

Host Links for Windows, Linux and UNIX  
Software Release Bulletin  
Release 6.5  
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# This release

## **Release number (6.5)**

This is the code base of a minor release. Any updates will have the same release identifier (6.5) and an update number (6.5.1).

## **New platforms**

Windows 2008 Server:           32-bit and 64-bit  
Windows 2008 Server R2:       64-bit

AIX 6.1  
HP-UX 11i v3

## **Product platforms**

All server products (Ggate, GUFT, Gspool, Gweb, Gmailer, Gproxy, etc.) and features mentioned in this release bulletin are available on UNIX, Linux and Windows server platforms. The emulators (Qsim, V78sim, G3270 and G5250) and other products that support terminals are available on UNIX and Linux, but not directly on Windows servers because there is no terminal support. However, Gweb and GlinkWeb on UNIX, Linux and Windows web servers can use all the emulations to provide host access for browsers. Host Links client products run on the user workstation.

For a complete list of platform codes supported in this release, see section **Delivery** and **Supported platform codes**.

## **Incompatibilities**

### **Mixing of releases**

Do not install programs from this release into a directory with G&R programs from a previous release. Mixing of releases will not work. Note that this limitation also includes customer-written applications using GlAPI. You must re-link them with the 6.5 GlAPI libraries. Host Links customers with Gmail should also update Gmail, although there are no functional changes, just error corrections.

If you need to run multiple releases simultaneously on a UNIX system, you must install them in separate directories and set the PATH and GAR\_SYSDIR accordingly. Host Links does not support multiple releases simultaneously on Windows platforms.

### **DSA configuration recompilation**

The version number of DSA configurations has been incremented; you must recompile dsa.cfg under the R6.5 version of glcc.

## **New license file**

All Release 6.5 licenses require a MachineID in the site license. The entry identifies the system that will run Host Links; by numerical IP-address or by MAC address. All installations need an updated license file.

License file example:

```
Site Agent=G&R A/S; Name=ABC; Platform=rs6a4; CustomerID=5;
      RefNum=6; MachineID=82.148.184.134; Key=12345678
Basic      Key=61b3af54;
Gproxy     Key=485b5d90;
Guftc      Key=539bd345;
Ggate      Release=6.5; Licenses=30; SiteLimit=90; Community=1;
      Corporate=200; Key=36a36c5b;
GljSrv     Release=6.5; Licenses=25; SiteLimit=50; Key=b8c57fa6;
Gweb       Release=6.5; Licenses=20; SiteLimit=40; Community=1;
      Corporate=60; Key=e7cbd9df;
```

(NB: In the license file, lines are not wrapped)

Contact your distributor for an update of the license file.

# **Changes and enhancements**

## **GGATE changes**

### **TN3270**

Ggate now supports the Telnet 3270 protocol, simultaneously with native Ggate, TNVIP and Telnet.

You can enable TN3270 on up to 4 ports using the Ggate parameter:

```
-t32 on/port number [port number]
```

The default port is 23 and TN3270 can share it with Telnet.

Ggate supports all IBM terminal types defined in the TN3270 RFC. Ggate negotiates extended TN3270, TN3270E, if possible. If successful, and Ggate parameter -T32ALT is set then the alternate screen size for the terminal type is used when GCOS systems such as TSS send data that is not in 3270 format.

Ggate supports IBM-DYNAMIC, and in this case, Ggate queries the emulator for the alternate screen size. If the emulator has the capability then an alternate size of 24x81 gives a much better presentation of GCOS data.

If Ggate successfully negotiates TN3270E it looks for CONAME TN3270E. If it doesn't find it or if TN3270 is negotiated Ggate looks for CONAME TN3270. If Ggate doesn't find a CONAME it reverts to TM dialog.

## **GLINE changes**

### *Terminal types*

Gline recognizes terminal types IBM3279 and IBM3279A. Additionally it recognizes all the IBM terminal types defined in the TN3270 RFC, so that Ggate TN3270 clients can set them.

### *GCOS7 default mailbox*

Normally DSA connections require an application mailbox, but some GCOS7 configurations have a default mailbox configured under the project. You can use GCOS7DEF as a dummy mailbox name, to deliver a blank mailbox and let the project decide it.

