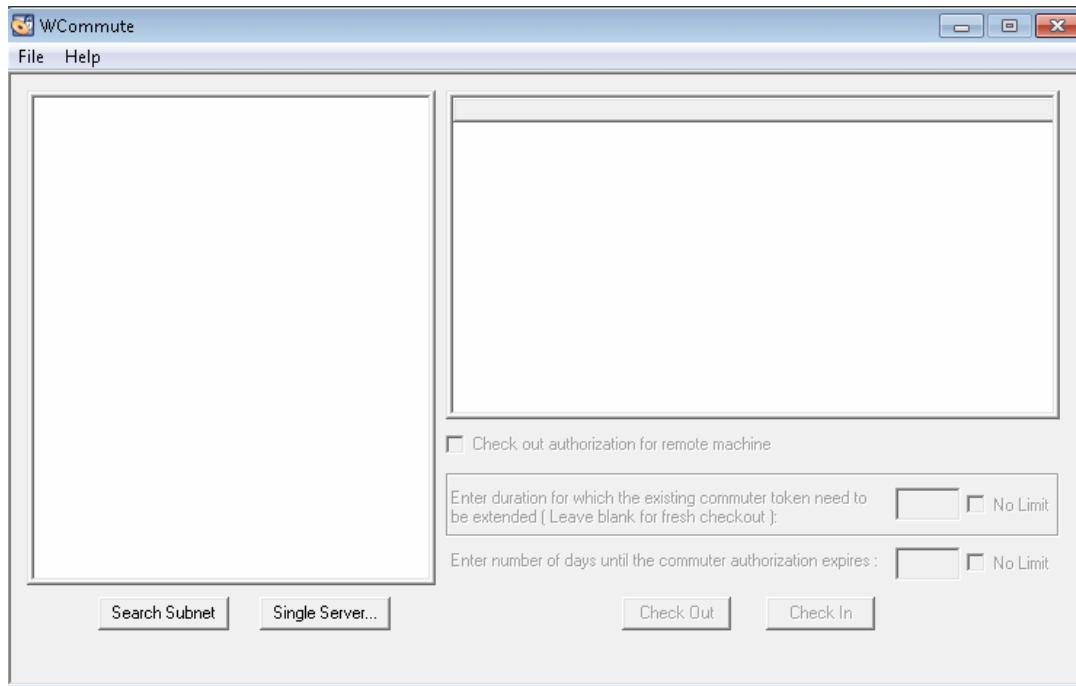
Note: If you have upgraded to HP Functional Testing Concurrent License from a version earlier than 7.6, you need to request a new server license key to enable the commuter licensing functionality. For details, contact HP Software Support or your local representative.

Checking Out a Commuter License

Before you check out a commuter license, ensure that the computer (for example, a laptop) on which you want to install the commuter license has UFT installed, is connected to the network, and has access to a concurrent license server with an available UFT license. After you have checked out the license, you can disconnect the computer from the network.

To check out a commuter license:

1. Run the `WCommute.exe` file located in `<Unified Functional Testing installation folder>\bin`. The `WCommute` dialog box opens.



2. To see commuter licenses available on all concurrent license servers located within your subnet, click **Search Subnet**. If you want to specify a particular concurrent license server, or if you want to select a concurrent license server outside of your subnet, click **Single Server**.
 - If you click **Search Subnet**, the WCommute utility searches the subnet for concurrent license servers that support commuter licensing and displays them in the WCommute dialog box.

Note: This process may take several minutes.

- If you click **Single Server**, a dialog box opens enabling you to specify the concurrent license server you want to locate. Enter the concurrent license server computer's host name, IP address, or IPX address and click **OK**. The specified concurrent license server is located and displayed in the WCommute dialog box.

For each concurrent license server, a list of available commuter licenses is displayed. A red check mark next to a commuter license means that the license is already checked out to your computer. You cannot check out multiple licenses for the same application to the same computer. Click a license to view the license details in the right pane of the dialog box.

3. Select the license that you want to check out.

4. In the **Enter number of days until the commuter authorization expires** box, specify the maximum number of days to check out the license. The maximum number of days is 180.

Note:

- UFT supports the Sentinel RMS License Manager version 8.4.0 as its concurrent license server. If you are upgrading to UFT with a concurrent license, you must also upgrade your concurrent license server.
- When you check out a license, it decreases the number of licenses available for use by others. Therefore, you should specify the absolute minimum number of days that you require.

5. Click **Check Out**. The selected license is saved locally on your computer.
6. To use the new checked-out license, open UFT and change your license type from concurrent to seat. In the confirmation message that opens after you change the license type, click **No** to use the commuter license.

