

Windows 2000 - NT 4 Dual Boot

Impact to Prinergy 2.0 Migrations

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Revision History

Revision	Date	Author	Comments
i	11 Oct. 2000	Tom Derr	Initial Release
ii	29 June 01	Robyn Lundstrom	Added procedures for DELL2400. Reorganized document.
A	07 Nov 01	Philip Samaniego	Modified Sec. 8.1 and the procedure in Appendix C.

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1. BACKGROUND

Users of Impact systems migrating to Prinergy 2.0 will be able to utilize their existing Data General or Dell Allegro Workstations as Prinergy Renderstations for a limited period of time using this Dual-Boot installation. The installation consists of an additional hard drive to house the new Windows 2000 Server operating system and on-site installation.

Note that this solution is supported for a limited time only as new operating system modifications by Microsoft (service packs) or updates to other CreoScitex applications software may not support this option.

This procedure is supported on the following platforms:

- DG AV2200 *(see note in section 7.1.3)*
- DG AV2300
- DG AV2700
- DG AV3700
- DELL PE2400L
- DELL PE2400H

Alternate support for maintaining a parallel workflow with existing Impact installations during Prinergy 2.0 installations is an equipment lease option and SCSI switching box for connectivity to the output device. This is the current supported option for all existing equipment and installations.

2. PROCEDURE OVERVIEW

To successfully install a Windows 2000 (W2K) and Windows NT 4.0 (NT4) dual boot option, there are many factors that must be addressed.

- Pre-Sales Inspection
  [see Windows 2000 – NT 4 Dual Boot Pre-Sales Checklist]
- Install Kit Ordering [with Pre-Sales Checklist]
- Pre-Install Backups (Ghost Image of the NT4 system disk)
- Hardware modifications
- Windows 2000 Image Installation
- Dual Boot Configuration
- Prinergy Application Installation
- Output Control Software Installation
- Output Device Configuration
- Workflow Functionality Verified
- Post-Install Backups

2.1 Estimated Time Requirements

The steps through the Dual Boot Configuration can be completed within 2 hours. Installing and configuring the Prinergy and Output Control software can also be completed within 2 hours. Therefore the complete process and downtime for the output station should be no more than 4 hours (assuming that backups have been done ahead of time by the customer).

Pre-Install Inspection

See the Windows 2000 – NT 4 Dual Boot Pre-Sales Checklist document (http://intranet.creo.com/support/docs/windows/w2k-nt4-preinstalist.pdf) for full details. If inspection disk configuration table is not available, fill in the one below.

Disk Drive Configuration

Disk # Size	Letter	Name	File System	Size	Free	Type
0						
1						
2						
3						
4						
CDROM		(N/A)	CDFS	(N/A)	(N/A)	(N/A)

Note: on Dell Power Edge systems with PERC RAID controller, the system disk is mirrored in hardware, and thus will show up as one disk in Disk Administrator. This mirror must be split using the PERC utility before installation.

3. INSTALLATION KIT CHECKLIST

Check that all necessary components are available.

- ☐ Disk Drive(s): _____
  [Verify part number for Server Type in Pre-Install Inspection sheet]
- ☐ Windows 2000 Support CD – Contains the following:
  [Platform specific version for system being modified]
  - Platform Specific W2K Ghost image file

- DOS 6.22 Boot Disk Images
  – SCSI CD Support version
  – Network Support version
- Prinergy Hardware Configuration And Windows 2000 Installation document [72-3476A-A]
- Ghost 6.5 DOS program

 Windows 2000 install Product ID
[Microsoft Windows 2000 Server license]

 W2K Ghost image install procedure
[Section 6.0 of 72-3476A-A]

 Ghost 6.5 Floppy Disk
[Created from Windows 2000 Support CD file]

 DOS Boot Disk – CD or Network support
[Create using instructions in section 6.1 of document 72-3476A-A]

 Prinergy 2.0 Install CDs

- Render Station Installation Procedure

 Output Control Software

- Any feature License Keys needed
- Control Software Installation Procedure

 W2K – NT4 Dual Boot Install Procedure (this document)

 Windows 2000 – NT 4 Dual Boot Pre-Sales Checklist
[Filled out from order or re-created]

4. DISK CONFIGURATION AND PRE-INSTALLATION BACKUP

It is necessary to ensure that you have a current backup image of the existing system plus an updated Emergency Repair disk and Disk Configuration disk. The disk configuration will usually need to be changed to create a FAT partition of sufficient size so that a Ghost image of the existing system can be created. Refer to Appendix B for refreshers on working with drive partitions if necessary.

4.1 System Mirror

System mirrors from NT4 will not be supported in Windows 2000. Using Disk Administrator, check for and break the system mirror if it exists.

Note: If you are working with a DELL machine with PERC2 RAID controller, refer to Sec. 17.1 in Appendix C for the procedure on how to break the hardware mirror.

There are three options for the old System Mirror disk:

1. Remove the disk from the system and set aside as a disk backup for recovery

2. Utilize the disk for the new W2K system installation (most common option)

3. Utilize the disk as a RECOVERY and DataLog disk.

If the disk is being removed or used as a W2K system disk as in options 1 or 2, shut down the system and remove the disk at this time. Reboot the system.

If the disk will be used as a DataLog and RECOVERY disk, delete the existing partitions.

Skip if no mirror exists (the output station will usually not have a mirrored system drive).

4.2 DataLog and Recovery Partitions

Review the Recovery Partition and DataLog Drive requirements from the Pre-Installation Checklist. If a suitable FAT partition does not exist (at least 1.5 GB available and not on the system disk), some configuration changes will be required at this time.

Note: Read through this section completely to determine your situation before starting.

If there are any questions as to what configuration to use, consult a Systems Specialist or Engineering before proceeding.

If the DATADRIVE must be re-configured, use the steps in this following section.

4.2.1 DATADRIVE files backup and RECOVERY partition creation

Delete all unnecessary files from the DATADRIVE (usually D:\). Make sure any disk buffer files from "print to disk" mode are removed and input files are removed from the done and failed folders. In the Explorer window, select "**View | Options**", the View tab, and ensure that the "**Show all files**" is selected in the "Hidden files" section. Select the entire contents of the drive and copy it to a new location that will be accessible after the disk configuration is changed.

Note: Make sure you do the following step under NT4.

Once a suitable disk is freed up for creating the recovery partition (see following steps), create a primary partition of 2047 MB and format it with the FAT file system. Label it RECOVERY disk. Remove the drive letter assignment.

Determine from the following steps whether the remainder of the free space will be a shared DATADRIVE and DataLog partition, or a DataLog partition only and format it accordingly.

