Update Notice:
TCP/IP

Release 5.4, Update 1

February 1992

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This release notice applies to the following model:

Q001

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Contents

1   Introduction

This notice describes update 1 to revision 5.4 of the TCP/IP package and its installation. This update will be referred to as 5.4.1 throughout this document.

This printed update notice always accompanies the software. You can print additional copies of this notice after you have installed the product. Its filename is: **/usr/release/tcpip_5.4.1.un**. Revision 5.4 is the previous release of this product.

2   Product Description

TCP and IP are communications protocols used on a large number of networks. The TCP/IP package consists of the additional software necessary to allow Data General's DG/UX™ operating system to communicate over those networks. This package supports devices for connection to Ethernet, Token Ring, and X.25 networks.

The TCP/IP package includes kernel support for the TCP, UDP, IP, ICMP, ARP and RARP protocols. It also includes user commands and server (daemon) processes that support the FTP, TFTP, BFTP, TELNET, SNMP, and SMTP protocols and the Berkeley R commands.

The TCP/IP package provides Application Programming Interfaces (API) for BSD sockets and the AT&T TLI library for the STREAMS environment. Additionally the TCP/IP package supports the 88open Binary Compatibility Standard Networking Supplement (BCSNS).

3   Environment

This section describes the hardware and software environment for TCP/IP.

3.1   Hardware

TCP/IP 5.4.1 runs on any AViiON® system running DG/UX revision 5.4.1 system software.

The hardware configuration should include at least one LAN controller and the internal and external cables necessary to connect the controller to an Ethernet or IEEE 802.3 Network. TCP/IP supports the following Ethernet controllers:

- VLC -- V/Ethernet 3207 Hawk LAN Controller (**hken**)

- Integrated Ethernet Controller (**inen**)

- Second Generation Integrated Ethernet Controller (**dgen**).

Wide Area Network (WAN) support is optionally available for TCP/IP by using X.25 for AViiON® Systems.

The TCP/IP 5.4.1 update requires 351 additional free blocks (5900 total blocks) of space in the /usr file system and 66 additional free blocks (400 total blocks) in the root file system. Installation of the man pages requires 280 additional free blocks (1100 total blocks) in the /usr file system.

3.2 Software

TCP/IP 5.4.1 requires DG/UX 5.4 with update 5.4.1. TCP/IP 5.4.1 fully interoperates with previous releases of the TCP/IP product.

4 Enhancements and Changes

4.1 Enhancements

4.1.1 TCP/IP Performance

TCP and UDP performance have been significantly improved in revision 5.4.1 of TCP/IP. These performance improvements are primarily in small-packet bidirectional traffic (i.e. TELNET-like traffic), but improvements are also visible in bulk-transfer applications such as NFS and FTP. The amount of improvement depends on hardware configuration and application mix.

4.1.2 TELNET Performance

Performance of incoming TELNET sessions has been greatly improved by performing most of the protocol operations inside the kernel, rather than in a user process. The result is a lower CPU usage per user, permitting either a greater maximum user count or, alternatively, more CPU time available for applications. The performance gains should be especially apparent for applications which perform a lot of keyboard and/or screen I/O, but relatively little other processing. Word processing and data entry programs often fit this description.

4.1.3 TELNET NAWS Support

In adherence to RFC 1073, the TELNET client and server programs, **telnet** and **telnetd**, respectively, now support window size changes via the NAWS (Negotiate About Window Size) protocol. When the client detects a size change, it transmits the new window size in a NAWS protocol sequence. The server responds to the NAWS protocol sequence by changing the row and column **stty** settings of the pseudo-terminal.

4.1.4   telnet

A new **telnet** command, **localchars**, allows the user to enable or disable the translation of certain character sequences into NVT protocol sequences. By default, local character translation is disabled. You can use the **localchars** command to enable local character translation.

In DG/UX release 5.4 **telnet** translated the intr, kill, and erase **stty** characters into the Interrupt Process, Erase Line, and Erase Character NVT protocol sequences, respectively. When **telnetd** received an NVT protocol sequence, it would translate the sequence into the appropriate local **stty** character. In some cases this translation had unexpected results. For example, if you use **rlogin** from a TELNET session, the intr, kill, and erase **stty** characters would not function correctly.

For more details about the **localchars** command, see the **telnet** man page.

4.1.5   inetd

The **inetd** server now supports TLI based daemons, such as the new **telnetd**. For more details, see the **inetd** and **inetd.conf** man pages.

4.1.6   ftpd

You can configure the FTP server, **ftpd**, to deny incoming FTP sessions from particular users. To deny FTP access to your system for a particular user, simply add the user name to the **/etc/ftpd.deny** file.

4.2   Changes

4.2.1   netstat and route

The **netstat** and **route** commands no longer use **/dev/kmem** to access kernel information. This change allows both commands to execute correctly on a system where the kernel image is not **/dgux**. The **netstat** command no longer accepts the system and core arguments. The **route** command no longer accepts the -k option.

