



# GeNUGate 6.2 Release Notes

Information on the GeNUGate 6.2 product family is available in these release notes.

Please read this document carefully! You are advised to install this upgrade, as this release both resolves various problems, and provides new features.

## Important Note!

We strongly recommend performing a configuration or preferably full backup of your GeNUGate system BEFORE upgrading.

Detailed instructions on how to perform this upgrade are available in section 5 of these release notes.

### Important - Mirroring:

During the upgrade procedure, systems with mirror disks (offline mirror) will DEACTIVATE mirroring. This enables testing of the upgrade.

The models GeNUGate 400, 600, 800 as well as the older model GeNUGate Enterprise are equipped with mirror disks.

Upgrading of systems with mirroring is performed as follows:

- Upgrade system as described in section 5. The mirror update is automatically deactivated.
- Test: It usually is sufficient to let the upgraded system run under normal conditions for a few days.
- Reactivate mirror: After testing, delete the file /var/db/.NOMIRROR. This reactivates the automatic mirror update and synchronizes the mirror at the next cron job run (nightly at 2.30 a.m.).

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## 1 Scope of Delivery

With the current GeNUGate version 6.2 you have received:

- these release notes
- a bootable CD-ROM
- a compressed PDF version of the manual on the GeNUGate-CD-ROM.

## 2 New Features in GeNUGate 6.2

GeNUGate 6.2 contains all patches and modifications of version 6.1 up to and including patch 11.

### 2.1 Updates

- **Update to OpenBSD Version 4.1:** The OpenBSD operating system, including all components, was updated to version 4.1.
- **Update to Squid 2.6Stable17:** The Web proxy Squid was updated to the current version 2.6Stable17.

### 2.2 Reporting

GeNUGate 6.2 now provides extensive reporting.

- **GUI Configuration:** Reporting is available in the GUI in the menu STATISTICS → REPORTING. Report extent, language and frequency can be configured here. The results are available as PDF files downloadable via the GUI, or as e-mails sent to a list of recipients. After upgrading, reporting needs to be activated for specific relays in the GUI menu SERVICES → RELAYS, Tab „Logging”.  
Note: Activation can lead to an increased amount of accounting data.

### 2.3 New log files and log messages

The „Logging and Accounting” menus were completely revised.

- **New filenames:** The logging mechanism continues to be based on the application `syslogd`. Log files are located in the directory `/var/log`. All processes involved in handling and delivery of e-mail (SMTP relay, SMTP gwd, sendmail) log to the file `/var/log/mail`.  
All relays – except for SMTP relay– log to the file `/var/log/relay`.
- **New log format:** Log messages have been reclassified and assigned unambiguous numbers. Leading characters in the number code specify the message categories „Emergency”, „Critical”, „Error”, „Warning”, „Info” or „Debug”.
- **Revised / Updated Logging GUI:** Display and search of log messages in the GUI now are faster. Additional information on the problem logged is available by clicking on the log message code.



## 2 NEW FEATURES IN GENUGATE 6.2

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- **Command line tool `logsearch`:** `logsearch` assists in searching log messages on the command line.
- **Separate logging and accounting:** Accounting and logging now are available in separate menus. The newly introduced process `acctd` collects relay accounting messages which then are logged to the file `/var/log/acctd.blg`.  
To view accounting information on the command line, execute the program `binacct`.
- **Rotation of logfiles via `newsyslog`:** Log files now are rotated by the program `newsyslog`. Threshold values for file rotation are specified in the menu SYSTEM → SYSADMIN → SYSLOG, submenu „Logfile-rotate“. The number of archive files to save also is set here.
- **Display of step-by-step mail processing in the GUI:** Individual processing steps of an e-mail within the system can be viewed in the GUI menu LOGGING → E-MAIL → MAILFLOW.

### 2.4 Remote configuration by GeNUCenter

Support for remote management and monitoring by GeNUCenter 1.1 has been integrated into GeNUGate 6.2. For details, see the GeNUCenter 1.1 release notes.

### 2.5 Mail

- **Whitelist Features:** Extended exceptions for spam checks now can be specified in the GUI menu for SMTP relay configuration. Sender IP addresses as well as entire sender domains and recipient addresses now can be excepted in the submenu „Whitelist“.
- **Use several RBL servers for SMTP relay:** A list of RBL („Remote Blackhole List“) servers now can be used to check IP addresses. A positive answer from any server in the list will cause the checked address to be treated as a spam mailer.

### 2.6 HA

- **Chart display of dynamic routing information in the GUI:** The status of the OSPF routing daemon `gated` on the ALG now is displayed as a concise graphical plot. Display format and information to be shown can be configured in the GUI menu SYSTEM → HA → CHECK → OSPF.

### 2.7 VPN

- **`ipsecadm` deprecated:** The tool `ipsecadm` has been removed. GeNUGate 6.2 now provides the updated program `ipsecctl` with extended functionality.

