

NetWare 3.11 Services for AViiON® Systems Release Notice

Revision 3.00

Model Number C020A

June, 1994

085-001237-07

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1 Introduction

This release notice describes the NetWare 3.11 Services for AViiON Systems product, revision 3.00. This notice includes information not currently available in the documentation.

<u>Part Description</u>	<u>Part Number</u>
NetWare 3.11 Services for AViiON Systems Release Notice	085-001237-07
NetWare 3.11 Services for AViiON Systems Media	Listed in section 7.1 of this notice.

This printed release notice always accompanies the software. After you have installed the product you can print additional copies of this notice. Its filename is `/usr/opt/netware/release/085001237_07`. Please note that a printed copy may be more up to date than the copy on the release medium.

2 Product Description

NetWare 3.11 Services for AViiON Systems is Novell's NetWare for UNIX version 3.11B product ported to DG/UX-based AViiON servers. NetWare 3.11 Services for AViiON Systems lets AViiON systems act as file and print servers, UNIX application servers, and/or multifunction communication/database servers for PC-client workstations. With NetWare, AViiON servers can interoperate with installed Novell systems, the largest installed base of PC LAN servers in the world. In addition, NetWare allows AViiON servers to grant transparent resource access to NetWare-supported PC clients, to integrate with Native NetWare servers, and to provide connectivity and an application program interface to support generalized client-server applications.

NetWare 3.11 Services for AViiON Systems is licensed by user count and has as its prerequisite an AViiON server with the NetWare 3.11 Transport for AViiON Systems license. It includes file sharing and print services.

3 Environment

NetWare 3.11 Services for AViiON Systems runs on the full line of AViiON servers.

3.1 Hardware

Revision 3.00 of NetWare 3.11 Services for AViiON Systems runs on the full line of AViiON Series system servers. In addition to the hardware required by the DG/UX operating system it requires the following:

- an additional 4 megabytes of system memory
- 100 megabytes of disk storage
- an additional 1 megabyte of memory for each NetWare Engine that you plan to run (we recommend a minimum of 5 connections per engine).
- Cartridge tape drive or CD-ROM drive

The hardware configuration must include at least one communications controller. NetWare 3.11 Services for AViiON Systems supports the following controllers:

- VTFC - VMR-bus Token Ring Controller
- VLC - V/Ethernet 3207 Hawk LAN Controller
- Integrated Ethernet Controller
- Second Generation Integrated Ethernet Controller

Client workstations running DOS, OS/2, Windows 3.x or Macintosh system software are prerequisites.

NOTE: If you are running other DG/UX applications over NetWare 3.11 Services for AViiON Systems, you may need to increase your system memory. Consult your local Data General System Engineer or Support Center for configuration guidelines.

3.2 Software

The following prerequisite software is required by NetWare 3.11 Services for AViiON Systems.

- DG/UX for AViiON Systems, Release 5.4 Revision 3.00 or later. Note: NETWARE 3.11 SERVICES FOR AVIIION SYSTEMS REVISION 3.00 WILL NOT RUN WITH PRIOR REVS OF DG/UX.
- NetWare 3.11 Transport for AViiON Systems Revision 3.00
- Additionally, the NetWare DOS Workstation Kit is required.

4 Enhancements and Changes

This section contains information about the enhancements and changes made to NetWare 3.11 Services for AViiON Systems, in revision 3.00.

4.1 Enhancements

The following enhancements were made to NetWare 3.11 Services for AViiON Systems.

- VLM clients are supported.
- Packet Signature support has been added.
- Read Only CD-ROM volumes are supported.
- The disk space used by the inodes files has been reduced.
- The nwrestore utility has improved support for 8 bit international characters.
- The NW Engine processes negotiate a maximum buffer size with clients of up to 4096 bytes.

4.2 Changes

The following changes were made to NetWare 3.11 Services for AViiON Systems.

