



OPENTTCN

Installation and Getting Started Guide OpenTTCN Tester 2011

This document walks you through the installation and initial setup of OpenTTCN Tester 2011.

VERSION 4.1.6 – December 25, 2012

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1 Introduction

OpenTTCN Tester 2011 is a TTCN-3 test case development and execution package built by integrating popular OpenTTCN Tester product and widely used Eclipse Graphical User Interface (GUI) and framework providing an easy to use TTCN-3 editing, compilation, debugging, execution, and test result visualization environment. OpenTTCN Tester 2011 allows use of ASN.1 and XML Schema with TTCN-3.

OpenTTCN Tester 2011 is a backwards-compatible successor of the OpenTTCN Tester 2010 product. Six major new features of OpenTTCN Tester 2011 are:

- Instantly-ready native TTCN-3 debugger,
- GFT (Graphical Presentation Format) log viewer,
- XML Schema to TTCN-3 translator,
- TTCN-3 TRI and TCI-CD interfaces for Java (all-Java version),
- TTCN-3 TRI and TCI-CD interfaces for C# (all .NET version), and
- TTCN-3 TRI, TCI-CD, and TCI-TM interfaces for C++.

For users requiring legacy TTCN-2 support for their existing or new 3G, Bluetooth, DSRC, GSM, ISDN, ISUP, V5, or other large number of existing TTCN-2 test suites, OpenTTCN Ltd is still actively both maintaining its TTCN-2 tools and developing new TTCN-2 solutions for both use and migration. Please read more in the chapter 6 TTCN-2 SUPPORT.

This document provides primarily a walkthrough of startup with the GUI, but also the command line product activation is discussed. For more details about the command line tools please see the OpenTTCN Tester User Guide document.

We consider the Eclipse-based graphical user interface the primary and certainly most convenient user interface for using OpenTTCN Tester 2011, although the command line tools are still useful in order to obtain more fine-grained control and flexibility for the power users. The command line user interface is backwards-compatible with previous versions of OpenTTCN software. Therefore existing customers will be immediately familiar with it.

2 Instructions for users of previous OpenTTCN versions

2.1 Upgrading

If any previous version of OpenTTCN Tester is installed, please read this chapter carefully. The same instructions apply for versions 2.x, 3.x, and 4.0 (i.e. OpenTTCN Tester 2010).

A short and simplified version of the upgrade instructions are: Uninstall any previous version first and then proceed with the setup instructions in the next chapter. Otherwise, the installation may not work out of the box.

However, we acknowledge that in many cases you may wish to keep the older version on the side. This is certainly possible, but it requires minor manual configuration - please keep reading if you wish to keep the older version installed. If you intend to use multiple OpenTTCN versions in the same computer, we recommend you contact OpenTTCN support for more information.

By default, OpenTTCN Tester 2011 (version 4.1) is installed into a separate folder, *Program Files \ OpenTTCN \ Tester2011*, in Windows. Therefore it does not directly conflict with the previous installation. The only conflicting part, which requires manual intervention, is making sure that the system path contains only the version you wish to use at the time. In order to have the command line tools available in the command prompt, both the older versions and the Tester 2011 will insert the bin directory into the system path (PATH environment variable). All the versions also have binaries with the same names (tester, ot, session, importer3, and so on).

If OpenTTCN Tester 2011 is installed on a computer which also has OpenTTCN Tester 2.x, 3.x, or 4.x, the system path will then contain both bin directories, and this leads to a scenario where we cannot be sure which binaries are run. **Therefore, in order to have OpenTTCN Tester version 2.x, 3.x, or 4.0 and version 4.1 installed at the same time, you must manually adjust the system path to include only the version you wish to currently use.**

By default, in Linux, OpenTTCN Tester 2011 is installed in a separate directory, *OpenTTCN*, to user specified location such as */user/local* or */home/<user>*. The default installation directory or location needs to be changed and path variable needs to be updated accordingly, in order to have multiple versions of OpenTTCN Testers installed at the same time.

2.2 Backwards-compatibility

A simple rule of thumb is: **Everything must be recompiled.** This includes both test suites and adapters. Contact OpenTTCN for information how to migrate legacy TTCN-3 and adapter code to new environment.

In OpenTTCN SDK for C there are two important changes:

- Build-breaking change: changed SDK for C installation path to sdk4c in the installation directory (see OT-1000 in the release notes), and
- Build-breaking change: previously multiple OpenTTCN SDK for C/C++ libraries are combined to one library: openttcn-sdk-mt.lib (Windows) or libOpenTTCNsdk.a (Linux) (see OT-944 in the release notes).
- Build-breaking change: changed location of OpenTTCN libraries and introduced new Visual Studio 2010 libraries. (see OT-1096 and OT-1097 in the release notes).
- API-breaking change: otSetDefaultCallbacks(); call needs to be added to the main function of the adapter in order to register the legacy TRI and TCI functions implemented by the user (see OT-1059 in the release notes).
- Please update your C TTCN-3 adapter projects accordingly with new include and library path settings.

In OpenTTCN SDK for Java there is one important change:

- Build-breaking change: changed SDK for Java installation path to sdk4java in the installation directory (see OT-1000 in the release notes).
- Build-breaking change: removed previously used DLL and replaced previously used single JAR with four JARs (OpenTTCN.SDK.jar, jacorb.jar, slf4j-api-1.5.6.jar, slf4j-jdk14-1.5.6.jar) (see OT-1089 in the release notes).
- Please update your Java TTCN-3 adapter projects accordingly.

