

Disk & Tape Array Management Licensed Internal Code Software for AViiON Systems

Revision 21.00

Model Numbers R057A & R065A

Release Notice

085001522-10

February, 2000

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Core Software

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## 1. INTRODUCTION

This release notice describes the Disk & Tape Array Management Licensed Internal Code Software (DAMLIC/TAMLIC) Software for AViiON Systems, which is being released at media revision 21.00. This media allows you to install new revisions of Core Software on AViiON Systems, which have installed CLARiiON disk or tape arrays.

It is strongly recommended that customers always upgrade their installed hardware with the latest Core Software provided via this microcode subscription service. When upgrading or adding additional hardware, new minimum levels of microcode will be required to provide base line functionality for the new product offerings. Please reference the attached chart to insure that the minimum required revision is installed in your system. Again, installation of the latest Core Software is always recommended

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This product consists of the following parts:

<u>Part Description</u>	<u>Part Number</u>
Disk & Tape Array Management Licensed Internal Code Software for AViiON Systems Release Notice	085001522-10
2. Disk & Tape Array Management Licensed Internal Code Software Rev 21.00 release media	See section 7 of this release notice

## 1. PRODUCT DESCRIPTION

The disk array Core Software that is distributed with DAMLIC is loaded onto the disk array either with the DAMLIC tool or with Navisphere, depending on which AViiON server the array is attached. Use the following matrix to determine the appropriate tool for downloading your Core Software:

AViiON Server	Core Software	Disk Array	Core Software Download Tool
<b><u>IX86:</u></b> AV 1600, 2100, 2150, 2600 AV 3600, 3650 AV 3700, 3704 AV 4700, 4800, 4900 AV 5800 AV 6600, AV20000, 25000	9.26.03 9.26.20*	78100, 79100	DAMLIC I
	9.46.03 9.46.20*	79400	
	9.56.03 9.56.20*	78200/79200/79300	
AV 2650, 2700 AV 8600	9.26.03 9.26.20*	78100, 79100	DAMLIC II
	9.46.03 9.46.20*	79400	
	9.56.03 9.56.20*	78200/79200/79300	

AViiON Server	Core Software	Disk Array	Core Software Download Tool
All Intel based AViiON Servers	2.04.21 2.04.25 2.04.26*	79500/501, 79565	Navisphere Manager/Supervisor 4.0 with DG/UX Agent 3.02.20 required.
	4.12.02 4.12.13*	79502, 79503, 79585	Navisphere Manager/Supervisor 4.0 with DG/UX Agent 3.02.20 or NT 4.0 Agent required.
	4.12.52 4.12.63*	79504, 79505, 79585	Navisphere Manager/Supervisor 4.0 with DG/UX Agent 3.02.20 or NT 4.0 Agent required.
	5.21.04	78400/401/402/403 79402, 79403 79451, 79459	Navisphere Manager/Supervisor 4.0 with NT Agent only required.
	5.11.03* 5.11.53*	79504, 79505, 79585	Navisphere Manager/Supervisor 4.0 with DG/UX Agent 3.02.20 or NT 4.0 Agent required. <b>NOTE: NT or MU05 and greater is required.</b>
AV 2300, AV 2800, AV8700, AV8900	9.26.03 9.26.20*	78100, 79100	Navisphere Manager/Supervisor 4.0 with DG/UX Agent 3.02.20 or NT 4.0 Agent required.
	9.46.03 9.46.20*	79400	
	9.56.03 9.56.20*	78200/79200/79300	

\* - indicates new revision

NOTE: Navisphere Supervisor and NT Agent/CLI are provided free of charge to AViiON CLARiiON customers. If you do not have a copy and require them, please contact your DG representative.

<b>Tape Array Controller firmware table for Rev 21.00</b>	
<b><i>DG MODEL(s)</i></b>	<b><i>Rev</i></b>
7921, 7931, 7900	1100
7921, 7931, 7900	1002
4000TA, 7000TA	020507
4000TA	020003

### 3. ENVIRONMENT

The following environment is required for DG/UX only:

Make sure the operating system is shut down at the SCM or SCM86 prompt. If your host is connected to two SPs in the same CLARiiON disable one of the SPs.

If two hosts are using a CLARiiON Storage system, the host that will NOT be used to run the Disk Array Management Licensed Internal Code Software program must not execute I/O to CLARiiON disks/tapes during Core Software installation. It is safest for the second host to unmount all of its disks/tapes in the CLARiiON and then soft disable its SP. Use the Enable Disable switch on the SP for models 78100 and 79100 or physically remove the SCSI cable from the other host. If your host is connected to two SPs (peers) in the same CLARiiON, disable one SP using enable, disable switch.