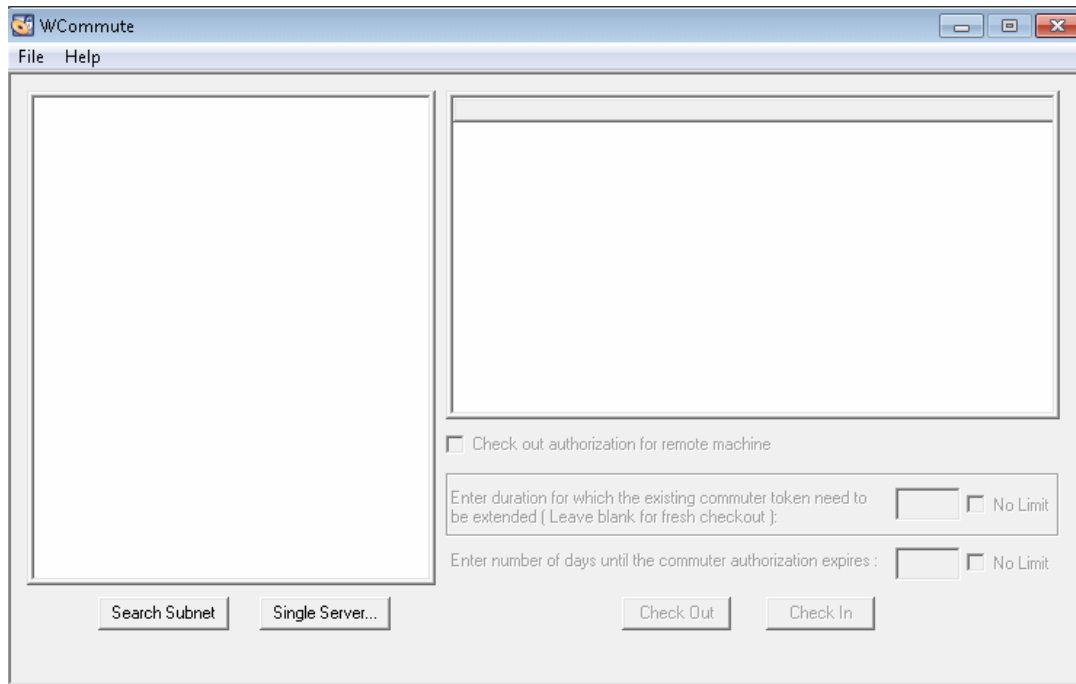
Checking In a Commuter License

When you finish using the commuter license, you should check it in from your computer to the concurrent license server from which you checked it out. This makes the license available to other users.

Note: If your license expires, you do not need to check it in. When a license expires, you can no longer use it. The license is automatically returned to the concurrent license server, even if your computer is not connected to the concurrent license server network.

To check in a commuter license:

1. Run the `WCommute.exe` file located in `<Unified Functional Testing installation folder>\bin`. The `WCommute` dialog box opens.



2. Locate the concurrent license server for the commuter license you want to check in, as described in "[Checking Out a Commuter License](#)" on page 36. You must check in the license to the same concurrent license server from which you checked it out.
3. Select the license you previously checked out.

Tip: The checked-out license is indicated by a red check mark.

4. Click **Check In**. The license is returned to the concurrent license server, and is made available for use by others.

Note: Before you can use UFT again, you must change your license type from seat to concurrent.

Obtaining a Commuter License Remotely

A local network user can locally check out a UFT commuter license and send it to you for installation on a remote computer. This is useful in situations in which you are currently not connected to the concurrent license server network. For example, you may be out of the office on an extended business trip, but need to be able to use UFT.

To obtain a commuter license remotely:

1. Run the WRCommute utility to generate a commuter locking code for your computer and send the commuter locking code to a local user who has access to the concurrent license server. For more details, see "[Step 1: Generating a Remote Computer Locking Code](#)" below.
2. Ask the local user to run the WCommute utility (entering the commuter locking code you generated) to check out a remote commuter license, and send the license to you. For more details, see "[Step 2: Checking Out a Commuter License for a Remote Computer](#)" on page 42.
3. Run the WRCommute utility to install the remote commuter license on your computer. For more details, see "[Step 3: Installing a Commuter License on a Remote Computer](#)" on page 44.
4. Open UFT and change your license type from concurrent to seat. In the confirmation message that opens after you change the license type, click **No** to use the commuter license.

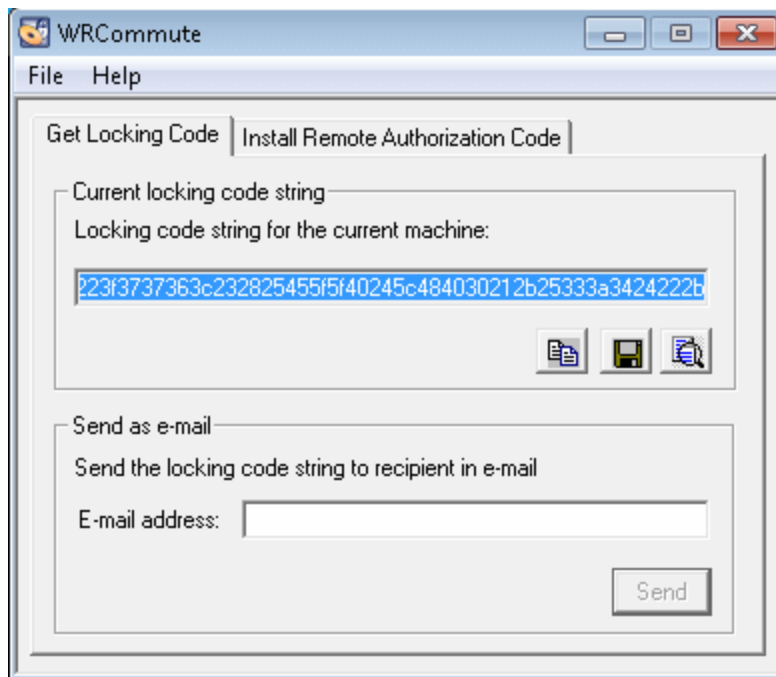
Step 1: Generating a Remote Computer Locking Code

The first step in remotely obtaining a commuter license is to generate a locking code on your computer using the WRCommute utility, and transfer the code (by e-mail) to a network user who has access to the concurrent license server.

Note: The remote computer locking code used to lock a commuter license is not the same as the locking code displayed by the ECHOID utility. You must use the WRCommute utility to obtain the commuter license locking code.




To generate a locking code on a remote computer:

1. Run the WRCommute.exe file located in <Unified Functional Testing installation folder>\bin. The WRCommute dialog box opens.



The **Locking code string for the current machine** box contains the locking code that you need to e-mail to a network user who has access to the concurrent license server containing the UFT licenses.

2. Send the locking code to the local network user in one of the following ways:

- Select the locking code string and click the **Copy to clipboard** button  to copy the string to your Windows clipboard. Then open your e-mail program and paste the string into a new e-mail message and e-mail it to the local network user.
- Click the **Save lock code string to file** button  to save the locking code in a file. Specify the name and location for the file, and then attach the file to a new e-mail message and e-mail it to the local network user.
- Click the **Display locking code string** button  to display the entire locking code in another dialog box. You can then select the locking code string, right-click it and select **Copy** to copy it to your Windows clipboard. Then open your e-mail program and paste the string into a new e-mail message and e-mail it to the local network user.
- In the **E-mail address** box, enter the e-mail address of the local network user and click **Send**.