In OpenTTCN SDK for C# there are three important changes:

- Build-breaking change: changed SDK for C# installation path to sdk4cs in the installation directory (see OT-1000 in the release notes),
- Build-breaking change: previously larger number of OpenTTCN SDK for C# assemblies are combined to three assemblies: OpenTTCN.SDK.dll, openttcnidl.dll, and IIOPChannel.dll (see OT-1022 in the release notes), and
- API-breaking change: SDK for C# was updated to use the standardized mappings defined in version 4.2.1 of ETSI ES 201873-5 and ETSI ES 201 873-6 standards (see release notes and OpenTTCN SDK User Guide for upgrade instructions).
- Please update your C# TTCN-3 adapter projects accordingly.

Otherwise, upgrade should not require any changes besides recompiling. As always, see the Release Notes document for a complete list of modifications and new features.

3 Setup

The setup process consists of the following steps:

1. Download the software and the license key,
2. Install the software, and
3. Activate the software.

The following sub-chapters will guide you through these steps.

3.1 Prerequisites

Before proceeding with the setup, please make sure that the following preconditions are met:

- A modern PC with RAM and processor selected based on the intended application (2GB of RAM and 1.5GHz single core processor for modest and 8GB of RAM and fast quad core processor for large applications),
- A supported operating system:
 - Microsoft Windows Windows 7, Windows Vista with Service Pack 2 or, Windows XP with Service Pack 3 (the Eclipse GUI may have difficulties to run in 32 bit version of XP, consider switching to 64 bit version of Windows 7 instead), or
 - the latest 32bit version of Debian GNU/Linux operating system, currently “squeeze”. Due to the wide variety of Linux systems available we cannot *guarantee* out-of-the-box support for all distributions, but we will gladly help you getting the software running in other up to date Linux distributions you are using.
- For adapter development:
 - For SDK for C/C++ and SDK for C#: Microsoft Visual Studio 2008 (Windows) and Microsoft Visual Studio 2010 (May 2011) and,
 - For SDK for C/C++: GNU g++ version 4.3 (Linux), or
 - For SDK for Java: Oracle Java Development Kit (JDK) version 6 (Windows and Linux).
- 500+ megabytes of hard disk space from which up to 500 megabytes are needed by the installed product while the rest may be needed temporarily,
- Internet connection as the product is downloaded from the internet, the license key is activated online, and evaluation and subscription versions are requiring Internet-based on-line license server for their usage,
- Your OpenTTCN Download Area login and password, and
- Oracle Java Runtime Environment (JRE) version 6 installed on your computer (Windows and Linux). JRE may be downloaded from <http://java.com/getjava>.

Note that only 32-bit version of Java is supported, regardless of the operating system.

3.2 Download

Navigate to <http://www.openttcn.com/updates>. You will be redirected to the secure OpenTTCN download area on our website. Please enter your user name and password when prompted. After successfully logging in, you will be shown the list of available downloads, as illustrated by Figure 1.

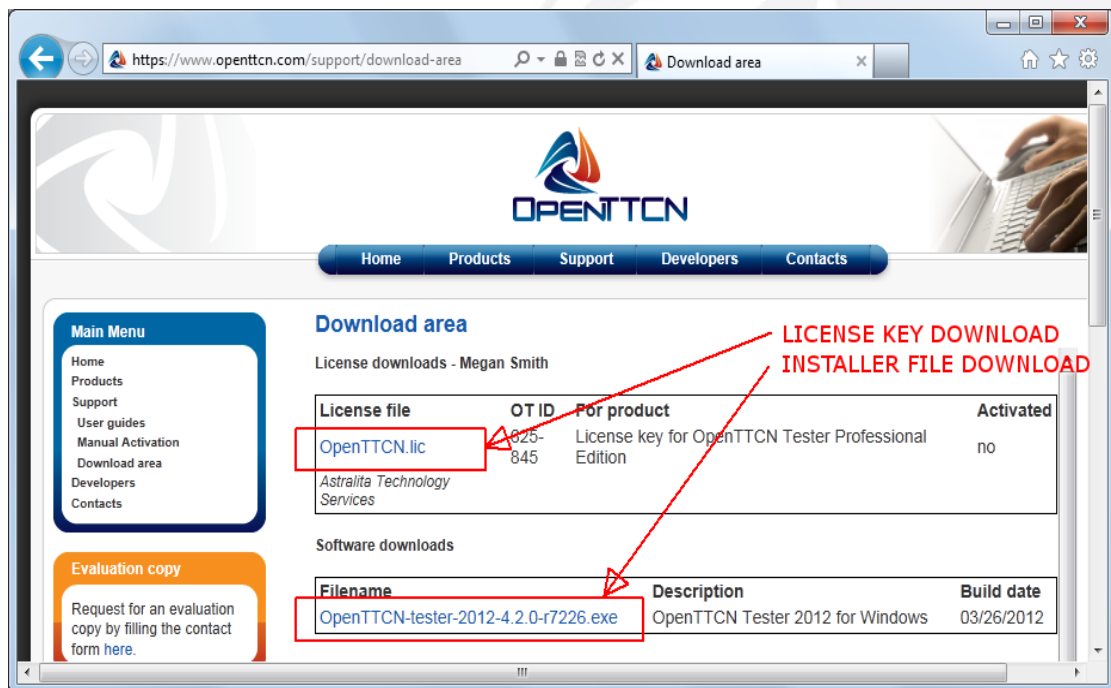


Figure 1: Download area

There are two files to be downloaded: A license key file and the OpenTTCN Tester 2011 installer itself. Existing customers may have also previous versions of the software available for download. The figure highlights these downloads using red rectangles. Please download and store these two files to your computer into a known location. They will be needed in the next two steps.

