HARLEQUIN LICENSE SERVER

For the Harlequin® Host Renderer SDK and Harlequin® MultiRIP™

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GLOBAL GRAPHICS®
software

Contents

Chapter 1–Introducing the Harlequin License Server

1.1 Overview

Harlequin License Server provides a secure licensing service for the following Global Graphics applications:

- Harlequin® MultiRIP™

- Harlequin® Host Renderer

The HLS service allocates application licenses from permit files installed in the HLS host machine. Provided the application machine and the HLS host machine are located on the same local network, licenses can be transferred across the network and applications authorized to run. An exception to this is the Harlequin MultiRIP, which must have a dongle attached and a HLS service running locally to be supported by Global Graphics.

1.2 Permit files and licenses

Global Graphics' products are certified to run by licenses. Licenses are provided via permit files or by dongles. Without a license the product is not permitted to start, resulting in the following typical error messages:

```
License Server failure (OxC8001005): permit for this software not available

License Server failure (OxC8001006): no free licenses available.
```

Permit files may contain multiple licenses. Each license allows one instance of the RIP to start. For example, if a permit contains two RIP licenses, two extra instances of the RIP are allowed to run concurrently. This is in addition to the permit file generated by the dongle which contains a single RIP license. In this example, three RIP instances are allowed; one license from the dongle and two licenses from the permit file.

1.2.1 How authorization works

Product authorization is obtained from the dongle attached to the computer.

Every permit file issued by Global Graphics is "keyed" to a specific HLS host server or servers. These servers are identified in the permit files, using the IP address, dongle number and/or machine ID of the HLS host. A permit file may not, therefore, be used on any machine whose dongle, ID or IP address is not known.

Permits generally have a very long expiry date.

Note: If you change the dongle on a machine, it changes the HLS unique ID. Thus, if you have any permit files keyed to the unique ID of the previous dongle, those permit files will not be valid with the new dongle. So, if you have for example a RIP permit file keyed to dongle1, that would not be valid for use with dongle2. Swapping to dongle2 would prevent your RIP from working.

1.2.2 Re-using licenses

Licenses are released and are available for re-issue when a product is closed or after an abnormal program termination occurs. If the product and HLS are running on the same machine, the license is immediately available for re-issue when a product is closed. However, in cases where HLS and the product are installed on different machines, the license may not be available for up to two minutes after a product is closed.

Permit files are installed in the HLS host machine using the Harlequin License Manager utility that is supplied with HLS—see Chapter 3, "HLS License Manager". For security reasons, without a permit and the availability of a suitable license your application will not be allowed to run.

Note: Some applications, most notably the Harlequin RIP, can provide their own permits via a dongle attached to the host computer. For these types of applications a separate permit file is not required. However, some dongles are empty and do not contain a permit. In this case the dongle provides a unique ID to the HLS which must then provide the permits.

Note: With HLS 4.1 (or later) existing demo dongles are treated as being empty dongles and all users of v9.0 demo RIPs will need permits.

Licenses are allocated by HLS to applications as they are started, and permit files may contain multiple licenses, allowing several instances of the application to be started simultaneously. Licenses come in two varieties: *node-locked* (also called *fixed*) and *floating*. Node-locked licenses may only be used by the machine whose machine ID or IP address is known to the permit file. Floating licenses, on the other hand, may be used by any machine: they are not locked to any one machine. Once a license has been allocated, it cannot be used again until the application has finished using it, by being closed down for instance. At this point, the license can be re-used[1] and issued to another machine by HLS. Once all the licenses for a particular application have been acquired, no other instances of that application will be permitted to start.

Note: Avoid making any changes to the HLS service or your permit files once an application is running, since this may cause a security error to occur.

1.3 Remote desktop

The HLS and the HLM can detect the dongle when running under Windows Remote Desktop or Terminal Services. In addition, the HLM correctly reports information about the dongle.

1.4 Obtaining permits and licenses

Permits and licenses can be obtained from Global Graphics by e-mailing the following details to the address below:

- Global Graphics customer number (contact Global Graphics if you do have not a customer number).

- Product to license, for example: Harlequin MultiRIP, Host Renderer.

- Machine ID and IP address of the HLS host. Use the License Manager to obtain these details— see Chapter 3, "HLS License Manager".

- Machine ID and IP address of the Harlequin MultiRIP, Host Renderer.

- Type of licenses required, either fixed or floating.

- Number required.

    UK customers – sales-admin-uk@globalgraphics.com

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[1] Re-issue of a license after abnormal program termination may take up to 2 minutes.

US customers – sales-admin-us@globalgraphics.com

Your new permit file will be dispatched to you by return e-mail, ready for installing in your HLS host machine, as described in "Adding permit files and licenses" on page 16.

Chapter 2–Installing HLS

Follow these instructions for installing HLS correctly on your chosen HLS host machines.

2.1 HLS supported platforms

Harlequin MultiRIP v10.1r0	Windows
32-bit	Windows 7 SP1 (excludes Starter edition)
	Windows 8.1 (excludes Windows RT)
64-bit	Windows 7 SP1 (excludes Starter edition)
	Windows 8.1 (excludes Windows RT)
	Windows Server 2008 R2 (requires SP1, Standard edition only, excludes Server Core configuration)
	Windows Sever 2012 R2 (Standard edition only, excludes Server Core configuration)

Table.2. 1 Supported operating systems HMR

Harlequin Host Renderer v4.1r0	Windows	Linux
32-bit	Windows 7 SP1 (excludes Starter edition)	
	Windows 8.1 (excludes Windows RT)	
64-bit	Windows 7 SP1 (excludes Starter edition)	Red Hat Enterprise Server v6.2
	Windows 8.1 (excludes Windows RT)	
	Windows Server 2008 R2 (requires SP1, Standard edition only, excludes Server Core configuration)	
	Windows Sever 2012 R2 (Standard edition only, excludes Server Core configuration)	

Table.2. 2 Supported operating systems HHR

2.2 Installing HLS

The Harlequin License Server can be installed at the same time as the installation of Harlequin Multi-RIP and Harlequin Host Renderer.

It is important that the dongle is plugged in before any attempt is made to start HLS. The HLS service automatically starts up when the computer boots up, and when the Harlequin RIP is started. You can, if you wish, manually start and stop the service. If the HLS service is stopped, the RIP will not work.

Linux can be configured to start the HLS automatically when the machine is restarted.

If you have a supported dongle type, the License Server will read the dongle ID, ascertain that it is valid, and give the RIP permission to run, by creating a valid "permit" which the RIP checks when it

starts up. That is, the dongle provides a permit containing a single license for one RIP. All other RIP instances require a permit file containing the required number of licenses.

Note: Some Harlequin RIP dongles are empty and do not contain a permit. In this case the dongle provides a unique ID to the HLS which must then provide the permits. With HLS 4.1 (or later) existing demo dongles are treated as being empty dongles and all users of v9.0 demo RIPs need permits.

If you have an unsupported dongle, you must replace it with a supported dongle type. Upgrade dongles, in which the upgrade dongle is plugged into the port, and the unsupported dongle is plugged into the upgrade dongle are no longer supported.

Note: On Linux openmotif_2.3.1 package must be installed before you can run the Harlequin License Manager or the Sentinel LDK tool. To install openmotif on Red Hat Enterprise Linux use the "sudo yum install openmotif" command. If the system asks for libXmu components then you would need to install using "sudo yum install libXpm".

2.2.1 Installing an older version of the RIP

If you attempt to install an older version of the Harlequin RIP or Harlequin Host Renderer after installing and using the latest version, the later version will no longer work. This is because installing the older version of the RIP also replaces the License Server with an older version.

2.2.2 Installation procedure

You should refer to the installation guide for the Harlequin MultiRIP or the Developer's Guide for the Harlequin Host Renderer SDK.

When installing you should:

• Install the RIP as an Administrator.

• Run the RIP as a User.

Note: On Linux if you have chosen an option to install the HLS but you do not have sufficient privileges you can choose to unload the HLS files but not install them.

2.3 Starting and stopping the HLS service

On Windows the HLS service has been set up to run each time you log onto the computer. Also, most Global Graphics applications will automatically start HLS when they start, if the service is not already running. This is not true on Linux, and you must add instructions to your startup script file if you want HLS to start each time you log onto your system.