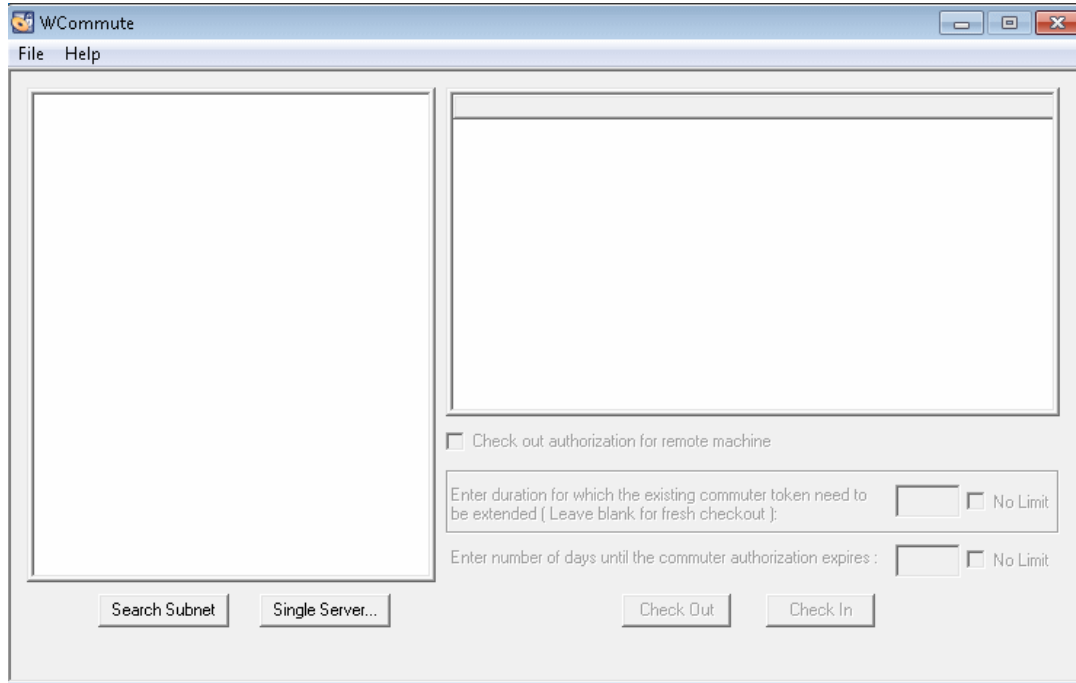
Note: This option is supported only if Microsoft Outlook Express is set up as your e-mail client.

Step 2: Checking Out a Commuter License for a Remote Computer

After a local network user receives the locking code, the user can check out the license and transfer the license to you (by e-mail). To do this, the user must have UFT installed on his or her computer and also have access to the concurrent license server with an available UFT license.

To check out a commuter license for a remote computer:

1. Run the WCommute.exe file located in <Unified Functional Testing installation folder>\bin. The WCommute dialog box opens.\



2. Locate the concurrent license server from which you want to check out a remote commuter license, as described in "[Checking Out a Commuter License](#)" on page 36.

For each concurrent license server, a list of commuter licenses that you can check out is displayed.

3. Select the license that you want to check out.
4. Select the **Check out authorization for remote machine** check box.
5. In the **Enter the number of days until the authorization expires** box, specify the number of days to check out the license. The maximum number of days is 180.

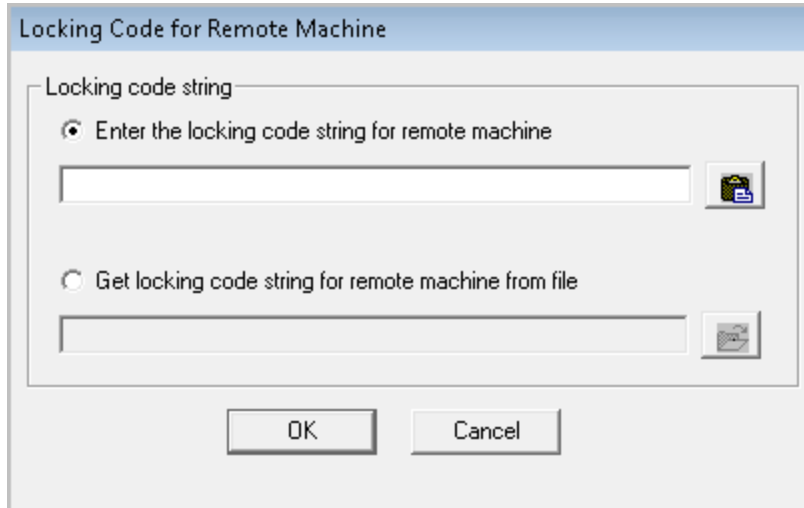
Note:

- UFT supports the Sentinel RMS License Manager version 8.4.0 as its concurrent license server. If you are upgrading to UFT with a concurrent license, you must also



upgrade your concurrent license server.

- When you check out a license for a remote computer, the license cannot be checked in and remains in use (unavailable to other users) for the entire number of days specified. Therefore, you should specify the absolute minimum number of days required.

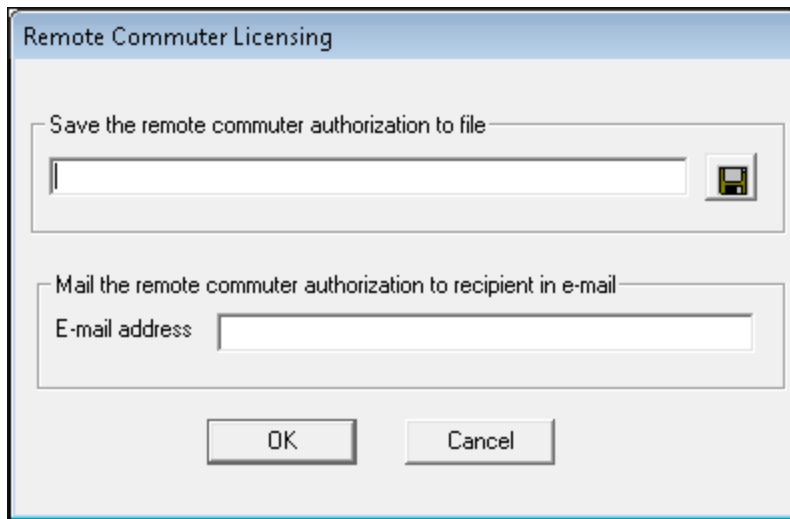
6. Click **Check Out**. The Locking Code for Remote Machine dialog box opens.