- A problem with NCPOpenCreateFile is fixed. This caused problems for NetWare Global Messaging communications with an AViiON file server. STR INTL-943.
- A problem with nwlp timing out a print request with piped input has been fixed. STR NASC-18095.
- A problem with MAP ROOT N: = SERVER/VOL:\PATH is fixed. STR NASC-18240.

- A problem that prevented a server from allowing 'max_connections' to login under certain conditions has been fixed.
- The SPX timeout interval can no longer be changed. SPX connections that do not respond to the SPX watchdog timer will be closed after about two (2) minutes. This change means that it will take about two (2) minutes for a remote printer connection to time out from a print server before it can be used again. This could affect users who re-boot their PC and immediately try to make a remote printer connection with the AViiON's print server.
- A problem preventing the CAPTURE of print requests using NETX.EXE v3.32 has been fixed. STRs NASC-19171, EURO-618109256.
- The size of the inodes cache is now configurable from within sconsole.

5 Notes and Warnings

This section describes special aspects of NetWare 3.11 Services for AViiON Systems, Revision 3.00. It also describes situations where you might experience a problem using this release.

5.1 Notes

1. If you are performing an upgrade of NetWare 3.11 Services for AViiON Systems from Revision 2.xx, you should follow these steps to insure DOS file information is upgraded correctly. NOTE: An upgrade from revision 1.40 is not supported. Details on this procedure are fully documented in the NetWare for AViiON Systems: Installation manual.
 - a) Back up your NetWare filing system.
 - b) Load and set up the nw_tran package from the Transport tape.
 - c) Load and set up the nw_serv package from the Services tape. This runs the nwbackup program if necessary. This step may take several hours to complete depending on the size of your NetWare volumes. You may manually run nwbackup before you load the tapes. NOTE: If you are upgrading from Revision 2.00, copy nwbackup and nwrestore from /usr/opt/3.11_upgrade/bin to /usr/opt/netware/bin. If the directory /usr/opt/3.11_upgrade does not exist, you should load the nw_3.11_upgrade package from the NetWare 3.11 Services for AViiON Systems Revision2.00 tape and then copy the files to /usr/opt/netware/bin.
 - d) Run the nwrestore program after the AViiON has been restarted with the new kernel. WARNING: If your NetWare volume contains files whose DOS name does not map directly to a Unix name, the restore program may encounter problems. Unix files created by hybrid users could be an example.
2. The NetWare utilities in the SYS:PUBLIC and SYS:LOGIN directory on a Revision 2.xx NetWare 3.11 Services for AViiON Systems do not support packet signature. They cannot be used to log into a Revision 3.xx server. Two options exist for correcting this problem:
 - a) Set the signature level of the Revision 3.00 server to 0 (this is the default value). This disables packet signature on the server.
 - b) If packet signature is enabled on a Revision 3.00 server, make sure that the PC uses correct versions of LOGIN.EXE, MAP.EXE, ATTACH.EXE, and LOGOUT.EXE by establishing a preferred connection to a 3.00 server.
3. The first time NetWare is started on a new installation, the inodes files get built. Depending on the size of your NetWare volumes, this process may take over an hour to complete.

4. If the install runs the nwbackup program, you must run the nwrestore utility once NetWare 3.11 Services for AViiON Systems is configured and running. The nwrestore utility may receive errors on the following files. This is normal behavior and is not a problem.

SYS:/SYSTEM/NET\$VAL.SYS

SYS:/SYSTEM/NET\$PROP.SYS

SYS:/SYSTEM/NET\$OBJ.SYS

5. The recommended virtual disk size for usr_netware is 200,000 blocks

NOTE: The above recommendation of virtual disk size allows for a reasonably sized client file system of about 100Mb. A larger or smaller virtual disk is possible. To calculate disk space, 2 disk blocks equals 1 Kb of disk space. If usr_netware is created with less than 50,000 blocks, the product will not load properly. If usr_netware is created with less than 100,000 blocks, disk space for clients will be severely limited.

