

Administering Licenses for Rational Software®

VERSION: 2001A.04.00

PART NUMBER: 800-024438-000

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<http://www.rational.com>

Rational®
the e-development company™

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Preface

Administering Licenses for Rational Software provides you with the technical information you need to install floating and node-locked license keys, install and configure the Rational license server software, and troubleshoot problems related to licensing Rational Software products.

Rational Suite delivers a comprehensive set of integrated tools that embody software engineering best practices and span the entire software development lifecycle. Rational Suite's unparalleled level of integration improves communication both within teams and across team boundaries, reducing development time and improving software quality.

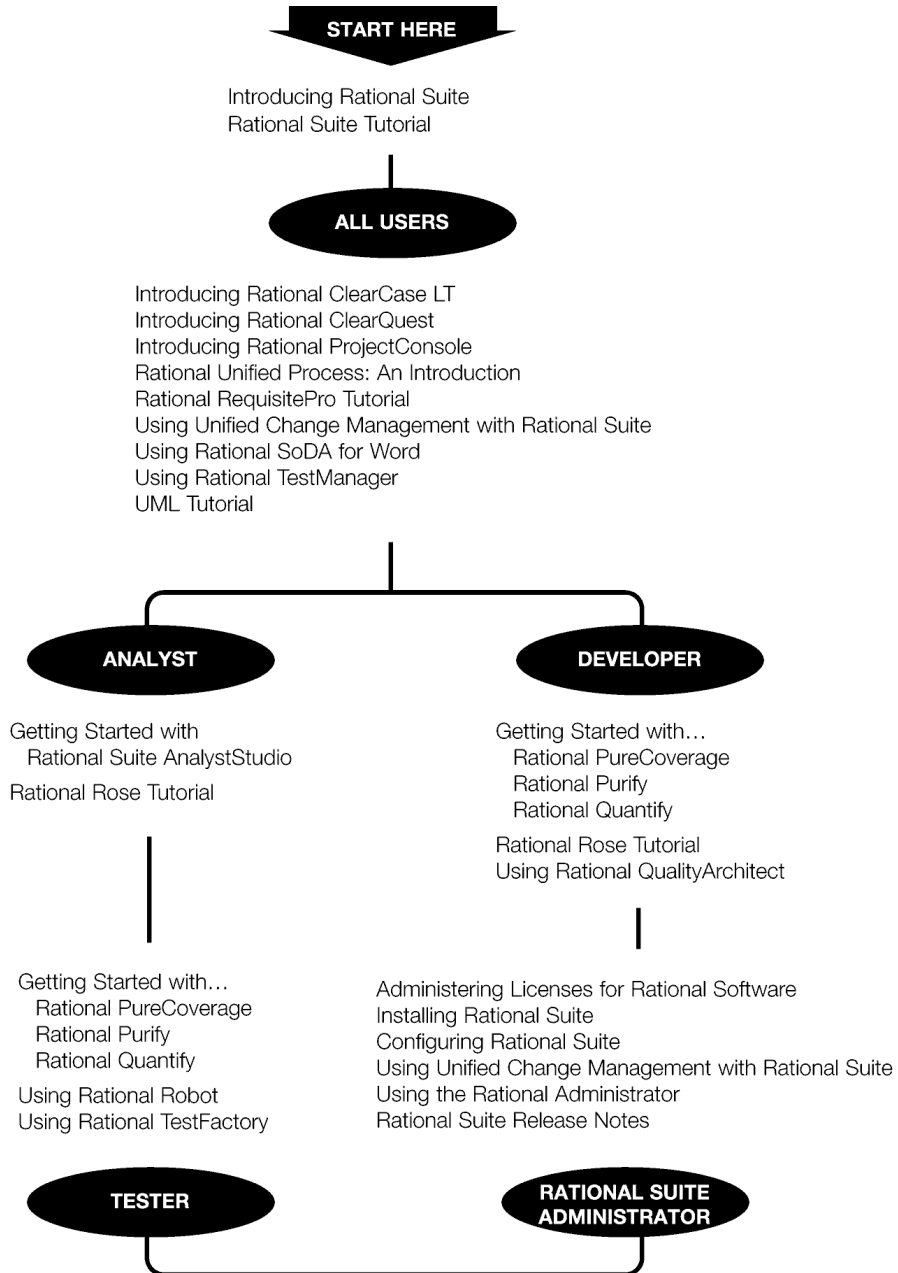
Audience

This guide is intended for system administrators. This book assumes knowledge of Microsoft Windows and its conventions and experience with client-server environments.

Other Resources

- All manuals are available online, either in HTML or PDF format. The online manuals are on the Rational Solutions for Windows Online Documentation CD-ROM.
- To send feedback about documentation for Rational products, please send e-mail to techpubs@rational.com.
- For more information about Rational Software technical publications, see: <http://www.rational.com/documentation>.
- For more information on training opportunities, see the Rational University Web site: <http://www.rational.com/university>.
- For articles, discussion forums, and Web-based training courses on developing software with Rational Suite products, join the Rational Developer Network by selecting **Start > Rational Suite > Logon to the Rational Developer Network**.

Rational Suite Documentation Roadmap



Rational Technical Support

When you contact Rational Technical Support or Licensing Technical Support, please be prepared to supply the following information:

- Your name, company name, telephone number, and e-mail address
- Your operating system, version number, and any service packs or patches you have applied
- Product name and release number
- Your case ID number (if you are following up on a previously reported problem)
- The Rational Account number listed on your Rational License Key Certificate (Rational Licensing Technical Support only).

Contacting Rational Technical Support

If you have questions about installing, using, or maintaining this product, contact Rational Technical Support as follows:

Your Location	Telephone	Facsimile	E-mail
North America	(800) 433-5444 (toll free) (408) 863-4000 Cupertino, CA	(781) 676-2460 Lexington, MA	support@rational.com
Europe, Middle East, Africa	+31 (0) 20-4546-200 Netherlands	+31 (0) 20-4545-201 Netherlands	support@europe.rational.com
Asia Pacific	+61-2-9419-0111 Australia	+61-2-9419-0123 Australia	support@apac.rational.com

Contacting Rational Licensing Technical Support

If you have questions about acquiring license keys for your Rational Software products, contact Rational Licensing Technical Support as follows:

Your Location	Telephone	Facsimile	E-mail
Asia Pacific	+61-2-9419-0111	+61-2-9419-0123	license@apac.rational.com
Asia Pacific (Japan)	+61-2-9419-0111	+61-2-9419-0123	license@japan.rational.com

Your Location	Telephone	Facsimile	E-mail
Asia Pacific (Korea)	+82-2-556-9420	+82-2-556-9426	license@apac.rational.com
Asia Pacific (Mainland China, Hong Kong, and Taiwan)	+61-2-9419-0111	+61-2-9419-0123	license@china.rational.com
Europe Middle East Africa	+31 20 4546 200	+31 20 4546 202	license@europe.rational.com
North American (East Coast) and South America	800-433-5444 (toll free, USA only) +1 (408) 863 4000	781-676-2460	license@rational.com
North America (West Coast) and Central America	800-433-5444 (toll free, USA only) +1 (408) 863 4000	408-863-4001	license@rational.com

This manual provides comprehensive information about licensing for Rational products. The information in this document pertains to products licensed using Rational Common Licensing for Windows.

This manual includes the following topics:

- Descriptions of Rational licensing tools: Rational AccountLink, License Key Certificate, “Getting Started with Rational Software,” and License Key Administrator.
- Definitions for license types and license key types.
- Requirements for acquiring permanent license keys.
- Instructions for installing node-locked license keys.
- Instructions for installing and configuring a floating license server, floating license keys, and named-user floating license keys.
- Information about other supported licensing features and configurations.
- Descriptions of and solutions for license installation problems and errors.
- Descriptions of Rational Common Licensing components and mechanics.

This chapter provides the following information about Rational licensing and Rational licensing tools:

- Request permanent license keys from AccountLink.
- Import the license key file that you receive from AccountLink.
- Return, remove, or move permanent license keys.
- Enter evaluation license keys.
- Upgrade permanent license keys.

The *Rational Common Licensing Roadmap* on page 24 directs you to procedures on the Web and in this manual to accomplish Rational licensing tasks.

The Rational Common Licensing Model

Rational Software uses a software-based license management tool from GLOBEtrouter, Inc. FLEXlm provides users with a powerful and flexible mechanism for managing licensing. This allows vendors, such as Rational Software, to build a customized licensing model by implementing the FLEXlm features that best meets their business needs.

Products Included in Rational Common Licensing

- All Rational Suite products
- Rational Rose products
- Rational ClearQuest products
- Rational Requisite products
- Rational ClearCase LT
- Rational SoDA products
- Rational Testing products
- Rational RealTime products
- Rational Developer Tools on Windows
- Rational Developer Tools on UNIX
- Rational Suite DevelopmentStudio on UNIX

Products Not Included in Rational Common Licensing

- Rational ClearCase
- Rational Developer Tools on UNIX (prior to the August 2000 release)
- Rational APEX
- Rational ClearDDTS
- Rational VADS

Rational Licensing Tools and Tasks

This section describes the tools you need to order and install your license keys.

Using AccountLink to Request Permanent License Keys

AccountLink (<https://www.rational.com/accountlink>) is a Web tool that you can use to manage your *permanent* (or Term License Agreement) license keys. To use AccountLink, you need the *License Key Certificate* that Rational includes in your product shipment. This certificate, enclosed in a large green envelope, provides license information. The Rational Account Number on this certificate verifies your company has purchased licenses to run Rational products.

Using AccountLink, you can order and return permanent license keys for Windows and UNIX products from single or multiple Rational accounts. AccountLink supports all license types: floating, named-user floating, and node-locked licenses. For more information about license types, see *Before Installing* on page 27.

Note: AccountLink does not support temporary license key transactions.

AccountLink's interface offers three license transactions:

- 1 Get License Key(s) – order your permanent license key by registering your Rational software to a specific system using the system's host ID or ethernet address. To order a permanent license key, you also need your Rational License Key Certificate and the hostname of the license server or client system.

You can register:

- Rational Windows or UNIX products that will be served from a Rational license server.
- Single or redundant Rational license servers on Windows or UNIX systems.
- Remote Windows or UNIX systems; you do not need to sit at the system you are requesting license keys for.

To find out more about the host ID and how to find the host ID or ethernet address, see *Finding the HOST ID* on page 69.

If you want to order permanent license keys for a redundant server environment, enter the redundant server order. For more information, see *Get Your License Keys for the Redundant Servers* on page 47.

- 2 Return License Key(s) – *return* the existing license key back to your Rational account and then order a license key for the new system. The return transaction updates Rational's records to indicate that you are no longer using the software on the old system. This adjusts the count of registered products in your account and allows you to get the license key for the new system. To learn more about returning license keys, see *Importing Permanent License Keys* on page 20.
- 3 Request a Copy of a License File – get a copy of a license key file for any system that has license keys already registered to it. This transaction does not require you to return or add license keys. You may find this transaction useful when your hard disk is reformatted, you need to restore the software on your system, or your license keys become corrupt.

Using Getting Started

The *Getting Started* Web pages provide step-by-step instructions, examples, and graphics for obtaining and installing Rational license keys. Click the **Getting Started** link on the AccountLink Web page.

Receiving and Importing License Keys

After you register your Rational products to a specific system with AccountLink, Rational generates a license file that contains the license key. The file is e-mailed to the contact e-mail address that you designate in AccountLink's License Contact page. Using the Rational License Key Administrator, you import the license key file on the system that you specified in AccountLink. See the instructions described in *Importing Permanent License Keys* on page 20.