### 2.8 GUI

- **Redesigned start page with status overview:** The GUI start page now displays a tactical overview of hardware status, existing connections, and system resource usage. Clicking on the links provide detailed status views or configuration menus.



- **GUI crontab settings:** Periodic `crond` tasks now can be configured in the GUI menu SYSTEM → SYSADMIN → CRONTAB.
- **GUI overview of bootinstall scripts:** Available „bootinstall” scripts are listed under SYSTEM → SYSADMIN → BOOT INSTALL. Unnecessary entries can be removed from the list.
- **Input fields now macro capable:** The menu SYSTEM → MACROS permits configuration of a list of global macros. These can be referenced by their names. Input fields that support this display the label „macros supported”. A macro can be referenced in input fields using the syntax `$<NAME>`.

## 3 Hard Drive Controller BIOS Update

Systems of the types GeNUGate 400, 600 and 800 delivered after November 2005 that in addition contain an LSI RAID controller, need a firmware update of the ALG RAID controller. BIOS flashing instructions are below:

### 3.1 Determine necessity for the system

Execute the following command at the console to determine if your system is affected:

```
grep LSI /var/run/dmesg.boot
```

Output from the system means the controller was found. An update of the RAID controller BIOS then is necessary.

### 3.2 Create boot floppy

There are two ways to create a boot floppy. The section 3.2.1 describes the procedure under Windows, section 3.2.2 on a GeNUGate system. The second method however needs the GeNUGate to run in single user mode.

#### 3.2.1 On a Windows PC

To create the boot floppy on a Windows system, insert an empty floppy and the GeNUGate 6.2 CD-ROM. Open the command box („Start → Run → cmd”). Change to your CD-ROM (e.g. „D:”) and then to the directory „floppies”. In this directory, start the program `ntrw.exe` and enter the BIOS file `lsi_1149.fs` as the first parameter, and the floppy drive as the second parameter. An example:

```
D:floppies> ntrw.exe lsi.1149.fs A:
```

#### 3.2.2 On the GeNUGate ALG

To create the boot floppy on a GeNUGate, the ALG must be in single user mode. To do so, reboot the GeNUGate and answer the following question:

```
NO AUTOBOOT. TYPE RETURN TO CONTINUE, S FOR SINGLE USER MODE:
```



## 4 CHANGED FUNCTIONALITY

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with **S**. The shell will be `/bin/sh`, „vt220” the terminal type per default. Now insert an empty floppy (without write protection) and the GeNUGate 6.2 CD-ROM in your GeNUGate ALG and execute the following commands:

```
# mount /dev/cd0c /mnt
# dd if=/mnt/floppies/lsi_1149.fs of=/dev/rfd0c
# umount /mnt
```

Now the boot floppy is ready.

### 3.3 Flashing the RAID controller

To flash the RAID controller, please reboot your GeNUGate and enter the BIOS by pressing the „Del” key at boot time.

Note the settings in „Boot → Boot Device Priority”. Then change the first boot device to „Floppy” and leave the BIOS with the command („Exit → Save Changes and Exit”).

Boot the GeNUGate from floppy. You will be prompted twice if you really want to flash the RAID controller. Answer with „y”. (Note: If you are using a German keyboard mapping, use the letter „z”).

The RAID controller now will be flashed.

After flashing you will be prompted to reboot the system. Remove the floppy and reboot the GeNUGate. Once again, enter the BIOS (pressing the „Del” key at boot time) and restore the settings at „Boot → Boot Device Priority” to the previously noted values. Save and exit the BIOS.

The GeNUGate system BIOS now has been updated to the current version, and you can proceed with the upgrade to GeNUGate 6.2.

## 4 Changed functionality

### 4.1 DNS names no longer used in SRCACL, DSTACL and IFRUTES

It previously was possible to manually modify relay configuration files and use hostnames in ACLs. Starting the relay resolved the hostnames and entered the IPs thus determined in the ACL. This feature was deprecated due to unforeseeable behaviour and security problems.

Local additions to your system that use this feature must be removed **before upgrading**.

### 4.2 DNS names no longer used in MAP directives

It previously was possible to manually modify relay configuration files and use hostnames as targets in „MAP” directives. This feature was deprecated. Local additions to your system that use this feature must be removed **before upgrading**.

### 4.3 Manual logwatch patterns

As all log messages have been reclassified and are written to other files, the logwatch patterns specified in the GUI menu `SYSTEM → SYSADMIN → PREFERENCES → LOGWATCH` no longer will work. These settings cannot be preserved during upgrade. Instead, these settings must re-entered afterwards.



#### 4.4 Default element in ACLs

Previously, default elements in ACLs such as „\*” or „0/0” were expected to be at the end of the string. All elements after the default element were ignored.

