HP Remote Graphics Software

Licensing Guide

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1 Introduction

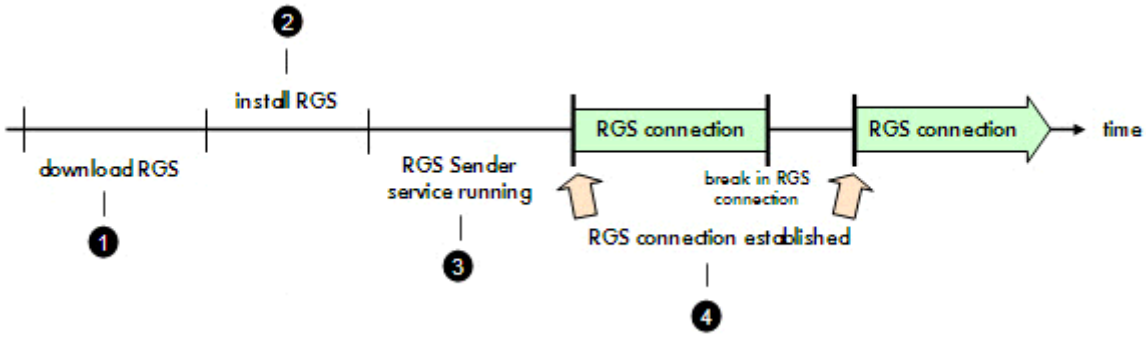
This document describes licensing of HP Remote Graphics Software (RGS) version 5.4.7 and later. RGS licensing applies to the RGS Sender only; the RGS Receiver is a free download which can be installed and used on a broad range of computers. Therefore, all discussion of RGS licensing applies only to the RGS Sender.

NOTE: For detailed RGS information, see the latest version of the *HP Remote Graphics Software User Guide*, available at http://www.hp.com/support/rgs_manuals. This website may also contain a more recent version of this licensing guide.

RGS licensing overview

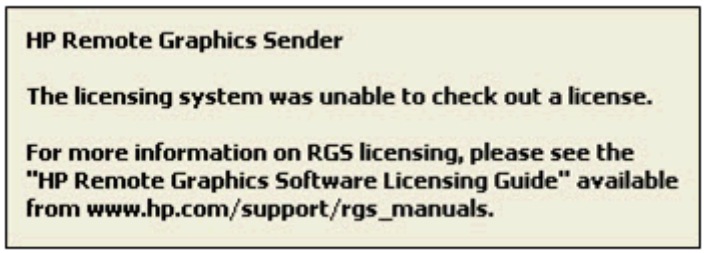
RGS Sender licensing is based on a *License Key* that is obtained from HP after your purchase of RGS. The License Key is saved in a file called the *License Key file*, which is checked each time an RGS connection is established. You can download, install, and run the RGS Sender to verify connection without a License Key file, as shown in Figure 1-1 RGS download/install/license timeline on page 1, but you will have a restricted use dialog box present at all times.

Figure 1-1 RGS download/install/license timeline



1. RGS can be downloaded from http://www.hp.com/go/rgs without a License Key file.
2. The RGS Sender and Receiver can also be installed without a License Key file. However, during Sender installation, you will be asked which license file you would like to use.
3. The default RGS Sender installation ensures the Sender begins running during the boot sequence. No License Key file is required.
4. The License Key file is checked each time an RGS connection is established. If the License Key file is valid, RGS runs normally. If the License Key file is missing or invalid, you will still be able to view and interact with the remote desktop, but the dialog shown in Figure 1-2 Dialog generated when the RGS Sender is unlicensed on page 2 will be displayed in your viewing window.

Figure 1-2 Dialog generated when the RGS Sender is unlicensed



RGS license types

The RGS Sender supports three types of licenses:

- **Trial license**—A 60-day trial license is provided with the HP RGS Trial Edition ("Trial Edition"). The License Key file provided with the Trial Edition is stored on the RGS Sender system.
- **Local license**—With local licenses, each system running the RGS Sender requires a license file. A license must be purchased and the license file installed for each RGS Sender computer.
- **Floating license**—With floating licenses, a pool of RGS licenses is purchased. These licenses are dynamically allocated on a first-come, first-served basis whenever an RGS Receiver attempts to connect to an RGS Sender. In licensing terminology, a floating license is *checked-out* when a connection is established to the RGS Sender, and is *checked-in* when the connection terminates.

  If multiple RGS Receivers are connecting to a single RGS Sender (for example, when conducting a collaboration session), only one license is consumed by the RGS Sender—when the first RGS connection is established.

  Floating licenses allow a company to purchase, for example, 75 licenses, but support a user community of perhaps hundreds of users, as long as no more than 75 users ever attempt to establish an RGS connection simultaneously. As noted above, a single RGS Sender connection session might include multiple Receiver connections. Therefore, licensing determines the number of *simultaneous RGS Sender connection sessions* that can be established, regardless of how many RGS Receivers are connected to each RGS Sender.

  Floating licenses require a license server, which can be installed on one of the computers running the RGS Sender, or the license server can be installed on a separate computer. The RGS product includes a `Setup.exe` file that installs the FLEXnet license server. For installation information, see Installing and configuring the FLEXnet license server on page 21.

RGS products

NOTE: For detailed information on the RGS products, see the *HP RGS Datasheet* and the *HP RGS QuickSpecs*, available at http://www.hp.com/go/rgs.

HP offers these RGS products:

- **HP RGS Trial Edition**—HP offers a free, 60-day trial version of HP RGS Desktop; no license purchase is required.
- **HP RGS VDI local license**—This RGS product runs on HP and non-HP VMware VDI (Virtual Desktop Infrastructure) and HP Blade PC platforms. HP RGS VDI uses a local license file key. A separate HP RGS VDI license is required for each virtual machine or physical machine using RGS.
- **HP RGS Desktop local license**—This RGS product runs on all RGS supported platforms, including: notebooks, desktop PCs, mobile workstations, personal workstations and HP Blade workstations. In addition, this key will also run on VMware VDI and HP Blade PC platforms that are supported by the RGS VDI license key. A separate HP RGS Desktop local license is required for each virtual machine or physical machine using RGS.
- **HP RGS Desktop floating license**—This RGS product runs on all RGS supported platforms, including: notebooks, desktop PCs, mobile workstations, personal workstations and HP Blade workstations. In addition, this key will also run on VMware VDI and HP Blade PC platforms that are supported by the RGS VDI license key. A license server is required to manage HP RGS Desktop floating license keys. A more detailed explanation of floating licenses may be found in RGS license types on page 2.

All RGS products include the same RGS Sender and the same RGS Receiver. The RGS Receiver is unlicensed, and can be installed on a broad range of computers.

NOTE: Except for the 60-day **HP RGS Trial Edition**, the RGS products never expire once they are installed and licensed. The purchased software license key will allow the user to install and run the latest version of RGS available at purchase time, as well as any subsequent minor/patch updates for that release.

In order to run future primary or major enhancement releases, the user must purchase an RGS Software Upgrade product. Upgrade pricing is available for new major releases of RGS. To qualify for upgrade pricing you must be a licensed owner of a qualifying version of HP RGS. The previous two major versions of HP RGS qualify for upgrade pricing. For example, versions 5.4 and 5.3 will both qualify for upgrade pricing for the next major release of HP RGS.

For more detailed information on the RGS products, see the *HP Remote Graphics Software QuickSpec* available on the RGS home page at http://www.hp.com/go/rgs.

For RGS supported operating system details on hosted OS Virtual Machine and physical machine environments, see the latest RGS User Guide available at http://www.hp.com/support/rgs_manuals.

NOTE: Telephone support service is for RGS software installation and configuration support.

Customer must have a fully functioning system with standard Microsoft Windows software loaded and running.

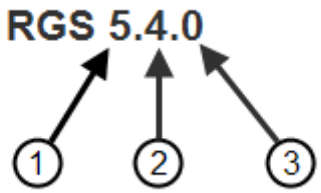
Software updates are available through the HP Software Depot. Go to http://software.hp.com and under **Product Category**, select **Virtualization Software** > **Client Virtualization** to find the latest HP Remote Graphics software release.

Release Version Number

The Release Version Number ("Version Number") contains the three numbers shown in Figure 1-3 Version Numbering used by RGS on page 4.