3.3 Installing and starting the software

3.3.1 Installation on Windows

After the download locate the executable installer, named *OpenTTCN-tester-2011-4.x.y.z.exe*. The letters x (for OpenTTCN Tester 2011, x=1), y and z denote version numbers that may vary as the software gets updated. Launch the installer by double-

clicking it on Windows explorer. Depending on your local settings, Windows operating system may prompt for your permission to execute the program as administrator. Eventually the installer wizard starts as shown in figure 2.



Figure 2: Installation wizard

Click the Next button to proceed and let the wizard guide you through the installation. The wizard will display and require agreement with the license agreement, prompt for a destination path and ask whether you wish to install the full package as shown in figure 4 or select only a subset of the components. If you already know that you do adapter development only in C#, you do not need install Java or C/C++ components. If you are planning to use all supported languages for adapter development, install all components.

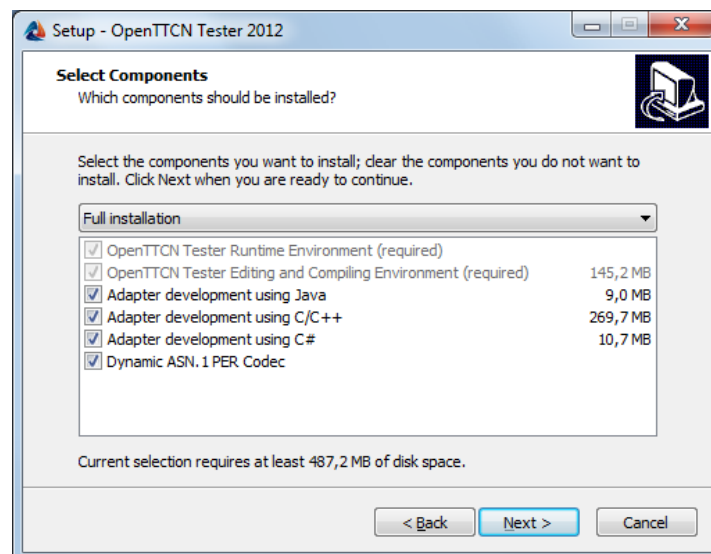


Figure 3: Select components

As a rule of thumb, unless you know that you will not be using a specific component, the defaults are always fine.

After the wizard completes, OpenTTCN Tester 2011 icons are added to the desktop and the Start Menu. Figure 4 shows an example of the shortcut which will start the application on a Windows 7 system. Please note that the exact structure of the menu may vary depending on your personal system configuration.

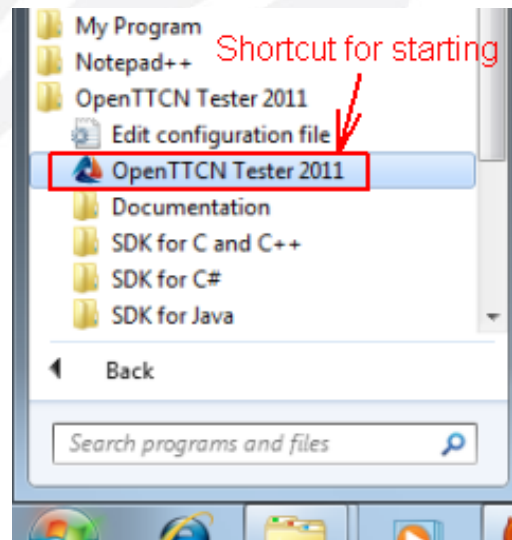


Figure 4: Startup

3.3.2 Installation on Linux

Execute the downloaded installer binary, for example on Linux:

```
$ ./OpenTTCN-tester-2011-4.1.6.7500-Linux.bin
```

The installer script will prompt for the installation location and give instructions about setting the PATH environment variable. After the installation is complete, you may need to restart your system in order to make the updated PATH setting effective. You may always check if the path is correctly configured by running "ot version" command as follows:

```
$ ot version  
4.1.6
```

If the path is correctly set up, ot version will print the version number of the application. At this moment the OpenTTCN installer will not configure any shortcut for starting the application. To start the graphical user interface, please run the following command on a terminal, such as xterm or Konsole:

```
$ testergui
```

Note that you need to be running the X Window system to use the graphical user interface (GUI). It is also possible to fully control the system using command line. If you do not wish to use the GUI, please see instructions for command line activation in Chapter 4.2 and more details about the command line tools in the OpenTTCN Tester 2011 User Guide.

3.4 First startup and activation using license key

If you would like to use license server and a floating license, skip this chapter and proceed to chapter 3.5 First startup and activation using license key instead.

Start the application as described in the previous platform-specific chapter. You will be presented with a "Workspace launcher" dialog as shown in Figure 5. The workspace is a local folder which is used for storing user data such as source code. The default workspace location offered by the dialog is located inside the personal home directory and it is a good choice for getting started. In short, just click OK.