Note: If AccountLink is unavailable, see *Requesting License Keys (Without an Internet Connection)* on page 34 or call Rational Licensing Support. See *Contacting Rational Licensing Technical Support* on page xiii for Support phone numbers.

Using the Rational License Key Administrator (LKAD)

The Rational License Key Administrator (LKAD) is installed with your Rational software and with your Rational license server software. This Rational program provides an interface to Rational Common Licensing features. You can use the LKAD to enter or import license keys and change your license configuration.

- To access the LKAD during the Rational Software Setup program, click **Configure Licenses** in the **Choose Product to Install** dialog box.
- To access the LKAD on a client system, click **Start > Programs > Rational *product name* > Rational License Key Administrator**.
- To access the LKAD on a license server system, click **Start > Programs > Rational License Server > Rational License Key Administrator**.

The online Help explains how to use the LKAD to review and modify your license configuration. The LKAD Help also provides information about configuring the license server software. To access the Help, click **Help** in the License Key Administrator's main menu or open `<Install Path>\Rational\Common\licadmin.hlp`.

Administrator Privileges for the LKAD

The Rational License Key Administrator (LKAD) is installed with every Rational product and with the Rational license server software. What you can do in the LKAD depends on the privileges that you have. Grayed out menu options in the LKAD Wizard, menu bar, or button bar indicate limited privileges.

- 1 To see which privileges are missing, select **Help > About Rational License Key Administrator**. You will see one or more of the following statements

Statement	Explanation
Cannot write to HKEY_LOCAL_MACHINE in the Windows Registry.	You cannot specify a license server.
Cannot Start and Stop a Windows Service.	You cannot start the license server.
Cannot create a file.	You cannot import a license key file on to your system.
Cannot modify a file.	You cannot enter a temporary license key in your system.

- 2 Request the missing NT administrator privileges from your system administrator.

Using the LKAD During the Rational Software Setup Program

To take care of licensing tasks before you install a product, you can open the Rational License Key Administrator from the Rational Software Setup program. The Rational Software Setup offers a **Configure Licenses** button in the **Choose Product** dialog box. When you see the License Key Administrator appear, you can import a node-locked license key, enter an evaluation license key, and specify a license server. After you configure product licensing, you can return to the Rational Software Setup program and install the product.

Reviewing Your License Information in the LKAD

By default, you should see complete information about your license keys in the main window of the License Key Administrator. If you do not see this information in the window, use the **View > Show** menu to display information about your licenses.

Table 1 defines each of the options in the **View > Show** menu.

Table 1 Show Licenses

License	Shows
Invalid and Expired Licenses	All expired node-locked, floating, and served licenses on the system that you are using
Floating Licenses	All floating licenses on the system that you are using
Node Locked Licenses	All node-locked licenses on the system that you are using
Served Licenses	All floating licenses that Rational software on your system could request from the license server

Importing Permanent License Keys

When you receive a license key file from Rational AccountLink, use the License Key Administrator to import the file on a floating license server or a node-locked client system. You can import the license key file before or after you install the Rational product.

To import a license key file:

- 1 Select **License > Import License Key(s)** on the menu bar.
- 2 In the **Import License Key(s)** dialog box, find the .upd or .txt file (license key file) and highlight it.
- 3 Click **Open**. The default location for the license key file is *<Install Path>\Rational\common*.

Other Methods

- If your e-mail program supports launching programs from file attachments, import a license key file by double-clicking the .upd or .txt attachment in the e-mail notification you received from Rational Software.
- Save the file attachment to any folder and double-click the license file. In the **Import License Key(s)** dialog box, select the .upd or .txt file and click **Open**.

What Does *Returning License Keys* Mean?

You may need to replace an old system or decide another system should act as the new Rational license server. Because permanent license keys are tied to a system's host ID, Rational products will not work on another system until you register the products to the new system and then import the new license keys that Rational generates onto the new system.

To get your new license key, you need to *return* the existing license key back to your Rational account and then order a license key for the other system. You could also call this task moving the license key from one system to another or removing the license key from the old system.

When you return a license key, you do not physically give the license key back to Rational. Instead, the return transaction updates Rational's records to indicate that you are no longer using the software on that system. This adjusts the count of registered products in your account and allows you to get a license key for the new system.

To comply with the Rational License Agreement, Rational sends you a license key file that contains updated license keys for the old system. If you have returned all the license keys for that system, Rational will send you a license file that is empty. Importing this license key file removes the installed license keys and makes it easy for you to comply with your License Agreement.

For removal or return instructions, see *Removing or Moving License Keys* on page 21.

Removing or Moving License Keys

Removing or moving a license key file requires a return transaction with Rational AccountLink and importing an update file on the old system and the new system, if you are moving the license key file.

To return a license key:

- 1 Use Rational AccountLink to return the license keys to your Rational account.
- 2 Import the license key update file that you receive from Rational AccountLink on the old license server or client to complete the return process.

To move a license key from one system to another:

- 1 Use Rational AccountLink to return the license keys to your Rational account.

Note: To help prevent you from confusing the license key update file for the old system with the license key file for the new system, you may want to complete the return process before you order license keys for the new system.

- 2 Remove the Rational software from the old system. See *Installing Rational Suite* for the removal procedures.
- 3 Install the Rational software on the new system.
- 4 Install the license server software (available on the Rational Solutions for Windows installation CD-ROM) on the new system.
- 5 Request a new license key file from Rational AccountLink.
- 6 Import the license key file on the new system.
- 7 If you are moving a license key file from one license server to another, start the new license server. Then, tell your users the name of the new license server.

Upgrading Licenses

If you are upgrading from an earlier version of a Rational Suite or point product, you can reuse your current Rational Suite and point product license keys.

Adding Rational Suites or Point Products to Licenses

This section describes the conditions under which you must order new license keys.

- If you have purchased a different type of Rational Suite from the one you are currently using, you must request a new license file that includes the new Rational Suite key.
- If you are adding a new product to your system, you have to request a new license file that includes the new point product license key.

Entering Temporary or Evaluation License Keys

The License Key Administrator lets you enter temporary license key information from the License Key Certificate on the floating license server or node-locked client system. You can enter the license key before or after you install the Rational product.

To enter temporary license information:

- 1 Select **License > Enter a License** in the menu bar of the License Key Administrator.
- 2 Choose the type of license you are installing: a **Node-Locked License Key** or a **Floating License Key**.
- 3 In the next dialog box, enter the following information from your License Key Certificate:
 - Product
 - Expiration Date
 - License Key
 - Quantity (if you are installing a floating license key)
- 4 Click **Finish**. The License Key Administrator creates a *.dat file for the license key in <Install Path>\Rational\common.

Configuring Clients to Use Floating Licenses

Floating licenses require a license server to serve the license keys to clients. To configure clients to use floating license keys:

- 1 Install the license server software and import your license keys on the Rational license server. For instructions, see *Setting Up Floating and Named-User Floating Licenses* on page 37.
- 2 Install your Rational software on the client systems because you need the License Key Administrator on each client to specify the license server. See *Configuring the Client System to Use a Floating License* on page 45 for instructions.

Rational Common Licensing Roadmap

To help you install and configure Rational licenses, Table 2 directs you to AccountLink and specific chapters in this manual.

Table 2 Rational Common Licensing Roadmap

To	See
Request and receive permanent (floating or node-locked) license keys	AccountLink at http://www.rational.com/accountlink Or 1 <i>Using AccountLink to Request Permanent License Keys</i> on page 16 2 <i>Receiving and Importing License Keys</i> on page 18
Understand basic Rational Common Licensing terms, such as node-locked and floating	<i>Before Installing</i> on page 27
Find out which licensing configurations and platforms Rational supports	<i>Before Installing</i> on page 27
Set up the floating license server and install floating and floating named-user license keys	AccountLink at http://www.rational.com/accountlink Or <i>Installing Floating and Named-User Licenses</i> on page 37
Configure the clients to use floating license keys	<i>Configuring the Client System to Use a Floating License</i> on page 45
Remove the Rational license server software	<i>Removing the License Server Software</i> on page 48
Install node-locked license keys on a client	AccountLink at http://www.rational.com/accountlink Or 1 <i>Receiving and Importing License Keys</i> on page 18 2 <i>Using the Rational License Key Administrator (LKAD)</i> on page 18 3 <i>Importing Permanent License Keys</i> on page 20 4 <i>Installing Node-Locked Licenses</i> on page 49

Table 2 Rational Common Licensing Roadmap (continued)

To	See
Enter a temporary (floating or node-locked) key for evaluating a Rational product	<p>For floating licenses:</p> <ol style="list-style-type: none"> 1 <i>Using the Rational License Key Administrator (LKAD)</i> on page 18 2 <i>Entering Temporary or Evaluation License Keys</i> on page 22 3 <i>Installing Floating and Named-User Licenses</i> on page 37 <p>For node-locked licenses:</p> <ol style="list-style-type: none"> 1 <i>Using the Rational License Key Administrator (LKAD)</i> on page 18 2 <i>Entering Temporary or Evaluation License Keys</i> on page 22 3 <i>Installing Node-Locked Licenses</i> on page 49
Configure redundant Rational license servers	<i>Installing Floating and Named-User Licenses</i> on page 37
Upgrading licenses or adding products to licenses	<ul style="list-style-type: none"> ▪ <i>Upgrading Licenses</i> on page 22 ▪ <i>Adding Rational Suites or Point Products to Licenses</i> on page 22
Change the order in which Rational products use licenses	<ol style="list-style-type: none"> 1 <i>License Usage Order</i> on page 32 2 <i>Changing License Usage on Your System (License Usage Mapper)</i> on page 59
Moving or returning license keys	<ol style="list-style-type: none"> 1 <i>What Does Returning License Keys Mean?</i> on page 21 2 <i>Removing or Moving License Keys</i> on page 21
Use other supported Rational licensing features and configurations, such as setting up a UNIX license server for Windows clients	<i>Using Other License Configurations</i> on page 51
Understand license installation problems and error messages	<i>Troubleshooting Licenses</i> on page 73
Understand the mechanics of Rational Licensing	<i>Understanding Rational Licensing Components</i> on page 61

This chapter describes Rational Common Licensing for Windows products, basic Common Licensing terms, supported platforms and configurations, license usage order, and noninternet license key requests. This information will help you understand Rational Common Licensing and plan the licensing configuration for your site. To find more definitions of Rational Common Licensing terms, see the *Licensing Glossary* on page 81.

What Are Node-Locked and Floating Licenses?

Rational supports both node-locked and floating licenses. Node-locked licenses are created only for a specific system. Floating licenses can be shared by multiple users on multiple systems. A Rational license server controls use of the floating licenses.

When users install Rational products on their systems, the Rational Software Setup program automatically installs the Rational licensing software (Rational *license server* software is not installed automatically). The licensing software lets these systems use either node-locked or floating licenses. (Table 3 explains node-locked and floating licenses in depth.)

Note: Users need floating license keys from a Web server to run Rational ClearQuest Web and Rational RequisiteWeb on Web clients.

Table 3 defines the basic types of licenses supported by Rational.

