



G&R ***Glinkjs*** TM
***License
and
Configuration
server***

***Installation
and
Configuration***

<http://www.gar.no/hostlinks/>



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Glinkjs

This manual describes installation and configuration of Glinkjs, the license and configuration server. It is a freestanding product, but a part of the G&R Host Links product range. The server is available for Windows and for a range of UNIX/Linux platforms.

Functional summary

Glinkjs is a server that dispenses licenses for a range of G&R products:

- Glink for Windows Enterprise Edition
- Glink for Java
- GlinkWeb for Java
- GlinkWeb for .NET
- User applications using the Glink for Java API
- User applications using the Glink .NET API

It is also a configuration server that dispenses centralized configurations for the Java and .NET products, but not for Glink for Windows Enterprise Edition.

Usage

Glink Enterprise Edition for Windows is an edition of Glink for Windows that is licensed by session rather than workstation. There is a native Windows license server that handles license dispensing in environments where only Glink for Windows Enterprise Edition is used.

The Glink for Java server, Glinkjs, dispenses licenses for the Java and .NET products that are licensed by session. It also dispenses centrally managed configurations for the same products.

Glinkjs

In environments where a mix of Glink for Windows Enterprise Edition and Java and/or .NET products is used there is a need for a license server that can dispense licenses from a single pool to all of the products that are licensed by session. The Glink for Java server meets this need.

Basic Host Links

The Glinkjs package includes basic Host Links utilities that are useful in the administration of all Host Links installations, including Glinkjs installations.

Other Host Links products

This manual describes installation and configuration of the Glink for Java server. The server can be used in combination with other host links products, for example *Gproxy* for load balancing and license sharing or *Ggate* for access to Bull mainframe systems. In this case installation and configuration are described in more detail in the Host Links installation and configuration manuals. There is an installation manual for Windows and a separate manual for UNIX/Linux.

The Host Links license file

All Host Links products, including the Glink for Java server, need a license. The license file is normally included in the delivery. Glinkjs itself needs a license, and its license also stipulates the number of licenses it is authorized to dispense. Additionally, if you are using Glink for Windows Enterprise Edition clients, you need the appropriate Glink license e.g.

```
basic      ExpiryDate=081230; Key=nxnrxnrxnrx;  
gljsrv    Release=6.7; ExpiryDate=081230; Licenses=100; Key=nxnrxnrxnrx;  
gljpro    ExpiryDate=081230; Key=nxnrxnrxnrx;  
gljall    ExpiryDate=081230; Key=nxnrxnrxnrx;  
glinkw    Release=8.1; ExpiryDate=081230; Key=nxnrxnrxnrx;
```

The license above enables the basic Host Links utilities, Glinkjs for 100 clients, the professional version of Glinkj clients, all GlinkJ emulations and Glinkw clients.

Installation on Windows

Delivery

Host Links products for Windows are delivered as an executable self-extracting archive. We deliver several different installation sets, containing different Host Links products. The name of the executable reflects the Host Links version, hardware platform and products included. e.g.:

386pc_650en_GlinkJavaServer.exe	Glinkjs version 6.5.0 (English) for 32 bits (IA32) processors
----------------------------------------	---------------------------------------------------------------

The platforms supported in any release are as stated in the **SRB** (Software Release Bulletin) for the release.

All G&R products require a license key. You should have received the license keys from your distributor together with the software. The licenses are stored in text format in a file named `licenses`.

If "licenses" is delivered with the product files you can pick it up when requested during the installation procedure. You can also copy it into your configuration after installation. The location is:

Windows server	C:\gar\config\licenses
----------------	------------------------

Installation step by step

Copy the installation package and license

Copy the installation package to a temporary directory (e.g. `c:\hlinstal`) on your Windows system. It is used only during installation and can be removed afterwards. For convenience copy the `licenses` file to the same directory.

Glinkjs

Create user gar

Before installing Glinkjs you should create a user for administration of the software. Create a new user `gar` on your Windows system. This user should be a member of the Administrators group.