**CAUTION:** Failure to isolate the device from an active bus can result in permanent damage to the device or render it unuseable. Only the CLARiiON disks/tapes (not all host devices) must be on and on-line.

You **MUST** disable the storage-system cache and verify that there are zero dirty pages before you "Update SP PROMs and Reboot SP". Updating and rebooting PROM code on both storage processors at the same time could result in the loss of data in cache with cache enabled.

When you install the Core Software code, the SP will try to copy it to reserved areas (outside operating system control) on the disk modules (sometimes called database disks). The disk modules are DPE drives 0,1,2 for 79500; A0, B0, C0, A3, and A4 for AV79300/AV79400 (30 slot) Series; A0, B0, C0, and A3 for AV79100/AV79200 (20 slot) Series; A0, A1, A3 and B0 for AV78100 (10 slot) Series; and A0, A1, B0 for AV77100 (7 slot) Series. At least two of these modules must be on line when you install code; ideally, all the modules you have in these positions will be on line.

## 4. ENHANCEMENTS AND CHANGES

### 4.1 Enhancements to previous revision (DAMLIC I & II)

1. New Core Software [9.56.20] for model numbers are 78200, 79200, 79300
2. New Core Software [9.26.20] for 78100, 79100
3. New Core Software [9.46.20] for 79400
4. New Core Software [5.11.03 & 5.11.53] for 79504, 79505, 79585
5. New Core Software [2.04.26] for 79500/501, 79565
6. New Core Software [4.12.13] for 79502, 79503, 79504
7. New Core Software [4.12.63] for 79504, 79505, 79585
8. New Core Software [9.26.20, 9.46.20, 9.56.20] for SCSI 10K RPM disk drives
9. New Core Software [4.12.13 & 4.12.63] support 7200RPM, Model 79021-HFH.

## 5. NOTES and WARNINGS

### 5.1 Notes

#### 5.1.1 Issues with the Core Software for the Disk Array:

1. Core Software [5.11.03 & 5.11.53 & 5.21.04] require NT and Navisphere 4.0 Manager/Supervisor/Agent/CLI. They are not currently supported on DG/UX (MU05) or the current Navisphere Manager 4.0 and DG/UX Agent 3.02.20.
2. When downloading 5.21.04 Core Software over a serial port, change modem baud rate speed from 9600 to 19200.
3. To move Core Software files from a CD to be loaded by Navisphere 4.0 must have the file properties changed to enable write. On an NT system, deselect the "read-only" in the file properties dialog box. In the UNIX environment use command "chmod 777 [filename]".
4. Download using Damlic is not supported for Model 7462A - 2944UW (B) HVD SCSI, use Navisphere 4.0.
5. Substitute 2940UW card for the 2940U2W card in systems to use DAMLIC 21. The 2940U2W card is not supported using Damlic.
6. Support for download of SCSI SP Firmware for newer AViiON Servers with Navisphere 4.0. The minimum Core Software revision requirements are 9.26.02, 9.46.02 and 9.56.02 for servers AV2300, AV2800, AV8700, and AV8900.
7. Core Software 9.26.20, 9.46.20, 9.56.20: Flare has been released to correct a problem found in CLARiiON tests with an unusual configuration and in extremely rare circumstances could potentially cause data loss.
8. Relative all Fibre Channel Core Software. An improvement to RAID-5 has been implemented that will allow Flare to avoid invalidating sectors during a host write operation, should a drive in a RAID-5 LUN encounter an error on a read to a location which it just successfully cleared of a media defect.
9. 5.21.04 Core Software - Resolved a problem that could result in Flare leaving inconsistent RAID-5 coherency information on RAID-5 LUNs during certain I/O combinations.
10. Fibre ID's under Emulex Fibre are reported incorrectly. The alpha ID is being displayed instead of the select ID. The download process works, but the ID are displayed for information purposes only.
11. The Core Software files for SCSI CLARiiON are being included in DAMLIC 21 for use on AV2300, AV2700, AV2800, AV8600, AV8700, AV8900, & AV25000. Navisphere 4.0 or greater should be used to download to arrays

attached to these systems. You **MUST** be running a minimum of Core Software 9.x6.02. If you are running an older rev you must upgrade with Damlic before using Navisphere 4.0.

12. When using Navisphere to upgrade the Core Software [4.12.13 & 5.11.03], you no longer need to choose the reboot checkbox. You can reboot at any time to activate the new Core Software.

## **5.2 Warnings (Disk Arrays)**

1. See Navisphere Agent/CLI for Windows NT Release Notice 085-001593-02 for upgrade instructions for Core Software 4.12.13 & 4.12.63 to Core Software 5.11.03 & 5.11.53. Once Core Software 5.11.03 & 5.11.53 is downloaded on the array, *do not* attempt to download 4.12.13 & 4.12.63. It will result in data loss or loss of access to LUNs.
2. When updating Core Software using Navisphere 4.x and disabling Read Cache Memory, per EMC CLARiiON Support Note S991218, do not set the RAID 3 Memory to 0. This will unbind and RAID 3 LUNs and cause data loss.

