

Host Links for Windows, Linux and UNIX
Software Release Bulletin
Release 6.6
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This release

Release number (6.6)

This is the code base of a minor release. Any updates will have the same release identifier (6.6) and an update number (6.6.1).

New platforms

Windows 2012 Server: 64-bit

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 6.6 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 R6.6 version of glcc.

New license file

All Release 6.6 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=x64pc; CustomerID=5;
RefNum=6; MachineID=82.148.184.134; Key=12345678
Basic      Key=61b3af54;
Gproxy    Key=485b5d90;
Guftc     Key=539bd345;
Ggate     Release=6.6; Licenses=30; SiteLimit=90; Community=1;
          Corporate=200; Key=36a36c5b;
GljSrv    Release=6.6; Licenses=25; SiteLimit=50; Key=b8c57fa6;
Gweb      Release=6.6; 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

Gconfigw facelift

Gweb changes

Gweb enhancement: The sessioncookie title (= what is displayed in the browser) can now contain expandable session parameters

The optional `-title` parameter sets the session title. This will be used as both as the window title in your browser and in the list of running sessions. Inside the `-title` setting you may optionally add dynamic parameters that are looked up at run-time. These these dynamic parameters must be supplied within square brackets in the format `[SECT:PAR]` where SECT is the name of the Gweb configuration file section (either `gweb`, `user` or `line a` (see below), and where PAR is the name of the parameter within that section. For example, `-title "User name: [line:du]"`

will be shown as

```
-title "User name: Nathalie"
```

if the currently logged user name is Nathalie.

The default heading and each of the host headings can be followed by any number of parameters.

If `-emu` is used, then Gweb will be able to include the entry in the list of available sessions obtained if the user connects to Gweb without giving any parameters, e.g.:

<http://www.gar.no/cgi-bin/gweb>

The Gwebs `"-dbg"` and `"-trace N"` parameters are now picked up by the emulator sessions

Max-Age cookie setting

Added support for the Max-Age cookie setting (does not work in MSIE 8 and older)

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.660	Installation script
srbhl.660	Software Release Bulletin
Licenses	License keys to activate software
unzcccoo	Unzip program to unpack delivery
pppcccoo.660	One or more ZIP archives with software

The 660 extensions above refer to the Host Links version number. Maintenance releases will have the last digit incremented, e.g. 661 and 662. Minor releases will have the middle digit incremented, e.g. 670 and 680. 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 'cccoo' 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:

38612	Intel Pentium PCs, Linux kernel 2.6
ppca5	Bull Escala, AIX 5L for Power V5.3/6.1

Supported 64 bit UNIX/Linux platforms:

x6412	AMD/Intel x64_86, Linux kernel 2.6
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Examples

Some examples of complete filenames:

ggax6412.660	Ggate for Intel x64_x86, Linux kernel 2.*, release 6.6.0
Gsp38612.660	Gspool for Intel x86, Linux kernel 2.x, release 6.6.0
gwbppca5.660	Gweb for Bull, AIX 5L for Power, release 6.6.0

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 'pppcccoo.660', 'install.660', '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/Linux deliveries by special request

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

Windows deliveries*Supported 32 bit platforms*

386pc	Windows Server 2003, 2008
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Supported 64 bit platforms

x64pc	Intel/AMD x64, Windows 2003, 2008, 2008 R2, 2012
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A Windows delivery is a single self-extracting exe file e.g.

386pc_660en_XXXXXXXX.e xe	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.660
```

where 660 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 6.5.0

We have corrected the following errors since we released the 6.5.0 code base. These corrections have been available as fixes for R6.5.0 and we have incorporated them in the code base for R6.6.0.

E1226: GIAPI, line_wait (0) failed to report events

The line_wait (N) call allows a Host Links GIAPI application to wait for an event (incoming data) on any of the lines it is controlling. The call returns the lid of the line on which the event occurred. The parameter N is a time-out in seconds that returns -1 to the application if no events occur. A negative time-out e.g. -1 causes the application to be suspended indefinitely until an event occurs. The special case of N=0 should have allowed the application to do a single 'poll' of the lines to check for events, without suspending. This had stopped working and always returned a time-out (-1).

The work around is to use line_wait(0) to poll the lines, but check with line_input_available.

E1229: Gspool Monitor did not write log file

Gspool Monitor is a Windows-only tool for tracking print reports delivered from the mainframes to Gspool, provided Gspool uses the -hist parameter to update the Gspool history file:

```
\gar\servers\<<node>.gsp\report.history
```

Gspool Monitor can be started from the toolbar in Gmanager or as a free-standing application. It behaves in some ways as a Host Links server. By default it writes a log in:

```
\gar\servers\<<node>.gsm\_logfile.gsm
```

where <node> is the dsa node name of the Windows platform.

The log function was failing, due to the fact that the server logging routines expect the directory:

```
\gar\servers\<<node>.<ID>
```

to exist. These directories are normally created during the Host Links server initialization routines, but since Gspool monitor is not a real server it was not executing the initialization routines. Since the log file could not be created no log was written, and also the most vital log messages were delivered to the Windows event manager as errors in the G&R custom log.

The work around is to create the directory:

```
gar\servers\<<node>.gsm
```

manually, and restart Gspool Monitor.

E1239: Ggate, problem using '-coi off' parameter

The -COI OFF (CONAME information from Ggate to Glink) ggate option triggered a crash in the line module and left Ggate in a hang situation.

E1240: Listener, did not detect that GCOS7 TDS went down

The G&R DSA listener (nl_dsa) is used to accept incoming connects to a Host Links platform, usually to GUFT or Gspool configured to start-on-demand. If TDS on GCOS7 is taken down it does not terminate open DSA sessions. If the TDS application has opened print sessions to start-on-demand instances of Gspool the sessions would remain open on the Gspool side. When TDS is restarted the print sessions are reopened, but for the Host Links Listener these looked like new connects, and so the Listener started a new instance of each Gspool. Eventually after several restarts of TDS the maximum number of incoming sessions supported by the Listener would be exceeded, resulting in reject of new sessions.

The listener now turns on KEEP-ALIVE on the RFC1006 port. The TCP/IP stack on the Host Links platform now sends a keep-alive packet every keep-alive interval (default 2 hours). If these are not answered the session is aborted and the start-on-demand service terminates. Note that a stop and then immediate restart of TDS will not be detected. It must be down for two hours before it is detected by the TCP/IP keep-alives.

The workarounds depend on the situation. In the command line configured for start-on-demand you can set the Gline parameter -ii nnn to disconnect the session if it has been idle for nnn minutes. Alternatively you need to stop and restart the Listener before taking TDS up again. The stop/start of the Listener is always necessary if you stop TDS and take it up again immediately, because the keep-alive interval is two hours.

E1241: Gproxy parameters over 8 characters were not recognised

The problem occurred if using SSL, and if using the long form of the SSL parameters.

For example:

