

**Product** Rational SoDA for Frame

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## Preface

This guide explains how to install Rational SoDA®, hereafter SoDA, on UNIX platforms.

#### **Before You Start**

Before starting the installation, you need:

- This guide, which is your primary source of installation instructions
- Current SoDA release notes, which may contain relevant information for installation not available at the writing of this document
- The SoDA distribution media, which contains the software and on-line help for the current SoDA release
- A general understanding of the UNIX operating system and X Window System environment on the platform on which you will install SoDA
- Help from your system administrator, or experience in UNIX system administration, and the ability to log in as root to do some of the installation steps

#### How to Use This Guide

Proceed straight through all the chapters in this guide, following instructions in the order given.

#### Conventions

This section summarizes conventions that are followed by this guide and by the scripts you run to install SoDA.

#### **Installation Guide**

This guide uses the following text conventions:

Example	Meaning
rational_dir	Indicates a variable element for which you must supply a value. For example, you might enter /vendor/rational instead of rational_dir.
./install	Specifies literal text that you enter exactly as shown.
csh	Identifies UNIX utilities, pathnames, or filenames.
File > New	Specifies the menu and the menu button for an operation. Read: From the File menu, choose the New menu item.
Return	Represents a key that must be pressed to initiate or complete an action.
Control-C	Represents keys that must be pressed simultaneously. For example, while holding down <b>Control</b> , press <b>C</b> .
%	Represents your shell prompt when you are a regular user. (Do not type the % as part of the command.)
#	Represents your shell prompt when you are the super user (root). (Do not type the # as part of the command.)

Also, the variable element I.J.K is used to represent the current release number, where I is the major release number, J is the minor update number, and K is the micro release number. Please substitute the current release number — for example, 2001A.04.00 — wherever you see I.J.K.

#### **Installation Scripts**

The installation scripts can be run on any type of character terminal or in an X-terminal window on a workstation that is running the X Window System. The scripts assume only that the terminal can print characters and newlines. All output is sent to the installer's screen and recorded in the install.log file.

A script prompts you for any information that is needed. You are allowed to step through the prompts as many times as you wish. Once assured that you have provided the proper responses to each prompt, the script proceeds with installation.

Many prompts give you a limited number of choices — for example: *yes* or *no*. In such cases, the scripts provide the following interface:

If you enter:	The installation script will:
Anything starting with <b>y</b> or <b>Y</b>	Assume that you mean yes
Anything starting with <b>n</b> or <b>N</b>	Assume that you mean no
Just Return	Use the default value displayed in brackets in the prompt message
An Interrupt (usually Control-C)	Exit without doing remaining installation steps
Anything else	Ask you to please type <b>Yes</b> or <b>No</b> and repeat the prompt



## Overview

This chapter presents an overview of the SoDA installation to provide context for the installation procedures from "Loading SoDA" on page 7.

The following topics are covered in this section:

- "Installation Checklist" on page 1
- "Hardware Configurations" on page 1

#### Installation Checklist

The major steps in the SoDA installation are listed below.

- Read the release notes for any instruction updates not available at the printing of this
  manual.
- **2.** Ensure that your workstations satisfy the requirements described in "Prerequisites" on page 3. Your system administrator may need to perform some of the requirements.
- **3.** Load the release as described in "Loading SoDA" on page 7.

## **Hardware Configurations**

SoDA can be installed on a stand-alone workstation or a client-server network that includes many workstations.

Conceptually, you can have different workstations performing each of these roles:

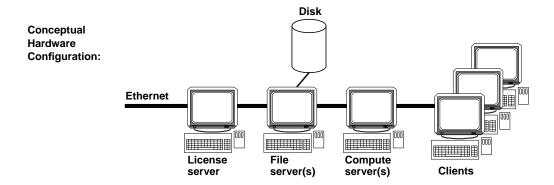
- Clients
  - Displays X windows and accepts input from users.
- File Servers
  - Stores the installation and user data. When a file server is distinct from other workstations, its file systems must be:
    - □ Visible via the Network File System (NFS<sup>TM</sup>)
    - □ Mounted on all workstations with the same pathnames

#### Compute Servers

Runs SoDA processes. When a compute server is distinct from a client, the
compute server is accessed via remote login (rlogin) or remote shell (rsh)
from the client.

#### License Server

Runs daemons that control access to SoDA.



More commonly, a file server doubles as the license server, and clients double as their own compute servers. In the simplest configuration, a stand-alone workstation performs all roles.

If you are installing SoDA on a client-server network, note that you must enter specific commands on specific workstations. For example, the license server daemon must be started on that license server, not on another workstation.



# **Prerequisites**

Ensure that you have the required hardware and software before proceeding with the SoDA installation. This chapter provides a quick checklist of hardware and software requirements. A more detailed description of hardware and software requirements can be found in Chapter 6

To install and use this release of SoDA, you need one of the following systems:

- An HP 9000 series workstation running HP-UX 10.20, 11.0 or 11.11
- A Sun SPARCstation or UltraSPARC workstation running Solaris 2.6, Solaris 7 or Solaris 8.

## **Requirements Checklist**

The following table lists the recommended configuration to successfully install and use SoDA.

You do not need to log in as **root** to verify that most of these requirements are satisfied. If all are satisfied, you can proceed with the installation. If any are not satisfied, however, you probably will need help from your system administrator. Changing most of these items requires knowledge of your network and workstation configurations as well as **root** permissions.

Recommendation: Check all the items listed, noting any requirements that are not satisfied. Give the list of needed changes to your system administrator, wait for the changes to be made, and then proceed with the installation.

