Update Notice:

DG/UX™ System for AViiON® Computers

Release 5.4, Update 1

February 1992

Part number 078-600076-00

This release notice applies to the following models:
P001
Q001

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Contents

1 Introduction

This update notice describes the DG/UX™ System 5.4, Update 1 product for Data General's family of AViiON ® computers. This software update is intended to provide incremental hardware support, kernel performance enhancements, a new version of RCS (Revision Control System), a C shell with multibyte capability, and fixes to many customer-reported problems.

This update notice supplements or replaces information found in the *DG/UX 5.4 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_5.4.1.un**. In the event of (actual text) differences between the printed copy of this notice and the on-line lineprinter version, the printed copy takes precedence.

2 Product Description

Refer to the *DG/UX 5.4 Release Notice* for initial information regarding the DG/UX product description.

DG/UX 5.4, Update 1 adds the following content:

Hardware Support

- Terminal hardware support for Spectrum, the D430C color terminal, and the Wyse 60 compatible terminal (model number dl400i).

- Enhanced SCSI drivers to support SCSI II functionality provided by model 6716 disks. See the manual page **sd**(7) for details.

- An enhanced syac driver to handle the VME Terminal Controller (VTC). The model number for the VTC is 7425.

- Support for the integrated synchronous controller in the AV 530 and AV 4600.

New Software Features

- A new release of Looking Glass (Looking Glass 2.2). For details, see the *Looking Glass 2.2 Release Notice* (085-600302-01).

- The C shell (**csh**(1)) now has multibyte capability by default.

- Revision 1.20 of the AView Graphics Library has been released. For more

information, see the *AView Release Notice* (085-600314-00).

- New microcode for HADA systems; see the release notice *Microcode Install for the Disk Array* (085-000826-02).

- Support for simultaneous read-write-execute (RWX) access to virtual memory. See **csync**(2), **mprotect**(2), and **stkprotect**(2) for details.

- RCS has been updated to Version 5.6. This version allows for the archiving of files that contain 8-bit characters.

- The kernel debugger has been enhanced to include an extended crash programmable macro language (see *Using the DG/UX*ⁱ* Kernel Debugger* for details).

Performance Enhancements

- SCSI II command queuing support improves I/O throughput by allowing model 6716 disks to perform optimizations on enqueued commands.

- The NFS automounter has been updated for increased reliability.

- Three configuration variables have been added to the scheduler to improve performance, see "Configurable Scheduler" in the section "Kernel Enhancements" later in this update notice.

- Support for an abbreviated (mini) system dump to tape has been added. The time to dump is reduced because only the kernel pages, and no user pages, are dumped.

- TCP/IP performance has been improved. Changes have been made to reduce latency, which is the major factor in small packet transfers.

Enhancements to Terminal and Printer Administration

- A new command, **admttydefs**(1M), has been added. This command manages the **/etc/ttydefs** file.

- The file **/etc/ttydefs** has been modified to include entries to match Data General terminals in their various emulations.

- A default table of filters has been added to the LP subsystem. This filter table effectively pre-installs all filters.

- The **lp** subsystem has been upgraded to UNIX Systems Laboratories (USL) System V Release 4 Version 4.

- The "termprinter" model printer script has been enhanced to support standard features of System V Release 4.

3 Environment

3.1 Hardware

Release 5.4, Update 1 of the DG/UX System is intended for the Data General AViiON Systems. It supports the following new hardware:

- The Dual Universal Serial Communications Controller (DUSCC) or the 68562 chip. DG/UX Release 5.4, Update 1 provides the integrated synchronous controller driver (iscd), which provides the interface for the DUSCC. This driver provides the physical layer for protocol suites that use a synchronous interface, namely X.25.

- The model 6716 disk drive. This is a 1.4 Gbyte full-height non-removable hard disk drive. It supports SCSI-II tagged command functionality.

- The VME Terminal Controller (VTC), model number 7425. The VTC allows Ethernet attached devices (for example, Termserver connected terminals, PCs, and workstations) that are capable of running Telnet and TCP/IP to connect to an AViiON host and appear as directly connected asynchronous devices.

3.2 Software

Release 5.4, Update 1 of the DG/UX System requires DG/UX Release 5.4 to be previously loaded. If this is a new installation, be sure to load DG/UX Release 5.4 before loading DG/UX 5.4.1. Please note that DG/UX 5.4.1 requires 12,697 more blocks of space in /usr than DG/UX 5.4.

Patches

DG/UX Release 5.4, Update 1 may or may not contain patches previously available for DG/UX Release 5.4. In particular, DG/UX Release 5.4, Update 1 contains the following patches and patch levels previously released for DG/UX Release 5.4:

- DG/UX for AViiON System Patch Level dgux_5.4.0.04

- DG/UX for AViiON System Patch Level op-sys-x.911209

- DG/UX for AViiON System Patch Level op-sys-x.920124

- Layered Software Prerequisite dgux_LSP_5.4.0.02 (part #079-600210-01)

- Layered Software Prerequisite dgux_LSP_5.4.0.03 (part #079-600210-02)

- AViiON Hardware Supplement for VTC dgux_5.4.0.p32 (part #079-600224-01)

- OpStar Software Prerequisite dgux_5.4.0.p42 (part #079-600234-00)

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● AViiON Hardware Supplement for AV/46xx and AV/53x dgux_5.4.0.c04 (part #079-600211-01)

Do not apply any DG/UX Release 5.4 patches to your DG/UX Release 5.4, Update 1 system without consulting the Customer Support Center first.

4   Enhancements and Changes

4.1   General

tcload

The process of downloading intelligent terminal controllers has been expanded in DG/UX 5.4.1 to include support for the VTC (Data General model number 7425), a new product from Systech Corporation that provides telnet-based terminal connections for up to 256 users. A new user-configurable file has also been added, **/etc/tcload/vtc.addrs**, which allows the user to control the VTC internet address, broadcast address, netmask, and routing information. See **vtc.addrs**(4M) for more information.

lp Alias Support

The **lp** subsystem has been upgraded to UNIX Systems Laboratories (USL) System V Release 4 Version 4. One new feature is provided by this upgrade: **lp** now includes a user "alias" on print jobs' banner pages. A valid alias is an alternate user name, taken from the LOGNAME environment variable when a print request is made, that maps to the same user ID (UID) as the normal user name. If the alias and the normal user name are different, both will be printed on the banner page. (For local print jobs, this can occur only when two or more login names are assigned the same UID in the **passwd** database.) The alias name is also included in the banner for all **lpNet** remote print requests, since user names may vary across systems (especially systems that do not use NIS).

lp Model Scripts

The "termprinter" model printer interface script has been enhanced to support standard features of System V Release 4. These features include: customized initialization and cleanup depending on the printer type; more detailed banner pages; support for standard System V Release 4 interface options; "fast" filter support; and better error handling.