1. Version primary number
   - A primary release contains sufficient changes such that interoperability with the prior primary release is not guaranteed. For example, Sender version 5.4.0 is not guaranteed to interoperate with Receiver version 4.2.0.
2. Version major number
   - Major releases introduce new RGS features and functionality. Major releases will also include (roll up) the changes in any prior minor/patch releases. RGS 5.4.0 is a major release.
3. Version minor/patch number
   - Minor/patch releases are generated only for a security issue or for a major defect in a feature. A minor/patch release is indicated by this number being non-zero. Therefore, RGS 5.4.0 would not be a minor/patch release. RGS 5.4.1 would be a minor/patch release.

Figure 1-3 Version Numbering used by RGS



NOTE: Each minor/patch release is a complete release of the entire RGS product, regardless of which components have changed. For example, if a minor/patch release is needed to make an RGS Sender security fix available, the entire RGS product (including both the RGS Sender and Receiver) would be included in the minor/patch release.

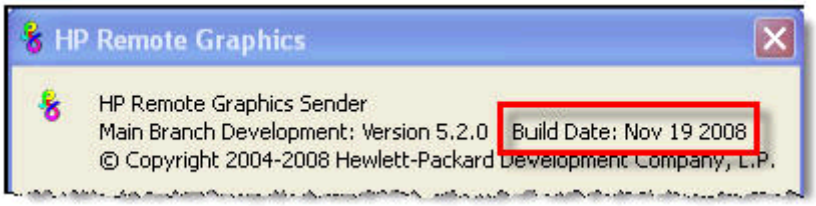
Release Version Date

In addition to the Version Number, each release of RGS has a Release Version Date ("Version Date") that is used by the RGS licensing mechanism. For example, the RGS 5.3.0 Version Date is September 4, 2009, which is formatted **2009.0904** (YYYY.MMDD).

You won't normally need to view the Version Date for your RGS product—only the RGS licensing mechanism typically needs to access the RGS Version Date. However, to assist in troubleshooting any license problems, RGS provides the ability to view the Version Date of your RGS product. For details, see Supplemental licensing information on page 30.

NOTE: The Version Date should not be confused with the *RGS Build Date*, which can be viewed by selecting **About** from the RGS Sender menu in the system tray (see Figure 1-4 The RGS Sender **About** dialog displays the Build Date on page 5). The Build Date is not used by the RGS licensing mechanism.

Figure 1-4 The RGS Sender **About** dialog displays the Build Date



RGS license policy

The RGS Version Date, in concert with one or more dates embedded in your License Key file, is used to implement the following RGS license policy:

- When you purchase RGS, you are entitled to free upgrades to all future minor/patch releases. For example, if you purchase RGS 5.4.0, you are entitled to a free upgrade to minor/patch release 5.4.1, if available.

The RGS Version Date is *not* changed when RGS minor/patch releases are released. The RGS Version Date *is* changed for a primary or major release. See Table 1-1 RGS Version Number and Version Date examples on page 5.

Table 1-1 RGS Version Number and Version Date examples

Version Number	Release Type	Version Date
RGS 5.2.0	major release	2008.1115
RGS 5.2.1	minor/patch release	2008.1115
RGS 5.2.2	minor/patch release	2008.1115
RGS 5.3.0	major release	2009.0904
RGS 6.0 (not committed)	primary release	2012.0718

If you have questions or need assistance

If you have questions or need assistance with RGS licensing, please contact the appropriate HP Regional Licensing Center listed below.

Hewlett-Packard Regional Licensing Centers: http://licensing.hp.com		
Americas Phone: +1(800) 538–1733 Fax: +1(800) 541–2633 E-mail: hplicense.na@hp.com Business hours: Monday to Friday 6:00am — 4:30pm PT	Europe, Middle East & Africa Phone; +353 (0)91 75 40 06 (Ireland) Fax: +353 (0)91 70 10 02 (Ireland) E-mail: codeword_europe@hp.com Business hours: Monday to Friday 8:30am — 5:30pm GMT	Asia Pacific & Japan Phone: +81.426.48.9312 (Japan) or 0120.42.1231 Fax: +81.426.48.6279 (Japan) or +800.2052.1231 Toll-Free from AP countries except from India, Indonesia, Vietnam and Japan E-mail: sw_codeword@hp.com Business hours: Monday to Friday 9:00am — 5:30pm GMT +9

2 HP RGS Trial Edition

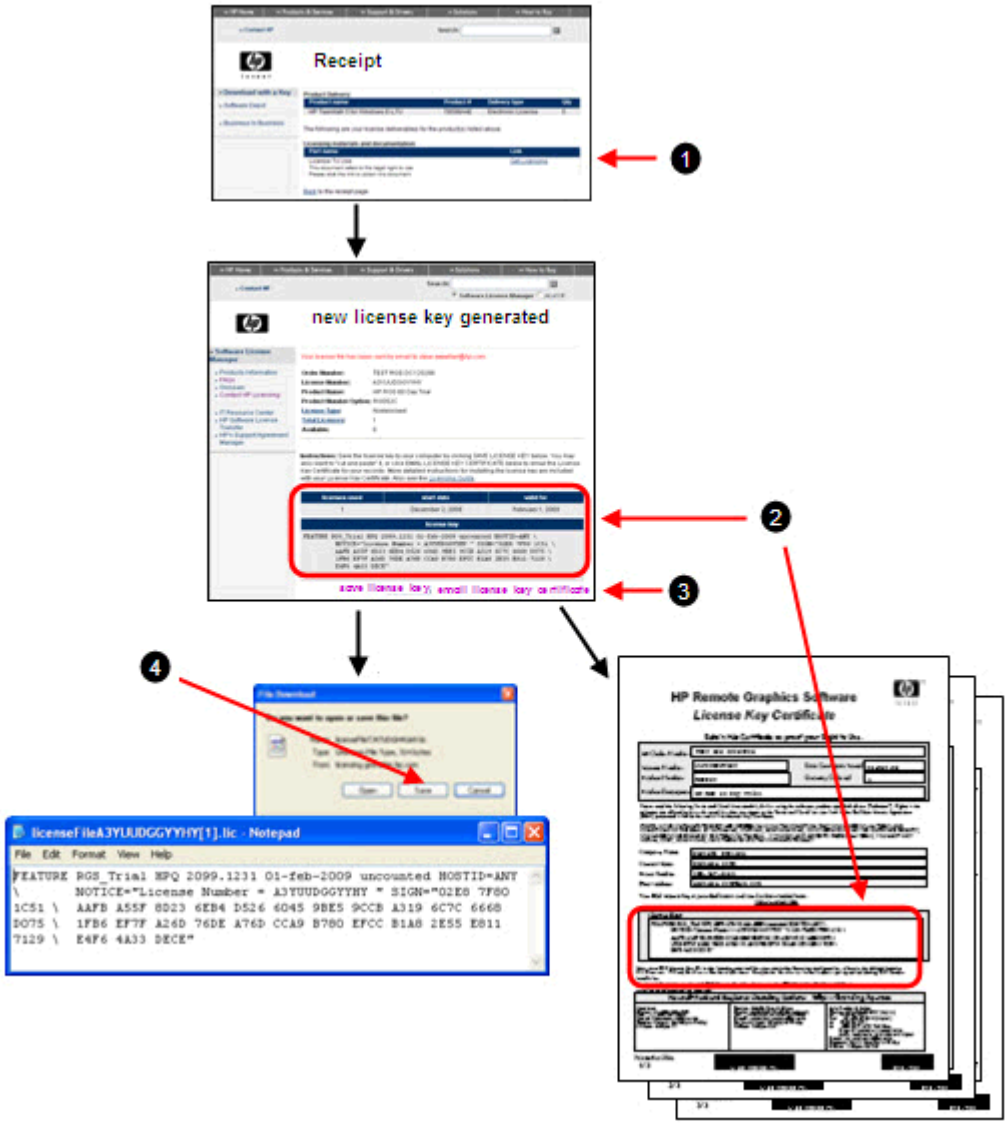
This chapter describes how to download and install the 60-day **HP RGS Trial Edition**, including its License Key. The Trial Edition RGS Sender can be run on any of the platforms shown in If you have questions or need assistance on page 6.

