

Update Notice:
DG/UX™ System 5.4 for
AViiON® Computers

Release 2.01

March 1993

Part number 078-600085-00

This release notice applies to the following models:

P001

Q001

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**DG/UX™ System 5.4 for
AViiON® Computers
Release 2.01**

078-600085-00

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1 Introduction

This update notice describes the DG/UX™ 5.4 Release 2.01 operating system for Data General's family of AViiON® computers. This software update supports new hardware, enhances kernel performance, enhances terminal and printer administration, and fixes many customer-reported problems.

This update notice supplements or replaces information found in the DG/UX 5.4.2 release notice. In addition, this notice includes information not currently available in the product manuals (e.g., information developed after the current manuals were printed, or corrections to current manuals).

You may print additional copies of this update notice after you have installed the DG/UX system. A copy suitable for line printers can be found in the file `/usr/release/dgux_5.4R2.01.un`. In the event of content differences between the printed copy of this notice and the on-line lineprinter version, the printed copy takes precedence.

This product update introduces a new release numbering scheme for the DG/UX operating system. Here's how it works:

product-name base-release Release *x.yz*

where:

product-name is **DG/UX**.

base-release is **5.4**.

x, if incremented, signifies a major release to support new functionality.

y, if incremented, signifies a maintenance release.

z, if incremented, signifies a bug fix release.

The name of the current update, DG/UX 5.4 Release 2.01, indicates that it is a bug fix release. In the new format, the previous revision of the product, DG/UX 5.4.2, would have been named DG/UX 5.4 Release 2.00.

2 Product Description

Refer to the DG/UX 5.4.2 release notice (`/usr/release/dgux_5.4.2.rn`) for initial information about DG/UX 5.4.2.

2.1 Hardware Support

Support has been added for the following new systems and devices:

- The AV 7400 systems are Data General's next generation server architecture, replacing the AViiON 5200 systems. Targeted at user populations of 75 to 300 these servers utilize an

easily upgradeable design which provides the throughput required for mid-range application environments. These systems provide:

- Models with 2 or 4 33 MHz 88100 processors with 96 KB of cache per processor
- Up to 2 GB of memory, with memory modules available in 32 MB or 128 MB increments
- High Availability features, allowing recovery from CPU, memory, I/O channel and disk channel failures in minutes. Includes redundant cooling systems providing continuous operation following fan failures.
- Integrated SCSI-2 and Ethernet plus a 5-slot VME chassis for I/O connections for very large user populations
- CLARiiON Model 7921 high capacity, high throughput SCSI-2 tape array subsystem
- Model 6841/6842 3.5 inch, 2 Gbyte, Fast, 5400 RPM SCSI-2 disk drive
- Model 6760 (single-ended SCSI) and 6761 (differential SCSI) 8mm 5GB 5 1/4" helical scan SCSI-2 tape drive
- Model 40263 MiLAN 3100 Network Print Server, a high performance Ethernet print server that simultaneously provides printer sharing across DG/UX and Novell LANs and features a DMA parallel port well suited to color and specialized graphics printers.

2.2 New Software Features

A new package, NetWorker, is included with this release. The NetWorker software provides advanced archiving capabilities, including:

- Automated backup initiation and scheduling
- Online storage of version and location information for each archived file
- Media labeling and recycling
- Writing to multiple concurrent tape drives
- Multiplexing multiple file systems on multiple disks to a single tape drive

See the NetWorker manuals and release notice (`/usr/opt/networker/release/networker_1.0.rn`) for additional information.

The DG/UX X Window System has been updated. For details, see the printed update notice, "DG/UX X Window System for AViiON System, DG/UX 5.4 Release 2.01" or the corresponding online file `/usr/opt/X11/release/X11_5.4R2.01.un`.

Other new features in this update include:

- Enhancements to **sysadm** in printer, logical disk, and file system areas
- Expanded SCSI-2 soft error reporting
- New system calls supporting POSIX-based realtime extensions
- Support for SCSI-2 Wide data transfers added to the **ncsc** adapter driver
- Enhancements to **libc**
- Improvements to **ttymon**, **login**, and archiving utilities
- Improved terminal support
- Enhancements to the VME Terminal Controller (VTC), model 7425. In addition to previously supported call-in connections with the telnet protocol, the VTC now supports call-in connections with the telnet, rlogin, and tcp protocols, and call-out connections with telnet and tcp protocols. An independent SNMP agent has also been added to the VTC in this release. Consult **vtc.addr**(4M) and **vtc_snmp_files**(4M) for complete details on taking advantage of this new functionality.
- Improved login speed for **telnet**, **rlogin**, and **ttymon** access

3 Environment

3.1 Firmware

The Model 40263 MiLAN Network Print Server requires firmware revision 2.7 or later.

The High-Availability Disk-Array (H.A.D.A.) requires microcode revision 3.34 or greater for proper operation with DG/UX 5.4 Release 2.01. This microcode is not shipped on the DG/UX release media, but is available through the Microcode Installer for Disk Array (MIDA) subscription service, as MIDA revision 4.00.

The CLARiiON disk array subsystem, previously known as the High-Availability Disk-Array II (H.A.D.A.-II) requires microcode revision 4.72 or greater for proper operation with DG/UX 5.4 Release 2.01. This microcode is available in the AV Disk Array Microcode Installer for AViiON Systems, Revision 3.00.

3.2 Software

DG/UX 5.4 Release 2.01 requires that the previous release, DG/UX 5.4.2, be installed on your AViiON system. If you are installing DG/UX for the first time on systems other than the AV 7400, load DG/UX Release 5.4.2 before loading DG/UX 5.4 Release 2.01. For complete details, see the "Installation" section of this notice and the manual *Installing the DG/UX™ System*.

3.3 Layered Products

OpStar 1.40 will not run on DG/UX 5.4 Release 2.01. Install OpStar 1.50 before attempting to use optical disk devices with DG/UX 5.4 Release 2.01.

If you are currently running Trusted DG/UX 5.4.2T/C2 or B1, do not load this release. Conversely, if you are currently running DG/UX 5.4 Release 2.01, do not load any release of Trusted DG/UX.

If you have previously installed the Looking Glass 2.2 product as part of your DG/UX 5.4.2 release, you may safely upgrade to DG/UX 5.4 Release 2.01 without any impact on the Looking Glass files.

3.4 Patches

DG/UX System 5.4 Release 2.01 contains the following patches and patch levels previously released for DG/UX Release 5.4.2:

- DG/UX for AViiON System Patch Level op-sys-x_5.4.2.930122
- AViiON Hardware Supplement for NVRam Board dgux_5.4.2.s06
- DG/UX for AViiON System Patch Level op-sys-x_5.4.2.921016
- DG/UX for AViiON System Patch dgux_5.4.2.p01
- DG/UX for AViiON System Patch dgux_5.4.2.p33
- DG/UX for AViiON System Patch dgux_5.4.2.p45
- Layered Software Prerequisite op-sys-x_5.4.2.s05

4 Enhancements and Changes

This section contains information about enhancements and changes made to the DG/UX System 5.4 in Release 2.01.

4.1 Printer Services

4.1.1 Sysadm Support for Ip

The printer add and modify operations in sysadm have been redesigned to provide easier printer setup, and include new support for networked printers and remote printers on systems other than DG/UX 5.4.

The `Device->Printer->Devices->Add` operation now includes a "quick" add option that reduces the number of screens and queries presented to the user by providing default values for less common printer attributes. If you need to set up advanced options such as fault recovery, then do not select the quick add option.

The printer add and modify operations include support for printers connected to a networked termserver device or a MiLAN 3100 Network Print Server. When setting up a networked printer, users can specify the hostname of the server device and the port number.

The add and modify operations also provide new support for printers on remote systems other than DG/UX 5.4. Remshlp interface scripts are included for printers on remote BSD systems, pre-DG/UX 5.4 systems and AOS/VS systems.

4.1.2 Ip Filters

This release includes a new printer filter "laserjet" which provides advanced printer support for the LaserJet II, LaserJet III and LaserJet IIISi printers. This filter allows you to select many of the standard laserjet features such as iont name, type face, style, weight, and paper tray.