4.2.2 Using the existing Impact DATADRIVE (single disk)

If 2 GB will always be free on this volume for Prinergy to operate (no saved disk buffer files), this can be shared between the two systems.

Note: Make sure you do the following step under NT4.

After completing step 4.2.1, create a primary partition for the DATADRIVE in the remaining space on the drive. Format it with the NTFS file system. Label as before and re-assign the correct drive letter from before.

Copy all files back from their temporary storage to the DATADRIVE.

4.2.3 New disk installation

If an extra slot is available an additional new drive can be installed as the Datalog volume for Prinergy. Backup of the DATADRIVE files in section 4.2.1 will not be necessary.

Shut down the system, install the drive in the free SCSI slot next to the existing drives, and reboot the system.

Note: If you are using a Dell server with a PERC RAID controller, the new disk must be initialized in the PERC management utility before it will be visible in NT. Create it as a stand-alone volume.

Open Disk Administrator, and format the RECOVERY partition as covered in section 4.2.1. Create a primary partition from the remaining space and format it using the NTFS file system, labeling it DataLog. Remove any drive letter that may be assigned to it.

4.2.4 Using a previous System Mirror disk

If a system mirror was broken in the first step, the secondary disk can be used just as a new disk would be in the previous section. Backup of the DATADRIVE files will not be necessary.

Do this step under NT4, do not leave it until after you install Win2k.

Delete the existing partitions from the drive. Open Disk Administrator, and format the RECOVERY partition as covered in section 4.2.1. Create a primary partition from the remaining space and format it using the NTFS file system, labeling it DataLog. Remove any drive letter that may be assigned to it.

4.2.5 Formatting unused space

If there is unused area on the drives of sufficient space for the RECOVERY and DataLog partitions (2 GB each), this may be used and backup of the DATADRIVE files in section 4.2.1 will not be necessary.

Select one area and format it for the RECOVERY drive as indicated in section 4.2.1. Select the other (or remaining) area and create a primary partition. Format it using the NTFS file system, labeling it DataLog. Remove any drive letter that may have been assigned to it.

4.2.6 Splitting a stripe or volume set

If no other option is available, you will have to split the multi-disk DATADRIVE volume. Complete backing up all files as in section 4.2.1 before starting.

Using Disk Administrator, delete the stripe or volume set. If you are on a Dell server, use the PERC utility.

If the set consisted of more than 2 drives, join all but one back together with the same type of configuration as before. Format this group (or the single drive) using the NTFS file system and label as the DATADRIVE with the same drive letter that existed before.

Format the remaining drive as in section 4.2.3, “New Drive Installation”. If you are on a DELL server, you will have to initialize this drive with the PERC utility.

Make sure you do create any new partitions under NT4, do not do it under Windows 2000, as this can cause problems on some systems.

Copy the files that were saved off back onto the DATADRIVE volume.

4.3 ERD and Disk Configuration

4. Check that you are logged into the system as Administrator and ensure no other software is running.

5. Create or update the Emergency Repair Disk (ERD) [**Start | Run "rdisk –s"**].

6. Create or update the Disk Configuration in Disk Administrator [**Partition | Configuration | Save…**].

5. NT4 SYSTEM BACKUP

Create a Ghost image of the current system onto the RECOVERY partition. Follow Ghost Image Backup Procedures in section 6.5.15 of the Prinergy Hardware Configuration And Windows 2000 Installation document [72-3476A-A]. Note that your NT4 system disk may not have 3 partitions on it as mentioned in that section. For the destination drive, select the RECOVERY partition you have created.

CAUTION: You must create a valid backup of the system at this stage. This installation cannot be repaired with the normal NT4 ERD once W2K is installed. Ensure your backup is done and is safe at this point. A Ghost image will provide the fastest and most secure restore method in case of disk failures.

6. HARDWARE MODIFICATION

The following steps are used to prepare the system for loading the new W2K image on a new internal disk drive.

6.1 System Firmware

Ensure that the proper firmware level for Windows 2000 support is in use by the system. Follow the procedure in section 10.2 in the Prinergy Hardware Configuration And Windows 2000 Installation document 72-3476A-A contained on the Windows 2000 Support CD.

6.2 Rearranging disk drives

Note: For Dell systems with PERC RAID controller, refer to Sec. 17.2 under Appendix C for the procedure on Windows 2000 installation and disk rearrangement.

The SCSI ID 0 position must be freed up for the new W2K system disk. Shut down the system and re-arrange the disks as needed.

If there was a mirrored system drive that has been removed (not used for Recovery and DataLog partitions), remove the SCSI ID 0 drive from the system (the lower drive in a DG Aviion 2300) and move it to the empty SCSI ID 1 slot above it.

If there was no system mirror, move all disks up one slot in the SCSI chain to free the slot for SCSI ID 0.

Note: For Dell systems with PERC RAID cards, don't move the hard disks as above. See Sec. 17.2 under Appendix C for a full procedure.

6.3 Verify system operation

Note: Skip this section for DELL servers with PERC RAID controller.

Reboot the system to ensure it is operational as normal with this new configuration.

Refer to your original Disk Configuration worksheet. If any drive letters have changed or additional drives appear, open up Disk Administrator and re-adjust or remove them.

7. WINDOWS 2000 IMAGE INSTALLATION

The W2K image must be loaded on a single disk with no other disks active in the system at the time. Refer to section 6.4 of the Prinergy Hardware Configuration And Windows 2000 Installation document [72-3476A-A].

7.1.1 Preparation

Shut down the system. Remove the existing disks including any external RAID's (they can be slid out an inch and left in the slots as long as they won't contact the rear connections). Insert the new disk in SCSI slot 0 (lowest slot on the Aviion 2300 and 2700, topmost on 3700, and rightmost on PE2400L's).

Note: For Dell systems with PERC RAID controller, refer to Sec. 17.2 under Appendix C for the procedure on Windows 2000 installation.

Insert the DOS 6.22 boot disk (with CD support if your image is on CD, or the Network Support version if the image is on a network share) and power up the computer.

7.1.2 Install Ghost Image

Once booted to DOS, ensure the source of your Ghost image is accessible. If on a CD, insert the CD and list the directory on it. If on a network share, use the command "**net view \\computername**" to see that the host is accessible. Map the share where the image is using "**net use z: \\computername\sharename**".

Remove the DOS diskette and insert the one containing the Ghost 6.5 program. At the A: prompt, enter "**ghost**" to run the program.