The "dg455x" model printer interface script now prints the same kind of detailed banners as the "standard" script.

Improved Network Printing

The **lp** subsystem has been upgraded to UNIX Systems Laboratories (USL) System V Release 4 Version 4. The network printing using **lpNet** has been enhanced to handle error conditions more robustly.

Dirty Stacks and the Dynamic Linker

The LD_CLEAN_STACK environment variable has been added. When this variable is set, the dynamic linker will "clean" (set to zero) portions of the stack it uses before passing control back to the application. This variable is useful because some application programs incorrectly assume that the initial contents of newly acquired stack space are zeroes. For example, some C programs incorrectly assume that an uninitialized automatic variable initially has zero contents. Such programs may fail to work when using dynamic linking because the dynamic linker normally "dirties" (leaves nonzero) portions of the stack before the application program acquires them.

Profiled Programs

In DG/UX Release 5.4, setting the PROFDIR environment variable caused a profiled program to dump core. In DG/UX Release 5.4, Update 1, this environment variable works as described in the **monitor**(3C) and **prof**(1) manual pages.

Miscellaneous Upgrades

The **cpio** and **sttydefs** commands have been upgraded to USL System V Release 4 Version 3. The changes consist solely of bug fixes; no new features have been added.

gcc

Two versions of the GNU C compiler are available with this release. Release 1.37.31 ("Version 1") is an update to the compiler resident on earlier releases of the DG/UX system. Version 1.96.4 ("Version 2") is the first release of a new implementation of GNU C, currently in limited release from the Free Software Foundation. The new implementation has a number of enhancements, notably in the area of code quality.

Version 2 is the default compiler on installation of DG/UX Release 5.4, Update 1. You can reset the system default with the command **default-gcc** (without argument, this command lists the available versions). To select a version other than the default, use the **-KV** option to **cc**(1) or the **-V** option to **gcc**(1). You may, of course, intermix output of the two versions: for example, you may wish to compile only performance-critical modules of an application with the Version 2 compiler and relink with existing objects.

<For full information on the two versions of GNU C, consult their respective release notices (gcc_1.37.31.rn and gcc_1.96.4.un in **/usr/release**).

4.2 Kernel Enhancements

Configurable Scheduler

Three new configuration variables have been added to control specific scheduling behaviors.

- The variable **cf_mts_do_languishing** lets you disable the check for runnable processes that are languishing. The check is necessary for environments where response time is important, but not necessary for batch-oriented environments. Disabling the check can improve performance of large user count batch-oriented benchmarks. The default is to do the performance checks.

- The variable **cf_mts_do_ilevel** lets you prevent the Medium Term Scheduler (MTS) from adjusting interactive levels and priorities of processes running in the system. This helps to regulate the completion rate of homogeneous processes that are required to complete simultaneously. The default is to adjust interactive levels and priorities.

- The variable **cf_vp_do_lifo** lets you add an unblocked process to the run queue before other processes at the same priority. This feature favors throughput over fairness by keeping highly interactive processes running together when there are a large number of runnable processes. The default is to add an unblocked process to the run queue after other processes at the same priority.

Size of fsck_log_size Option

The maximum size that can be specified for the **fsck_log_size** option of the **mount**(1M) command has been raised to 128 blocks. You can specify this option to turn on fast **fsck** logging for the file system. The minimum size that can be specified remains 4 disk blocks. If you specify a size outside of this range, the size will be automatically adjusted to be within the range. The size will also be adjusted to ensure that it is a power of 2.

Support for a Mini Dump

Mini Dump support lets the system administrator dump every page of physical memory (dump level = "all") or to select only operating system pages (dump level = "kernel"). Selecting operating system pages significantly decreases the size of the dump image and reduces the time needed for the dump. Generally, system dumps taken to submit with a Software Trouble Report can be mini dumps (that is, operating system pages only).

The dump level can be changed while the system is running by using **dg_sysctl**(1M). An additional dump level option has been added to **dg_sysctl**(1M). See the **dg_sysctl**(1M) manual page for details.

Support for Integrated Synchronous Chip on AV 530 and AV 4600 Systems

The **iscd** (Integrated Synchronous Chip Driver) is used to support the Signetics SCN68562 DUSCC chip. See the **iscd**(7) manual page for details. This device is available only on AV 530 and AV 4600 systems.

STREAMS-based lp Driver

The **lp** driver is now STREAMS-based. This driver supports Centronics printers on all AViiON hardware. It also supports Data Product printers on AViiON hardware except AV6240, AV5240, AV7000, AV8000, AV4600, and AV530.

4.3   Libraries

libm library

The new **libm** functions that take float arguments are now available for use. Float arguments are not part of traditional C; therefore, these functions should only be used with a compiler that supports this ANSI feature. See the **cc**(1) man page for a description of the **-Xa** and **-Xc** options or the equivalent documentation for your compiler interface.

The **libm** functions that take float arguments are:

acosf	asinf	atan2f	atanf	ceilf	cosf	coshf
expf	fabsf	floorf	fmodf	log10f	logf	powf
sinf	sinhf	sqrtf	tanf	tanhf		

setvbuf

In DG/UX Release 5.4, if **setvbuf**(3S) was called with a buffer pointer equal to NULL and a buffer size greater than BUFSIZ (from **stdio.h**), then the user's data could be corrupted when **stdio** functions were used on this file descriptor later. This has been fixed in DG/UX Release 5.4, Update 1.

ttyslot

In DG/UX Release 5.4, the **ttyslot**(3C) function would return an index of a **utmp**(4) entry even if the entry was of type DEAD_PROCESS. This has been fixed in DG/UX 5.4.1. This fix also affects the following functions: **getlogin**(3C), **sysv3_cuserid**(3S), **cuserid**(3S), **zcuserid**(3S), **ruserpass**(3S) and **rexec**(3X). These functions also use **ttyslot**(3C).

dg_strsignal

A new function, **dg_strsignal**(3C), has been added to **libdgc** for DG/UX Release 5.4, Update 1. This function maps a given signal number to a message string describing that signal, and returns a pointer to that string. See the **dg_strsignal**(3C) manual page for more details.