Log out, then in again as gar

Log out, and then log in again as `gar` before continuing with the rest of the installation.

Disable old Glinkjs releases

Remove any old Glinkjs system directories from your search path (in the System Control Panel).

Stop and Disable servers

If you have Host Links 6.0 or later installed:

Use the Gmanager program `gmanw.exe` to stop all running servers.

If you have Host Links 5.x installed:

Using the *Gservice* configuration program `gservice.exe`, stop *Gservice* if it's already installed and running; set its startup mode to **Manual** and click **Modify**. *Gservice* can also be stopped with the following command line via the Run menu or a DOS box:

```
net stop gservice
```

Also remember to close all running Host Links programs (Gmanager, Gconfig, Gdir etc.) before continuing with the installation!

The system directory

The default system directory for Gallagher & Robertson products is:

```
windows c:\gar
```

During installation you are given the choice of installing on a different directory. If you have an old version installed this will be detected, and you can install in the previously used system directory.

The installation program does not overwrite configuration files that you have changed at your site. Sample files will be installed in the configuration directory but will use the release number (650) as an extension, rather than `.cfg` or `.htm`.

Run the Glinkjs distribution executable.

The package first extracts the installation files in order to run the installation program. Thereafter you are guided through the installation process by a series of dialog boxes. These allow you to:

- Choose the system directory
- Choose between a full installation or custom (by product)
- Pick up the `licenses` file
- Install icons for yourself or all users
- Choose a Start program folder for the icons
- Start the physical installation

When the physical installation is completed Gmanager and the Host Links program group are started.

Running Gmanager for the first time

When you run Gmanager for the first time it requires that you install and configure Gservice on the system Gmanager monitors this process. First it displays a dialog box asking for the system name. The default is the local system name.

Glinkjs

Gmanager detects that Gservice is not installed on this system and offers to configure it. The Gservice configuration dialog box requires that you enter the Windows user account and password for a user with administrator rights that can be used to launch Glinkjs in the background as a Windows service. It will suggest the user name that you are using to install Host Links (gar). Set the startup type to Automatic so that Glinkjs is started after each boot.

Set the path

If you intend to run Host Links utilities from the command line prompt you should add the new Host Links binary directory (by default C:\GAR\BIN32) to the system search path in the Control Panel. Select the **System** icon, then **Advanced** and **Environment Variables**.

Configure Glinkjs

Next you must configure the Glink for Java server. You can work directly on the Gservice configuration file:

```
c:\gar\servers\gservice\gservice.cfg
```

An easier way to do this is with the Gconfig utility. From the Gmanager Configuration menu select **Gconfig**. In the Gconfig utility, select **Glink for Java server** and click the + button. A dialog box allows you to set the configuration parameters. See the section entitled *Glink for Java server parameters*. When you have finished, select **File->Save** to save the new configuration, and then exit Gconfig. The configuration file is read by Gservice when you use Gmanager to start (or restart) the servers. The configuration file now contains a line of the type:

```
glinkjs.exe -dbg -log -lp 30842  
glinkjss.exe -dbg -log -lp 30852 (SSL version)
```

Starting Glinkjs

You use Gmanager to start the configured servers. Just click the green start button or select **Start all servers** from the **Servers** menu. Gmanager requests Gservice to read the server configuration file and start the servers it finds there. Status information for each server should now appear in the Gmanager window.