2.3.1 Windows

The HLS service (HarlequinLicenseServer) starts automatically when Windows loads and when the RIP is started. To start and stop the service manually, do the following:

1. Either, right-click **Computer** and choose **Manage** from the pop-up menu.

2. Click **Services and Applications > Services** to reveal the list of services running on your computer.
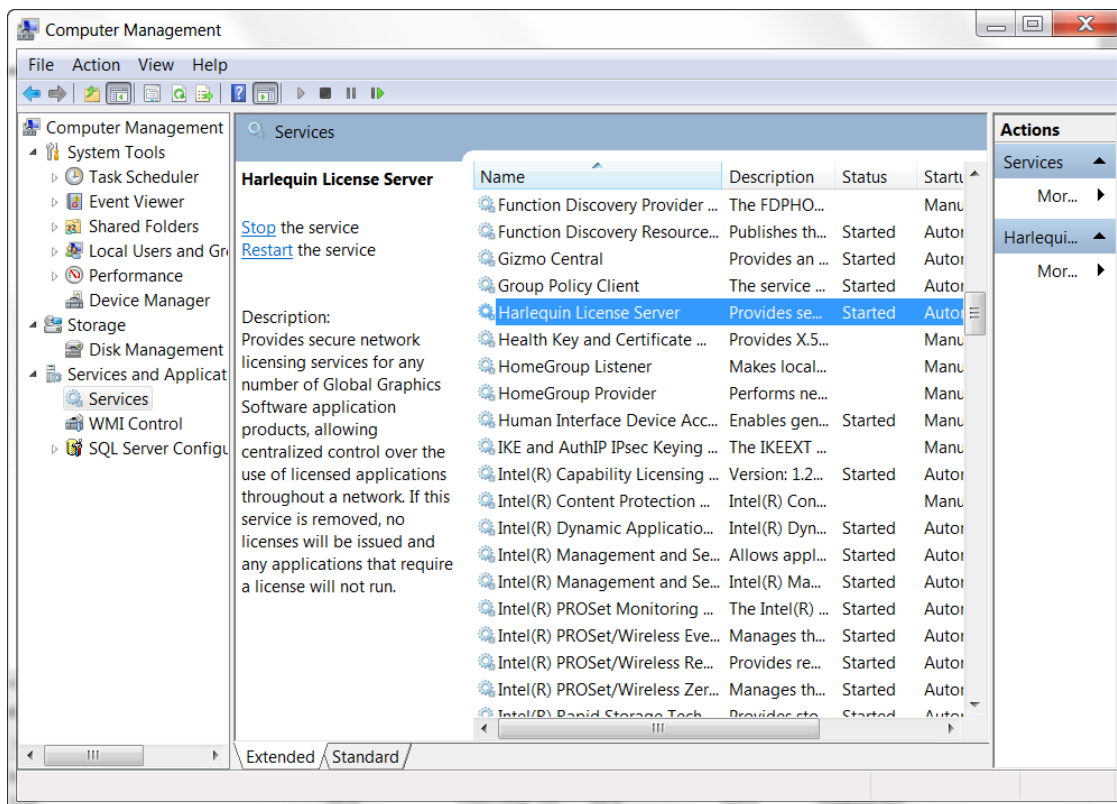

Figure 2.1 The HLS service

3. From the list, right-click **Harlequin License Server** and select **Start** or **Stop** from the shortcut menu that opens. The Service Control window appears briefly as the service is started or stopped.

4. Close all open windows to finish the procedure.

Alternatively, the HLS can be started and stopped from the command line:

1. To start the HLS open a command prompt window and enter:

```
net start "HarlequinLicenceServer"
```

The following message will appear:

```
The Harlequin License Server service is starting..
The Harlequin License Server service was started successfully.
```

To stop the HLS open a command prompt window and enter:

```
net stop "HarlequinLicenceServer"
```

The following message will appear:

```
The Harlequin License Server service is stopping..
The Harlequin License Server service was stopped successfully.
```

If you move `hqn_lsd.exe` from its original installation folder, the Harlequin License Server service will be prevented from starting and stopping. To resolve this problem you must remove the service with the command:

```
/<path to HLS>/hqn_lsd -remove
```

and then install it with the command:

```
/<path to HLS>/hqn_lsd -install
```

After doing this, you may start and stop the HLS service as described above.

Note: The `-install` option may be useful if you think you have installed the HLS, but it does not appear as a Service within the Administrative Tools. Using the `-install` command will make the service appear.

2.3.2 Linux

Unlike Windows and Mac, the HLS service on Linux does not automatically start each time you log on, unless you add the necessary commands to your startup script. To start the HLS service (daemon) in Linux, do the following:

To start and stop the HLS you must have super user privileges.

1. Open a terminal window.

2. Start the HLS service by entering the command:

```
/<path to HLS>/hqn_lsd &
```

You may wish to add the above line to your startup file (for example, `/etc/rc.local`) so HLS starts automatically each time you log on.

3. To start and stop the HLS on Linux use:

```
'/usr/local/bin/HQN/Global Graphics Software/Harlequin License Server/bin/hls-rcd'
start
```

```
'/usr/local/bin/HQN/Global Graphics Software/Harlequin License Server/bin/hls-rcd'
stop
```

To view more information on the current HLS (if any is available) use:

```
'/usr/local/bin/HQN/Global Graphics Software/Harlequin License Server/bin/hlsadm -i'
```

If you want to set up the HLS so that it is started and stopped with the system it needs to be run as a daemon. The following script is provided for this purpose:

```
'/usr/local/bin/HQN/Global Graphics Software/Harlequin License Server/bin/hls-rcd'
```

2.3.2.1 Stopping HLS on Linux

To stop the HLS service on Linux, enter the following command in a terminal window:

`kill <PID>`   Where *<PID>* is the HLS process number.

The following commands may also be useful:

`ps -ef`   Shows all PIDs (only when logged in as `sudo` or `root`).

```
ps -al
```
Shows the PIDs started by the current user (only when logged in as `sudo` or `root`).

2.3.3 Moving HLS on Linux

Generally, when a RIP has been installed it is possible to move the RIP and for it to continue to function correctly. However, moving the License Server on Linux may cause problems, depending on how HLS has been configured to auto-start.

2.4 Using HLS with networked applications

HLS can be used to supply licenses to networked applications. A single machine on the LAN is used to run the License Server which can then serve licenses to other remote machines running applications such as the Harlequin Server RIP or Harlequin Host Renderer.

For this system to work the HLS must be installed and running on only one machine on the LAN. It must not be running (and preferably not be installed) on any remote machines. A permit must be installed on the HLS machine to allow the remote applications to run.

You must ensure that the RIP and HLS can communicate across the network and that, depending on their configuration, this may involve changes to firewall and/or other network access privileges.

The License Manager application can be installed and run on any machine on the LAN including the machine running HLS and the remote machines.

To setup a single host server domain:

1. Install HLS on a machine on the LAN. See for more information. Install HLS on a single machine only.

2. On a remote machine requiring a license, for example a machine running a RIP, open the environment variables. On Windows XP, for example, use: **My Computer > Properties > Advanced > Environment Variables**.

3. Under System variables click **New**.

4. In the New System Variable dialog enter `HQNSERVERS` in the Variable name field.

5. In the Variable value field enter a fully qualified domain name for the machine running the HLS. For example, given a device with a local hostname of `myhost` and a parent domain name `acme.com`, the fully qualified domain name is written like this: `myhost.acme.com`.

6. Repeat steps 2 to 5 for every remote machine running an application that requires a license. The machine running HLS does not need the environment variable to be set.

Note: Making changes to environment variables via the Windows GUI has no effect on any command windows that are already open. Therefore, after making changes you should open a new cmd window., especially when using the Harlequin Host Renderer command line RIP.

Note: On Linux set the environment variable using a bash shell. To make any changes permanent, so that they work every time you login, you should edit the **.profile** file in your HOME directory.

Note: If for any reason the host machine running the License Server fails the you must re-install HLS on another machine, move the dongle and reconfigure the environment variables on the machines running the applications requiring a license.

2.5 Setting up hostname aliases

So that HLS can serve licenses to the application machines on the LAN it needs a method of converting those machine's IP addresses to names. The easiest way to do this is to add hostname aliases to your network hosts file.

If you do not have a central hosts file, you will need to add the HLS hostname alias to all the machines in your server-domain (the HLS host server and application machines).

Note: The RIP machines do not need the entries for the other RIP machines, but giving them will not cause any negative effect.

The following sections describe the methods of Adding hostname aliases for each operating system supported by HLS.