Table 3 License Types

License Type	Description	Notes
Node-locked	<ul style="list-style-type: none"> ▪ A node-locked license is configured for a specific system. It allows a user to run a Rational product only on that specified system. ▪ Rational supports <i>uncounted</i> node-locked licenses for Windows products. Rational refers to uncounted node-locked license keys for Windows products as <i>node-locked license keys</i>. ▪ Because these license keys do not use a Rational license server, the user may run multiple sessions of a Rational product concurrently using a single license key. ▪ To move a node-locked license to another system, you must <i>return</i> the license key from the old system and request a new license key for the new system. For a more detailed explanation, see <i>Importing Permanent License Keys</i> on page 20 	<p>Rational also issues node-locked licenses for Rational products that run on UNIX platforms. Node-locked Rational products on UNIX (that use Rational Common Licensing) are licensed with <i>counted</i> node-locked license keys. You manage counted node-locked licenses with a license server.</p> <p>Clients connect to the Rational license server and acquire a counted node-locked license specific to their system. This process is the same as the one used to acquire floating license keys.</p> <p>Essentially, a counted node-locked license key is a floating license key that can only be used on a specific host.</p>

Table 3 License Types (continued)

License Type	Description	Notes
Floating	<ul style="list-style-type: none"> ▪ A system administrator installs the Rational license server software on one or redundant systems. The administrator then installs the floating licenses on the license server. ▪ The pool of floating licenses are shared among all users of Rational products. ▪ Client systems obtain licenses from the license server system when they need to run a copy of Rational software. One license is granted per client per product ▪ To move a floating license to another license server, you must “return” the license key from the old license server and request a new license key for the new license server. For a more detailed explanation, see <i>Importing Permanent License Keys</i> on page 20. 	<p>Rational also supports Named-User floating licenses for Rational Purify, Quantify, and PureCoverage. This configuration assigns licenses to specific users. That is, only specific users can request floating license keys from the license server. For more information, see <i>Configuring the Server for Named-User Floating Licenses</i> on page 42.</p>

What Are Permanent and Temporary License Keys?

When you register Rational products to specific systems (license server or client) in AccountLink, Rational generates license keys and e-mails these permanent license keys in a license file to you. The permanent keys let you use the Rational products for an indefinite period of time. However, Rational assigns an expiration date to the license keys if your company has negotiated a Term License Agreement (TLA). Technically, TLA keys are not permanent, but Rational groups TLA licenses in the permanent license key category.

To use Rational products for an evaluation period or if you expect a delay in receiving your permanent keys, you can install the temporary license key provided in your Rational License Key Certificate. Because Rational has not generated the temporary key for a specific system, you can use it on any system until the specified expiration date.

Permanent and temporary license keys can be floating or node-locked. The difference is that a temporary key is *not* generated for a specific system and a permanent key is generated for a specific system.

Table 4 defines the types of license keys used by Rational licensing.

Table 4 License Key Types

License Key Type	Description	Notes
Permanent	<ul style="list-style-type: none"> ▪ A license issued to a customer for running Rational products. Permanent licenses are keyed to a specific Rational product and specific system. ▪ Permanent license keys can be node-locked or floating. The user installs a node-locked permanent key on a system on which the user runs Rational software. Floating permanent keys are installed on a Rational license server. 	<p>Rational issues permanent node-locked or floating keys upon request. Use AccountLink at www.rational.com/accountlink to acquire your license keys.</p>
Temporary	<ul style="list-style-type: none"> ▪ A time-limited license issued to a customer for running Rational products. Temporary licenses are not keyed to a specific system. ▪ Temporary license keys can be node-locked or floating. The user installs a node-locked temporary key on a system on which the user runs Rational software. Floating temporary keys are installed on a Rational license server. 	<p>The expiration date for a temporary key is noted on the License Key Certificate included with the Rational product shipment.</p>
TLA (Term License Agreement)	<ul style="list-style-type: none"> ▪ Variation of a Permanent Key. TLAs are issued to allow users access to Rational software for a negotiated period of time. 	<p>TLAs are issued by the Rational Sales Team. To obtain TLAs for your organization, contact your local Rational Sales Team.</p>

What Are Emergency and Evaluation License Keys?

Emergency and evaluation license keys are temporary license keys. They can be floating or node-locked. They are short-term licenses that are not generated for a specific system. For more information about temporary license keys, see *What Are Permanent and Temporary License Keys?* on page 29.

What Are Suite Licenses and Point Product Licenses?

A Rational license key indicates whether it is a Rational Suite license, such as Rational Suite Enterprise, or a point product license, such as Rational Purify. A Rational license file can contain multiple floating or node-locked suite and point product license keys.

Using Rational Suite License Keys

When you purchase a license key for a Rational Suite, you can run all of the products contained within a Rational Suite at the same time on a single system. The Rational Suite checks out a *single* floating or node-locked suite license key.

Using a Different Suite License from the Suite Edition Installed

You can install a Rational Suite on a client and specify that products within the Suite check out a different type of Rational Suite license either on the client system or from the floating license server. For example, you can install Rational Suite Enterprise on the client and have the point products within the Rational Suite check out a Rational Suite AnalystStudio license from the Rational license server.

To select a different license for a product, use the License Usage Mapper. See on page 58 for more instructions.

Using Multiple Floating or Node-Locked License Keys

A client system can check out *multiple* floating or node-locked licenses.

License Usage Order

A Rational product, whether it is installed as part of a Rational Suite or installed individually, requests licenses in this order, by default:

- 1 Node-locked before floating license
- 2 Suite license of the last Rational Suite installed
- 3 Suite license of the Rational Suite installed before the last Rational Suite installed
- 4 Point product license

A Rational product requests a node-locked license before a floating license, regardless of whether it is a suite or point product license. Then, among a group of floating or node-locked licenses, a product requests a suite license before a point product license. For example, Rational Purify is sold as part of a Rational Suite and as a standalone product. It will request the Rational Suite license before it requests a Rational Purify license.

To get a better understanding of how Rational products use licenses, read the following examples. If you would like to change how your Rational products use Suite and point product licenses, see *Changing License Usage on Your System (License Usage Mapper)* on page 59.

Rational RequisiteWeb and ClearQuest Web

Rational RequisiteWeb and ClearQuest Web require floating licenses. Unlike other Rational products, they request the point product license before the suite license.

Example: Rational Suite and Point Product Floating Licenses

A customer installs several Rational Suite Enterprise licenses and Rational ClearQuest licenses on its license server. A user installs Rational Suite Enterprise on a client system. When this user starts ClearQuest, which is a part of Rational Suite Enterprise, the product requests the Rational Suite Enterprise license before the ClearQuest license.

Example: Multiple Rational Suite Floating Licenses

A customer installs several Rational Suite DevelopmentStudio and TestStudio licenses on its license server. Then installs TestStudio and then DevelopmentStudio on clients. Because DevelopmentStudio was installed last on the client systems, a product common to both Rational Suites requests the DevelopmentStudio suite license first.

Supported Configurations

This section describes licensing configurations and platforms supported by Rational Software. The term *supported* refers to a licensing configuration that Rational has tested and guarantees will work under normal operating conditions. This applies to configurations that the software was designed to handle. This also applies to configurations for which the software was not specifically designed, but with which it will work with some manual intervention.

Rational License Server Platform Support

On Windows systems the Rational license server is available on Windows NT and Windows 2000 systems. The Windows systems must have a C drive. The Rational server is not available on Windows 95, 98, and Me systems.

On UNIX systems, the Rational license server is available on all platforms that support Rational's products.

Rational Licensing Configurations

Table 5 lists license configurations that Rational does support.

Table 5 Rational Licensing Configurations

Configuration	Supported Platform	Notes
Node-locked license key in a file	Windows	This configuration is fully supported starting with Rational Common Licensing 1.0.
Node-locked license key in a file	UNIX	This configuration is fully supported starting with Rational Common Licensing 1.0.
Rational license server and Rational Windows products installed on a single system	Windows	This configuration is fully supported starting with Rational Common Licensing 1.5.
Rational license server and Rational UNIX products installed on a single system	UNIX	This configuration is fully supported starting with Rational Common Licensing 1.0.
Floating licenses for Windows products.	UNIX servers; Windows clients	This configuration is supported starting with Rational Common Licensing 1.5.

Table 5 Rational Licensing Configurations (continued)

Configuration	Supported Platform	Notes
Floating licenses with redundant license servers	Windows servers; UNIX clients	This configuration is not yet officially supported by Rational.
Floating licenses with redundant license servers	UNIX servers; UNIX clients	This configuration is not yet fully supported by Rational Common Licensing.

Requesting License Keys (Without an Internet Connection)

This section summarizes the steps for getting a node-locked or floating permanent license key when you do not have an internet connection or when Rational AccountLink is unavailable.

Although this section gives customers instructions for obtaining license keys by fax, Rational recommends that you use Rational AccountLink (www.rational.com/accountlink) to request permanent license keys.

- 1 Find your License Key Certificate in your Rational product shipment.

Print the license request form. To print the form, either install the Rational product that you purchased and open the license request form in the Rational common directory or open the file in the Rational Solutions for Windows installation CD-ROM. The French and German versions of this fax form are in the same location.

- `<Rational_directory>\common\License Fax Form - English.htm`
- `<cd_drive>\common\License Fax Form - English.htm`
- `<Rational_directory>\common\License Fax Form - French.htm`
- `<cd_drive>\common\License Fax Form - French.htm`
- `<Rational_directory>\common\License Fax Form - German.htm`
- `<cd_drive>\common\License Fax Form - German.htm`

- 2 Use the License Key Certificate to fill out the form. Make sure that the contact, Rational account number, product, licensing, and host information are correct. Any errors will cause delays in receiving your license keys.
- 3 Fax the request to Rational. See *Contacting Rational Licensing Technical Support* on page xiii for fax and phone numbers.

Call Rational Licensing Support if you cannot use Rational AccountLink or the fax form to order your permanent license keys. See *Contacting Rational Licensing Technical Support* on page xiii for phone numbers.

Receiving Permanent License Keys

If you request a new license using AccountLink, Rational will send you a license key file through e-mail. If you request a permanent license key by fax and you have specified an e-mail address in your contact information, you will receive a license key file through e-mail. You can copy the permanent license file from the e-mail enabled system and install it on the system that is not e-mail enabled.

If you cannot provide an e-mail address, contact Rational Licensing Support. See *Contacting Rational Licensing Technical Support* on page xiii for the phone numbers.

Next Steps

The following table directs you to the chapters you can consult to install your evaluation or permanent license keys.

To	See
Install floating and floating named-user license keys	<i>Installing Floating and Named-User Licenses</i> on page 37
Install node-locked license keys	<i>Installing Node-Locked Licenses</i> on page 49
Install a temporary (floating or node-locked) key for evaluating a Rational product Note: If you expect delays in receiving your permanent license key, use the Rational License Key Administrator to enter the temporary key listed in your License Key Certificate. When you receive your permanent license key, you do not have to remove the temporary key.	<ul style="list-style-type: none">▪ <i>Installing Floating and Named-User Licenses</i> on page 37▪ <i>Installing Node-Locked Licenses</i> on page 49

Installing Floating and Named-User Licenses

3

Floating licenses, including named-user floating licenses, let you manage and maintain licenses on a single license server or redundant license servers.

This chapter describes how to set up and run Rational's floating license services. The information in this chapter is intended for system administrators or users who manage licenses. If you are using node-locked licenses, see *Installing Node-Locked Licenses* on page 49 for information about installing node-locked licenses on a client system.

Setting Up Floating and Named-User Floating Licenses

The steps required to set up floating (temporary or permanent) licenses are described in Table 6.