7. Enter the locking code that the remote user e-mailed you in one of the following ways:

- If the locking code was e-mailed to you in the body of an e-mail, copy it to your Windows clipboard. In the Locking Code for Remote Machine dialog box, select **Enter the locking code string for remote machine** and then click the **Paste from clipboard** button .
- If the locking code was e-mailed to you as an attached file, save the attachment and then select **Get locking code string for remote machine from file**. Click the **Load** button . Select the file that contains the locking code and click **Open**.

8. Click **OK**. The Remote Commuter Licensing dialog box opens.



9. Send the commuter license to the remote user in one of the following ways:

- Click the **Save** button  to save the locking code in a file. Specify the name and location for the file, click **Save** and then click **OK**. Attach the file to a new e-mail message and e-mail it to the remote user.
- In the **E-mail address** box, enter the e-mail address of the remote user. Click **Send** and then click **OK**.

Note: This option is supported only if Microsoft Outlook Express is set up as your e-mail client.

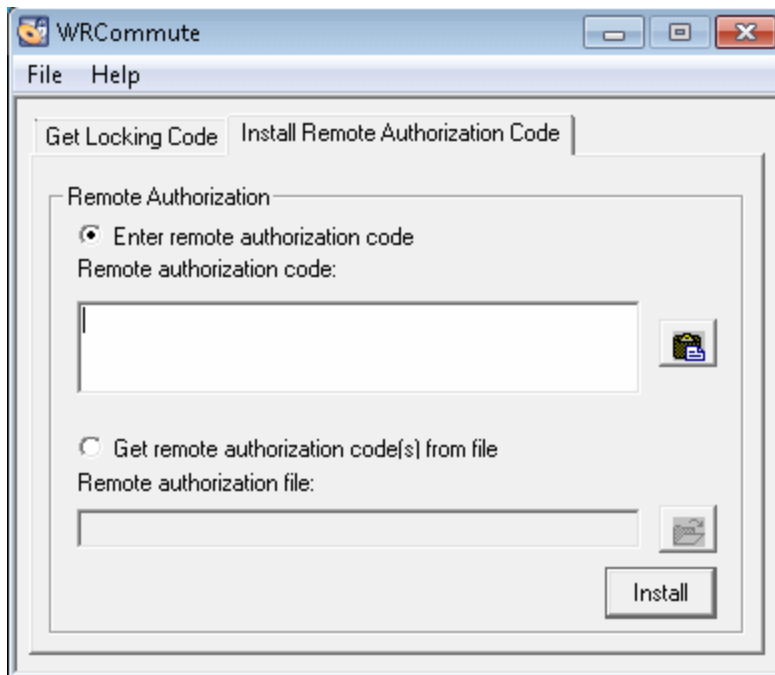
Step 3: Installing a Commuter License on a Remote Computer



The final step in remotely obtaining a commuter license is to install the license that was sent to you by the network user on your computer.

To install a commuter license on a remote computer:

1. Ensure that you are logged in to your computer with administrator privileges.
2. Run the `WRCommute.exe` file located in `<Unified Functional Testing installation folder>\bin`. The `WRCommute` dialog box opens.

3. Click the **Install Remote Authorization Code** tab.



4. Enter the commuter license that the network user e-mailed you, as follows:
 - If the commuter license was e-mailed to you in the body of an e-mail, copy it to your Windows clipboard. In the Install Remote Authorization Code tab of the WRCCommute dialog box, select **Enter remote authorization code** and then click the **Paste from clipboard** button .
 - If the commuter license was e-mailed to you as an attached file, save the attachment and then select **Get remote authorization code(s) from file**. Click the **Load** button . Select the file that contains the locking code and click the **Open** button.
5. Click **Install**. The new license code is installed on your computer.

Step 4: Modifying the License Type on the Remote Computer

Open UFT and change your license type from concurrent to seat. In the confirmation message that opens after you change the license type, click **No** to use the commuter license.

Note: A remote commuter license cannot be checked in to the concurrent license server when you have finished using it—the license simply expires on the remote computer. After you return to your office and are reconnected to the network, you should change your license type from seat to concurrent.

Troubleshooting and Limitations - Working with Licenses

The following section contains troubleshooting tips and limitations for using UFT licenses:

Using Old Service Test licenses

UFT cannot open with a license that was installed with Service Test 9.53.

Workaround: Reinstall the license using the UFT License Manger, available from the Start menu.

No network connection between the concurrent license server and client computers with the UFT installation

You can check the network connection between the client and server machines by pinging the license server machine in a command prompt window.

For example, you can enter the following command: `c:\ ping <license server name>`

If there are no replies from the ping command, or if there are timeouts in the replies, there may be a network problem. If required, contact your Computer or Network Administrator.

Concurrent license server not running

You may need to start or restart the license server service:

1. Open the Control Panel (**Start > Settings > Control Panel**).
2. Select **Services**.
3. Select **SentinelRMS** service.
4. Click **Start the Service** (or **Restart the Service**), or right-click and select **Start** (or **Restart**).

Licenses not installed on the concurrent license server

Use the WlmAdmin utility to check that licenses are installed on the license server. For more details on the WlmAdmin utility, see the **Utilities** chapter in the *HP Functional Testing Concurrent License Server Installation Guide*.

1. Run `SrvUtils.exe` in the `LicenseServer\utils` folder of the UFT installation DVD.
2. Select **WlmAdmin**.
3. Enter the license server name as a defined server.
4. Try to expand the license server branch.

If no license key information is displayed, then the installed licenses are invalid, or the license key file (`lserverc`) cannot be found. If license key information is displayed, then the installed licenses are valid. You can check whether the licenses are all in use by selecting a license and checking the **Statistics** pane in the WlmAdmin utility.