-DA/-DMB GCOS7DEF

## **Gproxy changes**

### *Network interfaces*

Gproxy previously supported up to 4 network interfaces on a system. It now supports up to 64 interfaces. This is because of Linux systems where more than 4 interfaces is common.

## **Gspool changes**

### *New debug options*

The -DBG parameter turns on internal debug and writes a trace file. This trace file contains details about Gspool's processing of host input. To enable this tracing, add the -DBG option to the Gspool start-up command or to the relevant section of the Gspool configuration file:

-USER  
-DBG ON/off/new/app

ON default if no parameter is given to -DBG  
OFF is the default if -DBG is not used  
NEW creates a new debug for each print job  
APP append debug information to the debug file using the standard suffix (e.g. 'def')

# Delivery and supported platforms

We deliver the software in a number of different ways; these instructions assume you have placed the files in a directory on your server system. You may remove them after installation.

## UNIX/Linux deliveries

### Deliverables

install.650	Installation script
srbhl.650	Software Release Bulletin
licenses	License keys to activate software
unzccoo	Unzip program to unpack delivery
pppccoo.650	One or more ZIP archives with software

The 650 extensions above refer to the Host Links version number. Maintenance releases will have the last digit incremented, e.g. 651 and 652. Minor releases will have the middle digit incremented, e.g. 660 and 670. Major release will have the first digit incremented, e.g. 700 and 800. Beta releases always have the last digit replaced with a letter, e.g. a/b.

The 'ppp' above refers to the product code.

The 'ccoo' above refers to the CPU family and operating system.

### Product codes

ppp	Product name
bas	Basic
g32	G3270
g52	G5250
gga	Ggate
gli	Gline
glp	GlAPI
gsp	Gspool
guf	GUFT
pth	Pthru
qsi	Qsim
v78	V78sim
gpr	Gproxy
gwb	Gweb
gsf	Secure ftp

*Supported 32 bit UNIX/Linux platforms:*

386l2	Intel Pentium PCs, Linux kernel 2.6
ppca5	Bull Escala, AIX 5L for Power V5.3/6.1

*Supported 64 bit UNIX/Linux platforms:*

i64l2	Intel Itanium 2, Linux kernel 2.6
x64l2	AMD/Intel x64_86, Linux kernel 2.6
i64hl	Hewlett-Packard, HP-UX 11i v3

*Examples*

Some examples of complete filenames:

ggax64l2.650	Ggate for Intel x64_x86, Linux kernel 2.*, release 6.5.0
Gsp386l2.650	Gspool for Intel x86, Linux kernel 2.x, release 6.5.0
gwbppca5.650	Gweb for Bull, AIX 5L for Power, release 6.5.0

We package these files in ZIP format archives using Info-ZIP's compression utility. This format is also compatible with PKWARE Inc's PKZIP version 2. The installation script uses the delivered unzip program to decompress the files.

All programs require a license key to run. Your distributor will include a licenses file in the delivery. If you receive an updated licenses file after delivery, you must copy it to the configuration directory.

Make sure that all the files end up in the same directory on your system, and that all the file names are in lower case. Only installation uses these files, so you can place them in /tmp, your home directory, or whatever. Use chmod to set the necessary permissions; (rw) on: the ZIP product archives 'ppcccoo.650', 'install.650', 'srb' and 'licenses', i.e. chmod 664 filename. Set the x-bit on the unzip program, i.e. chmod 775 unzcccoo. Proceed as described in the installation chapter.

The Info-ZIP copyright requires us to tell you:

Info-ZIP's software (Zip, UnZip and related utilities) is free and can be obtained as source code or executables from various bulletin board services and anonymous-FTP sites, including CompuServe's IBMPRO forum and <ftp://ftp.uu.net/pub/archiving/zip/>.

### **UNIX 32 bit deliveries by special request**

We can deliver for the following platforms by special request, at a cost based on time and materials, and delivery time depending on available test and qualification resources.

