Release Notice:
Legato NetWorker for AViiON® Computers

NetWorker 4.0 Release 1.0

Part number 085-600385-01

This release notice applies to the following models:

P001A
Q001A
Q017A

Restrictions and Trademarks

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Legato NetWorker for AViiON® Computers
NetWorker 4.0 Release 1.0

085-600385-01

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Contents

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1 Introduction

This release notice describes NetWorker for Data General's family of AViiON® computers. It includes information or corrections that developed after the manuals were printed.

An online version of this release notice, suitable for lineprinters, is in the file `/usr/opt/networker/release/networker_1.0.rn`. Should you find discrepancies between the typeset and online versions, the typeset version takes precedence.

2 Product Description

NetWorker is a backup application for networked computers. Developed by Legato Systems, Inc., NetWorker is based on the Client/Server computing model. With this product, the system administrator of a designated server can back up its own disks to local tape drives, and also the disks of its designated clients. The features of NetWorker include:

- Scheduling. Once the backup manager specifies the file systems and clients to be backed up, the tape drives to use, the backup levels, and backup intervals, NetWorker backs up a network of computer systems with minimal operator intervention.

- Restoration from backup. NetWorker maintains online indexes of all the files it backs up. A client user can browse through these indexes and select files to be restored, with minimal operator intervention.

- Support for on-demand backups and overrides. Client users, as well as the backup operator, can initiate on-demand backups. The backup operator can easily override a schedule without changing it permanently.

- Security. By default, a client user can request an on-demand backup only for a local file system, and can browse through and restore only files that were backed up from a local file system. But the backup administrator may extend access to include file systems located on other clients.

  By default, only the superuser on the backup server can change the backup configuration or access backed-up files. But the backup administrator, acting as superuser, can designate a subordinate backup operator to maintain the backup without giving the operator superuser access.

- Parallelism. NetWorker can back up an operator-specified number of file systems (up to 10) in parallel. The file systems may be located on the same or different clients. Parallelism can reduce the time required to complete a backup.

- Concurrency. NetWorker can write to multiple tape drives simultaneously. Used in combination with parallelism, concurrency can greatly reduce the time required to complete a backup.

- Software compression. Optionally, the operator can direct NetWorker to compress files prior to writing them to tape. Upon restoration, compressed files are uncompressed. Compression may reduce by up to fifty percent the tape space required for a backup.

- File bypass. Optionally, the operator can direct NetWorker to skip files that do not need to be backed up (for example, files ending with suffixes .o or .backup). Such directives can further reduce the number of tapes required to back up a disk.

- Flexible volume control. NetWorker maintains multiple versions of backup files, based on the operator's specifications.

- Flexible server support. A client can be supported by more than one backup server, and may choose between them. Also, a client and a server may be the same host. When this is the case, NetWorker backs up local disks to local tape drives.

- Device support. NetWorker works with all AViiON-supported tape drives, including the new Model 7921 CLARiiON™ tape array.

3   Environment

NetWorker 4.0 Release 1.0 requires DG/UX 5.4 Release 3.00 or later. It runs on any AViiON model. A NetWorker client must include one or more disks. A NetWorker server must include one or more backup devices.

NetWorker is available for AViiON systems in a single-client or in multi-client versions. The single-client version is included on the DG/UX 5.4 Release 3.00 tape or CD-ROM. The multi-client versions, available from Data General at additional cost, require an installed network.

Two user interfaces are available: a graphics interface based on the X Window System and Motif, and a curses-based ASCII terminal interface. The graphics interface program requires an AViiON workstation or X terminal, and the version of DG/UX 5.4 Release 3.00 (model Q001A) that includes the X Window System software.

4   Enhancements and Changes

4.1   Media pools

This new feature allows backup volumes to be segragated into separate "media pools". The administrator specifies which backup data can be assigned to a media pools based on criteria such as: the backup group, client names, backup levels, and device types. Some potential uses of this feature are: offsite backups, separating one group's backup data from another, separating client data from server data. Chapter 3 of the Legato NetWorker Administrator's Guide provides information for using this feature.

4.2   Support for large filesystems

NetWorker can now backup and restore filesystems that are greater than 4GB.

4.3   Configuration reports

NetWorker 4.0 Release 1.0 configuration reports provide quick, easy access to site-specific information. Through a new, customizable window, a system administrator can review schedules, groups, and policies on a client or server basis. Hard copies of these reports can also be produced at the push of a button.

4.4   Savegroup control

A new savegroup control feature allows system administrators to stop in-progress savegroups and restart them later at the exact point at which they were stopped.