## **5.3 Warnings (Tape Arrays)**

1. If using Damlic II, before downloading Tape Array Controller, the tape cartridges in the drives must be Unloaded, Ejected, Removed and the doors on the drives snapped shut. This is due to the fact that during download the doors are locked by the drives so if you do not completely remove the cartridges the download cannot be done and the download process will be rejected.

If using Damlic I do not eject or unload the tape cartridges from the tape drive. Damlic I requires media in place before attempting any downloads.



## 6. DOCUMENTATION

### 6.1 Manuals

This section contains information on the title(s) in the Disk & Tape Array Management Licensed Internal Code Software Media, Revision 21.00 release documentation set.

<u>Part Number</u>	<u>Name</u>
014-002396	Planning CLARiiON Disk Array Storage System Installation, DG/UX Environment
014-002323	Configuring and Managing a CLARiiON Disk-Array Storage System, DG/UX Environment
014-002320	Installing and Maintaining a CLARiiON Disk-Array Storage System, DG/UX, AOS/VS II, or AOS/VS Environment, Deskside Model, 2200 or 2300
014-002321	Installing and Maintaining a CLARiiON Disk-Array Storage System, DG/UX, AOS/VS II, or AOS/VS Environment, Rackmount Model, 2200 or 2300
014-002338	Installing and Maintaining a CLARiiON Disk-Array Storage System DG/UX, AOS/VS II, or AOS/VS Environment, Deskside Model, 1100 or 1300
014-002339	Installing and Maintaining a CLARiiON Disk-Array Storage System, DG/UX, AOS/VS II, or AOS/VS Environment, Rackmount Model, 1100 or 1300
014-002556	Installing & Maintaining CLARiiON Series 100, DG/UX, AOS/VS II, and Deskside Model
014-002557	Installing & Maintaining CLARiiON Series 100 AOS/VS Environments
014-002584	Installing and Maintaining a CLARiiON Disk-Array Storage System, DG/UX, AOS/VS II, or AOS/VS Environment, Deskside Model, 2800 or 2900
014-002585	Installing and Maintaining a CLARiiON Disk-Array Storage System, DG/UX, AOS/VS II, or AOS/VS Environment, Rackmount Model, 2800 or 2900
014-002181	CLARiiON Tape Array Storage System with DG/UX Operating System
014-002526	Installing 7200 RPM Add-on Disk Drive Module
014-002435	Direct Connect DCS-002373 (Plan)
014-002642	Read This Notice Before Installing the New 79012-HC 4GB disk
014-002626	Read This Notice Before Installing a 9GB Disk Module
069-000854	Navisphere Manager Installation and Operation Manual
069-000868	Navisphere Supervisor Installation and Operation Manual

## 7. SOFTWARE

### 7.1 Media

The Disk & Tape Array Management Licensed Internal Code Software for AViiON Systems, Revision 21.00, is included in the following package. Please refer to Key chart below for symbols used to show new or revised media parts since the last master release.

#### For installation on 88k based DG/UX systems (DAMLIC/TAMLIC I)

<u>Part Number</u>	<u>Description</u>
079000428-23	QICtape Cartridge 88k
068003058-16	CD-Rom 88k

#### For installation on Intel based systems (DAMLIC/TAMLIC I) AV1600/2100/2150/2600/3600/3650/3700/3704/4700/4800/4900/5800/6600/5900 20000/25000

<u>Part Number</u>	<u>Description</u>
068003146-08	CD-Rom Intel
090007864-06	1.44 MB diskette Intel only

#### For installation on Intel based systems (DAMLIC/TAMLIC II) AV2650/2700/8600

<u>Part Number</u>	<u>Description</u>
068003290-03	CD-Rom Intel

#### For installation on Intel based systems with Navisphere tool (AViiON DAMLIC Licensed Internal Code Software) AV2300/2800/8700/8900

<u>Part Number</u>	<u>Description</u>
068003323-03	CD-Rom Intel

## 7.2 Organization / Files

### For Tape Medium:

The following is a list of the files and a description of what is contained on each file on the media.

<u>File</u>	<u>Contents</u>
0	DG/UX Bootstrap
1	DG/UX Kernel
2-n	Firmware Binary Filesystem

## 8. INSTALLATION INSTRUCTIONS (DAMLIC/TAMLIC I)

**For installation on all m88k systems and the following Intel based systems.**

**AV1600/2100/2150/2600/3600/3650/3700/3704/4700/4800/4900/5800/5900/6600/20000/25000**

Updating Core Software and SP PROMs

Periodically, if your organization subscribes to Data General's Microcode Subscription Service (MSS), you will receive a tape or CD-ROM with updated Core Software for the SPs in your disk-array storage system. It may also include an update to SP PROM (programmable read-only memory) modules. We suggest that you install this code as soon as is practical after you receive it, since it may include features your current code lacks.

