

Release Notice:
ONC™/NFS® for AViiON®
Systems
Release 5.4

Part number 085-600300-00

This release notice applies to the following models:

Q0001

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1 Introduction

This release notice covers the ONC/NFS portion of the DG/UX client-server product, DG model xxxx 5.4. Please refer to the client-server release notice for more details.

In addition, this notice also includes information not currently available in the product manual (e.g., information developed after the current manuals were printed, or corrections to current manuals).

Release 4.30 is the *previous release* of this product and is referred to as such herein.

You may print additional copies of this release notice after you have installed ONC/NFS. A copy suitable for lineprinters can be found in the file `/usr/release/nfs_5.4.rm`. In the event of a text discrepancy between this (PostScript) copy, and the online (nroff/lp) copy, this (PostScript) copy supercedes.

2 Product Description

ONC/NFS for AViiON Systems release 5.4 is a port of SunOS version 4.0 ONC/NFS source code to Data General's AViiON family of computers.

3 Environment

3.1 Hardware

ONC/NFS 5.4 has no hardware requirements beyond those of the DG/UX operating system for AViiON computers and TCP/IP for AViiON computers. ONC/NFS for AViiON Systems is supported only over local area network connections (Ethernet and 802.3).

To load, this package requires 16000 free disk blocks in the `/usr` file system and 300 free disk blocks in the root file system.

3.2 Software

This product is designed to work with DG/UX for AViiON Systems release 5.4 and TCP/IP for AViiON Systems release 5.4. This product will run only if the aforementioned products are installed.

4 Enhancements and Changes

The ONC/NFS package now consists of two component packages, **ONC** and **NFS**.

The **NFS** package contains the items needed to run as a Network File System server or client. It contains applications level services based on RPC/XDR. These include The lock and status managers, Automount and bootparamd.

The **ONC** package contains the remainder of ONC/NFS and includes the ONC programming platform, Remote Procedure Call (RPC) and External Data Representation (XDR), for writing heterogeneous distributed applications. It also contains applications level services based on RPC/XDR. These include the Network Information Service, (formerly YP) and REX.

4.1 Enhancements

This section describes enhancements since the previous release of ONC/NFS for

1. The **intr** option for NFS mounted file systems is now accepted. DG/UX supports the "intr" option for both hard and soft mounted file systems. This provides a uniform programming environment. SunOS only allows the "intr" option for hard mounts.
2. **Mountd** now accepts an argument to allow for accepting request only from a secure port. By default this option is shipped off. If you desire extra security and if you do **not** have any diskless clients, you may modify the **mountd_ARG** through sysadm. See the **mountd(1m)** man page for more details.

4.1.1 Diskless Clients

Support of routing at kernel boot time: The init subsystem is now capable of mounting root and swap from servers on a different subnet from the client's. In order for this feature to work, server must be running a 4.31 or later **bootparamd**.

Before Release 5.4, the network software was only initialized at kernel initialization if either **root** or **swap** were NFS-mounted. Now the user can specify the NETSTART variable in the system file; this guarantees that the TCP/IP protocol stack will be initialized with the rest of the kernel. The net effect of this action is that the network will be available at single user level rather than requiring the administrator to taken the system to run level 3.

1. In order for this feature to work, an ARP server must have an entry for client that is booting. If no server has the ARP entry, network initialization will fail.
2. At the present time, if network is up and system is brought to multi-user level, an error message appears when an attempt to initialize the network is made by **/etc/rc3.d** scripts. The error does not affect correct operation.
3. With this new feature it is possible to have a usr-less configuration (local root and swap, remote usr). If this is desired, make certain that the client's **/etc/hosts** file

has an entry for the server providing the `/usr` filesystem.

NOTE: Before changing your `fstab` file to mount `/usr` from a remote machine, make sure you can mount `/usr` remotely while at single user level. A failure while mounting `/usr` once the change in `fstab` has been made will keep the machine from being able to boot to single user mode, thereby making changes to the `fstab` file impossible.

4.2 Changes

This section describes changes since the previous release of ONC/NFS for AViiON computers.

1. The `spray` command has been changed to correctly send ICMP echo requests. (The `-i` option.)
2. The network lock daemon (`lockd`) has had numerous bug fixes.

5 Notes and Warnings

5.1 Notes

In the ONC/NFS 5.4 release the following items from SunOS version 4.0 ONC/NFS are not implemented:

1. Any use, manipulation or reporting of user quotas.

5.1.1 lockd

If you are running a DG/UX 5.4 client, especially a diskless client, from a DG/UX 4.3x server, you may experience problems using `lockd(8C)`. A patch to 4.3x must be installed on the server in order to run 5.4 clients from 4.3x server. Contact your Data General representative for a solution.