Installation on UNIX/Linux

Delivery

We deliver the software in various ways; these instructions assume you have the distribution files in a directory on your system (e.g. /tmp/hlinstal). They are only used during installation and you may remove them afterwards. You should have received these files:

install.650	Installation script
srbhl.650	Software Release Bulletin
licenses	Optional, license keys to give access to the software
unzcccoo	Unzip program
gjscccoo.650	ZIP archive with Glinkjs

gjs refers to the product name. ccc refers to the CPU family and oo refers to the operating system. The products and platforms supported in any release are specified in the **SRB** (Software Release Bulletin) for the release. The 650 extensions refer to the release number. Some examples of complete filenames:

gjsx6412.650	Glinkjs for Intel x64_x86, Linux kernel 2.*, release 6.5.0
gjs38612.650	Glinkjs for Intel x86, Linux kernel 2.x, release 6.5.0
gjsppca5.650	Glinkjs for Bull, AIX 5L for Power, release 6.5.0

These files are packaged in ZIP format archives using Info-ZIP's software, and the installation script unpacks them with the unzip program we deliver.

Info-ZIP's software (Zip, UnZip and related utilities) is free and can be obtained as source code or executables from Internet/WWW sites, including the Info-ZIP home page: <http://www.info-zip.org/>

Installation step by step

The default system directory for Gallagher & Robertson products is:

```
UNIX/Linux /usr/gar
```

Many of the Host Links programs will look for text files, configuration files and macro files etc. in the Host Links system directory. The installation script will give you a choice to select another directory as the default system directory, but you should note that if you do that, you must define a `GAR_SYSDIR` environment variable that points all Host Links users to this directory.

For a new installation we strongly recommend that you create a new UNIX/Linux user id and group id for Glinkjs. An obvious choice of names would be:

```
username=gar
```

```
groupname=gar
```

and to let the system assign the numeric ids. Log in as, or `su` to, this user whenever you install new releases, change configuration files or start Glinkjs as a background process.

Here is an outline of why this is recommended:

- This user will own all files created by the installation routine, making it easy to identify files belonging to Glinkjs.
- If you use a disk quota system, the disk space will not be deducted from the quota of whoever installs Glinkjs.
- This user can own all daemon processes, such as the background Glinkjs server, making it easy to identify.
- Glinkjs can be installed in such a way that only users belonging to the `gar` group can access the software.

Copy the software to your system

If the Glinkjs installation files are on a file server somewhere, copy them to a temporary directory (e.g. `/tmp/hlinstal`) on your system. Use `chmod` to set the necessary permissions; 'rw' on `bas38612.650`, `gjs38612.650`, `install.650` the `srb` and licenses, e.g. `chmod 664 filename`. Set the x-bit on the unzip program: `chmod 775 unz38612`.

Create user gar

Before installing Glinkjs or any of its associated software you should create a user for administration of the software. Create a new user id `gar` and group id `gar` on your UNIX/Linux system.

Create directory /usr/gar

Log in or 'su' to the `root` user, create the directory `/usr/gar` and make the `gar` user the owner of it with the `chown` command.

Log out, then in again as gar

Log out, and then log in again as `gar` before continuing with the rest of the installation (or `su` to the `gar` user id).

Disable old Glinkjs releases

Stop the Glinkjs server if it is running. The simplest way to stop the server is to use `Gman`. From the `Gman` main window select the server and use `F3` to issue the **DOWN** command.

Stop all host links clients using the command interface. Remember utilities such as `Gdir`, `Gman` etc. Then use `glicense -i remove` to release the license IPC. See section entitled ***Tools*** under ***Server administration*** for a description of `Glicense`.

Remove any old system directories from your search path.

Run the installation script

The installation script does not overwrite configuration files that you have changed at your site. The sample files delivered will only be installed when you do the first time installation, not when you do upgrades. The same installation script is used both for new installations and for upgrades of old ones.

`cd` to the directory that contains the delivery files (`/tmp/hlinstal`).

Start the installation script with:

```
sh install.650
```

It shows you the user id and group id you are running with and reminds you that this user will own all files. Please check that you are running as user id `gar` and have group id `gar`, unless you are very sure that you want something else.

It offers to set permissions so that only members of the `gar` group can use the products. Accept the default, which gives all users access (read and execute permissions for others), unless you intend restricting access to the group id you are using for installation.