The program that installs the new code is called the Disk Array Management Licensed Internal Code Software (DAMLIC) installer. You boot the installer on a server from the supplied tape, CD-ROM, or diskette.

Note that In DAMLIC installer dialog, the term controller means SP (storage processor).

To update Core Software

1. Make sure there are at least two database disks in the storage system.
2. Make sure the server from which you will boot the installer is shut down (to the SCM prompt or if no TSB exists, the Operating System should not be running).
3. If a second server is connected to the storage system, make sure all its file systems on storage-system disks are unmounted. If the second server's system disk is in the storage system, shut down that server's operating system.
4. Disable the read and write caches.
5. If the storage system you want to update has just one SP, skip to step 6.

If the storage system has two SPs, you must disable one SP. If two servers connect to the storage system, you will disable the SP of the server you *will not* boot from. Please refer to the Navisphere User's Guide.

6. On the server you plan to boot from, mount the update medium (Licensed Internal Code tape on tape unit 0 on the appropriate type of tape unit, or insert the CD-ROM into a drive).

7. If you did not receive a diskette along with the other update medium, skip to step 9. If you did receive a diskette (this holds a special BIOS for Intel-based AViiONs), then power off the server, insert the diskette in the drive, and power on the server.

The server boots from diskette and displays

DG/UX System Release X.XX Bootstrap

Boot command:

8. Enter the CD device name (described in the server system manual); then press Enter. The CD device name is similar to the following: (Your system configuration may be different.)

<b>sd(npssc(gpcc(0)0,0,n),3)</b>	(For AV10000 )
<b>sd(ncsc(0),3)</b>	(For AV4500/5500/8500/9500 )
<b>sd(dgsc(0),3)</b>	(For AV6000 series )
<b>sd(ncsc(0),3)</b>	(For 46xx series )
<b>sd(cisc(0),3)</b>	(For AV5000 series )
<b>sd(insc(0),3)</b>	(For AV4000 series)
<b>sd(apssc(pci(0,0),a,0),6)</b>	(For an AV 25000 with its CD at SCSI ID 6)
<b>ided(0,0,0)</b>	(For an AV 3704 with the Atapi CD-ROM)
<b>sd(apssc(dppb(pci(0,1),F),F),6)</b>	(For AV20000 with CD at SCSI ID 6)
<b>sd(apssc(pci(1),c),4)</b>	(For an AV 3600, 3000, 3650, 6600 server with its CD at SCSI ID 4)
<b>sd(apssc(dppb(pci(0),14),5,4)</b>	(For an AV 2600 server with its CD at SCSI ID 4)
<b>sd(apssc(pci(0),b),4)</b>	(For an AV 5900, 5800, 4900, 4800, 2000, 1600 or 2150 server with its CD at SCSI ID 4)

The bootstrap reads the microcode installer program from CD into memory. The program displays initializing messages and prompts you to continue. (If you see an error message and/or the server reboots, wait for the Boot command prompt to reappear and respecify the CD device name.) Skip to step 10.

9. If you did not receive a diskette with the update medium, boot from the tape or CD-ROM. The tape or CD device name is described in the server system manual. For example,

**b st(apssc(pci(1),C)2)** (for tape on an Intel-based system)

**b sd(ncsc(), 3)** (for CD-ROM on an 88K-based system)

The SCM reads the microcode installer program into memory. The program displays initializing messages and prompts you to continue.

10. To continue, press Enter. Then the installer displays revision information.
11. To continue, press Enter. The installer displays a copyright notice.
12. To continue, press Enter.

The installer now sizes all SCSI peripherals on the system. It displays dots to indicate activity. If you see any *could not be opened* error messages, make sure disk modules are in database slots.

The Main Menu appears as follows:

```

=====
                          MAIN MENU
=====
1 - Display Sizer Report on all System SCSI Peripherals
2 - Display Sizer Report on Discrete Drives ...
3 - Display Sizer Report on Array Modules ....
4 - Display Sizer Report on Array Processors ...
-----
5 - Download firmware for Disk ... Array Processors
-----
6 - Resize System's SCSI Devices
7 - Switch Update Criteria Setting
   Current setting: Latest Firmware Revision Check
0 - Exit

Enter Selection and press Enter:
-----

```

13. Enter the number for “Download firmware” and press Enter.

The installer scans all SCSI peripherals looking for SPs. It lists the SCSI-2 adapters and SPs it finds. When the program finds an SP, it searches its firmware database for new revisions for that SP, and then lists the current revision and all available revisions. For example,

Description	Vendor	Model	Cr Rev	Av Rev
SCSI-2 Adapter ncsc(8,7 )	DGC	7305 IOP	9.56.03	9.56.20

The information displayed in this example indicates that this SP is currently running firmware revision 9.56.03, and that the utility’s firmware database contains a newer version, 9.56.20.