4.4 Commands

RCS Version 5.6

DG/UX Release 5.4 shipped RCS Version 3. The RCS commands and manual pages for DG/UX Release 5.4, Update 1 have been upgraded to RCS version 5.6. There are bug fixes as well as new features provided, most notably the ability to source control files containing eight bit characters. Also the **rlog** output format has changed. Old version behavior (version 3 delivered in DG/UX Releases 4.10 through 5.4) can be accessed via the **-V3** switch. Refer to the **rcsintro**(1) manual page and the manual pages listed on that page for details.

Multibyte csh

Csh with multibyte capability shipped as a separate command (**csh-mb**) on the DG/UX Release 5.4 tape. It is now the standard **csh** command on DG/UX Release 5.4, Update 1.

ulimit

The **ulimit** builtin command has been added to **sh**. It provides all of the functionality that the old **limit** command provided and should be used instead.

as

The **as**(1) command has been enhanced. The symbol table now grows dynamically. Entries in the symbol table are limited by the amount of available swap space.

Interface Description Interpreter

The interface description interpreter (idi), which is used by **sysadm**(1M), has been enhanced to improve efficiency during the startup and initialization of **sysadm**.

The motif interface now supports the **TitlePrefix** and **TitleSuffix** variables, which are used to create custom titles for windows and screens. For example, you could have the system's host name appear in all **sysadm** windows and screens by setting **TitleSuffix** to " ('hostname')" in the **$HOME/.sysadmrc** file. See **sysadm**(1M) and **idi**(1) for details.

The **idl**(4) language has been enhanced to include the following new attributes: input-separator, output-separator, entry-action-message, exit-action-message, and action-message. See **idl**(4) for details.

Sysadm

The **sysadm** facility has been enhanced as follows:

- The **sysadm**(1M) User Login menu now lets you use underscores (_) and dashes (-) in usernames.

- The `Device -> Port -> Terminal` operations let you manage multiple terminal lines in a single step.

- The File System operations let you have file systems with pluses (+) in their names.

- The `User -> Mail Alias` operations let you use the characters '%', '=', '|', and '/' in alias member names.

- The `Client -> OS Client -> Add` operation lets you export the **/usr** file system for operating system clients with read-only access.

- The `Package -> Load` operation displays (and logs) the name of the release from which packages are being loaded.

- The `Device -> Printer` menu lets you have multiple printer types for a single printer.

- The `Device -> Printer -> Classes` menu provides Accept and Reject operations.

- `File System-> Remote -> Add` (and Modify) menu lets you prevent the mount from being interrupted.

- In the ASCII (serial) version of **sysadm**, for queries where only a predetermined set of responses is appropriate ("select" queries), in addition to giving a list of numbers or names, you may specify ranges of numbers as n-m. Here, n must be a number, and m can be either a number or the character '$', which means the last choice in the list. Generally, names, numbers, and ranges of numbers may be separated by either spaces or commas.

dg_sysctl

The **dg_sysctl**(1M) command now includes support for the auto-poweroff and dump-level parameters of **dg_sysctl**(2). See the **dg_sysctl**(1M) and **dg_sysctl**(2) man pages for details.

ttymon

The following problems with **ttymon**(1M) were fixed in DG/UX Release 5.4, Update1:

- Active login sessions are no longer killed whenever a port monitor is disabled. In DG/UX Release 5.4, disabling a port monitor killed all login sessions on ttys monitored by that port monitor.

- Modem connections are no longer prevented from getting hung up when login sessions are terminated.

- A new option has been added. The **-T** allows the value for the TERM variable to be specified from the command line when invoking **ttymon** in express mode. This is useful for setting the TERM variable for the "express" **ttymon** for the console in **/etc/inittab**.

- **ttymon** now detects the case where a syac is in the process of being initialized. In this case, it continues to retry the ttys associated with the syac until the syac becomes available. In DG/UX Release 5.4, ports associated with an uninitialized syac were marked as FAILED and deactivated.

- **ttymon** no longer displays an extraneous login prompt whenever a port with an active login session is disabled, then enabled.

- A "memory leak" has been fixed. This leak, in some instances, caused the **ttymon** process to gradually increase in size. The result was that, eventually, login attempts would begin to fail.

4.5 Software Trouble Reports Resolved

Following is a list of Software Trouble Reports that have been resolved in DG/UX Release 5.4, Update 1. 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 1000036, 2000075, and 2000107 system panics have been corrected in DG/UX Revision 5.4, Update 1. These corrections resolve the following Software Trouble Reports:

GER-000014838-0	GER-000014843-0	GER-000014845-0
GER-000014848-0	JAPN-000000635-0	NASC-000010821-0
NASC-000010831-0	NASC-000010893-0	NASC-000010896-0
NASC-000010918-0	NASC-000011106-0	NASC-000011376-0
NASC-000011419-0	NASC-000011432-0	NASC-000011441-0
UKSC-000054084-0		

STR #   **Description**

GER-000014836-0   AV6220 with DG/UX 4.32 experienced 121000071 panic.

GER-000014856-0   AV300 hang and all SCSI devices were periodically accessed.

GER-000014872-0   **getgrnam** consumes memory.

INTL-000000163-0   After selecting a filesystem to restore, filesystem **/db3** in our
                   case. "sysadm filerestore" skipped 2 filesystems and positioned the
                   tape at **/ora** instead.

INTL-000000179-0   Backups to 3 1/2" diskette using **CPIO** cannot continue to second
                   volume, at the end of the first diskette, it fails with I/O error no
                   6.

INTL-000000337-0   In the manual *Using Icobol under DG/Unix* pg. 2-17, CNTRL is
                   the same as a kill -3 which should terminate the process. It
                   actually logs them off the system, back to the login prompt.
                   Actually a **sh**(1) problem.

ITAL-000000099-0   When running the attached test program with the enclosed system
                   configuration file, **dg/ux** either panics or hangs.

JAPN-000000539-0   **Cflow**(1) prints illegal line numbers.

JAPN-000000592-0   **Lpr's** output filtering program does not work completely.

JAPN-000000604-0   If a printer queue has more than 150 requests, **lpstat** and **sysadm**
                   hang.

JAPN-000000605-0   PANIC 57000143.

JAPN-000000618-0   The erase char of 9600bps entry has been set to ^h.

JAPN-000000625-0   **cpio** cannot extract control point directory.