To configure the laserjet filter, use `sysadm` and select laserjet as the content type. You will also need to indicate which laserjet printer type you are using.

To access the laserjet filter features from `lp`, use the option `-y mode`, where `mode` is the desired feature. For more details see `laserjet(1)` and `lp(1)`.

4.1.3 MiLAN 3100 Network Print Server Support

The MiLAN 3100 Network Print Server DG Model 40263 connects remote printers to TCP/IP Ethernet networks. The FastPort server is connected directly to the network using 10BaseT, 10Base2, or 10Base5 Ethernet media and the device includes a high speed Centronics parallel port and an RS232 serial port.

This release includes new support for the MiLAN 3100 Network Print Server. Administrators can configure a printer on either the parallel or serial port of the FastPort using `sysadm`, and users can print to the FastPort with the standard `lp` commands and options.

To configure a printer on a MiLAN 3100 Network Print Server, use `sysadm` and choose the "Remote to networked printer device" connection type. Then select the "fastport" interface script, give the hostname of the fastport device and enter port 2000 for the parallel port or 2001 for the serial port. For more details see `fastport(1)`, `fpfilter(1)`.

Data General recommends the "Use-ACK" setting for the parallel port when printing to impact (line or dotmatrix) printers. You should also manually set the IP address. For more information on configuring the print server and setting the IP address, see Section 11 of *FastPort 3000 and 3100 Network Print Server User's Guide* Version 2.5 (available from MiLAN Technology Corporation).

If you connect the FastPort print server to a multiport transceiver, and there are pauses of several minutes during printing, the LAN may be operating at utilization levels greater than the IEEE standard recommends. To eliminate the pauses, either: (1) set the print server to ignore alignment

errors, using the E command (see section 11.3 of the MiLAN FastPort User's Manual); or (2) put the print server on a separate single port transceiver.

You should cycle the print server power (that is, turn it off, and then on again) if you change any of the following:

- Printers on the print server port
- Print server switch positions
- The setup of a printer (such as switching from SW flow control to HW flow control)

The timeout and retry parameters set by `lpsystem` and in the Systems menu of `sysadm` are now configurable. Previously these values were hard-coded to avoid problems using other timeout values. Set the timeout higher if the system will have a heavy printing load. Generally 10 minutes is sufficient. The retry time should not be too long, or the scheduler may appear to hang, when it really is just waiting a long time to retry a job. A setting of 2 minutes generally gives acceptable performance.

Remote printers served on BSD and Novell systems may now be accessed using `lpNet`.

The scheduler has been improved to allow faster scheduling. Under heavy load to a BSD server this improvement is over 10 times. As a result jobs get sent to a remote or local server faster, and local commands are responded to more quickly. Before this change, under heavy load (50 - 100 jobs in the queue), jobs would wait long periods of time in the print queue waiting to be scheduled.

4.1.4 Ip Bug Fixes

- The postprint filter has been modified so that margins are not automatically adjusted when printing a text file to a PostScript printer with a small character pitch selected.
- The termprinter interface script now sends each `lp` print request as one job to the `termserver` rather than multiple jobs. This fixes an interleaving problem when sending several `lp` requests to the termprinter.
- The `lpsched` command has been modified so that `/var/spool` can be set up as a separate file system. In previous releases of DG/UX, a `/var/spool` file system could not be unmounted due to a bug in `lpsched`.
- A bug was fixed in `lpsched`, so that `lpstat` reports the correct destination for each request when printing to a printer class that is being modified.
- The scheduler has been improved to fix the unexpected message errors, received when using `lpstat` or `lp`.
- The scheduler is now more robust due to a selective redesign which includes testing for memory use errors.
- The scheduler no longer creates unnecessary files in the spool directory. This previously required an administrator to periodically clean out these files.

- The scheduler names filtered files with the request id and the system name to provide unique names. Previously two filtered files could have the same name causing some files not to be printed.
- The scheduler properly removes a cancelled request to a server that has been down. While the server is down the job is marked cancelled when doing an lpstat.

4.1.5 Problem to Avoid: Insufficient Remote Spooler File Space

If there is not enough room on the remote spooler file system for a print job, the print job will fail silently. This problem exists for AViiON servers and for BSD/Novell servers.

4.2 File System and Logical Disk Management

The **sysadm** facilities for creating and expanding logical disks and local (DG/UX) file systems have been improved.

When creating a logical disk, and when expanding a logical disk or local (DG/UX) file system, you are given the choice as to whether to manually specify the logical disk pieces yourself (the old way), or to have the system automatically choose piece(s) for you (the new way).

4.2.1 Creating File Systems

To create a logical disk and file system using default characteristics, do NOT first create a logical disk. Go straight to the `File System->Local Filesys->Create` operation in **sysadm**. There you will be given the option of choosing an existing logical disk (if any are available), or typing in the name to be given to the logical disk that will be created. Think up a name (not the name of an existing logical disk), and type it in. You will be prompted for a few more things, and the logical disk will be created, a file system will be created on it, and the file system will be added.

If you want to create a file system on a logical disk with special characteristics (striping, mirroring, etc.), do so using the `Device->Disk->Logical` and/or `Device->Disk->Mirror` **sysadm** menu(s). Then go to the `File System->Local Filesys` menu and choose the `Create` (NOT the `Add`) operation. Note that this is a change from the way things were done when **sysadm** invoked `diskman` to create logical disks.

The `File System->Local Filesys->Create` operation offers a list of logical disks and mirrors to use; select the one you just created, and proceed.

4.3 Kernel Enhancements

4.3.1 New SCSI-2 soft error reporting

DG/UX now reports soft errors on SCSI-2 tape drives (models 7921, 6760/6761, and 6762) based on frequency. Instead of reporting all soft errors as they occur, DG/UX periodically checks the rate of soft errors per bytes written on these drives. If the soft error rate exceeds normal limits, either a "marginal" or "bad" soft error message will be reported.

The "marginal" error rate indicates that, while data integrity is being maintained, tape capacity and throughput are reduced. Either the tape drive's heads are dirty, or the tape cartridge has a significant number of bad spots. To correct the marginal condition, try cleaning the heads and/or replacing the tape. If the condition persists, get the tape drive serviced.

The "bad" error rate indicates that, even though data integrity is still being maintained, tape capacity and throughput are seriously reduced. If the condition persists after the tape drive heads have been cleaned and the tape has been replaced, get the tape drive serviced.

The probability of soft errors is highest at the beginning of a tape, where tape wear is highest. Replace worn tapes promptly.

The following is an example of the "marginal" soft error message:

```
Tape device at st(insc@7(FFF8A000,7),5,0) encountered a high
number of correctable (soft) errors. Please observe the
suggested maintenance schedule for the drive.
```

The following is an example of the "bad" soft error message:

```
Tape device at st(insc@7(FFF8A000,5,0) encountered an unacceptably
high number of correctable (soft) errors. Please clean the tape drive
and use a known good tape. If you receive this message frequently,
contact your DG service representative.
```

4.3.2 Soft Realtime Support

This release includes twenty new system calls supporting realtime extensions. The new realtime calls are based on the POSIX 1003.4 Draft 12 (P1003.4/D12) functional specification, sections Synchronization, Execution Scheduling, and Clocks and Timers. P1003.4/D12 contains 12 other sections that are not directly supported in this release, although several of the capabilities defined in these sections are already either partially or fully supported by existing system calls in standard DG/UX.

The new realtime system calls are listed below.

P1003.4 D12 Section 17 (all), Synchronization:

```
sem_init()
sem_destroy()
sem_unlink()
sem_lock()
sem_trylock()
```

```
sem_unlock()
```

P1003.4 D12 Section 21 (all), Execution Scheduling:

```
sched_setparam()
sched_getparam()
sched_setscheduler()
sched_getscheduler()
sched_yield()
sched_get_priority_max()
sched_get_priority_min()
sched_rr_get_interval()
```

P1003.4 D12 Section 22 (partial), Clocks and Timers:

```
clock_getres()
timer_create()
timer_delete()
timer_settime()
timer_gettime()
timer_getoverrun()
```

The Clocks and Timers Section is a partial implementation in that it does not provide all of the P1003.4/D12 Clock support. In addition, P1003.4/D12 requires support for at least 32 per-process timers, whereas in this release only 4 per-process timers are provided.