4.5   Client retries

This new capability enables a system administrator to direct a server to automatically retry extablishing contact with a backup client in cases where the initial contact fails.

4.6   Control Point Directories

NetWorker 4.0 Release 1.0 now supports archiving and recovery of control point directory information.

4.7   Raw disk partitions

NetWorker 4.0 Release 1.0 now supports archiving and recovery of raw disk partitions. To archive raw disk partitions, simply include the raw disk's /dev/rdsk device name in the list of directories to back up as though it were a filesystem. NetWorker will schedule and backup the raw disk along with the other directories: It will determine which physical device each filesystem or raw disk resides on, and attempt to schedule filesystems and raw disks that reside on different physical devices or on disk arrays for concurrently.

4.8   .rhosts dependency

The requirement that all NetWorker clients have the hostname of the server in their .rhosts file has been removed. Validation is now performed by a new daemon, nsrexecd(8), which runs on each client.

4.9   Label templates

A new feature called "label templates" allows you to specify a template in order to facilitate and enforce uniformity in naming NetWorker volumes. See the Adminstrator's Guide for more information.

4.10   networker -x option

Prior to this release hidden resource attributes could only be accessed in the character-based interface via the nsradmin program. In this release, a new option to the networker command, -x, allows you to access hidden attributes from the Motif interface as well.

4.11   mm command

The name of the **mm** command has been changed to **nsrmm** in order to eliminated name conflicts with other software packages with commands of the same name.

5   Notes and Warnings

5.1   NetWorker and ACL's

NetWorker does not support archive and recovery of ACL's; therefore, it should not be used for archiving data on security releases of DG/UX (e.g., DG/UX Release 3.00T).

5.2   NetWorker and dump2/restore

Archiving of AViiON systems via **dump2/restore** is still available in NetWorker 4.0 Release 1.0; however, we strongly urge our customer's to begin migrating to NetWorker and away from **dump2/restore** for both local and networker-wide backups. NetWorker is a more fully-featured, superior backup solution, and is the product that Data General intends to focus on for meeting our customers' commercial archiving needs in the future. **Dump2** will be supported through at least the next release.

Access to **dump2/restore** is still provided via the f(CRFile System->Backup options of **sysadm**. These operations have no effect on NetWorker.

5.3   Portmap dependency

NetWorker uses RPC calls and, hence, requires that portmap(1M) be running. Portmap(1M) is started automatically by DG/UX when it is booted to init level 3.

5.4   Using the Multi-Client Version of NetWorker

When installing the Multi-client version of NetWorker, please note that sysadm will not automatically create a separate virtual disk for the /usr/opt/networker filesystem. You should create a Virtual disk of 40000 blocks for /usr/opt/networker (if one doesn't already exist) before loading Multi-client NetWorker.

5.5   Using the Single-Client Version of NetWorker

The DG/UX 5.4 Release 3.00 tape or CD-ROM includes a version of NetWorker that works with a single client (the server as a client of itself). This version allows you to back up local disks to local tape drives. You get this version at no extra cost with the DG/UX operating system license. The NetWorker package loads by default when you install DG/UX 5.4 Release 3.00 but you can choose not to load it. If you do exclude it, you can load and install it at a later time from your release tape or CD-ROM, using the **sysadm** `Software->Package->Install` selection: see the "Installation" section of this release notice.

Available from Data General at additional cost are multi-client versions of NetWorker. Multi-client versions allow a server to back up the disks of its clients over the network, to the server's tape drives. They also allow client users to restore backed-up files from, and perform on-demand backups to, the server's tape drives. See your Data General representative for more information about obtaining the multi-client versions of NetWorker.

The same NetWorker manuals document the single-client and multi-client versions. When using the manuals with the single-client version, note the following points:

*   References to "network-wide backups" do not apply.

*   References to more than one client do not apply.

Note, however, that you can create multiple instances of a single client. By default, all filesystems on a single host are assigned to the same backup schedule. However, if you would like to assign different backup schedules to filesystems on the same host, you may do so by adding the host as a client multiple times, dividing the filesystems between the client instances, and assigning each client instance to a separate backup group. For example, for a NetWorker server named *foo*, you can add several clients named *foo*. "Scheduling Large Client Filesystems" in Chapter 3 of the Administrator's Guide explains how to do this.

5.6   Using NetWorker from Diskless Workstations

Diskless workstations use dedicated areas of disks belonging to their server. The correct way to back up a diskless workstation's disk area is to back up the server. Do not attempt to install NetWorker on a diskless workstation.