JAPN-000000627-0   **Fingerd** is fixed to "ux_kernel" domain.

JAPN-000000628-0   Panic 57000136

NASC-000005234-0   The errors "Too much defining" and "No space" are returned
                   from **cxref** when used with program files that have large include
                   files.

NASC-000007314-0   The errors "Too much defining" and "No space" are returned
                   from **cxref** when used with program files that have large include
                   files.

NASC-000008512-0   **Cxref** *program.c* returns an error if **termio.h** is included in
                   program.c.

NASC-000008896-0 Request that **dump2** change the method used for calculating how many tapes the backup will require.

NASC-000009135-0 Request for enhancement to **dbx** to support attaching to a running pid.

NASC-000009768-0 **Filec** function in the C shell is not operating properly when on a tty port of a VDC or VAC controller.

NASC-000009796-0 The **make** command is not following the documented rules for escaping the meaning of the # meta character. A \ placed in front of the #, such as \# should escape the command meaning of the #.

NASC-000009897-0 Problem with **dump2/fsdump** not using block size specified in **/etc/dumptab**.

NASC-000009913-0 Problems with the Bourne shell and group access to a file.

NASC-000009987-0 **Sar** data is getting overwritten in 4.32 of DG/UX.

NASC-000010046-0 **Cpio** to a 3-1/2 in disk will return error 6 if the files to be dumped span more than one diskette.

NASC-000010218-0 No documentation is available on obtaining access to the information in the **siginfo** structure from within a signal handler defined by a call to the **signal()** function.

NASC-000010238-0 The command, "**tail -<***integer*>**c**", as documented on page B-10 of *Installing and Managing DG/UX* corrupts **/etc/wtmp** if integer is not a multiple of 64.

NASC-000010242-0 We are having a problem when using the **cpio** command with the "**-oa**" option, in that the access times of the files being backed up are being changed to Dec 31 1969.

NASC-000010353-0 System hang with no error message on the master console.

NASC-000010386-0 The **style**(-s) switch does not work correctly when used with **dbx** to debug GreenHills Fortran programs.

NASC-000010387-0 The **dbx dump** command no longer works in the current revision on **dbx**.

NASC-000010508-0 Problem with **trap** command in a Bourne shell script. **trap** is not working correctly for **trap** 2,3.

NASC-000010521-0 The LIMITATIONS section of the **getwd** call is misleading when it states "The maximum pathname length is limited by the length of the array pathname".

NASC-10522-0 The function **getwd()** was not returning with a 0 on error.

NASC-000010549-0 The **dg_sysctl** command in the script **/usr/sbin/init.d/chk** system returns an error if the current boot path contains any switches, such as run level.

NASC-000010570-0 System up and running. After about 20 users login on their Xterminals, the system panics with code 3000032 PM_PANIC_KERNEL_EXCEPTION.

NASC-000010629-0 Syac lines do not become enabled after a cold boot.

NASC-000010649-0 AV4600 running DG/UX 5.4 does not recognize exabyte tape drive from a cold boot.

NASC-000010693-0 Printing to laser printer via termprinter does not work. Need new termprinter model and **lp.cat**.

NASC-000010702-0 When waiting for an incoming message, the permission bits in the **ipcs** command are not properly set. They should show "R" at the beginning of the permissions to indicate there is a process waiting to receive a message off of this qid.

NASC-000010712-0 DOS file interchange using **dfm()** on DG/UX 5.4 does not allow successful transfer of DOS or DG/UX files to either machines via diskette.

NASC-10722-0   **as**: symbol table has insufficient entries for a large assembly file.

NASC-000010742-0 **Trap** does not function correctly in the Bourne shell for 5.4 as it did in 4.3x systems, in relation to the signal, SIGINT - 2.

NASC-10759-0   **setvbuf** and **malloc** are not working properly. The example program should print out "this is a test" and then the line from the input file. Instead it prints out the contents of the input file.

NASC-000010761-0 Running a Progress application that does cursor positioning works correctly on a terminal connected to a DUART. The same application when run on a SYAC causes the terminal to display incorrectly.

NASC-000010765-0 Running a Progress application that does cursor positioning works correctly on a terminal connected to a DUART. The same application when run on a SYAC causes the terminal to display incorrectly.

NASC-000010781-0 A total system hang occurred.

NASC-000010784-0 Cannot set up SUN client under 5.4 DG/UX.

NASC-000010785-0 5.40 **sysadm** does not allow adding users whose name contains "_" or "-" in their name. The old **sysadm** does allow this and the 5.40 manual *Customizing the DG/UX System* page 4-3 states these are valid username characters.

NASC-000010799-0 Scripts that do cursor handling do not work correctly after revving up to revision 5.4 of DG/UX.

NASC-000010809-0 The **ps -lf** command does not work correctly under revision 5.40 of DG/UX. The nice value is not displayed in the "NI" column. The address is displayed in the "NI" column instead of the "ADDR" column.

NASC-000010849-0 The **dbx** source code debugger changes from statement stepping to instruction stepping when the explicit form of the list command is used.

NASC-000010853-0 Cursor position does NOT work when a d410 is connected to a VDC, but does work when we **telnet** to the AV8000. Lines connected to a VDC have form feeds and vertical tabs padded with nulls when ofill is turned off.

NASC-000010886-0 Request to have the son **ttymon(1M)** process after it has been **fork**'ed, to have only the devices associated with it open, all others closed.

NASC-000010877-0 Cursor position does NOT work when a d410 is connected to a VDC, but does work when we **telnet** to the AV8000. Lines connected to a VDC have form feeds and vertical tabs padded with nulls when ofill is turned off.

NASC-000010932-0 **uudemon.cleanup** no longer runs properly under DG/UX Revision 5.4 because of the modification to **pwd** under DG/UX Revision 5.4.

NASC-000010951-0 AV/6240 with HADA disk array experienced a 6000015 panic.

NASC-000011000-0 Printing from a DG/UX 5.4 AViiON to another 5.4 AViiON does not work using **lpNet**. The print job stays in the queue on the remote machine. Must drop back to pre-5.4 printing.

NASC-000011019-0 The **-a** option to **cpio** sets the file access time AND modification time to DEC 31 19:00 1969. This causes problems for the **make** utility.

NASC-000011042-0 The file **/usr/spool/lp/admins/lp** is incorrectly linked to **/etc**, instead of **/etc/lp**.

NASC-000011046-0 The man page for **crontab** is incorrect about the default editor used.