```
-SSLCF                was recognized
-SSLCERTIFICATEFILE   was not recognized
```

E1242: Gproxy load balancing failed

This known error concerns only customers who received a UNIX/Linux Host Links 6.5 update after April 2010 and before May 2011. The standard 6.5 delivery did not have this problem.

In April 2010 Gproxy was changed to listen for load-balancing UDP broadcasts only on it's own IP address (rather than all). This avoids problems with servers that have multiple network interfaces. The change worked perfectly on Windows platforms. Subsequent testing showed that on UNIX and Linux platforms an application that listens on a specific IP address no longer sees UDP broadcasts, and the load-balancing function of Gproxy stopped working.

The change is reversed and Gproxy now listens on all interfaces as before, so that it receives broadcasts on UNIX/Linux platforms. Customers with servers using multiple network interfaces and experiencing problems should contact support.

We continue to look for a solution that will allow Gproxy on UNIX/Linux platforms to listen only on it's own IP-address, but still receive broadcast information.

E1243: Ggate Telnet sessions failed for clients using binary

During the implementation of TN3270 client support for Ggate an error was introduced into the code that stopped Telnet clients using only CR as a terminator (instead of the normal Telnet CRLF) from being able to complete Terminal Manager dialog with the line module.

Work around is to configure the client to use normal Telnet protocol.

E1244: Ggate/Telnet CTRL/A not recognized as attention

The asynchronous terminal manager in Datanet/MainWay traditionally mapped CTRL/A (0x01) to the DSA Attention1 signal, and CTRL/Z (0x1A) to Attention2. These signals function in a similar way to break. The Telnet server on the MainWay delivered CTRL/A and CTRL/Z to the asynchronous terminal manager, so that they functioned in a Telnet environment.

The Ggate Telnet server has been modified to recognize CTRL/A and CTRL/Z and map them to the attention signals.

The work-around is to send text messages `*$A1` or `*$A2` to engage the attention logic.

E1245: Ggate/Telnet failed if client refused TT negotiation

Due to extended functionality in Ggate/Telnet that allows Telnet clients to use the Telnet terminal type response to specify a CONAME/RESOURCE for the GCOS connection, the Ggate Telnet server was dependent on the client negotiating Telnet terminal type. This is not a problem for a terminal emulator, which normally always uses the

Telnet terminal type response to inform the host which terminal type it is emulating.

Some script languages and applications that are not emulating a terminal use Telnet to communicate with a host application. These do not necessarily implement/configure Telnet terminal type negotiation. These scripts and applications failed with Ggate/Telnet.

The Ggate Telnet server has been modified to default these clients to a new Host Links terminal type, NVT (Network Virtual Terminal), which is the absolute minimum client functionality required to use a Telnet connection. Telnet clients that do negotiate terminal type, but use VTxxx as the response are also mapped to NVT. The NVT terminal type maps to a DSA terminal code of 0x2001 so that GCOS sees it as a TTY33. This is exactly the same strategy as used by the MainWay Telnet server.

NVT can be used explicitly as a Telnet terminal type response for simple applications/scripts/emulators that have no real terminal functionality, just simple message exchange with the host application.

NVT can be used generally as a terminal type in Host links, it is not restricted to Telnet.

For failing Telnet scripts/applications there is no work-around other than configuring terminal type negotiation if it is available in the Telnet client.

E1253: Ggate, Telnet debug was created for native Ggate

If Ggate is used for both Telnet and native Ggate sessions and Telnet debug was specified an empty Telnet debug file was created also for native Ggate sessions.

There is no work-around. Simply ignore/delete the Telnet debug files for native Ggate sessions.

E1254: Gftp, incoming connections could leave zombie

When a client connects to Gftp a child process is forked to receive the connection and handle the FTP session. If the client dropped the connection before the FTP child process received it, the child process would hang in the connect receive routine as a zombie process. The fix adds a 9 second timeout to the connect receive.

There is no work-around.

E1255: Gline, DSA connects could occasionally be rejected

A DSA connect to a GCOS host could very occasionally be rejected because Gline sometimes unintentionally offered to do suspend protocol. The Gline error was random, due to an uninitialized block of memory. In general this was never a problem, since GCOS applications that do not support suspend protocol simply refused the

offer by normal DSA protocol negotiation rules. Very occasionally the application refused the connect.

The work-around is simply to try the connection again.

E1256: Ggate, TN3270 to GCOS8 Start Field Extended failed

Ggate/TN3270 connections to GCOS8 applications generally use ASCII, and the support was for the GCOS8 applications using ASCII data stream to handle the 3270 terminal. IBM's specification of support for ASCII data stream states that all characters from the application must be ASCII graphical characters. Things like buffer addresses (binary for 3270 terminals) have to be mapped as two characters if they are fall in the control character area of ASCII (0x80 - 0x9F). ASCII data stream restricts the functionality of the 3270 terminal. For example SFE (Start field extended) is EBCDIC 0x29 and in ASCII this is 0x89 i.e. in the control character zone. The IBM 3270 manual does not specify any way of sending this as two graphical ASCII characters, it simply states that SFE is not supported for ASCII data stream. This is historical, and there is no reason today that Ggate/TN3270 should restrict the GCOS8 application to ASCII data stream. The fix allows GCOS8 applications to send ASCII control characters unencoded and Ggate maps them to EBCDIC one-to-one.

There is no work-around.

E1257: Ggate, TNVIP using symbolic host IP could fail

TNVIP/TELNET connections to a host with a symbolic IP address in das.cfg could occasionally fail. This was due to TNVIP/Telnet sessions collecting Gline parameters by TM (Terminal Manager) dialog delivering invalid Gline parameters to the DSA line module. This caused the DNS look-up of the symbolic host name to crash.

The work-around is to use numeric IP addresses for the hosts in das.cfg.

E1258: Ggate UNIX/Linux, restart failed if listening on many ports

If Ggate on UNIX/Linux was listening on more than three ports and there were client sessions connected, then if Ggate was taken down restart would fail, unless the client sessions were disconnected. Note that in general Ggate listens on only one or two ports, for example the native Ggate port and the TNVIP port. The internal test case that failed was a Ggate listening on the native, Telnet, TNVIP and TN3270 ports. The problem was caused by the client sessions that were forked inheriting all the listening ports from Ggate, but only disconnecting the first three, leaving the fourth listen open. When Ggate was restarted it was not able to listen on the fourth port, because the client sessions were still listening on it.