3 Licensing

This chapter describes the licensing infrastructure—that is, licenses, the licensing system, and the components of the licensing system. In some cases, you may use command line options, but the preferred method for managing licenses—when available—is the License Manager graphical user interface.

Topics covered in this chapter include the following:

- Licensing System Overview
    - License File Format Change
- License Manager Graphical User Interface
    - Starting the License Manager GUI
    - Exiting the License Manager GUI
    - License Server Operations within License Manager GUI
    - Add License from License Manager GUI
    - Deregistering a License
    - Clearing a License File
    - Changing the Maintenance Expiration for a License
    - Changing the Expiration Date for a License
- Managing Licenses from the Command Line
- Restricting License Server Administration
    - Restricting License Users
- License Server Reporting
    - Enable License Tracking
    - Obtaining License Server Statistics
- Troubleshooting Licenses
- Licensing Preferences
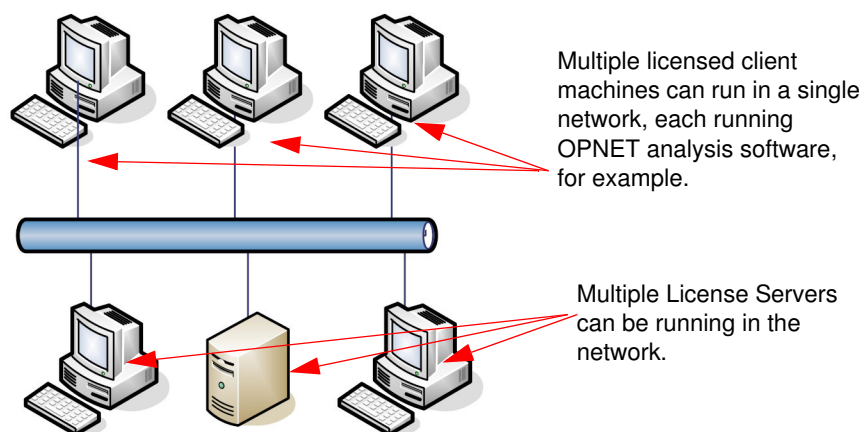
Licensing System Overview

This section describes the licensing system, which includes the License Manager, the License Server and the licenses. The License Manager graphical user interface (GUI) can oversee multiple license servers in a network, with each license server allocating licenses to one or more clients. Topics covered in this section include the following:

- OPNET Licenses

- Licensing Mode

- License Manager

- License Server

The following figure shows an example of a licensing system.

Figure 3-1   License Manager Components

The **License Manager** can be used to view status and manage licenses on any license server that it ca⁻ access on the network.

Multiple licensed client machines can run in a single network, each running OPNET analysis software, for example.

Multiple License Servers can be running in the network.

Each **License Server** has a license file. When a request for a license arrives, it checks the license file for a valid license to issue.

This **License Server** has multiple licenses that it serves to the entire network. Client machines that need a license can use one of the floating licenses from this license server. When not in use, floating licenses are available to all client machines on the network.

OPNET Licenses

A *license* conveys the right to use an application. A license may be a single permit or a bundle of *permits*, each permit relating to an application, the simulation program, or a module. Licenses are allocated on a per-permit basis. This means that a component that is part of a license (that is, a permit) may be free and can be conveyed to any requester, even if another component of the same license (most likely an application program) is in use.

Note—As a license is a bundle of permits for application usage, we will use the term *license* in the remainder of this chapter.

OPNET licenses are called *floating licenses*. What this means is that a pool of one or more licenses is maintained by the license server for use by any authorized user with access to the license server. The license server can be local (installed on the same machine as the client it serves) or remote (installed elsewhere). Licenses are not pre-assigned to a specific user. By default all users are authorized to obtain licenses, but you can restrict authorization. See Restricting License Server Administration for more information.

Licensing Restrictions on AppInternals Xpert

Please note that AppInternals Xpert has the following restrictions regarding product licensing.