Once the program is up, select Local > Disk > From Image. Use the <tab> key or <shift><tab> to select the source drive box at the top of the window, and use the down arrow to select the CD (or z: drive you mapped) as the source. Use the <tab> key to get to the file window, and select the appropriate ghost image (eg: blW2K23 for the Aviion 2300), and select OK to continue.

Highlight the 1st hard disk from the drive list (the only one available) as the destination and press <Enter>. Select OK and enter to proceed. Ghost will now indicate the original partitions and any changes in size going to the new disk.

WARNING: Ensure that the partition sizes are the same between the new size and the old size.

Set the new sizes to be the same as the original sizes. Once adjusted, select OK to start the transfer. This should take about 5 minutes.

7.1.3 Installation Customization

Once the transfer is complete, reboot the system as prompted. Follow the instructions in Prinergy Hardware Configuration And Windows 2000 Installation document [72-3476A-A] section 6.4.2 to customize the installation for your current server. Ensure that the registration entries are modified as required.

Once customization is done, reboot a final time to stabilize the new install.

Note for AV2200 systems only: make the hard disk that contains Windows 2000 a Dynamic Disk by right-clicking on the drive in Disk Management and selecting Upgrade to Dynamic Disk. This should **only** be done for the hard disk that contains the Windows 2000 system files, not for any other disk in the system.

8. DUAL BOOT CONFIGURATION

8.1 Modifying the boot selection

Browse on your computer to the C: drive. In the explorer menu select **Tools | Folder Options | View**. Deselect '**Hide file extensions for known file types**" and "**Hide protected operating system files**", and close the menus down.

Select the Boot.ini file and open it. Below the existing lines, enter the following:

```
Multi(0)disk(0)rdisk(X)partition(Y)\WINNT="Impact NT4 Server" /NoSerialMice

Where X=the bay number that the NT4 disk is in (numbering starts at 0). For DELL
2400H servers with PERC RAID controller, X = the container number of the NT4 disk.

Where Y=the partition number that NT4 resides on (numbering starts at 0)
```

Also verify that the entry for Windows 2000 is pointed to the appropriate disk (rdisk(0).

Save and close the file (if it is read only, select the file and right-click for properties, and deselect the read only attribute).

8.2 Accessing the NT4 system

Shut down the system and re-insert the original NT4 drives. Power back up, and at the boot selection menu, select the "Impact NT4 Server" option. Ensure that the system boots to the original system properly.

See note in section 6.2 if you have a Dell server with a PERC RAID controller.

Once booted into NT4, open Disk Administrator and remove the drive letter assignment from the W2K disk System partition. This will make it invisible to the NT4 users. Select the DOS partition on Disk 1 and remove the drive letter. Select the DOS partition on Disk 0 and change the drive letter to C:. Check that the SYSTEMDRIVE, DATADRIVE and CDROM volume drive letters have not changed (see information recorded earlier in the Disk Configuration table).

8.3 Adjusting the W2K system

8.3.1 Adjusting Drive Letters

Reboot and select the Prinergy W2K boot option. The additional drives will appear with new drive letter designations.

Access the disk administrator through the **Start | Programs | Administrative Tools | Computer Management** program, selecting **Storage \ Disk Management** to view the disk configuration.

WARNING: If the "Write Signature and Upgrade Disk Wizard" comes up, select "Do not show this wizard again" and "Cancel". If W2K signatures are written to the existing disks, they will become unusable to the NT4 system.

For any data volumes that will not be used with Prinergy (especially all volume or stripe sets from NT4), right-click and select "Change Drive Letter and Path…". The drive letter should already be selected, and click on "Remove" to delete it. Do the same for the NT4 SYSTEMDRIVE and MS-DOS drive (not the W2K one that you are booting from).

Ensure that the DataLog drive letter is set to E: (even if it is a shared volume that will be D: under NT4).

8.3.2 Adding DuoComm COM ports

The DuoComm serial port board is not automatically detected in Windows 2000. To add back in COM3 and COM4, you will have to do it manually.

Open the Control Panel and select **Add/Remove Hardware**. Select **Next**, and continue with the selection to **Add/Troubleshoot a device**. It takes a while to search the system, then select **Add a new device** from the list and **Next**. Select **No, I want to select the hardware from a list**, and **Next**. Scroll down to **Ports (COM & LPT)** and select **Next**. With **[Standard port types]** selected on the left, select **Communications Port** on the right and **Next**. Select **OK** to the warning, and in the panel that appears, select **Basic configuration 0008** from the drop down list (or one where no resources are already specified). Click on **Change Setting…**, and in the fields that appear, enter the following values for the resources of COM3:

- COM3: Input/Output Range = 0280 – 0287
  Interrupt Request (IRQ) = 05

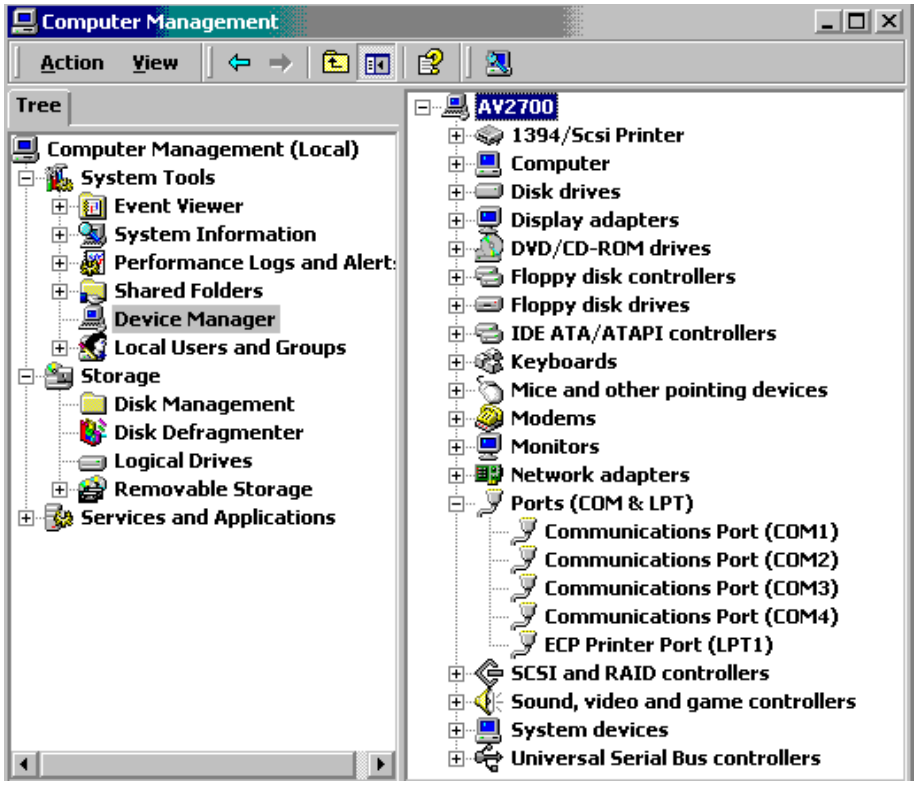
Finish the operation, but do not reboot when asked to. Go through the same sequence and do the same thing with the COM4 settings below, but specifying a different basic configuration that has no reservered resources (probably **Basic configuration 0009**):