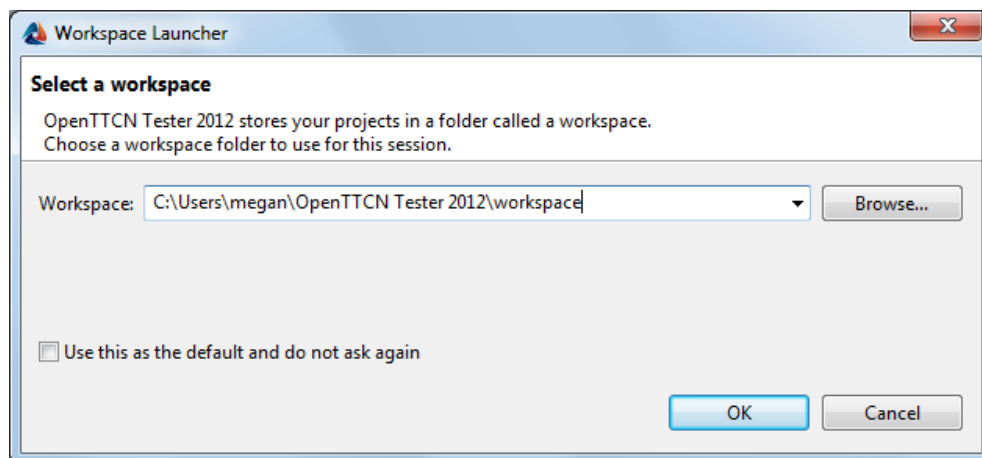


Figure 5: Workspace selection dialog

If the application cannot find a license key in the installation, you will be prompted to install one. This is usually the case unless the application has been previously installed on your computer. Figure 6 illustrates the license file prompt shown on first. Click Yes, and select the license file you previously downloaded.

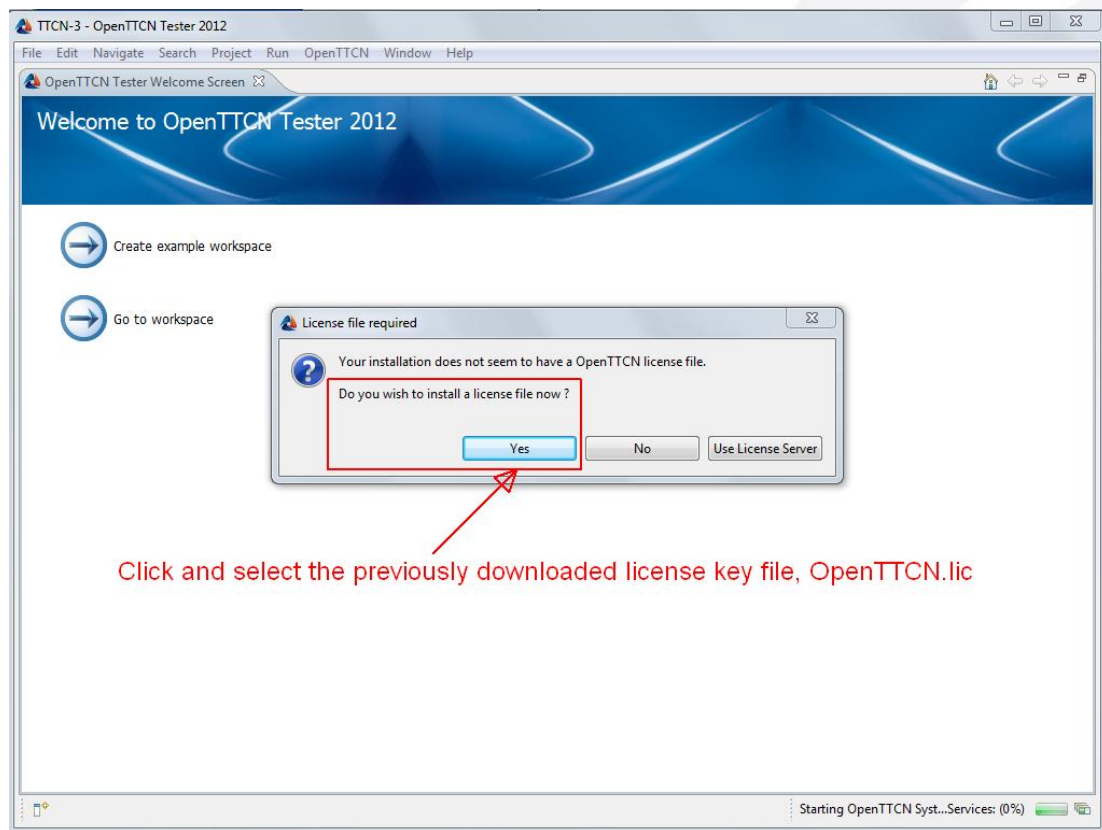


Figure 6: License file prompt

A new license key must also be **activated**. Activation locks the license key to the computer being currently used. In the activation process, OpenTTCN Tester 2011 collects information about your system and generates a machine identifier using a one-way hash function. Therefore, OpenTTCN Ltd has no means to decrypt the identifier; we can only compare the identifiers to make a distinction between computers. Once a pristine license key is provided, the application will prompt you to activate it. The activation prompt is illustrated in Figure 7.