Downloading and installing the HP RGS Trial Edition

1. Go to the RGS homepage at http://www.hp.com/go/rgs, and click the **HP RGS Trial Edition** link.
2. Click the **Receive for Trial** link to bring up the Trial Edition registration page. Provide the requested information, and click **Next**.
3. The **Download software and license** page has tabs for **Order Confirmation**, **Get Software**, **Get Licensing**, and **Get Documentation**.
4. Select **Get Download** (on the **Order Confirmation** tab) or the **Get Software** tab, and choose the RGS version appropriate for your operating system. The top button can be used to download a TAR file for Linux, while the bottom button can be used to download a ZIP file for Windows. Click the button corresponding to the OS you're using, and specify the location to save the file. If you're using both operating systems (for example, Linux on the Sender computer and Windows on the Receiver computer), you'll want to download both files. As noted previously, only the RGS Sender needs to be licensed.
5. Next, click **Get License** (on the **Order Confirmation** tab) or select the **Get Licensing** tab, and select **Get License** which will bring up the **Receipt** web page shown in Figure 2-1 Downloading the Trial Edition License Key on page 8. The sequence to download and save

your Trial Edition License Key is shown in Figure 2-1 Downloading the Trial Edition License Key on page 8.

Figure 2-1 Downloading the Trial Edition License Key



To download the Trial Edition License Key:

1. Click **Get Licensing** .
2. The RGS Trial Edition License Key is listed on this web page, and is also on the *HP Remote Graphics Software License Key Certificate*.
3. Click this link to email the *HP Remote Graphics Software License Key Certificate*. HP recommends that you obtain this certificate, and retain it for your records.
4. Save your RGS Trial Edition License Key to a file.

6. The installation procedure for the Trial Edition License Key and the local License Key are identical; see Installing the local License Key file on page 14. In summary, during RGS installation, **Install**

a license file on this system is selected in the dialog in Figure 4-2 Dialog to specify that the RGS Sender will access a License Key file on this computer on page 15. The Trial Edition License Key file location is then specified in the dialog in Figure 4-3 Dialog used to enter location and name of the local License Key file on page 15. .

The License Key file will be copied from the location you specify to the Remote Graphics Sender install directory:

- For 32-bit Windows systems:

  ```
  C:\Program Files\Hewlett-Packard\Remote Graphics Sender
  ```

- For 64-bit Windows systems:

  ```
  C:\Program Files (x86)\Hewlett-Packard\Remote Graphics Sender
  ```

- For Linux systems:

  ```
  /etc/opt/hpremote/rgsender
  ```

3 Obtaining your RGS product and its License Key

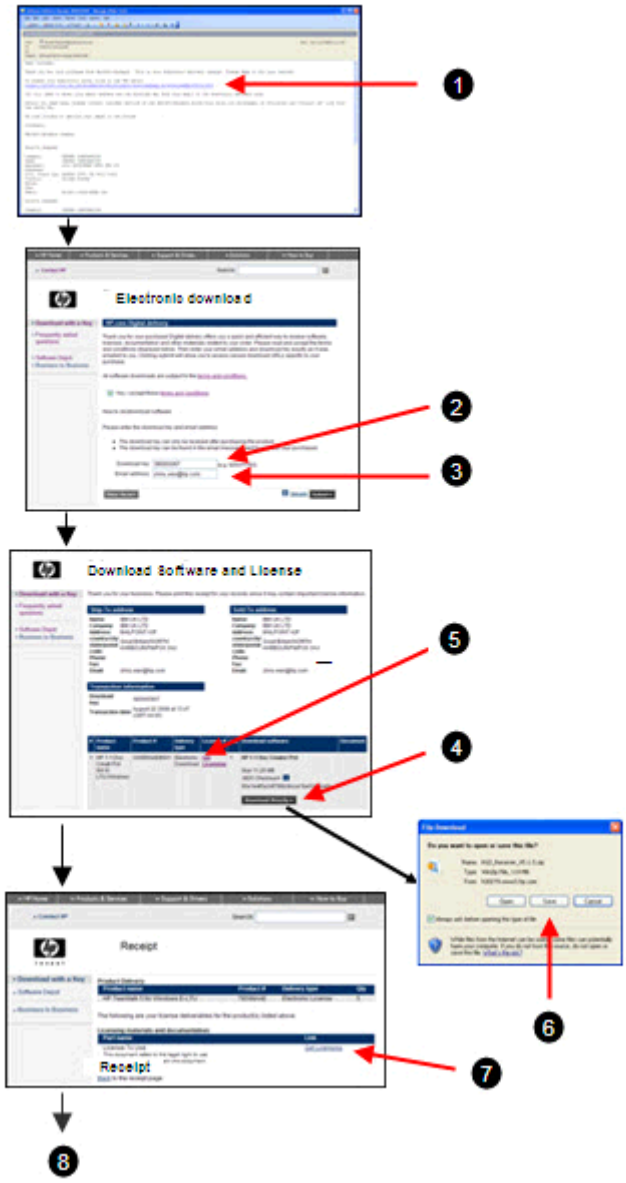
The RGS products listed in RGS products on page 3 can be ordered for electronic delivery (downloadable from HP). This chapter describes the delivery method and how to obtain the required RGS License Key.

NOTE: Ordering of the RGS products is not described in this guide. For RGS ordering information, please see the *HP Remote Graphics Software QuickSpecs*, available on the RGS homepage at http://www.hp.com/go/rgs.

Before presenting the RGS delivery method and describing how to obtain your License Key, a couple of general guidelines are provided:

- If you're acquiring RGS electronically, you'll be given a link to the latest RGS software that you're entitled to.
- After one or more License Keys have been generated, you can view your previously generated License Keys using the **Previously Generated License Keys** link on the **generate a new license key** web page. To view your previously generated License Keys after exiting the License Key generation process, start at http://licensing.hp.com, and enter your License Number on the **Welcome to Software License Manager** web page.

Figure 3-1 Electronic delivery



For electronic delivery of RGS:

1. After your order, you'll receive email containing the RGS download website URL. The email will also provide the Confirmation Number that you'll need below. Click this URL to continue.
2. Enter the **Confirmation Number** from the above email.
3. Enter your **email address**, and click **Submit**.
4. Click **Download Directly** to download the RGS software to your computer. This should be done before obtaining your License Key.

NOTE: HP recommends downloading your RGS software *first*, and then obtaining your License Key. If you click **Get Licensing** first, you'll leave the web page, and will need to use the URL in the email to return.

5. Click **Get Licensing** to begin the process of obtaining your RGS License Key. This should be done *after* RGS is downloaded.
6. Click **Save** and specify the location to save the RGS file.
7. Click **Get Licensing** to continue.
8. Continue with Obtaining your RGS local License Key on page 13 or Obtaining your RGS floating License Key on page 20.

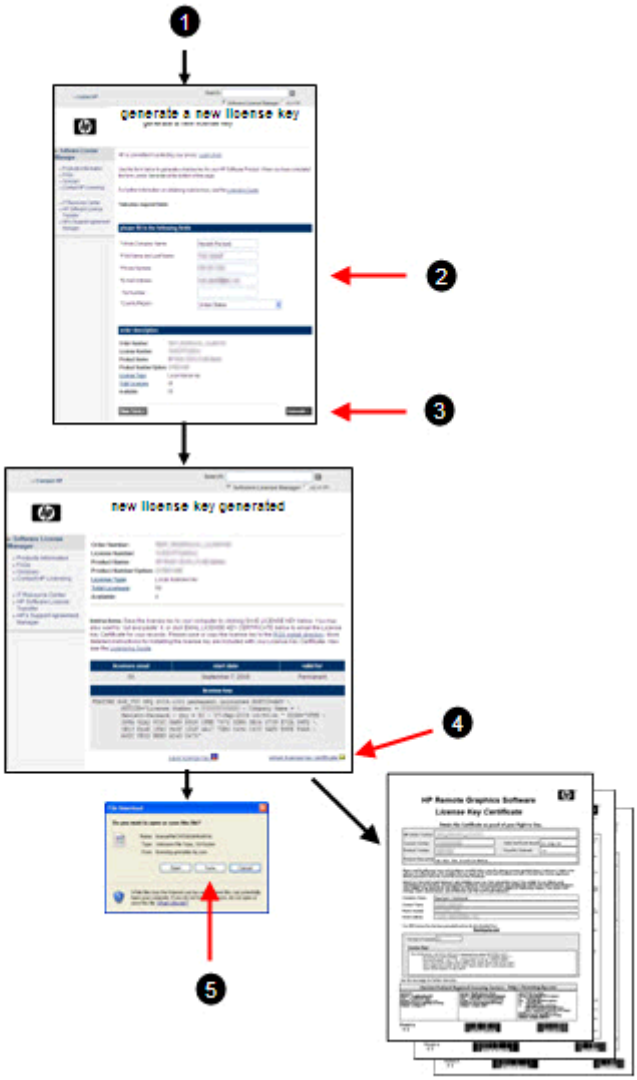
4 HP RGS local license products

All RGS products version 5.3.0 and later are available with a local license. This includes, **HP RGS Trial Edition**, **HP RGS VDI**, and **HP RGS Desktop**.