- COM4: Input/Output Range = 0288 – 028F
  Interrupt Request (IRQ) = 15

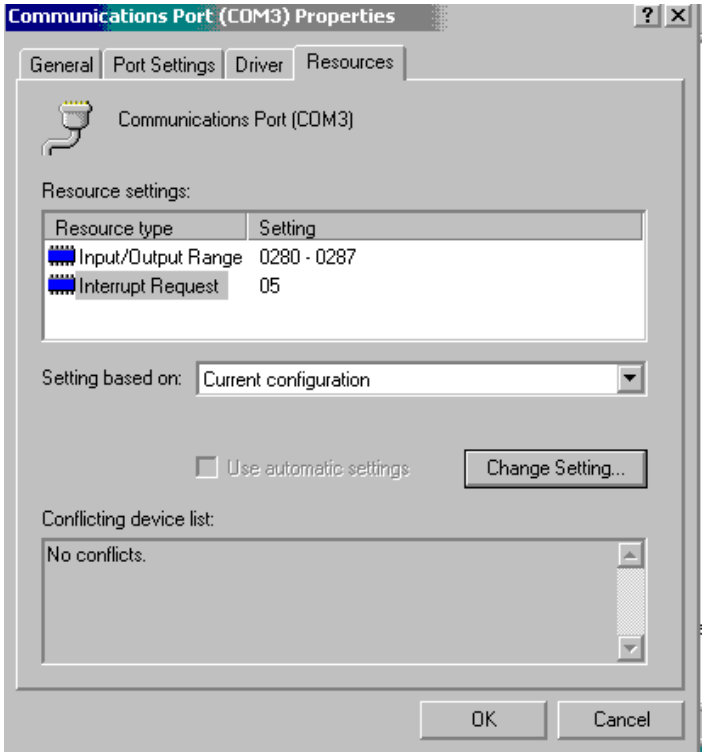
Reboot this time, back to the Windows 2000 installation.

Check that COM3 and COM4 are installed properly by doing the following:

- Right-click "**My Computer**" and select "**Manage**" and the "**Computer Management**" MMC console appears
- Select "**Device Manager**" on the left pane window, then select and expand the "**Ports (COM& LPT)**" field and verify that COM3 and COM4 appear as shown in the figure below:



- Right-click on COM3 or 4 and select "**Properties**" and the properties dialogue window appears
- Click on "**Resources**" tab, and verify that:
  - COM3: Input/Output Range = 0280 – 0287
    Interrupt Request (IRQ) = 05
  - COM4: Input/Output Range = 0288 – 028F
    Interrupt Request (IRQ) = 15
  - Conflicting device list = No Conflicts as shown in figure below:



- If things shown without any errors/warnings, the system is ready for normal operation.

9. PRINERGY APPLICATION INSTALLATION

Follow the installation instructions for the Prinergy 2.0 Software to install this as a Secondary Renderstation as normal.

10. OUTPUT CONTROL SOFTWARE INSTALLATION

Follow instructions to install and configure the output control software as a normal installation.

11. WORKFLOW VERIFICATION

Output a job through the new Prinergy installation to ensure functionality.

Reboot and log into the Impact NT4 system. Output the previous test file to ensure system functionality is fine.

12. POST-INSTALL BACKUPS

Backups were completed for the Impact NT4 installation previously and should not be re-done in the current configuration.

Boot back into the Prinergy W2K installation to back up the new system. Create an Emergency Repair Disk and Disk Configuration disk. Follow the instruction in section 6.5.14

thru 6.5.16 of the document *Prinergy Hardware Configuration And Windows 2000 Installation* [72-3476A-A] to create them as well as a Ghost image of your fully configured Prinergy 2.0 system for recovery. Copy the NT4 and W2K ghost images to an additional backup location for safety, on an attached RAID or across the network.

13. SERVICE NOTIFICATION

Place a label on the output server with the system serial number and a clear indication that this is a W2K – NT4 Dual Boot machine.

Complete the install configuration sheet from your service call indicating that this system is a W2K – NT4 Dual Boot configuration.

Call the Response Center in Burnaby and ask them to put an alert on the system in Clarify to indicate that this system is now in a dual boot configuration.

14. CUSTOMER TRAINING

Show the customer how to boot from one system to the other. Ensure that they make note of the following guidelines:

- No files in process from the Prinergy or Impact workflows before rebooting
- 2 GB free space on the DATADRIVE in Impact if it is shared with the Prinergy system as a DataLog drive
- Exit workflow software, then Restart the system
- How to select the login selection and which is which

Your dual boot Windows 2000 – NT 4.0 installation is now complete.

15. APPENDIX A: WINDOWS 2000 SUPPORT DISK CONTENTS

Directories:

```
\Areader          Acrobat Reader software
\BIOS_FW          Data General AV2300 BIOS Firmware
\BootDisk         DOS and W98 Boot Disk images
\Docs             Windows 2000 Installation Document
\DOS_Util         DOS Ghost and Partition utilies
\EZSCSI           Adaptec EZ-SCSI files
\NetPerf          Network Performance measurement utility
\RECOVERY         Base Windows 2000 Ghost Image
\W2KDRVR          Windows 2000 Drivers
\W2KSP1           Windows 2000 Service Pack 1
\W2K_Util         Windows 2000 Utilities
\WallPP           Prinergy Wallpapers
```

