Technical Note

Upgrade to Windows XP Embedded

Introduction

It is advisable to upgrade the FR0040-00 NV9000 frame (running Windows XP) to an FR0040-02 or FR0040-10 (running Windows XP Embedded).

This process installing a new SSD in a working FR0040-00 controller using an upgrade kit which has all the necessary parts and software installed.

The system being upgraded has been licensed to run Windows XP Professional, so you should see an embedded license sticker in the SSD drive tray next to the drive which permits the system to run Windows XP embedded.

Procedure

Follow these steps to perform this upgrade of the client's controller:

1 Save the client's NV9000 configuration from the controller to a USB flash drive. Record any unique settings of the client's controller. Also make sure that you have the proper kit for the controller at hand: a stand-alone controller kit, primary controller kit, or secondary controller kit.

2 Shut down, power down, and unplug the controller. Wait 30 seconds.

3 Move the two Ethernet NICs to the bottom 2 slots. If there is a serial NIC, place it in the top NIC slot. Refer to Miranda document RF0189-10-A0 for details. Refer also to Technical Note *TN0019-xx Moxa Card Installation*.

4 Remove both drive trays (HDD and SSD) from the controller. Insert the HDD drive tray (the HDD is larger and this tray was in the top bay) in the bottom bay.

To open the drive bay

1 Slide the latch at the right to the right. The lever pops out.

2 Pull the lever until the tray is all the way out.

5 Insert the SSD drive tray *from the upgrade kit* in the top bay. (It should have a license sticker.)

To reinsert a drive tray

1 Push the tray all the way in.

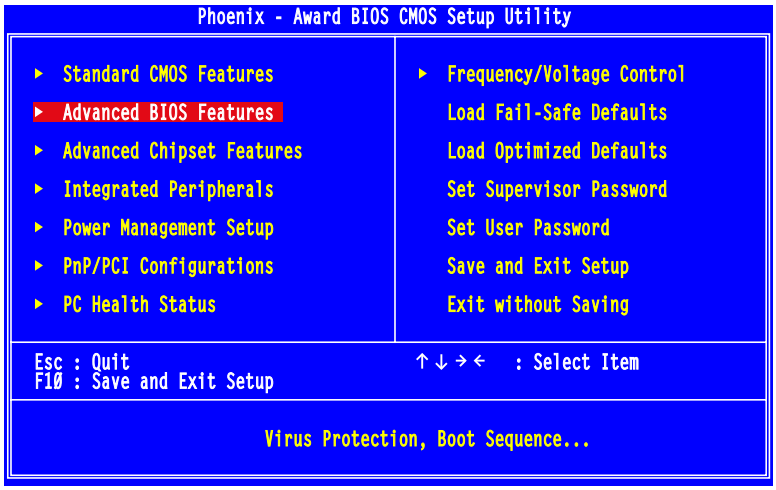
2 The lever should snap closed. Push on the lever to ensure that it closes completely.

6 Plug in the power cords and turn on the controller.

7 Ensure that the controller has the boot priority order set to start with the SSD. This should be automatic because the SSD is currently in drive bay 0 (the top bay).

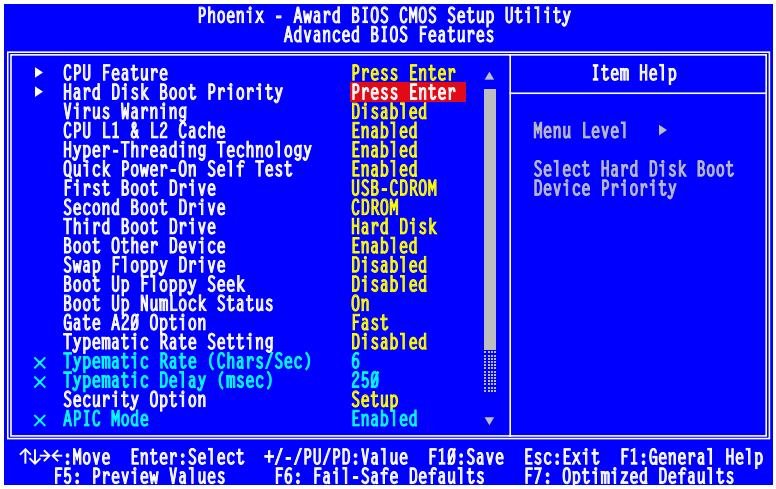
If you are not sure, press and hold the 'Del' key during the initial bootup. The "CMOS Setup" page appears after a few seconds. This is an alphanumeric screen having a blue background and several command options to which you can navigate using arrow keys.