6. The file system information specific to NetWare now occupies approximately 1,600 bytes per file. Ensure that your virtual disk has the additional room. To estimate the number of files in your filing systems, use commands similar to the following:

```
% cd /usr/netware/sys
```

```
% ls -alR | wc -l
```

7. The system login prompt may appear before NetWare 3.11 Services for AViiON Systems is fully initialized. It is dependent on your server and the size of your NetWare volumes. Also, an "Initialization Complete" message may appear on the system console before NetWare 3.11 Services for AViiON Systems can be used by clients. It is most noticeable when NetWare is started for the first time and the NetWare filing system is being built, especially if the AFP namespace is enabled. NetWare is fully up and usable when the message "Server Advertiser Started" appears.

8. If NetWare 3.11 Services for AViiON Systems is upgrading from a previous revision, the upgrade procedure requires disk space to save information. The amount of space required is proportional to the number of files in your NetWare file systems. An estimate (in bytes) is:

$(\text{<number-of-files> * 187}) + (\text{<number of directories> * 175})$

9. NetWare 3.11 Transport for AViiON Systems must be setup up before the services package is set up.

10. If you have more than one machine running NetWare 3.11 Transport for AViiON Systems or native 3.x servers, you must modify the internal network number. The internal network number **MUST** be unique for each server running NetWare on a LAN.

11. Over time, the inodes files can grow very large. A script is provided with the nw_serv package that can be run periodically to reduce the size of the inodes files. The file name is compressnw and can be found in /usr/opt/netware/bin. This script performs the following steps:

Runs nwbackup (saves file and trustee information)

Stops NetWare 3.11 File and Print Services

Renames the inodes files

Removes the Trustee Database

Starts NetWare 3.11 File and Print Services (rebuilds the inodes files)

Runs nwrestore (restores file and trustee information)

12. The SALVAGE, PURGE, DSPACE and SETTTTS utilities are not supported in this revision.

13. As a non-dedicated NetWare Server, NetWare 3.11 Services for AViiON Systems may perform certain internal tasks differently than Native NetWare servers. Some of these differences may be reflected in the number of accounting charges. Lower charge rates may be desired for:

Blocks read/written charge rates

As the charges are per block, current settings should be acceptable. If clients use several applications throughout the workday, a 15-20% reduction in rate may be appropriate.

Connect time charge rates

The per-minute charge is applied automatically every 30 minutes or when an attach, login or logout is done. It is recommended to plan on a half charge and enter it as the numerator with 30 as the denominator. For example to charge 3 units per half hour, set the rate to 3/30.

Disk storage charge rate

This rate is not supported in NetWare 3.11 Services for AViiON Systems.

Service request charge rates

This charge is calculated per request received. It is recommended that small charges, i.e. 1/50 or 1/100, be used or that users be given adequate account balances, over 20,000 units.

14. It may be necessary to modify the permissions of the directory you created (using the DG/UX commands `chmod`, `chgrp`, and/or `chown`) to allow NetWare to properly access this new volume. NetWare 3.11 Services for AViiON Systems access the volumes with a user id of "netware" and a group id of "netware". Both read and write access are required by the NetWare Engines for directories and files in a NetWare volume.

15. This revision includes header files and a library for the NetWare 3.11 Portable C Interface (API's). They can found in `/usr/include/netware` and `/usr/lib/netware` respectively.

16. It may be necessary to change the shared memory size used by NetWare for large user count file servers. Use `sconsole` to increase the size of the shared memory segment. A size of 1048576 is recommended for 250 users. On large NetWare installations, you may run out of memory for the NetWare file system. An Inform error of "Process memory exhausted (bytes wanted nnn)" is displayed. Change the `fs_shm_size` in the `/etc/netware/NWConfig` file with a text editor. This shared memory segment holds the inodes cache, trustee information and inode locks.