It asks for the directory into which you will install. The default suggested is `/usr/gar`. If you already have a Host Links installation and choose a new directory the installation is done as for installation on a new system including the sample configuration files, and you must thereafter copy over your various configuration files from your old installation.

It asks if you are installing a system that will be shared by several platforms, for example by NFS mounting the 'System directory'. Accept the default unless you plan to do this.

The licenses file

If the product license key is missing from the supplied licenses file, or if this file isn't supplied with the software, the license key can be installed later by copying a valid license file to the `/usr/gar/config` directory.

Review the release information

When all the files have been installed, the ASCII version of the SRB `srbhl.650` will be found in `/usr/gar/install`. The installation procedure writes a log `instlog.650` in the same directory, and also installs sample configuration files there so as not to overwrite files from a prior release. For a first time release, sample configuration files are installed in the correct directories.

Set the path

Use the system-wide `/etc/profile` shell script to add `/usr/gar/bin` to the path for all users.

Configure Glinkjs

Configuration is done by adding parameters to the command line used to start Glinkjs. See the section entitled ***Glink for Java server parameters*** for a complete description of the various parameters available.

Starting Glinkjs

Glinkjs is started by simply executing the command line. You can start it manually for test purposes, but typically you should set up the system such that the command is run each time the system boots.

Command line syntax

Glinkjs can be started at the UNIX/Linux prompt, or from shell scripts etc. with a command in the form:

```
glinkjs [-xx yyyyyy ]
glinkjss [-xx yyyyyy ]           (SSL version)
```

where `-xx yyyyyy` is one or more legal parameters.

Glinkjs

Start at system startup

On AIX systems you can start the Host Links servers directly from `/etc/inittab`, by placing the command lines at the end of the file:

```
glinkjs:2:once:/usr/gar/bin/glinkjs
```

On many other systems you can create a shell script e.g. `S99gar` with the content below, and place it in the `/etc/rc2.d` directory:

```
/usr/gar/bin/glinkjs
```

The format and placement of these installation scripts vary from OS to OS and between versions of the same OS. Please consult your operating system manuals in order to obtain the correct method for creating startup scripts.

License server

Server configuration

No further configuration of Glinkjs is necessary. The number of licenses available is given in the `licenses` file in the form of a line such as:

```
gljsrv Release=6.7; Licenses=100; Key=580a5f6d;
```

Dispensing licenses

Clients request a license by connecting to the server port (default 30842 for the standard server and 30852 for the SSL server) and exchanging license dialog. If there are licenses available one is allocated to the client. In order to detect 'dead' clients and recover the license the license is allocated for a given time, known as the license lease interval. This is controlled by the parameter `-lli nnn` and defaults to 30 minutes. The clients automatically renew their license within the lease interval. If the lease expires then Glinkjs assumes that the client died without returning the license, and returns the license back to the pool.

Client configuration

Glink for Windows

Glink for Windows Enterprise Edition clients can obtain their licenses from either the native Windows license server that is part of the Enterprise Edition package or from the Glink for Java server. You choose Glinkjs with a command line parameter to Glink:

<code>/CS dnsname</code>	license server DNS name (port 30842)
<code>/CSSL dnsname</code>	SSL license server DNS name (port 30852)

Java and .NET clients

The clients covered by this section are:

- Glink for Java
- GlinkWeb for Java
- GlinkWeb for .NET
- User applications using the Glink for Java API
- User applications using the Glink .NET API

When you configure these clients to use the Glink for Java server they automatically use it as both a license server and configuration server.

You configure the Glink for Java server with the parameter **configserver** in the **glink.ini** file e.g. for the Windows version of Glink for Java and GlinkWeb:

```
C:\Program Files\GlinkJ\glink.ini  
C:\Program Files\GlinkWeb\glink\glink.ini
```

If you want Glink to obtain the configuration and license from a Glink for Java server, modify the **configserver** parameter. For example:

Using the DNS name of the server machine:

```
configserver=mainframename.yourcompany.com
```

Server running on this machine:

```
configserver=localhost
```

Configuration server

Glinkjs acts as a configuration server for the Java and .NET clients. This is enabled automatically when you configure the clients to use the server as described above in the *License server* section.