Item	Requirement	For
Memory	64 MB recommended	Use
Disk space	190-440MB for loading release media + space for user data (e.g. documents).	Installation, Use
CD-ROM	CD-ROM drive mounted as a UNIX file system	Installation
Display	Color display	Use
Port map daemon	Must be running	Installation, Use
TCP/IP	Must be running	Installation, Use
Host names	Must be configured	Installation, Use
Page/Swap space	At least 64 MB	Use
X Window System: HP-UX Solaris	MIT X11R5 or later MIT X11R5 or later	Use
Window manager	OSF/Motif window manager ( <b>mwm</b> ) 1.1 or later	Use
Adobe FrameMaker <sup>®</sup> +SGML	Version 5.5 or 6.0 must be installed.	Installation, Use
Rational Apex®	Apex 3.2 or 4.0, optionally installed, if you plan to use certain SoDA features	Installation, Use
ClearCase <sup>TM</sup>	ClearCase 3.0 or later, optionally installed, if you plan to use certain SoDA features	Use
ClearQuest <sup>TM</sup>	ClearQuest 2002.05.00 optionally installed, if you plan to use SoDA's ClearQuest integration.	Installation, Use
TestMate <sup>TM</sup>	TestMate 3.2 or 4.0, optionally installed, if you plan to use SoDA's TestMate information source domain	Installation, Use

Item	Requirement	For
Rational Rose®	Rose 2001a or 2002, optionally installed, if you plan to use SoDA's Rose information source domain	Installation, Use
Rational Rose Real Time®	RoseRT 2002 optionally installed, if you plan to use SoDA's RoseRT information source domain.	Installation, Use



## Loading SoDA

This chapter details how to install Rational SoDA from the distribution media.

The following topics are covered in this section:

- "Overview" on page 7
- "SoDA Components" on page 8
- "Before Starting" on page 10
- "Upgrading from a Previous Release" on page 10
- "Typical Installation" on page 10
- "Installing and Licensing SoDA" on page 10
- "Removing Previously Installed Releases" on page 13

#### Overview

This document provides you with the following information:

- An overview of the installation procedures.
- Software licensing description and procedures. See "Licensing" on page 19.
- Information needed to perform a typical installation of the product.
- Support information, including references to additional sources of information for Rational software and licensing. See "Contacting Technical Support" on page 37.

Before starting the installation, you need:

- Installation instructions including this manual and the current release notes
- The distribution media, which contains the software and on-line help for the current release
- A general understanding of your UNIX operating system and the X Window System environment
- UNIX system administration ability to log in as root for some of the installation steps

**Note:** Additional hardware and software requirements are discussed in "Prerequisites" on page 3.

## **SoDA Components**

During installation, you will have the option of choosing which SoDA components to load. These components are described below.

#### **Required Components**

There are two components that are required for all installations; you must load them:

- **SoDA Common Component**, containing document templates, X resources, **apiclients** file updates, and so on
- **SoDA Components for** *platform*, the platform-specific executables

The SoDA installation process is not optimized for heterogeneous networks (more than one UNIX platform). If you need to install more than one version of SoDA, please contact Rational Technical Support.

#### **Optional Components**

There are additional components that you may need to load, depending on the needs of your project:

- Apex Domain for *platform*, containing source-domain definitions, executables, and so on for integrating SoDA and Rational Apex. You must load it to use SoDA with Apex.
- **TestMate Domain for** *platform*, containing source-domain definitions, executables, and so on for integrating SoDA and TestMate. You must load it to use SoDA with TestMate.
- Rose Domain for *platform*, containing source-domain definitions, executables, and so on for integrating SoDA and Rational Rose. You must load it to use SoDA with Rose.
- RoseRT Domain for *platform*, containing source-domain definitions, executables, and so on for integrating SoDA and Rational Rose Real Time. You must load it to use SoDA with RoseRT.
- ClearCase Domain for *platform*, containing source-domain definitions, executables, and so on for integrating SoDA and Rational ClearCase. You must load it to use SoDA with ClearCase.
- ClearQuest Domain for *platform*, containing source-domain definitions, executables, and so on for integrating SoDA and Rational ClearQuest. You must load it to use SoDA with ClearQuest.

- Ghostscript postscript interpreter for *platform*, this is public domain software for processing postscript images. You may install this component for improving the appearance of diagrams generated by the Rose domain. Ghostscript is provided without warranty or support. Usage of Ghostscript is subject to the GNU General Public License. See the release notes for more information
- **SoDA Training**, a platform-independent tar file. Load it only if you have SoDA users who are planning to attend Rational's SoDA training class. (Further instructions on completing the installation of the **SoDA Training** component are provided with the training material.)
- **SoDA Demo**, a platform-independent component for demonstrating SoDA features. It is intended primarily for use by Rational personnel. Unless requested by your Rational representative, you do not need to load this component.

## **Preparation**

Determine the file system into which to load the SoDA release as described in "Disk Space" on page 26. Refer to the table below for a space usage guideline.

Component	Size <sup>a</sup>	Standard Location <sup>b</sup>
Installation Scripts	1	install
SoDA Common Components	10	share
SoDA Components for platform	10-20	<i>platform/</i> bin
Apex Domain for platform	30-50	share/bin and <i>platform</i> /bin
Testmate Domain for platform	25-42	share/bin and <i>platform</i> /bin
Rose Domain for platform	20-40	share/bin and <i>platform</i> /bin
RoseRT Domain for platform	10-15	share/bin and <i>platform</i> /bin
ClearCase Domain for platform	1	share/bin and <i>platform</i> /bin
ClearQuest Domain for platform	3	share/bin and <i>platform</i> /bin
Ghostscript Postscript Interpreter for <i>platform</i>	7	rational_dir/base/cots
SoDA Training	3	share/training
SoDA Demo	11	share/Demo_Installation

<sup>&</sup>lt;sup>a</sup>Shown here in megabytes. The **install** script displays the exact component sizes. The sizes may have changed slightly since this guide was printed.

<sup>b</sup>Pathnames are relative to the *rational\_dir/releases/soda.I.J.K* directory.

## **Before Starting**

To install SoDA you will need a UNIX workstation running either Solaris or HP-UX. FrameMaker+SGML must also be installed on the target workstation.

## **Upgrading from a Previous Release**

See the release notes for information about upgrading from a previous version of SoDA.

## **Typical Installation**

The following list gives a brief outline of what takes place during a "typical" installation. For a detailed description of the install options, please see "Configuring SoDA" on page 15.

- Install the SoDA components (rs\_install). This will also install FLEXIm licensing support.
- Install startup license keys as part of the install. See the license certificate that comes with the media kit.
- Check that licensing is working by starting SoDA.
- Request permanent licenses, install them (license\_setup), and then test that licensing is working.

## **Installing and Licensing SoDA**

The following sections provide a summary of the steps you take when installing Rational software products and the FLEXIm license server software.