- Standalone licensing is not supported by AppInternals Xpert

- Loanable licenses are not supported for AppInternals Xpert

- AppInternals Xpert requires a floating license server

- AppInternals Xpert console licenses cannot be upgraded to enterprise licenses

Licensing Restrictions on AppTransaction Xpert

- Loanable licenses are not supported for AppTransaction Xpert

Licensing Restrictions on VNE Server

Please note that VNE Server has the following restrictions regarding product licensing.

- Standalone licensing is not supported by VNE Server

- Loanable licenses are not supported for VNE Server

- Only one local, floating license server can be installed on the VNE Server host

- The license manager utility (LS_UTIL) included with VNE Server does not support Express Method license operations

- A license server installed with VNE Server on a host with no OPNET analysis software installed will default to listen on port_a.

A license server installed with VNE Server on a host with OPNET analysis software installed (configured for remote licensing) will use the port specified in the licensing.ef file in the OPNET analysis software installation at `\sys\configs\global_prefs`.

Where are Licenses Stored?

Licenses are stored in a file named `license_file`. There can be only one license file on a machine. The file is stored in one of the following directories:

- Windows: `<primary_hard_drive>:\OPNET_license`

  The `<primary_hard_drive>` is the first drive letter (usually C:) that names a non-removable, non-network, local drive partition.

- Linux: `/opt/OPNET_license`

How are Licenses Managed?

You can manage licenses through one of the following methods. Click on a method to go to more information about that method:

- License Manager Graphical User Interface

- Managing Licenses from the Command Line covers the following:

  — Command Line Utility for VNE Server
  — Command Line Utility for AppTransaction Xpert
  — Command Line Utility for AppInternals Xpert

License Attributes

A license has several associated attributes, as listed in the following table.

Table 3-1   License Attribute Definitions

Attribute	Description
Status	The status is visible in the License Manager GUI. This icon identifies the state of the license: • A *free license* is available to the next user who requests it. • An *in use license* is unavailable. • An *expired license* is no longer valid.
License number	A unique pair of numbers that identifies the license. A license may bundle several programs. This means that a single license (for example, 100/1) that includes the programs Modeler and eXpress Data Import is shown as two separate lines in the License Manager interface.
Program name	Controls which products or modules the license can run (such as Modeler or the AppTransaction Xpert module).
License expiration	Controls how long you can use the license. After a license expires, it no longer runs the applications.
Maintenance expiration	Controls which releases of the applications can be run. Current maintenance allows you to use the latest software release and entitles you to technical support and other services.
User	If the license is in use, this attribute shows the name of the user who checked out the license.
Host	If the license is in use, this attribute shows the machine where the license is being used.
Time in Use	If the license is in use, this attribute shows the days, hours, minutes, and seconds elapsed since the start of use.

Licensing Mode

When you install OPNET analysis software, you are asked to choose a licensing mode, as shown in the following figure.

Figure 3-2   Licensing Options at Installation
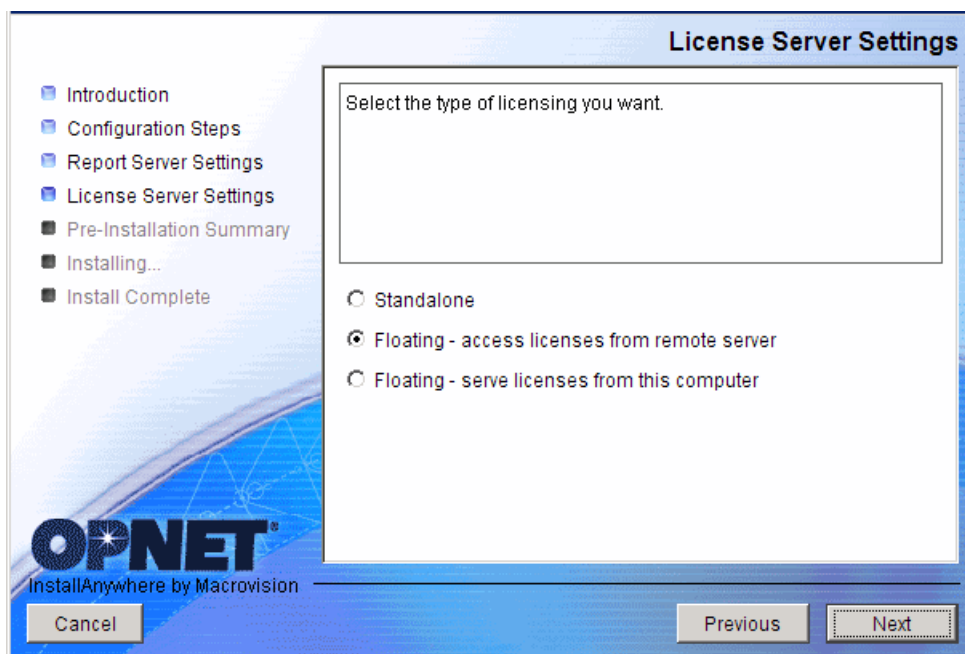
The following table lists the use cases for each type of licensing.