License key file (lserverc) not found on the concurrent license server

The lserverc file should be located in the following directory:

<drive>\Program Files\Common Files\SafeNet Sentinel\ RMS License Manager\WinNT

If the file is not there, the license server is not able to locate licenses. Search the license server computer for the file. If found, move the file to the correct directory and restart the SentinelLM service. If the file is not found, licenses are not installed.

The concurrent license server is being used by the maximum number of users

- If all licenses are in use, the License Server Manager is not able to issue another license until a license is released. You can use the WlmAdmin utility to determine which users are currently using the licenses. Run SrvUtils.exe in the LicenseServer\utils folder of the UFT installation DVD, and select **WlmAdmin**.

For more details on the WlmAdmin utility, see the **Utilities** chapter in the *HP Functional Testing Concurrent License Server Installation Guide*.

- There may be cases where UFT closes unexpectedly and does not release the license automatically. If this happens, you can wait for the license to timeout, or you can restart the license server.

For more details, see the HP Software Self-solve knowledge base at <http://h20230.www2.hp.com/selfsolve/document> (requires an HP Passport user name and password).

In the knowledge base, search for: **Document ID 18428**. "What happens if AQT/QTP crashes on a client machine while using a Floating license".

Two or more versions of the concurrent license server running

Only one version of the license server should be installed and running on the same computer. If there are more versions, use **Add/Remove Programs** to uninstall all of the license server instances. Then install the latest version of the license server software and reinstall the license code keys.

Client computer configured to use a seat license

If your computer is configured to use a seat license and you need to switch to a concurrent license, select **Install License** when opening UFT or select **Help > License Wizard** in UFT.

License key does not match the concurrent license server locking code

Use the lsdecode.exe utility to check the locking code for a license key:

1. Copy the lsdecode.exe utility from the LicenseServer\utils folder of the UFT installation DVD to the location of the lserverc file (<drive>\Program Files\Common Files\SafeNet Sentinel\ RMS License Manager\WinNT).
2. Run the lsdecode.exe utility. A command prompt window opens with the decoded key information.

The locking code for the license key is displayed on the **Server locking code** line.

3. Run the `inst_key.exe` utility from the `LicenseServer\KeyInstallation` folder of the UFT installation DVD.

The license server computer's locking code is displayed on the Welcome screen.

Note: This step must be done on the license server computer. Accessing the license server computer remotely can generate an invalid license code.

4. Compare the locking code for the license key and from the server computer.

If the locking codes do not match, you need to determine why the locking code has changed. Reinstalling the operating system, renaming the computer, using a dynamic IP address, retrieving the locking code through a terminal session, or installing the license keys through a terminal session can cause the locking code to be changed and the license keys to become invalid.

After you have determined why the locking code has changed, you can submit a License Request to have a new license key generated.

Client computer cannot identify the license keys on the server computer

Use the `WlmAdmin` utility to check the licenses on the client computer. For more details on the `WlmAdmin` utility, see the **Utilities** chapter in the *HP Functional Testing Concurrent License Server Installation Guide*.

1. Run `SrvUtils.exe` in the `LicenseServer\utils` folder of the UFT installation DVD.
2. Select **WlmAdmin**.
3. Enter the license server name as a defined server.
4. Try to expand the license server branch.

If license keys are not identified, then either UDP Port 5093 is blocked between the client and server, or the IP address of the license server is using Network Address Translation (NAT), which is not supported. If required, contact your Computer or Network Administrator.

For more details, see the HP Software Self-solve knowledge base at <http://h20230.www2.hp.com/selfsolve/document> (requires an HP Passport user name and password).

In the knowledge base, search for:

- **Document ID 18402.** "What is port 5093 in the license mechanism used for?"
- **Document ID 41449.** "Does UDP port 5093 need to be bi-directional?"
- **Document ID 18424.** "How to set up the License Manager for machines running on different subnets."

LSHOST or LSFORCEHOST variables are not set on the concurrent license server

For details on how to set these variables, see the *HP Functional Testing Concurrent License Server Installation Guide*.

LSERVRC system variable is set on the client computer with the UFT installation

The LSERVRC variable is used for seat licenses and may have been created for the demo license when UFT was installed. If this variable exists, it must be removed so it does not interfere with locating the license server.

1. On your desktop, right-click **My Computer** and select **Properties**.
2. Select the **Advanced** tab and click **Environment Variables**.
3. Check the System Variables list for the LSERVRC variable. If it exists, click **Delete**.
4. Click **OK** to close the windows.
5. Reboot the client computer to implement the changes.

Client computer with the UFT installation connects through VPN software

If the client computer with the UFT installation is connecting through VPN software, verify that VPN has **not** been configured to use **IPSec over UDP**. This configures the network to use Network Address Translation (NAT), which is not supported.

Appendix A: Additional Installation Information

This chapter provides additional supplemental information about the installation.

This chapter includes:

Silent Installation Commands	51
Modifying DCOM Permissions Manually to Enable Remote UFT Execution	52
Modifying UAC Settings to Connect with ALM	58
Verifying the UFT Installation	60

Silent Installation Commands

The following table lists commands, arguments, and options used for silent installation (in alphabetical order):

Command / Argument	Description
ADDLOCAL (UFT core installation only)	<p>(Optional) Instructs the silent installation to install specific UFT features and add-ins. For more details and a list of available features, see "Installing UFT add-ins" on page 19.</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p>Note:</p> <ul style="list-style-type: none"> • If you do not use this argument, UFT is installed with the default add-ins. • You must include <code>Samp1es</code>, and <code>Core_Components</code> in the <code>ADDLOCAL</code> command. • Values must be separated by commas and must not contain spaces. </div>
LicSvr	(Mandatory) The name or IP address of the license server to specify when installing UFT licenses.
MsiFlags	(Optional) Any MSI options, flags, and other instructions that are not included in the <code>MsiProperties</code> arguments, such as logging commands.
MsiProperties	(Optional) Any MSI properties or parameters, such as <code>TARGETDIR</code> . Each MSI property and its definition must be contained in quotes ("") and must not contain spaces.
ALM_Plugin (UFT Add-in for ALM installation only)	<p>(Mandatory) The name of the MSI installation file.</p> <div style="background-color: #f0f0f0; padding: 10px;"> <p>Note: There is a different MSI file for each available user interface language.</p> </div>
UFT_DVD_Path	The path to the UFT Installation DVD or network location.
<installation_download_directory>	The path to the UFT Installation executable that you downloaded.