2.5.1 Adding hostname aliases on Windows

To set up HLS hostname aliases on Windows:

1. On the central server, using a text editor program, open the file:
    `\WINNT\system32\drivers\etc\hosts`

2. Add the following lines to the hosts file (substituting the example IP addresses and machine names for your actual hosts details):

```
105.13.27.01    hls.mycompany.com    # hls host
105.13.27.02    rip1.mycompany.com   # rip1
105.13.27.03    rip2.mycompany.com   # rip2
105.13.27.04    rip3.mycompany.com   # rip3
and so on...
```

3. Save the hosts file.

Note: Making changes to environment variables via the Windows GUI has no effect on any command windows that are already open. Therefore, after making changes you should open a new cmd window., especially when using the Harlequin Host Renderer command line RIP.

2.5.2 Adding hostname aliases on Linux

To set up HLS hostname aliases on Linux, edit the central hosts file with the following details, substituting the example IP addresses and machine names for your actual hosts details:

```
105.13.27.01    hls.mycompany.com    # hls host
105.13.27.02    rip1.mycompany.com   # rip1
105.13.27.03    rip2.mycompany.com   # rip2
105.13.27.04    rip3.mycompany.com   # rip3
and so on...
```

2.5.3 Selecting HLS security

From HMR v10.0 and HHR v4.0 both HLS and Sentinel LDK is available. You, therefore, must configure the RIP to use one or the other.

When using HLS security you should:

• Create a **SW/secprefs** file containing these two lines:

```
method
hls
```

This tells the RIP to use the HLS, and not the Sentinel LDK, for its security, so the RIP will use any HLS permits and the SuperPro dongle.

Chapter 3–HLS License Manager

The HLS License Manager is a useful utility for checking what licenses are available and for querying machine and dongle details. You can also use the License Manager to install new permits.

3.1 Starting the License Manager

To start the License Manager on Windows:

Select **Start > All Programs > Global Graphics > *<RIP Version>* > License Manager**.

To start the License Manager on Linux:

```
'/<Harlequin RIP folder>/License Manager/hlsatool'
```

Open a terminal window and use:

```
'/usr/local/bin/HQN/Global Graphics Software/License Manager/licmgr'
```

After a slight delay, during which time the application searches for the HLS hosts, the License Manager window opens.

On starting up, License Manager searches for HLS host servers. This may take a few seconds as License Manager searches your local machine and any machines specified in the *HQNSERVERS*

environment variable. Eventually the License Manager dialog (Figure 3.1) will appear, showing details of your licenses, servers, dongle and host machine.
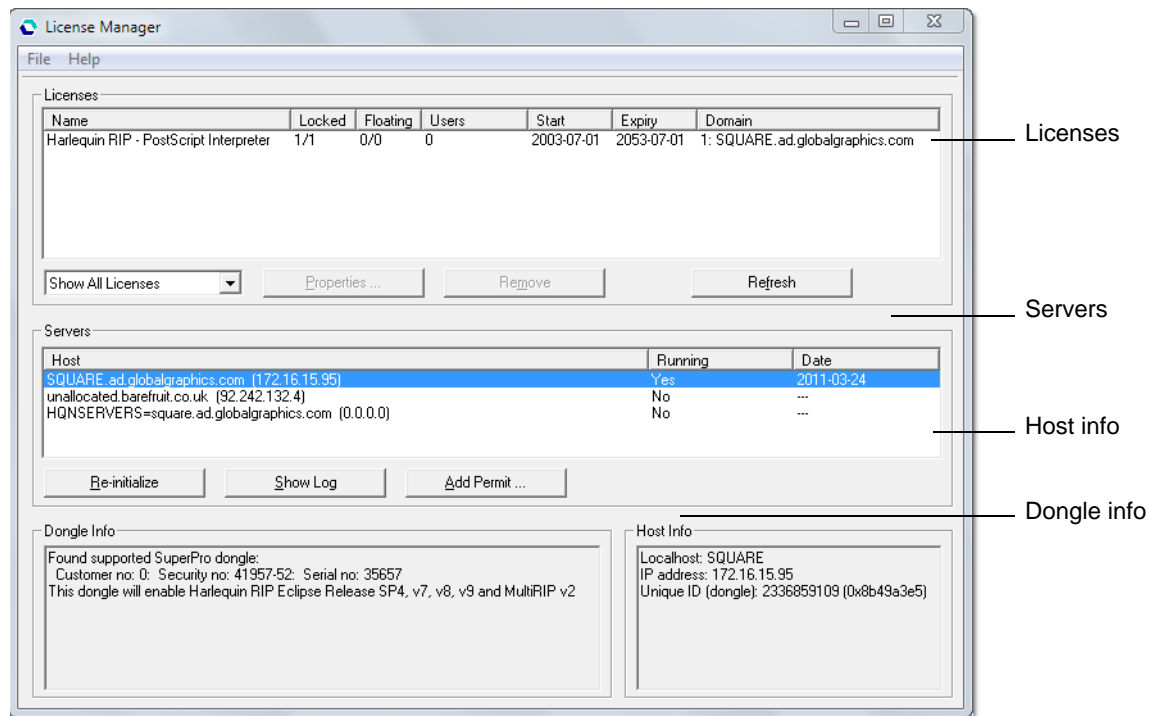

Figure 3.1 The HLS License Manager

License Manager data:

Licenses	Lists details for any licenses found locally or installed on remote HLS hosts. Details include the name of the licensed application, the number of locked and floating licenses available and the start and expiry dates for the permit. Click **Properties** to open the License Details dialog for more license information.
Servers	Shows details of your HLS host machines, as entered for your alias host names or environment variables. The Date column shows the most recently used date for the license server. Note that the date is shown as `2004-01-01` if HLS has never issued any licenses.
	Choose **Re-initialize** to refresh the servers list. This is useful if you get a "No free licenses available" error message, yet you are sure you have licenses available and no RIPs running.
Dongle info	Shows the dongle security number, OEM customer number, and the product enabled by the dongle. The dongle security number is required when ordering new permit files, see "Obtaining permits and licenses" on page 5.
	Note: If a dongle for a different platform is plugged in, the License Manager will display a message. For example, "Found SuperPro dongle for a different platform".
Host info	Shows the localhost name, IP address and unique ID. This information is required when ordering new permit files, see "Obtaining permits and licenses" on page 5.

Select File > Save Summary to save a summary of all the information shown in the License Manager.

Use the down-arrow to select the following License Manager options:

Show All Licenses	Displays all licenses.
Show Licenses In Use	Displays all licenses currently in use.
Show Valid Licenses	Displays all licenses which are valid and can be used.
Show Expiring Licenses	Displays any license which is due to expire. A license is regarded as expiring when in its last 7 days for durations up to 70 days, in its last 14 days for durations up to 140 days, and in its last 31 days for longer durations.
Show Expired Licenses	Displays any license which has already expired. The Remove button becomes available and allows the permit file for a locally served expired license to be removed. The file is moved to a **Harlequin License Server Permits (expired)** directory alongside the permits directory. HLS is then re-initialized, so that the removed license is no longer known to HLS and will not be listed in the License Manager. The Remove button is only enabled when the Show Expired Licenses option is selected.

The following options are available in the License field:

Properties	Select a license in the Licenses field and click Properties to display the details for that license.
Remove	This option is only available when the Show Expired Licenses option is selected and an expired license is displayed and selected. Click Remove to remove the license The file is moved to a **Harlequin License Server Permits (expired)** directory alongside the permits directory. HLS is then re-initialized, so that the removed license is no longer known to HLS and will not be listed in the License Manager.
Refresh	Click this option to refresh the display.

The following options are available in the Servers field:

Re-initialize	Select an active server in the Server field and click this option to re-initialize the server. A "...re-initialized successfully" message appears. Click OK to continue. This is useful if you get a "No free licenses available" error message, yet you are sure you have licenses available and no RIPs running.
Show Log	Select an active server in the Server field and click this option to display the log file
Add Permit	Highlight the local HLS server in the Servers area. Click Add Permit. If Add Permit is not available, ensure you have selected the *local* HLS host. Select the new permit/license file you wish to add and click Select.

3.2 Adding permit files and licenses

You can use the License Manager to add new permit files and licenses to your *local* HLS host. The License Manager is the best and easiest way to ensure your permit files are placed in the correct folders.

Note: See "HLS installation folders" on page 25 for the location of your "HLS installation folders" on page 25 files when they have been installed.