Then you may be prompted to load a different revision as follows:

Choose action (then press ENTER): (d)ownload, (p)ass,  
(m)ain menu?

The three options:

download	Starts the download sequence for new code.
pass	Skips this SP and scans for another array.
main menu	Quits scanning and returns to the Main Menu.

14. Select the download option.

The software prompts for confirmation. It may also prompt for the revision; if so, we suggest the latest one. For example

Are you sure you want to download rev 9.56.20? (y/n)

15. Respond yes by entering **y**, or no by entering **n**.

If you enter **n**, the utility continues scanning for SPs. If you enter **y**, it downloads the firmware. After several minutes, it displays waiting messages and, finally, a done message:

Waiting for array processor to become ready ... done.

**READ note 11** in the NOTES and WARNINGS section of this release notice.

After performing all download operations, the utility resizes the system's SCSI peripherals to update its revisions table. Then it displays the Main Menu.

If the storage system has just one SP, skip to step 19

16. Re-enable the SP you disabled in step 5 earlier: With a PowerPC SP, answer Yes on the storage-system console to enable the SP. With an AMD SP, return the Enable/Disable switch to Enable.

The SP you enabled now loads the revision of Core Software you specified above. At this point, both SPs are running that revision, and that revision has been saved on the database disks.

**IMPORTANT** Updating the code also updated the PROM code in the original SP (the one you did not disable). You should now update the PROM code in the SP you disabled. If you do not update that SP's PROM code, the SPs might be running different PROM revisions - an undesirable situation. You must make sure caches are disabled.

To update the PROM code in the other SP, please refer to the User's Guide for the appropriate CLARiiON array management tool for your system.

17. At the system console, the installer utility is still running. To exit from this utility, select Exit and confirm.
18. The software returns the system to the SCM or reboot prompt.
19. Reboot the server(s) connected to the storage system if any need rebooting. (If you inserted a diskette in a server earlier, remove the diskette from the server before booting.) Then mount any file systems from step 3 that remain unmounted.
20. Remove the microcode installer tape or CD-ROM and store it and the diskette (if any) in a safe place.

You have updated the Core Software and the PROM code on your SP(s). You can skip the next section.

### Updating SP PROM code

The procedure for updating Core Software also loads any new PROM code onto the database and installs the code in the SP PROMs; so if you followed the Core Software update procedure (above), you do not need to update PROM code.

However, you can update SP PROM code without installing a new revision of Core Software. You might want to do this, for example, if you can see on the Presentation screens of each SP that the Core Software revisions match but the PROM code revisions do not match. To update SP PROMs, please refer to the Navisphere User's Guide.

## 9. INSTALLATION INSTRUCTIONS (DAMLIC/TAMLIC II) AV2650/8600/2700 ONLY

### Updating Core Software Code and SP PROMs

Periodically, if your organization subscribes to Data General's Microcode Subscription Service (MSS), you will receive a tape or CD-ROM with updated Core Software for the SPs in your disk-array storage system. It may also include an update to SP PROM (programmable read-only memory) modules. We suggest that you install this code as soon as is practical after you receive it, since it may include features your current code lacks.

The program that installs the new code is called the Disk Array Management Licensed Internal Code Software (DAMLIC) installer. You boot the installer on a server from the supplied tape or CD-ROM.

Note that In DAMLIC installer dialog, the term controller means SP (storage processor).

#### To update Core Software

1. Make sure there are at least two database disks in the storage system.
2. Make sure the server from which you will boot the installer is shut down (to the SCM prompt or if no TSB exists, the Operating System should not be running).
3. If a second server is connected to the storage system, make sure all its file systems on storage-system disks are unmounted. If the second server's system disk is in the storage system, shut down that server's operating system.
4. Disable the read and write caches. Please refer to the Navisphere User's Guide.
5. If the storage system you want to update has just one SP, skip to step 6

If the storage system has two SPs, you must disable one SP. If two servers connect to the storage system, you will disable the SP of the server you *will not* boot from. Please refer to the Navisphere User's Guide.

6. On the server you plan to boot from, insert the CD-ROM into a drive.
7. Boot from the CD-ROM.

#### **SCM86> b bios**

The SCM or BIOS reads the microcode installer program into memory. The program displays initializing messages.