Table 6 **Guide to Setting Up Floating Licenses**

To	Procedures
Set up floating licenses	<ol style="list-style-type: none">1 Make sure your license server and clients can work with the network configuration that you have set up. See <i>Working with a Supported Network Configuration</i> on page 38.2 Install the Rational license server software on the license server system. See <i>Working with a Supported Network Configuration</i> on page 38.3 Install the evaluation or permanent floating license keys on the license server system. See <i>Configuring the Server for Named-User Floating Licenses</i> on page 42.4 Start the license server software. See <i>Starting the License Server</i> on page 44.5 Configure the client to use license keys from the server. See <i>Configuring the Client System to Use a Floating License</i> on page 45.

Table 6 Guide to Setting Up Floating Licenses (continued)

To	Procedures
Set up named-user floating licenses (only applies to Rational Purify, Quantify, and PureCoverage)	<ol style="list-style-type: none">1 Make sure your license server and clients can work with the network configuration that you have set up. See <i>Working with a Supported Network Configuration</i> on page 38.2 Install the Rational license server software on the license server system. See <i>Working with a Supported Network Configuration</i> on page 38.3 Create a Rational options file on the license server. See <i>Configuring the Server for Named-User Floating Licenses</i> on page 42.4 Install the evaluation or permanent floating license keys on the license server system. See <i>Configuring the Server for Named-User Floating Licenses</i> on page 42.5 Start the license server software. See <i>Starting the License Server</i> on page 44.6 Configure the client to use license keys from the server. See <i>Configuring the Client System to Use a Floating License</i> on page 45.
Configure redundant license servers	See <i>Setting Up Rational Redundant Servers</i> on page 46.
Modify the time-out period	See <i>Modifying the Floating License Time-Out Period</i> on page 45.
Remove the license server software	See <i>Removing the Rational License Server Software</i> on page 48.

Working with a Supported Network Configuration

This section provides important information about network configurations.

Dial-Up Support

You can use floating licenses with a dial-up network connection that supports a constant TCP/IP connection to the Rational license server. Any client must have a constant TCP/IP connection to the license server.

If the dial-up connection is lost while a client has checked out a floating license, the server will automatically reclaim the floating license. When the connection is lost, the client cannot periodically “talk” to the license server to refresh its license. Because the client cannot refresh its license, the Rational product will run for a limited period of time. This time period is product dependent.

WAN Support

Rational floating licenses can be used over a wide area network if this is in compliance with the geographical allowance of the License Agreement.

If you choose to run licenses over a WAN, be aware of how your systems resolve hostnames. Rational recommends, but does not require, that you always use the fully qualified domain names in the SERVER line and on the clients. This technique tends to reduce the number of issues with hostname resolution.

Novell Support

Rational’s licensing implementation does not support Novell Netware 5.0 or later directly with floating licenses. Rational floating licenses can be used in a Novell 5.0 environment that is configured with TCP/IP and/or IPX.

Node-locked licenses with Novell 5.0 are supported.

Installing the Rational License Server Software

To install floating licenses, you must install and configure the Rational license server. This section describes how to use the Rational Software Setup program to install the license server software, software that allows you to flexibly install and manage license keys.

Before You Install the License Server Software

The following sections provide requirements for installing the license server.

Installation Requirements

Table 7 lists the system and software requirements for installing the Rational license server software.

Table 7 Rational License Server Requirements

Item	Requirement
Operating System	Microsoft Windows NT 4.0, Service Pack 2 or greater Microsoft Windows 2000
Processor	133 MHz or greater
Memory	64 MB
Disk space	1.8 MB
Privileges	Windows NT administrator privileges on the local system

Note: Make sure that you have a current backup of your Registry and system directories before running the Rational Software Setup program.

Default Installation Path

The Rational Software Setup program uses C:\Program Files\Rational as the default installation path. If your C:\ drive lacks sufficient free disk space, you may either specify another drive or make space available on the default drive.

Warning: Interrupting an installation that is in progress may leave your system in an indeterminate state. If you try to close the Rational Software Setup window while the installation is in progress, the Setup program asks you to confirm that you want to exit from the incomplete installation.

Using the Rational Software Setup Procedure

This section describes a Typical installation of the Rational license server software.

- 1 Insert the Rational Solutions for Windows Disc 1 or Disc 2 into your system's CD-ROM drive.

The Rational Software Setup program starts automatically.

If autorun is disabled on your system, click **Start > Run** and enter *drive*: \Setup.exe where *drive* is the letter of the CD-ROM drive.

- 2 The **Rational Software Setup** dialog box provides general information about the software installation.

- 3 On the **Choose Product** dialog box, choose **Rational FLEXIm License Server**.
- 4 Choose to accept or not accept the Rational Software license agreement in the **License Agreement** dialog box.
 - If you accept the license agreement, the Setup program continues.
 - If you do not accept the license agreement, you cannot continue with the Setup program. Exit the Setup program by clicking **Finish** or **Cancel**. When you exit from the Setup program, the Setup program makes no changes to the system.
- 5 The **Select Configuration** dialog box displays the setup options for the software. The only choice available for the license server is **Typical**.
- 6 The **Upgrade Compatibility** dialog box appears if you have additional, older, Rational products installed on the system. When you have older Rational products installed on your system, you have to ensure that all Rational products on that system are upgraded to the same version. Because Rational tools share files and components, a new installation can cause the older Rational products to stop working.

For each of the Rational products listed in the **Upgrade Compatibility** dialog box, we strongly recommend that you do one of the following:

- **Upgrade it:** Complete the installation, and then restart the Setup program to upgrade the older Rational products. For example, if you have standalone installations of Rational point-products on your system, you must upgrade each product. If you have a Rational Suite and a point-product on the same system, upgrade both Rational products to the same version. Upgrading each product updates all necessary files, registry entries, startup menu items, and shared components on your system.
 - **Remove it:** Complete this installation, and then see *Installing Rational Suite* for the removal procedure.
- 7 The **Confirmation** dialog box displays the product features that will be installed.
 - 8 The **Error Summary** dialog box displays errors from the first part of the Setup program. If the installation is successful, you do not see this dialog box.

The Rational Software Setup program writes a log of installation activities. The log file is located in `<Install Path>\Rational\RSSetup\RSsetup.log`.

Possible Reboot Required

If files required for the installation are in use during the Rational Software Setup program, and if the program needs to install shared components on your system, the Setup program may need to reboot your system. After rebooting, do the following:

- 1 Log on as the same administrator to complete the installation procedure. If you do not log on as the same administrator, the installation does not complete correctly.
The installation process completes on your system.
- 2 Click **Finish**.

Note: After you install the license server software, install the floating license keys on the license server before you start the license server.

Configuring the Server for Named-User Floating Licenses

Named-user floating licenses behave like floating licenses except you lock the floating license key to a user or users, allowing users to run Rational software on multiple systems.

Setting Up the Options File on the License Server

You add an entry for each user that will use a floating license in a text file on the license server. The number of entries in the text file can not be greater than the number of floating licenses purchased.

- 1 Create a text file, called `rational.opt`, in the `<rational flexlm dir>\common` directory.
- 2 Specify the `userid` for each user that will use the software. To specify the `userid`s, you use the `INCLUDE` option in the options file.

The syntax of the `INCLUDE` option is as follows:

```
INCLUDE feature_name USER userid
```

Where:

Item in Options File	Explanation
<code>feature_name</code>	PurifyNT, VisualQuantify, or VisualPureCoverage
<code>userid</code>	Is the username of the user eligible to use the software On Windows systems, this is the Windows login id.

Examples:

```
INCLUDE PurifyNT USER jsmith
```

```
INCLUDE VisualQuantify USER jsmith
```

```
INCLUDE VisualPureCoverage USER jsmith
```

Note: If you do not use the correct syntax, this feature will not work.

- 3 You can not have more INCLUDE lines than you have licenses.
- 4 Restart the license server. See *Starting the License Server* on page 44 for instructions.

Note: You can edit the options file when the license server is running. However, for the server to implement your changes, you have to restart the license server.

Installing Floating License Files

This section describes how to install permanent or evaluation license keys on the license server system.

Installing Permanent or Term License Agreement (TLA) License Keys

When you have requested your license keys using Rational AccountLink or the fax form described in *Requesting License Keys (Without an Internet Connection)* on page 34, Rational sends you a permanent floating license file. This file contains license keys for the license server system or host that you specified in AccountLink. You can install the permanent license key file on the license server by using the Rational License Key Administrator (LKAD). The LKAD is automatically installed with the Rational product software.

To install or import the permanent license file on the license server, see *Importing Permanent License Keys* on page 20.

Entering Temporary or Evaluation License Keys

You may enter a temporary or evaluation license key on the license server to let client systems request a floating license key from the Server.

The temporary or evaluation license key information, including the expiration date, is on your License Key Certificate. The License Key Certificate is enclosed in a large green envelope in your Rational Software product shipment.

You can enter the temporary license key information on the license server by using the Rational License Key Administrator (LKAD). The LKAD is automatically installed with the Rational product software.

To enter the temporary or evaluation license key on the license server, see *Entering Temporary or Evaluation License Keys* on page 22.

Starting the License Server

The license server software requires no configuration. Start the Rational license server after you have installed the floating license keys.

Note: The Rational license server will not start until floating license keys are installed.

Starting the License Server on Windows 2000

- 1 Click **Start** and select **Settings > Control Panel > Administrative Tools > Services > FLEXlm License Manager**.
- 2 In the **General** tab, click the **Start** button under **Service Status**.

Starting the License Server on Windows NT

- 1 Click **Start** and select **Settings > Control Panel > Services**.
- 2 Select the **FLEXlm License Manager** in the Services dialog box and click the **Start** button.

Note: Although the control panel applet may still appear on your system from an earlier release of Rational server software, version 2001 does not use the FLEXlm control panel applet.

Switching to Manual Startup

The Rational license server software is automatically set as a Windows NT service. The default Startup type is automatic, which means the license server starts automatically each time you start the system.

Switching Startup Type on Windows 2000

- 1 Click **Start** and select **Settings > Control Panel > Administrative Tools > Services > FLEXlm License Manager**.
- 2 In the **General** tab, select **manual** under **Startup type**.

Switching Startup Type on Windows NT

- 1 Click **Start** and select **Settings > Control Panel > Services > FLEXlm License Manager**.
- 2 In the dialog box, select **manual** under **Startup type**.

Modifying the Floating License Time-Out Period

The Rational license server will reclaim a floating license when the product has not been used for a default period of 120 minutes. If you use the product again after the server has reclaimed its license, the product will check out the license again from the server.

To change the time-out period, create a text file, called `rational.opt`, in the `<rational flexlm dir>\common` directory and enter one of the following two commands in the text file:

- 1 `TIMEOUT feature seconds` directs the license server to reclaim the feature (the product as it is listed in your license key file) after the number of seconds that you enter into the file.
- 2 `TIMEOUTALL seconds` directs the license server to reclaim all products after the number of seconds that you enter into the file.

The value for each of these options must be greater than 7200 seconds (or 120 minutes).

Configuring the Client System to Use a Floating License

You can enter the host name of the license server in the Rational License Key Administrator (LKAD) on the client system before or after you install the Rational product. When the Rational Software Setup program installs Rational products on your system, it automatically installs Rational licensing software too.

Note: In the case of ClearQuest Web and RequisiteWeb, the Web server is the client of the license server. When a user opens these applications on a Web client, the ClearQuest Web server or the RequisiteWeb Requirements server, on the behalf of the user, requests the floating license from the license server.

- To open the LKAD during the Rational Software Setup program (before you install the product), click **Configure Licenses** in the **Choose Product to Install** dialog box. The License Key Administrator main window and the License Key Administrator Wizard dialog box appear.