Server configuration

You build and administrate the configuration database using the Glink for Java Administration program. The administration program is delivered with Glink for Java, and both Glink for Java and the Administration program are delivered with all other clients. This is because new or modified configurations should be tested with Glink for Java, before being released for use by more complicated clients, especially hand-coded Glink API clients. The amount of configuration needed varies for the different clients. Glink for Java users might need quite complicated configurations defining terminal emulation options, keyboard options and screen display options. An application developed with the Glink API for Java or .NET might need some few very simple configurations.

The Administration program

The administrator uses the administration program to build and modify configurations for clients. There are two main processes involved: creating and managing users and groups, and creating and managing configuration profiles.

Users & groups work just as they do in any other context. You can create user accounts and arrange them into groups as needed. You can control access to various advanced features, such as scripting and configuration, on the group and/or individual user level.

Configuration profiles each define a single part of a complete configuration. Separate profiles can be made to describe mainframe connection options, emulation options, keyboard layout, toolbar setup, screen colors and printer configuration. These profiles, once created, can be mixed & matched into complete configurations. A configuration is a collection of profiles used to connect to a given mainframe application. These configurations can be made available to specific groups, individual users, or everyone.

Glinkjs

When clients connect to the server they receive a list of all the configurations available to them, and they select one for their session.

When setting up the configuration database for the first time, you will generally first create the users and groups you need, then create new profiles (using the sample profiles provided as templates), and finally create the configurations that bind sets of profiles together to make them available to clients.

Setting up users and groups

Initially, Glink is shipped with a user database containing two users and one group: user **admin** with password **admin**, belonging to group **Admins**, and user **demo** with password **demo**, not belonging to any group.

The first thing you should do is to change the password for user **admin**. Select the line for user **admin** and click **Modify User** on the toolbar. The password will be shown as a sequence of asterisk characters. Change it and click OK.

Next, you need to create users and groups to reflect your organization. There is no ‘right answer’ here. One way of doing it is to create groups to reflect your organizational structure; another is to create groups that share the same mainframe access requirements.

It is important to realize that in large organizations it may not be practical to create a user in Glink for each and every person. Rather, users in Glink should be thought of as ‘roles’, or ‘subgroups’. Glink allows several users to connect simultaneously using the same user name and password; thus a user is more a collection of privileges and resources than a means of personal identification. The Glink for Java server takes care of licensing issues.

Once you’ve decided on your group and user structure, create the corresponding entries using the Administration program. Select **Users and Groups** in the left pane, and use the toolbar buttons to do the job. Each toolbar button has a tool tip explaining its function; move the mouse pointer to a button and let it rest there, the tool tip will appear after 1-2 seconds.

Privileges and resources are ‘inherited’ in the sense that settings for a group apply to all its members. Some resources are global, meaning that all users, regardless of group membership, inherit them. Every Glink user can be a member of up to 2 groups.

When you're done, click the **Save** button on the toolbar to save your work.

Configuring mainframes

Select **Hosts** in the left pane of the Administrator program. A Host profile is a collection of information needed to connect to a specific mainframe. Folders for your groups and users should appear in the right pane. Double-click on the folder icons to see what mainframe profiles are already configured for the groups or users. In the Global folder you should see a set of demo mainframe profiles that were shipped with Glink.

To view or modify a profile, double-click on it or select it and click the **Modify Host** button on the toolbar. Browse the demo profiles to get an idea of how they are configured.

Now you're ready to create your own mainframe profiles. Select the folder in which you want to place the new profile (the Global, a Group or a User folder), and click the **New Host** button on the toolbar. If you'd like to use one of the demo profiles as a template: select it, click **Copy** on the toolbar, select the destination folder (Global, Group or User) and click **Paste** on the toolbar.