To add your permits and licenses with License Manager, do the following:

1.   Start License Manager.

2.   Highlight the local HLS server in the Servers area.

3.   Click Add Permit. If Add Permit is not available, ensure you have selected the *local* HLS host.

4.   Select the new permit/license file you wish to add and click Select.

The new permit/license will be added and its details displayed in the Licenses part of the License Manager. You may need to click Refresh to have the new license details display correctly.

When the RIP is started, it uses the license generated from the dongle. This is shown in the Licence Manager's GUI. It shows one license being available and one license in use. However, if the RIP process is killed, the License Manager will still show the license as being used. Selecting Refresh does not alter the status being reported. This does not prevent the RIP from being re-started.

Note: Some dongles are empty and do not contain a permit. In this case the dongle provides a unique ID to the HLS which must then provide the permits. With HLS 4.1 (or later) existing demo dongles are treated as being empty dongles and all users of v9.0 demo RIPs will need permits.

Note: For Harlequin MultiRIP v3.0 a 64-bit RIP will run with a 32-bit dongle, but a 32-bit RIP will not run with a 64-bit dongle.

3.3 Viewing the log file

From the License Manager you can directly open the HLS log file. To do this, click the Show log button to open `hls.log` in a text editor. The log file records every HLS event, enabling you to diagnose any issues you may encounter when setting up your HLS hosts.

Note: See "HLS installation folders" on page 25 for the location of your HLS log file.

Note: HLS 4.2r2 or later will install the file **hls_config.txt** in the **\Common Files\Global Graphics Software** directory. This file contains text which describes how to limit the log file size (**hls.log**). The default setting is `0` (bytes), which means no limit to its size. When **hls.log** exceeds the specified limit it is renamed to **hls.log.old**, overwriting any existing file of that name.

Chapter 4—Using HLS with the Harlequin RIP

This section describes the various Harlequin RIP and HLS host configurations supported by Global Graphics. To start the Harlequin RIP, access to the HLS service and an attached dongle is required. A separate license, installed in HLS, is not necessary because the license is generated automatically from the dongle as the RIP starts.

4.1 Supported dongles

Harlequin RIP supports the following dongles:

Platform	Dongle type
Windows	SuperPro
Linux	SuperPro

Table.4. 1 Platform support dongles

Note: On Windows platforms, once the dongle is attached to the computer you may be able to start the Harlequin RIP. However, some Harlequin RIP dongles are empty and do not contain a permit. In this case the dongle provides a unique ID to the HLS which must then provide the permits. With HLS 4.1 (or later) existing demonstration and evaluation dongles are treated as being empty dongles and all users of v9.0 RIPs of this type need permits.

Note: For Harlequin MultiRIP v3.0 a 64-bit RIP will run with a 32-bit dongle, but a 32-bit RIP will not run with a 64-bit dongle.

On Linux systems you must first start the HLS service before the RIP is allowed to run. Use this command to start the HLS service:

```
<path to HLS>/hqn_lsd &
```

You may want to add this command to your startup script so that it runs each time you log on.
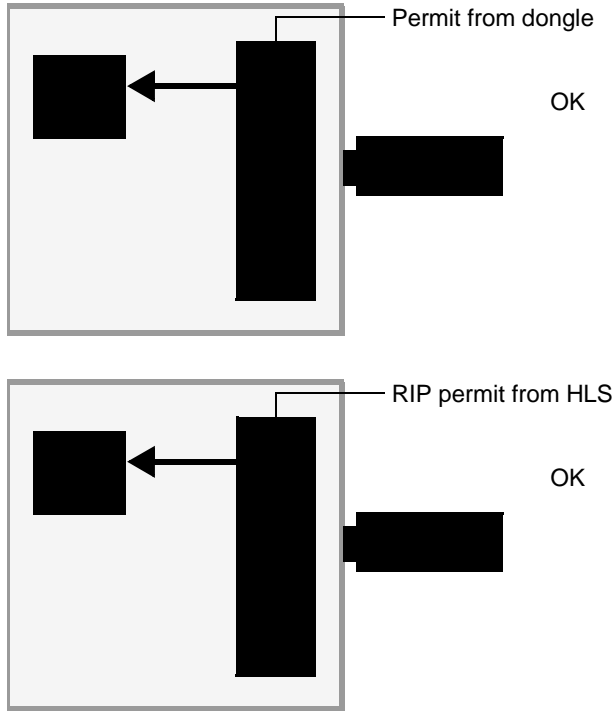
Figure 4.1 Using a supported dongle

4.2 Running the RIP with other applications

The RIP is often used with applications that require a separate license to be installed in HLS, for example, JDF Enabler and PDF Conversion Server, as shown in Figure 4.2. Use the License Manager application to add the required licenses to HLS, as described in "Adding permit files and licenses" on page 16.
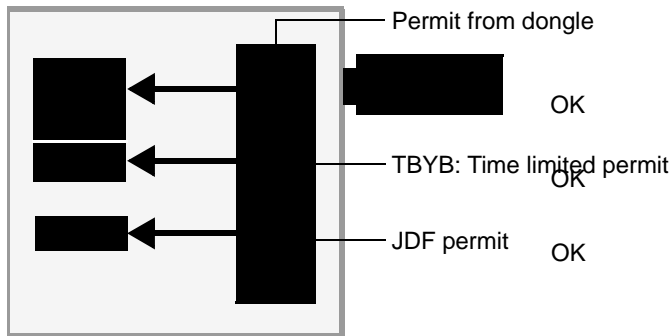

Figure 4.2 Running the RIP with JDF and TBYB

4.3 Expiring licenses

The HLS governs when a license is considered to be expiring according to the following rules:

- if in its last 7 days for durations of up to 40 days

- if in its last 14 days for durations up to 100 days

- if in its last 21 days for permits up to 200 days.

- if in its last 30 days for longer durations.

As an aid the following messages are displayed in an Expiring Licenses dialog when the RIP is first started:

`RIP license will expire in 7 days,` `RIP license will expire in 6 days,` and so on.

`RIP license expires tomorrow`

`RIP license expires today`

`RIP license has expired.`

Similar messages will appear for Try Before You Buy permits.

You can view expiring licenses in the RIP by selecting Harlequin RIP > Expiring licenses....

Chapter 5–HLS Frequently Asked Questions

1. What is the Harlequin License Server?

   The Harlequin License Server (HLS) is a license distribution service that issues licenses to Global Graphics applications. The requesting application may be located locally or on a connected machine, running on a LAN (local area network).

   Once a license has been issued it cannot be used again until the application holding it is closed, or stops responding to the HLS host, in which case the license is automatically revoked.

2. Do I need a dedicated machine to run HLS?

   No. HLS consumes very little memory or processing power when running. However, if HLS is installed on a central server that distributes licenses to several machines on a LAN, make sure you install HLS on a reliable and always-available machine, otherwise your applications will not be able to run if they cannot contact the license server.

3. How do I install HLS?

   HLS is installed by your main job processing application (Harlequin RIP, SOAR SDK, and so on). If necessary, HLS may also be installed separately, from the *Harlequin RIP Tools and Documentation CD*.

4. How do I run HLS?

   On Windows you can simply restart the machine where HLS is installed to start the licensing service. On Linux, issue the command `hqn_lsd &` to start HLS.

5. Do I need a dongle as well as a permit file?

Note: Some applications, for instance the Harlequin RIP, require access to HLS with a valid permit *and* a dongle. Other applications simply require access to a permit file on a HLS host machine. Your supplier will be able to tell you if you need a dongle or not. However, some dongles are empty and do not contain a permit. In this case the dongle provides a unique ID to the HLS which must then provide the permits. With HLS 4.1 (or later) existing demo dongles are treated as being empty dongles and all users of v9.0 demo RIPs will need permits.

6. What are the dongle types supported by the Harlequin RIP?

Platform	Dongle type
Windows	SuperPro
Linux	SuperPro

Table.5. 1 Platform support dongles

   Contact Global Graphics if you do not have this type of dongle.

7. What type of license are available?

   Node-locked licenses can only be used on machines whose details are listed in the permit. Floating licenses do not have this restriction, and can be used by any machine.

8. How do I order a permit file or additional licenses?

   Contact Global Graphics to order a permit file or additional licenses. Details of what details are required are described in "Obtaining permits and licenses" on page 5.

9. Can I run multiple RIPs on one computer?

   Yes, Global Graphics supports the running of more than one RIP on a single computer. You must, however, have the correct permit file to do this.