Modifying DCOM Permissions Manually to Enable Remote UFT Execution

This section describes how to manually change DCOM permissions and open firewall ports to enable remote execution of UFT. These changes are only required if you are running UFT on Windows 7 or Windows 8.

You need to make these changes only if:

- You plan to execute UFT tests remotely as part of a Default ALM test set.
- You did not select the Configure DCOM Settings option during the installation process.

Tip: The HP Support Knowledge Base provides utilities to assist you in making DCOM changes. For more details, see the HP Software Self-solve knowledge base (<http://h20230.www2.hp.com/selfsolve/document/KM196144>) and search for Problem ID 43245. The Knowledge Base area requires that you register as an HP Passport user and sign in.

To manually enable remote execution of UFT, perform the following procedures:

- Enable Windows to authenticate the remote user (described on page 52)
- Configure the Windows Firewall to enable port 135 for DCOM (described on page 53)
- Modify DCOM security properties (described on page 53)
- Configure security settings for the Unified Functional Testing Remote Agent DCOM applications (described on page 58)
- Disable group-wide remote DCOM execution of UFT scripts (described on page 56)
- Enable COM+ Access

In addition, before remotely running a test you must also make sure that the **Allow other HP products to run tests and components** option is selected in the **Run Sessions** pane (**Tools > Options > General tab > Run Sessions** node) of the UFT Options dialog box. For more details, see the *HP Unified Functional Testing User Guide*.

To enable Windows to authenticate the remote user:

For users logged into both computers, add these users to the Local Administrators group on the UFT computer. This enables Windows to authenticate the remote user executing the tests against the DCOM objects.

To configure the Windows Firewall to enable port 135 for DCOM:

1. On the UFT computer, select **Control Panel > System and Security > Windows Firewall**. The Windows Firewall options open.
2. Select the **Allow a program or feature through Windows Firewall** option on the left sidebar.
3. Click **Allow another program**. The Add a Program dialog box opens.
4. Select or browse to the Remote Agent (<Unified Functional Testing installation>\bin\AQTRmtAgent.exe) and click **OK**.

Note: If you do not configure the Remote Agent as an exception as described above, a Windows Security Alert message will display while running a test remotely. Click **Unblock** to solve this problem. The next time you remotely execute an automated test, the warning does not display.

5. Click **OK** to close the Windows Firewall dialog box.

Note: For more details, a list of port assignments for commonly-used services can be found at: <http://technet.microsoft.com/en-us/library/cc959833.aspx>.

To modify DCOM security properties:

1. Select **Start > Run**, type `dcomcnfg`, and press **Enter**. The Component Services window opens.
2. Navigate to **Console Root > Component Services > Computers > My Computer**.

Note: If a Windows Security Alert message opens, click **Ask me later** or **Unblock**.

3. Right-click **My Computer** and select **Properties**.
4. Select the **Default Properties** tab.
5. Make sure the **Default Impersonation Level** is **Identify** and click **Apply**.
6. Select the **COM Security** tab.
7. In the Access Permissions area, click **Edit Limits**. The Access Permission dialog box opens.
8. Click **Add**. The Select Users or Groups dialog box opens.
9. Click **Advanced**.

10. Click **Locations**. In the displayed dialog box, select your computer name and click **OK**.
11. Click **Find Now**.
12. Select the following users and groups from the local computer and click **OK**:
 - Administrator
 - Administrators
 - Authenticated Users
 - Anonymous Logon
 - Everyone
 - Interactive
 - Network
 - System
13. Add the following users from the domain and click **OK**:
 - <domain user logged into the UFT computer>
 - <domain user logged into the ALM computer that is performing the remote execution>
14. In the Access Permission dialog box, assign **Local Access** and **Remote Access** permissions to the groups and users in the list and click **OK**.
15. In the Launch and Activation Permissions area, click **Edit Limits**. The Launch Permission dialog box opens.
16. Repeat steps 8 to 13.
17. In the Access Permission dialog box, assign **Local Launch**, **Remote Launch**, **Local Activation**, and **Remote Activation** permissions to the groups and users in the list and click **OK**.

To configure security settings for the Unified Functional Testing Remote Agent DCOM applications:

1. In the Component Services window, navigate to **Console Root > Component Services > Computers > My Computer > DCOM Config**.
2. Right-click the **AQTRmtAgent** item and select **Properties**. The AQTRmtAgent Properties dialog box opens.
3. In the **Identity** tab, select **The interactive user**. This enables the DCOM application to

authenticate the process against the logged-in Windows user and run the process in that security context.