4.2.2   /etc/inetd.conf_tcpip.proto

The **telnet** entry in the **/etc/inetd.conf_tcpip.proto** file has been changed. The **/etc/inetd.conf** file is updated appropriately during the set up of TCP/IP 5.4.1 after copying the original to **/etc/inetd.conf.bak**.

4.2.3 /usr/src/uts/aviion/cf/system.tcpip.proto

The **/usr/src/uts/aviion/cf/system.tcpip.proto** file has been changed. In particular, **ether** has been removed as a STREAMS module and **telnet()** has been added as a STREAMS driver. Note also that each system file in the **/usr/src/uts/aviion/cf** directory is updated appropriately with respect to these two changes during the set up of TCP/IP 5.4.1. Before being updated, each system file is copied to **<system-filename>.bak**, where **<system-filename>** is the name of the system file.

4.3 Software Trouble Reports Resolved

Following is a list of Software Trouble Reports that have been resolved in TCP/IP Release 5.4.1. 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.

NASC-000009305-0   NASC-000010940-0   NASC-000011356-0

STR #   **Description**

NASC-000009305-0 **FTP** compress mode returns error "dir create: Permission denied" when putting a file to a remote system as any user except root or sysadm.

NASC-000010940-0 We have problems with the Synoptics termservers booting from the AViiON computers using **TFTP**.

NASC-000011356-0 When running **inetd** with the -d option to display various diagnostic messages, problems such as intermittent **ftp** hangs after successfully connecting, but before giving a username prompt, and access problems to files, resulted.

5 Notes and Warnings

5.1 Notes

In TCP/IP 5.4, a new **telnetd** was introduced based on AT&T V.4 sources. The old **telnetd** was renamed **dg_telnetd**. Since this program will be removed in a future release, please let us know immediately via an STR if the default 5.4 or 5.4.1 **telnetd** has not met your application needs.

5.2 Warnings

The TCP/IP 5.4.1 package must be installed (i.e. both loaded and set up) prior to rebuilding the kernel. For each file that is updated during the set up of TCP/IP 5.4.1, a message is written to **/var/setup.d/log/tcpip.root** and the original file is copied to **<original-file>.bak**, where **<original-file>** is the name of the file which is updated. You must rebuild the kernel using an updated 5.4.1 system file for the system to function correctly.

When running protocols stacks (i.e. TCP/IP or ISO) over the token ring interface, it is possible to encounter a stack overflow (i.e. panic code 1000001). This panic may be avoided by changing the dgux system file, **/usr/etc/master.d/dgux**, so that the **vitr** device and the **llc** pseudo-device are in the same STREAMS concurrency set. They may be placed in the same concurrency set by changing the word "module" to "llc_vitr" on the line entries for both **llc** and **vitr**. After making these changes, you must build a new kernel and reboot.

6 Documentation

6.1 Titles

This section describes Data General and third party manuals applicable to the DG/UX TCP/IP package.

NOTE: When you are ordering new manuals, be sure to include the revision number with your order. The revision number is the last two digits in the manual's part number.

- *Using TCP/IP on the DG/UX*™ *System* (093-701023-02)

- *Managing TCP/IP on the DG/UX*™ *System* (093-701051-04)

- *Programming with TCP/IP on the DG/UX*™ *System* (093-701024-02)

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

- *Managing the DG/UX*™ *System* (092-701088-01)

● *UNIX* ᴿ *System V Release 4 Programmer's Guide: Networking Interfaces*, Prentice Hall. ISBN 0-13-947078-6

6.2 Changes

This section describes changes or corrections which are not in the current version of the manuals.

6.2.1 man page changes

All man pages currently in TCP/IP reference manuals are now obsolete. They have been moved into the DG/UX reference manuals. The following list indicates to which DG/UX reference manual the TCP/IP man pages have been moved.

● *Using TCP/IP on the DG/UX*™ *System* ..... *User's Reference for the DG/UX System* (093-701054-03)

● *Managing TCP/IP on the DG/UX*™ *System* ..... *System Manager's Reference for the DG/UX System* (093-701050-03)

● *Programming with TCP/IP on the DG/UX*™ *System* ..... *Programmer's Reference for the DG/UX System* (Vol. 1) (093-701055-03)

   Programming with TCP/IP on the DG/UX™ *System* ..... *Programmer's Reference for the DG/UX System* (Vol. 2) (093-701056-03)

   Programming with TCP/IP on the DG/UX™ *System* ..... *Programmer's Reference for the DG/UX System* (Vol. 3) (093-701102-01)

6.2.2 change files

There are two documentation change files which contain replacement sections and pages. The following list shows the names of the change files and the manuals to which they apply. See the change files for more information.

● **/usr/release/093_701023_02** ..... *Using TCP/IP on the DG/UX*™ *System*

● **/usr/release/093_701051_04** ..... *Managing TCP/IP on the DG/UX*™ *System*

7 Software Distribution

This section discusses release media and files.