10. Will my application run if I swap dongles?

    No. Permit files are keyed to the dongle security number. Removing or swapping the dongle will therefore de authorize the permit file.

11. What happens when the RIP and HLS is upgraded?

    The HLS should first be stopped and then the RIP and/or HLS should be installed. All current permits will continue to be used.

Chapter 6–Troubleshooting

Problems associated with starting and running Global Graphics products can usually be attributed to security issues relating to your HLS setup, or your permits or dongles. As a first step in diagnosing any HLS related issues, run the Harlequin License Manager (see Chapter 3, "HLS License Manager") and check the status of your dongle, permit files/licenses and host machines in it.

The troubleshooting suggestions in this section will help you to resolve many of the common issues relating to HLS.

When starting my Global Graphics application I get the following error message: "License Server failure (0xC8001005): permit for this software not available. Please launch License Manager for information.".

- If your product uses one, ensure the dongle is attached securely.

- Check the dongle is the correct type and that it is the first one connected to the port on your computer. Only SuperPro (Windows, Linux) are supported. Another dongle type requires an upgrade dongle to be in place.

TIP: To check the status of your dongle, start License Manager and review the information in the Dongle Info box.

- Ensure a valid permit file/license is available on the HLS host.

- Using License Manager, ensure sufficient licenses are available. Add additional licenses, or wait until a license becomes available.

- Check the system clock hasn't been changed since the permit or dongle was installed. If it has, reset it to the original time (the time when the dongle or permit was installed). A flat BIOS battery will also cause the clock go wrong, so make sure you check this isn't the cause of the problem.

When starting my Global Graphics application I get the following error message: "License Server failure (0xC8001003): unable to contact any licence server. Do you want to contact the licence server now for information?".

- Is the License Server actually running? Check the Licence Manager to make sure.

- If it is running why can't the RIP contact it? Check the Log File (viewable via the Licence Manager).

- If it is not running, is the License Server installed? Check the License Server Log File. Did the License Server start and then quit? Can the License Server be started manually (for example, via the Windows Services dialog, or by restarting the machine)?

Due to a battery failure the time and date on my computer have been reset. Since then, my Global Graphics application reports a security error.

- Set the system clock to the correct time to resolve this issue.

I accidentally removed the dongle while the Global Graphics application was running. I have put the dongle back but get a security error when I start the application.

- Reinitialize the HLS service in the License Manager.

I have changed the clock and now my Global Graphics application will not run.

- A security error will occur if the system clock has been changed since installing the permit file or dongle. Reset the system clock back to the original time and the permit/dongle will work.

The License Manager application says the permit file is not valid when I try to add it.

- The permit may have been issued for a different machine. Fixed permits are only valid for the machines they were created for, as identified by the machine ID. Contact Global Graphics to obtain a permit file for the machine in question.

The number of licenses available in the License Manager application is incorrect.

- Ensure all your permit files are installed correctly. Use the **Add Permit** option in the License Manager to add permits.

I get a security error when I start my Global Graphics application. The permit file/license is located on a remote HLS host machine.

- Ensure HLS is not running locally, otherwise the application will contact this host first to request a license, it will then *not* contact any other HLS hosts to request a license, even if the local host does not contain an appropriate license.

- Ensure you have added the permit file to the remote HLS host machine. Use the License Manager application on the remote machine to do this.

- Ensure you have set up the hostname aliases correctly, as described in "Setting up hostname aliases" on page 12.

Why does the HLS log file (hls.log) contain an entry "Bad Product" after a RIP starts up?

- This error message is generated because you do not have a Try Before You Buy permit. When this error is reported the name of the unknown product is included in the **hls.log** message, for example:

```
20100315 15:08:15: hqn_lsd: [19041] <your name> mymachine.<your network>.com
172.16.154.31 Harlequin RIP - Try Before You Buy : BAD PRODUCT.
```

When the License Server starts I get a "Bad Product" warning.

- This means that the requested product is unknown to HLS. Not having a Try Before You Buy permit is one of the most common reasons for this error.

I swapped the dongle and now my RIP will not start.

- Wait a few minutes for HLS to spot the new dongle, or run License Manager and re-initialize the host server.

Appendix A – HLS Components

A.1 HLS components

The following components are installed by HLS:

License Manager (hlsatool)

>License Manager allows you to examine the licenses and HLS hosts that are available, add new permits and view the log file. See Chapter 3, "HLS License Manager" for more information.

hqn_lsd

>Runs the license service, distributing licenses to applications on request. hqn_lsd is automatically started by the Harlequin RIP if it is not running already. See Appendix B, "The License Server Daemon" for more information.

hqn_lsa

>A command line application that provides administrative control of your licenses. See, Appendix C, "The License Server Administration Tool" for more information.

hlsadm

>Linux only—can be used to run the HLS admin tool (hqn_lsa) from any folder. Note that superuser privileges are required for most options for this tool.

hls-rcd

>Linux only—this is used to start and stop the HLS itself (hqn_lsd) as a UNIX daemon. Note that superuser privileges are required for this option. If required this script could be included in system start up and close down processes.

licmgr

>Linux only—This can be used to run the HLM from any folder.

A.2 HLS installation folders

Depending on the operating system, the various HLS components are installed into the following locations.

A.2.1 Location of the Harlequin License Server components

HLS program:		
	Windows	/Program Files/Common Files/Global Graphics Software/Harlequin License Server/
	Linux	'/usr/local/bin/HQN/Global Graphics Software/Harlequin License Server/bin'
License Manager		
	Windows	/Program Files/Common Files/Global Graphics Software/License Manager
	Linux	'/usr/local/bin/HQN/Global Graphics Software/License Manager'
Permit files:		
	Windows	/Program Files/Common Files/Global Graphics Software/Harlequin License Server Permits
	Linux	/usr/local or /usr/local/HQN
Log file:		
	Windows	/Program Files/Common Files/Global Graphics Software/hls.log
	Linux	<Harlequin RIP Installation Folder>/HLS/bin/hls.log
Log file configuration:		
	Windows	/Program Files/Common Files/Global Graphics Software/hls_config.txt
	Linux	/<Harlequin RIP folder>/HLS/bin/hls_config.txt

Table A.1 Location of Harlequin License Server components

Note: HLS 4.2r2 or later will install the file **hls_config.txt** in the **\Common Files\Global Graphics Software** directory. This file contains text which describes how to limit the log file size (**hls.log**). The default setting is 0 (bytes), which means no limit to its size. When **hls.log** exceeds the specified limit it is renamed to **hls.log.old**, overwriting any existing file of that name.

Appendix B – The License Server Daemon

B.1 Overview

The Global Graphics License Server daemon `hqn_lsd` provides secure network licensing services for the TrapProLite. Together with its administration utility `hqn_lsa`, it allows flexible but simple centralized control over the use of licensed applications throughout a network.

The daemon itself is licensed to run on one or more specific host machines at any given site. Where multiple hosts are specified this constitutes a *server- domain*. Any host within a server-domain can be configured as the active license server, while the rest provide backup services in case of failure of the current server. Applications, such as the Harlequin RIP, which require a dongle for permit generation, are not suitable applications for use in a server-domain, and indeed are not supported by GG. Instead, physical transfer of the dongle to another machine is needed should the host machine fail.

Product licenses are provided in human-readable permit files and locked to a particular server domain, that is, only daemons within that domain are able to serve licenses for the product. (The product itself can of course be run anywhere within the network depending on its policy configuration.) This allows networks to be freely split or added to without loss of security.

B.2 Using hqn_lsd

`hqn_lsd` can be run on any machine, either stand alone or within a network. On start-up, it looks for permit files in one or more defined directories. See Chapter 2, "Installing HLS" and "Location of license permit files" on page 31.

Each permit file contains a list of machine-specific details for one or more machines. This list constitutes the server-domain of the product permits defined in the rest of the permit file. Machines are specified by a unique ID number (the source of which depends on the kind of machine) and an Internet address. The rest of the permit file contains permit details for one or more products.

If `hqn_lsd` reads a permit file in which the server-domain listing contains the host it is running on, then it is enabled to serve licenses for the products to which the permit relates. Whether it *will* serve licenses for those products depends on the type of the server domain.

If the server-domain contains a single host, `hqn_lsd` will always serve licenses for products having that domain. In this case nothing else needs to be done: just start `hqn_lsd` on this host and the licensed applications can be run (depending on the permit details of each product).