Obtaining your RGS local License Key

The steps to obtain the RGS local License Key are detailed in Figure 4-1 Obtaining a local License Key for the HP RGS Desktop product on page 13. This process is continued from Obtaining your RGS product and its License Key on page 10.

Figure 4-1 Obtaining a local License Key for the HP RGS Desktop product



To obtain your RGS local license key:

1. Figure 4-1 Obtaining a local License Key for the HP RGS Desktop product on page 13 is continued from Obtaining your RGS product and its License Key on page 10.
2. Complete the required fields.
3. To generate your new License Key, click **Generate**.
4. To email your *RGS License Key Certificate* to you, click this link . HP recommends that you obtain this certificate, and retain it for your records.
5. Save your RGS local License Key to a file. All License Key files have a `.lic` suffix.

Installing the local License Key file

This section describes how to install the local License Key file for **HP RGS VDI** and the local license version of **HP RGS Desktop** and **HP RGS Trial Edition**.

A local License Key file must be stored on each licensed RGS Sender computer.

NOTE: The local License Key file is read and checked whenever the number of RGS connections to the RGS Sender transitions from 0 to 1. For larger numbers of connections, such as when transitioning from 1 to 2 connections (for example, in a collaboration scenario), the local License Key file is not read.

Configuring the Windows RGS Sender to access the local License Key file

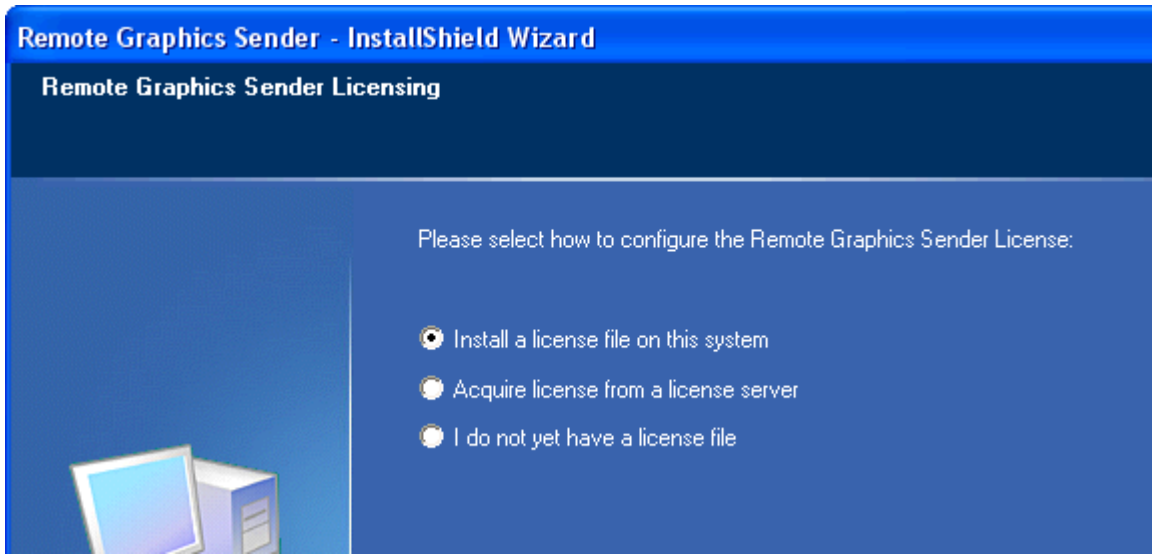
Configuration of the Windows RGS Sender to access the local License Key file can be completed either during RGS Sender installation or after RGS Sender installation.

Configuration during RGS Sender installation

During RGS Sender installation (as described in the *HP RGS User Guide*), you'll be presented with the dialog shown in Figure 4-2 Dialog to specify that the RGS Sender will access a License Key file on this

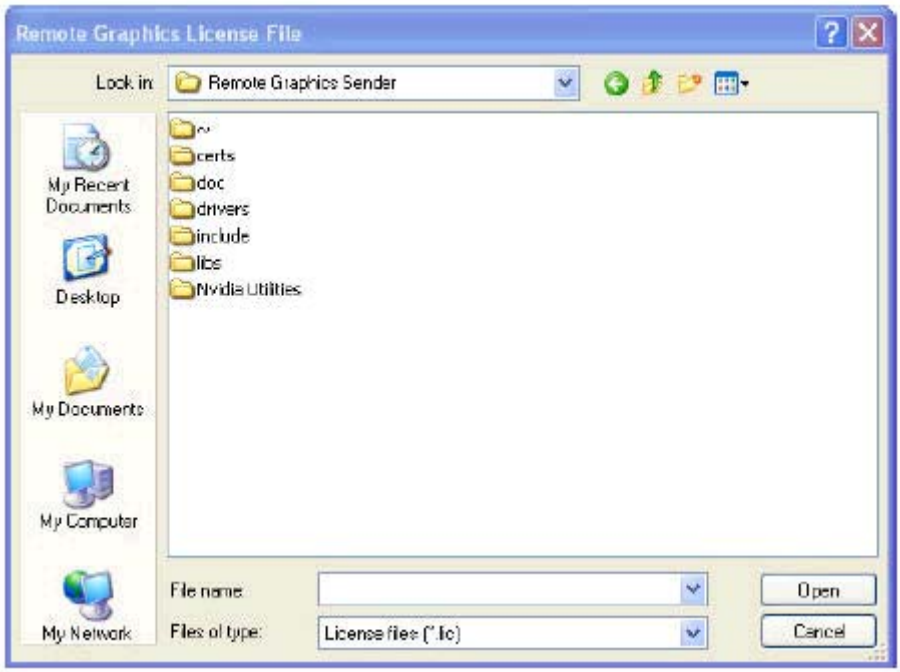
computer on page 15. For local licenses, select **Install a license file on this system**, and click **Next**.

Figure 4-2 Dialog to specify that the RGS Sender will access a License Key file on this computer



After clicking **Next**, the dialog in Figure 4-3 Dialog used to enter location and name of the local License Key file on page 15 will be displayed, prompting you to enter the location and name of the local License Key file. Note that License Key files need to end with the .lic suffix.

Figure 4-3 Dialog used to enter location and name of the local License Key file



The License Key file will be copied from the location you specify to the Remote Graphics Sender install directory:

- For 32-bit Windows systems:

  `C:\Program Files\Hewlett-Packard\Remote Graphics Sender`

- For 64-bit Windows systems:

  `C:\Program Files (x86)\Hewlett-Packard\Remote Graphics Sender`

NOTE: The RGS Sender installer copies the License Key file from the location you specify in the Figure 4-3 Dialog used to enter location and name of the local License Key file on page 15 to the Remote Graphics Sender install directory for your operating system. The licensing mechanism searches the License Key file folder. Therefore, if you update your License Key file, the updated file will not be seen by the licensing mechanism—the licensing mechanism searches only in the License Key file folder for License Key files. See Configuration after Sender installation on page 16

Configuration after Sender installation

If, during RGS installation, you select **I do not yet have a license file** in the Figure 4-2 Dialog to specify that the RGS Sender will access a License Key file on this computer on page 15, you can specify the location of the License Key file post-installation in one of two ways.

1. The first way to specify the location of the License Key file post-installation is to copy the license file into the Remote Graphics Sender install directory

   - For 32-bit Windows systems:

     `C:\Program Files\Hewlett-Packard\Remote Graphics Sender`

   - For 64-bit Windows systems:

     `C:\Program Files (x86)\Hewlett-Packard\Remote Graphics Sender`

2. The second way to specify the location of the License Key file post-installation is by using the `LM_LICENSE_FILE` environment variable. To set this environment variable, bring up the System Properties dialog from the start menu, as follows:

   Start > Control Panel > System

   Select the **Advanced tab** and click **Environment Variables**. Under **System variables**, click **New**—this brings up the New System Variable dialog in Figure 4-4 Setting the LM_LICENSE_FILE system variable on page 17.

   Figure 4-4 Setting the LM_LICENSE_FILE system variable

   Enter the path to the local License Key file. Multiple paths may be entered, separated by semicolons, such as:

   ```
   C:\licenses;C:\backuplicenses
   ```

   The RGS Sender will sequentially examine each folder, from left to right, until it finds a folder containing a valid local License Key file.