386v3	Intel Pentium PCs, SCO UNIX R5
alpdu	Alpha, Digital Unix 4.x
hppul	Hewlett-Packard, HP-UX 10.x
rs6ai	Bull DPX/20 and IBM RS/6000, AIX 4.2
386so	Intel Pentium PCs, Solaris release 7/8
hpp11	Hewlett-Packard, HP-UX 11.0
rs6a4	Bull Escala/Estrella, IBM RS/6000, AIX 4.3
spaso	Sun SPARC, Solaris 7/8

### **Windows deliveries**

#### **Supported 32 bit platforms**

386pc	Windows XP, 2003, 2008
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#### **Supported 64 bit platforms**

x64pc	Intel/AMD x64, Windows 2003, 2008, 2008 R2
i64pc	Intel Itanium 2, Windows 2003

A Windows delivery is a single self-extracting exe file e.g.

650_en32_XXXXXXXX.exe	xxxx is <complete> or product names
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### **Marben OSIAM deliveries**

We deliver the Marben OSIAM transport stack as a self-extracting archive.

Marben301_w2k_xp.exe	Windows XP and 2003
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This is a 32-bit product. You cannot use it on the 64-bit Windows platforms.

# Installation

## *Installation on Windows*

We deliver Host Links products for Windows as self-extracting archives. When run they will automatically extract to a temporary directory and start the installation program.

Please read the file HLREADME.TXT and the Host Links on Windows Installation and configuration manual.

## *Installation on UNIX/Linux*

We strongly recommend that you create a new UNIX/Linux user id and group id for Host Links. An obvious choice of names would be:

```
username=gar
groupname=gar
```

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 background processes such as Gspool.

Here is an outline of why we recommend this:

This user will own all files created by the installation routine, making it easy to identify the files belonging to Host Links.

If you use a disk quota system, it will not deduct the files' disk space from the quota of whoever installed them.

This user will own all daemon processes, such as the background Gspool and GUFT server, making them easily identified.

You can install Host Links in such a way that only users belonging to the gar group can access the software.

The Host Links default system directory is /usr/gar. Many of the Host Links programs will look for text files, configuration files, macro files and other information in the Host Links system directory. The installation script gives you a choice of selecting another directory as the default system directory. 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. To make your installation as simple as possible we suggest the following. Before you run the installation script, 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. Thereafter:

Log in as, or 'su' to, the gar user:

cd to the directory that contains the delivery files.

Start the installation script:

```
sh install.650
```

where 650 is the Host Links version number.

The script will ask you a few questions before it goes on to do the actual installation. The script is very careful not to overwrite configuration files that you have changed at your site. The script only installs sample files when you do the first time installation, not when you do upgrades. You use the installation script both for new installations and for upgrades of old ones.

If you will be using the rlogin mode of the TCP/IP line handler to reach other systems you must carry out a last step as superuser:

```
su
cd /usr/gar/bin
chown root gl_tcp
chmod u+s gl_tcp
```

## **Errors corrected since 6.4.0**

We have corrected the following errors since we released the 6.4.0 code base. These corrections have been available as fixes for R6.4.0 and we have incorporated them in the code base for R6.5.0.

### ***E1176: Ggate, a new connect from GTWriter could be rejected***

The attached printer (-PCO) for a copy of Glink connected by Ggate could occasionally reject a new connect from GTWriter on GCOS7.

The default configuration for a terminal (TERM/TWDEST) in GTWriter is to connect to the printer node/mailbox when a report is queued, and disconnect when there are no more reports queued for the TERM/TWDEST. If an application or user queued a new report just after the disconnect process was started, the new connect could be rejected with mailbox busy.

The disconnection was taking a couple of seconds, leaving a timing window during which the printer mailbox was still busy from the first report when the new connect arrived. The slow disconnect was caused by Ggate trying to use the traditional DSA transport disconnect protocol and waiting for a reply to a transport disconnect request until a two second time-out fired.

GTWriter retries the connect each minute, and so the second report was delayed for a short time, but delivered on the first retry.

The DSA transport disconnect protocol is now dropped, since it is not supported.

### ***E1191: Ggate, \$\$GGA: Start of line module, wrong port no.***

In some situation, Ggate failed to accept an incoming connection from a Glink client. Glink would display the following message at startup:

```
$$GGA: Start of line module, wrong port no.
```

This was a timing issue and was generally only provoked on fast multi-CPU/hyper-threaded Windows systems.