B.2.1 hqn_lsd options

On Windows, `hqn_lsd` supports the following options:

`hqn_lsd -debug`	Runs HLS as a console application for debugging purposes.
`hqn_lsd -install`	Installs the HLS service.
`hqn_lsd -remove`	Removes the HLS service.
`hqn_lsd -start`	Starts the HLS service.
`hqn_lsd -verbose`	Generates an expanded log file for diagnostic purposes.

Table.B. 1 hqn_lsd options

B.2.1.1 ORB command line parameters

From Harlequin Server RIP v8.1 -ORBxxx command line parameters are accepted and passed to the ORB on initialization.

Each configuration setting comprises a first argument starting "-ORB" and a second argument containing the value of the setting.

For example, ORB trace level can be changed with:

```
-ORBtracelevel 25
```

B.3 Product permits

Permits for application products determine the use of that application at any particular client site. Permits are human-readable text files with embedded lock-key strings. A lock-key string is a setting that determines how the license can be used, as described in "Policies" on page 32. Permit files can be obtained from Global Graphics upon purchase of the TrapProLite. Figure B.1 shows a sample permit file.

```
########### Scriptworks license server permits #############

THE HARLEQUIN LICENSE SERVER VERSION X.X

NUMBER: 223232456

# Licensed to run on:

SERVERS: 1

# Internet-address      Unique-ID
  192.124.144.205       0x6902b705

PERMITS: 1

#--------------------------------------------------------#
  SXMi35wKZTM48C6FX3@Z2<W2?           g?PAu5AYfXJ2QXMP?5SOb=93O
#--------------------------------------------------------#

Global Graphics Software Limited
Web GUI for Harlequin RIP
WebGUI - Version 1

# License  Node    Floating Start    Expiry     Update
# Policy   Licenses Licenses Date(dmy) Date(dmy) Period(mins)
  0x1      0        1        19/08/2007 6/11/2017  5

# Application data (signed values)

DATA:5

Client limit (-1 = unlimited)
      5
#Unused currently
      1
#Unused currently
      1
#Unused currently
      1
#Unused currently
      1

LOCKED-NODES: 0

#--------------------------------------------------------#
  fOonr1ToY?<3p3mwJ576=ts5?           qCno@4ov@:25Ze5Z32rUStK5?
#--------------------------------------------------------#


#--------------------------------------------------------#
  Y5lTq63pFKR2DK@nW5Qv?gX4Y           Y5lTq43pFKR2DK@nW5Qv?gX4Y
#--------------------------------------------------------#
```

Figure B.1 Sample permit file

Each permit contains information about:

1. The product version.
2. The licensing policy associated with the product.

3.   The number and types of licenses available.

4.   Start and expiration dates of the permit.

5.   Data specific to the application. For example, the data can record features that are enabled by the permit, or extra security checks. The example permit in Figure B.1 shows entries for the customer number, the maximum supported output resolution, and the equivalent of numbers that might identify a hardware-based security device.

6.   If node-locked licenses are specified, details of hosts to which the product is locked.

Two basic types of license are provided: floating and node-locked licenses. If ten floating licenses are specified in a product permit then up to ten instances of the product may be run simultaneously anywhere on the network (assuming access to the current license server for the associated server domain). Node-locked licenses allow the product to be run only on certain hosts. These hosts may be specified in the product permit or, if the permit allows it, they may be configured by your systems administrator. Depending on the policy settings for the permit, floating licenses may be converted into node-locked licenses according to your requirements.

B.4 Location of license permit files

When `hqn_lsd` starts up, or is reinitialized via `hqn_lsa -reinit` (see Appendix C, "The License Server Administration Tool", for details of this option), it looks for permit files that match the regular expression

```
.*hqn.permit[0-9]*$
```

That is, any string, followed by the string `hqn.permit`, and possibly followed by a number. For example, `hqn.permit` and `hqn.permit1` match this pattern.

The directories that `hqn_lsd` searches for permits can be specified by one of the following methods:

• The first is to supply the `-p` option on the command line supplied to `hqn_lsd`. This option takes a colon-separated list of path names to search. For example:

```
bash$ hqn_lsd.sol2.6_sparc -p /usr/local/HQN:/usr/local/hqn
```

• If you do not use the `-p` option, or no permit files are found in the directories specified using it, `hqn_lsd` uses the value of the environment variable `HQNPERMITPATH`, also a colon-separated list of search paths.

• If the variable has no value, or no permit files are found using it, the following directories are searched in order:

    1.) The current working directory for `hqn_lsd`

    2.) `/usr/local/HQN`

    3.) `/usr/local`

The order in which the permit files are read is determined by their order within the directory — that is, the order shown by `ls -f`.

`hqn_lsa -sinfo` shows what permit files have been read and in what order. If no permits are found, `hqn_lsd` remains idle until given further instructions, for instance by using `hqn_lsa -reinit` to re-initialize it.

Note: For any permit file for which `hqn_lsd`'s host is its entire server domain, `hqn_lsd` will now serve licenses for the products listed in the permit file.

If any errors are detected in a permit file (such as an incorrect lock string), `hqn_lsd` discards the rest of the file and issues error messages to the system log and standard error. The cause and position of the error can also be found with `hqn_lsa -sinfo`.

B.5 Policies

Each product permit has a number of settings that determine how the product can be used. Generally the policy setting can be adjusted by your systems administrator using the administration tool `hqn_lsa`. See Appendix C, "The License Server Administration Tool", for details of how to change policies. However, if required, Global Graphics can lock one or more policy flags into the permit.

The policy value in a permit is a set of bit flags which, if set, turn on the policies shown in Table B.2. Note that `hqn_lsa` never changes the permit files themselves; it only configures an active `hqn_lsd` daemon. Current policies are as follows for the 'on' setting.

B.5.1 Log-level switches

Platform	Policy	Dongle type
0	GRAB	Licenses not updated within "crashout" time period are freed on next request (the default setting). Thus licenses held by applications that have crashed will be made available. This policy is on by default.
1	ONPN	Only 1 floating license is allowed per machine. For locked nodes only one license is allowed per *listed machine*—the same machine may be listed more than once to allow up to a maximum number of products instances to run on a single specified machine.
2	TIML	Licenses may only be held continuously for some maximum time period (time-out) after which the license may be given up to another user if no free licenses are available.
3	LKNL	As for TIML but the time limit does not apply to locked nodes.
4	LKNF	Node-locked machines are not allowed to also hold floating licenses.
5	LKPR	Users on node-locked machines have priority over users on other machines. That is, if no licenses are available, the oldest floating license not running on a locked-node will be reallocated.
6	UVIS	The application is allowed to request a list of current users of that product so that users can see where licenses are allocated. The client software may not necessarily implement this facility.
7	USRL	The system administrator can allocate guaranteed licenses for particular users. If no licenses are available, the oldest current license is reallocated to the privileged user.
8	ACCL	Your system administrator can assign an access level to groups and/or particular users. Client software can request the access level of the user if it wishes to allow/disallow functionality, and so on. Generally full access is assigned, unless the current user or their current group has a lower access level assigned. Access levels are in the range 0 to 8, where 8 is full access, 1 is minimum access, and 0 denies all access to the software, that is, no license is issued.

Table B.2 Policies for permits

In addition to tailoring the licensing policy of a product to your site, `hqn_lsa` can also be used to convert floating licenses to node-locked licenses (and vice versa but only if the license has been previously converted), add to the list of node-locked hosts, and exclude certain hosts from running the product at all.

B.6 Versioning

By default `hqn_lsd` will only serve licenses for one version of a product at a time. If `hqn_lsd` reads two permits for the same product, which differ in their version string, only the first permit read will be served. This is the default mechanism since it is generally required that new versions supersede old versions without increasing the total set of licenses for the product. In the event that permits exist for the same product from different suppliers, both permits will be read (that is, both sets of Licenses will be available). Note that versioning can also be implemented in an application-specific manner using the application data-field of the product permit.

B.7 Logging

If required, all license transactions can be logged via the standard `syslog` daemon services. Details of product, license, user and host are logged as a `LOG_USER` facility at the `LOG_INFO` level for each basic transaction, and at the `LOG_WARNING` level for certain error conditions. If this is required, configure the `syslog.conf` file accordingly. The type and extent of logged information is configurable with the `-loglevel` option to `hqn_lsa`.