NASC-000011062-0 When you add a tty line through **sysadm**, the fastest speed you can designate is 19.2.

NASC-000011068-0 When installing printers for WordPerfect 5.0, WordPerfect modifies the printer files in the "interfaces" directory. The path to the "interfaces" directory did not resolve correctly.

NASC-000011074-0 We are having a problem with the way that the quit character is behaving under 5.40 of DG/UX. The quit character does produce a core file, but it logs us off the system.

NASC-000011101-0 Customer is getting 0x60 iocb timeout message when he issues a **shutdown** command. There are still several processes running after the **shutdown** command completes.

NASC-000011113-0 Error "No tdesc information or code reading failed" is returned by the **dbx** WHERE command when used to debug a core file.

NASC-000011115-0 Cursor position does NOT work when a d410 is connected to a VDC, but does work when we **telnet** to the AV8000. Lines connected to a VDC have form feeds and vertical tabs padded with nulls when ofill is turned off.

NASC-000011142-0 Mirror broken after system panic'd with 3000032.

NASC-000011164-0 DG/UX allows ' in the User Comment field when creating a new user through **sysadm** but gives an error after saying OK to execute.

NASC-000011179-0 Customer needs the replacement module for **ld** when it becomes available. DG/UX 5.4 to correct the added swap space requirement.

NASC-000011181-0 Script **ckpacct** will turn on accounting in some cases even if $account_START="false" in **dgux.params**.

NASC-000011183-0 System hang after getting LDterm:(LDterm serv) out of blocks message on master console.

NASC-000011184-0 The **trap** command does not work under DG/UX revision 5.40 if it is invoked under the users initial shell. This did work correctly under revision 4.3x.

NASC-000011194-0 Problem with batch in DG/UX 5.4. The **at**(1) command appends extra newlines to scripts submitted for execution via **batch**(1) or **at**(1).

NASC-000011199-0 When print jobs are submitted to a Termprinter via **Lpsched** only one Termprinter will actively print at a time. Print jobs submitted via **Lptermprinter** work fine.

NASC-000011200-0 **Sysadm addlp**: returns an error "Printer does not exist".

NASC-000011201-0 The **cpio** command terminates prematurely when using the following command: **cpio -ivcdumB </dev/rmt/0**.

NASC-000011207-0 Panic 6000015 under DG/UX revision 5.40.

NASC-000011208-0 DG/UX panic 4000415.

NASC-000011248-0 We are not able to change the default TERM variable for
                  /dev/console under 5.40. When we were running 4.32 of DG/UX,
                  we were able to change the TERM variable for the console in
                  /etc/inittab.

NASC-000011256-0 Problem with 5.4 and echoing /014's.

NASC-000011312-0 **lpstat** hangs when the number of print requests in the queue is
                  greater than 130.

NASC-000011373-0 Problem with **dd** command reporting "dd: read error: No such
                  device or address".

NASC-000011383-0 We are experiencing a problem with double logon's being
                  displayed. Errors 5,6, and 11 are recorded in the **ttymon** log.

NASC-000011394-0 When U_ASIZE was exceeded in the accounting package we lost
                  one day's accounting.

RTP0-000013803-0 When you tell installation procedure that you want to load the
                  root file system to a file system not call root, it should
                  automatically put the '-q' option in the reboot path so that the
                  correct file system will be mounted on /.

RTP0-000013808-0 remshlp_BSD adds control characters to the end of a file,
                  depending on the value of "nofilebreak." A Sun machine sees the
                  characters and interprets these as an error, hence the file is not
                  printed.

RTP0-000013810-0 The **mailx ˜r** to read a file does not work under DG/UX revision
                  5.4.

RTP0-000013845-0 When telnetting on a d216+ terminal to an AV Office application,
                  the newline acts as down arrow. This does not occur using
                  rlogin.

RTP0-000013854-0 Cursor position does NOT work when a d410 is connected to a
                  VDC, but does work when we **telnet** to the AV8000. Lines
                  connected to a VDC have form feeds and vertical tabs padded
                  with nulls when ofill is turned off.

RTP0-000013857-0 System cannot **fork** - gets message "daemon: cannot fork", and
                  for login attempt at console get "-sh: fork failed - too many
                  processes".

SPA-000000833-0 When the system start all terminals are hang, but if i kill the
                 ttymon process then all terminals become ready. I must wait until
                 the lights of cluster of VDC stop before kill the **ttymon** process.

SWE-000000424-0 The **sysadm** Networking->TCP/IP->Resolve Address->Add
                 operation find both the primary hostname and all its aliases when
                 it is checking if it is possible to add a server.

SWE-000000432-0   Panic 54000003 occurred.

SWE-000000433-0   Panic 2000007 taken during full production in the middle of the
                   work day.

SWE-000000442-0   Restoring a 1.4 Gbyte file system with fast recovery enabled was
                   very slow. The rate of data restored varied between 17 and 35
                   KBytes per second.

UKSC-000046520-0   When defining an 'input' macro for the **lex** command, the
                   standard input is not renamed or removed. This causes syntax
                   errors when compiling.

UKSC-000049044-0   DG/UX 4.31 Panic 1000027.

UKSC-000049134-0   Within a here document (for example, **cat <<!**), **end-of-file**
                   (**ctrl-D**) did not delimit end of input.

UKSC-000050880-0   If the contents of tags file created by **ctags**(1) are not in
                   alphabetical order then some tags are not recognized. **ctags** -a
                   does not add new tag(s) in alphabetical order.

UKSC-000052162-0   RFE to add to the DG/UX standard models' files a file that will
                   handle postscript printing for a postscript printer attached to a
                   termserver. That is a combination of a standard and termprinter
                   files.

UKSC-000052384-0   The SIGQUIT function under 5.4 behaves differently than under
                   4.32. Under 4.32 the SIGQUIT signal is ignored at the parent
                   shell prompt btu under 5.4 the user is logged off. Which is
                   correct function? Unable to trap signal under 5.4.

UKSC-000052950-0   The SIQUIT signal under 4.32 is ignored at the login prompt, but
                   under 5.40 the user is logged off the system if the SIGQUIT is
                   input at the login prompt.

UKSC-000052993-0   The customer is running DG/UX 5.40, under 4.32 "trap
                   <command> 1 2 3" worked when used within a script, under 5.40
                   it doesn't. Instead of a HUB INT or QUIT being trapped they
                   result in the termination of the script.

UKSC-000053863-0   DG/UX 4.31 system hanging approx every 30 minutes, requires
                   hot key sequence to interrupt and continue.