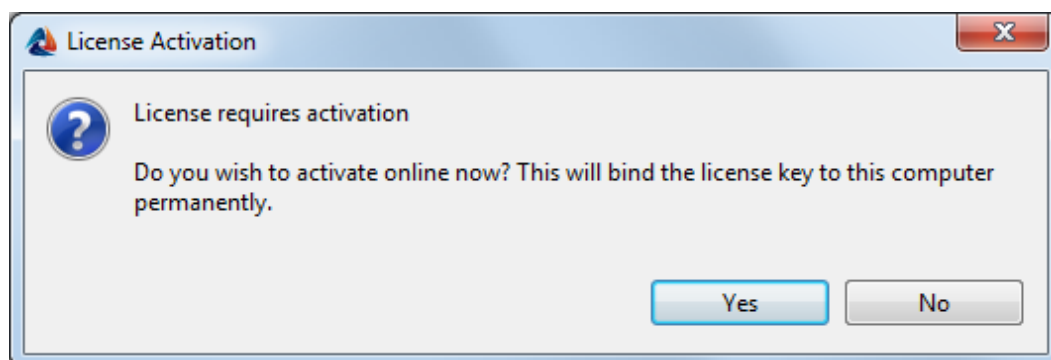


Figure 7: Activation dialog

If Internet connection is available, clicking Yes on the activation prompt will contact OpenTTCN activation server and activate the software. After successfully activating the product you may start working with the software. Figure 8 illustrates the dialog shown after activation.

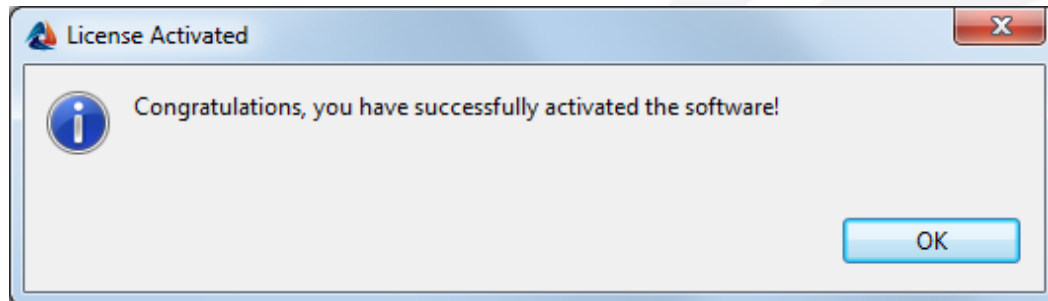


Figure 8: Activation completed

If the activation fails, it is typically caused by the Internet connection being unavailable or restricted. The next chapter covers troubleshooting activation and startup of the application. **If the activation succeeded, you may skip chapter 4 and proceed to chapter 5.**

3.5 First startup and activation using license server

Before starting OpenTTCN Tester 2011 for the first time, please change the host configuration setting from “host = 127.0.0.1” to “host = 0.0.0.0” in your configuration file. The configuration file may be opened from the OpenTTCN 2011 folder in the Start menu.

Start the application as described in the previous platform-specific chapter. You will be presented with a "Workspace launcher" dialog as shown in Figure 9. The workspace is a local folder which is used for storing user data such as source code. The default workspace location offered by the dialog is located inside the personal home directory and it is a good choice for getting started. In short, just click OK.

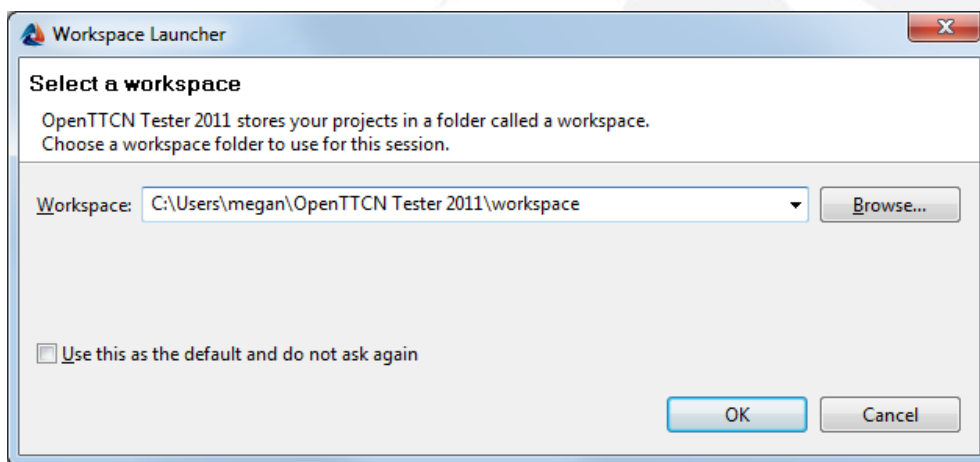


Figure 9: Workspace selection dialog

If the application cannot find a configured license server, you will be prompted to configure one. This is usually the case unless the application has been previously installed on your computer. Figure 10 illustrates the license file / use license server prompt shown on first. Click Use License Server, and configure the license server settings.

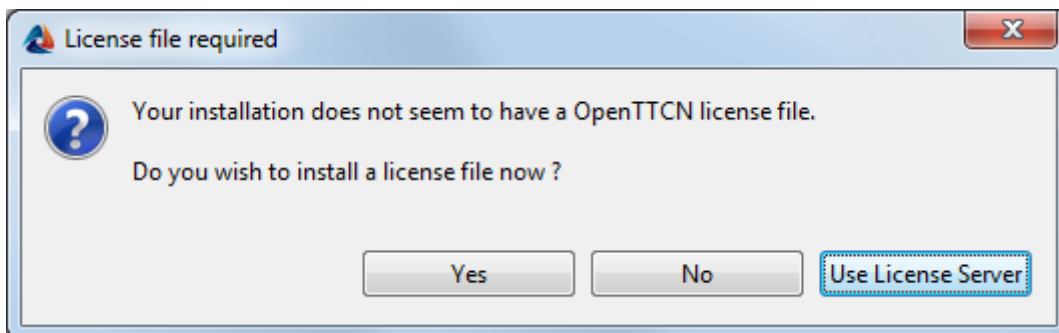


Figure 10: License file / use license server prompt

Select the “Use License Server” tick box, and configure the server IP address and TCP port in a “License server configuration” dialog as shown in Figure 9.