Appendix C – The License Server Administration Tool

C.1 Overview

`hqn_lsa` is a utility available to the administrator for interrogating and configuring the `hqn_lsd` license server daemon. It lets you configure the license server to your site, and allows finer control over the way licenses on your network or machine are managed.

The `hqn_lsa` program accepts commands either from the command line, from an interactive shell mode, from the standard input, or from a file. The commands available are the same as the command line options, but the leading hyphen is omitted. Call it from a shell as follows:

```
> hqn_lsa [-option][ - | filename]
```

If you supply no options, `hqn_lsa` enters a simple interactive mode, with a prompt indicating the currently connected server or servers. By default, `hqn_lsa` attempts to connect to the lowest numbered active `hqnserver` (see Appendix B, "The License Server Daemon") on start-up, or if no servers are available, to the local host. The `-w` option can be used to set the maximum amount of time `hqn_lsa` will take to attempt to make a connection.

With the hyphen (`-`) or *filename*, commands are read from `stdin` or a file. The `-y` option can be used to suppress confirmations required by certain commands.

C.2 Administration tool command reference

This section describes entries for all commands accepted by the `hqn_lsa` license server administration tool.

All the commands have a long and a short form. Values in `[]` are optional. When using the command line, prefix each command with a hyphen. All numerical values can be input in decimal, octal (beginning with `0`), or hexadecimal (beginning with `0x`).

Product permits can be referred to either by name or by index. In the options described below, *p* can be either a regular expression, which is matched against the concatenated product and version strings of all product permits held on the connected server or servers, or an index number as returned by the `listp` command.

server   *Administration tool command*

```
server | s [host | n [host | n …] ]
```

On start-up, `hqn_lsa` attempts to connect to the `hqn_lsd` server on the local host. If this fails it then tries `hqnserver`, environment variables.

If no `hqnserver` can be contacted, it attempts to connect to a server on the local host. Without options, `server` connects to this default server.

In interactive mode, the prompt indicates the connected server. Multiple hosts/indices can be given to connect to multiple hosts simultaneously, in which case all commands are copied to each connected server. The prompt indicates the number of connected servers.

`listhqn`   *Administration tool command*

```
hq | listhqn
```

List the hosts.

`sinfo`   *Administration tool command*

```
i | sinfo
```

Gives information on the currently connected server or servers. The following information is shown:

— The version string of the server.

— The number of products for which it is serving licenses.

— The number of products seen but which are not in this host's domain.

— List of permit files read with versions and permit IDs.

— List of all server domains stored with current state.

If an error occurred when reading a permit file, the error condition and number appear beside the relevant file name. Use `-reinit` to force the server to re-read all permit files.

`date`   *Administration tool command*

```
date
```

Returns the most recently used date for each connected server. Note that the date is shown as `2004-01-01` if HLS has never issued any licenses.

`dongle`   *Administration tool command*

```
dongle
```

Reports whether a dongle is connected, and if so its serial number, OEM number and security number.

`listp`   *Administration tool command*

```
lp | listp [p]
```

Lists information on all products served, or on product(s) *p*. If *p* is not given, a short listing is given for each product held, showing the following information:

— Index of the product as held by the server.

— File from which the permit was read.

— Publisher, Product, and Version descriptor strings.

If you supply *p*, more information is listed for each product matching *p* on each of the currently connected servers:

— Current policies in effect.

— Node-locked licenses remaining out of total available.

— Floating licenses remaining out of total available.

— Crashout time (minutes).

The period the server will wait before releasing an application's license on the assumption that it has crashed.

— Timeout period (minutes).

If TIMEOUT policy is set, the maximum consecutive period that an application can hold a license.

— Start date of product permit.

— Expiry date of product permit.

— Status of this host in its server domain.

— server-domain of this product.

— Node locked hosts (if any).

— Excluded hosts (if any).

— Users with user-locked licenses (if any). Only if policy on.

— Users with access levels set (if any). Only if policy on.

— Groups with access levels set (if any). Only if policy on.

If the product or products *p* are not served by the current server, only the domain information is available.

listp+   *Administration tool command*

```
lp+ | listp+
```

Give full listing on all products.

listu   *Administration tool command*

```
u  | listu p
```

Show information on current license holders of product(s) *p*. Lists the following information:

— The license index (between 1 and total number of licenses available)

— The user name of the license holder.

— The host running the product application.

— The type of license (locked or floating).

— The access level of the license holder.

— The process ID of the application.

— The time and date the license was allocated.

help   *Administration tool command*

```
h  | help
```

Lists all options available.

The following commands configure the connected server(s).

policy   *Administration tool command*

```
p  | policy [p [val | mnemonic[-|!] ...]]
```

Set the policy flags for product(s) *p*. See "Policies" on page 39, for a description of the policy flags. If a value `val` is given this replaces the current policy value, except where policies are locked by the permit. If one or more flag mnemonics are given they turn on the corresponding policy. Appending a hyphen ("-") turns off the policy. Appending a "!" locks the policy (that is, it is impossible to change it without re-reading the permit file). With no options, this command lists the possible policies and mnemonics.

loglevel   *Administration tool command*

```
lg | loglevel [f ...]
```

Configures the type and amount of information logged with the system logging daemon. Without parameters, `loglevel` lists the possible log level settings and the current state of the connected server or servers. See "Logging configuration" on page 40 for a description of the logging options. Otherwise turn on the `f` log level setting or settings. Appending a "-" turns off the level.

crashout   *Administration tool command*

```
c  | crashout p t
```

Set crashout time for product(s) *p* to `t` minutes. See `listp`.

timeout   *Administration tool command*

```
t  | timeout p t
```

Set the timeout for product(s) *p* to `t` minutes. See `listp`.

kill   *Administration tool command*

```
k  | kill p n [n ...]
```

Revoke license(s) index `n` of product(s) *p*. The license will then be available to other users.

addnode   *Administration tool command*

```
n+ | addnode p host hostid [host hostid ...]
```

Add host machine(s) to the locked node list for product(s) *p*. The `host` argument is the network host name for the required machine and *hostid* is its unique ID number. Note that the source of the unique ID depends on the make of the host machine.

You must ensure that the unique ID is given in the correct base. Note that there must be 1 or more node-locked licenses for this to have any effect. Node-locked licenses are available only on the listed hosts.

rmnode   *Administration tool command*

```
n- | rmnode p host [host ...]
```

Remove *host*(s) from locked node list of product(s) *p*. Only hosts previously added by `addnode` can be removed in this way. Note that all licenses for the product(s) will be revoked.

ftol   *Administration tool command*

```
f  | ftol p n
```

Convert *n* floating licenses to node-locked licenses for product(s) *p*. There must be at least *n* floating licenses available. Note that all licenses for the product(s) will be revoked.

`ltof` *Administration tool command*

```
l | ltof p n
```

Convert *n* node-locked licenses to floating licenses for product(s) *p*. Only node-locked licenses previously converted with `ftol` can be moved in this way. All licenses for the product(s) will be revoked.

`exhost` *Administration tool command*

```
e+ | exhost p host [host ...]
```

Exclude *host*(s) from running product(s) *p*. For example if a host is to be used exclusively as a server the system administrator may wish to prevent certain software being used on it.

`unexhost` *Administration tool command*

```
e- | unexhost p host [host ...]
```

Allow `host` to run product(s) `p`.

`adduser` *Administration tool command*

```
ul+ | adduser p user [user ...]
```

Register `user`(s) to have a guaranteed license for product(s) `p`. This only has effect if the USER_LOCKS policy is in effect. See "Policies" on page 39.

`remuser` *Administration tool command*

```
ul- | remuser p user [user ...]
```

Unregister `user`(s) from USER_LOCKS policy for product(s) `p`.

`adduacc` *Administration tool command*

```
ua+ | adduacc p user lev [user lev ...]
```

Add `user` access levels. Set level to `lev` for user in product(s) `p`. Only effective if ACCESS_LEVEL policy set (see "Access levels" on page 40). Note that the *user* access level takes precedence over any group access level set.

`remuacc` *Administration tool command*

```
ua- | remuacc p user [user ...]
```

Remove `user`(s) access level from ACCESS_LEVEL policy. The user will have full access or the group access level of their current group if any is set.