Table 3-2   Licensing Modes

Licensing Scheme	Use Case
Standalone (See Standalone Licensing)	• OPNET analysis software products will be used only on the computer where the license is installed • All discrete event simulations (DES) will be launched from the OPNET analysis software GUI, rather than from a command line or from a script • 3DNV, AppInternals Xpert, or VNE Server applications are not used
Floating (See Floating (Enterprise) Licensing)	• You want to share a license among computers that are on different IP networks without purchasing additional licenses • The client computer can maintain constant connectivity with the License Server • The address range of the client computer's IP address is known in advance • You want to run DES from the command line, script, or batch file outside the context of the OPNET analysis software GUI • A VNE Server application will obtain its license from this License Server

Note—(OPNET analysis software) To change licensing modes, you must reinstall the latest version of the software from your product CD or from a downloaded version obtained from technical support. Normally this is all that is required to change the licensing scheme. However, if you previously used Edit > Preferences to change the value of the `license_server_standalone preference`, you must manually set `license_server_standalone` to the correct value after reinstalling the software.

Standalone Licensing

In the standalone configuration OPNET analysis software acts as its own License Server, accessing the license directly without any intermediary program. When you use standalone mode, OPNET analysis software may only be run on the computer on which the license is installed.

WARNING—Because VNE Server and AppInternals Xpert do not support standalone licensing, do not install and configure OPNET analysis software using standalone licensing on the same system as VNE Server or AppInternals Xpert.

Floating (Enterprise) Licensing

In the floating configuration, `op_license_server` executes on a host computer that is accessible to the clients it serves.

Multiple license servers can run on the same IP network, each allocating different licenses. You cannot register a license to more than one license server, however. For example, if one license server allocates licenses 100-1 through 100-10, another license server cannot allocate those same licenses.

With enterprise licensing, you can also support clients that are on IP networks other than the network containing the license server.

Note—Enterprise licensing is available for Modeler and ODK but is not included by default. Contact your OPNET account manager for more information.

Loanable Licensing

Note—Loanable licenses are no longer offered with AppTransaction Xpert.

Loanable licenses can be temporarily transferred an unlimited number of times from one license server to another, without the assistance of technical support. This is useful for providing licenses to applications that will be run on a portable computer or at a remote site that doesn't have network access, without needing to register a license for that computer.

It is important to note when loaning a license that a "day" is defined as 24 hours. If a license is loaned at 10:00AM on Monday for a duration of one day, the loan expires on the loanee's computer at 10:00AM on Tuesday. For loans of more than one day, the number of days specified is multiplied by 24 hours to determine the end of the loan period.

A simplified method of managing loanable licenses is built into the License Manager. For details, see License Operations for Loanable Licenses.

License Manager

The License Manager is the interface through which license servers and licenses are managed. You can use either the graphical user interface (recommended where available, see License Manager Graphical User Interface) or the command line interface (see Managing Licenses from the Command Line). From the License Manager, you can perform administrative operations on application licenses. Typical operations include

• License registration/deregistration

• Selection of the default license server

- Change license or maintenance expiration

- Revoke licenses

Note—The License Manager installed with OPNET analysis software may be used to manage licenses on either local or remote license servers.