17. Although multiple print servers are supported, `sconsole` can only start and stop one print server. Use the script `/usr/opt/netware/bin/stoppps` to stop all print services. The script `/usr/opt/netware/bin/psinit` starts print services.

18. The `sconsole` utility requires a default printer for printing error logs. It does not prompt for a printer name.

19. Warning messages about "List corrupt...", may be seen in the system log file. These are intended for internal use and in general, no adverse behavior is seen from them.

20. Due to a change in how login scripts are created in NetWare 3.11, if you have both NetWare 3.11 for AViiON Systems and NetWare for AViiON Revision 1.40 or earlier servers on the same network, you

should copy the LOGIN.EXE program from your 3.11 server to the LOGIN and PUBLIC directories of your non-3.11 servers. The newer LOGIN.EXE program will work correctly on both revisions. If this is not done, then login scripts may not execute properly.

21. NetWare server failover is not supported on Trusted DG/UX systems. If you are installing NetWare 3.11 for AViiON Systems on a trusted system, you should answer "N" to the prompt for installing failover support.

22. If you install NetWare server failover support, both the PRIMARY and SECONDARY machines must be at init level 3 during installation. Additionally, the PRIMARY system must have remote copy (rcp) access to the SECONDARY system.

5.2 Warnings

1. If you upgrade your DG/UX system to Trusted DG/UX, you must re-install NetWare 3.11 Services for AViiON Systems. This step is required to add NetWare audit definitions to the system.

2. The NetWare 3.11 for AViiON Systems APIs do not support NCP Packet Signature. This means that you cannot use API-based programs to communicate with NetWare servers that require signature (security level 3). The following are affected by this restriction:

AViiON based NetWare printing (pserver)

Sconsole utility (statistics and utilities)

userlist utility

MHS for AViiON Systems

3. Installation requires the License Key Sheet that accompanies NetWare 3.11 Services for AViiON Systems for all user counts except five (5). During installation, the key must be entered exactly as it appears on the sheet. Accepting the default key during installation results in a five (5) connection system. Entering an incorrect key results in a five (5) connection system also. A warning message stating this will appear on the console. If this happens, and you have a License Key Sheet for more than five (5) users, shut down services and edit the file /etc/netware/NWConfig using any text editor. Locate the line that begins with the key work "license_key". Replace the value to the right of the "=" symbol with the value that appears on the License Key Sheet. Services will use the new key (and the correct connection count) the next time it is started.

4. The print daemons, pserver and rprinter, will not automatically start when changing to init level 3. They must be started using sconsole. If you want them started automatically edit the file /usr/opt/netware/bin/psinit. Comments within this file detail the correct usage and procedure to follow to start pserver correctly. The system manager is responsible for editing all the text between the comments "Beginning of Modify Text" and "Ending of Modify Text". The next time the system changes to init level 3, the print daemons will start. Note that the system manager must remove the -p option if there is no password set for that pserver.

5. If you are upgrading from Revision 2.00, a new psinit file is loaded. The old psinit file is saved as psinit.2.00. You must edit the new psinit file and add the parameters for the print servers that are configured for your system.

6. If there are applications that run under DG/UX and access the NetWare file system, PC applications could experience a discrepancy in file sizes and time stamps for files that the DG/UX applications modify. If it is important for the PC applications to receive current file sizes and time stamps, the DG/UX applications should use the NetWare Application Programming Interface (API) to modify files.

7. A part of the upgrade procedure could reset the file creation dates of all files in the NetWare file system to the current date. This happens when the correction procedure is required before the upgrade can be run successfully.

8. If you are installing NetWare 3.11 Services for AViiON Systems on a AViiON running Trusted DG/UX and you have hybrid users configured, then you should delete and re-configure the hybrid users. If you have installed NetWare 3.11 Services for AViiON Systems on a non trusted DG/UX system and have hybrid users configured, then you must delete and re-configure the hybrid users if the system is upgraded to Trusted DG/UX.