You get the correct license server IP address and port number from your system administrator.

In the following dialog, the license server is configured to IP address 192.168.21.2 and TCP port 5501.

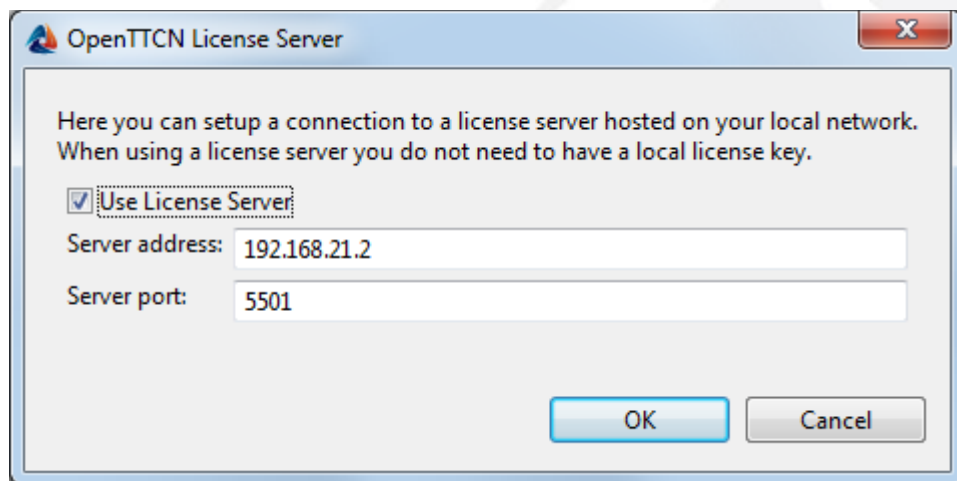


Figure 11: License server configuration dialog

If connection to license server is working, clicking Yes on the license server configuration prompt will contact OpenTTCN license server. After successfully configuring the license server you may start working with the software.

4 Troubleshooting activation and startup

If the license installation or activation fails, you will be taken to the License Management window. This tool, shown in Figure 12, contains features for correcting the problem. The software will not let you proceed further before having a valid license key installed.

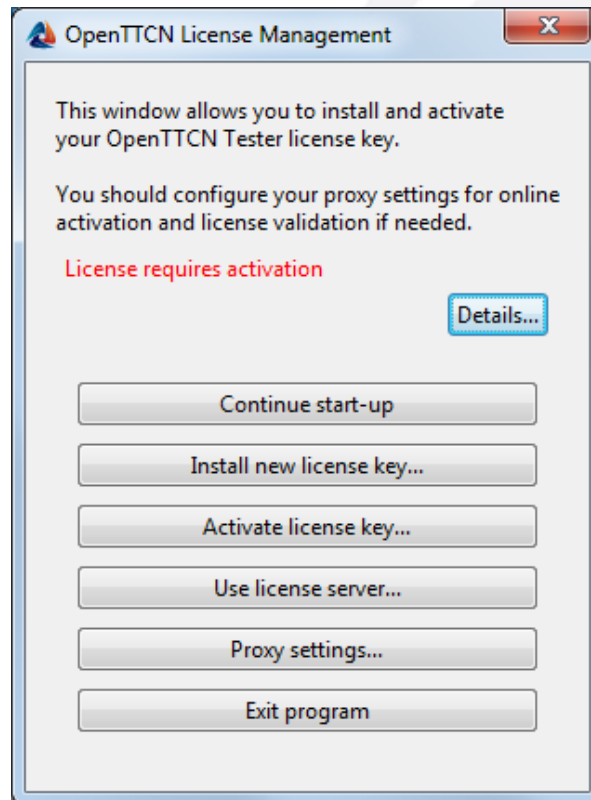


Figure 12: License Management screen

Instructions for proceeding in different scenarios are as follows:

- If you are installing the software on a computer that can access Internet through a proxy server, see section 4.1.
- If you are installing the software on a computer that does not have any Internet connectivity, see instructions for manual activation in section 4.2.
- If you wish to not use the graphical user interface at all, see instructions for command-line activation in section 4.3.
- If you encounter any other problems, see instructions for contacting OpenTTCN support in section 4.4.

4.1 Internet access through a proxy server

If your network requires proxy settings, you might encounter problems when activating your license or with Online License Validation. Proxy configuration can be opened from the OpenTTCN License Management dialog. Later on you can access the proxy settings via the *Window -> Preferences...* menu item. It is available in the *General -> Network Connections* section. The proxy configuration settings, shown in Figure 13, allows three choices for proxy configuration provider:

- **Native.** Use the proxy settings discovered from the operating system (Internet Explorer settings).
- **Manual.** Configure the proxy settings explicitly here.
- **Direct.** Connect directly; no proxy is used.