- To open the LKAD when you have installed the Rational product, click **Start > Programs > Rational *product name* > Rational License Key Administrator**. The License Key Administrator main window and the License Key Administrator Wizard dialog box appear.

To enter the license server(s) on a client:

- 1 Select **Settings > Service Configuration**.
- 2 Click the **Servers** tab.
- 3 Select the **Use License Server** box.
- 4 Select **Single Server**.
- 5 Enter the hostname of the license server.

Use Additional Server

If your system administrator has given you the hostname of an additional license server, your client can request license keys from that system by selecting **Use Additional Server** and entering the name of that server.

Note: Do not use Additional Server for a redundant server environment.

- 6 Click **OK**.

Setting Up Rational Redundant Servers

Rational license servers can be set up to run in a fault-tolerant configuration known as *redundant servers*. Redundant servers are a system of three servers that work as a team to manage a single pool of floating license keys. If one of the server systems goes down, the other two license servers automatically continue managing the license pool.

Example

You have purchased 25 floating licenses of Enterprise Suite and wish to set up a redundant server configuration on three Windows systems. You request permanent keys for the redundant servers using AccountLink. You install the Rational license server software on each of the three redundant server partners; servers A, B, and C. When you receive the license file of 25 permanent floating keys, you install the license file on each server.

The three servers work as a team to manage all 25 floating licenses in unison. When you have 20 license keys checked out to your users and server A crashes, servers B and C continue to manage the 25 licenses.

Warning: It is a common misperception that separating redundant servers across multiple sites (for example, one in US, one in Europe, one in Asia) provides maximum fault tolerance. This is not the case. Redundant servers should always be at the same site and on the same subnet.

Get Your License Keys for the Redundant Servers

Go to AccountLink (www.rational.com/accountlink) and request licenses for the redundant servers. (If you do not have an internet connection, see *Requesting License Keys (Without an Internet Connection)* on page 34.) In AccountLink, specify the redundant servers in the following order:

- Primary license server
- Secondary license server
- Backup license server

The client systems communicate with the redundant servers in that order so generally the primary license server is the most stable system.

Set Up Redundant License Servers

- 1 Install license server software on all three license servers. See *Working with a Supported Network Configuration* on page 38 for instructions.
- 2 Import the license file that you receive from Rational licensing services on each license server. See *Configuring the Server for Named-User Floating Licenses* on page 42 for more information.
- 3 Start each license server. See *Starting the License Server* on page 44 for instructions.

Configure Clients to Use the License Servers

In the License Key Administrator of each client system:

- 1 Click **Settings > Service Configuration**.
- 2 Select **Redundant servers** and click the **Set Up Servers** button.
- 3 Enter the Primary, Secondary, and Backup license server hostnames *in the order* in which they were requested in Rational AccountLink.
- 4 Click **OK**.

Removing the Rational License Server Software

This section describes how to remove the license server software from the system.

Before You Remove the License Server Software

- 1 Make sure that no one is using the license server or any associated files. You cannot remove files that are in use.
- 2 Return the license keys to your Rational Account through Rational AccountLink (www.rational.com/accountlink), the online license management tool. For more information about moving or returning licenses, see *What Does Returning License Keys Mean?* on page 21 and *Removing or Moving License Keys* on page 21.
- 3 To remove the software from a Windows NT system, you must have Windows NT administrator privileges on the local system.

Removing the License Server Software

Use the Windows **Add/Remove Programs** control panel to select and remove the license server software. The Rational Software Setup program removes the files from your system. It does not remove directories that contain files that you created while you were using the software.

When you use Add/Remove Programs to remove the Rational license server software or a Rational product, it does **not** remove the license key files from the system.

Next Steps

For other license server configurations and license file options, see *Using Other License Configurations* on page 51.

Installing Node-Locked Licenses

4

Because a node-locked license is created for a specific system, Rational software can be used only on that system. You do not need to connect the client system to a license server; you simply install license keys on the client. This license type allows for portability, especially for customers who have isolated systems or laptops.

This chapter covers how to install permanent or Term License Agreement license keys and temporary or evaluation license keys.

If you are using floating licenses, see *Installing Floating and Named-User Licenses* on page 37 for information about setting up floating licenses on a license server system.

Installing Permanent or Term License Agreement (TLA) Keys

When you have requested your license keys using AccountLink, Rational sends you a permanent node-locked license file. This file contains license keys for the host that you specified in AccountLink. Use the Rational License Key Administrator (LKAD) to enter the temporary license key information on the client before or after you install the Rational product. The LKAD is automatically installed with the Rational product software.

- To open the LKAD during the Rational Software Setup program (before you install the product), click **Configure Licenses** in the **Choose Product to Install** dialog box. The License Key Administrator main window and the License Key Administrator Wizard dialog box appear.
- To open the LKAD when you have installed the Rational product, click **Start > Programs > Rational *product name* > Rational License Key Administrator**. The License Key Administrator main window and the License Key Administrator Wizard dialog box appear.

To install or import the permanent license file on a client, see *Importing Permanent License Keys* on page 20.

Installing Temporary or Evaluation License Keys

The temporary or evaluation license key information, including the expiration date, is on your License Key Certificate. The License Key Certificate is enclosed in a large green envelope in your Rational Software product shipment.

Use the Rational License Key Administrator (LKAD) to enter the temporary license key information on the client before or after you install the Rational product. The LKAD is automatically installed with the Rational product software.

- To open the LKAD during the Rational Software Setup program (before you install the product), click **Configure Licenses** in the **Choose Product to Install** dialog box. The License Key Administrator main window and the License Key Administrator Wizard dialog box appear.
- To open the LKAD when you have installed the Rational product, click **Start > Programs > Rational *product name* > Rational License Key Administrator**. The License Key Administrator main window and the License Key Administrator Wizard dialog box appear.

To enter the temporary or evaluation license key on the license server, see *Entering Temporary or Evaluation License Keys* on page 22.

Next Steps

If you are interested in using other license file options, see *Using Other License Configurations* on page 51.

Using Other License Configurations

5

This chapter describes additional configurations that Rational Common Licensing supports. The first section provides additional procedures for license server configurations. The second section explains additional license file options. A table in the beginning of each section provides pointers to specific topics.

Many of the tasks in this chapter are not recommended for the casual or novice user. Attempt them only if you are familiar with your operating system (or systems) and Rational Common Licensing.

Other License Server Configurations

Table 8 provides pointers to information in this chapter about other license server configurations.

Table 8 License Server Configurations

For more information about	See
Monitoring Rational license server activity	<i>License Monitoring</i> on page 51
Windows clients using a UNIX server	<i>Windows Clients Using a UNIX License Server</i> on page 52
Running multiple license servers on the same system	Rational and GLOBEtrouter recommend running a separate <code>lmgrd</code> instance for each vendor daemon and keeping license keys in separate files.
Using floating licenses with a firewall	<i>Using Floating Licenses with a Firewall</i> on page 54
Changing the <code>lmgrd</code> port	<i>Changing Only the <code>lmgrd</code> Port Value</i> on page 57

License Monitoring

You may need to monitor and report on license usage. GLOBEtrouter offers a robust solution for license usage reporting called SAMreport. SAMreport is designed specifically for reporting on license server activity. SAMreport offers a full set of administrative tools that generates reports, graphs, high-water marks, and even sets

alarms to notify individuals when a server has gone down or the license pool is nearly exhausted. SAMreport works with any vendor's FLEXlm server, not just Rational's. It is available only through GLOBEtrotter. Detailed information on SAMreport can be found at: <http://www.globetrotter.com/samreport.htm>.

Windows Clients Using a UNIX License Server

You can set up a UNIX license server to serve floating licenses to Windows clients. If you have purchased DevelopmentStudio for UNIX in addition to Rational's Windows products, see the Rational Suite UNIX installation manual or a UNIX point product installation manual for information about configuring a Rational license server on a UNIX system. You can also find UNIX installation manuals at www.rational.com. Select **Support > Documentation**. Click on **Install Guides** under **Documentation**.

If you do not have access to a Rational UNIX installation manual, read the following overview.

- 1 Go to AccountLink (<http://www.rational.com/accountlink>) to get license keys for the products on your Windows clients. Use the **Getting Started** link to help you order the license keys.
- 2 You need FLEXlm 6.0 or higher software and the Rational daemon to set up the Rational license server on a UNIX system. If you not purchased Rational UNIX products, you can download the Rational licensing executables and files from our ftp site at:

`ftp://ftp.rational.com/public/tools/flexlm`

When you decompress and expand the TAR files on your UNIX system, they create this directory:

`flexlm.<version>/<arch_os>`

You should see the following executables in the FLEXlm directory:

Name	Description
lmgrd	FLEXlm license server executable
rational	Rational's license vendor daemon executable

The rest of the files correspond to system-administrator commands, which the license manager (`lmgrd`) supports.

Command	Description
<code>lmdiag</code>	Allows you to diagnose problems when you cannot checkout a license
<code>lmdown</code>	Shuts down license and vendor daemons
<code>lmhostid</code>	Reports license manager host ID of workstation
<code>lmremove</code>	Returns specific licenses to license pool (for example, after a system crashes)
<code>lmreread</code>	Rereads license file, starts new vendor daemons
<code>lmstat</code>	Reports status on daemons and feature usage
<code>exinstal</code>	Reports on licenses in license file you specify on the command line

- After you install the Rational license server software and files on the UNIX system, import the license file that you receive from AccountLink on the same system. Save the `.upd` file as `license.dat` in a directory where you would like to maintain your licensing information. Ensure that you do not overwrite any existing `license.dat` files you may currently have in this directory.

The default location is:

```
/usr/local/flexlm/licenses/license.dat
```

We strongly recommend that you do not set `LM_LICENSE_FILE`. You will not typically need to set the `LM_LICENSE_FILE` variable to use Rational software products.

- Start the Rational license server by using the command:

```
lmgrd -c <licenseFileList> -l <logfile>
```

- `lmgrd` is the license manager that you downloaded from our ftp site to the Rational license server host.
- `licenseFileList` is the path to the license file or a list of license files.
- `logfile` is the path to a log file.

If you already have a UNIX Rational license server set up, use the `lmreread` command to restart the server.

- 5 For convenience, you will probably want to augment a system initialization script on your license server to automatically start the license daemon each time the license server boots.

The names, locations, organization, and contents of system initialization scripts varies from UNIX system to UNIX system. You might begin by looking at the following files:

HP-UX: /sbin/init.d/S98Rational

Solaris: /etc/rc2.d/S98Rational

- 6 To verify that your license manager is operational, you can enter these commands on your license server to see if its daemons are running:

```
% ps axw | grep -v grep | egrep "lmgrd|rational"
```

or

```
% ps -e | grep -v grep | egrep "lmgrd|rational"
```

Rose RealTime Example

```
setenv ROSERT_LICENSE_FILE /apps/licenses/rrt6.0/license.dat
```

```
lmgrd -c $ROSERT_LICENSE_FILE -l /apps/logs/logRRT
```

or

```
lmgrd -c $ROSERT_LICENSE_FILE:$LM_LICENSE_FILE -l
```

```
/apps/logs/current_log
```

- 7 Install the Rational products on the Windows clients and configure them to acquire license keys from the UNIX server. See *Configuring the Client System to Use a Floating License* on page 45 for more information.