**NOTE:** If your system does not have a TSB installed, simply power up the system to autoboot the CD-ROM.



8. The Main Menu appears as follows:

Select Option

DAMLIC II

---

View Readme File  
Latest Disk Array Firmware for all modules  
Older Disk Array Firmware for all modules  
Tape Array Firmware all modules  
Exit

9. Use the arrow keys to highlight Latest Disk Array Firmware for all modules.
10. You will see the following menu:

Latest Disk Array Firmware

---

\*Download Disk Array Firmware onto 78100, 79100 Family of SP's  
Model Numbers (7427, 7624, 7341, 7340, 7300).  
Firmware REV. 09.26.20  
\*Download Disk Array Firmware onto 78200, 79200, 79300 Family of SP's  
Model Numbers (7350, 7345, 7305).  
Firmware REV. 09.56.20  
\*Download Disk Array Firmware onto 79400 Family of SP's  
Model Number (7355)  
Firmware REV. 09.46.20

11. Use the arrow keys to highlight the firmware download selection you wish to perform.  
Press Enter.

After you pressed enter, a new screen will appear and right about the middle of the screen, a series of dots will be displayed. This indicates that the tool is downloading the firmware image into memory. After DAMLIC II finishes uploading the image to memory. The system will continue booting the CD. This will appear as though the system is rebooting. This is normal. On system where Post Testing is enabled, you will see the following message:

Do you wish to bypass POST testing ? [y]/n [10] \_

Press Enter to bypass POST testing.

12. At the AV/Rx> prompt, type damlic
13. After typing damlic, you will see the following message on the screen

```
>>> Sizing S C S I connections <<<
```

The installer scans all SCSI and FC peripherals looking for SPs. It lists the SCSI-2 adapters and SPs it finds. When the program finds an SP, it searches its firmware database for new revisions for that SP, and then lists the current revision and all available revisions.

For each SCSI and FIBER controller that there is on the host, DAMLIC II will query the user as follows:

```
Skip XXXXXX-XXXXXX controller ? y/[n] [10] _
```

The default is no. There is a 10 second countdown for the answer which is displayed after the '[n]'. After the 10 seconds time has completed the default (n) takes place.

If you typed y, DAMLIC II will skip this controller and proceed to size the next controller, if any, if you typed 'n' then the tool will proceed to size all arrays attached to the controller, and it will display the appropriate Firmware Rev., whenever applicable. For example,

PCI Bus	SCSI ID	Conf Sys	Curr Sys	Vendor ID	Model ID	Firmware Rev
====	=====	=====	=====	=====	=====	=====
6	0	1	1	DGC	7305 IOP	095603

The information displayed in this example indicates that this SP is currently running firmware revision 9.56.03

**NOTE:** While the sizing is occurring you may see this message: "The program you selected has no firmware for the vendor/product shown." This information is for sizing purposes only and does not indicate that any errors have occurred. If you wish to download firmware to this device, reboot the CD-ROM and choose the appropriate selection from the menu.

Along with the table above, you will also see the following.

Available Option(s) are:

- ```
1> 095620          095620.bin
0> Skip
X> Exit
```

14. Select the download option (option 1)

You will see the following:

```
Begin download .....
```

.....  
Download Finished

Waiting 3 minutes for array to become ready

Drive(s) Ready

ATTENTION: Updating array to Type XX settings if needed...

Configured SysType: XX Current SysType XX

**NOTE:** if downloading same firmware, you will see the following message instead:

SysType values are correct – no change required

For cases where you are doing a Firmware update from a firmware revision 9x5 to a 9x6 revision, or 9x6 to 9x5, Damlic will check the current system type (see Section 4.2 Enhancements and Changes for Damlic II). If they are different, then you will see the following messages,

SP CACHEs will be disabled now ...

Current Cache state is: [NOT DISABLED/DISABLED]

New Cache State is: DISABLED

**NOTE:** if settings had cache disabled, then the Current Cache state would be DISABLED.

SysType XX settings change will be performed now ...

Waiting 60 seconds for Array to become ready ..... Array Ready.

ATTENTION: To verify the Config SysType and Current SysType re-run sizing for SCSI Devices after completing all of your firmware downloads

NOTE: After sizing all possible SCSI peripherals, the utility will proceed to size all possible Fibre Channel devices attached through Emulex cards only. You will see the following message

>>> Sizing F I B R E C H A N N E L connections <<<

If you have Fibre channel devices, the following messages will appear on the screen:

Initialization takes 15 seconds Do you want to skip ? y/[n] [10]

If you type 'y' the utility will take you back to the Av/Rx> prompt. If type 'n', the following message will appear on the screen:

.

0: 15 seconds pause for linking.....

.

.

Any controller which this utility can size will be displayed on the screen. Along with this the corresponding options, 0 to skip, 1 to download, X to exit.