9. If MHS for AViiON Systems is installed on your NetWare file server, remove any soft links for MHS executables. The compressnw script may remove the execute permission from MHS executables. Replace the links with the actual files from /usr/opt/mhs/bin/exe.

10. If you are setting up a workstation with IP tunnelling to communicate with a NetWare server (AViiON or PC server), you should use the ODI software that comes with LAN WorkPlace, not the ones that come with your DOS client kit. Specifically, load LSL and IPXODI from the \NET\ODI directory. This will allow you to use IP Tunnelling with the latest NETX and VLM shells.

6 Documentation

All manuals are shipped with the NetWare 3.11 Transport for AViiON Systems product. A list of the manuals is located in section 6.1 of the NetWare 3.11 Transport for AViiON Systems release notice. Information about performance and tuning a NetWare file server can be found in the appendix of the System Administration Manual.

7 Software Distribution

The Software Distribution section lists the distribution media and file organization for the NetWare 3.11 Services for AViiON Systems product.

7.1 Media

NetWare 3.11 Services for AViiON Systems is available on the following release format:

<u>Model Number</u>	<u>Part Number</u>	<u>Description</u>
C020A-A	079-000369-05	Cartridge tape (150 Mbyte)
C020A-D	068-003001-02	CD-ROM

7.2 Organization

The NetWare 3.11 Services for AViiON Systems product tape has the following organization:

<u>File</u>	<u>Name</u>
0	empty
1	XDRTOC (Table of Contents)
2	NetWare Services root setup scripts
3	NetWare Services executables
4	NetWare Services client file system

7.3 Files

The file /usr/opt/netware/release/nw_serv_3.00.fl contains a list of all files loaded by NetWare 3.11 Services for AViiON Systems.

8 Installation Instructions

Note: For a detailed description of how to load NetWare 3.11 Services for AViiON Systems, refer to the NetWare 3.11 Services for AViiON Systems Installation Manual. The installation process requires the License Key Sheet that accompanies NetWare 3.11 Services for AViiON Systems. Instructions for installing from a CD-ROM are contained in the insert shipped with the CD.

When upgrading a previous version of NetWare 3.11 for AViiON Systems to 3.11, it is VERY important to follow the detailed upgrade instructions found in the manual. Failure to do so could result in the loss of data. The upgrade instructions must be followed before the NetWare 3.11 Transport for AViiON Systems tape is loaded. Please refer to the manual for complete instructions.

If you are upgrading from revision 2.xx it is recommended that you compress your inodes before upgrading. Refer to the Notes section for a description of the compressnw script and inode file size.

If you are installing failover support, both the PRIMARY and SECONDARY machines must be at init level 3 during installation. The PRIMARY system must have remote copy (rcp) access to the SECONDARY system.

8.1 Starting and Stopping NetWare Services

NetWare 3.11 Services for AViiON Systems is started automatically when DG/UX is brought up to init level 3 or higher and is shut down automatically at init level 2 or lower.

NetWare 3.11 Services for AViiON Systems may be started and stopped manually using the SCONSOLE utility.

If you use SCONSOLE, the NetWare Transport must be running prior to starting NetWare Services. NetWare File and Print Services must be stopped prior to stopping the NetWare Transport.

8.2 Upgrade Installation

Refer to the NetWare for AViiON Systems: Installation manual for details about upgrading a NetWare for AViiON Systems installation. NOTE: If you are upgrading from Revision 2.00, copy nwbackup and nwrestore from /usr/opt/3.11_upgrade/bin to /usr/opt/netware/bin. If the directory /usr/opt/3.11_upgrade does not exist, you should load the nw_3.11_upgrade package from the NetWare 3.11 Services for AViiON Systems Revision 2.00 tape and then copy the files to /usr/opt/netware/bin.

9 Preparing a Software Trouble Report (STR)

If you believe you have found an error in the software or its documentation, or if you have suggestions for enhancing or improving the product, please fill out a Data General Software Trouble Report (STR). (If your contract permits, you may report the information called for in this section to your Data General representative.)