A dialog box will appear, guiding you through the configuration process. If you pasted a template from one of the demo profiles, you simply modify the settings to match your mainframe; otherwise you'll have to enter the information from scratch. Note that you'll have to rename a pasted profile.

As a general rule, you should seek to place your resources - including host profiles - as high as possible in the hierarchy of groups and users. The higher you place it, the more users will have access to it. If more than one user needs access to a specific resource, do not duplicate the profile for all the users, but place it in a group to which these users belong.

Once you're done, click the **Save** button to save your work.

Configuring terminal emulations

An Emulation profile describes the characteristics of a particular terminal type. Emulations are configured in the same way as host profiles. Click on Emulations in the left pane, and double-click on the folder icons in the right pane. As for host profiles, Glink comes with a predefined set of terminal type descriptions, found in the Global folder.

Setting up Configurations

A Configuration profile is a special profile that groups a Host profile, an Emulation profile and one each of the other profile types that appear in the left pane of the Administrator program.

To add a configuration, click on **Configurations** in the left pane to display the folders in the right pane, and double-click the folders to expand them as before. You'll see a list of predefined configurations under the Global folder.

Browse these configurations to see how they're built. The procedure is extremely simple: you pick one each of all the other profiles, and these are grouped as a Configuration.

You can now build your own Configurations, following exactly the same procedure as for hosts and emulations. Remember to save your work when you're done!

Finishing touches

In a similar way you can create custom profiles for keyboards, printers, screen look & feel, toolbars and menus. The predefined profiles are sufficient to get you started. For special needs, the Administration program allows you to fully re-configure most aspects of these items. For more information on specific topics, click the Help buttons in the configuration dialog boxes.

Server parameters

You include parameters in the command line that starts the Glink Java server, for example:

```
/usr/gar/bin/glinkjs -dbg
```

The following parameters are available:

Parameter	Description
-cdir configdir	Specifies an alternative parent directory of the Glink server's configuration directory, defaults to <gar>/glinkj
-ci nnn/10	Check interval. Seconds between each status check
-dbg	Turns on a debug trace and the verbose log
-dbl nnn	As debug, but truncates the debug records to nnn bytes
-lli nnn	License lease interval, defaults to 30 minutes
-log	Turn on a verbose log, rather than the default minimum log
-lp nnnnn	Glink server port, defaults to 30842
-mod XXX	Mode/ID. Default DEF. Identifier if using multiple servers
-na IP IP	Send load-balancing information to specific instances of Gproxy. Up to 4 IP addresses, separated by space
-nb on/off	Default broadcast load-balancing information to all Gproxy
-redir	Enables the Glink server redirection capability
-ro	Read only permission for remote administration programs

License lease interval

If a client shuts down without closing the session the license remains in use until the lease expires. Decrease the interval to detect defunct sessions sooner. Increase the interval to reduce the traffic between clients and license server. Defunct licenses are released on the next status check (-ci).

Glinkjs

Glink server port

This must be changed if using *Gproxy* load balancing. If changed for other reasons the corresponding change must be made in the applet or application configuration files so that they connect to the alternative port.

Load balancing (Gproxy)

If you are using *Gproxy* for load balancing across multiple *Glink* servers you must either broadcast load-balancing information (default) or address it to specific instances of *Gproxy* every `-ci` seconds. See the *Gproxy* manual.

Redirection

When configuring *Glink* sessions the host configuration dialog box has an option for connecting via the *Glink* server, rather than directly to the mainframe application. This is used in situations where the mainframe is protected by a firewall, but the *Glink* sessions are to be allowed through, via the system on which the *Glink* server is running. For security reasons this is only allowed if the `-redir` option has been set for the server.

Read only

If set the *Glink* server allows remote administration programs to browse in the *Glink* configuration database, but does not allow changes to be saved. Changes to the configuration can only be made using the administration program in application mode on the same system as the database.