- 1. Log into any UNIX workstation that:
  - Gives you access to a CD-ROM drive
  - Mounts the file system(s) into which you will load the SoDA release
  - Has FrameMaker+SGML installed
- Create the Rational root directory, which is referred to as *rational\_dir* throughout this guide:

```
% mkdir rational_dir
% cd rational_dir
```

For *rational\_dir*, supply a pathname such as: /vendor/rational. The *rational\_dir* directory needs to be visible on all machines from which you wish to run this product. The NFS name for *rational\_dir* must be the same on all machines.

**Note:** You must be on the correct operating system version on which you will run the release. For example, if you wish to install the HP-UX 11.00 SoDA release, you must install from an HP-UX 11.00 machine. The correct product will be selected automatically. You will not be able to make this selection manually.

#### Mount the CD-ROM Drive

As root, make a directory (if one does not already exist) to be the mount point for the CD-ROM drive. The following examples for each platform uses the directory /cdrom. Make sure you know the device name of the CD-ROM drive. If you do not know the device name for the CD-ROM drive, consult your system administrator. Mounting commands for different operating systems follow.

#### Sparc/Solaris with volume management

Solaris 2.x with volume management mounts to the /cdrom directory. This happens automatically when you load the CD-ROM drive. You have volume management if the vold daemon is running on your system.

#### Sparc/Solaris (Solaris 2.x) without volume management

```
# mkdir /cdrom
# mount -r -F hsfs /dev/dsk/c0t6d0s0 /cdrom

HP (HP-UX 10.x or 11.0)

# mkdir /cdrom
# mount -r -F cdfs /dev/dsk/c0t2d0 /cdrom
```

#### Run the Install Program

Exit root and go to the /cdrom directory and run the rs\_install command. For Solaris with volume management, go to /cdrom/cdrom0.

```
# exit
% cd /cdrom # (or /cdrom/cdrom0)
% ./rs install
```

Rational recommends that you follow the menus and prompts and let **rs\_install** guide you through the install. From the **rs\_install** menus, you will be guided to include information about yourself (license contact), your Rational account number, and someone else to contact for license renewal. The license renewal will default to license contact if you do not specify this.

Note: Prompts with text between two square brackets (for example: [default]) indicate the default input if you simply press the Enter key on your keyboard. Most of the prompts in the install have a default choice. As a convenience, most of your input is saved in two default files. One contains general purpose defaults that relate to you and the license server you configure. The other keeps track of the product specific information for the install of this specific product and version. The two text files can be edited by you. rs\_install will tell you where these files are when you quit the program.

Next, this program will guide you through configuring the required licenses, checking the licenses, installing the product, and running the post-install program.

The **rs\_install** command is a complete installer that includes the licensing setup, license checking, installing, and post-install. This command can be run under the following aliases to allow you to run a specific section of the install:

license\_setup license\_check post\_install uninstall

#### where:

#### license\_setup

This command allows you to rerun the license setup without running the install or post-install sections.

If you choose to operate your SoDA purchase with the included startup licenses, run either the **rs\_install** or **license\_setup** command. After you obtain your permanent license keys, run **rs\_install** or **license\_setup** again to reconfigure SoDA. Permanent license keys may be requested through Rational's license maintenance web site (http://www.rational.com/accountlink).

#### license check

This command allows you to run the **lmstat** command for non-startup licenses and the **exinstal** command for all licenses. The **lmstat** command queries the license server for a list of licenses that are in the license pool. The **exinstal** command checks the license file format and license codes to see if everything is consistent.

#### post install

This command allows you to rerun **post\_install**. This step takes care of the final post-install setup prior to running SoDA.

#### uninstall

This command allows you to uninstall the previously installed release of the product. It is described in detail in "Running the Uninstall Program" on page 13.

#### **Unmount the CD-ROM Drive**

For CD-ROM installs, unmount the CD-ROM drive.

Solaris with volume management (**vold** is running):

```
% eject cd
```

All others must unmount the CD as root:

% c1

# umount /cdrom

## **Removing Previously Installed Releases**

Once you have installed the latest version of SoDA, and after all users have switched to using it, you can remove the old release to reclaim disk space.

#### **Running the Uninstall Program**

Rational includes an **uninstall** script in its **config** directory. You can uninstall the previous release of a product by running this script in the *rational\_dir* directory.

Before you run **uninstall**, you must verify that your system startup file has a valid path to the Rational license daemon. See "The License Manager" on page 20. Open this file and search for the string *lmgrd*.

If the file contains the following pathname, it is correct:

#### /rational\_dir/base/cots/flexlm.7.0f/platform

If the pathname does not look like this, you must change the path.

With the valid path to the SoDA license daemon established, you are ready to run **uninstall**. Running the script with no command line arguments causes it to display the list of products in the **releases** directory. You will be prompted for the product or suite to uninstall. If there is only one product, you will be asked for confirmation before the uninstall takes place. You must be the installer of the product to uninstall it.

#### Example:

```
% cd rational dir
```

% config/uninstall



## Configuring SoDA

This chapter describes SoDA configuration options available during installation, and for reconfiguration purposes after installation.

The following topics are covered in this section:

- "Configuring SoDA For FrameMaker+SGML" on page 15
- "SoDA Control Options" on page 16
- "Installing SoDA With Rational Rose" on page 17
- "Installing SoDA With Rational Rose Real Time" on page 17
- "Installing SoDA With Rational ClearQuest" on page 17
- "Installing SoDA With Rational Apex" on page 18
- "Reconfiguring SoDA" on page 18
- "Using SoDA" on page 18

## Configuring SoDA For FrameMaker+SGML

FrameMaker+SGML is no longer shipped with SoDA, it must now be licensed and installed independently. SoDA 2002 supports FrameMaker+SGML 5.5 and 6.0. When installing FrameMaker+SGML, make a note of the installation directory as you will need to provide this information during SoDA install.

If you have previously installed version 3.0.1, 3.0.3, or 3.1.0 of SoDA, you may choose to use the installation of FrameMaker+SGML bundled with that release. To do this, simply provide *<old SoDA installation directory>/share/frame* as the FrameMaker installation directory when prompted during the install of SoDA 2002. If you use an installation of FrameMaker+SGML bundled with a previous version of SoDA, note that the older version of SoDA must not be removed or uninstalled, or SoDA 2002 will no longer operate.