Note that, when P1003.4 is finalized, it is likely that the interfaces and/or functional descriptions of these routines will change. Data General's long-term goal for realtime extensions is to be P1003.4 compliant. As the specification becomes a standard, future DG/UX releases will be upgraded to the standard P1003.4 interfaces and will no longer support the draft versions. Therefore, we do not guarantee backward compatibility to these routines in future releases.

Please refer to individual man pages for detailed programming information.

Realtime Configuration Parameters

In addition to the twenty realtime system calls, configuration parameter MAXLATENCY has been added. MAXLATENCY is the maximum time (in milliseconds) the current process will run before being interrupted to check for preemption due to a process being made eligible for execution by another processor.

The processors are self-scheduling. When a process becomes eligible the current processor will check for preemption. If the process is of a lower priority, it is added to the eligible list. In a multi-processor system, it is possible that the process added to the eligible list is of a higher priority than a currently running process on another processor, and therefore should be serviced. MAXLATENCY puts an upper bound on the amount of time before a processor will be interrupted to check for this case.

In most cases, some event will occur on the processor that will result in checking for preemption before the MAXLATENCY interrupt occurs (a device interrupt, the process blocks or exits, etc.), and therefore this interrupt is rarely used.

For additional information about the DG/UX realtime extensions obtain the technical brief *Real-time Extensions to the DG/UX 5.4.2 Operating System* (012-004244-00), or specification *P1003.4 Draft 12, Draft Standard for Information Technology - Portable Operating System Interface (POSIX) - Part 1: System Application Program Interface (API) - Amendment 1: Realtime Extension [C Language]*, February 1992. The specification is available by contacting the IEEE Standards Office, PO BOX 1331, 445 Hoes Lane, Piscataway, N.J. 08855-1331, phone number 909-562-3811.

The **sdb** and **dbx** debuggers will not display symbolic names for the DG extended signals for real-time, SIGDGTIMER[1-4], and SIGDGNOTIFY -- signal numbers 61 - 64. ELF **dbx** will not accept these symbolic names for the catch/ignore commands although the signal numbers can be used, and the catch/ignore signal settings will not display information about these signals.

4.3.3 SCSI-2 Wide Data Transfers

The **ncsc(7)** adapter driver supports SCSI-2 Wide data transfers. The SCSI-2 Wide support extends the data transfer bus width from 8 bits to 16 bits, doubling the bus bandwidth. SCSI-2 Wide support does not include 16-bit device addressing (i.e. 16 SCSI IDs per bus).

The **ncsc(7)** driver attempts to negotiate Wide transfers with each target device during device configuration. If a device does not support Wide transfers, the **ncsc(7)** driver accesses the device in narrow (8-bit) mode. Wide and Narrow devices can coexist on the same SCSI bus.

Wide support is currently implemented only on AV 7400 class AViiON systems. The CLARiiON Model 7921 high capacity, high throughput SCSI-2 tape array subsystem is currently the only device that supports Wide data transfers.

4.3.4 Kernel Bug Fixes

- For all disk devices found in /dev/pdsk, the logical disk manager (LDM) checks the physical device at boot time to see if it is LDM formatted. If it is, then the device is registered. If the device is not LDM formatted, then an inadvertent update is made to the disk device, causing corruption of data stored on the device.
- Problem with memory error detection on AViiON 5200, 5225, 6200, 6225, 6200-20, 6225-20, 5240, 6240, 6240-20, 6280, 7000, and 8000 systems. Single bit errors are fixed, but the corrected word is not written back into the memory location. In addition, neither single nor multibit errors are reported.

4.3.5 H.A.D.A. Adapter Device Code Change

The default device code assigned to the High-Availability Disk-Array adapter has been changed from a range of 30 through 33, inclusive, to a range of 70 through 73. This change has been made in order to provide a consistent set of device codes for current and future products. Machines which have configured H.A.D.A. devices at the previous device code will have "short" device

names for these devices. To keep the same "short" name(s), you must edit the file `/etc/devlinktab` to account for the new device code. See `hada(7)` for more information.

4.3.6 Problem to Avoid: DG/UX Installation and Jukeboxes

When upgrading your system to DG/UX 5.4 Release 2.01, power off the jukebox until you have completed the install procedure. When attempting to configure OpStar drives and/or jukeboxes for jukeboxes that remain on during the install procedure, `diskman` may display errors. DG/UX does not distinguish between an optical disk drive (OD) device and SCSI devices (SD) until they are entered in the system configuration file. The same problem occurs with the jukebox device.

If the jukebox is left on during the install procedure, edit the configuration file and change the device specifications intended for the jukebox and optical drives prior to building a custom kernel. Once the custom kernel is ready to boot you may then power on the jukebox.

4.4 Libraries

4.4.1 `libc`

In all `libc` versions:

- `bcmp()` no longer reads and writes one too many bytes for certain cases.
- `atof()` and `strtod()` give zero for zero raised to any exponent.
- **POSIX TZ** format is fully supported.

In the `m88kdguxelf` version of `libc`:

- The `rpc` functions now correctly allow for user defined `malloc()` and `free()` routines.
- The `isinf()` function from BSD 4.3 version 2 function has been added.
- The error "symbol not found" no longer occurs when `RTLD_LAZY` is used with `dlopen()`.
- `scanf()` now allows for argument suppression with `/*n`.
- `catclose()` now frees all the memory allocated by `catopen()`.
- `strerror(256)` now returns the string "The object did NOT have the specified attribute", rather than simply "Error 256."
- The limit of 999 pty's previously enforced by `ptsname()` and `grantpt()` has been removed.
- A small memory leak observed with repeated calls to `cftime()` has been corrected.

In all COFF version of libc, **ecvt()** has improved precision. (For m88kdguxelf, this improvement was made in DG/UX Release 5.4.2.)

4.4.2 **libdgc**

The Berkeley function **usleep(3C)** has been added.

The **gethostbyaddr()** and **gethostbyname()** functions now correctly interpret the `/etc/svcorder` file.

4.4.3 **/usr/include**

New include files, `<sched.h>` and `<semaphore.h>` have been added to the realtime extensions (**librte**).

Support changes for the **DIAB** compiler have been made in `<int_varargs.h>`, `<stdarg.h>`, and `<varargs.h>`.

The `<types.h>` header can now be used with **lint(1)**.

The `<libgen.h>` header has been changed. The **bufsplit()** prototype is now correct. The SVR3 mappings of **p2open()** and **p2close()** have been removed.

4.5 **Commands**

4.5.1 **Assembler**

The ELF assembler now sets the object file's permission to 664, rather than 644, to accommodate group access.

4.5.2 **CLARiiON Tape Array Support**

The **mt** command provides extended status information for CLARiiON tape array devices, including: tapeset id, total tapes in tapeset, the tape number in tapeset, write-protect status, and whether the tapeset was written using parity. If a drive doesn't contain a tape, that information is reported as well. See the **mt(1)** man page for details.

4.5.3 **ttymon**

A number of problems have been corrected:

- Enhanced file locking to the `_pmtab` and `_cmdpipe` eliminates contention problems. The **admterminal** no longer returns error 1 when it is run successively in the background within an **sh** script.

- A timing problem, whereby **ttymon** was being enabled before the syac code was downloaded, has been fixed. This problem was causing **ttymon** to fail to initialize the terminals on a syac cluster box and to log the message "no such device or address".
- Modem hangup is now handled correctly. Previously, **ttymon** would hang up even if "hangup" was set to "no". If "hangup" was set to "yes", **ttymon** could get hung in a portion of code trying to enforce a delay after modem hangup. The result of this was that other lines controlled by that parent **ttymon** could no longer be used for login.
- The default for "hangup" is now "yes", as it was in revisions of DG/UX prior to 5.4.2. In 5.4.2, the default was "no", but **ttymon** would hang up anyway. If you install this update on a 5.4.2 system that has modems defined, you may need to change the value of "hangup" on each modem line.
- Modem support has been enhanced so that the modem port will not hang when the phone cord to a modem is disconnected.
- The autobaud capability has been enhanced so that a greater range of modems can be used with this feature. 300 baud is now supported. 110 baud is no longer supported.
- A bug has been fixed that was causing an incorrect message "Message not found!!" to be written to the log file. The correct message "Retrying terminal controller ..." is now logged.
- **Ttymon** now updates `/etc/utmp` correctly when a user logs off. Before, it could leave a live entry if the newly logged-off user had the same pid as a previously logged-off user. As a result, a subsequent **who** command could show two users logged onto the same tty line, and other programs that access `/etc/utmp` could be mistaken in other ways.