You can use the NetWorker client software from a diskless workstation in order to request on-demand backups or recover files provided: (1) NetWorker is installed on the workstation's server (or the workstation's server is set up as a NetWorker client) and (2) the workstation has login privileges on the server. Here's how:

1.   Allow the workstation's server to use the workstation's display. From a terminal window on the workstation, type this command:

     xhost *server*

     where *server* is the workstation server's hostname.

2. Open a terminal session on the server. For example, type:

    ```
    rlogin server
    ```

    and log in.

3. From this terminal window on the server, start NetWorker with this command:

    ```
    networker -display wrks:0 &
    ```

    where *wrks* is the workstation's hostname. If the NetWorker server is different from the workstation's server (that is, if the workstation's server is a NetWorker client), type this command:

    ```
    networker -display wrks:0 -s networker-server &
    ```

    where *networker-server* is the NetWorker server's hostname.

You can automate this procedure by editing your `.login` and `.mwmrc` files.

5.7   Using NetWorker from Terminals

The NetWorker manuals document the graphical user interface for NetWorker, which reqires a workstation or X terminal. If you plan to use NetWorker from an ASCII terminal, consult the NetWorker manual pages.

Appendix C of *Legato NetWorker Administrator's Guide* provides useful descriptions of the administrative commands available in the ASCII interface and instructions for printing out the man pages.

Make sure the TERM environment variable is correctly set for the terminal you use. The **nsradmin**(8) and **nsrwatch**(8) commands will not work properly if TERM is set incorrectly. *Customizing the DG/UX System* (093-701101-03) discusses terminal setup.

5.8   Using NetWorker in Heterogeneous Networks

With a multi-client version of NetWorker, you can back up non-AViiON clients to the AViiON server, provided NetWorker is installed on those clients. For example, you can back up Sun, HP/UX, RS6000, DEC, MIPS, and MS-DOS clients to an AViiON backup server. However, to do so, you must obtain an appropriate version of the NetWorker software for those clients, from Data General or from Legato Systems, Inc. You *cannot* back up a non-AViiON client with the AViiON version of the NetWorker client software that accompanies this release notice.

5.9   Disk Space for NetWorker Index Files

The NetWorker index files may consume a large amount of disk space. The section "Disk Layout and Space Requirements" tells how to estimate the space requirements.

If you run out of index space during a backup, you'll have to do the following on each NetWorker server:

- Shut down networker (exit **networker** and, as superuser, type **nsr_shutdown**).

- Force the system log daemon, **syslogd**, to close its log files in the index directory: edit file `/etc/syslog.conf` to comment out the NetWorker-added lines, then send the **syslogd** process a hang-up (hup) signal. See syslog.conf(5), syslogd(1M), and kill(1).

- Expand the index file system (use **sysadm** to unmount, expand, and mount the file system.)

- Force **syslogd** to start logging files in the expanded file system (remove the comment characters from the NetWorker lines in `/etc/syslog.conf` and send **syslogd** a hang-up signal).

- Restart the NetWorker daemons (type **/usr/sbin/init.d/rc.networker start**).

- Restart NetWorker (type **networker&**).

- Re-run the backup

5.10   Using NetWorker with the CLARiiON Tape Array

Before NetWorker can use a tape volume, you must label the volume using the `Opera-tion->Label` or `Operation->Label and Mount` selection in the graphical interface or the *nsrmm* command in the terminal interface. NetWorker writes the label you supply on the tape and records it in the online indexes: you should affix an adhesive label to the tape. Labels allow NetWorker to prompt for the tape it needs to fulfill a restoration request.

With the CLARiiON tape array, a single NetWorker label applies to all tapes in the array. When labeling a CLARiiON tape array volume, affix the adhesive volume label to each separate tape, and keep the tapes together in a group. A prompt from NetWorker to insert or remove a CLARiiON tape array volume means you should insert or remove the complete group. The tapes in the group may be inserted in any array slot and in any order.

5.11   Inspecting NetWorker Syslog Entries

When you install NetWorker, several entries are added to the server's `/etc/syslog.conf` file, specifying where NetWorker messages and logging information are sent. We recommend that you inspect these entries, which appear between two comment lines identifying NetWorker as their source. You can change the specifications if they are not appropriate at your site. See syslog.conf(5) and syslogd(1M).