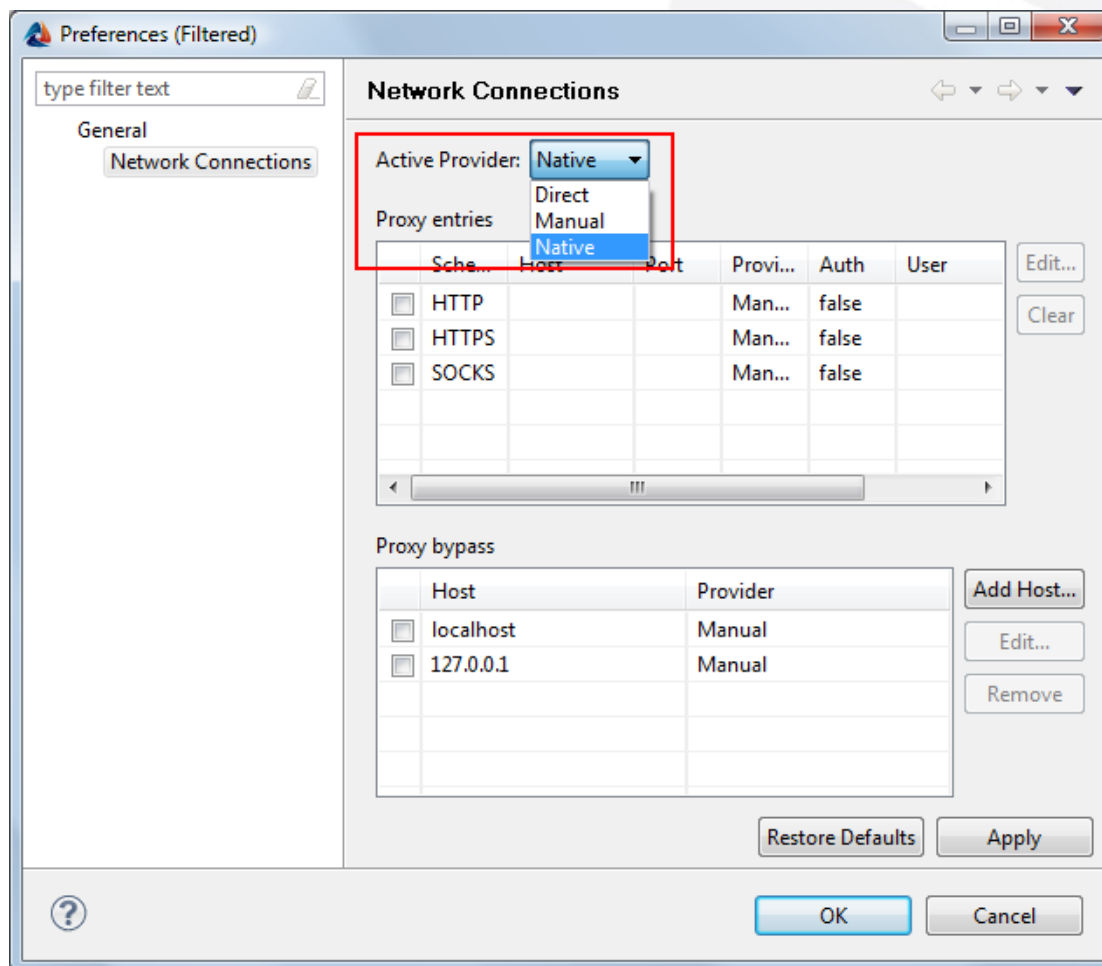


Figure 13: Proxy configuration

Typically, if the proxy is configured in Internet Explorer settings, there is no need to alter the configuration. However, if the automatic configuration fails or the information is not supplied, you may need to explicitly specify the proxy to be used

here. In that case, select the Manual provider, then click on the corresponding Schema (HTTP, HTTPS or SOCKS) and click the Edit... button to input the details.

After you are done with the configuration, select OK to return back to the license dialog and run the activation again.

4.2 Command-line

This chapter explains the command-line method used to install and activate a license key. You can try this should you encounter unsolvable problems without the graphical user interface. However, generally the use of the activation with the graphical user interface is recommended as it is most likely more convenient.

To begin with the command-line activation, you need to manually add the OpenTTCN.lic license key file to the **<installation location>/etc** directory. Typically the installation directory is one of the following:

- *C:\Program Files\OpenTTCN\Tester2011* (32-bit Windows)
- *C:\Program Files (x86)\OpenTTCN\Tester2011* (64-bit Windows).

You can activate the software with the command “ot activate” from the command prompt. This will bind the license key to the computer. An internet connection must be present and you may need to enter the proxy configuration. Should you encounter any problems, please visit the following page for troubleshooting instructions: http://wiki.openttcn.com/media/index.php/OpenTTCN/FAQ#OpenTTCN_Testers_installation_and_activation

4.3 Manual activation

If a direct Internet access is not available, the license key activation may be performed on computer with web browser and access to Internet. However, this requires that an *activation request* is created on the computer which is going to run the application.

1. On the computer which you wish to activate the license on, install your license file into *<install location>/etc* directory.
2. To generate the activation request file run the following command:
`'ot activate --manual'`
3. This command creates a file in the directory where the command was run with the activation information required. Send the generated file

"*OpenTTCN.ActivationRequest.txt*" to us with an internet enabled computer from the webpage <http://www.openttcn.com/support/manual-activation>.