### ***E1192: Ggate, Telnet failed to negotiate if TNVIP not used***

Ggate Telnet sessions failed to negotiate if TNVIP was not configured.

### ***E1193: Ggate, could hang with 100% CPU after several months***

In heavy load situations, with many sessions, after several months without restarting, Ggate could hang with a 100% CPU usage. This was due to a limitation in the Ggate monitor interface.

### **E1194: Ggate, changing TNVIP login field attributes could cause failure**

When using Ggate as a TNVIP server for third party emulators the TNVIP RESOURCE is used to point to a CONAME/RESOURCE (these are synonyms) in dsa.cfg (the Gline configuration file). The default for TNVIP is to display the CONAME/RESOURCE as a menu in the form of a formatted screen with the fields:

```
User ID:
Password:
Project:
Billing:
Host Mailbox:
Host Node:
Host Type:
Local Mailbox:
Mailbox extension:
User string:
Printer resource name:
Printer mode (Listen/Connect):
```

The fields are normally all transmittable (can be changed) but the fields can be flagged to change the attributes. e.g.

```
RESOURCE TNVIPMENU -desc "tnvip menu" -type menu
-hm cxi -dn +ab2b -da distreg -du * -pw *
```

Use of the flags '+' (protected transmittable) or '\*' (must enter) to change the attributes of some of the parameters could cause the line module to fail. Occasionally this could cause the gl\_dsa on UNIX/Linux or the nl\_dsa.exe on Windows to crash.

### **E1198: GUFTsrv, the -CMD parameter failed to insert file name**

When transferring files to the GUFT server on Windows or UNIX/Linux there is a need to be able to execute a user-written program or utility after the transfer. The GUFTsrv start command offers two possibilities:

```
-CMD cmdline      Execute 'command line' after a transfer request
                  completes. The name of the local file can be inserted
                  into the command line at a point marked by a %
                  character.
```

```
-ECMD cmdline     Execute 'command line' after a transfer request
                  completes. GUFTsrv appends the local filename, status
                  (0 good, 1 error), direction (S sender, R receiver)
```

```
and
                  node names (local then remote) as space separated
                  parameters.
```

The -CMD command was not working on Windows platforms when using the % to insert the local file name into the command e.g.:

```
guftsrv.exe -cmd "c:\Auft\uftcmd.bat %" -li DSA
```

This command can be pre-started or started on-demand. At the termination of each file transfer the command "c:\Auft\uftcmd.bat %" is executed, and the local file name is inserted in the command at the point where the % character is placed. Note that the command must be in quotes. The local file name is then accessible in the .bat as a parameter, in the example as parameter 1 (%1).

### ***E1199: GgateMonitor, did not save session info on 'Save Data as'***

When using the 'Save Data as' action, GgateMonitor was only saving the User view (Client IP addresses). This is now corrected to also save the 'Session View' (session information for each client).

GgateMonitor has also been corrected to allow saving to long path names such as the 'Desktop' that could previously cause GgateMonitor to crash on some systems.

### ***E1201: Glicense, Correct MAC address could give invalid license***

When the MachineID in the Host Links license is a MAC address, and the target MAC address is the last interface delivered by the Windows system, the license routines failed to find it. This has only been observed on one system, which delivered the local host (IP-address 127.0.0.1, MAC address 00:00:00:00:00:00) as the first of two interfaces, where the second was the target MAC address in the license. You can use the command:

```
glicense -n
```

to display the interfaces on the system in the order in which they are delivered to G&R licensing software.

### ***E1202: Gservice, the G&R windows services manager could fail to update***

G&R Windows products write important status and error messages to a Windows event log (Gallagher&Robertson). This can be viewed using:

```
Control Panel=>Administrative Tools=>Event Viewer
```

In order to display the correct texts the Event Viewer connects to gservicw.exe. This means that gservicw is busy as long as the Event Viewer is being used to view a Gallagher&Robertson event log. An update of Host Links while the Event Viewer is in use will fail to update gservicw.exe.

### ***E1203: Gspool 6.4 did not save failed printjobs***

When a print operation fails, Gspool should make a copy of the printjob that failed to print so that it can be reprinted by an operator later when the printer is back in operation or

redirected to another printer by the operator, using the Gspool Monitor.