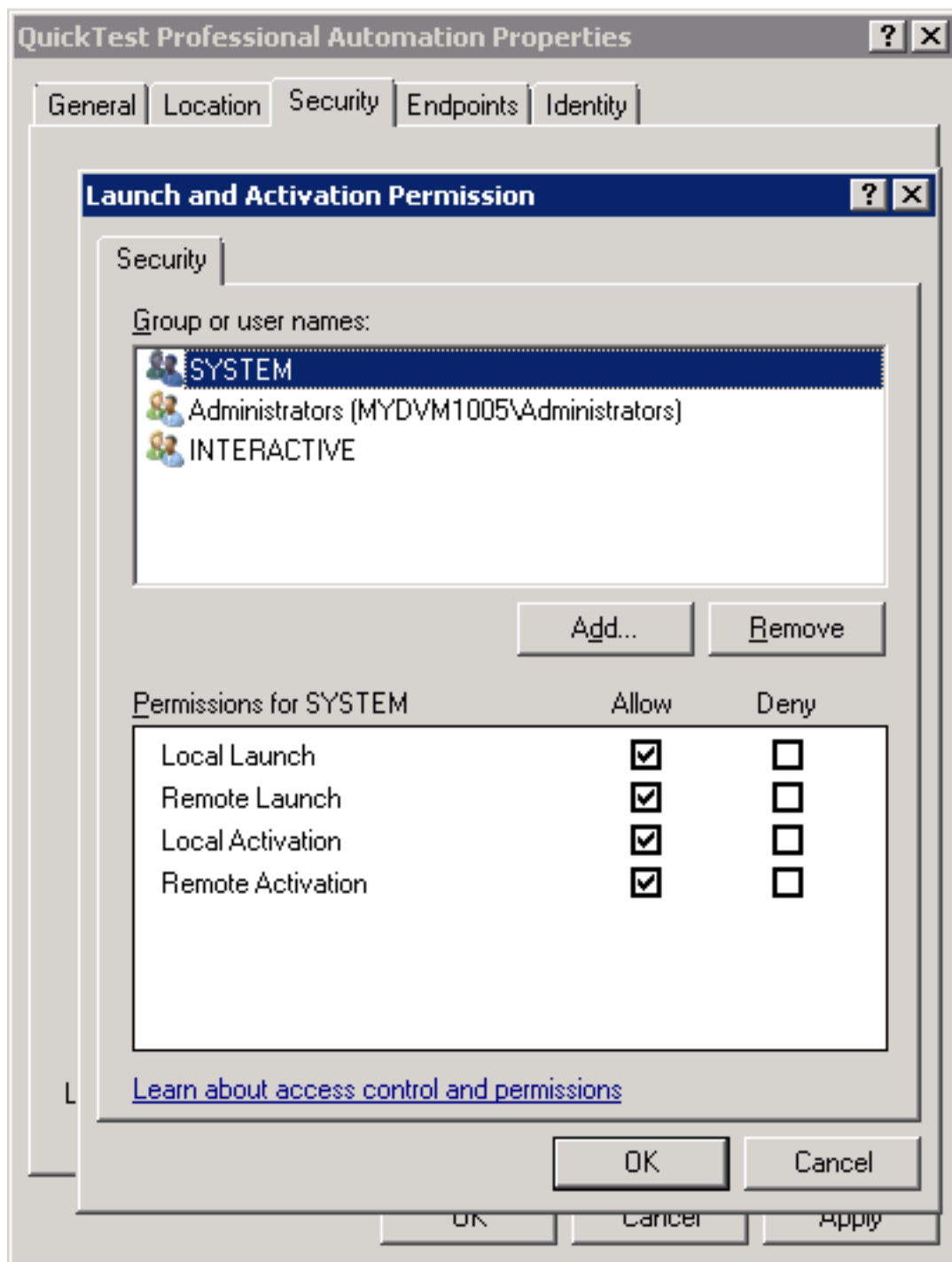
4. Select the **Security** tab.
5. In the Launch and Activation Permissions area, select **Customize** and click **Edit**. The Launch Permission dialog box opens.
6. Click **Add**. The Select Users or Groups dialog box opens.
7. Click **Advanced**.
8. Click **Locations**. In the displayed dialog box, select your computer name and click **OK**.
9. Click **Find Now**.
10. Select the following users and groups from the local computer and click **OK**:
 - Administrator
 - Administrators
 - Authenticated Users
 - Anonymous Logon
 - Everyone
 - Interactive
 - Network
 - System
11. Add the following users from the domain and click **OK**:
 - <domain user logged into the UFT computer>
 - <domain user logged into the ALM computer that is performing the remote execution>
12. In the Launch Permission dialog box, for all the groups and users in the list, select **Allow** for all permissions and click **OK**.
13. In the Access Permissions area, select **Customize** and click **Edit**. The Access Permission dialog box opens.
14. Repeat steps 6 to 12.
15. Click **Apply** to save the changes and click **OK** to close the dialog box.

16. Close the Component Services window.

To disable group-wide remote DCOM execution of UFT scripts:

1. In the Component Services window, navigate to **Console Root > Component Services > Computers > My Computer > DCOM Config**.
2. Right-click the **QuickTestProfessional Automation** item and select **Properties**. The QuickTestProfessional Automation Properties dialog box opens.
3. Select the Security tab.
4. Select Customize and Click Edit. The Launch and Activation dialog box opens.
5. Select a group/user name from the list of groups/user names following for it:

6. In the Permissions list below, for **Remote Activation**, clear the **Allow** box.



7. Repeat steps 5 and 6 for each group/user name in the list.

To enable COM+ on a Windows 2008 or Windows 2012 server:

1. Open the Server Manager.
2. Install the **COM+ Network Access** feature in the **Application Server** role.

You can now remotely execute a UFT test from ALM.

Note: Before remotely running a test, you must also make sure that the **Allow other HP products to run tests and components** option is selected in the **Run Sessions (Tools > Options > General tab > Run Sessions node)** pane of the UFT Options dialog box. For more details, see the *HP Unified Functional Testing User Guide*.

Modifying UAC Settings to Connect with ALM

If you are running UFT on Windows 7, Server 2008, or Server 2008 R2, you must disable User Account Control (UAC) and restart your computer before you connect with ALM for the first time. After you have connected with ALM for the first time, you can enable User Account Control (UAC) again if required.

This change is required only if you are running UFT on one of the operating systems listed above. If you do not intend to execute UFT tests remotely from ALM, you do not need to make these changes.

Note: The security changes described in this section should be performed by your System Administrator. Please contact Microsoft Support if you have questions regarding changes in User Account Control (UAC) on any of these operating systems.

To temporarily turn off the UAC option, do the following:

For Windows Server 2008:

1. Log in as an administrator.
2. From the Control Panel, select **User Accounts > Change Security Settings**, and clear the **Use User Account Control (UAC) to help protect your computer** check box.
3. Restart the computer to enable this setting to take effect.

For Microsoft Windows 7 and Windows Server 2008 R2:

1. Log in as an administrator.
2. From the Control Panel, select **User Accounts > User Accounts > Change User Account Settings**.
3. In the User Account Control Settings window, move the slider to **Never notify**.
4. Restart the computer to enable this setting to take effect.