7.1 Media

The DG/UX System release tape contains the TCP/IP package. The DG/UX System is included in the following packages:

- Model Number P001, the DG/UX Operating System with X Windows package (079-600223-00).

- Model Number Q001, the DG/UX Operating System package (079-600222-00)

7.2 Files

The **/usr/release/tcpip_5.4.1.fl** file contains the list of files in the TCP/IP package. The **/usr/release/tcpip.man_5.4.1.fl** file contains a list of the man pages.

8 Installation Instructions

This section describes how to install TCP/IP 5.4.1 on your system. These instructions assume you have already installed TCP/IP 5.4 on your system.

8.1 Installing TCP/IP From a DG/UX 5.4.1 Compact Disc (CD)

You will probably want to install TCP/IP 5.4.1 at the same time you install DG/UX 5.4.1. To do this, see the DG/UX 5.4.1 release notice for complete information. Otherwise, refer to this section for instructions on how to install TCP/IP 5.4.1 after DG/UX 5.4.1 has already been installed.

In order to load from a CD, it must first be registered. For information on registering your CD, see chapter 7 of *Managing the DG/UX™ System*.

On the software distribution CD is a logical disk (LD) called **+release**. In order to load from a CD, this LD must be mounted on your system. If it is not already mounted on your system, the following commands show how to mount this LD at directory **/tmp/cd_release**.

```
# mkdir /tmp/cd_release
# mount -o ro /dev/dsk/+release /tmp/cd_release
```

Next, using **sysadm**, perform the following operations: "Software->Package->Load". You will then receive the following prompts. In general, the tape device you enter should be the mount point for the **+release** LD.

```
Release Area: [PRIMARY]
Tape Device: [/dev/rmt/0] /tmp/cd_release
Is /tmp/cd_release ready? [yes]
Release Name: [DG/UX 5.4 update 1 only] ?
Select the name of the release from which to load.
```

You must choose a release name at this point; **sysadm** describes each option in detail. After you have chosen a release name, you are prompted for the package names as shown below. Select **tcpip**, and also select **tcpip.man** if you would like to load the TCP/IP manual pages.

                      078-600078-00

```
Package Name(s): [all] ?
Select 'all' to load all packages from the release medium.  If there
are specific packages that you want to load, you may select the package
names.  Separate the package names or numbers with commas.

Do not select 'all' if you are selecting individual packages.

Choices are

        1  all
        2  gcc
        3  tcpip
        4  nfs
        5  onc
        6  X11
        7  aview
        8  dgux.man
        9  gcc.man
       10  tcpip.man
       11  nfs.man
       12  onc.man
       13  X11.man
       14  aview.man
       15  X11.sde
       16  X11.doc
       17  X11.lg

    Enter a number, a name, the initial part of a name, <NL> to take
    the default, ? for help, ^ to return to the previous query, < to restart
    the operation, or q to quit.
    Package Name(s): [all] tcpip tcpip.man
    List file names while loading? [no]
    OK to perform operation? [yes]
```

The TCP/IP package will then be loaded on your system by **sysadm**. You must also set up TCP/IP. For information on setting up TCP/IP, see chapter 7 of *Installing the DG/UX™ System*.

After installing TCP/IP 5.4.1, you must build a new kernel. See section 8.3 below.

8.2   Installing TCP/IP From a DG/UX 5.4.1 Tape

You can use **diskman** to install TCP/IP 5.4.1 while installing DG/UX 5.4.1, or you can use **sysadm** after installing DG/UX 5.4.1. For more information, consult *Installing the DG/UX™ System*.

After installing TCP/IP 5.4.1, you must build a new kernel. See the following section.

8.3 Building a New Kernel

You can use either of the following **sysadm** operations to build a new kernel: "System->Kernel->Autoconfigure" or "System->Kernel->Build". If you use the autoconfigure option, you may receive the following warning from **sysadm**: "Only devices with drivers already configured into the kernel will be listed in the system file." This warning can be safely ignored.

After building and installing the new kernel, you should reboot your system.

9 Preparing a Software Trouble Report (STR)

Chapter 7 of *Managing TCP/IP on the DG/UX™ System* contains hints for troubleshooting problems you may encounter while using DG/UX TCP/IP. If you are experiencing problems on your system you may want to consult this chapter to see if it can help you determine the cause.

If you believe you have found an error in the TCP/IP package or the documentation, or if you have a suggestion for enhancing or improving the product, use a Data General Software Trouble Report (STR) to communicate this information to DG.

The DG/UX release notice contains a detailed description of the procedure to use in filing a STR for any DG/UX related problem. Please follow the instructions provided in the DG/UX release notice to provide the basic problem information. You can find a copy of the DG/UX release notice in **/usr/release/dgux_5.4.rn** and the update notice in **/usr/release/dgux_5.4.1.un**. Additionally you should provide the information requested in the online STR form located in **/usr/release/tcpip_str_form**. Since networking problems are often due to interoperability issues, it is important for you to provide as much detail as possible about the network environment.

<div align="center">End of TCP/IP Update Notice</div>

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