SSL configuration

You can secure communication between the *Glink* clients and the server using Secure Socket Layer. The parameters are set in the configuration dialog box for Windows servers, and on the command line for UNIX/Linux servers. See the G&R/SSL manual for details of the parameters.

Glink for Java server log

As with all other Host Links server programs, the *Glink* server writes an event log in a product specific directory under the `servers` directory in the G&R system directory.

Windows server	<code>\gar\servers\<scid>.glj< code=""></scid>.glj<></code>
UNIX/Linux	<code>/usr/gar/servers/<scid>.glj</code>

The log file name is `_logfile.def` (unless `-mod` has been used).

e.g. `\gar\servers\ljj1.glj_logfile.def`

```
[2006/10/10 11:14:34] G&R/GlinkJS 6.3.0/m32pc 2006-10-05 15:49:03 started
[2006/10/10 11:14:34] LicReset, resetting license gljsrv, 0 cleaned
[2006/10/10 11:14:34] Local port used:30844, parameters supplied: -log -nb -lp 30844
```

The event logs are 64k long, and the last three generations are kept for reference.

Directory: `\gar\servers\ljj1.glj`

```
file _log_001.def
file _log_002.def
file _logfile.def
```

Glink for Java server trace

Use the `-dbg` parameter in the UNIX/Linux command line or 'Enable tracing' in the Windows configuration dialog box.

The trace information is written to a file in the following directory:

Windows server	<code>\gar\debug\NODE</code>
UNIX/Linux	<code>/usr/gar/debug/NODE</code>

NODE is the local DSA node name if G&R/DSA is installed, otherwise the system name.

The name of the trace file is `glj.dbg`.

Server Administration

Gmanager

Gmanager is the Host Links administration tool. It can be used to control, configure and monitor all the G&R Host Links server programs.

The dialog and interaction between the server programs and Gmanager is based on information located in a database file `_active.srv` that is located in the Host Links `servers` directory. The first time a Host Links server program starts up it registers itself in this 'active' file. Thereafter the server program updates this database with status information whenever the server is active.

The Gmanager program is available in 2 different versions – a Windows GUI based version `gmanw.exe` and a character based subset `gman` (UNIX/Linux binary) or `gman.exe` (PC console application).

The basic functionality of the two versions is the same, but the Windows version interfaces directly to other Windows-only Host Links administrative tools (*Gconfig*, *Gservice*), and can also start the browser directly to view HTML reports produced by *Gproxy*, if enabled, or to view the HTML pages associated with a *Gweb* or *Glink for Java* installation.

The *Gproxy* reports, *Gweb* and *Glink for Java* web pages are of course available to administrators of UNIX/Linux Host Links systems, and can be viewed by starting a browser manually, and connecting to the appropriate URLs:

```
http://mysite.mydomain.com/Gproxy  
http://mysite.mydomain.com/Gweb  
http://mysite.mydomain.com/GlinkJ
```

Gmanager can be used to perform the most common Host Links administrative tasks. A summary of the available functions follows. The Windows-only functions are marked.

Glinkjs

- View the last reported status information from the servers
- Stop or restart all servers, start a new server, stop, restart or delete a server
- Send a command to a server
- Load the DSA configuration into an editor, compile the DSA configuration
- Start the server configuration program or the configuration wizard (Windows)
- Load the *Gservice* configuration into an editor (Windows)
- Edit the product specific configuration files
- View a server log file, a server trace file or the server configuration file
- View program version numbers, program link information (Windows)
- View license info and license usage (Windows)
- View Host Links environment information, the 'VMAP' (Windows)
- Start Gdir directory administrator, Ggate monitor, Gspool monitor
- Gather all traces and logs for trouble-shooting by support
- Gping a DSA node to check the connection, use Gerror to explain error code
- Set a transport route state (down, enbl, lock, used)
- Check if a printer is on-line, request a list of bins
- Connect directly to the *Gproxy*, *Gweb*, *GlinkJ* HTML pages(Windows)

The commands that are accepted by all servers are:

- DOWN - terminates the server
- STATUS - reports server-specific status information to the log file
- PARAM - allows the operator to give a command line parameter to the server. Note that some parameters do not work when given interactively i.e. they can only be handled at server startup time
- DEBUG ON/OFF - toggles on and off tracing interactively

Additionally, the server in question might support other interactive commands. For a description of the supported commands, check the server-specific documentation.