Contents:

```
Readme.rtf
\Areader       Acrobat Reader Directory
    ar40eng.exe
\BIOS_FW       Data General 2300 BIOS Firmware Directory
    av23b111.exe                                \bios\1.BAT
    \bios\2.BAT                                 \bios\AUTOEXEC.BAT
    \bios\BEEP.COM                              \bios\BIOINSTR.TXT
    \bios\BIOS.REC                              \bios\BIOSREC.EXE
    \bios\biosub.EXE                            \bios\IFLASH.EXE
    \bios\LICENSE.TXT                           \bios\OPTIONS.BAT
    \bios\P11-0102.BI1                          \bios\P11-0102.BI2
    \bios\P11-0102.BI3                          \bios\P11-0102.BI4
    \bios\P11-0102.BI5                          \bios\P11-0102.BI6
    \bios\P11-0102.BI7                          \bios\P11-0102.BI8
    \bios\P11-0102.BI9                          \bios\P11-0102.BIA
    \bios\P11-0102.BIO                          \bios\README.TXT
    \bios\RELNOTES.TXT                          \bios\SHOWHDR.EXE
    \bios\USERBIN.USR
\BootDisk      Boot Disk Images Directory
    \DiskDupe\README.TXT
    \DiskDupe\Setup.exe
    \DOSMltSC\Readme.txt
    \DOSMltSC\XX0213AB.img
    \NetBoot\Readme.txt
    \NetBoot\XX0214AA.img
    \W98MltSC\W98Multi.img
\Docs   Windows 2000 Install Document Directory
    72-3476A-A.Doc
\DOS_Util      DOS Utilities Directory
    gdisk.exe
    ghost.exe
    GHOST5.EXE
\EZSCSI        Adaptec EZ-SCSI Directory
    \DISK1\3_5                                  \DISK1\ADAPTEC.INF
    \DISK1\AHA154X.MPD                          \DISK1\AHA154X.SYS
    \DISK1\AIC78U2.MPD                          \DISK1\AIC78U2.SYS
    \DISK1\AIC78XX.MPD                          \DISK1\AIC78XX.SYS
    \DISK1\ARROW.SYS                            \DISK1\DATA.1
    \DISK1\DISK1                                \DISK1\DISK1.ID
    \DISK1\FD16_700.MPD                         \DISK1\FD16_700.SYS
    \DISK1\MINIPORT.EXE                         \DISK1\MINIPORT.INF
    \DISK1\OEMSETUP.INF                         \DISK1\SETUP.EXE
    \DISK1\SETUP.INI                            \DISK1\SETUP.INS
    \DISK1\SETUP.PKG                            \DISK1\SPARROW.MPD
    \DISK1\SPARROW.SYS                          \DISK1\TXTSETUP.OEM
    \DISK1\UNINST.EXE                           \DISK1\_INST32I.EX_
    \DISK1\_ISDEL.EXE                           \DISK1\_SETUP.DLL
    \DISK1\_SETUP.LIB                           \DISK1\3_5\AIC78U2.SYS
    \DISK1\3_5\AIC78XX.SYS                      \DISK2\DATA.2
```

```
     \DISK2\DISK2.ID                                    \DISK2\README.TXT
\NetPerf       Network Performance Tool Directory
     How To.pdf
     netperf.exe
     netserver.exe
     server.bat
     tcp.bat
\RECOVERY      Windows 2000 Base Install Ghost Image Directory
     BLW2K23.GHO
\W2KDRVR       Windows 2000 Drivers Directory
     \ATL_2640\Atlaclmc.inf
     \ATL_2640\atlaclmc.sys
     \ATL_2640\Q248800 - Removable Storage Manager Reports Automatic Library.htm
     \Digi\Beta2
     \Digi\Classic4
     \Digi\Phantom port removal on Windows 2000_files
     \Digi\Phantom port removal on Windows 2000.htm
     \Digi\Beta2\CLASPORT.INF
     \Digi\Beta2\classbrd.cnt
     \Digi\Beta2\classbrd.dll
     \Digi\Beta2\CLASSBRD.HLP
     \Digi\Beta2\CLASSBRD.INF
     \Digi\Beta2\classbrd.sys
     \Digi\Beta2\cocpyinf.dll
     \Digi\Beta2\readme.txt
     \Digi\Beta2\tty.exe
     \Digi\Classic4\CLASPORT.INF
     \Digi\Classic4\classbrd.cnt
     \Digi\Classic4\classbrd.dll
     \Digi\Classic4\CLASSBRD.HLP
     \Digi\Classic4\CLASSBRD.INF
     \Digi\Classic4\classbrd.sys
     \Digi\Classic4\cocpyinf.dll
     \Digi\Classic4\dgcbcln.cmd
     \Digi\Classic4\DigiCbCo.CNT
     \Digi\Classic4\DigiCbCo.dll
     \Digi\Classic4\DIGICBCO.HLP
     \Digi\Classic4\digiclsb.cat
     \Digi\Classic4\digiclsb.sys
     \Digi\Classic4\readme.txt
     \Digi\Classic4\tty.exe
     \Digi\Phantom port removal on Windows 2000_files\click_add_new_hardware.gif
     \Digi\Phantom port removal on Windows 2000_files\click_finish.gif
     \Digi\Phantom port removal on Windows 2000_files\click_next.gif
     \Digi\Phantom port removal on Windows 2000_files\comdb.gif
     \Digi\Phantom port removal on Windows 2000_files\done.gif
     \Digi\Phantom port removal on Windows 2000_files\edit_binary.gif
     \Digi\Phantom port removal on Windows 2000_files\regedit.gif
     \Digi\Phantom port removal on Windows 2000_files\select_digi.gif
     \Digi\Phantom port removal on Windows 2000_files\select_uninstall.gif
     \Digi\Phantom port removal on Windows 2000_files\select_yes.gif
     \Digi\Phantom port removal on Windows 2000_files\uninstall_device.gif
     \DLTTools\Firmware
     \DLTTools\WinTools
     \DLTTools\Firmware\ADIC
     \DLTTools\Firmware\DEC
     \DLTTools\Firmware\Quantum
     \DLTTools\Firmware\ADIC\DS9400 - DLT4000
     \DLTTools\Firmware\ADIC\DS9400 - DLT4000\Readme.txt
     \DLTTools\Firmware\ADIC\DS9400 - DLT4000\V116D4_X1.IMG
     \DLTTools\Firmware\ADIC\DS9400 - DLT4000\V140d4_x1.img
     \DLTTools\Firmware\Quantum\DLT4000
     \DLTTools\Firmware\Quantum\DLT4000\V116D4_1.IMG
     \DLTTools\WinTools\IBMinq.dll
     \DLTTools\WinTools\logpage.bmp
     \DLTTools\WinTools\main.bmp
     \DLTTools\WinTools\OEMINQ.dll
     \DLTTools\WinTools\Seldev.bmp
     \DLTTools\WinTools\selhost.bmp
     \DLTTools\WinTools\selinq.bmp
     \DLTTools\WinTools\selinq2.bmp
     \DLTTools\WinTools\twinrn.PDF
     \DLTTools\WinTools\T_path2.bmp
     \DLTTools\WinTools\WINDLTtools.exe
```

```
     \Dlt_V1.1\d11w2ki.exe                    \Dlt_V1.1\DISK1
     \Dlt_V1.1\QNTMDLT.INf                    \Dlt_V1.1\qntmdlt.sys
     \Dlt_V1.1\README.TXT                     \Emulex8K\driver
     \Emulex8K\fw                             \Emulex8K\driver\emulex.sli
     \Emulex8K\driver\I386                    \Emulex8K\driver\oemsetup.inf
     \Emulex8K\driver\readme.txt              \Emulex8K\driver\I386\elxcfg.exe
     \Emulex8K\driver\I386\elxcfg.lnk         \Emulex8K\driver\I386\elxsli2.sys
     \Emulex8K\fw\DB140.PRG                   \Emulex8K\fw\DD302.AWC
     \FastStor\adic.exe                       \FastStor\adicfs.inf
     \FastStor\adicfs.pdb                     \FastStor\adicfs.sys
     \FastStor\adicfs.zip                     \FastStor\adicfs_old.sys
     \FastStor\readme.txt                     \FastStor\setup.cmd
     \IPro100\8255XDEL.EXE                    \IPro100\8255XNDI.DLL
     \IPro100\ANSMW2K.INF                     \IPro100\ANSPW2K.INF
     \IPro100\E100B.CAT                       \IPro100\E100BNT5.SYS
     \IPro100\E100BW2K.CAT                    \IPro100\IANSW2K.SYS
     \IPro100\IVLANM.INF                      \IPro100\IVLANP.INF
     \IPro100\IVLANW2K.SYS                    \IPro100\NET82557.INF
     \IPro100\PRODD.SYS                       \IPro100\PRODD.VXD
     \IPro100\PROKDDP.SYS                     \IPro100\PROKDDP.VXD
     \IPro100\PROMON.EXE                      \IPro100\PRONTOBJ.DLL
     \IPro100\PROSETP.CNT                     \IPro100\PROSETP.CPL
     \IPro100\PROSETP.HLP                     \IPro100\PROUNSTL.EXE
     \IPro100\UPDATE.TXT                      \IPro100\VERFILE.TIC
     \IPro100\WOL558.VXD                      \IProGiGa\ANSMW2K.INF
     \IProGiGa\ANSPW2K.INF                    \IProGiGa\DIAG1000.EXE
     \IProGiGa\E1000.CAT                      \IProGiGa\E1000DSK
     \IProGiGa\E1000NT3.SYS                   \IProGiGa\E1000NT4.SYS
     \IProGiGa\E1000NT5.SYS                   \IProGiGa\GUIDE.HLP
     \IProGiGa\IANSNT4N.SYS                   \IProGiGa\IANSW2K.SYS
     \IProGiGa\INETWH32.DLL                   \IProGiGa\INTELNIC.DLL
     \IProGiGa\IVLAN.SYS                      \IProGiGa\IVLANM.INF
     \IProGiGa\IVLANP.INF                     \IProGiGa\IVLANW2K.SYS
     \IProGiGa\MAKEDISK.BAT                   \IProGiGa\NET8254X.DIN
     \IProGiGa\NET8254X.INF                   \IProGiGa\OEMSETUP.INF
     \IProGiGa\PRODD.SYS                      \IProGiGa\PROKDDP.SYS
     \IProGiGa\PROMON.EXE                     \IProGiGa\PRONTOBJ.DLL
     \IProGiGa\PROSETP.CNT                    \IProGiGa\PROSETP.CPL
     \IProGiGa\PROSETP.HLP                    \IProGiGa\PROUNSTL.EXE
     \IProGiGa\README.TXT                     \IProGiGa\Zipped
     \IProGiGa\Zipped\1000disk.exe            \Qlg2200\QL2200.SYC
     \Qlg2200\QLOGIC                          \Qlg2200\TXTSETUP.OEM
     \Qlg2200\W2K                             \Qlg2200\W2K\OEMSETUP.txt
     \Qlg2200\W2K\QL2200.CAT                  \Qlg2200\W2K\QL2200.SYS
     \Qlg2200\W2K\README.TXT                  \Qlg2200\W2K\RELEASE.TXT
\W2KSP1 Windows 2000 Service Pack 1 Directory
     sp1network.exe
\W2K_Util      Windows 2000 Utilities Directory
     \Reskit\apimon.cnt
     \Reskit\apimon.exe
     \Reskit\apimon.hlp
     \Reskit\pfmon.exe
     \Reskit\regfind.exe
     \Reskit\sc.exe
     \Reskit\srvinfo.exe
     \Reskit\whoami.exe
\WallPP Prinergy Wallpapers Directory
     Bright Green.bmp
     Deep Blue.bmp
     Deep Green.bmp
     Grey.bmp
     Prinergy.bmp
     PrinergyInsite.bmp
     PrinergyPowerpack.bmp
     Violet.bmp
     Yellow.bmp
```