NOTE: If a License Key file is specified and found during Sender installation, it will be copied into the folder `C:\Program Files\Hewlett-Packard\Remote Graphics Sender` or `C:\Program Files (x86)\Hewlett-Packard\Remote Graphics Sender`, according to your operating system. License Key files found in folders specified by the `LM_LICENSE_FILE` environment variable are not copied; they are read in-place.

If a License Key file location is specified during Sender installation and is also specified by the `LM_LICENSE_FILE` variable, the RGS Sender will look in both locations for a valid local License Key file at Sender startup. The Sender will first look in the location(s) specified by the `LM_LICENSE_FILE`. If the Sender fails to find a valid license, it will then look in the folder `C:\Program Files\Hewlett-Packard\Remote Graphics Sender` or `C:\Program Files (x86)\Hewlett-Packard\Remote Graphics Sender` for a valid license.

Configuring the Linux RGS Sender to access the local License Key file

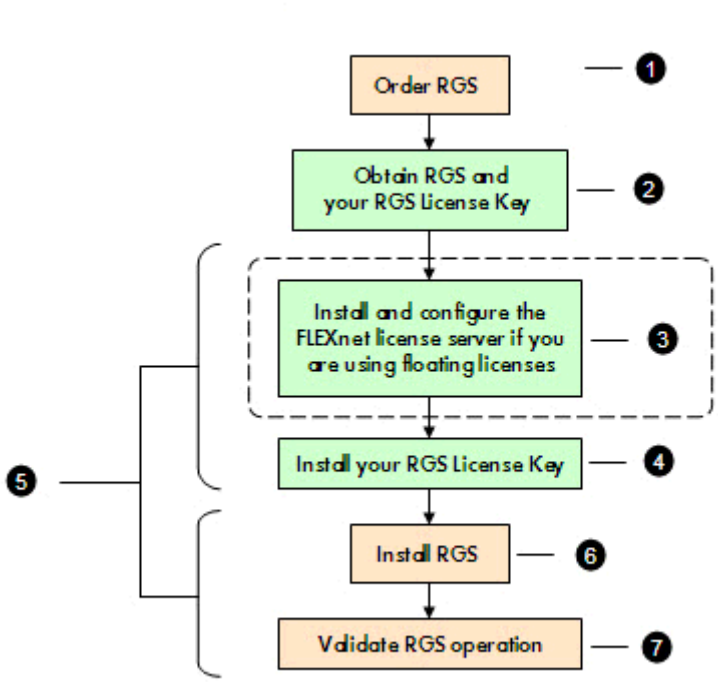
In order for the Linux RGS Sender to find the local License Key file, it must be saved in this directory on the RGS Sender:

```
/etc/opt/hpremote/rgsender
```

5 HP RGS floating license products

The recommended steps to install and license RGS floating products are shown in Figure 5-1 Steps to install and license RGS on page 18. The steps shown in green are described in this guide. Note that variations to this sequence are possible—for example, as indicated below, you can reverse the order of license installation and RGS installation.

Figure 5-1 Steps to install and license RGS



Summary of the steps to install RGS:

1. Order RGS.
2. Obtain RGS and your RGS License Key For more information, see HP RGS Trial Edition on page 7 or Obtaining your RGS product and its License Key on page 10.
3. If you are using floating licenses and don't yet have a FLEXnet license server set up, install and configure the FLEXnet license server.
4. Install your RGS License Key.
5. **NOTE:** These two sets of steps can be reversed in order. You could first install RGS and validate its operation (but with the popup dialog shown in Figure 1-2 Dialog generated when the RGS Sender is unlicensed on page 2), and then install the FLEXnet license server (if needed) and the License Key. Once the License Key is installed, the popup dialog will no longer be displayed.

   The advantage of the order shown is that, during RGS installation, you will know and be able to enter the requested licensing information.

6. Install RGS. Installation of RGS is described in the *HP RGS User Guide*.

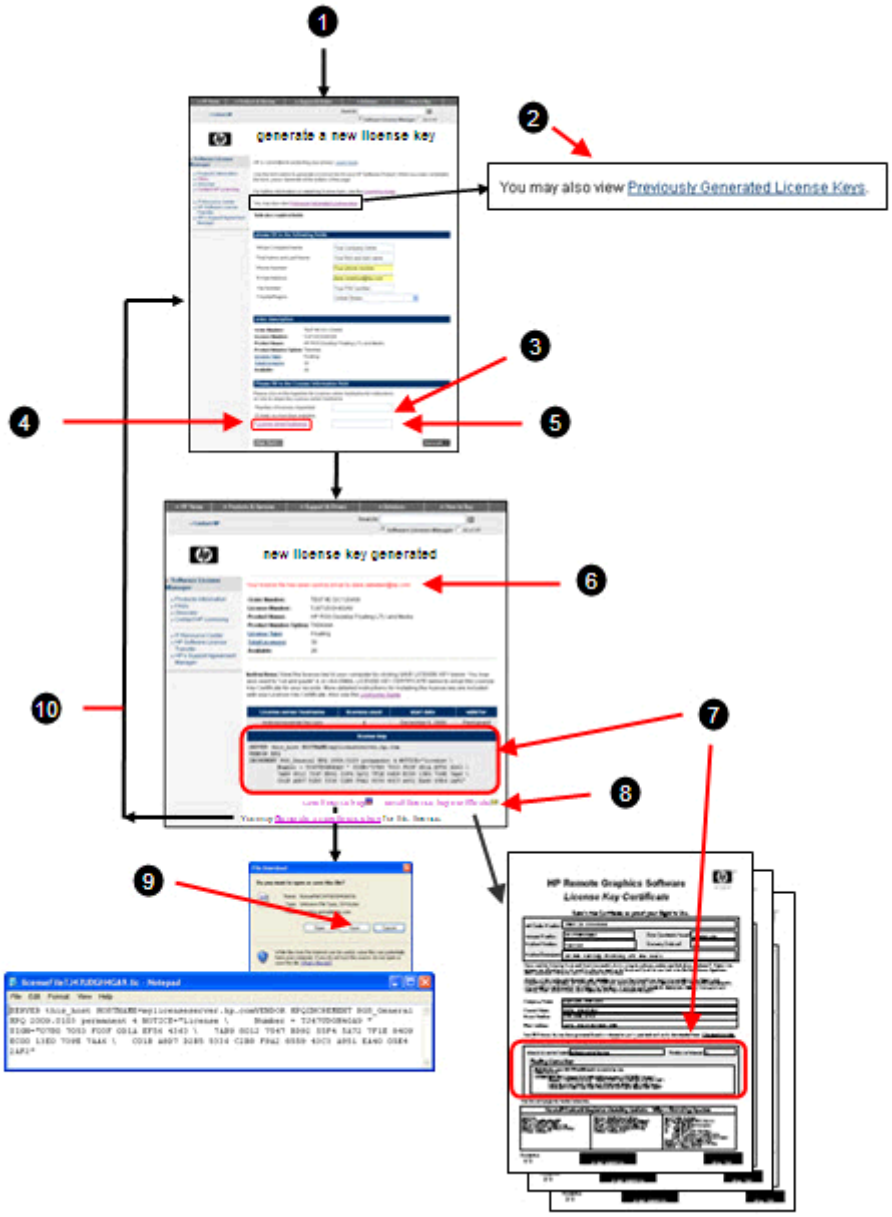
NOTE: The *HP RGS User Guide* is included with RGS, and is also available at http://www.hp.com/go/rgs. The web version of the *RGS User Guide* may be more recent than the version included with RGS.

7. Validate RGS operation. See the *HP RGS User Guide*.

Obtaining your RGS floating License Key

The steps to obtain an RGS floating License Key are shown in Figure 5-2 Obtaining a floating License Key on page 20. This procedure is continued from Obtaining your RGS product and its License Key on page 10.

Figure 5-2 Obtaining a floating License Key



To obtain your floating License Key:

1. Figure 5-2 Obtaining a floating License Key on page 20 is continued from Obtaining your RGS product and its License Key on page 10.
2. After obtaining one or more License Keys associated with this purchase, this link will be displayed on subsequent visits to this web page.

3. Enter the number of floating licenses being requested.
4. For information on specifying the license server hostname, click this link.
5. Specify the license server hostname, and click **Generate**.
6. This notice, which indicates that your License Key Certificate has been emailed to you, is displayed after you complete step **8**, **email license key certificate** below.
7. The RGS floating License Key is shown on this web page, and also on the *RGS License Key Certificate*.
8. Click this link to email your *RGS License Key Certificate*. HP recommends that you obtain this certificate, and retain it for your records.
9. Save your RGS floating License Key to a file. All License Key files have a `.lic` suffix.
10. Repeat this procedure to generate additional License Keys.