More specifically, the default configuration for NetWorker uses local1.notice for default log messages, and local0.alert for the second tape mount request. If this use of syslog conflicts with your current configuration, you may want to modify NetWorker's syslog entries to use another facility (e.g. local2 and local3). If you do this, you will also need to use nsradmin or networker to modify the directives for "Log default" and "Tape mount request 2" so that they log to the appropriate facility.

5.12 Starting and Stopping NetWorker Daemons

By default, the NetWorker daemons start whenever the system enters run level 3 (init 3). To change this behavior, edit the file /etc/networker.params and change the variable net-worker_START to false.

If you set a system up as a NetWorker server and later decide to set it up as a NetWorker client, stop the daemons:

```
# nsr_shutdown
```

Next, edit the /etc/networker.params file and change the variable networker_SERVER to false, then restart the client networker daemons:

```
# /usr/sbin/init.d/rc.networker start
```

5.13 Changing the Destination of Bootstrap Information

Bootstrap information allows NetWorker backup volumes to be used for recovery should a disaster befall the computer system. As each savegroup of a backup completes, NetWorker sends the saveset bootstrap information to the default printer. This allows you to store the information with the tape volumes to which the information applies.

You can change the destination of bootstrap information to a different printer. To do so, you use either **networker** with the -x option or the **nsradmin** program. Follow the instructions in the Administrator's Guide, Appendix D, section "Cannot Print Bootstrap Information." For detailed information about using nsradmin, see its man page (type **man nsradmin**).

If the destination printer for bootstrap information is unavailable, the information is included in the savegroup completion notification message.

5.14 Selecting Files for Backup and Recovery

Chapter 3 of the User's Guide explains how to use Operation->Backup->View to request on-demand backups, and Operation->Recover->View to recover backed-up files. The section "Expanding a Branch" explains that the Expand Branch option lets you view all levels of subdirectories in a directory. You probably want to avoid choosing Expand Branch in directories that contain many or large subdirectories as this operation will take a long time to complete. Instead, choose Expand One Level to traverse subdirectories individually until you reach the one containing the files you want to back up or recover.

If a directory is extremely large, **networker** will not be able to display the entire tree. In this case, **networker** will warn that all of the tree is not being displayed, and the undisplayed subdirectories will still be accessible by typing their pathnames directly, or by collapsing the directory to form a smaller tree.

Additionally, if you attempt to expand a directory which contains hard-mounted NFS subdirectories and any of these hard-mounted directories are not available, **networker** will hang waiting on the directory to come back online. Such hangs do not affect the NetWorker daemons.

5.15   Known Problems

5.15.1   Sharing Tape Drives with NetWorker

Do not access (read, write, or rewind) a mounted NetWorker drive with another utility (for example, with **cpio**). Doing so will interrupt the backup and recovery process, and could destroy the contents of a NetWorker volume.

Before using a tape drive that NetWorker uses, first make sure that NetWorker is not using the drive. If NetWorker has the drive mounted, unmount it and remove the NetWorker tape volume. Note that you cannot unmount a drive or remove a tape while a NetWorker backup or recovery operation is in progress.

6   Documentation

The graphical user interface provided by the **networker** program is documented in these manuals:

Legato NetWorker Administrator's Guide (069-100495-01)
Legato NetWorker User's Guide (069-100496-00)

See also the online Help information. Chapter 2 of the Administrator's Guide explains how to use the pull-down Help menu.

For the curses-based shell interface, see Appendix A of the Administrator's Guide.

For detailed reference information, see the online manual pages. See appendices A and C of the Administrator's Guide for useful summaries of the shell commands and manual pages. To print the complete set of manual pages, type this command after loading NetWorker:

```
pcat /usr/catman/networker/man?/*.z | lp -dprinter
```

where `printer` is the name of an ASCII-capable printer.

7 Software Distribution

7.1 Media

Legato NetWorker for one client is part of the general DG/UX operating system release package. See the DG/UX 5.4 Release 3.00 notice for exact media details of single-client NetWorker.

Multi-client NetWorker, model Q017A, is released on:

• QIC-150 cartridge tape, part number 079-600382-00

• CD-ROM, part number 068-600100-00

7.2 Files

These online files in /usr/opt/networker/release list the contents of NetWorker 4.0 Release 1.0:

```
networker.man_1.0.fl
networker_1.0.fl
```

8 Installation Instructions

Single-client NetWorker is optionally loadable at the time you install DG/UX 5.4 Release 3.00. To load and install NetWorker at this time, accept the default value (all) when asked for the packages to load. Should you choose not to install NetWorker at the time of DG/UX installation, you can load and install it at a later time from the DG/UX release tape or CD-ROM, using the **sysadm** Software->Package->Install option. Multi-client NetWorker is a separate product. You load and install it from its release tape or CD-ROM, again using the **sysadm** Software->Package->Install option. Installation of both single-client and multi-client NetWorker are described below.