### **SoDA Control Options**

If you have Rational Apex installed, you will be prompted during installation to provide a control type for use during checkin of a FrameMaker+SGML file. Here are the two options for SoDA control:

- Storage in binary format or MIF (Frame's Maker Interchange Format) upon checkin
- Document locking (Frame's View Only format) upon checkin and document unlocking upon checkout

#### Storage Formats

You can specify the way in which versions of controlled documents are stored in the CMVC database. The two choices are:

- Binary format, which is the normal format of FrameMaker+SGML documents. This
  format is more compact and requires less time for FrameMaker+SGML to save and
  open.
- However, CMVC does not store versions of binary files efficiently. Each version is stored as a full copy of the current binary file. Over time, as many new versions are checked in, the CMVC database will grow very large even if each version contains only minor changes.
- MIF, which is an ASCII representation that fully describes the contents of FrameMaker+SGML documents. MIF can be several times larger than the equivalent binary format and requires more time for FrameMaker+SGML to save and open (because FrameMaker+SGML must convert the MIF from/to binary).
- However, CMVC stores versions of ASCII text files efficiently. Only one version is stored as a full copy of the original file. All other versions are stored as differentials.
   Over time, as many new versions are checked in, the CMVC database does not grow too large if most versions contain only minor changes.
- Because MIF files are often quite large, calculating the differences between versions can take some time, thereby slowing the checkin.

### **A Binary Example**

For example, a 10 KB document is controlled in binary format, and its initial version takes up 10 KB in the CMVC database.

The document is checked out, additions are made to it, and its size is now 15 KB. The document is checked in, and its two versions take up 25 KB (10 KB + 15 KB) in the CMVC database.

The document is checked out again, minor changes are made to it, and its size remains 15 KB. It is checked in again, and its three versions take up 40 KB (25 KB + 15 KB) in the CMVC database.

#### A MIF Example

The same 10 KB document is controlled in MIF, and its initial version takes up 30 KB in the CMVC database. (For this document, the MIF was three times larger than the equivalent binary format. Your mileage may vary.)

The document is checked out, additions are made to it, and its size (in binary format) is now 15 KB. The document is checked in, and its two versions take up 36 KB (30 KB + 6 KB in differences) in the CMVC database.

The document is checked out again, minor changes are made to it, and its size (in binary format) remains 15 KB. It is checked in again, and its three versions take up 37 KB (36 KB + 1 KB in differences) in the CMVC database.

#### **Document Locking**

When documents are controlled and checked in, their UNIX file permissions are set to be read-only (**r--r--r**). However, there is no easy way to tell if a document is read-only from within FrameMaker+SGML.

You can tell SoDA to lock documents when they are checked in and unlock them when they are checked out. When a document is locked (in FrameMaker+SGML View Only format), it is apparent in FrameMaker+SGML that the document is not editable—you cannot select text or type in the document until it is checked out and unlocked.

### **Installing SoDA With Rational Rose**

During installation you may be asked if you want to use SoDA with Rational Rose. If you answer **yes**, you must also provide the location of your Rose installation. The install process will automatically configure SoDA to use the version of Rational Rose you have specified.

## Installing SoDA With Rational Rose Real Time

During installation you may be asked if you want to use SoDA with Rational RoseRT. If you answer **yes**, you must also provide the location of your RoseRT installation. The install process will automatically configure SoDA to use your RoseRT installation.

## **Installing SoDA With Rational ClearQuest**

During installation you may be asked if you want to use SoDA with Rational ClearQuest. If you answer **yes**, you must also provide the location of your ClearQuest 2002 installation. The install process will automatically configure SoDA to use this version of ClearQuest.

## **Installing SoDA With Rational Apex**

If you are installing SoDA with Rational Apex, and if you would like **apexinit** to automatically start SoDA for all Apex users, use your preferred text editor to adjust the **soda.start** script as shown below:

% cd rational\_dir/releases/soda.I.J.K/share/bin % vi + soda.start

Normally, it is better *not* to make this adjustment unless all Apex users will also be regular SoDA users. Usually, only some Apex users are regular SoDA users.

## **Reconfiguring SoDA**

Sometimes it is necessary to reconfigure SoDA after installation, for example to specify a new Rose or Apex installation, or to change a configuration option. The SoDA configuration described in this chapter is performed during the **post\_install** phase of **rs\_install**. You may run **rs\_install** using the **post\_install** alias described under "Run the Install Program" on page 11 to reconfigure SoDA.

Licensing may also be reconfigured after install by using the **license\_setup** and **license\_check** aliases, also described in Chapter 3.

## **Using SoDA**

Once you have completed the SoDA installation, you may start SoDA by running the **soda** command. For further information, see the instructions for SoDA users in Chapter 1, "Getting Started," of *Using SoDA 2002*.



## Licensing

When you buy Rational SoDA, you purchase some number of floating licenses. Floating licenses allow anyone on your network to use SoDA as long as a license is available. Thus, the number of licenses that you purchase determines the maximum number of users who can use SoDA concurrently.

This chapter describes the following topics related to Rational software licensing services:

- "How Licenses Work" on page 19
- "The License Manager" on page 20
- "License Manager Commands" on page 21
- "The License File" on page 21
- "Obtaining Licenses" on page 22
- "Frequently Asked Questions" on page 23
- "FLEXIm User Guide" on page 24

#### **How Licenses Work**

Licenses are controlled by a *license manager* (FLEXIm<sup>TM</sup> software delivered as part of SoDA) that runs on a *license server* (one of your workstations). The license manager monitors license access, simultaneous usage, idle time, and so on.

When you start SoDA, you are initially unlicensed. If a license is available, the license manager gives you a license and you retain it as long as you keep using SoDA. When you exit SoDA, your license is returned to the license manager and becomes available for another user.

If no license is available, you are unable to use SoDA until a license is returned by another user.