This RGS floating License Key will be installed after the FLEXnet server is configured. Continue with Installing and configuring the FLEXnet license server on page 21.

Installing and configuring the FLEXnet license server

The FLEXnet license server ("license server") is required only if you're using the HP RGS Desktop floating license.

Before you install the license server

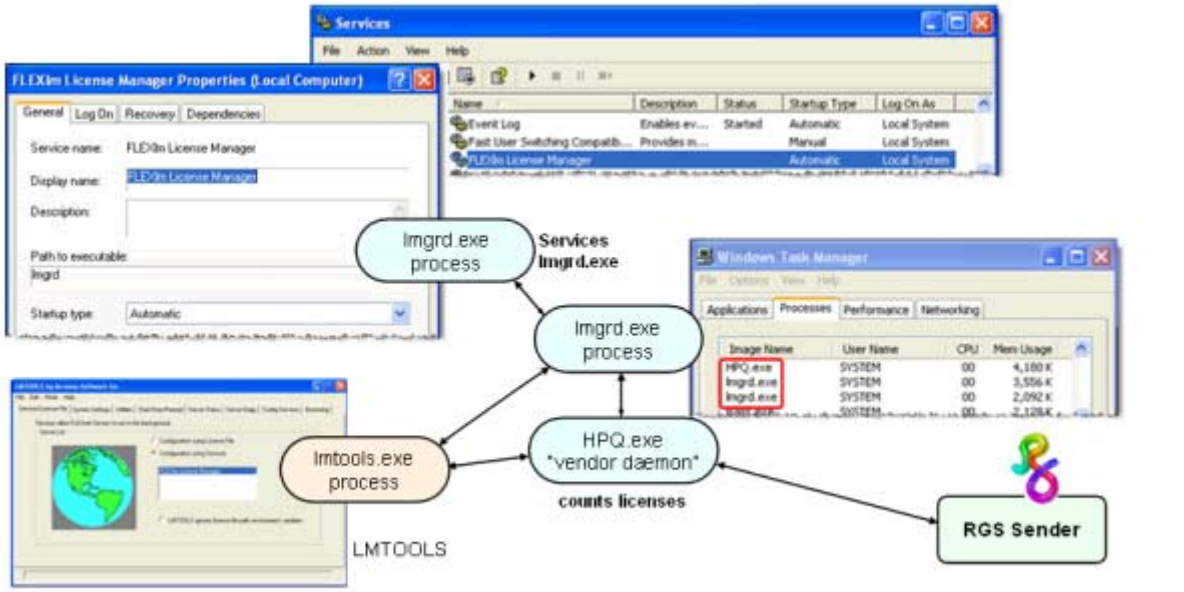
This section provides information to help you plan your installation of the FLEXnet license server.

- The Windows 32-bit version of the FLEXnet license server is provided with the RGS product. The Windows 32-bit license server can be installed on any modern Windows OS—Windows XP Pro, Windows XP Pro x64 Edition, Windows Vista, Windows 7 and Windows Server.
- A Linux version of the FLEXnet license server is available from HP—please contact your HP Sales Representative if you need the Linux license server.

NOTE: The RGS FLEXnet license server can only be run on Windows and Linux operating systems.

- The license server is usually installed on a computer other than one of the computers running the RGS Sender. However, nothing prohibits installing the license server on an RGS Sender computer.
- When the license server is running, the processes shown in blue in Figure 5-3 Windows processes associated with the FLEXnet license server on page 22 will be running. Note that two versions of `lmgrd.exe` will be running, one as a service. The Service `lmgrd.exe` process spawns the second `lmgrde.exe` process. Two `lmgrd.exe` processes are required because the Windows Vista and Windows 7 security architecture enforces restrictions on processes running within a Service.

Figure 5-3 Windows processes associated with the FLEXnet license server



FlexNET license server installation folder: C:\Program Files\Hewlett-Packard\Remote Graphics FlexLM

NOTE: The Linux FLEXnet license server will have two associated processes, Lmgrd and HPQ.

- The HPQ.exe "vendor daemon" interfaces to the RGS Sender, and provides HP-specific functionality for the license server, such as counting RGS floating licenses.

NOTE: Other products, such as HP OpenView, also have a vendor daemon named HPQ.exe. The different HPQ.exe executables may not be interchangeable. Furthermore, only one HPQ.exe can be executing at a time on the license server computer. Therefore, a single computer cannot run two FLEXnet license servers simultaneously.

- The RGS license does not support FLEXnet's three-server redundancy capability, also known as *triad license* servers.
- During license server installation, the FLEXnet administration utility, LMTOOLS, is installed. LMTOOLS provides a graphical user interface that allows you to administer the license server. Using LMTOOLS is described in the next section.

Installing the Windows license server

To install the license server, perform the following steps:

1. Locate the FLEXnet installation executable, Setup.exe, in the following location in the RGS media file tree:

   ```
   win32 flexlm Setup.exe
   ```

2. Move the `Setup.exe` file to your license server computer.
3. Double-click **Setup.exe** to begin installation of the license server. If desired, change the installation folder to a different folder than the default folder `C:\Program Files\Hewlett-Packard\Remote Graphics FlexLM`. If the installation is successful, a dialog indicating **InstallShield Wizard Complete** will be displayed.

4. Next, the license server needs to be installed as a Windows Service. To do this, run the `installs.exe` command (located in `C:\Program Files\Hewlett-Packard\Remote Graphics FlexLM`) from a Command Prompt window, with the options shown below.

NOTE: These options, although shown on separate lines for clarity, are options to the `installs` command and need to be entered as a single command, even if the command spans multiple lines in the Command Prompt window.

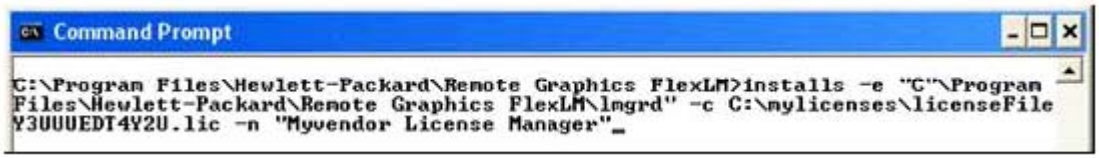
Full path names are required and, if a path name contains spaces, the path name must be enclosed in double quotes.

```
installs –e "C:\Program Files\Hewlett-Packard\Remote Graphics FlexLM
\lmgrd" –c C:\mylicenses\sample.lic –n "Myvendor License Manager"
```

- `-e` needs to include the full path name to the `lmgrd.exe` file, even if you're currently in the directory where `lmgrd.exe` is located. If the path name has spaces, it must be enclosed in double quotes.
- `-c` needs to include the full path name to the license file. If the path name has spaces, it must be enclosed in double quotes.
- `-n` specifies the name you want to use to identify the `lmgrd.exe` executable in the Services applet. If the name has spaces, it must be enclosed in double quotes. If -n is not specified, "FLEXlm License Manager" is used as the service name.

Figure 5-4 Example `installs` command on page 23 shows an example `installs` command. Note that the command wraps around to multiple lines because the combined width of the command prompt and the installs command is greater than the width of the Command Prompt window.