UKSC-000054087-0   When using **sysadm** ->device->port->Port Service->modify, an
                   error: "received Signal 11 " is returned after entering ttymon1 to
                   the first question "Controlling port monitor for service"

WEBO-000000001-0
                   Under DG/UX 5.4, the **sh** (ie., Bourne shell) sets the signal
                   SIGQUIT to SIGIGN. This breaks VTP for AViiON Systems
                   (C096A). Please restore to previous handler.

WEBO-000036783-0

> **xsysadm** sometimes hides "Interactions" screen from the user. This causes confusion.

WEBO-000036816-0

> All user terminals hang.

5 Notes and Warnings

5.1 General

Port Monitors and Serial Printer Ports

If you connect a printer to a serial (**tty**) port, make sure that the port is not being actively monitored by the command **ttymon**(1M). The port monitor can disrupt XON/XOFF flow control or inadvertently capture messages from the PostScript printers. We recommend that you delete all port services associated with your printer ports rather than disable them. However, if you choose not to delete the port services, you should follow these guidelines:

- Do not specify any "disabled" message for the printer ports.

- If the port is used only for printing, disable the port service(s) associated with the port.

- If the port is switched between a terminal and a printer, configure the **lp** scheduler so that it recognizes the port as a "login terminal" (see the **-l** option of **lpadmin**(1M)).

lp Fault Detection

For serial connections, the **lp** scheduler generally relies on modem control signals from the printer to indicate printer status. (The notable exception is PostScript printers driven by the **postio** fast filter.) In particular, the printer should be set up to lower the Data Terminal Ready (DTR) signal on an unrecoverable error, and NOT to toggle DTR as a form of flow control. Also, the serial cable used must pass through DTR if fault detection is to work; some cables bypass this signal by "looping back" modem control at each connector.

If you cannot configure your printer to keep the DTR signal high, you will need to set the **stty** option **clocal** for that printer. To set **clocal**, use **sysadm** to set the printer configuration.

fsck Facility

If a file system could hold more than 65535 inodes, running a fast recovery on it after a system failure (by using the command fsck(1M) with the -l option) could incorrectly compute the total number of allocated inodes, setting it to a very large number. This would prevent new files from being created, but access to existing files would not be affected.

This has been fixed in the fsck utility. If this problem has happened to a file system, running normal fsck on it will correctly repair the total count of inodes allocated. No files are lost or damaged as a result of this problem.

Sde-target Values

The table "Sde-target Values for Environment Control" on page 8-5 of the manual *Porting and Developing Applications on the DG/UX™ System* incorrectly shows each of the sde-target values with an underscore prepended. The underscores should not be a part of the sde-target values and will be removed in the next revision of the manual. When setting the environment variable TARGET_BINARY_INTERFACE, do not use underscores in the names of the sde-target values.

Tools Affected by the sde-target Mechanism

A list on page 8-7 of the manual *Porting and Developing Applications on the DG/UX™ System* shows the tools affected by the sde-target mechanism with hyphens prepended to their names. Ignore the hyphens; they will be removed in the next revision of the manual.

Installation

When running surface analysis on a disk, you will get a message every five minutes throughout the analysis. This message reports an estimate of the percentage of analysis completed and an estimate of how long it will take to complete the analysis. Every 5 minutes diskman recomputes these figures. Each message is more accurate than the previous message. Once a percentage greater than 1% is reported, the estimated time to completion will be fairly accurate. We do not recommend running surface analysis on HADA disk drives, as the disk array IO processor provides bad block remapping automatically.

Setting Up Clients and Servers

A server can have more than one network interface name. When configuring a client, use the server's primary name. If you do not, the client will fail to recover its remote locks when the server reboots. To determine the primary network interface name, execute hostname(1M) on the server.

IOP Microcode

DG/UX Release 5.4, Update 1 contains revision 2.13 of the **Gridman** utility and revision 3.10 of the **IOP** microcode. Revision 3.10 of the microcode contains many new features and enhancements. However, this new revision is not backward compatible. **Once you have installed revision 3.10 on your IOP you can not return to a previous revision.**

DG/UX Release 4.34 and Release 5.4 contain old versions of the microcode. If you plan on upgrading to DG/UX Release 5.4 or DG/UX Release 5.4, Update 1, we recommend that you upgrade the microcode to revision 3.10. There are two release methods for this microcode. The first is via a MIDA release tape and the second is via the DG/UX software release tape.

There is a new release of the MIDA tape (Microcode Install for the Disk Array) called rev 2.0 which contains revision 3.10 of the microcode. This release supports HADA disk systems running DG/UX Release 4.34, Release 5.4, and Release 5.4, Update 1.

All versions of the microcode are loaded from the DG/UX release tape into the directory **/usr/stand/gridman.u**. Customers who have upgraded their systems will find multiple revisions in this directory. We recommend that you remove all revisions except rev 3.10.

A Restriction in Loading Software Packages

Beginning with Release 5.4 of DG/UX, the standalone **diskman**(1M) utility is capable of loading any software package conforming to DG package guidelines. However, because **diskman** is not able to propagate new software to operating system clients, you should NOT use **diskman** to load non-operating system software unless explicitly instructed to do so by the installation instructions accompanying the software. You should use **sysadm**(1M)'s `Software -> Package -> Load` operation to load software packages from media which conform to DG package guidelines.

If you are explicitly instructed to load non-operating system software with **diskman**, then refer to the release notice accompanying that software for details on completing the installation of diskless clients.

Loading Networking Products

If you load a networking product other than TCP/IP or X.25, be sure to make an entry for that product in the **master.d** directory to set the locking set name to **netinet**. If you do not make this entry, your system may panic with the code 1000001.

Token-Ring Interface

When running protocols stacks (TCP/IP, ISO) over the Token-Ring interface, there is a possibility of encountering a stack overflow (Panic code 1000001). This panic may be avoided by changing the **dgux** system file in **/usr/etc/master.d** to place the **vitr**

device and the **llc** pseudo-device in the same Streams lockset. They may be placed in the same lockset by changing the word "module" to "llc_vitr" on the line entries for **llc** and **vitr**.

Service Daemon (dgsvcd)

When using the service daemon (**dgsvcd**) on a system that is not connected to a network, you must do the following:

1. place the following entry for **dgsvcd** in **/etc/services**: **dgsvcd 21100/tcp**.

2. perform a **make** on the file **/etc/services**.