The standard STR form is available once DG/UX is loaded. It is called `/usr/release/STR_form` and is line printer ready. STR forms are also available from the nearest Data General office, Data General representative, or the Software Support Center.

9.1 Gathering STR Information

To help us expedite STR processing, include only one problem or suggestion on each STR form. Please follow these guidelines when filling out your Software Trouble Report:

1. List the name of the product as NetWare 3.11 Services for AViiON Systems. List the following model number: C020A. List the revision number as 3.00. If you are running an upgrade or patch, then 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 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 Data General personnel can try to reproduce and isolate it. See the section Software Problems below for more details.
3. If you are submitting an STR, please run the utility `nwinfo` located in the directory `/usr/bin/netware` while the system is experiencing the problem. Please send a printout of the resulting file, `/usr/bin/netware/info`, or the file itself along with your STR.
4. On the STR form provide all of the following applicable information:
 - Date
 - CPU type
 - Name and revision number of the product
 - Release of the operating system
 - Hardware configuration (if relevant)
 - Names and revision numbers 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

5. If the problem occurred soon after installing a new revision of software or new hardware, please note this.
6. If you received any error messages, please write down the exact text (and number, if present) of each message.
7. You can shorten the time it takes to solve the problem by isolating the problem as much as possible.
8. Please supply copies of files containing any logging and tracing information if available.

9.2 Software Problems

Report any particular activity or program running on the system that seems to cause the problem. If the program is supplied by Data General, 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.

9.2.1 System Panics or Hangs

If your system panics, be sure to record the panic number. Then take a dump of the system memory as described in the Taking System Dumps section of the DG/UX for AViiON Systems Release Notice. Make sure you include the DG/UX system image on the system dump tape.

If your system hangs:

1. Try the "Hot key" sequence (see the Notes and Warnings section of the DG/UX for AViiON Systems Release Notice).
2. If this does not work, then reset your machine using the reset key or switch. Once in the SCM, enter "reset" followed by "Start 1000". This will invoke the dump sequence. See the Taking System Dumps section of the DG/UX for AViiON Systems Release Notice for more details.

9.2.2 Abnormal Termination of a NetWare Services Process

Include copies of any core files you find in the /usr/bin/netware directory as well as copies of files containing all logging and tracing information available.

9.3 Sending Media

Tapes containing a system memory dump should be clearly labeled as such. Use the following format for cartridge tapes:

Tape file 0: memory contents (final volume) in memory dump format

Tape file 1: system image (normally /dgux) in cpio format

Tape file 2: other files, programs, etc., in cpio format

Do not use absolute pathnames (i.e., starting with /). The following example shows the steps for making such a tape on a system whose primary tape drive is /dev/rmt/0. Use the device name appropriate for your system.

1. For file 0: Dump the system memory as described in the Taking System Dumps section of the DG/UX for AViiON Systems Release Notice. The final tape volume will rewind upon completion of the dump.

2. For file 1: Use a command like this:

```
#mt -f /dev/rmt/0n fsf 1
```

```
# cd / ; echo dgux | cpio -oBcv > /dev/rmt/0n
```

The command above does not rewind tape. The tape will be positioned for file 2 to be written.

3. For file 2: Use a command line like this:

```
# echo filename | cpio -oBcv > /dev/rmt/0
```

The tape will rewind after the command above.

For problems that do not involve a system dump, please put all files associated with the problem on tape file 0 in cpio format, using this command:

```
# ls filenames | cpio -oBcv > /dev/rmt/0
```

4. Clearly label the media, giving format, contents, density, and date. Verify that the media is readable. Please place a label on the tape(s) containing any information clearly indicating their contents. Send your STRs to:

Data General Corporation
1626 Jeurgens Court
Norcross, GA 30093

Attn: SPMD Administrator

— End of Release Notice —