## The License Manager

SoDA uses the Flexible License Manager, FLEXlm<sup>TM</sup>, from Globetrotter Software, Inc. SoDA requires FLEXlm 7.0. The license manager includes the following components:

- A vendor daemon named rational that dispenses SoDA licenses.
  The rational daemon is used for all of Rational's licensed products. If you have other products from other vendors that also use FLEXIm, they will include their own vendor daemons.
- A *license daemon* named **lmgrd**.
  - The same license daemon is used by all licensed products from all vendors that use FLEXIm. The **lmgrd** daemon does not process requests on its own, but forwards requests to the appropriate vendor daemon.
- A license file that you maintain.
   It specifies your license servers, vendor daemons, and product licenses.

Note: Rational recommends that you use a single combined license file for all of our products.

Once the license file is in place and the license daemons are running, the server machine needs to be set up to automatically restart the license server when it reboots. You will be instructed by **rs\_install** or **license\_setup** how to do this. These commands cannot do this because this step requires root permissions. The commands to do this will be as follows: On HP-UX:

```
% su
# cp rational_dir/config/start_lmgrd_on_server-name \
    /sbin/init.d/S98Rational.sh
# ln -s /sbin/init.d/S98Rational.sh /sbin/rc2.d/S98Rational.sh
On Solaris:
$ su
```

# cp rational\_dir/config/start\_lmgrd\_on\_server-name \
 /etc/rc2.d/SlmRational.sh

SoDA provides installation scripts to guide you through this setup. They are described in "Loading SoDA" on page 7.

## **License Manager Commands**

To verify that your license manager is operational, you can enter these commands on your license server to see if it's daemons are running:

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

Their output should include lines similar to the following (your pathnames may vary):

```
538 ?? S 0:03.50 /rational/base/cots/flexlm.7.0f/platform/lmgrd
    -c /rational/config/servername.dat
    -l /rational/config/servername.log
539 ?? I 0:00.90 rational -T brazil 7.0 3 -c ...
```

The license manager supports several system-administration commands.

Command	Description
lmdiag	Allows you to diagnose problems when you cannot checkout a license.
lmdown	Shuts down license and vendor daemons
lmhostid	Reports license manager host ID of workstation
lmreread	Rereads license file, starts new vendor daemons
lmstat	Reports status on daemons and feature usage
exinstal	Reports on licenses in license file you specify on the command line.

#### The License File

The default Rational license file is either:

rational\_dir/config/server-name.dat

or

#### rational\_dir/config/Temporary.dat

The Temporary.dat file is used for startup and evaluation license keys while the *servername*.dat file is used for permanent and TLA licenses.

When users start SoDA, the environment variable LM\_LICENSE\_FILE is automatically defined for them. FLEXIm uses this variable to locate the license file. The LM\_LICENSE\_FILE environment variable can contain other non-Rational products, but Rational recommends that you keep the licenses in separate files.

#### **Format**

The license file is a text file that is setup by the **rs\_install** or **license\_setup** programs. Your license file will contain a SERVER line, a VENDOR line and one or more INCREMENT or FEATURE lines.

Detailed information about the license file and licensing can be found in the FLEXIm End User Manual that is included online with this release and at <a href="http://www.globetrotter.com/manual.htm">http://www.globetrotter.com/manual.htm</a>.

### **Obtaining Licenses**

#### **Startup Licenses**

Your media kit comes with a license certificate containing a startup license key that will be good for approximately two to four weeks. This allows you enough time to contact Rational and get your permanent license keys configured.

You will need to select the product that matches your license certificate, the expiration date on the certificate, and the hexadecimal license code.

A temporary license file will be set up by the **rs\_install** or **license\_setup** command. You will not need a license server for these keys.

### **Requesting Your Permanent License Keys**

AccountLink (http://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 require the license key certificate that is shipped with SoDA. AccountLink's interface offers three license transactions:

- Get License Key(s)
- Return License Key(s)
- Request a copy of a License File

With these three transactions, you can order and return permanent license keys for SoDA from single or multiple Rational accounts.

**Note:** AccountLink does not support temporary license key transactions.

AccountLink requires you to register your Rational software to specific systems using the system's host ID or ethernet address. You can register:

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

After you register your Rational products to a specific system using AccountLink, Rational generates a license key 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.

You need to save the license file to a known directory location as you will need to provide this information when you install Rational SoDA.

Licenses may also be requested by FAX. Please contact Rational Licensing Technical support to obtain a FAX License Request form. See *How to Contact Rational Technical Support* on page 38 for contact information.

### **Frequently Asked Questions**

1. Can I use the Flex licensing software I already have installed?

Yes. Install our license code in the default location (in *rational\_dir/base/cots*) and use it to serve the Rational licenses.

Use a common *rational\_dir* for all Rational products. No room? Create a link for a product to some other file system and install through the link. For example, to put SoDA on some other big filesystem, do:

cd rational\_dir/releases

mkdir /bigfs/SoDA.2002.05.00

ln -s /bigfs/SoDA.2002.05.00 SoDA.2002.05.00

2. I already have Flex installed and managing non-Rational licenses, and now I want to install SoDA. Can I do this?

Yes. You can have more than one **lmgrd** on a machine, but they must use different ports. You can only have one rational daemon on the machine.

- a. What do I do if my existing Flex installation uses port 27000?27000 is the default port, so you need to specify a different port number for SoDA. This is done in the rs\_install menu 4) Server and License File Settings....
- **b.** What do I do if my existing Flex installation uses a port other than 27000? You don't have to do anything as 27000 is the default port for Rational products.

## **FLEXIm User Guide**

An HTML version of the *FLEXIm User Guide* can be found at **http://www.globetrotter.com/manual.htm**Additional information on FLEXIm can be found at **http://www.globetrotter.com/lmfaq.htm**.



# Hardware and Software Requirements

This chapter provides more details about the hardware and software requirements for installing and using SoDA. It also offers some tips for checking and satisfying those requirements, *but every system is different!* When in doubt, refer to your system reference manuals or consult your system administrator.

Recommendation: Before installing SoDA, you might find it helpful to get a copy of the system management guide from your platform vendor.

The following topics are covered in this section:

- "Hardware Requirements" on page 25
- "Software Requirements" on page 27
- "Operating System Runtime and/or Patch Recommendations" on page 33

## **Hardware Requirements**

Your hardware can be configured in various ways. For example:

- A powerful, stand-alone, desktop workstation
- Moderately powerful desktop workstations with a central file server
- Less powerful desktop workstations with a powerful central file and compute server
- X-terminals with a powerful central file and compute server

This chapter describes the requirements for a single-user desktop workstation that you will use either stand-alone or with a file server that provides no support other than file service. The desktop workstation runs all SoDA processes.