3. make sure the following entries exist in the kernel build file:

   - tcp()

   - ipproto_tcp

   - socsys

For systems with NIS servers that are pre-DG/UX Release 5.4, you must place the entry mentioned above for **dgsvcd** in the **/etc/services** file on those servers.

Editread Restriction

If **editread** is turned on when an **xterm** is put into the background, the **stty** settings picked up by the background **xterm** could be those before **editread** sets them up or those after. **Xterm** reads the **stty** settings of the parent to establish the settings it will use. **Editread**, however, sets up the **stty** settings during the re-initialization after the background **xterm** is launched. It is, essentially, a race as to whether the **stty** settings are established by **xterm** or **editread**.

This condition appears often in the **csh**, but rarely in the **sh**. The workaround is to have a **.cshrc** file that resets your **stty** settings in **xterm** after the C shell comes up or to turn **editread** off before starting **xterm**. If you turn off **editread** before starting **xterm**, you cannot turn it back on.

Physical Disk Copy Restriction

The Physical Disk Copy mechanism provided in **diskman** is restricted to copying physical disks that contain complete logical disks on the source physical disk. Regardless of whether the logical disk is single- or multi-piece, the entire logical disk must be on the source physical disk. In addition, if the physical disk is larger than two gigabytes, you cannot use the Physical Disk Copy mechanism to copy it.

If you have a multi-piece disk with pieces that are not on the source physical disk or a physical disk larger than two gigabytes, then you should use **diskman**'s Logical Disk Copy mechanism. To use this mechanism, you must first create a logical disk that is

the size of all of the pieces of the logical disk you want to copy. Be sure to give the logical disk you create a different name from those you are copying.

Synchronizing Software Mirrors on HADA Systems

Do not attempt to remove a drive from the HADA for repair while synchronization is in process. If the slave image of a software mirror fails during synchronization, data copying stops, but the state of the mirror indicates that synchronizing is still taking place. Because breaking a mirror and starting a synchronization require that a synchronization not be running when they are performed, the mirror will be stuck in this state until the machine is rebooted.

If this problem occurs, do the following:

1. Repair the failure on this disk drive.

2. Reboot the machine.

3. Restart the synchronization process.

Header File Dependency

Programs that include the **/usr/include/sys/dlpi.h** or **/usr/include/sys/dl_ext.h** file will need to also include the **/usr/include/sys/types.h** file for the programs to compile cleanly.

5.2 System Calls

FIONREAD Behavior

The DG/UX 5.4 Release Notice warns that the FIONREAD command for the **ioctl**(2) system call differs from 4.3 BSD and 88open Binary Compatibility Standard (BCS) Networking Supplement. This warning does not apply in DG/UX Release 5.4, Update 1. FIONREAD is now compatible with BSD, the 88open BCS Networking Supplement, and System V Release 4.

BCS ptrace Extensions

The Release Notice for DG/UX Release 5.4 warns that DG/UX Release 5.4 complies with 88open Binary Compatibility Standard (BCS) 1.1 (not 88open BCS 1.1A) for optional extensions to **ptrace**(2). As a result, a process could not use **waitpid**(2) to wait for an attached process that was not its child. This warning does not apply in DG/UX Release 5.4, Update 1. Support for the optional extensions has been added.

select

The **select**(2) system call always returns true on a file descriptor created by opening **/dev/tty**.

poll

A **poll**(2) issued on an empty pipe does not wake up when characters are written into the pipe. As a workaround, the application should be modified to use POLLRDNORM rather than POLLIN.

sleep

The **sleep**(2) system call does not work correctly when a large number of seconds (x) is specified. If the number of seconds to sleep is greater than 128K (1.5 days), then the sleep will last 64K $+ x$ mod 64K seconds.

5.3 Libraries

Values Files in BCS and OCS libc

In DG/UX Release 5.4, the **libc** in the m88kbcs and m88kocs environments contained values-Xt.o instead of values-Xa.o. This problem has been corrected and the workaround described in the DG/UX 5.4 Release Notice is no longer necessary.

Standard .profile File

The standard **.profile** shipped in DG/UX 5.4 for **root, sysadm**, and all New users contained a test to determine if **/usr/bin/X11** should be included in the path. Because **/usr/bin/x11** is now a directory, not a symbolic link, the test should be rewritten in existing **.profile** files as follows:

```
if [ -d /usr/bin/X11 ]
then
path=${PATH}:/usr/bin/X11
fi
```

fread Function

In the m88kdguxelf software environment, the **fread**(3S) function will return prematurely in some cases. It should only return a value greater than zero but less than the number of items requested when EOF is encountered. However, **fread**(3S) can return values greater than zero but less than the number requested if the underlying **read**(2) system call returns before reading the full request. The **read**(2)

manual page discusses conditions under which this can happen.

monitor Function

The **monitor**(3C) function is missing from all COFF versions of **libc**, namely the environments m88kdguxcoff, m88kbcs, and m88kocs. In these environments, the function is mistakenly named **_monitor** instead of **monitor**. Though the function has the wrong name, it functions as documented. This problem does not affect executables that have already been linked or the ELF environments. When using one of these COFF environments and you wish to use the **monitor**(3C) function, call it by the name **_monitor**. This will be fixed in the next revision of the DG/UX system.

You can work around this problem either at compile or link time. At compile time, you include **-Dmonitor=_monitor** on your compilation line. This way, you avoid having to modify your current source.

At link time, you can include an object that consists of a function definition called **monitor()**. This function definition should return the results of calling **_monitor** with all the documented arguments available in **monitor**(3C).

ftruncate

The **ftruncate**(3C) function is documented incorrectly, although the implementation matches the documentation. In particular, **ftruncate**(3C) should work on any file descriptor open for writing, regardless of file permissions. However, it only works on a file open for writing and for which the EUID of the process has write permission.

5.4 Commands

RCS Version 5.6

The SETUID feature as described in **ci**(1) is disabled for now. A future release may re-enable this feature.

tcload

The **tcload** command automatically runs as part of the boot process. This command starts one LOAD process for each syac in your system. These LOAD processes never terminate. They monitor the syac for various events and handle them as appropriate. See the **tcload**(1M) manual page for more details.

vi

The function keys on a terminal or workstation may be mapped in vi as demonstrated in the following example. To map function key F1 to insert 'This is a test' into the file you are editing, enter:

:map #1 iThis is a test<Ctrl-V><Esc><CR>
                              or
:map <Ctrl-V><F1> iThis is a test<Ctrl-V><Esc><CR>

Because the "#" syntax is limited to #1 thru #9, the second method above must be used when defining function keys greater than F9.