4. After you've submitted the file successfully you can proceed to secure OpenTTCN download area (<http://www.openttcn.com/updates>) to download the activated license. The download page should now show the license's *Activated* column having **Yes**.
5. Install the activated license file the same way you installed the original license file.

4.4 Contacting support

If you encounter problems with setting up your license, please contact OpenTTCN support using the support@openttcn.fi e-mail address. In your message please indicate the OT ID number of your license key and any error messages you have received during the activation. In the license management window, please click the *Details...* button to obtain the error message.

You can find the OT ID number by issuing the command "ot itd" at the command prompt.

5 GETTING STARTED

The TTCN-3 (Demo3), ASN.1 (ASN1), debugger (Fibonacci), and GFT log viewer (gft_example) and DNS (dns_example) examples are available from the OpenTTCN Tester welcome screen after first startup on a new workspace. The welcome screen has two options: Create the examples in the workspace, or start with existing (typically empty) workspace. Figure 14 shows the welcome screen and highlights the "create examples" option.

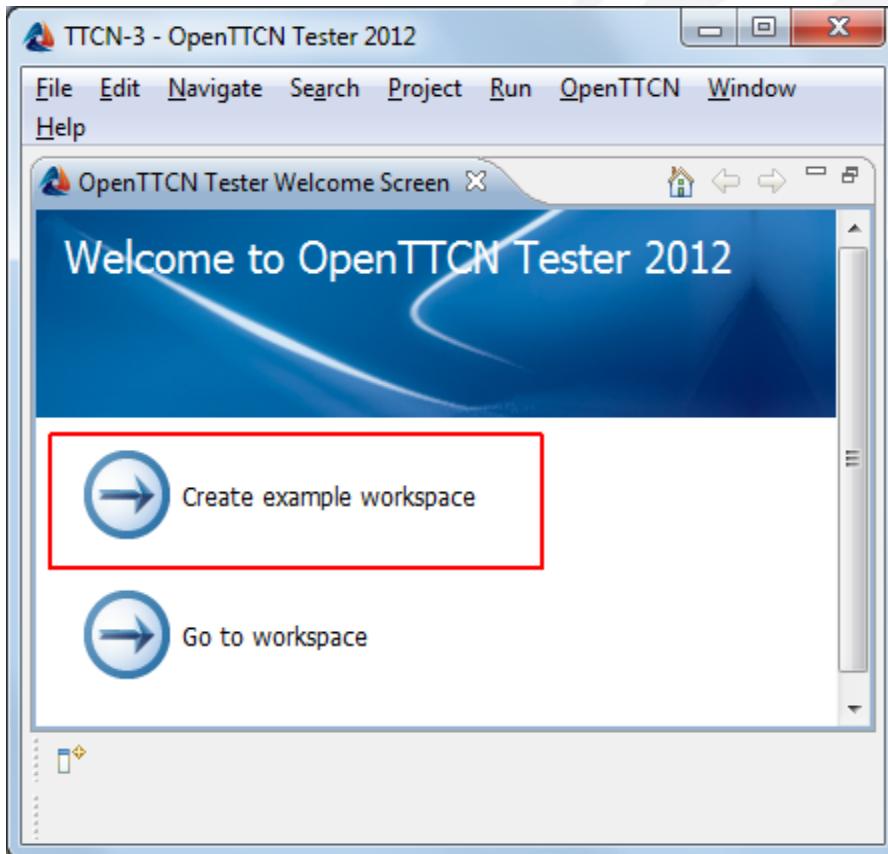


Figure 14: Welcome screen

The examples are a good way to get started and therefore it is recommended that you start by creating the example workspace, especially if you are a new user of OpenTTCN Tester. For instructions on running the examples please refer to Chapter 6 of the OpenTTCN Tester User Guide.

For command-line users, the TTCN-3, TTCN-2, and ASN.1 examples are included in the sub-directories of the <installation location>/examples directory. The Demo3 sub-directory contains the TTCN-3 example, Demo2 sub-directory contains the TTCN-2 example, and ASN1 sub-directory contains the ASN.1 example. The use of each example is explained in the text document that can be found in the corresponding sub-directory.

6 TTCN-2 SUPPORT

For users requiring legacy TTCN-2 support, OpenTTCN Tester 2011 offers integrated native TTCN-2 compiler and execution as an option to be purchased separately. TTCN-2 to TTCN-3 converter is available as a separate add-on.

TTCN-2 Compiler

The TTCN-2 execution uses the standardized TTCN-3 interfaces for programming adapters which allows using the same TTCN-3 adapters with both TTCN-3 and TTCN-2 test systems providing safe and smooth use and migration strategy for your legacy test suites.

TTCN-2 to TTCN-3 Converter

The TTCN-2 to TTCN-3 converter translates all TTCN-2 definitions to their TTCN-3 counterparts so that the same TTCN-3 adapter that was used to execute TTCN-2 test cases can be used to execute the translated TTCN-3 tests as well. No manual modifications are required for the translated TTCN-3 test suite, if the original was in good condition.

7 CONTACT INFORMATION

Please give us your feedback about OpenTTCN Tester 2011 by sending your questions using support@openttcn.fi e-mail address.

Latest user guides and training course materials can be found from:

<http://www.openttcn.com/support/user-guides>

Tutorials and articles about OpenTTCN use and programming can be found from:

<http://wiki.openttcn.com>

You can contact OpenTTCN sales by sales@openttcn.fi e-mail.

OpenTTCN wishes you a good time using OpenTTCN Tester 2011!