Now the default element is implicitly placed at the end of the string regardless of its real position. I.e., even ACLs containing a default element in the middle of the string now are interpreted as if it were at the, thus activating previously ignored elements. It therefore is recommended to check ACLs of this type and modify the syntax before upgrading.

#### 4.5 Packet filter pf(4) default setting „stateful”

Packet filter pf(4) default rule settings have changed in OpenBSD 4.1. As of this version, all rules are per default „stateful” unless specifically described otherwise. TCP states now only are created by the first packet of the connection.

Any custom rules introduced by the local file `pf.conf` on the GeNUGate ALG or PFL component must be checked if they conform to the new default behaviour, and possibly modified. Rules in the local file that may not be „stateful” need the additional statement

```
flags any no state
```

#### 4.6 New hardware sensor names

Due to the operating system upgrade to OpenBSD 4.1, the names and recognition order of detected hardware sensors have changed. Hardware profiles of older machines not covered in the default tables need to be redefined in the GUI menu SYSTEM → HARDWARE → CONFIGURATION after upgrade.

Custom settings in the hardware sensor list must be saved **before upgrading**. These settings can be restored afterwards.

## 5 Upgrade Installation

### 5.1 Upgrade path

**Beginning from version 6.1, GeNUGate systems can be upgraded to version 6.2.**

No specific patch level within version 6.1 is necessary.

### 5.2 Data integrity

As opposed to the upgrade of GeNUGate 5.1 to GeNUGate 6.1, the current upgrade to GeNUGate 6.2 does not create any new filesystems. Therefore, log files and e-mails in the system spool directory will not be lost.

Nevertheless, please back up your configuration before upgrade with:

```
# cfgbu -s
```

To back up log files and e-mails, a full system backup is necessary, as described in the product manual, chapter 6.1 „Backup and Restore”.



## 5 UPGRADE INSTALLATION

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### 5.3 Minimum available disk space

Sufficient space in the partitions on the hard drive is needed for a successful upgrade. Above all, the partitions `/` and `/usr` need more than 50% available space. Enter the command `df` to determine file system usage:

```
admin@ggd132:~# df
Filesystem 1K-blocks      Used    Avail Capacity  Mounted on
/dev/wd0a    128942      42256    80240    34%     /
/dev/wd0f   2064734    154116   1807382     8%    /cage
mfs:15976     64446         2     61222     0%    /tmp
/dev/wd0d    513710    240628   247398    49%    /usr
/dev/wd0e    256846    123050   120954    50%    /var
```

The column „Capacity” states the used percentage of the respective file system.

### 5.4 Performing the upgrade

Please note:

**Physical access to the GeNUGate system itself, or to a connected serial console is necessary, as a CD-ROM and possibly a floppy need to be inserted or switched.**

Insert the GeNUGate 6.2 CD-ROM in the drive, log on to the system as the user „admin”, and become „root” with the command `su`.

```
admin@ggd132:~# su -
Password:
Apr 18 08:06:33 ggd132 su: admin to root on /dev/console
root@ggd132:~#
```

Enter the command `ggupgrade` to start the upgrade.

```
root@ggd132:~# /usr/local/gg/sbin/ggupgrade
Executing upgrade script from cdrom.
Starting /cdrom/usr/local/gg/sbin/ggupgrade ...

Before the upgrade starts, the patches for the new release are
transferred. This ensures your GeNUGate system will be running with
the latest patchlevel immediately after upgrade.

Before the upgrade the patches for the new release are fetched now.
That way your GeNUGate will start working with the latest patchlevel
right after upgrade.

Get upgrade patch from cdrom ...
Retrieving G620_000.tar

The patches for the new version can be fetched from GeNUA over the
Internet.

Patches from GeNUA (yes no) [yes]? yes
```

You can check for published patches before restarting the system by typing **yes**.

Reboot the system now.



## 5 UPGRADE INSTALLATION

```
root@ggdl32:~# reboot
Apr 18 08:11:42 ggdl32 reboot: rebooted by admin
/etc/rc.shutdown in progress...
IP is OFF
/etc/rc.shutdown complete.
Apr 18 08:11:45 ggdl32 syslogd: exiting on signal 15
syncing disks... done
rebooting...
```

Be sure the system boots from the inserted GeNUGate 6.2 CD-ROM by checking for the message *CDBOOT 1.06* in the boot prompt.

```
>> OpenBSD/i386 CDBOOT 1.06
boot>
booting cd0a:bsd.install: 3876896+779056 [52+205664+186065]=0x4d072c
entry point at 0x200120

[ using 392156 bytes of bsd ELF symbol table ]
Copyright (c) 1982, 1986, 1989, 1991, 1993
    The Regents of the University of California. All rights reserved.
Copyright (c) 1995-2007 OpenBSD. All rights reserved. http://www.OpenBSD.org

OpenBSD 4.1-stable (ALG.install) #0: Tue Apr 15 21:29:59 CEST 2008
    gernler@g621.genua.de:/build/gg.62/62.D017/ALG.install
cpu0: Dual Core AMD Opteron(tm) Processor 265 ("AuthenticAMD" 686-class ...
cpu0: FPU,V86,DE,PSE,TSC,MSR,PAE,MCE,CX8,APIC,SEP,MTRR,PGE,MCA,CMOV,PAT,PSE36 ...
...
```