The alternative is to run all SoDA processes on a remote compute server, redirecting the display to your local workstation or X-terminal. If the compute server is shared by several SoDA users, it will need to be more powerful than a desktop workstation that supports only one SoDA user. Note that SoDA must be installed on a system where FrameMaker+SGML is installed.

#### Memory

To ensure adequate SoDA performance, Rational recommends that your workstation have at least 64MB of RAM. To determine how much memory your workstation has, enter the command for your system:

System	Command
HP-UX <sup>a</sup>	# /etc/dmesg   grep -i physical
Solaris	% /usr/sbin/dmesg   grep -i mem   sort -u

For example, your workstation has 64MB of RAM if the command returns:

System	Sample Command Output	
HP-UX	Physical: 65536 Kbytes	
Solaris	mem = 65536K (0x4000000)	

#### Disk Space

The SoDA release that you load from CD contains SoDA executables, online help, document templates, and so on. It requires from about 190-440 MB total, varying slightly from release to release. Less disk space is required if you load only the required components for only one platform. More disk space is required if you load optional components. Individual component sizes are listed on page 9.

On a client-server network, you can load the SoDA release into any file system on any file server so long as it is visible (by NFS mounting) to all SoDA workstations.

To determine how much disk space is available in the file systems on your workstation, enter this command:

#### % /bin/df

or for HP-UX, enter:

#### % /usr/local/bin/df

# **Software Requirements**

## **Operating System**

SoDA requires the following versions of operating systems:

OS	Required OS Version
HP-UX	HP-UX 10.20, 11.0, or 11.11. To determine which version of HP-UX your workstation is running, enter this command:
	% /bin/uname -rs It will return a string such as HP-UX A.10.20.
Solaris	Solaris 2.6, 7, or 8, which includes version 5.6-5.8 of the standard SunOS distribution. To determine which version of SunOS your workstation is running, enter this command:
	% /bin/uname -rs It will return a string such as SunOS 5.6.

# **Networking**

**Note:** These networking requirements apply even if you are installing SoDA on a standalone workstation. Do not change your networking configuration without help from your system administrator!

#### TCP/IP

SoDA requires TCP/IP to be running. To determine whether TCP/IP is running on your workstation, enter the appropriate command to look for the inet daemon on your system:

System	Command
HP-UX	% /bin/ps -ef   grep inetd
Solaris 2	% /bin/ps -ef   grep inetd

The output varies slightly depending on your system:

System	Sample Command Output
HP-UX	The output will always include a line such as: you 25113 24302 0 13:34:20 ttys1 0:00 grep inetd If TCP/IP is running, the output will also include a line such as: root 143 1 0 Aug 31 ? 0:00 /etc/inetd
Solaris 2	The output will always include a line such as:  13349 pts/5 S 0:00 grep inetd  If TCP/IP is running, the output will also include a line such as:  126 ? S 0:02 /usr/sbin/inetd -s

# **Port Mapper**

SoDA requires the port mapper to be running. To determine whether it is running on your workstation, enter the command for your system;

System	Command
HP-UX	% /bin/ps -ef   grep portmap
Solaris 2	% /bin/ps -ef   grep rpcbind

The output varies slightly depending on your system

System	Sample Command Output
HP-UX	The output will always include a line such as: you 25143 24302 1 13:51:52 ttys1 0:00 grep portmap If portmap is running, the output will also include a line such as: root 114 1 0 Aug 31 ? 0:17 /etc/portmap
Solaris 2	The output will always include a line such as:  15612 pts/5 S 0:00 grep rpcbind  If <b>rpcbind</b> is running, the output will also include a line such as:  107 ? S 0:34 /usr/sbin/rpcbind

Tip for system administrator: If necessary, you can start the port mapper as follows:

System	Command
HP-UX	Unknown for HP-UX.
Solaris 2	Enter this command as <b>root</b> :
	# /usr/sbin/rpcbind Normally, the rpcbind daemon is started from the file /etc/rc2.d/S71rpc.

#### Host Names

SoDA requires host names on your workstations.

**Note:** Host names must be properly configured before continuing with the installation. They are significant not only during SoDA execution, but also during some SoDA installation steps.

# **Swap Space**

To ensure adequate SoDA performance, Rational recommends that your workstation have at least 64 MB of swap space.

To determine how much swap space your workstation has, enter the command for your system:

System	Command
HP-UX <sup>a</sup>	# /etc/swapinfo
Solaris 2	% /usr/sbin/swap -s

<sup>&</sup>lt;sup>a</sup>On HP-UX, log in as **root** to get the output you want from this command.

The output varies depending on your system. For example, your workstation has 128 MB of swap space if the command returns:

System	Sample Command Output	
HP-UX	Kb Kb Kb TYPE AVAIL USED FREE dev 131072 11885 119187	
Solaris 2	15120k allocated + 3064k reserved = 18184k used, 110212k available	

# X Window System

SoDA requires the following versions of the X window system:

System	Required Version of X Window System
HP-UX	MIT X11R4 or later (that is, version 11, release 4 or later of X). SoDA was developed and tested with X11R5, so it is recommended.  To determine whether the required X11 directories are available on your workstation, enter this command:
	% ls -d /usr/*/X11 The output should include: /usr/bin/X11 /usr/include/X11 /usr/lib/X11
Solaris 2	MIT X11R4 or later (that is, version 11, release 4 or later of X). SoDA was developed and tested with X11R5, so it is recommended.  To determine whether the required X11 directories are available on your workstation, enter this command:
	% ls -d /usr/openwin/* The output should include: /usr/openwin/bin /usr/openwin/lib /usr/openwin/include

To check the version of the X server running on your workstation, enter the command for your system:

System	Command
HP-UX	% /usr/contrib/bin/X11/xdpyinfo
Solaris 2	% /usr/openwin/bin/xdpyinfo

The output will include lines similar to the following:

System	Sample Command Output
HP-UX	version number: 11.0 vendor string: Hewlett-Packard Company vendor release number: 508000
Solaris 2	version number: 11.0 vendor string: MIT X Consortium vendor release number: 5000

In this example, the version number and vendor release number indicate that the X server is based on MIT X11R5.