`addgacc` *Administration tool command*

```
ga+ | addgacc p group lev [group lev ...]
```

Add `group` access levels. Set level to `lev` for members of group in product(s) `p`. Only effective if ACCESS_LEVEL policy set. Note that the user access level takes precedence over any group access level set.

remgacc *Administration tool command*

```
ga- | remgacc p group [group ...]
```

Remove *group*(s) access level from ACCESS_LEVEL policy. That is, members of the group will have full access unless modified by another group or user access level.

reinit *Administration tool command*

```
ri | reinit
```

Reinitialize the connected server(s) and force it to re-read all permit files. All licenses for all products will be revoked. This can be used to add or change permits served by hqn_lsd.

C.3 Miscellaneous

The following is a description of miscellaneous commands or options available with hqn_lsa.

w *Administration tool command*

```
w time
```

Set the time in seconds. hqn_lsa will wait while trying to create a connection to a server or execute a command. The default time is ten seconds, and the minimum two seconds. Useful in initialization scripts, for example in the rc.local file.

y *Administration tool option*

Suppress confirmations. Commands which normally ask for confirmation will continue as if 'yes' was input.

lk *Administration tool command*

```
lk lockstring
```

Checks a permit file *lockstring* to ensure correct entry when changing a permit. Place *lockstring* in quotes to protect special characters from the shell.

id *Administration tool command*

```
id [host ...]
```

Returns the Internet address and unique ID number of the machine hqn_lsa is running on, and of the currently connected server. If host(s) are supplied hqn_lsa will try to obtain this information from an hqn_lsd server running on that host. For some makes of machine this is the only means of obtaining the unique ID number.

C.4 Policies

The policies flags for a product are held as a 32-bit value. The lower 16 bits are bit-flags for each of the policies described below. The upper 16 bits act as locks on each corresponding policy. If a lock bit is set, the corresponding lower bit cannot be changed by hqn_lsa. For example, a value of 0x10001 sets the GRAB policy and locks it. Using the policy command allows the policies for a product to be configured either by a single value or a set of mnemonics. Attempts to change a locked policy will be ignored.

Current policies for the "on" setting are described in

C.5 Access levels

If the ACCL policy is set, the system administrator can assign an access level to particular users and groups of users. Generally, full access is allowed unless the current user or group has a lower access level assigned. Access levels range from 0 to 8, where 8 allows full access, 1 allows minimum access, and 0 allows access to no software, and no license can be issued.

Client software may request the access level of the current user in order to allow or disallow functionality and so on. hqn_lsa can be used to assign levels to users and/or groups for any particular product. Full access is generally granted to all license holders unless other levels are explicitly set. The documentation for the client software should list the significance of different levels of access. If the client application does not use access levels then setting these will have no effect *except that* an access level of 0 prevents a license being issued at all.

Note: The ACCL policy must be set, otherwise all users will have full access.

C.6 Logging configuration

If required, all license transactions can be logged via the standard syslog daemon services. Information is logged as a LOG_USER facility at the LOG_USER or LOG_WARNING level. System administrators can tailor the types and amount of information logged with the -loglevel option. Log level switches control logged output as shown in Table C.1.

Bit	Policy	Description
1	WARNING	All warning and error messages — logged at system LOG_WARN level.
2	INFO	Information messages, mainly during start-up.
3	ADMIN	Changes via the administration tool hqn_lsa.
4	LICENSE	All license transactions. Control output via the license flags at bits 5–10 (listed below).
5	PRODUCT	Output the full product name on each transaction.
6	HOSTNAME	Output the name of the product host.
7	HOSTADDR	Output the Internet address of the product host.
8	USERNAME	Output the name of the user of the product.

Table C.1 Log-level switches

Log settings are turned off by appending a hyphen ("-") to the switch name. For example,

```
> hqn_lsa -lg exterr-
```

turns off extra error logging. In addition, some standard settings are provided, as listed below. Each standard setting has a configuration of log settings automatically switched on, as in Table C.2.

Name	Log settings on
DEFAULT	WARNING INFO ADMIN LICENSE PRODUCT HOSTNAME USERNAME

Table C.2 Log settings

Name	Log settings on
SMALL	WARNING INFO ADMIN LICENSE HOSTNAME USERNAME
FULL	DEFAULT HOSTADDR UID EXTERR
MINIMAL	WARNING ADMIN LICENSE HOSTADDR UID
EXTRA	FULL DOMAIN
NONE	No logging

Table C.2 Log settings

`hqn_lsd` starts up with the default standard setting, plus extra error logging turned on. The `-f` option on `hqn_lsd`'s command line may be used to turn on domain logging during start-up.

Appendix D – Dongles for HLS

D.1 Dongle types

Until May of 2014 dongles to protect Harlequin RIPs on Windows using HLS were SafeNet Sentinel SuperPro dongles. As from May 2014 SafeNet Sentinel HL dongles are used instead for Windows licenses.

When programmed for use with HLS these operate in exactly the same way. SuperPro dongles are still in use for Linux licenses.

D.2 Dongle numbers

Each dongle has two numbers associated with it:

Dongle serial number

This is printed on the dongle, and refers to the dongle hardware only.

Dongle security number

This is programmed into the dongle when it is prepared for you. It is used as the RIP serial number.

All dongle shipments are accompanied by a log sheet detailing both the hardware serial number and the security number for each dongle.

D.3 Dongle part numbers

Each HLS dongle is shipped from GGS bearing a part number, which can be broken down into several sections:

```
<Dongle-Type>-<Resolution>-<Version>-<Customer No.><Flags>-<Platform>
```

<Dongle-Type>

Describes the physical dongle itself. Values on currently shipping dongles are:

PU1   SuperPro USB dongle (teal) or SafeNet Sentinel HL dongles.

<Resolution>

Describes the highest resolution at which output may be produced.

N   Limited to 9900 dpi—the default for high-resolution licenses.

R a Resolution is limited to a x 100. For example:
                        R6—Restricted to 600 dpi.
                        R15—Restricted to 1500 dpi.

\<Version\>

The describes which versions of the Harlequin RIP the dongle will enable:

`10 .. 50`	Allows use of a specific major version of the Harlequin RIP and up to two earlier versions (where major version refers to the first digit in the RIP release version, e.g. release 8.2r1 has major version 8).
	The two version cut-off means, for example that a v9 dongle will allow v8 and v7 RIPs, but not v6 RIPs.
	`18`—will enable Harlequin Server RIP 9.
	`33`—will enable Harlequin Server RIP 9, and is only used if any of the restrictions flags need to be set. For more information see .
	`34`—will enable HHR 3.
	`35`—will enable HMR 10 and HHR 4.
	A dongle from one version can be extended to run a later version by using a password.

\<Customer\>

This is the unique ID assigned to each Harlequin RIP OEM by GGS. It is written in hexadecimal and is followed immediately by any of the flags described next. For example, demonstration dongles use the flag `D`, so you would see `09D` for a demonstration dongle for customer number `0x9`.

Evaluation (generic) HMR licenses will be shown as customer number `0B` and evaluation HHR licenses will be shown as `63`. Both will always have `D` appended.

\<Flags\>

Represents a number of potential restrictions on the RIP. Each restriction has its own code letter, as listed below:

`D`	A demo dongle.
`F`	A dongle where PDF input requires a password.
`G`	A dongle to allow HHR RIPs. That is, a GUI control/display denied (EE/headless RIP).
`H`	A dongle where the use of HPS requires a password.
`K`	Used for all HMR 10 and HHR 4 RIPs. This option and is mainly used to distinguish a v9 dongle from GGS HMR 10 and HHR 4 RIP dongles used for pre-release testing.
`M`	A dongle where the use of XPS requires a password
`P`	A dongle requiring passwords for plugins.
`S`	A dongle where PostScript language input requires a password.
`T`	A dongle for a time expiry RIP.
`W`	A dongle for a watermarked RIP.
`X`	A dongle that has increased security.

Note that all of the flags may be used in combination. For example:

SF	A dongle where PostScript language and PDF input requires a password (raster-only RIP).

<Platform>

Describes which platform/operating system the dongle is valid for, displayed in hexadecimal.

Full dongles may only be used with a single product.

A7	32-bit Microsoft Windows on x86 platforms.
B7	64-bit Microsoft Windows on x64 platforms.
97	64-bit Linux on x64 platforms.

For example, this would be a valid label:

```
PU1-R10-35-09X-B7
```

Full dongle for HMR 10 or HHR 4, customer 9, for use under 64-bit Windows, limited to 1000 dpi.

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Harlequin License Server (HLS)

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pthreads-win32 - a POSIX threads library for Microsoft Windows

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zlib - general purpose compression library

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