Using Floating Licenses with a Firewall

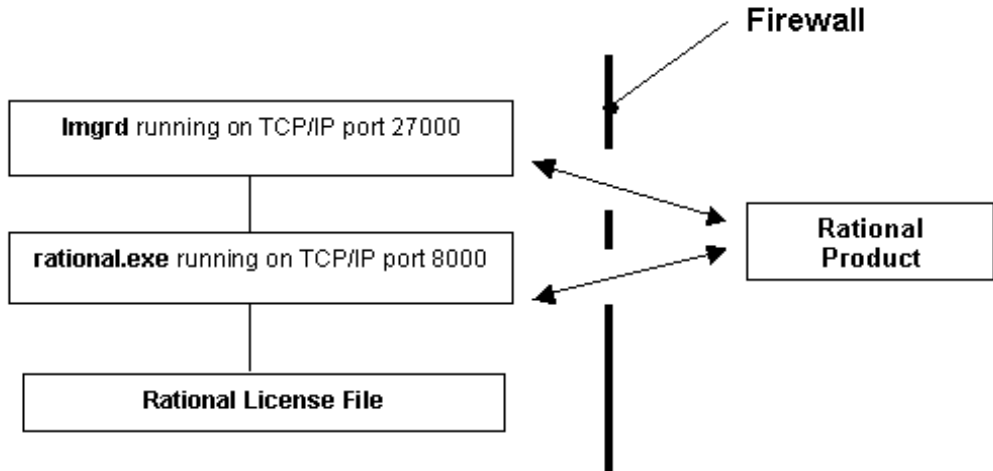
Rational's licensing implementation supports a firewall. To configure licensing with a firewall, give the `lmgrd` daemon and the vendor daemon TCP/IP port numbers. The TCP/IP port is used for client/server communication for floating licenses.

In a non-firewall situation, the `lmgrd` daemon (license manager daemon) starts on TCP/IP port 27000 when you start the server. (You will have to change this number if another application is using this port number.) The license manager daemon assigns a random TCP/IP port number to the vendor daemon (Rational daemon or `rational.exe`).

In a firewall situation, the client cannot communicate with the daemons on the license server because the ports on which they are running are blocked. To allow license requests to pass through the firewall, you assign numbers to these ports. The Rational daemon (or `rational.exe`) and license manager daemon must start on the same ports each time a client makes a license request and checks out a floating license from the server. The specified ports or connections remain open until the client returns the license to the server.

Note: The Rational daemon and the license manager daemon cannot be set to the same port number.

The following diagram displays a sample firewall situation. The Rational product on the right-hand side can communicate with the `lmgrd` and `rational.exe` on the license server through the firewall because the numbers 27000 and 8000 have been assigned to the license manager daemon (`lmgrd`) and the Rational daemon (`rational.exe`) respectively.



When you specify the port information, the Rational License Key Administrator stores the port information in the `rational_redirect.dat` file, located by default in `\Program Files\Rational\Common`.

The following procedures let you change the `lmgrd` port in single or multiple server environments and redundant server environments. They assume that you have already started the license server(s) and entered the hostname(s) of the license server(s) in the License Key Administrator of each client.

A Firewall Exists Between the License Server and Clients

To allow clients to communicate with the license server, you must enter values in the `lmgrd` port and the Rational Vendor port.

To enter port numbers on a license server:

- 1 Select **Settings > Service Configuration** in the Rational License Key Administrator.
- 2 In the **Service Configuration** dialog box, click the **Ports** tab.
- 3 Enter values in the `lmgrd` port and the Rational Vendor port, but do not set them to the same value.
- 4 Click **OK**.
- 5 Give users the Rational Vendor Port value to enter into the License Key Administrators of their systems. Users must use the following procedure to enter port values on a client.

To enter a port value on a client:

- 1 Select **Settings > Service Configuration** in the Rational License Key Administrator.
- 2 In the **Service Configuration** dialog box, click the **Ports** tab.
- 3 Enter the Rational Vendor port value in the port (Optional) field next to the **Single Server** hostname.
- 4 Enter the Rational Vendor port value in the port (Optional) field next to the **Additional Server** hostname, if applicable.
- 5 Click **OK**.

To enter port numbers on a redundant license server:

- 1 Select **Settings > Service Configuration** in the Rational License Key Administrator of the Primary license server.
- 2 In the **Service Configuration** dialog box, click the **Ports** tab.
- 3 Enter values in the `lmgrd` port and the Rational Vendor port, but do not set them to the same value.
- 4 Click **OK**.
- 5 Enter the same port values in the other license servers by repeating Steps 1–4.
- 6 Give users the Rational Vendor Port value to enter into the License Key Administrators of their systems. Users should perform the following procedure to enter port values on a client.

To enter port values on a client:

- 1 Select **Settings > Service Configuration** in the Rational License Key Administrator.
- 2 In the **Service Configuration** dialog box, click the **Ports** tab.
- 3 Enter the Rational Vendor port value in the port (Optional) fields next to the servers listed in Redundant servers.
- 4 Click **OK**.

For more information about the license manager and vendor daemons, see *Understanding the Rational License Server Process* on page 62.

Changing Only the lmgrd Port Value

When another application is using the TCP/IP port 27000 that is used by `lmgrd`, you must change the `lmgrd` port. You do not need to enter a value in Rational Vendor because it runs on a random TCP/IP port.

The following procedures let you change the `lmgrd` port in single or multiple server environments and redundant server environments. They assume that you have already started the license server(s) and entered the hostname(s) of the license server(s) in the License Key Administrator of each client.

To change the `lmgrd` port value on a license server:

- 1 Select **Settings > Service Configuration** in the Rational License Key Administrator.
- 2 In the **Service Configuration** dialog box, click the **Ports** tab.
- 3 Enter a value in the `lmgrd` port.
- 4 Click **OK**.

Note: Do not enter a port value in each client.

To change the `lmgrd` port value on a redundant license server:

- 1 Select **Settings > Service Configuration** in the Rational License Key Administrator of the Primary license server.
- 2 In the **Service Configuration** dialog box, click the **Ports** tab.
- 3 Enter a value in the `lmgrd` Port.
- 4 Click **OK**.

Enter the same `lmgrd` port value in the other license servers by repeating Steps 1–4.

Note: Do not enter a port value in each client.

Other License File Options

Table 9 provides pointers to information in this chapter about additional license file configurations.

Table 9 License File Configurations and Options

For more information about	See
Combining license files	Rational and GLOBEtrouter recommend keeping the license keys in separate files.
Home use or travel	<ul style="list-style-type: none"> ▪ Rational recommends that you contact a Technical Support Engineer about the disconnected use of floating licenses. See <i>Contacting Rational Licensing Technical Support</i> on page xiii for phone numbers. <p>Or</p> <ul style="list-style-type: none"> ▪ <i>Installing Node-Locked Licenses</i> on page 49
Disconnected use of floating licenses on Windows systems	<i>Contacting Rational Licensing Technical Support</i> on page xiii. Rational supports this feature, but recommends that you contact a Technical Support Engineer for instructions.
Changing license usage order on your system	<p><i>Changing License Usage on Your System (License Usage Mapper)</i> on page 59</p> <p>To understand the default order of license use—in what order a product uses available licenses on a system—see on page 32.</p>
Directing Rational Web products to use suite licenses	<p><i>Changing License Usage on Your System (License Usage Mapper)</i> on page 59</p> <p>To understand the default order of license use—in what order does a product use available licenses on the system—see on page 32.</p>

Changing License Usage on Your System (License Usage Mapper)

To change the order in which a product on your system requests suite and point product licenses, use the Rational License Key Administrator's License Usage Mapper.

To change the license usage order:

- 1 Select **Settings > License Usage Mapper** in the menu bar.
- 2 In the **License Usage Mapping** dialog box, make sure the correct product is highlighted in the **Installed Products** box.
- 3 Move the product license above the suite license under **License Usage Order**.
- 4 Click **OK**.

Understanding Rational Licensing Components

6

This chapter describes how Rational Software has implemented FLEXlm features and options in Rational Common Licensing.

Locating the Licensing Components

All Rational software files and Rational license key files are installed in *<Install Path>\Rational\Common* unless otherwise noted.

Guide to Rational Licensing Components

Table 10 provides pointers to topics in this chapter.

Table 10 Guide to Rational Licensing Components

For more information about	See
The Rational license server components	<i>License Server Components</i> on page 62
Server set up in the license key file	on page 63
The client configuration in the server set up process	<i>Entering the License Server Name on the Client</i> on page 64
How the license server grants licenses to clients	<i>License Server Process</i> on page 66
Restricting access to floating licenses and other options	<i>Setting Up the Options File</i> on page 68
Rational license key file	<i>License Key File</i> on page 62
Rational license key file names	<i>License File Names</i> on page 62
The Host ID	<i>Finding the HOST ID</i> on page 69
Diagnostic tools	<i>Diagnostic Tools</i> on page 71
Windows registry information	<i>Windows Registry Information</i> on page 71

Understanding the Rational License Server Process

The following sections provide information about the Rational license server, including descriptions of the license daemons running on the server systems.

License Server Components

The Rational license configuration includes these major components, which are described in the following sections:

- License key file
- License manager daemon (`lmgrd`)
- Vendor daemon

License Key File

License key definition are stored in a text file called the *license key file*. Rational creates the license key file based on the data that you provided in Rational AccountLink. The license file can contain license key data for several Rational products and is created for a specific host. The Rational License Key Administrator that is installed with every Rational product edits and installs the license key file.

The license key definition contains information about the server nodes and vendor daemons, and at least one line of data (called FEATURE or INCREMENT lines) for each licensed product. Each FEATURE line contains a license key based on the data in that line, the *host IDs* specified in the SERVER lines, and other vendor-specific data.

License File Names

Table 11 describes the types of Rational license key files.

Table 11 License Key Files

File Name	Description	Notes
rational_temp.dat	Contains all node-locked temporary license keys.	You must obtain a permanent license key to continue to use your Rational Software product past the temporary key expiration date.
rational_perm.dat	Contains all node-locked permanent license keys.	Go to Rational AccountLink to request permanent keys.

Table 11 License Key Files (continued)

File Name	Description	Notes
rational_redirect.dat	Used on a client to specify the name of the license server system that manages floating licenses. The Rational License Key Administrator creates or updates this file when you specify a license server name on the client.	This file is initially empty. The Rational License Key Administrator updates this file with the name of your license server(s) when you select server-based licensing.
rational_server_temp.dat	Contains all temporary floating license keys on a license server.	You must obtain a permanent license key to continue to use your Rational Software product.
rational_server_perm.dat	Contains all permanent floating license keys on a license server.	Go to Rational AccountLink to request new permanent license keys.

The Floating License Server Line

This section explains the line used to set up a license server in the license key file.

A typical Rational SERVER line is similar to the example below:

```
SERVER    curly    DISK_SERIAL_NUM=12345678
```

Item in SERVER Line	Description
SERVER	Tells the server that the license file will be used for floating or counted node-locked licenses. This is needed in a floating license file along with a VENDOR or DAEMON line.
curly	The hostname of the license server machine. Allows the license server's hostname or IP address to populate the hostname field in the SERVER line. Rational also allows both values. The hostname value is not encrypted into floating license keys.
12345678	The host ID of the license server machine. The default value is the disk serial number (DISK_SERIAL_NUM) of the user's boot drive. The HOST ID value is encrypted into floating license keys.

Entering the License Server Name on the Client

When you enter the name of the license server in the License Key Administrator (LKAD) of the client, the LKAD writes the hostname of the license server to an empty license file in the `<rational>\common` directory on the client.

License Manager Daemon (lmgrd)

Rational uses two daemons (or processes) to manage floating licenses:

- `lmgrd`, the license manager daemon
- `vendor` daemon

The `lmgrd` daemon and the vendor daemon work together to manage the license keys.