## Window Manager

SoDA requires the OSF/Motif window manager (mwm), release 1.1 or later.

To find **mwm** on your workstation, enter this command:

% which mwm

The pathname may vary on your workstation, but the output should be similar to:

System	Sample Command Output
HP-UX	/usr/bin/X11/mwm
Solaris 2	/opt/SUNWmotif/bin/mwm

Given the pathname, enter a command similar to the following to check the version of **mwm**:

#### % what /usr/bin/X11/mwm

The output will vary depending on your executable and how it was built, but generally reveals the version in some way—for example:

/usr/bin/X11/mwm:

OSF/Motif mwm 1.2.4 Release

## **Rational Apex**

Certain features of SoDA depend on SoDA's integration with Rational Apex. You must install Apex 3.2 or 4.0 before installing SoDA if you plan to use the following features of SoDA:

- Configuration management and version control (CMVC)
- Apex source domain

You can determine which version of Apex you are running on your workstation by entering this command:

## % apexinit -batch exit

The output will be similar to:

Apex version 3.2.0

#### **TestMate**

If you plan to incorporate information from TestMate into your SoDA documents, that information must come from TestMate 3.2 or later.

#### **Rational Rose**

If you plan to incorporate information from Rational Rose into your SoDA documents, that information must come from Rose 2001a or later.

### **Rational Rose Real Time**

If you plan to incorporate information from Rational RoseRT into your SoDA documents, you must have Rational RoseRT 2002.05.00 installed.

#### ClearCase

If you plan to incorporate information from ClearCase into your SoDA documents, that information must come from ClearCase 3.0 or later.

#### ClearQuest

If you plan to incorporate information from ClearQuest into your SoDA documents, you must have ClearQuest 2002.05.00 installed.

# **Operating System Runtime and/or Patch Recommendations**

The recommendations below are in relation to the following platforms:

- HP-UX
- SUN Solaris

**Note:** We recommend that you utilize the following patch versions. While we encourage you to contact the appropriate vendor to determine if a patch has been superseded we cannot guarantee release compatibility with a patch version we have not yet tested.

Please contact Rational Technical Support if you encounter any compatibility difficulties after installing a patch which supersedes the patches listed below.

## HP-UX 10.20 & 11.00 Patch Recommendations and Descriptions

The following table describes patch recommendations for HP-UX.

Runtime patches	Description	Reason for Patch	Operating System Versions & Notes
PHCO_17187	s700_800 10.20 csh(1) cumulative patch	To prevent calling csh X terminal closing, if application terminates incorrectly.	HP-UX 10.20 This is only necessary if you are using csh.
PHSS_17327	X/Motif2.1 Dev Kit Mar99 Periodic Patch	Runtime requirement	HP-UX 11.00

The HP-UX patches are available at:

- http://us-support.external.hp.com (US, Canada, Asia-Pacific and Latin-America)
- http://europe-support.external.hp.com (Europe)
- ftp://us-ffs.external.hp.com ("anonymous" FTP)

# **Solaris Patch Recommendations and Descriptions**

The following tables describe patch recommendations for Solaris.

<b>Runtime Patches</b>	Description	Reason for Patch	Operating System Version
105633-22 or greater	Xserver Patch	(Equivalent to patch 103566-38) Fixes bugs in XinitThreads and _XflushInt, i.e., bug fixes for multi-threaded applications under X	Solaris 2.6

Machine Specific RunTime Patches	Description	Reason for Patch	Operating System Version & Graphic Card (see information describing how to detect graphics cards in the following Notes section)
105362-10 or greater	M64 Graphics Patch	To fix gui hanging problems To fix paint problems (black/white regions appear in menu's, dialog boxes, toolbars, etc.)	For PGX (M64 Graphics card) on Solaris 2.6
105360	FFB Graphics Patch	To fix gui hanging problems To fix paint problems (black/white regions appear in menu's, dialog boxes, toolbars, etc.)	For Creator Graphics Card on Solaris 2.6
105363-10	AFB Graphics Patch	To fix gui hanging problems To fix paint problems (black/white regions appear in menu's, dialog boxes, toolbars, etc.)	For Elite3D Graphics Card Solaris 2.6
106022-02 or greater	OpenGL 1.1.1: OpenGL Patch	This patch is for user's of OpenGL who have installed patch 105363 or 105791	Solaris 2.6

The Solaris patches are available at:

http://sunsolve.sun.com/private-cgi/show.pl?target=patches/patch-access

The Sun Solaris patches may not be available publicly.

The following may be necessary in order to obtain some of the Solaris patches listed above:

- Must be under maintenance support with SUN; or
- System must be under warranty; or
- You must be willing to pay for patch to receive it.

/dev/fbs/cgsix\* - GX graphics
/dev/fbs/leo\* - ZX graphics
/dev/fbs/sx\* - SX graphics

#### Notes

How to detect a graphics card:

1. To verify that an FFB accelerator is installed on the system (Creator 3D)

```
% dmesg | grep ffb
SUNW,ffb0 at root: UPA 0xle 0x0
SUNW,ffb0 is /SUNW,ffb@le,0
stdout is (/SUNW,ffb@le,0) major (53) minor (0)
2. To verify that an AFB accelerator is installed on the system (Elite 3D)
% dmesg | grep afb
SUNW,afb0 at root: UPA 0xle 0x0
SUNW,afb0 is /SUNW,afb@le,0
stdout is major <79> minor <0>
3. DETECTING OTHER GRAPHICS CARDS
% ls /dev/fbs/*
/dev/fbs/m640 - PGX graphics
/dev/fbs/afb* - Elite3D graphics
/dev/fbs/ffb* - Creator/Creator3D graphics
```



# Chapter 7

# Contacting Technical Support

This chapter describes procedures for interacting with Rational Software Corporation's Technical Support services. The following sections are included:

- "When Contacting Rational Technical Support" on page 37
- "How to Contact Rational Technical Support" on page 38

**Note:** Please check the Rational Technical Support website for the latest support information: http://www.rational.com/sitewide/support/index.jtmpl

# **When Contacting Rational Technical Support**

When contacting Rational Technical Support, please be prepared to supply the following information:

- Name, telephone number, and company name
- Product name and version number
- Operating system and version number (i.e. HP UX 11.0)
- Computer make and model
- Your case id (if you're calling about a previously reported problem)
- A summary description of the problem, related errors, and scenario.