16. APPENDIX B: MODIFYING DISK PARTITIONS IN WINDOWS NT4

For information on working with Partitions in NT 4, review sections of Module 4 in the CreoScitex NT 4 training course.

Sections from the material have been provided here as a refresher.

Deleting Partitions

All partitions are deleted the same way. Keep in mind that if any part of a Stripe Set or Volume Set is deleted, the whole partition is deleted.

1. ***Right click*** on any portion of a partition and choose ***Delete***
2. Choose ***Yes*** to following message:

All data in the partition or logical drive will be lost!
Are you sure you want to delete the partition or logical drive?

3. Choose ***Commit Changes Now***

To change a Drive Letter:

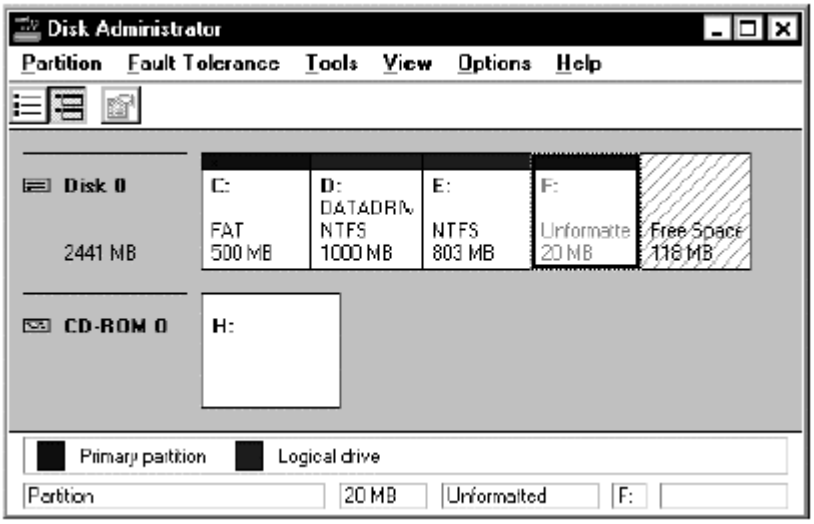
1. ***Right Click*** a partition
2. Choose ***Assign Drive Letter***
3. Select the radio button ***Assign Drive Letter***
4. Use the drop down list to choose the appropriate drive letter
5. Click ***OK***

If a drive letter is already in use, it cannot be chosen from the drop down menu.