**READ note 11** in the NOTES and WARNINGS section of this release notice.

15. The utility will continue to search through the controllers to see if there are any additional arrays to update. Repeat the download procedure as appropriate.
16. After you return to the Av/Rx> prompt, you can re-run the damlic program to verify that the firmware has been installed correctly. To do this, type damlic↵ at the prompt.
17. If you wish to download Core Software to additional CLARiiON families, return to step 7. Otherwise, goto step 18.
18. Re-enable the SP you disabled in step 5 earlier. Please refer to Navisphere User's Guide.

The SP you enabled now loads the revision of Core Software you specified above. At this point, both SPs are running that revision, and that revision has been saved on the database disks.

**IMPORTANT:** Updating the code also updated the PROM code in the original SP (the one you did not disable). You should now update the PROM code in the SP you disabled. If you do not update that SP's PROM code, the SPs might be running different PROM revisions - an undesirable situation. You must make sure caches are disabled.

To update the PROM code in the other SP, please refer to Navisphere User's Guide.

19. After completing firmware updates, you can reboot the system by typing reset at the AV/Rx> Prompt. Note that you must take the CD out of the CD-ROM before you the system otherwise the system will boot from the CD.

#### **Updating SP PROM code**

The procedure for updating Core Software also loads any new PROM code onto the database and installs the code in the SP PROMs; so if you followed the Core Software update procedure (above), you do not need to update PROM code.

However, you can update SP PROM code without installing a new revision of Core Software. You might want to do this, for example, if you can see on the Presentation screens of each SP that the Core Software revisions match but the PROM code revisions do not match.

To update SP PROMs, please refer to the Navisphere User's Guide.

## 10. INSTALLATION INSTRUCTIONS

This section refers to the CD labeled 068-003323-03. The CD contains files applicable to NT and DG/UX architectures refer to the appropriate section.

### **Upgrading Navisphere Manager 3.02 to Navisphere Supervisor 4.0**

Core Software [5.11.03 & 5.11.53 & 5.21.04] require NT and Navisphere 4.0 Manager/Supervisor/Agent/CLI. If you presently use Navisphere Manager 3.02 and have not purchased the upgrade to Navisphere 4.0 Manager, Navisphere Supervisor and NT Agent/CLI are provided free of charge to AViiON CLARiiON customers. If you do not have a copy and require them, please contact your DG representative. See Table on section 2, for verification of your need to upgrade to Navisphere 4.0 Supervisor.

This must be done prior to the download of Core Software.

1. In Control Panel, go to Add/Remove Program Properties and remove Navisphere 3.02, both Manager and Agent.  
**NOTE:** Agent must be removed on each server with a CLARiiON attached that needs update.
2. Install Navisphere Supervisor 4.0 according to instructions in manual 069-000868-02.
3. Install Navisphere NT Agent 4.0 according to manual 069-000866-02 and DG/UX Agent 3.02.20 according to manual 069-000852-01.
4. Follow system specific instructions below to download firmware.

### **Reinstall of Navisphere Manager 3.02**

This procedure needs to be done only if you need Navisphere 3.02 to manage your CLARiiON storage.

1. In Control Panel, go to Add/Remove Program Properties and remove Navisphere 4.0 Manager, DG/UX Agent 3.02.20 and/or NT Agent 4.0.  
**NOTE:** Agent must be removed on each server with a CLARiiON attached that needs update.
2. Reinstall Navisphere 3.02 Manager/Agent.

### **NT systems instructions**

#### a) CD contents

The CD labeled AViiON DAMLIC Licensed Internal Code Software contains 5 directories named as follows.

CLARiiON\_5200\_5300  
CLARiiON\_5400\_5500  
CLARiiON\_5600\_5700  
CLARiiON\_5603\_5703  
CLARiiON\_SCSI

**Important:** for NT systems, use CLARiiON\_5600\_5700.

The directory CLARiiON\_5600\_5700 contains the files LIC41213.bin, LIC41202.bin, and LIC51103.bin

b) Accessing the contents of the CD

In order to access the CD media's contents you must follow these steps.

1. Start Windows Explorer.
2. Create a new Folder called Firmware under C:\Program Files\CLARiiON, if any of these folders do not exist, create them.
3. Select the CD drive, then select the directory Clariion\_5600\_5700
4. Copy the contents of this directory into C:\Program Files\CLARiiON\Firmware

Once the contents of the directory have been copied, take out the CD and start Navisphere. Please refer to Navisphere Supervisor Installation and Operation Manual, 069-000868 or Navisphere Manager Installation and Operation Manual 069-000854 to continue downloading Core Software onto the disk array's SPs.