8.1 Disk Layout and Space Requirements

NetWorker requires a minimum of 40,000 blocks of disk space. Do not attempt to install NetWorker on disk unless you have at least this much free disk space. (As noted below, you can install NetWorker on a client by mounting the software from the NetWorker server instead of loading the software onto the client's disk.)

In addition, on the NetWorker server, you need disk space for NetWorker's online indexes. How much you need depends on a number of factors, including:

• The number of files you back up and their combined size

- The browse policy: how long you keep online the indexes for each backup

- The number of full backups performed during the browse policy period

- The number and average size of incremental backups performed during the browse policy period

NetWorker requires approximately 1 block of online index space for every two files it backs up. Different versions of backed-up files count as separate files. For example, if two given files are backed up on a monthly full backup and also on each of four weekly full backups, 5 blocks are required for those two files.

By default, online indexes for backed-up files are recycled (discarded and reused) after one month. If you choose a longer browse period (for example, quarterly), you'll need more disk space. You can decrease the index space requirements by shortening the browse period, by reducing the number of backups within the browse period, or by replacing full with incremental backups.

A rule of thumb for determining index space requirements is: estimate the total number of files in all file systems you plan to back up and allow two blocks for each file. This will be enough space for four distinct backup versions of each file. You may need to experiment over time to determine the best index size for your site.

8.2   Installing Single-Client NetWorker

Read this section if you are installing the single-client NetWorker software from the DG/UX 5.4 Release 3.00 tape or CD-ROM. It summarizes detailed installation instructions for NetWorker in Chapter 7 of *Installing the DG/UX System* (093-701087-03).

When you indicate that you want to install NetWorker (or accept the default, which is to load all packages), a NetWorker installation script on the DG/UX 5.4 Release 3.00 tape or CD-ROM does the following:

- Creates a virtual disk and file system of 40,000 blocks named `usr_opt_networker`

- Loads the NetWorker files into this file system

- Mounts the file system as `/usr/opt/networker`

- Creates symbolic links in `/usr/bin` to the NetWorker executables in `/usr/opt/networker/bin`

For the specific prompts, see "Preparing the Logical Disk for the /usr/opt/networker File System" in Chapter 7 of *Installing the DG/UX System.*

During NetWorker setup, you will be prompted:

```
Configure system as a client for a remote NetWorker server? [no]
```

If you override the default (answer yes), setup ends. With this response, you will not be able to use NetWorker on this system unless you purchase the multi-client NetWorker software and install it (as described below in "Installing Multi-Client NetWorker") on a NetWorker server.

Accepting the default indicates that the system will be both backup server and client: it will be able to use NetWorker for backup of local disks to local tape drives. With this response, the setup script proceeds to set up the system as a NetWorker server. It:

- Creates a virtual disk and file system named `var_opt_networker` for the NetWorker index files: you can supply a different name. You must decide how large to make this file system based on how many files you will back up.

- Mounts the file system as `/var/opt/networker`

- Creates a symbolic link file named `/nsr` pointing to the index file mount point (During operation, the NetWorker software writes indexes to the location indicated by `/nsr` on the server.)

- Enables execution of the NetWorker daemons at system startup.

For a list of all the prompts that appear during the setup procedure, see "Setting Up NetWorker" in Chapter 7 of *Installing the DG/UX System.*

8.3   Installing Multi-Client NetWorker

Read this section if you are installing the multi-client NetWorker software from its release tape or CD-ROM. For a general discussion of software package installation, see Chapter 7 of *Customizing the DG/UX System* (093-701101-03).

NetWorker requires DG/UX 5.4 Release 3.00 or later. Before continuing, first make sure that your system has been been upgraded to DG/UX 5.4 Release 3.00.

8.3.1   Server Installation

On each server:

- Create a 40000-block virtual disk and file system named `usr_opt_networker` (if one doesn't exist) and mount it under the mount point /usr/opt/networker. The NetWorker software will be loaded into this file system.

- Insert the NetWorker release tape or CD-ROM in a drive.

- Start **sysadm** and select the `Software->Package->Install` option.