Related Topics

- *Starting the License Manager GUI or Managing Licenses from the Command Line*

- *Exiting the License Manager GUI or Exiting the Floating License Manager from the Command Line*

- *License Manager Graphical User Interface*

License Server

License Server (`op_license_server`) is the application that issues licenses to licensed applications when you use *workgroup licensing*, that is, floating licenses. You may not need to directly invoke this application at all, because the graphical License Manager allows you to perform most common operations, including starting and stopping the license server. However, you may want to use the command line operations offered by `op_license_server`, perhaps by including commands in a script file.

WARNING—Your license server should run the latest software release. A newer version of the license server can always serve licenses to earlier versions of the product.

Note—If you are using standalone licensing, OPNET analysis software accesses the license file locally and does not use `op_license_server`. Standalone licensing does not apply to VNE Server or AppInternals Xpert.

`op_license_server` runs as a service (on Windows platforms) or as a daemon process (on Linux platforms), issuing licenses to licensed applications. A daemon process is one that executes continuously without being attached to a user shell. Applications send messages to `op_license_server` by referencing its host (the workstation on which it runs) and its port (a unique identifier of a communications port on that host).

You can restrict who has access to certain server operations by creating an `admin_auth` file. If you do not create such a file, any user has access to any license operations on any server. See Restricting License Server Administration for information.

You can restrict who can obtain licenses from a particular server by creating a `user_auth` file. See Restricting License Server Administration for details.

Related Topics

• *Starting the License Server from the License Manager GUI or Starting a License Server from the Command Line*

• *Stopping the License Server from the License Manager GUI or Stopping the License Server from the Command Line*

• *License Server Reporting*

• *Restricting License Server Administration*

• *License Server Operations within License Manager GUI*

License File Format Change

The license server installed with releases 15.0 and higher uses a new format for license files. Your existing license files must be converted before a 15.0 or higher license server can use them to serve licenses to clients running release 15.0 or newer. Also note the following:

• Until the license file is converted, the license server will be unable to provide licenses to any clients running 15.0 or newer. (However, it can provide licenses to pre-15.0 clients.) Use Procedure 3-1 to convert your license file(s).

• After the license file is converted, license servers are able to serve licenses to both all license clients.

• If you have any pre-15.0 clients that use standalone licensing and you intend to run clients using release 15.0 or newer that will access those same licenses, *do not* run any of the clients in standalone licensing mode. Instead, use Procedure 3-2 to configure all clients to use the floating license server on which 15.0 licenses are installed.

Install the 15.0 or newer floating license server on the system on which your license file resides, and then use Procedure 3-1 to convert your licenses.

Procedure 3-1   Convert License Files to 15.0 Format

  1 Start the License Manager.

  2 In the License Manager tree view, select the server whose license file you want to convert. Servers with unconverted license files are marked by a yellow dot with a C, as shown in the following figure.

Figure 3-3   Convert Pre-15.0 License File
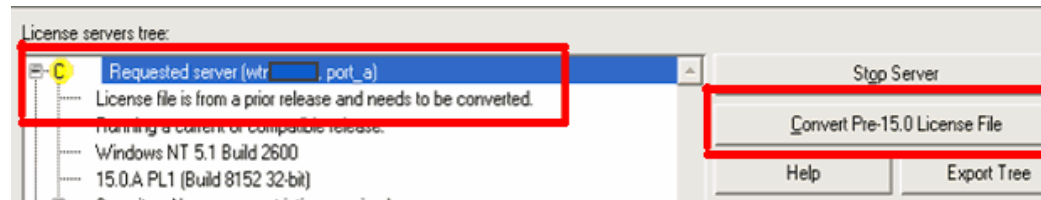
3   Click the Convert Pre-15.0 License File button and follow the on-screen prompts for Express, Browser, Email, or Offline method.

Note—More detailed instructions for each method are posted at the OPNET Support Center (www.opnet.com/support); follow the License Registration link to the Instructions section, if you need assistance.

End of Procedure 3-1

Use Procedure 3-2 to configure both 15.0 (and newer) and pre-15.0 clients to use the 15.0 license server in floating license mode.

Procedure 3-2   Configuring Clients for 15.0 Licensing

1   After installation of the license server, configure each OPNET application to obtain licenses from the floating license server.