4.5.4 login

The **login** command has been enhanced:

- After an incorrect username/passwd is entered, the timeout delay increases with each try. The initial delay is 0 seconds, then 1, and so on up to a maximum of 4 seconds. This change gets rid of the annoying lengthy delay in cases where inadvertent typographical errors require that the login name and password be re-entered, while still giving a delay in the event of malicious attempts to discover a valid login/password by repeated guessing.
- A new "-d device" option has been added to the **login** command which allows you to specify the device name you are logging into. This option improves performance by eliminating a search of the `/dev` directory. The `-d` option is the default when setting up terminal lines through **sysadm**.

The **telnetd** and **rlogind** use this new option by default. In addition, **telnetd** contains other enhancements to improve login speed and reduce system resource use, especially when running NIS.

`"/usr/bin/login -d %d"` rather than simply `"/usr/bin/login"` is now the default service command for terminal lines that are set up through **sysadm** or **admterminal**. (**Ttymon** replaces `%d` with the device name, e.g. `/dev/tty00`, before invoking login.) To take advantage of this performance improvement on a system that already has its lines defined, use **sysadm** or

admterminal to change each line's service command.

4.5.5 Archiving

A number of problems with magnetic tape utilities have been fixed:

- **REELexchange** no longer prepends zeroes to volume numbers having fewer than 6 digits. This was causing problems when attempting to load tapes from other systems.
- **REELexchange** may core dump with fixed-length records when used with **twrite** unless the terminating character "none" is specified. This behavior is now documented in **tkey(1)**.
- Multi-volume **tar** images can now be loaded correctly. In previous releases of DG/UX, the **tar** program would stop after loading the first volume in some cases.
- The **cpio** utility no longer creates incorrect symbolic links or dumps core. (Previously, this problem sometimes occurred with a small buffer size to restore from an archive that contained many symbolic links with long resolution filenames.)

4.5.6 terminfo

The wyse60 **terminfo** entry has been enhanced so that the sgr capability is now fully supported. This enables a broader range of display attributes for this terminal.

This release includes new **terminfo** support for the vt320 terminal. The following terminfo entries are provided:

vt320	dec vt320 8 bit terminal
vt320-rv	dec vt320 8 bit terminal with reverse video
vt320-w	dec vt320 8 bit terminal in 132 column mode
vt320-w-rv	dec vt320 8 bit terminal in 132 column mode with reverse video

Function key definitions have been added to the d1400i-vt220 **terminfo** entry so that the home, end, page up, page down, insert and delete keys are now supported.

4.5.7 od

The **od** command supports the option of displaying data offsets in hexadecimal. The man page has also been updated to describe this new display option.

4.5.8 ps

The **ps** command has changed in the following ways to accommodate changes in available process priorities and scheduling classes needed for new realtime features in DG/UX 5.4 Release 2.01:

- A **-l** option widens the **PRI** field one column (it was 3) and shrinks the **C** field one column (it was 2). These two fields are adjacent. The change has the effect that all other fields in the output have the same column positions.

Example:

```
myhost% new-ps -l | head -10 | cut c1-41
  F S  UID   PID  PPID C  PRI NI   ADDR
  2 W   226   645   644 7  200 20  fc831000
  2 W   226 10279   645 7  200 20  fc847000
  2 R   226 10278   645 6  214 20  fc845000
```

```
myhost% /bin/ps -l | head -10
  F S  UID   PID  PPID C  PRI NI   ADDR
  2 W   226   645   644 7  200 20  fc831000
  2 W   226 10281   645 7  200 20  fc847000
  2 R   226 10280   645 6  214 20  fc845000
```

- A **-f** option (without **-l**) keeps the **C** field 2 columns. This option does not display the priority and so remains unchanged.

Example:

```
myhost% new-ps -f | head -10
      UID   PID  PPID  C    STIME TTY      TIME  CMD
joeuser   645   644   7    Sep 29 p0      2:09  /bin/csh
joeuser 10283   645   7 11:58:03 p0      0:00  head -10
joeuser 10282   645   6 11:58:03 p0      0:00  ./ps -f
```

```
myhost% /bin/ps -f | head -10
      UID   PID  PPID  C    STIME TTY      TIME  CMD
joeuser   645   644   7    Sep 29 p0      2:09  /bin/csh
joeuser 10285   645   7 11:58:28 p0      0:00  head -10
joeuser 10284   645   6 11:58:28 p0      0:00  /bin/ps -f
```

- A **-c** option (without **-l**) widens the **PRI** field one column (it was 3) and shrinks the **CLS** field one column (it was 4). These two fields are adjacent; the change has the effect that all other fields in the output have the same column positions.

Example:

```
myhost% new-ps -c
      PID CLS  PRI TTY      TIME  CMD
      645  TS  200 p0      2:09  csh
     10286 TS  214 p0      0:00  ps
```

```
myhost% /bin/ps -c
```

```

PID  CLS  PRI  TTY      TIME  CMD
645   TS  200  p0       2:09  csh
10287 TS  214  p0       0:01  ps

```

- A `-c` option (all options) displays, in the CLS (scheduling class) field, classes other than "TS" (time sharing), if they exist. New values are "RR" (round robin with a time slice) and "FF" (fixed priority).
- Some `ps` fields that were formerly blank now contain a hyphen (-), with the same right or left justification normal field values have. Blanks occurred in the WCHAN field of running processes and in the ADDR, SZ, WCHAN, TTY fields of defunct processes. There remain blanks within some fields in certain formats of time such as the date. This change makes it easier for scripts processing `ps` output to locate fields by field position rather than column position. It is also the proposed behavior for `ps` in the POSIX 1003.2a draft. (But `ps` does not comply with all parts of the POSIX draft.)

Example:

```

myhost% new-ps -el | egrep '(PID|defunct)' | cut -c1-57
 F S  UID  PID  PPID  C  PRI  NI      ADDR  SZ  WCHAN
 4 Z   226  643  637  7  200  20      -    -    -

myhost% /bin/ps -el | egrep '(PID|defunct)'
 F S  UID  PID  PPID  C  PRI  NI      ADDR  SZ  WCHAN
 4 Z   226  643  637  7  200  20

```

- The "COMD" column title has been changed to "CMD".

After executing successfully, the `ps` command now returns a status value of 0, instead of the uninitialized value it returned in 5.4.2.

4.5.9 sar

The `sar` command now reports disk names in their short form, like `sysadm`. Previous versions of `sar` could not fit all disk names into the 25-column field for disk names, making it impossible to distinguish some disk names.

4.5.10 New telnetd and rlogind Session Structure

The `telnetd` and `rlogind` programs now set up the login shell as the session leader (process ID = process group ID = session ID) to fit the POSIX model. This arrangement can be seen via the `ps` command. A `ps` command with no options will no longer show `telnetd` or `rlogind`.

4.5.11 useradd

The `useradd` command ignores the the `-f` and `-e` options. These obsolete options are no longer documented in the man page.

4.5.12 **osysadm**

Data General no longer supports this obsolete version of the system administration program. It will be removed in the next release of DG/UX. You should stop using it and start using **sysadm**.

4.5.13 **VME Terminal Controller (VTC) Changes**

The commands **syac_ttyaddrs** and **syac_routes** have been renamed to **vtc_ttyaddrs** and **vtc_routes**, respectively.

The format for tty entries in `/etc/tcload/vtc.addrs` has changed significantly. See **vtc.addrs(4M)** for a description and examples. Note that during installation the tty entries in `/etc/tcload/vtc.addrs` will automatically be modified to match the new format.