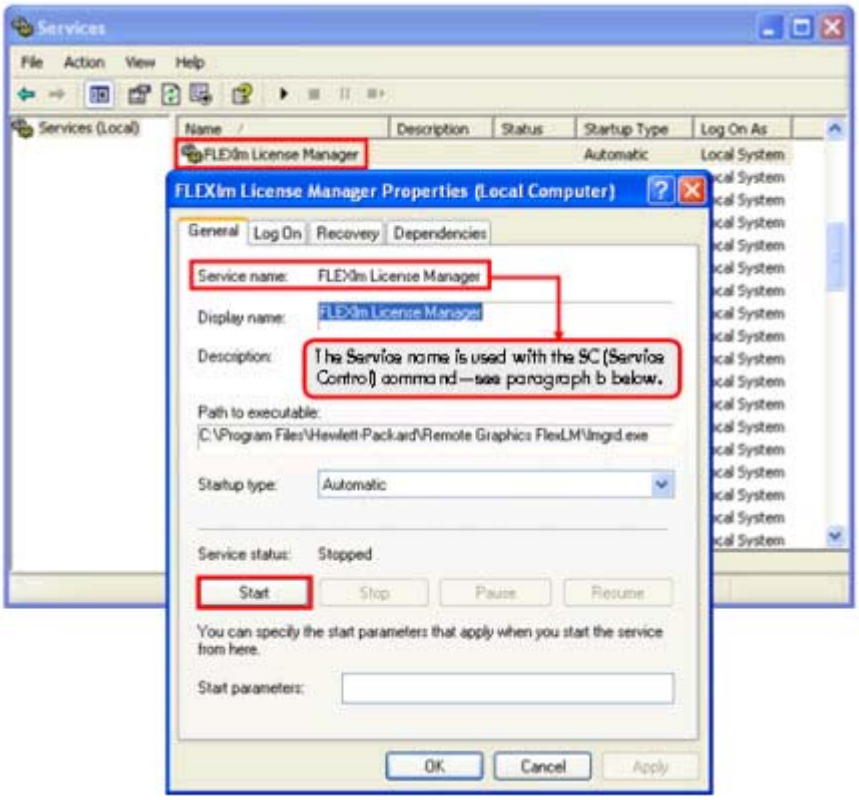
Figure 5-4 Example `installs` command



5. The license server can be started and stopped in two ways:

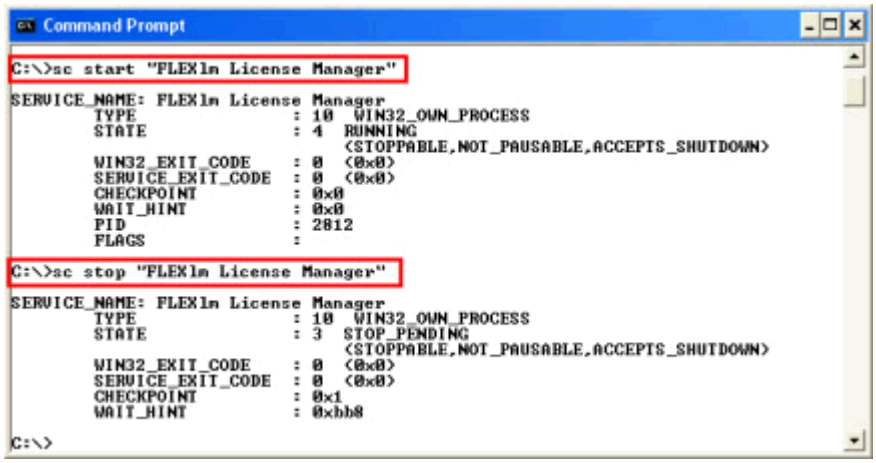
   a. Using Windows Services—Open the Windows **Control Panel**, select Administrative Tools, then select Services, which brings up the Services dialog shown in Figure 5-5 The services properties dialog can be used to start and stop the license server on page 24. Next, open the properties dialog for the license server service, using the name you supplied with the `installs` command `-n` option (if you didn't use the `-n` option, the service will have the default name shown in Figure 5-5 The services properties dialog can be used to start and stop the license server on page 24), and click **Start.** Because the license server is installed with a Startup type of "Automatic", the license server will also start when the computer is restarted. To stop the license server, click **Stop**.

Figure 5-5 The services properties dialog can be used to start and stop the license server



b. Using the SC (Service Control) command—The SC command can be used in a Command Prompt window to start and stop the license server, as shown in Figure 5-6 Using the Service Control command to start and stop the license server on page 25. The Service name listed in the properties dialog in Figure 5-5 The services properties dialog can be used to start and stop the license server on page 24 is used with the SC command—in this example, the Service name is the default name, "FLEXlm License Manager". If you use the `installs –n` command option to specify a name for the license server service, the specified name will be listed in the Service name dialog and should be used with the SC command. If the Service name contains spaces, it must be enclosed in double quotes.

Figure 5-6 Using the Service Control command to start and stop the license server



NOTE: As described previously, the service `lmgrd.exe` process spawns a second `lmgrd.exe` process. The floating License Key file is read only when these processes start. Any change to the floating License Key file after the license server starts will not be seen. In order for changes to the floating License Key file to be seen by the license server, LMTOOLS should be used to re-read the License Key file, as described below.

6. To remove the lmgrd service, use the following syntax:

   ```
   installs -r -n "Myvendor License Manager"
   ```

   - `-n` the services name must match what was used during installation.

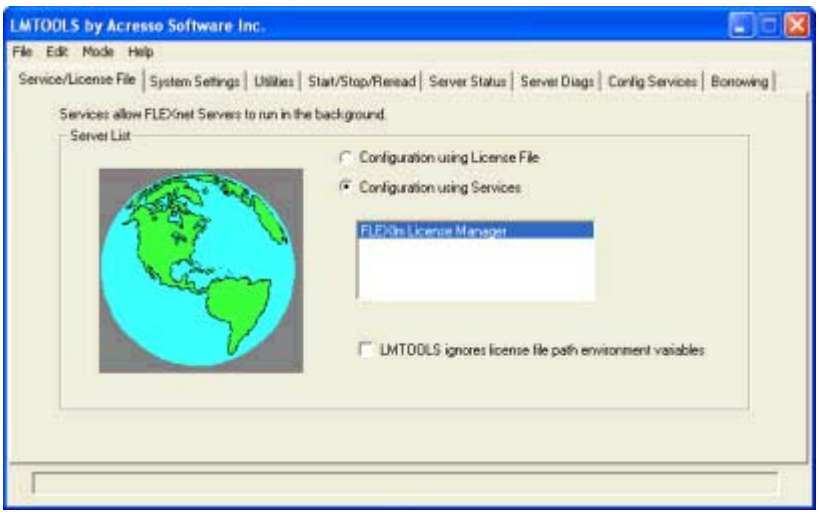
NOTE: In using the `installs` command, you may see messages in the Command Prompt window such as "**To remove FLEXnet License Manager, type 'installs -r'** " or "**FLEXnet License Manager is already installed**." These messages relate to the status of the license manager service—they do not relate to the physical installation or removal of the FLEXnet License Manager files.

7. LMTOOLS can be executed from the start menu as follows:

   Start > All Programs > HP Remote Graphics > lmtools

This brings up the LMTOOLS interface shown in Figure 5-7 LMTOOLS interface on page 26.

Figure 5-7 LMTOOLS interface



LMTOOLS can be used for tasks such as:

- Configuring the license server
- Adding licenses
- Re-reading the license file if it's been changed—This is done by clicking the **Start/Stop/Reread** tab, followed by clicking **ReRead License File**.
- Viewing system information, such as hostids, and viewing the license server status
- Troubleshooting issues with the license server

NOTE: Although LMTOOLS provides the **Start Server** and **Stop Server** buttons (under the **Start/Stop/Reread** tab), HP recommends that the license server be started and stopped using the methods described previously in The license server can be started and stopped in two ways: on page 24.

Configuring the license server

Describing how to configure and administer the FLEXnet license server is beyond the scope of this guide—it is assumed you are experienced with the FLEXnet license server. For detailed information on this license server and the lmtools utility, visit the website http://www.flexerasoftware.com/#acresso. The *License Administration Guide—FLEXnet Publisher Licensing Toolkit 11.6* is available for download.

Accessing the RGS floating license

This section describes how to access the RGS floating license. It is assumed you've installed and configured your FLEXnet Publisher license server ("license server") as described in Installing and configuring the FLEXnet license server on page 21. After you've obtained your floating License Key file, store it on the license server in accordance with the FLEXnet license server configuration requirements.