**DG/UX systems instructions**

**Preparation for Download Core Software on Operating System Disk only:**

1. All I/O or requests to the storage array should be stopped including turning off automatic polling in the Navisphere Manager or Supervisor.
2. Bring the system down to init level S
3. Start the Navisphere Agent: SYSADM Device->Disk->Navisphere->Contol Navisphere Agent->Start
4. Start the tcpip services: /usr/sbin/init.d/rc.tcpipport start command.
5. For system where the OS is located on the array once the disk storage array reboots, DG/UX will be lost and you must restart the system. The array will reboot after the Manager displays the dialog box stating that the download was successful. When the array starts to reboot you should shutdown and restart your DG/UX system. After the system is restored, the current version of FLARE can be verified by viewing the array information dialogs from the array configuration screen in the Navisphere Manager.
6. Proceed to download steps.

**Download Steps for all disks:**

a) CD contents

The CD labeled AViiON DAMLIC Licensed Internal Code Software contains 5 directories named as follows.

CLARiiON\_5200\_5300  
CLARiiON\_5400\_5500  
CLARiiON\_5600\_5700  
CLARiiON\_5603\_5703  
CLARiiON\_SCSI

The directory `clariion_5400_5500` contains the files `lic.20421bin` and `lic.20425.bin`

b) Accessing the contents of the CD

In order to access the CD media's contents you must follow these steps.

1. Create a directory under `/usr/opt/Naviagent` called `firmware`, if any of these directories do not exist, create them.
2. Place the media in the CD-ROM drive
3. Make the `/cdrom` mount point if it does not exist by typing  
**# mkdir /cdrom**
4. If you do not know the short device name for your CD-ROM drive, look it up in the `/etc/devlinktab` file  
**cat /etc/devlinktab | grep pdsd | pg**
5. Mount the CD drive by typing  
**mount -o noversion -t cdrom /dev/pdsd/# /cdrom**  
where `#` is the device number for the `cdrom` drive
6. Change directory to the CD drive  
**cd /cdrom**
7. Now change directory to the directory `clariion_5400_5500` or `5600_5700` or `5603_5703` or `SCSI`  
**cd clariion\_5400\_5500**
8. Create the `/usr/opt/Naviagent/firmware` directory, if does not exist.  
**# mkdir /usr/opt/Naviagent/firmware**
9. Copy the contents of this directory into `/usr/opt/Naviagent/firmware`.
 

|                           |                                                 |               |
|---------------------------|-------------------------------------------------|---------------|
| <b>cp -p lic20421.bin</b> | <b>/usr/opt/Naviagent/firmware/lic20421.bin</b> | for 5400/5500 |
| <b>cp -p lic20425.bin</b> | <b>/usr/opt/Naviagent/firmware/lic20425.bin</b> | for 5400/5500 |
| <b>cp -p lic20426.bin</b> | <b>/usr/opt/Naviagent/firmware/lic20426.bin</b> | for 5400/5500 |
| <b>cp -p lic41202.bin</b> | <b>/usr/opt/Naviagent/firmware/lic41202.bin</b> | for 5600/5700 |
| <b>cp -p lic41203.bin</b> | <b>/usr/opt/Naviagent/firmware/lic41203.bin</b> | for 5600/5700 |
| <b>cp -p lic51103.bin</b> | <b>/usr/opt/Naviagent/firmware/lic51103.bin</b> | for 5600/5700 |
| <b>cp -p lic41252.bin</b> | <b>/usr/opt/Naviagent/firmware/lic41252.bin</b> | for 5603/5703 |
| <b>cp -p lic41263.bin</b> | <b>/usr/opt/Naviagent/firmware/lic41263.bin</b> | for 5603/5703 |
| <b>cp -p lic51153.bin</b> | <b>/usr/opt/Naviagent/firmware/lic51153.bin</b> | for 5603/5703 |
| <b>cp -p lic92603.bin</b> | <b>/usr/opt/Naviagent/firmware/lic92603.bin</b> | for SCSI      |
| <b>cp -p lic94603.bin</b> | <b>/usr/opt/Naviagent/firmware/lic94603.bin</b> | for SCSI      |
| <b>cp -p lic95603.bin</b> | <b>/usr/opt/Naviagent/firmware/lic95603.bin</b> | for SCSI      |
| <b>cp -p lic92620.bin</b> | <b>/usr/opt/Naviagent/firmware/lic92620.bin</b> | for SCSI      |
| <b>cp -p lic94620.bin</b> | <b>/usr/opt/Naviagent/firmware/lic94620.bin</b> | for SCSI      |
| <b>cp -p lic95620.bin</b> | <b>/usr/opt/Naviagent/firmware/lic95620.bin</b> | for SCSI      |
10. Change file properties on the Core Software bin file to enable write for Navisphere download.  
**# chmod 777 [filename]**

Once the contents of the directory have been copied, unmount the CD-drive, take out the CD and start Navisphere. Please refer manual 069-000868 or 069-000854 to continue downloading Core Software onto the disk array's SPs.