After loading the kernel, the GeNUGate 6.2 installation routine will prompt you for the installation language and keyboard mapping. Afterwards, please select the installation mode **upgrade**.

```
GeNUGate Installation

Sprache auswaehlen.
Sprache/Language (de en) [de] ? en

Select the layout of the keyboard connected to the GeNUGate.
Keyboard layout (us de de.noad ... pl hu si cf cf.noad) [cf.noad] ?
us
kbd: keyboard mapping set to us

Probing system.

Choose installation, upgrade or recovery from backup.
Mode (install upgrade recover) [upgrade] ? upgrade
```

The hard drives and file systems are checked, mounts performed and the upgrade is started.

```
Mount hard disk.
Select boot hard disk.
Detecting hard drives in system.
Boot hard disk selected.
Unmount all partitions.
Read in fstab.

Check file systems.
/dev/rwd0a: file system is clean; not checking
/dev/rwd0f: file system is clean; not checking
/dev/rwd0d: file system is clean; not checking
/dev/rwd0e: file system is clean; not checking
```



## 5 UPGRADE INSTALLATION

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```
Mount all partitions.

Remove flags.

GeNUGate licenses.

Initialize license.
```

You are prompted for the GeNUGate license number and hardware serial number. The values from GeNUGate 6.1 still are valid. Press **[RETURN]** to accept them.

```
Enter license.
The value to be entered has the format 1513-GG-W6E6-R8XG-XEHQ-F20A.
License [1513-GG-W6E6-R8XG-XEHQ-F20A] ? [RETURN]

Enter serial number.
The value to be entered has the format 11453-11-M8MZ.
Serial number [11453-11-M8MZ] ? [RETURN]
```

You now can transfer patches from USB stick, an HA peer or over the network.

```
Get patches from USB stick.
Fetch patches from USB medium (yes no) [no] ? [RETURN]

Get patches from HA peer.
Fetch patches from HA network (yes no) [no] ? [RETURN]

Get patches from GeNUA.
Fetch patches from network (yes no) [no] ? [RETURN]
```

Upgrade begins now. The new software is copied to the system and configuration starts.

```
Begin upgrade.

Copy upgrade patch from cdrom.
Retrieving G620_000.tar
...
```

At the end of the upgrade, you are prompted to set new passwords for the administrative accounts „admin” and „root”. Alternatively, keep the existing passwords by pressing **[RETURN]** to select **no**.

```
Set administrator passwords.
Set passwords (yes no) [no] ? no
```

The upgrade is done. Press **[RETURN]** to restart the system and remove the CD-ROM from the drive.

```
Press <Enter> to reboot, remove the cdrom after the 'rebooting...'
message.
Reboot now (reboot) [reboot] ? [RETURN]
```

The system now starts the new software. After the kernel has been loaded, you are prompted for the „root” password, as a bootinstall script needs to be run to upgrade the PFL (packet filter) system component.



```
I found at least one bootinstall script. You can only run them as root.
So I will ask for the root password now. If you do not know it, enter
three times the empty string, and we will continue with booting without
executing the bootinstall scripts. Enter your root password now.
You have 60 seconds to authenticate!
```

```
Enter root password!
```

```
Password:
```

Select the script with **1** und **[RETURN]**. Start the script by entering **y**.

```
Select a list of bootinstall scripts by entering their numbers or by
entering * to select all.
```

```
=====
1) /var/gg/boot/bootinst.2008.04.18-08.34.21.exe
   Initialize packet filter disk
```

```
Auswahl (1) []: 1
```

```
1) /var/gg/boot/bootinst.2008.04.18-08.34.21.exe
   Initialize packet filter disk
```

```
Is this ok? (y/n) [n]: y
```

Insert the PFL floppy in the ALG drive, or insert the PFL USB stick in an available USB slot of the ALG, and rewrite the PFL medium. Follow the displayed instructions to restart the PFL.

After restart, log on to the ALG. A banner will displayed with the new version number.

```
login: admin
```

```
Password:
```

```
Last login: Thu Mar 15 13:06:29 on console
```

```
                Welcome to your GeNUGate Firewall System.
```

```
                This system is running GeNUGate Version 6.2 000 based on OpenBSD 4.1
```

```
admin@ggd132:/var/home/admin$
```

Enjoy your new GeNUGate system!

## 6 How to Contact Us

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