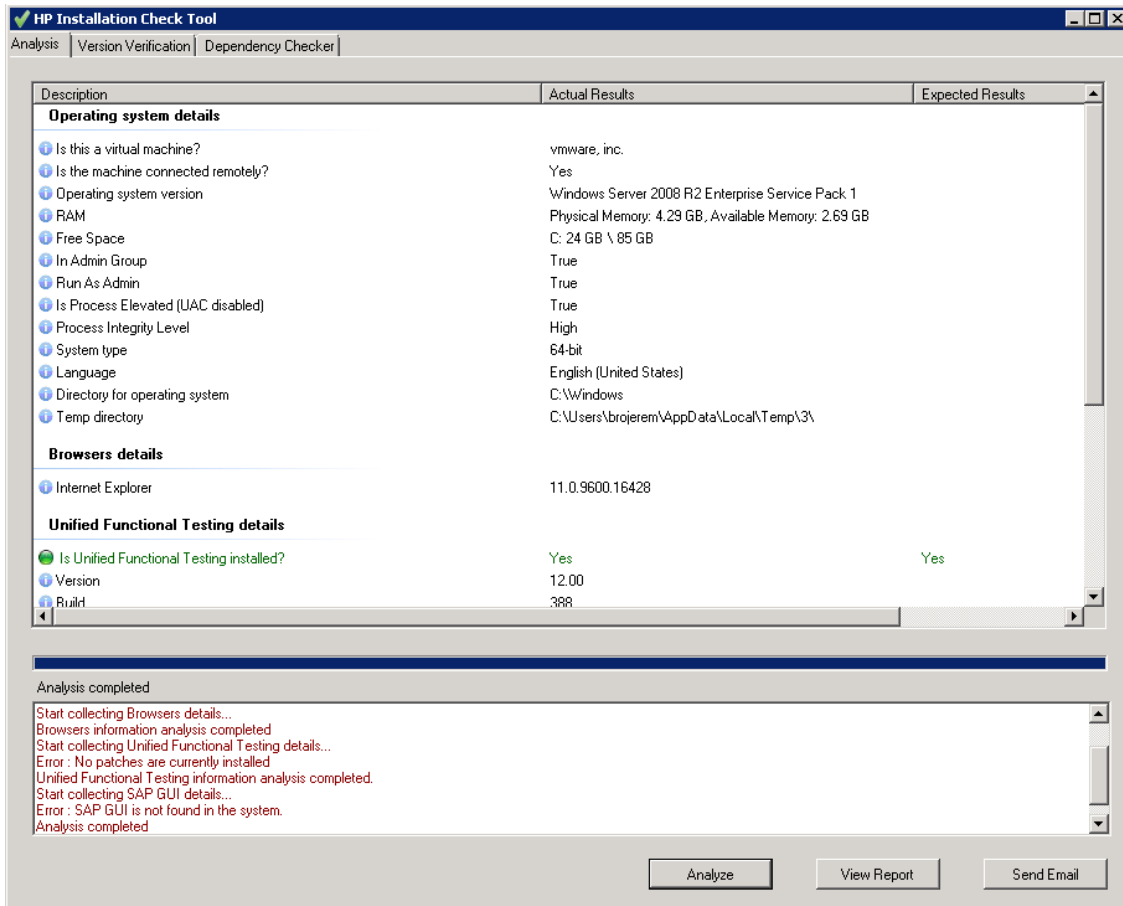
For Microsoft Windows 8 and Windows Server 2012:

1. Log in as an administrator.
2. From the Control Panel, select **User Accounts and Family Safety > User Accounts > Change User Account Control Settings**.
3. In the User Account Control Settings window, move the slider to **Never notify**.
4. In the Control Panel, select **System and Security > Administrative Tools > Local Security Policy**.
5. In the Local Security Policy window, in the left pane, select **Local Policies**.
6. In the Local Policies tree, select **Security Options**.
7. In the right pane, select the **User Account Control: Run all administrators in Admin Approval mode** option.
8. Select **Action > Properties** from the menu bar.
9. In the dialog that opens, select **Disabled**.
10. Restart the computer for your changes to take effect.
11. After working with the desired tool, return to the User Account Control Settings window, and restore the slider to its previous position to turn the UAC option on again.
12. Restart the computer for your changes to take effect.

Verifying the UFT Installation

After installing UFT and running the Additional Installation Requirements utility, you can check the status of the installation using the HP Installation Check Tool.

Open the Installation Self-Check tool from the **Start** menu (**Start > All Programs > HP Software > HP Unified Functional Testing > Tools > HP Installation Validation Tool**).



In some cases, the Installation Check tool validates the state of settings against their expected values. If UFT is returning the expected value, then the setting is marked in green, and if the value is not expected, the setting is marked in red.

You can also view this report as a .htm file by clicking **View Report** or you can send it via e-mail to another user by clicking **Send Email**.

Accessing UFT in Windows 8 Operating Systems

By default, you can access UFT directly from the **Start** or **Apps** Screen in Windows 8.x.

In addition, you can add UFT application and files that were accessible from the **Start** menu in previous versions of Windows to the **Start** screen, including:

- **Applications (.exe files).** For example:
 - The Run Results Viewer
 - All UFT tools, such as the Password Encoder and the License Validation Utility
 - The API testing sample Flight applications
- **Non-program files.** You can access documentation and the link to the Mercury Tours Website from the **Apps** screen.

Note: By default, the Start and Apps screens on Windows 8 are set to open Internet Explorer in Metro Mode. However, if User Account Control is turned off on your computer, Windows 8 will not open Internet Explorer in Metro mode. Therefore, if you try to open an HTML shortcut from the Start or Apps screen, such as the UFT Help or Readme file, an error will be displayed.

To solve this, you can change the default behavior of Internet Explorer so that it never opens in Metro mode. In the **Internet Properties** dialog box > **Programs** tab, select **Always in Internet Explorer on the desktop** for the in the **Choose how you open links** option. For more details, see <http://support.microsoft.com/kb/2736601> and <http://blogs.msdn.com/b/ie/archive/2012/03/26/launch-options-for-internet-explorer-10-on-windows-8.aspx>.

We appreciate your feedback!

If you have comments about this document, you can [contact the documentation team](#) by email. If an email client is configured on this system, click the link above and an email window opens with the following information in the subject line:

Feedback on Installation Guide (Unified Functional Testing 12.00)

Just add your feedback to the email and click send.

If no email client is available, copy the information above to a new message in a web mail client, and send your feedback to sw-doc@hp.com.