If your organization has a designated, on-site support person, please try to contact that person before contacting Rational Technical Support.

# **How to Contact Rational Technical Support**

Rational Technical Support can provide information and assistance via:

- Electronic Mail
- Telephone
- Fax
- Mail

## **Electronic Mail, Telephone, and Fax**

Telephone support is available Monday through Friday from 6:00 a.m. to 6:00 p.m. Pacific Standard Time. International telephone support hours span the normal local business hours.

You can obtain technical assistance by sending electronic mail to the appropriate e-mail address. Electronic mail is acknowledged immediately and is usually answered within one working day of its arrival at Rational. When sending an email place "SoDA 3.1 for UNIX \$ARCH" in the subject line, and in the body of your message include a description of your problem. \$ARCH should be one of the following architectures (enter exactly as shown):

- Solaris
- HP-UX

When sending email concerning a previously-reported problem, please include in the subject field: "CaseID: v0XXXXX", where XXXXX is the caseid number of the issue. For example:

CaseID: v0176528 New data on SoDA 3.1 for UNIX install issue Sometimes Rational technical support engineers will ask you to fax information to help them diagnose problems. You can also report a technical problem by fax if you prefer. Please mark faxes "Attention: Technical Support" and add your fax number to the information requested above.

Telephone and fax numbers for Rational Technical Support are contained in the following table. If you have problems or questions regarding licensing, please see "License Support Contact Information" on page 40.

Table 1 Rational Support Telephone Numbers

Region	Telephone Number	Fax Number
Americas	408-863-4000 or 800-433-5444	(781)676-2460
Asia Pacific (Includes support for Japan, China, India, Korea, Taiwan)	+61-2-9419-0111	+61-2-9419-0123
Europe, Middle East, and Africa (Includes support for Israel)	+31-23-569-4310	+31-23-569-4302

Email addresses for Rational Technical Support are listed in the following table.

Table 2 Rational Support Email Addresses

Region	Email Address
Americas	support@rational.com
Asia Pacific (Including Japan, China, India, Korea, Taiwan)	support@apac.rational.com
Europe, Middle East, and Africa (Includes support for Israel)	support@europe.rational.com

## Mail

You can also correspond with Rational at the following mailing addresses. Please mark correspondence to expedite its routing once it reaches Rational — for example: "Attention: John Smith" or "Attention: Technical Support."

Rational Software Corporation 18880 Homestead Road Cupertino, CA 95014 U.S.A. Rational Software B.V. Siriusdreef 41 2132 WT Hoofddorp

The Netherlands

Rational Software Pty. Ltd. Level 13, Tower A, Zenith Centre 821 Pacific Highway Chatswood NSW 2067 Australia

# **License Support Contact Information**

If you have a problem or questions regarding the licensing of your Rational Software products, please contact the appropriate Licensing Support office.

Region	Telephone Number	Fax Number	Email Address
Americas	800-433-5444	408-863-4001	license@rational.com
Europe, Middle East, Africa	+31 20 4546 200	+31 20 4546 202	license@europe.rational.com
North Asia Pacific Mainland China, Hong Kong, Taiwan	+61-2-9419-0111	+61-2-9419-0123	license@china.rational.com
Korea	+82 2 556 9420	+82 2 556 9426	license@apac.rational.com
South Asia Pacific Australia, New Zealand, Malaysia, Singapore, Indonesia, Thailand, The Philippines, Vietnam, Guam, and India	+61-2-9419-0111	+61-2-9419-0123	license@apac.rational.com
Japan	+61-2-9419-0111	+61-2-9419-0123	license@japan.rational.com



# Chapter 8

# Glossary of Licensing Terms

### **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 5 days. Emergency Keys can be node-locked or floating. Emergency Keys are distributed by the Licensing Support Group and will run on any host.

## **Evaluation Key**

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

### Floating License

A license type that links products to a License Server system. Client systems access licenses on the License Server system 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.

#### **GLOBEtrotter FLEXIm Server**

Software license manager for Windows, NT, UNIX, Java, and VMS.

## **Key Type**

Both 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. These keys are issued by different groups (i.e., Sales, Order Entry, License Support, Tech Support, License Support) at different times, for different purposes, and governed under 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, startup, evaluation, emergency, and Term License Agreement (TLA).

#### License Key Administrator

A Windows program written by Rational Software, which provides a customer interface to Rational's Licensing system. Similar functionality exists with a subset of the **rs\_install** command, called **license\_setup**. Starting with the release of Rational Suite 1.0 and associated point products, the License Key Administrator or **license\_setup** command is installed whenever a Rational software product is installed. For hosting floating licenses on Windows NT, the License Key Administrator is installed when the Globetrotter FLEXIm server is installed on a Windows NT License Server 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.

#### **Node-Locked License**

A type of license that links a product to a system. Typically, one node-locked license is issued per software copy, but exceptions can be made if a user needs to run a single copy of the software on two systems. Contact Licensing Customer Support for information on this exception.

### **Permanent Key**

A license issued to a customer for running Rational products. Permanent licenses are keyed to a product and system. Permanent Keys have expiration dates that vary by product, but will probably be two product cycles. 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 system. The Rational BackOffice issues Permanent Keys.

## **Permanent Key Code**

The FLEXIm encrypted code that lets a customer run a particular Rational product using a Permanent Key. It is valid until the expiration date for that key.

#### Startup Key

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

### Startup Key Code

The FLEXIm encrypted code that temporarily lets a customer run a particular Rational product using a Startup Key.

#### Startup License Key Certificate

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

#### **Term License Agreements (TLAs)**

Variations 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.



# Reader's Comments

Please return this form to:
Publications Department
Rational Software Corporation
18880 Homestead Road
Cupertino, CA 95014

**Note:** You can also submit documentation comments by sending electronic mail to **documentation@rational.com**. If you send mail, please indicate the book name, revision number, and page number.

Did you find this book understandable, usable, and well organized? Please comment and list any suggestions for improvement.

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