4.5.14 **Binary Interface of sadc**

The binary interface to the **sar** data collector, **sadc** will not be supported in the next major revision of DG/UX. Use the ascii output of **sar** instead.

4.5.15 **Machine Initiated Failover**

Machine Initiated Failover is supported. A secondary system in a dual-initiator configuration can be set up to monitor the primary system and take control of physical disks that have been set up for failover. The shell interface is explained in these manual pages: **admfailoveraltcommpath(1M)** and **failovermon(1M)**. For additional information, obtain the technical brief *Machine Initiated Failover in the DG/UX 5.4R2.01 Operating System* (012-004245-00). A PostScript version is contained in the file `/usr/release/012004245_00.ps`.

4.5.16 **Operator Initiated Failover**

The **admfailoverdisk** command uses **fuser** to terminate processes that would prevent the deregistration of a physical disk. The **fuser** command terminates a process by sending a SIGKILL signal to it. Certain processes may not be prepared to handle this signal without problems. You should terminate such processes, following whatever procedures they require, before transferring a disk between two working systems. Similarly, you should terminate applications, such as NetWare™, that restart terminated processes before transferring a disk between two working systems.

When systems are under extreme loads the online transfer of physical disks may fail. This failure can occur if a process accessing a physical disk to be failed over, has a currently active kernel request (such as I/O requests). Because of the active request, the process will not receive the SIGKILL until the I/O completes. As a result, attempts to unmount file systems or deregister disks will fail. Eventually, the process will be terminated by the SIGKILL. When it does, retry the failover.

When setting up dual-initiator configurations, you should make sure the appropriate drivers have entries in the system file of the system that does not have the disks configured into it. For example, using a disk subsystem such as the H.A.D.A. I for failover only, would require you to add the "da"

and "hada" entries to the secondary system's system file.

4.5.17 Problems to Avoid: Failover

In the manual **Managing the DG/UX™ System** (093-701088-03), Chapter 7, the section "Managing Failover Disks" contains incorrect menu paths for **sysadm** failover operations. This section tells you to follow the **sysadm** path `Device->Disk->Failover` to access failover operations. The actual path is `Availability->Failover`. This will be corrected in the next revision of the manual.

4.6 Resolved Software Trouble Reports

This section contains a list of Software Trouble Reports that have been resolved in DG/UX 5.4 Release 2.01. The problem descriptions given here are listed exactly as described in the original report filed by customers. Please refer to the DG/UX Monthly Newsletter for additional details.

A variety of causes of the 2000075, 2000063, 3000016, 3000032 system panics have been corrected in DG/UX 5.4 Release 2.01. These corrections resolve the following Software Trouble Reports: FRA-00000870-0, FRA-00000924-0, ITAL-00000152-0, NASC-000013826-0, NASC-000013999-0, UKSC-000059066-0, INTL-00000621-0, NASC-000014059-0, UKSC-000061108-0, NASC-000014257,

STR #	Description
EURO-000070010-0	dg/ux 5.4.2. when users home directory is modified under sysadm the contents of the original home directory are deleted and moved to the new directory. In 5.4.1, the contents were left intact, only the /etc/passwd entry was modified.
EURO-000070012-0	Under dg/ux 5.4.2, when doing an 'at -f <script>' command, the file placed in /usr/spool/cron/atjobs contains an extra blank line between each command line.
EURO-000070028-0	Under 5.42 the c compiler ignores umask when creating the .o files which stops Ingres compiles from working properly. Under 5.4.1 setting umask 000 the .o's were created with 666 permissions, now under 5.42 they're 644 even with umask 0
EURO-000070039-0	sar -d doesn't display the full name of a hada II disk device because the device column description is too short.
EURO-000070046-0	Device names for Clariion disks on an Aviiion system can be more than 25 chars long. As sar only logs the first 25 characters it is sometimes not possible to distinguish between disks when looking at sar reports.
EURO-000070076-0	DG/UX 5.4.2. When requesting multiple print copies to laser connected to Termserver then extra unwanted copies are produced. eg requesting 4 copies will result in 10 copies.

EURO-000070077-0	system hang, dump forced via hotkey sequence. dump shows vp23 and vp33 both deadlocked on the same streams head (7ae66400). One of the processes is trying to clone major device 29.
EURO-000070085-0	DG/UX 5.42. When printing through a Termserver, running rev tsvr s/w, dgtermprinter issues series of nulls which introduces an unacceptable delay between prints.
EURO-000070103-0	When modifying a users home directory under sysadm (admuser), the original home directory is deleted. Other system users with the same home directory therefore lose their home directory. This was not the functionality under 5.4.1
FIN-000053003-0	Termserver printers lose characters during heavy cpu activity. Characters get lost printing to a termserver connected printer in DG/UX 5.4
FRA-000000832-0	Problem with job's execution with "at" and "batch" commands.
GER-000014945-0	If VSN is shorter than 6 characters, tread fills out the VSN to 6 characters with leading zero's.
GER-000014959-0	passwd(1) fails with user names greater than 8 characters, even though DG/UX 5.4.1 allows/accepts user Login names with more than 8 characters.
GER-000015003-0	If a archive contains names which are longer than 14 characters "make" compiles the sourcefiles every time, even if the object modules are up to date.
HOLL-000000464-0	Malfunction of cftime(c) strftime(c) subroutines
INTL-000000523-0	Shutdown -i1 runs init 1 twice.
INTL-000000531-0	userdel will hang if the user to be deleted also is a member of any group in the /etc/group file.
INTL-000000539-0	Executing man and piping it to page within the Korn shell will cause the terminal to hang more often than not.
INTL-000000543-0	The system panicked with 4000110 on integrated device 0x4. This occurred when booting a kernel with NetWare drivers in it.
INTL-000000619-0	Terminal hangs when mail is sent to a non-existent recipient.
INTL-000000638-0	Every time a process calls the cftime() system call, when using the zic style timezone, the process leaks 4kb of memory.
INTL-000000641-0	Execution of part of the termprinter model is very slow.
JAPN-000000687-0	cpio(1) from DG/UX 5.4.1 fails with a Segmentation Fault when trying to resolve some links. This failure also occurs under DG/UX 5.4.2, and with patch dgux_5.4.1.p27 installed on DG/UX 5.4.1.

JAPN-00000697-0	Increasing memory image size of csh script process
JAPN-00000701-0	<varargs.h> for Diab Data C compiler does not work correctly.
JAPN-00000706-0	C shell return incorrect prompt.
JAPN-00000709-0	"tar cvf" infinitely repeats copying out a file on the DOS file system.
JAPN-00000711-0	exportfs(1M) with readonly option does not work correctly.
JAPN-00000726-0	grfx device is not configured on the cold start of AV400 with 24bit graphics board.
NASC-000011285-0	Request an enhancement to ttymon, so that it will handle multiple signals simultaneously. This would ensure that signals are not missed.
NASC-000011846-0	RFE for ability to backup and restore "all" file systems with one command and the documentation to reflect this procedure.
NASC-000011923-0	Using 'man' pages with PAGER=more doesn't always work right.
NASC-000012272-0	VI will replace line1 with line12 of a 25 line file when you scroll down using ^D and attempt to page back up using ^B. This only happens when the file is 1 line larger than the screen size.
NASC-000012464-0	We have an AV6240 running rev 5.4 of DG/UX. We are unable to use our TZ variable to change when daylight savings time begins and ends.
NASC-000012465-0	The TZ locale databases for various countries do not change from/to summer time/standard time on the correct days.
NASC-000012514-0	Attempts to load 5.4 tapes on DG/UX 5.4.1 system allow first tape to be loaded, but tar program stops at the end of the first tape as if the file is finished loading (even if it is split between two tapes).
NASC-000012586-0	RFE - DG/UX does not handle optical disks correctly. There is no documented, supported way to spin disks up and down for removal or replacement.
NASC-000012708-0	When using the statfs system call, it will return the same value for fs_bfree and fs_bavail when the fstype is set to a non zero number.
NASC-000012729-0	If there is a parenthesis inside quotes in a script, it is not recognized correctly. For example, if the line 'if ("("=="")) then ' (single quotes excluded) is in a script, it doesn't get executed properly.
NASC-000012871-0	We are having an intermittent problem using the admterminal command. We receive a "1" returned from the admterminal command which says the operation was unsuccessful.
NASC-000012904-0	We have found that under revision 5.40, when we use the mv command the file permissions are not handled consistently depending on whether