5.2 Warnings

1. If the "intr" option is specified, then system calls that access files on NFS mounted file systems may return EINTR if one of the following signals is received (and a signal-handler is invoked) while the call is in progress: SIGINT, SIGQUIT, SIGHUP or SIGTERM. As a rule these particular signals are used to terminate a process or, in the case of command interpreters like `sh(1)`, to terminate a sub-command and return to keyboard input mode.

If the "intr" option is not specified, then only those signals that terminate the program (e.g., SIGKILL) can interrupt system calls that require remote NFS access. This behavior differs from SunOS, where program termination is only

allowed when "intr" is specified and one of the signals listed above is received.

2. If you wish to run Diskless Clients that use ONC/NFS 5.4 from a secondary release on a DG/UX Server running the previous release's ONC/NFS, you should contact your local Data General Systems Engineering Office to obtain a patch to allow this.
3. If you experience **Access Denied** messages when trying to mount file systems from a foreign NFS server, check to see if **root** belongs to more than eight groups. (Use the **id(1)** command) Some older ports of ONC/NFS do not allow membership in more than eight groups.
4. File information for files recently updated by remote users across an NFS server connection may be out-of-date on the NFS server host for up to 30 seconds or until the file is closed by the remote user. The client's NFS cache for a file can be flushed by the client application's executing the **fsync(2)** call on the file.
5. DG's ONC/NFS 5.4 is based on Sun Microsystems' ONC/NFS 4.0 release. Because the protocols used in the Network File System and related network services (such as Network Information Service) are updated periodically, some lack of interoperability may be seen between systems supporting different revisions of the ONC services. Presently, the main restriction of this nature is that in an environment containing NFS 2.0 and ONC/NFS 4.0 based systems, users should be careful not to attempt using both NFS 2.0 and ONC/NFS 4.0 based Network Information Service servers in the same Network Information Service domain. Mixing NIS servers based on NFS 2.0 with clients based on ONC/NFS 4.0 or *vice versa* is permissible, however. Also note that this restriction only applies to **Network Information Service** servers, not to NFS (distributed file system) servers or others.

6 Documentation

6.1 Manuals

Publication	Part Number
Managing NFS and Its Facilities on the DG/UX System	093-701049-03
Planning, Installing, and Customizing DG/UX Systems	093-701087-00
Managing the DG/UX System	093-701088-00

6.2 Changes

Managing NFS and Its Facilities on the DG/UX System has been updated. *Installing and Managing the DG/UX System* has been split into two manuals.

7 Software Distribution

7.1 Media

ONC/NFS 5.4 is delivered as part of the DG/UX client-server package.

Description	Model Number	Part Number
ONC/NFS Client/Server Package for Server	C002AZU1CA	079-600015-02
ONC/NFS Client/Server Package for Workstation	C002AZQ1CA	079-600015-02

7.2 Files

A list of files that are loaded when ONC/NFS is loaded on your disk is available in files called `/usr/release/nfs_5.4.fl` and `/usr/release/onc_5.4.fl`, depending on which packages of the ONC/NFS component are loaded. Also a man page listing in a file called `/usr/release/nfs.man_5.4.fl`.

8 Installation Instructions

Please refer to *Installing the DG/UX System* for information on installing and setting up ONC/NFS on your system.

8.1 Setting up a Custom System

6. Setup for NFS

Besides starting the NFS daemons (done automatically in init state 3) you need to see the appropriate manuals for details about making entries for each of the system database files used by NFS.

- `/etc/exports` identifies the local file systems you want to make available to other hosts. If you want to allow other systems to mount any of your own files set up an `/etc/exports` file. Then run the `exportfs` command. See the man page `exportfs(8)` for details.
- `/etc/fstab` lists the remote file systems you want `init` to mount automatically.

- **/etc/hosts** lists the remote hosts you will want to access.

7. Setting up for the Lock Daemon (lockd)

The remote lockd daemon (lockd) protocol allows processes that hold locks on a server to reclaim their locks when the server reboots after a crash. This feature is implemented by disallowing new locks on the server during a "grace period" at system boot time.

If your machine has no local file systems, or does not export any local file systems, this grace period can be eliminated by specifying zero as the length of the grace period when starting the lock daemon. This is done by editing a parameter in **/etc/nfs.params**: Set **lockd_sleep_ARG** to 0 (zero).

The lockd server consists of 2 daemon programs **rpc.lockd** and **dg_lock_mgr**.