Tools

Glicense

Glicense is supplied as a character based utility `glicense` (UNIX/Linux binary) or `glicense.exe` (PC console application). The utility can be used to read, modify and update a license, but these functions are not generally available to users. When the first Host Links product is started the license is read into a shared memory segment (IPC, Inter Process Communications) and thereafter read and updated by all Host Links products under the control of a shared semaphore. Glicense display functions (`-i`) are generally available. This documents the UNIX/Linux version, the Windows version is a subset.

```
glicense -i info                IPC size and usage e.g.
License IPC area size=1996, licenses=7, key=0x8a52ad08, users=2
```

```
glicense -i show [active|product] License usage e.g.
gljsrv/100/0 inuse=1 #1
```

```
glicense -i reserve product    reserve/release 1 license
```

```
glicense -i clean              remove 'dead' licenses
```

```
glicense -i remove            delete the IPC and semaphore
```

Updating a license

When updating a Windows license it is sufficient to terminate all Host Links products. You terminate the servers from *Gmanager*, by stopping *Gservice*. You terminate the clients using the command interface to the clients. Remember client utilities such as *Gdir*. Copy in a valid license file, and then restart the Host Links servers and clients.

When updating a UNIX/Linux license you first terminate all Host Links products as for Windows. Then use Glicense (`glicense -i remove`) to release the IPC and semaphore.

Some useful UNIX/Linux commands for checking the Host Links license area and cleaning up after a system crash are:

```
ipcs -ms                display shared memory and semaphores
ipcrm -m <id>          release shared memory
ipcrm -s <id>          release shared semaphore
```

Glinkjs

Gver

This is a utility program that lists the version number of the G&R Host Links release programs that you are using. Gver is supplied as a character based utility `gver` (UNIX/Linux binary) or `gver.exe` (PC console application). It can be used to list only the release number, or to list details of all G&R software installed:

```
jim@aladdin ~ $ gver -r
6.5.0/38612
```

```
jim@gars ~ $ gver
gg_tcp      737472 gline/gg_tcp  6.5.0/38612 Dec  2 2009 10:28:35
gl_dsa     978964 gline/gl_dsa6  6.5.0/38612 Nov 30 2009
gman      824292 gmonitor/gman  6.5.0/38612 Nov 30 2009 13:20:02
```

Gdump

This utility program lists the Host Links environment. It is supplied as a character based utility `gdump` (UNIX/Linux binary) or `gdump.exe` (PC console application).

```
TelnetGV - aladdin.gar.no
File Edit Settings... Line Transfers Help
G&R/Gdump version 6.5.0/38612 Feb  1 2010 16:32:47 aladdin
-----
Dump of video map at 0x80eeba0 level 3.6/3.6, size: 8112/8112
-----
gmail_options      : 0x00000000      mail_max_copies   : 9999
gwarn_options      : 0x2e800000      mail_max_trash    : 200
file_options       : 0x08000000      mail_max_size     : 0
stationID          : 0x2f31          message_limit     : 0      ext: FALSE
sitekey            : 0x2f1dd7c0      Reference number  : 1002
IPC mask           : 0x00000000      Local SCID       :
-----
fullname           : jim
User Id #U.#A.#M  : jim.gar.
station #V         : /dev/pts/1
language #L        :
localnode          :
default namesfile  : local
-----
X.400 address      :
Internet address   :
-----
Distributor name   : G&R A/S      Customer name     : aladdin
-----
Press a key to continue...
GLINK8.21 VIP ECHO ROLL NUML 024 028
aladdin.gar.no 09:22:34
```