- you mv across file system boundaries or within the same file system.
- NASC-000012916-0 The root crontab job, dodisk, fails with "Can't Open Device" when run on a ram disk and cdrom disk. dodisk runs fine on all other logical disks. AV5240 5.4.1
- NASC-000012944-0 The MTIOC_MODFM ioctl(2) option of the rmt device is not documented in the man pages.
- NASC-000012946-0 Enhancement request to remove or allow customization of the pause generated by /etc/login(1) when the username and/or password have been entered correctly.
- NASC-000013043-0 We are having a problem with the way ulimit is being displayed. If we run the bourne shell and type "ulimit", a value of 4194303 is displayed; however, if we do a "ksh", and then type "ulimit", a value of 4290772993 is returned.
- NASC-000013046-0 Under DG/UX revisions 5.4.0 and 5.4.1 we are receiving the message "Terminal controller temporarily unavailable, will retry in 15 seconds".
- NASC-000013179-0 Serial port is left in blocking state if a dial up connection is lost.
- NASC-000013184-0 Unix 5.4.1 AV532 64mb memory fails to execute idi motif version when there are too many main menu options. Ascii version does not fail.
- NASC-000013274-0 Mail will hang when you reply to the first message in the mail queue; mailx will work fine.
- NASC-000013294-0 Pipes to more or pg hang. Example "ls lmore". This happens about half of the time. We use "ksh" as our login shell.
- NASC-000013426-0 When rlogin to a system and issue 'init 6', the system comes back up to the present level when issued, not the default value in /etc/inittab.
- NASC-000013459-0 Error bringing AV310 diskless workstation down: SAC: Could not lock logfile.
- NASC-000013477-0 Under DG/UX revision 5.4.1 we are unable to delete some users.
- NASC-000013522-0 Mail message from dodisk cron job, 'disk acct increase size of maxusers'.
- NASC-000013585-0 Rmail process accumulating cputime on remote system if mail recipient does not exist on the remote system.
- NASC-000013620-0 When we use the command "sysadm -m file:backup | tee somefilename", we have to hit newline 3 times before the sysadm backup menu appears, and then the menu is displayed 3 times. We did not have this problem under 4.32 of DG/UX.

- NASC-000013622-0 Admlock does not function correctly, if cooperating processes have different user ids.
- NASC-000013635-0 If a remote printer is busy and returns a message 80, it will hang lpNet with patch dgux_5.4.1.p47 installed and configured as BSD.
- NASC-000013654-0 After applying dgux_5.4.1.p47, 'lp -d<bsd-rinter> file' UX:lp: ERROR: Received unexpected message 80 from the LP print service. TO FIX: It's likely there is an error in this software. Please get help from your system administrator."
- NASC-000013665-0 Customer is using lpNet to do BSD printing to a novell PLDP print server. If 10 minutes elapse between jobs, lp reports "error message 80 returned from LP Print Service". Lpsched must be "bounced" to recover.
- NASC-000013726-0 We were given a copy of a new sendmail program by DG to correct a problem in which we were not able to use sendmail to send to more than 80 users. The new sendmail program corrected the problem. An STR was requested.
- NASC-000013758-0 Installing patch kit 26 Op_sys_x_5.4.1.920612 causes a 5 Gbyte Contemporary Ciberetic CY8500 tape drive to stop working.
- NASC-000013764-0 mail(1) returns error "Not-Delivered-To: {hostname}!{longusername} due to 12 Inability To Transfer ORIGINAL MESSAGE ATTACHED (mail: Error # 15 'Cannot create lock file'" with any username of LONGER than 13 characters.
- NASC-000013765-0 We are unable to downline load a font to our postscript printer. We receive the error "UX:lp: Error: There is no filter to convert the file content". We loaded patch dgux_5.4.1.p26, but it did not change the problem.
- NASC-000013797-0 Programs using curses and a Wyse 60 terminal do NOT execute the reverse function properly. We believe it is because the terminfo for a Wyse 60 is NOT correct. We are including a program which demonstrates the problem.
- NASC-000013835-0 Autoboot from power on always fails to find the grfx() device since revving up to 5.4.1 and only on AV400's.
- NASC-000013838-0 With AV4300, DG/UX with patch level 5.4.1.00.26 installed, and either 1.31 or 1.40 Netware, system panics at boot time with 4000110.
- NASC-000013840-0 The layer shl does NOT work properly when the initial sh is running at 19200 baud.
- NASC-000013848-0 Using NWLP in this manner: "ls -al | nwlp -s server -u guest -p -q queue-name" we get an error "permission failed, cannot read file queue-name". Detach from server failed with 90030 on the PC and a 3000032 panic on the AViiON side.

- NASC-000013933-0 The new HP disks model 97558 work fine in the AViiON 400 and 412, and they do not work on the AViiON 532 with the SCSI II controller. The drive hangs during the initial load of DG/UX.
- NASC-000013970-0 Use of the finger(1) command after a user has logged out replies back that the user had never logged in.
- NASC-000013988-0 Error - "Segmentation fault core dump", is returned from DBX in the coff environment when the list command is used to list a function that does not exist.
- NASC-000013994-0 The coff version of DBX continues to print the source code from the main program after the "func" command has been used to position the debugger to a new function.
- NASC-000014030-0 When we try to do an fuser command, the terminal hangs.
- NASC-000014057-0 Request for enhancement to reduce or eliminate the delay between different print jobs and between print jobs and their banner pages when using the termprinter model file.
- NASC-000014073-0 Network printing from Windows 3.00a via NetWare and DG/UX is not possible. The postprint(1) filter incorrectly filters a postscript-ready file if there is a ^D (0x04) as the first character of the file.
- NASC-000014092-0 Lpstat reports incorrectly which print requests are printing on which printer within a printer class. This will happen when adding or removing a printer from a class. Note Managing the DGUX pg 11-56; Removing a printer from a class.
- NASC-000014102-0 Getting an error that the INGRES username is not defined in the passwd file when trying to install the INGRES 6.4 update. We have INGRES defined as a YP user and need this install script to work as YP.
- NASC-000014104-0 Under DG/UX revision 5.4.1 the postprint utility will move the left hand margin by itself if you are using a point size smaller than the default of 10.
- NASC-000014116-0 The 'useradd' command will not allow a user to specify a -1 as a inactive period when used with the -f option.
- NASC-000014152-0 User is unable to telnet to an AV4320 via VTC from a Chase IOLan Termserver. Telnet "time out" occurs.
- NASC-000014159-0 On DG/UX 5.4.1 and 5.4.2, mterm windows spontaneously and intermittently terminate when invoked using the TCP/IP "on" command.
- NASC-000014280-0 Every time a user accesses the Opstar file system on the AV/4605 from the NeXt workstation via NFS, the system panics with a panic code of 2000110.

- NASC-000014284-0 When mounting a file system that was exported from a 5.4.2 system that has a group ID of 65534 and owner ID of 65534 and permissions of 775, root on the remote system is unable to write to that directory.
- NASC-000014293-0 The "mcs -d" command causes object corruption which then causes the ld linker to fail with a segmentation violation. This command was being used to delete the contents of the comment section from an ELF object.
- NASC-000014346-0 Core dumps abort at about 10mbyte, and the core is deleted. The core should be produced. Problem occurs when file is mmap'ed into a memory area larger than the file.
- NASC-000014390-0 After running 'shutdown -g0 -y' we notice that sac(1M) and tty-mon(1M) are still running. Please explain why these processes are not killed.
- NASC-000014391-0 We have a separate /var file system. After "shutdown -g0 -y" and after killing sac(1M) and ttymon(1M) we cannot umount /var. fuser(1M) shows /var is not in use.
- NASC-000014433-0 There are several errors in libgen.h. The function prototype for bufsplit is incorrect. In sys/_int_features.h defaults to _USING_SYSV3_OR_DGUX which in turn in libgen.h causes sysv3_p2open and sysv3_p2close to be defined.
- NASC-000014444-0 In revision 5.4.2 the ps command returns a "164" instead of a "0" for the exit code.
- NASC-000014454-0 Upon bringing the system up, one or more ttymon(s) do not enable their ttys.
- NASC-000014464-0 We have a problem with our VTC not using the (default) routing information from the HKEN controller in 5.4.2, as it did in 5.4.1. We are unable to get to the VTC from other subnets, but it can get to the HKEN bd.
- NASC-000014489-0 We received a 57000136 panic while running a program called mthreads. Although the problem turned out to be a problem with a file that mthreads was accessing, we do not believe it should have caused the system to panic.
- NASC-000014495-0 The finger command does not report the date and time of users who have already logged off.
- NASC-000014501-0 The size parameter is inconsistent when using bind with UNIX domain sockets. Currently you have to pass the size of the family plus the string length of the path. It should be modified to accept just the size of the structure.
- NASC-000014505-0 RFE: Would like to be able to connect to a port via a VTC other than telnet.