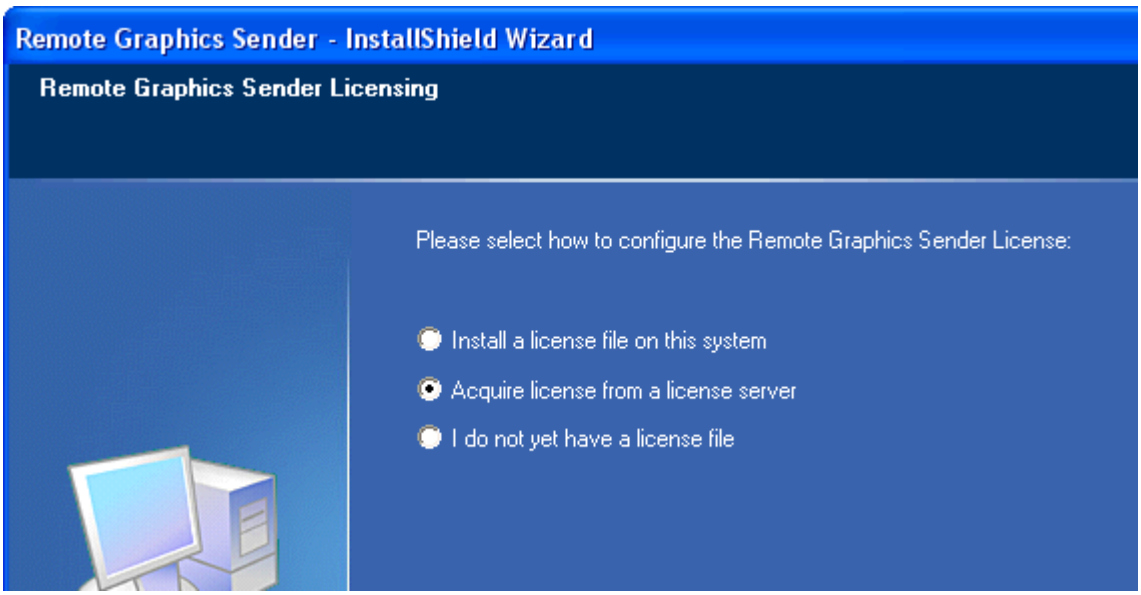
NOTE: When you acquire an RGS floating License Key, you'll provide your license server hostname. The signature included in the License Key file reflects the hostname that you provide; changing the hostname within the License Key file to a different license server will invalidate the License Key. If you need to change your license server hostname, please contact the appropriate HP Regional License Center, as listed in If you have questions or need assistance on page 6.

Configuring the Windows RGS Sender to access a floating license

NOTE: Configuration of the Windows RGS Sender to access a floating license can either be done during Sender installation or after Sender installation. This section describes both methods. Configuration during Sender installation is described first, followed by a description of post-installation configuration. Post-installation licensing configuration of the Sender, if performed, supersedes any during-installation configuration of the Sender.

During RGS Sender installation (as described in the *HP Remote Graphics Software User Guide*), you'll be presented with the dialog shown in Figure 5-8 Dialog to specify that a floating license will be acquired from a license server on page 27. Select **Acquire license from a license server**, and click **Next**.

Figure 5-8 Dialog to specify that a floating license will be acquired from a license server



Next, you'll be prompted for the port number and hostname of the license server—this will allow the RGS Sender computer to communicate with the license server. If you provide just the hostname, the default port of **27000** is used.

Figure 5-9 Dialog to enter the license server hostname and, optionally, the port number

If, during RGS installation, you select **I do not yet have a license file** in the Figure 5-8 Dialog to specify that a floating license will be acquired from a license server on page 27, you can specify the location of the RGS license server post-installation using the `LM_LICENSE_FILE` environment variable. To set this environment variable, bring up the System Properties dialog from the start menu, as follows:

Start > Control Panel > System

Select the **Advanced tab** and click **Environment Variables**. Under **System variables**, click **New**—this brings up the New System Variable dialog shown in Figure 5-10 Setting the LM_LICENSE_FILE system variable on page 28.

Figure 5-10 Setting the LM_LICENSE_FILE system variable

The `LM_LICENSE_FILE` value has this format: `portnumber@hostname`

If a portnumber isn't specified, the default port 27000 is used. Examples:

```
@MyLicenseServer.hp.com (uses default port 27000) @15.2.21.129 (uses
default port 27000) 27002@MyLicenseServer.hp.com
```

Multiple `portnumber@hostname` values may be entered in the above dialog, separated by semicolons, such as:

```
27000@15.232.16.2;@MyLicenseServer.hp.com;27002@BackupServer.hp.com
```

The RGS Sender will sequentially attempt to contact each listed license server, from left to right, until it finds a license server containing a valid RGS license.

Configuring the Linux RGS Sender to access a floating license

The Linux RGS Sender can be configured to access a floating license by setting the `LM_LICENSE_FILE` environment variable to point at the RGS license server. The format of the `LM_LICENSE_FILE` environment variable is:

```
portnumber@hostname
```

If a portnumber isn't specified, the default port 27000 is used. Examples:

```
@MyLicenseServer.hp.com (uses default port 27000) @15.2.21.129 (uses
default port 27000) 27002@MyLicenseServer.hp.com
```

Multiple portnumber@hostname values may be included in the LM_LICENSE_FILE environment variable, separated by colons, such as:

```
27000@15.232.16.2:@MyLicenseServer.hp.com:27002@BackupServer.hp.com
```

The complete command on Linux would appear as follows:

```
export LM_LICENSE_FILE=27000@15.232.16.2:@MyLicenseServer.hp.com:
27002@BackupServer.hp.com
```

The RGS Sender will sequentially examine each listed license server, from left to right, until it finds a license server containing a valid RGS license.

A Supplemental licensing information

This appendix provides supplemental information on the RGS licensing, and is provided to help troubleshoot any licensing problems.

Viewing the RGS Version Date

As described in Release Version Date on page 4, the Version Date embedded in the RGS Sender is used by the RGS licensing mechanism. To view the RGS Sender Version Date, perform the following steps:

1. The Version Date is logged in the RGS Sender log file (default log file is `rg.log`). To set up Sender logging, see Section "Sender logging" in the *HP Remote Graphics Software User Guide*, available at http://www.hp.com/support/rgs_manuals. The logging level should be set to INFO-level logging.
2. The Version Date is generated in the log file line containing the phrase "License Version Date". For RGS 5.3.0, the Version Date log file line is:

   INFO - # License Version Date: 2009.0904

RGS Sender log

To help debug licensing problems, the RGS Sender logs licensing failures to the Sender log file, `rg.log`. For information on this log file, please see the section "Sender logging" in the *RGS User Guide*. If RGS Sender licensing (either local or floating) fails, an entry containing the string "FlexLM" will be added to the Sender log file. The remainder of the entry will indicate the search path used by the RGS Sender in trying to access the RGS license. For local licenses, the search path entry will be the License Key file location searched by the RGS Sender (as described in Installing the local License Key file on page 14). For floating licenses, the search path entry will be the portnumber/hostname used by the RGS Sender in an attempt to contact the license server (as described in Accessing the RGS floating license on page 26).

Note, however, in both cases, the `rg.log` entry does not identify the specific cause of a licensing failure. For local licenses, failure to find the RGS License Key file is not differentiated from an RGS License Key file that is found but contains an invalid license. Likewise, for floating licenses, failure to contact the license server is not differentiated from a license server that is contacted but has an invalid RGS license.

B Cleaning Registry References To The FlexLM License Server For RGS

This appendix provides supplemental information on removing FlexLM references from the Microsoft Windows registry.

FlexLM License Server Keys

CAUTION: Backup the registry prior to making any changes. Refer to the Microsoft documentation for more information.

When a FlexLM license server is used with RGS, the FlexLM libraries will add the license server information to the following registry keys:

NOTE: Not all keys listed below may be present in your registry.

```
HKLM\SOFTWARE\FLEXlm License Manager\HPQ_LICENSE_FILE

HKLM\SYSTEM\ControlSet001\Control\Session Manager\Environment
\LM_LICENSE_FILE

HKLM\SYSTEM\ControlSet001\Control\Session Manager\Environment
\HPQ_LICENSE_FILE

HKLM\SYSTEM\ControlSet002\Control\Session Manager\Environment
\LM_LICENSE_FILE

HKLM\SYSTEM\ControlSet002\Control\Session Manager\Environment
\HPQ_LICENSE_FILE

HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Environment
\LM_LICENSE_FILE

HKLM\SYSTEM\CurrentControlSet\Control\Session Manager\Environment
\HPQ_LICENSE_FILE

HKEY_USERS\.DEFAULT\Software\FLEXlm License Manager\LM_LICENSE_FILE
```

In some cases, there may be other registry entries that are used by FlexLM. To find them, you will need to search the registry for keys named either "LM_LICENSE_FILE" or "HPQ_LICENSE_FILE". The value of these keys will be the license server paths, as specified for the environment variables. See the section Configuring the Windows RGS Sender to access a floating license on page 27 for details on these values and how they are set.

⚠ **CAUTION:** Any registry keys named "LM_LICENSE_FILE" may be used by any application that accesses a FlexLM license server on the system. If other applications besides RGS are using a FlexLM license server, they may be adversely impacted by any changes made to the LM_LICENSE_FILE registry entries. Any registry keys named "HPQ_LICENSE_FILE" may be used by any HP application that accesses a FlexLM license server. If other HP applications besides RGS are using a FlexLM license server, they may be adversely impacted by any changes made to the HPQ_LICENSE_FILE registry entries.