The `lmgrd` handles the initial contact with the client application programs, passing the connection on to the appropriate vendor daemon. It also starts and restarts vendor daemons.

By default, the `lmgrd` on Windows is a Windows NT *service*.

The `lmgrd` daemon starts on TCP/IP port 27000 (default) when you start the server. The `lmgrd` daemon will assign a random vendor TCP/IP port number (unless you set up a firewall) to the vendor daemon and start the vendor daemon on that port.

License Manager Version

Rational currently ships `lmgrd` version 7.0 or later with Rational Common Licensing on Windows and version 6.0 or later with UNIX products.

Vendor Daemon

The vendor daemon is a program developed by Rational implementing FLEXlm. The vendor daemon keeps track of how many licenses are checked out and who has them. Rational's vendor daemon (`rational.exe`) is customized to behave in a specific manner.

Rational specifies the path to the `rational.exe` vendor daemon using the DAEMON line in the license key file. Rational also supports specifying the path to the options file on the DAEMON line after the path to the vendor daemon.

A typical Rational DAEMON line for Windows appears as:

```
DAEMON rational D:\Rational\common\rational.exe
```

Where:

Item in DAEMON Line	Description
DAEMON	Rational's license daemon name and path are specified in this line.
rational	The name of Rational's license server daemon. Both floating and node-locked licenses have this value defined in the DAEMON string.
<install path>\ Rational\common\rational.exe	The path to Rational's license server executable.

Licenses are granted by running processes. There is one process or vendor daemon for Rational which has a licensed product on the network.

If the vendor daemon terminates for any reason, all users lose their licenses. (This does not mean the applications suddenly stop running. Users can save their work and exit safely.) Users normally regain their license automatically when `lmgrd` restarts the vendor daemon, although the applications may exit if the vendor daemon remains unavailable.

The application program communicates with the vendor daemon, usually through TCP/IP network communications. The application program and the daemon processes (the license server) can run on separate nodes on your network, across any size wide-area network.

The format of the traffic between the client and the vendor daemon is system-independent, allowing for heterogeneous networks. This means the license server and the system running an application can use different hardware platforms or even different operating systems (for example, Windows NT as a server system and Windows 95 as a client).

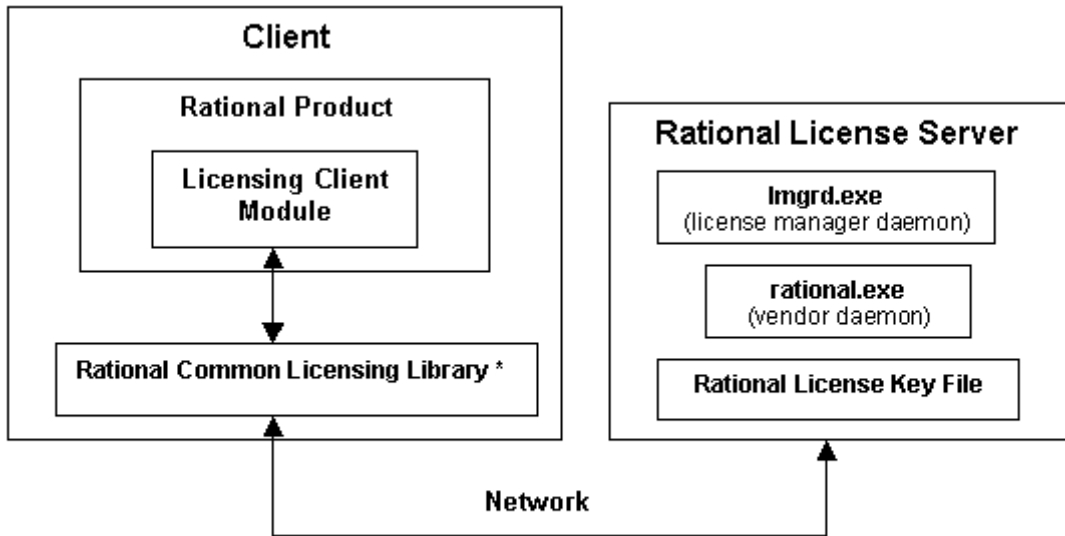
License Server Process

When you run a *counted* licensed application, such as a Rational Suite product that uses a floating license, the following occurs:

- 1 The license module in the client application finds the license key file on the license server, which lists the hostname of the license server and the port number of the license manager daemon (`lmgrd.exe`).
- 2 The client establishes a connection with the license manager daemon (`lmgrd.exe`) and specifies the vendor daemon (`rational.exe`).
- 3 The `lmgrd.exe` determines which system and port correspond to `rational.exe` and returns that information to the client.
- 4 The client establishes a connection with `rational.exe` and sends its license request.
- 5 The vendor daemon (`rational.exe`) checks in its memory to see if any licenses are available and sends a grant or denial back to the client.
- 6 The license module in the application grants or denies use of the feature, as appropriate.

Uncounted features, where the number of licenses is 0 (zero), do not require a server and the Rational common licensing library in the client grant or deny usage based solely upon the license contents. Node-locked licenses, for example, set the license number to 0 (zero).

The following diagram provides an overview of the interaction between the Rational Common Licensing Library on the client and `lmgrd.exe`, `rational.exe`, and the license key file on the Rational license server.



* Components installed in `<install path>\Rational\common`

The Options File for Floating Licenses

Rational provides the least restrictive licensing environment possible. By default, the server does not restrict access to any client requesting a license key. This configuration works best for most customers.

If you want a more controlled floating license environment, you can use the options file to reserve or deny licenses for certain users, hosts, displays, groups, or IP addresses. You can also limit the number of licenses each user or group can access.

Note: This file applies only to floating licenses.

Setting Up the Options File

To use options, create a text file, `rational.opt`, in the `<rational flexlm dir>\common` directory.

Note: For the server to recognize the file or any changes made to it, restart the license server. You will have to stop and then start the license server. The `lmreread` diagnostic tool will not work.

Options File Examples

This section gives two simple examples of how the options file can be used.

Example 1

You may have 10 floating licenses of Rational ClearQuest. You want to ensure that users Greg and Peter always have a license of ClearQuest available for their use. Set up the options file as follows:

```
RESERVE    1  ClearQuest    USER  greg
RESERVE    1  ClearQuest    USER  peter
```

Where:

Item in Options File	Description
RESERVE	Tells the server to reserve a license
1	Is the number of licenses to reserve
ClearQuest	Is the name of the license to reserve
USER	Tells the licensing software to reserve a license for a specific user id
greg	Is the userid for which the license will be reserved

Example 2

You have 10 floating licenses of Rational ClearQuest. You want to ensure that user Bob does not have access to a ClearQuest license. Set up the options file as follows:

```
EXCLUDE    ClearQuest    USER  bob
```

Finding the HOST ID

The term *host ID* is a generic term that is used to signify to specify the host or system's disk serial number or ethernet address.

The HOST ID field is used to associate the key with other entities; the most common are the system's DISK_SERIAL_NUM (disk serial number) or the ethernet address (network id).

With Rational Common Licensing, the default HOST ID value on Windows systems is the disk serial number of the user's boot drive. In this case the HOST ID field appears as: DISK_SERIAL_NUM=nnnnnnnn. Example: DISK_SERIAL_NUM=12345678.

The default HOST ID value on UNIX systems is the ethernet address of the system written in the format HOSTID=nnnnnnnnnnnn. Do not confuse the format HOSTID=nnnnnnnnnnnn with the disk serial number format DISK_SERIAL_NUM=nnnnnnnn that is referred to in Rational Software documentation, online Help, and AccountLink as the host ID.

Rational does not allow for multiple values of HOST ID to be defined within a single key.

Finding the Host ID on a Windows System

To get the hostname and host ID (disk serial number) of a Windows system, select **License > Host Data** in the Rational License Key Administrator's menu bar.

Note: If Rational software is not installed on the license server or client, Rational AccountLink provides a tool to help you find this information.

What if the Host ID on My System Changes Frequently?

Registering the host ID of the boot drive may not be optimal if you have dual boot systems, you frequently reformat your disks, or you ghost your disk images because these processes change the host ID of the boot drive. Because the products and license keys are registered to a specific host ID, you cannot use your Rational products if the host ID changes.

To avoid this situation, use one of the following approaches:

- Use floating licenses served by a license server with a constant host ID.
- Use the address of the ethernet card in the system as a host ID instead.
 - a To find the ethernet address, see *Finding the Ethernet Address on a UNIX System* on page 70 and *Finding the Ethernet Address on a Windows System* on page 70.
 - b If you are using a Rational product release earlier than 2001 on a Windows system, you also need to change a registry setting. To change the setting, see *Using the Ethernet Address on a Windows System* on page 70.
- Make sure that when images are created to refresh the system you keep the disk serial number of the boot drive constant.

Finding the Ethernet Address on a UNIX System

On UNIX systems, use GLOBEtrouter's `lmhostid` command to find the ethernet address of the system. On Sun systems, `lmhostid` returns the value of the Sun `hostid` command.

Finding the Ethernet Address on a Windows System

To find the ethernet address on a Windows system, use the `ipconfig/all` command.

Using the Ethernet Address on a Windows System

On Windows systems, the License Key Administrator (LKAD) can be forced to use the ethernet address instead of the disk serial number. This will allow the LKAD to import the license key file correctly. Add the registry setting "UseNIC=TRUE" to `HKEY_LOCAL_MACHINE\SOFTWARE\Rational Software\Licensing\1.0`.

Note: You do not need to add this setting if you have Release 2001 of Rational products.

Diagnostic Tools

lmtools

The `lmtools` application is designed to help diagnose licensing issues. It is available on Windows only. Rational installs this application with all products in the `<rational>\common` directory. If the license server is installed, you can use the License Tools **Start** menu shortcut to the `lmtools` GUI.

lmutil

By default, Rational installs the `lmutil` program in the `<rational>\common` directory. `lmutil` is fully supported with Rational's implementation and has a number of useful options. More information can be found at <http://www.globetrotter.com/chap7.htm>.

lmreread

The `lmutil lmreread` command is a supported option that forces the server to source the license file without having to shut down the server. This allows systems administrators to make changes to the license file without stopping and restarting the server.

Note: The `lmutil lmreread` command does not detect changes to the Options File on page 67.

Windows Registry Information

This section describes the Windows Registry settings for Rational Software licensing.

Warning: Use extreme caution when editing the Windows Registry! Incorrect edits can render your system unusable!

Windows Registry entries are located in:

HKEY_LOCAL_MACHINE\SOFTWARE\Rational Software\Licensing\1.0

The *<Install Path>* in Table 12 refers to the path specified during installation. The default value is C:\Program Files\Rational.

Table 12 Rational Licensing Registry Entries

Key and Description	Default Value
UseLicenseServer Is this system using a license server to obtain its license keys?	FALSE
LicenseRequest Path of license request file	<Install Path>\common\rational_request.dat
LicenseTemp Path of temporary license key file	<Install Path>\common\rational_temp.dat
LicensePerm Path of permanent license key file	<Install Path>\common\rational_perm.dat
LicenseServer Path of file containing name of license server	<Install Path>\common\rational_redirect.dat
LicenseRequestAddress E-mail address for sending license requests to Rational	auto-licensing@rational.com
LicenseServerName Name of system used as a license server	This registry entry appears when the system points to a license server.
ClientInstalled Does this system have client software installed?	TRUE
ServerInstalled Is this system a license server?	FALSE

This chapter provides possible solutions based on commonly asked questions and error messages.