- NASC-000014512-0 When booting directly to run level 3, unable to login from clusters. Log in `var/saf/log`, indicated "tyxx respawning too rapidly" for all configured ttys.
- NASC-000014546-0 The existing vt220 terminfo entry is incorrect when being used by a d1400i terminal emulating vt220 with an IBM 101 keyboard. The keys F5 and Page Down are not defined, and the other keys in the keypad are not defined correctly.
- NASC-000014555-0 sysadm will report a syntax error if you enter "(" or ")" in the printer description during a modify on a printer. Help on the printer description does not mention any restrictions on what can be entered for this prompt.
- NASC-000014573-0 When news gets read, it continues to be current. The date of the file `news_time` is 0 Dec 31, 1969, so all news is considered current news.
- NASC-000014596-0 We are having a problem with processes hanging intermittently when trying to access a directory called `/usr2/ASI/RELEASE/TMP`. The filesystem is `/usr2`. To clear the hang we must crash the system and run `fsck` on `/dev/dsk/usr2`.
- NASC-000014607-0 Documentation change request for the manual "Installing the DG/UX System", 093-701087-02. Please emphasize that `gcc` is a required package.
- NASC-000014608-0 FTP's `.netrc` file will not accept aliases as opposed to hostnames.
- NASC-000014620-0 We are unable to use the `mt -f /dev/rmt/0 fsf 1` command on a 4mm HP tape drive Model #35480A. If we load patch 5.4.1.p14, then neither the 4mm nor our non-DG reel-to-reel tapes will work.
- NASC-000014643-0 Under `sh`, `csh`, and `ksh`, a `umask` value of 0022 causes incorrect permissions (777 instead of 755) to be assigned to directory files when you create them on NFS mounted file systems.
- NASC-000014644-0 The `/usr/bin/news` utility on DG/UX 5.4.2 creates a `$HOME/.news_time` file with a date/time stamp of Dec 31 1969 and does not change that stamp when news events are read.
- NASC-000014697-0 Modifying a 'user' and changing the home directory will result in the the old directory being deleted.
- NASC-000014748-0 When using mail to send mail to a user that does not exist, the mail process hangs until you kill the process.
- NASC-000014773-0 When using `sysadm` to modify a user and changing the user's home directory, the contents of the original HOME directory are deleted and moved to the new directory. This creates a problem if the original directory was shared.

- NASC-000014788-0 Changing user's home directory via sysadm corrupts the new user directory.
- NASC-000014812-0 If an archive contains names which are longer than 14 characters, "make" compiles the sourcefiles every time even if the object files are up to date.
- NASC-000014840-0 Autobuad feature of /etc/ttydefs does not function as documented in the man pages for 'sttydefs' and 'ttydefs'.
- NASC-000014932-0 "Message not found" error logged to /var/saf/ttymon1/log when trying to start ttymon.
- NASC-000014945-0 3com Termserver taking 20 seconds or more to print the document after the banner page has already printed.
- NASC-000014949-0 Documentation Error - Man page for resolver(3C) tells reader to SEE ALSO resolve.conf(4M). It should say resolv.conf (no 'e').
- NASC-000015005-0 Sysadm will delete a user account's home directory without any warnings or messages. This happens when I change the user's home directory during a modify of a user's account.
- NASC-000015051-0 When a user logged onto the system on a VTC line, he assumed the identity of a previous user that was logged onto that same line.
- NASC-000015091-0 5.4.2 and 5.4.2T UPS software not working with model 20 cluster port.
- NASC-000015122-0 Printing thru Windows 3.1 on a PC to a postscript printer on the AV4600 does not work.
- NASC-000015160-0 Long delay when printing to a printer connected to a termserver when using the termprinter model file.
- NASC-000015169-0 System hung during normal operation.
- NASC-000015254-0 TCP/IP routing information doesn't properly get downloaded to the VTC.
- NASC-000015263-0 Log, in /var/saf/ttymon6 (7 and 9), indicated a "no such device or address" message followed by "ttyxx respawning too rapidly".
- NASC-000015276-0 The string "Message not found" was reported in /var/saf/ttymon7/log.
- SWE-000000586-0 There should be support in sysadm to schedule unattended backups via cron instead of just starting the backup jobs interactively in sysadm.
- SWE-000000600-0 Sysadm parses RFC-822 mail addresses incorrectly from the /etc/aliases file. Double quotes are not respected as they should.
- UKSC-000053504-0 Customer has found that options on termprinter such as nobanner do no work. Would it be possible to enhance the Termprinter facility to

- include all options as in normal printer operation?
- UKSC-000057907-0 Printer connected to Ungermann Termserver and configured using the dg/ux Termprinter definition has unacceptable delay (up to 20 - 25 secs) between printing the banner page and document text and also between documents.
- UKSC-000057961-0 Request for change. Make the timeout delay after an incorrect user-name/password pair be configurable.
- UKSC-000058064-0 After running for 4+ hours jobs start to stack up in the print queue. The printers are all enabled and idle but only the 1st job in the queue will print. Each time another job is queued the 1st job only in the queue will get printed.
- UKSC-000058839-0 Printing from a Sparc to the AViiON fails with error "there is no filter to convert file content".
- UKSC-000059406-0 Two logical printers defined for same physical port, 1 is disabled the other is enabled. Ipsched will process queue A until it comes to a job which has a date/ timestamp later than top of queue B jobs, at which it stops processing.
- UKSC-000059896-0 5.4 version of assembler will not accept a literal "-1" on a cmp instruction when producing COFF output.
- UKSC-000060270-0 When a SCCS scriptfile is run a BUS error is generated when using the get(1) command.
- UKSC-000060307 Compiling an Ingres application with the -O flag for optimisation causes the executable to fail with segmentation violation. gcc rev 2.2.3 also tried and this makes no difference.
- UKSC-000061384-0 A pipe is opened by the prog "csb" which then "exec invoke". If the program composer is run and the cmd "run ls" is entered on dgux 5.4.1.41 , the invoke program will utilise 100% of a CPU. See materials readme file for instructions.
- UKSC-000061559-0 User logs on to AViiON from PC using tcp/ip, if the PC is powered off whilst the user is still logged on the processes use up all the available cpu time. eg. try vi on a file and switch off PC, then use sar/ps and watch the vi process.
- UKSC-000062227-0 When customer attempts to restore any data from a 3 volume backup, using sysadm he gets an error message "Wrong Volume (2)" when volume 3 is loaded. Backup tapes were created using sysadm (dump2) and were being restored using
- UKSC-000062344-0 If TCP/IP is not loaded with 5.4.2 then the syslogd outputs the following message shortly after booting (a lot of customers have standalone systems!) syslogd:/var/adm/dgsvcmgr/log.come: Interrupted system call.

5 Notes and Warnings

Potential problem areas with DG/UX 5.4 Release 2.01 are discussed in appropriate sections above. For example, to find out whether a note or warning may apply to a DG/UX 5.4 Release 2.01 command, see the section "Commands" above.