    1.1   Open the OPNET application.

    1.2   Select License > License Management.

       ➥ The License Manager GUI opens.

    1.3   From the treeview, expand each tree as necessary to locate the license server you want to use. Specifically, you must find a host on which a 15.0 or newer floating license server is running. In the example shown in Figure 3-4, we have selected newserver (port_a) as the license server we want to use.

Figure 3-4   Select a License Server
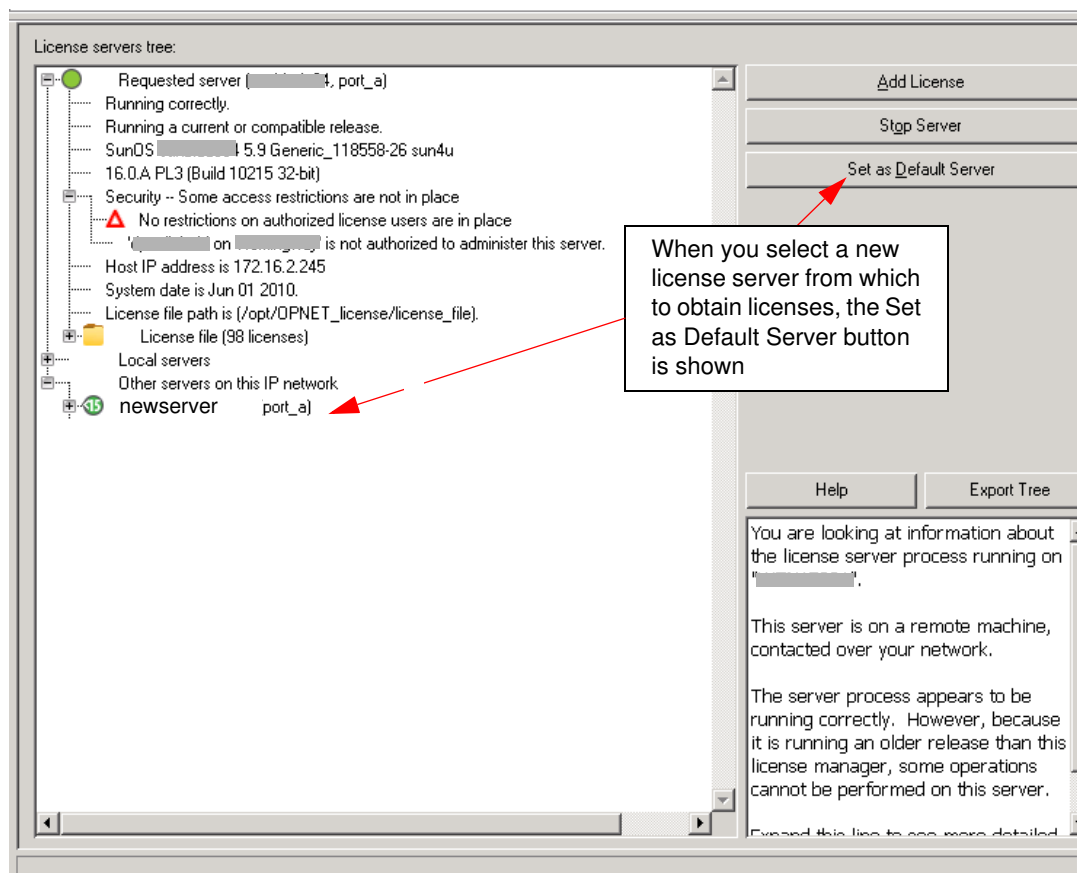
1.4   Click on the Set as Default Server button. A message will appear confirming your selection. Click Close.

➥ The next time you start the OPNET application, it will obtain a license from the newly designated license server.

2   Close the License Manager GUI by selecting File > Close.

Note—If you have been using standalone licensing, continue with steps 3 through 5. Otherwise, restart the client application and stop here.

3   Select Edit > Preferences.

4   Ensure that the Licensing > Standalone License Server preference is set to FALSE.

Note—If you change the value of this preference, you must restart the application.

5   Restart the client application.

End of Procedure 3-2