The commonly asked questions are sorted into the following topics:

- *Node-Locked Licenses* on page 73.
- *License Server and Floating Licenses* on page 74.
- *Installing Rational Software and Floating Licenses* on page 75.
- *Requesting a License Key* on page 75.
- *Moving License Keys* on page 76.
- *AccountLink Data Entry* on page 77.
- *Host ID* on page 77.
- *Upgrades* on page 78.

An alphabetical list of error messages and possible solutions are in Table 13 on page 78.

Node-Locked Licenses

What exactly is a node-locked license? How many users does it support at one time? Does each additional user cost as much as the first?

A node-locked license supports a single user on a single system. For more information, see *What Are Node-Locked and Floating Licenses?* on page 27.

Contact your Rational Sales office for information about pricing for node-locked licenses.

Does the node-locked software use the IP address as the host ID? We have DHCP using Windows NT and the software is Rational Rose 98i.

By default, the node-locked license uses the `disk_serial_num` for the licensed system, not the IP address. Rational Common Licensing does support the use of static IP addresses for floating licenses. To find instructions, refer to *Contacting Rational Licensing Technical Support* on page xiii.

Does a change in the IP address and internet address affect the node-locked license?

Node-locked licenses use the host ID or `disk_serial_num` of the licensed system. Therefore, a change in the IP address or a change in Internet address does not affect your Rational Software license. However, you should notify Rational Licensing Support if the e-mail address of the license contact has changed.

License Server and Floating Licenses

How do I identify who checked out a license?

It is possible to find out who used which license and when the user did so. If the license server is installed, click **Start > Programs > Rational FLEXlm License Server > License Tools**. License Tools starts the `lmttools` GUI.

- 1 Select **Configuration using Services** in the **Mode** pull-down menu.
- 2 Click the **Server Status** tab and the **Perform Status Enquiry** button in the **Server Status** dialog box.

How do I set up the license server?

For floating licenses, you set up a server by installing license server software on a system. Then you request permanent license keys through Rational AccountLink (<http://www.rational.com/accountlink>) or *Requesting License Keys (Without an Internet Connection)* on page 34.

What does “The license was not intended for this server” mean? I tried to import a license key file and received a message that reported “The license was not intended for this server.”

You are trying to install the license key on a system other than the one for which the license key was generated. The `license.upd` file specifies the system name and host ID that you entered in the license key request to Rational. You should either import

the file on the correct system or you can move the license file to the system that you are currently using. For more information about moving license keys, see **Frequently Asked Questions** in the Rational License Key Administrator Help.

Can ClearQuest on a client in one NT domain obtain licenses from a license server that is on a different NT domain?

Yes, it is possible. If the client can *see* the license server by hostname, the request will work. Rational licensing also supports using the fully qualified domain name or using the IP address of the license server instead of the hostname.

Installing Rational Software and Floating Licenses

How do I install licensed software on a second disk? I have a second disk on my system and I have requested a floating license for <product>.

You can install Rational software on the appropriate disk for your system. See the Help in the Rational Software Setup program or see the *Installing Rational Suite* manual.

If you have floating licenses, your license keys are tied to the license server, not client systems. You can install the Rational product on as many client systems connected to the license server as you would like.

Requesting a License Key

How do I submit fax requests for license keys? Please give me the fax number to which I can send my request for permanent node-locked licenses. Not all team members have internet or e-mail so requests need to be centrally controlled.

See *Contacting Rational Licensing Technical Support* on page xiii for the appropriate fax number.

Can we request permanent license keys without entering a temporary key?

Yes, you can use AccountLink (<http://www.rational.com/accountlink>) to request permanent license keys without first installing your temporary license key.

How long does it take to obtain the permanent license key?

Rational AccountLink (<http://www.rational.com/accountlink>) will e-mail you your license keys as soon as you submit your transaction.

The speed and reliability of your internet connection will also affect when you will receive your permanent keys.

Moving License Keys

How do we move or transfer a license to another system?

If you want to move a license (floating or node-locked) from one system to another, first return the license to Rational. Use Rational AccountLink (<http://www.rational.com/accountlink>) to notify Rational that you want to return a license from the old system. Then in a new transaction, request a license key for the new system. Please return the license keys to your Rational account before you remove the software from your first system.

How long does it take to move a license key to another system?

The requests for returning and getting a new license key usually take no longer than your initial license request.

What would happen if I did a clean install of the operating system on my system (which would wipe out all the license keys currently on it) without deleting the license key first? Would it be easy to obtain a new license key or a replacement for this key?

If you install a new version of the operating system or initialize the disk where your license keys are stored, you can request a replacement license key from Rational. To request a replacement, go to Rational AccountLink (<http://www.rational.com/accountlink>) and select **Request Copy of a License File**.

How do I move a node-locked license mistakenly installed on a database/repository server to a client system? We purchased two node-locked licenses for two client systems. I made a mistake and requested and installed one of the licenses on the database/repository server. I cannot install this license on the second client because it is system-specific.

If you want to move a license (floating or node-locked) from one system to another, first return the license to your Rational account. Use Rational AccountLink (<http://www.rational.com/accountlink>) to notify Rational that you want to return a license from the server system. Then in a new transaction, request a new license key for the client system.

AccountLink Data Entry

What is my Rational Account Number? I just downloaded the upgrade to <product>. I am now unable to run the software. I do not know my “Rational Account Number” which is a required field in AccountLink.

Use the Rational Account number specified on your License Key Certificate.

Host ID

Why isn't host ID ffffffff valid? ffffffff is the value listed in the host ID field in the License Manager.

When you initialized your disk, your disk did not receive a disk_serial_num. Although the software accepted this entry, Rational's licensing services regards this value as invalid.

You can reset your host ID by using third-party disk utility tools such as those by Norton. Another option is to use the Ethernet card address instead of the host ID.

I changed my file system from FAT to NTFS, which changed my host ID. Could you please change my key to make it work again? I changed my system disk and the licenses no longer work.

The license keys are generated for a specific hostname and host ID. You have to return the license keys to your Rational account and then request license keys for the new host ID. To perform these transactions, connect to Rational AccountLink (<http://www.rational.com/accountlink>).

Upgrades

We received two upgrade packets but chose not to upgrade immediately because we were in the middle of pre-release testing. The License Key Certificate says, however, that the key expires on <date>.

Contact your Rational Sales Office to obtain temporary license keys that will work until you are ready to upgrade your system.

Error Messages

Table 13 lists licensing error messages and their solutions.

Table 13 Licensing Error Messages

Message or Condition	Description and Action
Cannot find SERVER hostname Cannot find SERVER hostname in network database. The lookup for the hostname on the SERVER line in the license file failed.	Confirm with your system administrator: <ul style="list-style-type: none">▪ Your system is connected to the license server (that you specified in the Service Configuration dialog box of the License Key Administrator).▪ The license service is running on the license server system.▪ You have entered the correct name for the license server (in the Service Configuration dialog box of the License Key Administrator).
NO SUCH FEATURE EXISTS Failed to check out a <product-name> key.	There is no license key for the product in the node-locked license file or on the license server (if your system is requesting a floating license key). Look at your License Key Certificate to make sure you have a license for the product. If you do, return the license file to Rational and request a new one that contains the correct data.

Table 13 Licensing Error Messages (continued)

Message or Condition	Description and Action
The license for this product will expire...	Your temporary or Term License Agreement (TLA) license key is nearing its expiration date. To continue using the product, contact your Rational Software sales representative to purchase the product or extend your TLA. Click OK to run the product. This warning message appears each time you start the application until you install a permanent license key or another TLA license key. You can turn off the warning by clicking Settings > Display Expiration Warnings in the Rational License Key Administrator.

Technical Notes

The Rational Web site contains Technical Notes about licensing issues. For example, you can use a Technical Note to find out how to:

- Use the options file to exclude certain users.
- Troubleshoot the license server functions.

New Technical Notes appear on a regular basis. Go to <http://www.rational.com>. Click **Support > Technical Notes > Licensing (Technical Notes Index)** to see the Technical Notes about Rational Common Licensing.

For more technical notes related to licensing Rational Suite, click **General** or **Rational Suite Enterprise**, under **Rational Suite (Technical Notes Index)**.

Licensing Glossary

AccountLink. Rational's Web-based license management tool. Customers can use this tool to request and return licenses to their Rational accounts.

ANY-HOST. A license key issued for ANY-HOST will run on any system, and is not tied to the customer's system ID.

Emergency Key. A temporary key that lets a customer use Rational software for a fixed period of time if they cannot use their own license for some reason. The duration of the Emergency Key is five days. Emergency Keys can be node-locked or floating. Emergency Keys are distributed by the Licensing Support Group and run on any host.

Evaluation Key. A temporary key that lets a customer use and evaluate Rational software for a fixed period of time. Rational Software determines the duration of the Evaluation Key. Evaluation Keys can be node-locked or floating. Evaluation Keys are distributed by the Sales team and run on any host.

Floating License. A license type that links products to a license server system. Client systems obtain licenses from the license server when they need to run a copy of Rational software. Multiple clients can share the pool of floating licenses; one license is granted per client per product. Floating licenses on license servers are typically administered by system administrators.

Key Type. Node-locked and floating licenses can be enforced by different types of license keys. The types of license keys are Startup and Permanent. Evaluation and Emergency keys are variations of Startup keys, and Term License Agreements (TLAs) are a variation of Permanent keys. Each type of key has different business rules and policies.

License. A legal right to use a product. A customer receives a license when they purchase the product. However, they need a license key to actually associate the product and the system on which it is running with a license.

License Key. Generic term used in this document to describe keys that enable licenses on a customer system. The types of license keys are: permanent, temporary, evaluation, emergency, and Term License Agreement (TLA).

License Key Administrator. A program written by Rational Software which provides a customer interface to Rational's Licensing system. The License Key Administrator is installed whenever a Rational software product is installed on a Windows system. For hosting floating licenses, the License Key Administrator is installed when the Rational license server software is installed on a system.

License Key Code. An encrypted code used to enforce a license agreement.

License Type. The valid types of licenses are node-locked licenses and floating licenses. See also **Key Type**.

LKAD. Abbreviation for License Key Administrator.

Node-Locked License. A type of license that links a product to a system. Typically, one node-locked license is issued per software copy.

Permanent Key. A license that lets customers run Rational products indefinitely. Permanent Keys can be node-locked or floating. Node-locked Permanent Keys are installed on a client system. Floating Permanent Keys are installed on a license server. Obtain Permanent Keys from the Rational Back Office. Note: A Term License Agreement, a variation of a permanent key, does have an expiration date. See *Term License Agreement*.

Permanent Key Code. The encrypted code that lets a customer run a particular Rational product using a Permanent Key.

Temporary Key. A short-term license key that lets a customer run Rational software products. Temporary licenses are not keyed to a specific system. Temporary Keys can be node-locked or floating. Node-locked Temporary Keys are installed on a client system. Floating Temporary Keys are installed on a license server. Temporary Keys are issued by the Rational Back Office and run on any host until the specified expiration date.

Temporary Key Code. The encrypted code that lets a customer run a particular Rational product using a Temporary Key.

Temporary License Key Certificate. A piece of paper or an electronic file that contains information a customer needs to begin using Rational software with a license. The temporary License Key Certificate is shipped to the customer with the software installation media.

Term License Agreements (TLAs). Variation of a Permanent Key. TLAs are issued to a site to let their employees use Rational software for a negotiated period of time. TLAs are issued by Rational Sales and have an expiration date.

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