There is an option to assign no drive letter at all. You can use this option to obtain access to drive letters that are already in use.

1. ***Right Click*** the partition that has the drive letter you want to change to
2. Choose ***Assign drive letter***
3. Select the radio button ***Do not assign drive letter***
4. Click ***OK***

To create a Primary Partition:



1. ***Right click*** on an area of free space
2. Select ***Create***
3. A message regarding MS-DOS may appear.If a Primary partition already exists a message will appear.

The MS-DOS operating system can only create one Primary partition and that is why this message appears. However, if multiple Primary partitions are created in another operating system, such as NT, these partitions will be accessible in MS-DOS provided they are formatted with the FAT file system.

4. Choose ***Yes***
5. Type in the size of the partition you want to create and choose ***Ok***

By default, the whole area of free space will be allocated to the partition.

6. ***Right click*** on the newly created partition

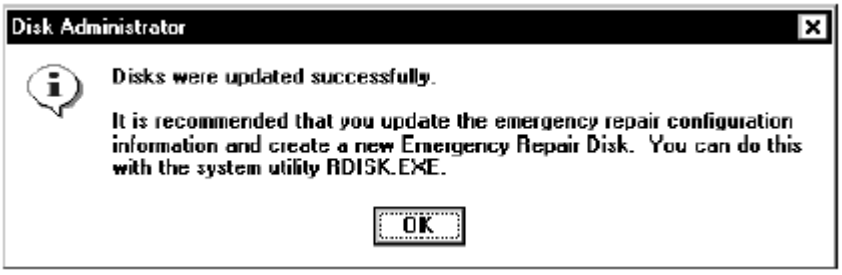
Select **Commit Changes Now**

A message appears:



7. Choose ***Yes***

A message appears:



8. Select ***OK***

It is absolutely critical that disk information remains up to date. If the system crashes, one of the possible recovery mechanisms is to use an Emergency Repair Disk (ERD). If the disk is not updated properly, recovery will simply not work. Information will be lost which could be disastrous to the organization. The ERD will be discussed in detail later in this module.

9. The next step in this process is to format the partitions. Partitions are inaccessible until formatted with a supported file system.

Right Click newly created partition

10. Choose ***Format***

A window appears with several options. This window determines what file system the partition will be formatted with.

- The first drop down list shows the capacity of the partition. This usually appears as an ***Unknown Capacit***y.
- The second drop down allows the choice of formatting with ***FAT*** or ***NTF***S.
- The third drop down specifies the ***Allocation Unit Size*** or block size set for the partition. This can only be changed if the file system is being formatted with NTFS. It is strongly recommended that this setting be left at the default.
- The fourth box allows the user to define a ***Volume Labe***l. A user can give a name to the partition to identify its contents. This label appears in Disk Administrator, Explorer and My

Computer. A label is not required but is useful in identifying the type of information held on a disk (i.e. DATA, APPS, SYSTEM).

- Under ***Format Options*** there are two check boxes:
  - ***Quick Forma***t. If the disk has been previously formatted, the index is deleted. Disk blocks are not checked for errors.

This option can usually be selected safely. If there is a possibility that a disk may be damaged, it is better to leave this box unchecked, but the format will take much longer, depending on the size of the partion being created.

  - ***Enable Compressio***n. This is only available when the partition is formatted with NTFS. FAT does not support compression.

Note: Creo systems are tuned for high performance, therefore using compression is not supported.

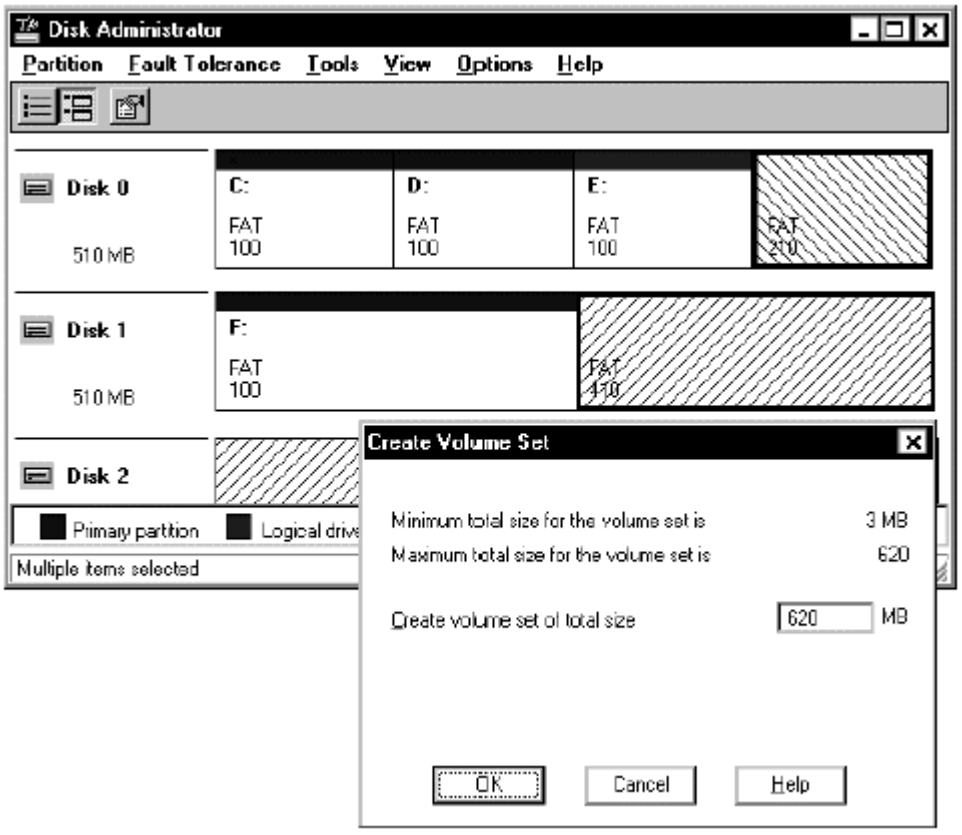
11. Using the drop down list ***File Syste***m, choose the desired file system and click ***Start***