Gspool failed to create a copy of the printfile that failed to print, requiring a reprint from the host.

### ***E1211: Ggate, enabling TNVIP/Telnet could cause load sharing to fail***

When Ggate/DSA is used in a load sharing environment for Glink clients, Gproxy takes over the Ggate port, accepts connections from Glink clients and redirects them to the least loaded Ggate system it finds in the local load-balancing community. Ggate must be allocated 'some other' port using the -gga parameter. Gproxy locates the Ggate port it should use when redirecting Glink clients by looking at the port from which Ggate load-balancing information is broadcast.

When Ggate/TNVIP-server functionality is enabled using the -tnv parameter it allocates a port for TNVIP clients (default 7323 or given in the -tnv parameter).

If the -tnv parameter occurred on the Ggate command line before the -gga parameter The -tnv port was used as the broadcast port for load balancing information. This caused Gproxy to redirect Glink/DSA clients to the TNVIP port, and load balancing failed.

The same problem can occur when enabling Telnet or TN3270 functionality.

### ***E1213: Gline, blank application mailbox was never allowed***

The application mailbox (-da) is normally required for a connect, and because the error messages issued by different GCOS hosts when the mailbox is missing (blank) could be difficult to understand, non-existent or simply cause a connect time-out, the line module pre-checked that a mailbox name was present before attempting a connect.

GCOS7 has a possibility for defining the application mailbox under the project. To engage this functionality the connect must have a blank mailbox. To allow this functionality to be used the -da parameter for Gline has been extended to allow a mailbox name GCOS7DEF, which is mapped to a blank mailbox for the connect.

### ***E1214: Gline, spanned records failed on input to GCOS***

DSA session negotiation includes the maximum send and receive size for DSA letters. If user records that exceed this size are sent they are split into several DSA letters. This is indicated in the protocol using a 'spanned record indicator' in the DSA 'Record segment header'. There are four indicators (using a two bit field). An indicator of zero (00) says that the entire user record is carried within the record segment. An indicator of 1 (01) means that this is the first part of a spanned record and that more record segments follow in one or more subsequent DSA letters. An indicator of 3 (11) means that this is an intermediate part of a spanned record, but not

the end, and an indicator of 2 (10) means that this is the final part of a spanned record.

The spanned record indicator was not being set correctly for user input to GCOS that exceeded the negotiated letter size.

Note that G&R/Gline by default suggests a letter size of 6k, and accepts whatever the GCOS side suggests in the negotiation. A letter size of 6k is normally enough to avoid spanned records on input, although spanned records can be seen on output of very large user records. Note also that you can set the G&R/Gline default letter size using the Gline -LL parameter to change the letter size that we suggest to the GCOS side. Normally the GCOS side will suggest a size it is happy with, and Gline will accept that, but you might find the -LL parameter to be necessary in special circumstances.

***E1215: Gline, Long time-out on connects to systems that are up, but not listening on the RFC port***

When the primary transport route (TS) is via a system that is available on the network, but not listening to port 102, the connect attempt times out after 30 seconds. Gline then tried to send a Disconnect Request on the non-existent connection. On Linux this operation timed out after 2 minutes and 40 seconds. The back-up route (if configured) is now tried much faster.

***E1216: Ggate/TNVIP, use of broadcasting caused loop on UNIX/Linux***

When gg\_tcp was started on UNIX/Linux with TNVIP support (-tnvip) and broadcasting (-na or-nb) enabled, Ggate looped and the gg\_tcp process had to be manually killed.

***E1217: Ggate, the message logs were cluttered with semaphore warnings***

The message logs were cluttered with message of the type:

```
000 G&R/gg_tcp/6.4.0/0: Semaphore: Release i=65538
      [(0022) Invalid argument]
```

The above has only been seen on Centos/Linux operating system.

***E1218: Gweb, Connections to Web8/TDSweb on non-standard port failed***

Connections to Web8/Tds-web using other than the default port number (port 80) would fail.

***E1219: Gline, the backup transport route was not tried if the primary failed immediately***

When the primary transport route (TS) is via a system that is not available on the network Gline gets a 'no route to host' error on the connect. This was not picked up at a stage where Gline could easily try the back-up route instead.