6 Documentation

Three new manuals are available for DG/UX 5.4 Release 2.01:

- *Analyzing DG/UX™ System Performance* (093-701129-00)
- *Legato NetWorker Administrator's Guide* (069-100495-00)
- *Legato NetWorker User's Guide* (069-100496-00)

The following revised manuals are provided:

- *Guide to AViiON® and DG/UX™ System Documentation* (069-701085-03)
- *Installing the DG/UX™ System* (093-701087-03).
- *Managing the DG/UX™ System* (093-701088-03).
- *Customizing the DG/UX™ System* (093-701101-03).

In addition, two new and one revised technical brief are included. The new briefs are *POSIX Real-time Extensions for the DG/UX 5.4.2 Operating System* (012-004244-00) and *Machine Initiated Failover in the DG/UX 5.4 R2.01 Operating System* (012-004245-00). *POSIX Realtime Extensions for the DG/UX 5.4.2 Operating System* introduces the new realtime extensions, while *Machine Initiated Failover in the DG/UX 5.4 R2.01 Operating System* describes how the software automatically transfers physical disks and restarts applications when a system fails.

The revised technical brief, *Operator Initiated Failover in the DG/UX 5.4.2 Operating System* (012-004186-01), describes how the software helps users get the most from their dual-initiator configuration.

Contact your Data General representative for ordering information.

In addition, if you use the FastPort network print server, you may want to obtain its manual from MiLAN Technology Corporation: *FastPort 3000 and 3100 Network Print Server User's Guide*, version 2.5.

A number of manual pages have been added or modified. They are listed in the following files:

- `/usr/release/dgux.man_5.4R2.01.fl`
- `/usr/release/tcpip.man_5.4R2.01.fl`

- `/usr/release/onc.man_5.4R2.01.fl`
- `/usr/release/nfs.man_5.4R2.01.fl`
- `/usr/opt/networker/release/networker.man_1.0.fl`

7 Software Distribution

7.1 Media

DG/UX System 5.4 Release 2.01 is released on QIC 150 tapes and compact disks (CD). This update is available via the following model numbers:

P001 The *DG/UX Operating System with X Window System* package. The part numbers are: 079-600308-00 for the tape and 068-600036-00 for CD.

Q001 The *DG/UX Operating System* package. The part numbers are: 079-600306-00 for the tape and 068-600034-00 for CD.

7.2 Files

The following online files, in directory `/usr/release`, list the contents of the DG/UX 5.4 Release 2.01 base model:

```
dgux_5.4R2.01.fl
tcpip_5.4R2.01.fl
onc_5.4R2.01.fl
nfs_5.4R2.01.fl
gcc_2.2.3.fl
```

The NetWorker files are listed in `/usr/opt/networker/release/networker_1.0.fl`

If you are installing the workstation model (P001A), see the DG/UX (Trademark) X Release Notice for the names of other online files listing the contents of that model.

8 Installation Instructions

The DG/UX 5.4 Release 2.01 media contains a new package containing the NetWorker software. This package will be loaded automatically if you select "all" at the loadpackage prompt. NetWorker requires a separate logical disk. See the NetWorker release notice and the manual *Installing the DG/UX™ System* for complete details before beginning the installation process.

If you are installing the DG/UX System on the AViiON Model 7400, please see the appropriate section below.

You must load DG/UX 5.4 Release 2.01 onto a system that already has DG/UX 5.4.2 installed. The update can be loaded from a local tape drive, a remote tape drive, or from a local compact disc (CD). See the manual *Installing the DG/UX™ System* for complete installation instructions.

Do not apply any DG/UX Release 5.4.2 patches to your DG/UX 5.4 Release 2.01 system without consulting the Customer Support Center first.

8.1 Installing DG/UX from Compact Disc (CD)

The program **diskman** probes the standard disk devices. If it detects a distribution CD, **diskman** will give the following prompt:

```
Do you want to load from the system software distribution disk? [yes]
```

If your response is "yes", the distribution CD is mounted, and a query such as the following is presented:

```
The following releases may be loaded:
```

- 1 DG/UX 5.4.2 only
- 2 DG/UX 5.4R2.01 only

```
Enter the number of the release you wish to load:
```

A default may appear for this prompt, depending on the software already loaded on the system. The remainder of the installation process appears unchanged.

If your response is "no" to loading from the distribution disk, the normal installation procedure continues with the tape drive query:

```
Enter the tape drive specification in DG/UX common format:
```

8.2 Installing Model 7400 Systems

In order to install the DG/UX system on a Model 7400, you must use the bootstrap provided with DG/UX 5.4 Release 2.01. Insert the Release 2.01 tape in your system's tape drive and enter the boot command appropriate for your hardware configuration. Follow the steps outlined in the manual *Installing the DG/UX™ System* through the preparation of physical and logical disks. At step 3, "Load System Software", remove the DG/UX 5.4 Release 2.01 media and insert the DG/UX

5.4.2 media and continue with Step 3. You must answer "no" to any questions about auto-boot/reboot during the 5.4.2 installation and setup process. Once 5.4.2 is loaded, remove the media and re-insert the Release 2.01 media and load it. Refer to the chapter on upgrading from 5.4.2 to 5.4R2.01 in the manual *Installing the DG/UX™ System* for complete details.

If you are installing a Model 7400 system from CD-ROM media, you must answer "no" to the any questions about autoboot or reboot that appear during the 5.4.2 load and setup process. You should build a kernel and reboot once the Release 2.01 update has also been installed. See the manual *Installing the DG/UX™ System* for complete details.

8.3 Booting OS Clients

After loading DG/UX 5.4 Release 2.01 on an OS server, you must arrange for OS clients of the PRIMARY release to boot a DG/UX 5.4 Release 2.01 kernel. There are two ways to do this. The first method is to build and link a kernel for the clients using the **sysadm** `Sys-tem->Kernel->Build` operation.

If you prefer that OS clients boot an installer kernel and build their own custom kernel, you can use the second method. To boot the installer kernel, do the following steps at the OS server:

```
# cp /usr/stand/dgux.installer.diskless /srv/release/PRIMARY/root/_Kernels
# admkernel -o link -c <client1>,<client2> installer.diskless
```

where *<client1>* and *<client2>* are replaced by the names of the OS clients of the PRIMARY release.

8.4 Space Requirements

The following table provides the space requirements in blocks for DG/UX 5.4 Release 2.01. Use the values in this table when calculating your space requirements. (Table 2-10 of the "Installation Planning Worksheets" in the manual *Installing the DG/UX™ System* lists the values for DG/UX Release 5.4.2 only.)

Package	root	usr	usr_opt_ X11	usr_opt_ networker	var_opt_ networker	Total Blocks
dgux	14,700**	205,300**	0	0	0	220,000
dgux.man	0	17,700	0	0	0	17,700
gcc	0	9,300**	0	0	0	9,300
gcc.man	0	110	0	0	0	110
tcpip	400	5,900	0	0	0	6,300
tcpip.man	0	1,100	0	0	0	1,100
nfs	50	5,900	0	0	0	6,000
nfs.man	0	700	0	0	0	700
onc	50	3,600	0	0	0	3,700
onc.man*	0	0	0	0	0	0
X11	0	2,200**	63,400	0	0	65,600
X11.man	0	0	7,600	0	0	7,600
X11.lg	0	0	10,100	0	0	10,100
X11.sde	0	0	6,000	0	0	6,000
X11.doc	0	0	1,300	0	0	1,300
networker	0	0	0	39,300	10,000***	49,300
networker.man	0	0	0	700	0	700
TOTAL	15,200**	251,900**	88,400	40,000	10,000	405,700**

* This entry is a link to **nfs.man** and does not add to the amount of space required.

** These space requirements are larger than those specified for DG/UX Release 5.4.2.

*** This is the minimum size. The actual requirement depends on size of backups.

9 Preparing a Software Trouble Report (STR)

See "Preparing a Software Trouble Report (STR) in the *DG/UX 5.4.2 Release Notice*. When submitting a DG/UX 5.4 Release 2.01 STR, be sure to list all patches applied to your system as well as the correct hardware model number.

9.1 Dumping to a Local Tape Drive

If you specify that the system automatically reboot after a panic (using the **dg_sysctl** command), the final tape will not be rewind when the dump completes. You must explicitly rewind the tape using the following command:

```
# mt -f /dev/rmt/0 rewind
```

End of DG/UX Update Notice