Prompts appear for loading and setting up the software, including:

- The creation (if one doesn't exist) of a virtual disk and file system for the NetWorker index files, `var_opt_networker`, the mounting of this file system under the mount point `/var/opt/networker`, creation of a symbolic link file `/nsr` pointing to `/var/opt/networker`, and arranging for the startup of NetWorker daemons during system initialization.

Either accept the defaults or supply the requested information. Be sure to answer no (the default) to the prompt:

```
Configure system as a client for a remote NetWorker server? [no]
```

For a list and brief discussion of the prompts that appear, see Chapter 7 of *Customizing the DG/UX System* (093-701101-03).

8.3.2 Client Installation

At each NetWorker client, do one of the following:

* If you installed NetWorker on the client's disk when you upgraded to DG/UX 5.4 Release 3.00 you need do nothing. NetWorker will work as a client even though you indicated during installation that it was a server.

  However, if this system has previously been set up as a NetWorker server, you may want to reconfigure it as a NetWorker client, so the server daemons will not get executed at system startup: see "Starting and Stopping NetWorker" in this release notice. While the server daemons do no harm, they consume resources needlessly and may cause confusion. For example, if the daemons continue to run on the client, you might inadvertantly request a system backup of the local copy of the NetWorker software.

* If you did not install NetWorker at the time of DG/UX 5.4 Release 3.00 installation, do so now.

  Create a 40000-block virtual disk and file system named `usr_opt_networker` (if one doesn't exist) and mount it under the mount point /usr/opt/networker. The NetWorker software will be loaded into this file system.

  Insert the NetWorker release tape or CD-ROM in a drive, start **sysadm** and select `Software->Package->Install`. Answer yes to this prompt:

  ```
  Configure system as a client for a remote NetWorker server?
  [no]
  ```

  Answering yes to this prompt prevents the setup script from enabling startup of the NetWorker server daemons, which need run only on the NetWorker server; and from creating the index file virtual disk, which is not needed on NetWorker clients.

* Optionally, instead of loading and setting up the NetWorker software on the client's disk, you can:

  (1) Remote mount the NetWorker software from the NetWorker server (directory `server-name:/usr/opt/networker`)

  (2) Add the mount command to the client's `/etc/fstab` file

  (3) Add the NetWorker executable directory, `/usr/opt/networker/bin`, to the search path of root and of any other NetWorker user on the client.

(4) Using nsradmin or networker, set the hidden attribute, executable path, in the client re-
source to /usr/opt/networker/bin. Hidden attributes can be accessed with
nsradmin via the Display options attribute under the Options menu; in the Motif inter-
face, they can be accessed by invoking networker with the -x option.

You can use **sysadm** to perform (1) and (2) in one step.

9   Preparing a Software Trouble Report (STR)

If you believe you have found an error in the NetWorker software or its documentation, or if you
have a suggestion for enhancing or improving the product, tell Data General about it. Here's how:

*   Describe the problem or request, using a Data General Software Trouble Report (STR) form.
    See "Describing Problems."

*   For software problems, prepare a tape containing diagnostic information and problem illustra-
    tions. See "Preparing STR Tapes" in the DG/UX 5.4 Release 3.00 release notice.

A copy of the standard STR form, suitable for printing on a line printer, is in the file
/usr/release/STR_form. STR forms are also available from the nearest Data General of-
fice, from your representative, or from the Software Support Center. Depending on your support
contract, you submit STR reports to the Software Support Center or directly to your Data General
representative.

9.1   Describing Problems

For each problem you report, fill in the 3-page STR form completely. Where asked for the product
name and release, enter NetWorker 4.0 Release 1.0. For the model number, enter the number of
your release tape: Q001, P001, or Q017A.

Also, indicate the type of STR you are writing:

*   An enhancement request: describe it clearly and say why you want it.

*   A documentation error: identify the document -- the manual page name, the document title,
    ordering number, the page number(s) and section(s) containing the error. Explain the error
    where necessary.

*   A software problem: clearly describe the problem, indicating how to reproduce it.

If you are reporting a problem that involves or results in a system panic or hang, your filled-out
STR form **must** be accompanied by a tape, containing:

*   In file 0, a system memory dump

*   In file 1, a cpio copy of your tailored system file (usually named /dgux)

*   In file 2, a cpio copy of other files (logs, program source and executable files, shell scripts,
    etc.) that cause, illustrate, or document the problem.

An accompanying tape is also essential for problems caused by programs not supplied by Data General. Include a copy of the executable program file *and* of the source file where possible.

If your STR includes a tape, indicate in the problem description the tape's organization and contents.

<center>End of NetWorker Release Notice</center>