A warning message appears:

"WARNING: Formatting will erase ALL data on this disk. Select OK to format the disk, CANCEL to abort"

12. Select ***OK***
13. When the ***Format Complete*** message appears, select ***OK***
14. Select ***Close***

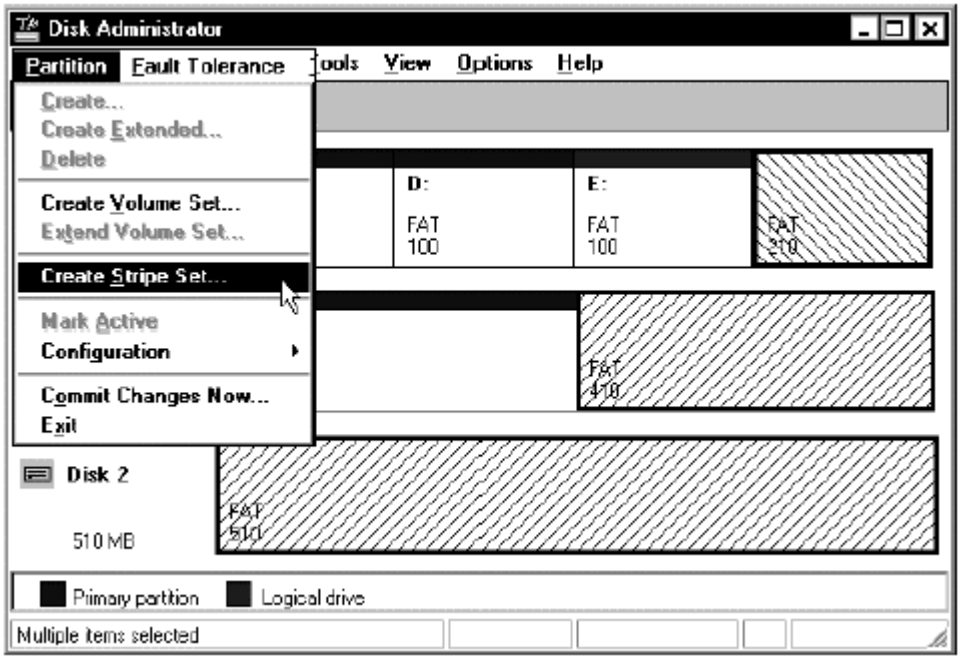
To create a Volume Set



1. Choose two areas of free space by holding down the ***Ctrl*** key and clicking free space with the mouse
2. ***Right Click*** one of the areas of free space and choose ***Create Volume Set***
3. Type in the desired total size of the Volume Set

4. ***Right Click*** the newly created Volume Set and ***Commit Changes Now***
5. Choose ***Yes*** to saving your changes
6. Choose ***Yes*** to continue with changes and restart your computer. Creating a Volume Set requires that the system be restarted.
7. Wait while system restarts
8. ***Right Click*** newly created Volume Set and choose ***Format***
9. Select options for formatting partition
10. Choose ***Start***
11. Choose ***OK*** when Format Complete
12. Choose ***Close***

To create a Stripe Set



1. Choose two areas of free space on two separate physical disks by holding down the ***Ctrl*** key and clicking free space with the mouse
2. ***Right Click*** one of the areas of free space and choose ***Create Stripe Set***
3. Type in the desired total size of the Stripe Set (Remember that with Stripe Sets, the free space has to be the same size on both physical disks)
4. ***Right Click*** the newly created Stripe Set and ***Commit Changes Now***
5. Choose ***Yes*** to saving your changes
6. Choose ***Yes*** to continue with changes and restart your computer. Creating a Stripe Set also requires that the system be restarted.

17. APPENDIX C: 2400H DELL SERVERS WITH PERC RAID CONTROLLERS

17.1 Breaking the Hardware Mirror

Break the NT4 hardware mirror using the FAST utility (Start|Programs|DELL Perc2|FAST). Right click on the mirrored container and choose Split the mirror. This will break the mirror, preserving the NT4 container in Disk 0. Disk 1 will be available for the W2K system or DataLog drive depending on the option selected in Section 4.

17.2 Windows 2000 Install and setting up for Dual Boot

This procedure is to be used in conjunction with the main procedure in Sections 6 and 7.

1. For Dell machines with PERC RAID controllers (2400H only), there is a special order of events that must be followed. This order is very specific. If you deviate from it, this install will not work.
2. Make sure that the server is powered down. Place the disk that is intended for Windows 2000 installation in the next available slot (do not replace the first disk as in the Aviion installations), i.e. if there are disks in bays 1,2 and 3, then install the new disk in bay 4.
3. Remove all disks except for the Windows 2000 disk. This includes any external RAID systems.
4. Power on the server. Initialize the Windows 2000 disk using the PERC Utility. Create a container as a single volume (no mirroring, etc).
5. Shut down the server.
6. Using Ghost, install Windows 2000 on the disk that is still installed. Boot from it and go through the mini-installer and enter the site specific information (computer name, workgroup/domain, W2K Product ID etc.). After the reboot, make sure Windows 2000 is functioning properly. Check the boot.ini file and if necessary change it to boot Win2k off of rdisk(0)partition(3). Shut down the server.
7. Remove the Windows 2000 disk and install it into the first bay (bay 0). *Do not change anything in the PERC setup utility!* The PERC will realize that the disk has moved and will adjust itself accordingly. If it asks you to, accept the changes. Boot Windows 2000 again to be sure it still functions properly. Shut down the server.
8. Put all of the other disks back in their original slots, except the NT4 system disk, which should be put in the slot formerly occupied by the Windows 2000 system disk.
9. Power on the server. While the DELL PERC RAID controller is being scanned, press <CTRL-A> to open the PERC Utility.
    - Choose *Container Configuration Utility* and press <Enter>.
    - Choose *Manage Container* and press <Enter>.

- If the Windows 2000 container is not on top of the list, move cursor to the Windows 2000 container and press <CTRL-B> to make it first in the boot order.
- Note the container number of the Allegro NT4 disk. This number is to be used in configuring the Boot.ini (rdisk number)
- Exit the utility by pressing <Esc> three times.

10. Boot the system again into Windows 2000, and then change the boot.ini file appropriately as per Section 8.1 to reflect the Windows NT disk's location as verified in the previous step.