For a diskless client work station to run the lock daemon, its server machine must also be running the lock daemon. If the diskless client is running the lock daemon, but its server is not running the lock daemon, then the client machine will hang when the system startup scripts attempt to enter init state 3. There are 2 other symptoms of this situation: the **ps(1)** command hangs when run on the diskless work station and the **mount(1)** command and the **/etc/mnttab** do not list any remotely mounted file systems.

8. Setup for NIS

The required NIS daemons will be started for you in init state 2 or 3, and you will run as a NIS client by default. However, you may want to modify your configuration.

Generally, entries that are duplicated in the local and the NIS databases should be removed from the local database files. Your specific security concerns, network configuration and user population will affect this decision. See the *Managing NFS and its Facilities on the DG/UX System* manual for guidance in setting up **/etc/passwd** and **/etc/group**.

The following instructions apply to NIS **master** and **server** hosts only. **Client** hosts can skip these instructions.

- When you install and you have identified yourself as a NIS master host, or slave server you need to run **ypinit** after reaching init level 3. If **ypinit** fails you need to fix the problem, and re-run **ypinit**. This is an interactive script which will prompt you for the required information. Consult the manual *Managing NFS and Its Facilities on the DGUX System* and the online manual pages for guidance about **ypinit**.
- If you are going to be the **master** or **server** you need to edit the **/etc/nfs.params** file and change the **ypserv_START** variable to either **MASTER** or **SERVER**, as appropriate.
- If you are going to be the **master** NIS server for the passwd map, edit the **/etc/nfs.params** script and change the line

```
yppasswdd_ARG=""
```

to

```
yppasswdd_ARG="/etc/passwd -m SRC_DIR=/etc passwd"
```

where "/etc/passwd" is the location of passwd file to be used for the creation of the NIS map. See chapter 4 of *Managing NFS and Its Facilities on the DGUX System* for details about **yppasswdd** and the `nfs.params` file in general.

9. Default init run levels

After loading the NFS tape, configuring NFS and/or NIS, initializing the parameters, and setting up the database files, you are ready to take your system and advance it to the normal run state.

- By default, run level state **2** starts NIS. NFS services are **NOT** started until run level 3.
- By default, run level state **3** starts the NIS daemons (if they have not already been started), the NFS daemons, runs **exportfs** and mounts any NFS file systems listed in `/etc/fstab`.

10. Checking the Running System

You can check NFS to see if it is working correctly by mounting an NFS file system and trying to access files in that system.

You can check NIS by trying any of the commands:

- `/usr/bin/ypwhich`, returns the name of your NIS server.
- `/usr/bin/domainname`, returns your current NIS domain name.
- `/usr/bin/ypcat ypservers`, lists NIS server hosts.

9 Preparing a Software Trouble Report (STR)

If you believe you have found an error in the DG/UX™ ONC/NFS or its documentation, or if you have a suggestion for enhancing or improving the product, use a Data General Software Trouble Report (STR) to communicate this to DG.

STR forms are available from the nearest DG office or DG representative, or the Software Support Center. Online STR forms are available in `/usr/release/STR_form`.

If your contract permits, you may report the information called for in this section to your Data General representative. To help us process STRs quickly, **please include only one problem or suggestion on each STR form**. Please follow these guidelines when filling out your Software Trouble Report:

1. List the product name, model number, and revision number as shown on the title page of this release notice. If you are running an update or patch, include its number as well.
2. Decide what kind of STR you are writing:
 - **Enhancement:** describe the proposed enhancement clearly and tell why you want it. The better we understand your desire, the easier it is for us to evaluate your request.
 - **Documentation Error:** list the title and part number of the document or man page and list the page and paragraph (or section) containing the error. Please state exactly why you think there is an error.
 - **Software Problem:** clearly and specifically state the problem so that support personnel can try to reproduce it. See the section **Software Problems** below for more details.
3. On the STR form provide all of the following information:
 - Date
 - Name and revision of the product
 - CPU type
 - Hardware configuration (if relevant)
 - Names and revisions of other software running on the system
 - The command line or scenario that caused the problem
 - The action(s) necessary to reproduce the problem
 - How often the problem occurs and how serious it is
4. If the problem occurred soon after installing a new revision of software or new hardware, please note this.

5. If you received an error message, please write down the exact text (and number, if present) of the message.
6. Please see the DG/UX™ release notice for information on how to prepare a tape for STR submission.

9.1 Software Problems

Report any particular activity or program running on the system that seems to cause the problem. If the program is supplied by DG, report in detail the exact steps used to reproduce the problem. If the program is supplied by another vendor or written by an installation, include a copy of the program and its source code if possible. Again, report in detail the exact steps used to reproduce the problem.

If your system panics, hangs or halts, see the DG/UX™ 5.4 release notice for instructions on taking system dumps and submitting DG/UX™ STRs.

End of NFS Release Notice