Refer to the section, "Using Key Maps" in *Using the DG/UX™ Editors* for additional information on key mapping in vi. Note that in order to use the function keys, your TERM environment variable and terminal configuration must be set up as described in "Appendix D" of *Customizing the DG/UX™ System*. If you are in an xterm window on a workstation or Xterminal, your TERM variable must be set to "xterm-fk".

crash

Note that the name of the **break** debugger command in **crash**(1M) has changed to **brk**.

ctl

If mxdb 2.00 is setup, then the **ctl**(1) tool in **/usr/bin** will be replaced with a pre-DG/UX Release 5.4, Update 1 version. This should not affect debugging. However, any updates included in the DG/UX Release 5.4, Update 1 **ctl** will not be available.

sh and csh

When typed at a shell prompt, the SIGQUIT and SIGINT signals are ignored.

sh

Beginning with DG/UX Release 5.4, the Bourne shell (**sh**(1)) was modified to disallow shell scripts that use **setuid**(2). These scripts could cause security problems by allowing a user to gain super user privilege through an interactive shell.

prof

The **prof**(1) command dumps core when it is invoked on a COFF executable that has been compiled with the -g option.

6 Documentation

6.1 Titles

Several documents are being revised to support DG/UX Release 5.4, Update 1. They include the following:

- *Installation Roadmap to DG/UX™ for AViiON ® Systems* (069-701084-01).

- *Guide to AViiON ® and DG/UX™ System Documentation* (069-701085-01).

- *User's Reference for the DG/UX™ System* (093-701054-03).

- *System Manager's Reference for the DG/UX™ System* (093-701050-03).

- *Programmer's Reference for the DG/UX™ System, (Volume 1)* (093-701055-03).

- *Programmer's Reference for the DG/UX™ System, (Volume 2)* (093-701056-03).

- *Programmer's Reference for the DG/UX™ System, (Volume 3)* (093-701102-01).

- *Using the DG/UX™ Kernel Debugger* (093-701075-01).

- *Installing the DG/UX™ System* (093-701087-01).

- *Managing the DG/UX™ System* (093-701088-01).

- *Customizing the DG/UX™ System* (093-701101-01).

Contact your Data General representative for ordering information.

6.2 Changes

Certain on-line man pages have been added or modified. They are listed in the file **/usr/release/dgux.man_5.4.1.fl**.

The reference manuals for the DG/UX system now include all of the manual pages for TCP/IP and ONC/NFS as well.

The table "Sde-target Values for Environment Control" on page 8-5 of the manual *Porting and Developing Applications on the DG/UX™ System* incorrectly shows each of the **sde-target** values with an underscore prepended. The underscores should not be a part of the **sde-target** values and will be removed in the next revision of the manual. When setting the environment variable TARGET_BINARY_INTERFACE, do not use underscores in the names of the sde-target values.

A list on page 8-7 of the manual *Porting and Developing Applications on the DG/UX™ System* shows the tools affected by the **sde-target** mechanism with hyphens prepended to their names. Ignore the hyphens; they will be removed in the next revision of the manual.

In the directory **/usr/release** is an on-line comment form for documentation. If you
have comments about the printed manuals, notices, or on-line documentation, please
use the file **doc_comment_form** to record your comments and send them to us.
Please see the file for details on how to contact us.

Please note that one of the phone numbers for obtaining information about joining
the North American Data General Users Group (NADGUG) has changed. The new
number is: 1-800-253-3902.

7   Software Distribution

7.1   Media

The DG/UX for AViiON Systems 5.4, Update 1 is released on QIC 150 tapes and
compact disk (CD). This update is available on the following packages:

Model Number *P001*, the **DG/UX Operating System with X Windows** package.
The part numbers are: 079-6000223-00 for the tape and 068-600002-00 for CD.

Model Number *Q001*, the **DG/UX Operating System** package. The part numbers
are: 079-600222-00 for the tape and 068-600001-00 for CD.

7.2   Files

A list of files that are loaded when the DG/UX system is loaded on your disk is in the
file **/usr/release/dgux_5.4.1.fl**.

8 Installation Instructions

You must load DG/UX Release 5.4, Update 1 of the DG/UX System onto a system that already has DG/UX 5.4 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 patches to your DG/UX Release 5.4, Update 1 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 only
  2  DG/UX 5.4 update 1 only
  3  DG/UX 5.4 and DG/UX 5.4 update 1

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 Booting OS Clients

After loading DG/UX Release 5.4, update 1 on an OS server, you must arrange for OS clients of the PRIMARY release to boot a 5.4.1 kernel. There are two ways to do this. The first method is to build and link a kernel for the clients using **sysadm**'s System -> 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.

8.3 Space Requirements

The following table provides the space requirements in blocks for DG/UX Release 5.4, Update 1. 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 only.)

Package	root Logical Disk (in blocks)	usr Logical Disk (in blocks)	usr_opt_X11 Logical Disk (in blocks)	usr_opt_aview Logical Disk (in blocks)	Total Blocks
dgux	14,700**	205,300**	0	0	220,000
dgux.man	0	17,700	0	0	17,700
gcc	0	9,300**	0	0	9,300
gcc.man	0	110	0	0	110
tcpip	400	5,900	0	0	6,300
tcpip.man	0	1,100	0	0	1,100
nfs	50	5,900	0	0	6,000
nfs.man	0	700	0	0	700
onc	50	3,600	0	0	3,700
onc.man*	0	0	0	0	0
X11	0	2,200**	63,400	0	65,600
X11.man	0	0	7,600	0	7,600
X11.lg	0	0	10,100	0	10,100
X11.sde	0	0	6,000	0	6,000
X11.doc	0	0	1,300	0	1,300
aview	0	0	0	5,400	5,400
aview.man	0	0	0	1,100	1,100
TOTAL	15,200**	251,900**	88,400	6,500	362,200**

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

**   These space requirements are particularly larger than those specified for DG/UX Release 5.4.

9 Preparing a Software Trouble Report (STR)

See "Preparing a Software Trouble Report (STR) in the *DG/UX 5.4 Release Notice*. When submitting a DG/UX Release 5.4, Update 1 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**(1M) command), the final tape will not be rewound when the dump completes. You must explicitly rewind the tape using the following:

 # mt -f /dev/rmt/0 rewind

End of DG/UX Update Notice