This is the CMOS Setup page:

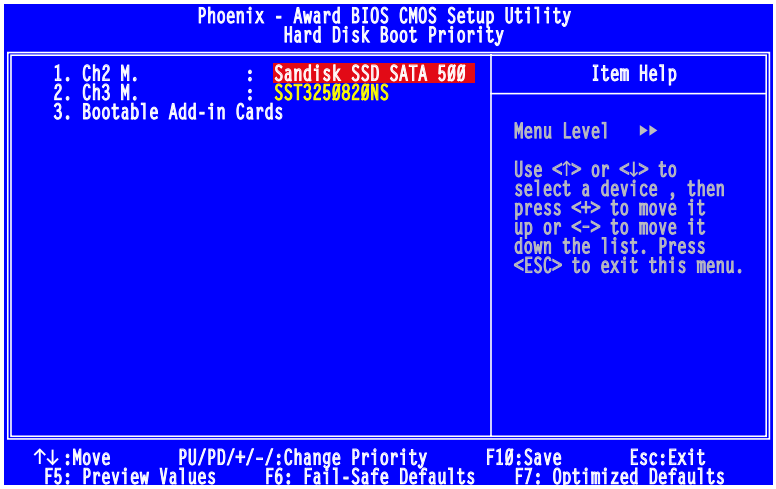


Follow these steps:

1 Using the arrow keys, choose “Advanced BIOS Features”



2 Choose ‘Hard Disk Boot Priority’ and press the ‘Enter’ key. The priority list appears:



3 Follow the directions on the screen to place the SSD first.

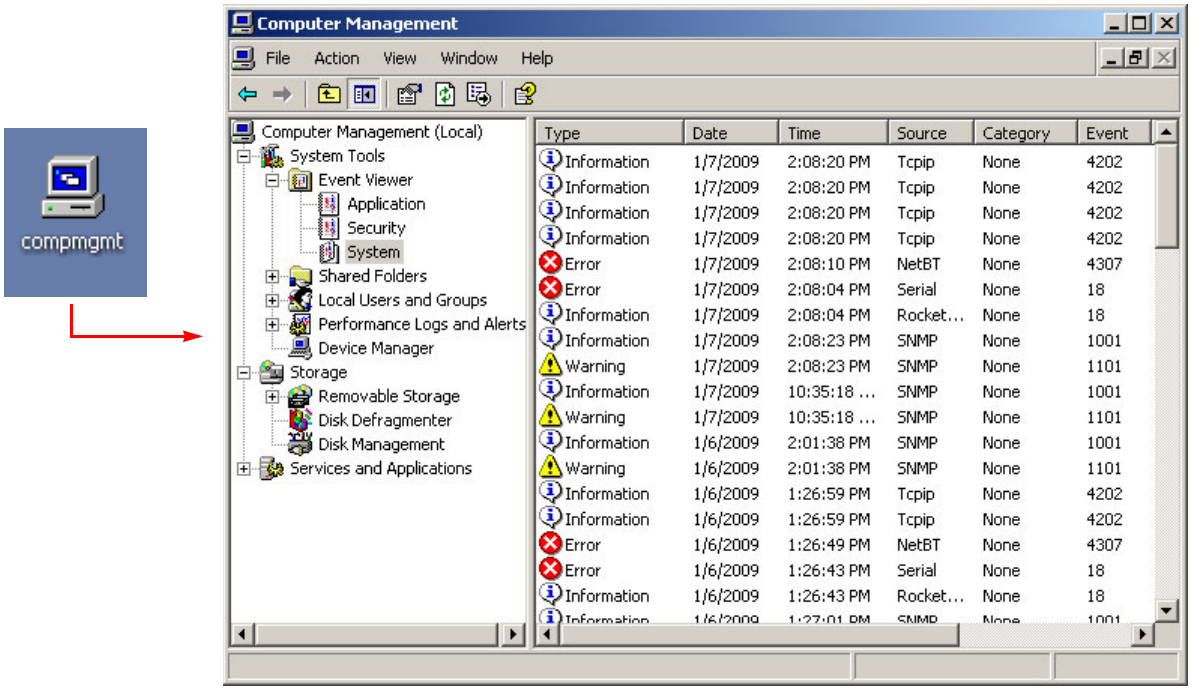
8 Now restart Windows (using the embedded OS on the SSD).

9 Clear event logs after you verify that there were no major errors.

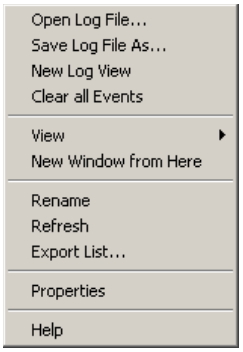
On the desktop, you will find a ‘compmgmt’ tool. It is a copy of this file:

C:\Windows\system32\compmgmt.msc

Launch the tool and choose “Event Viewer’ in the navigation tree:



To clear all events, right-clock the sub-entry (such as System) and choose ‘Clear All Events’ from the context menu:



10 Restart Windows. Again verify that there are no errors in the event logs.

11 Install the client configurations that you saved in step 1. Make changes to the controller to reflect the unique settings that you recorded in step 1. Then restart Windows and verify correct operation.

12 Insert a formatted USB drive into the running controller. The USB drive must have the HDD setup files on it.

You can obtain the relevant files from Miranda’s FTP site. The name of the folder is ***TBD***. See the listing at the end of this note for details. The files total about 400 MB in size. You should place these files in a folder called `Drive_D_hdd_setup_thumb_drive` on the USB drive.

Change the drive letter to ‘X’.

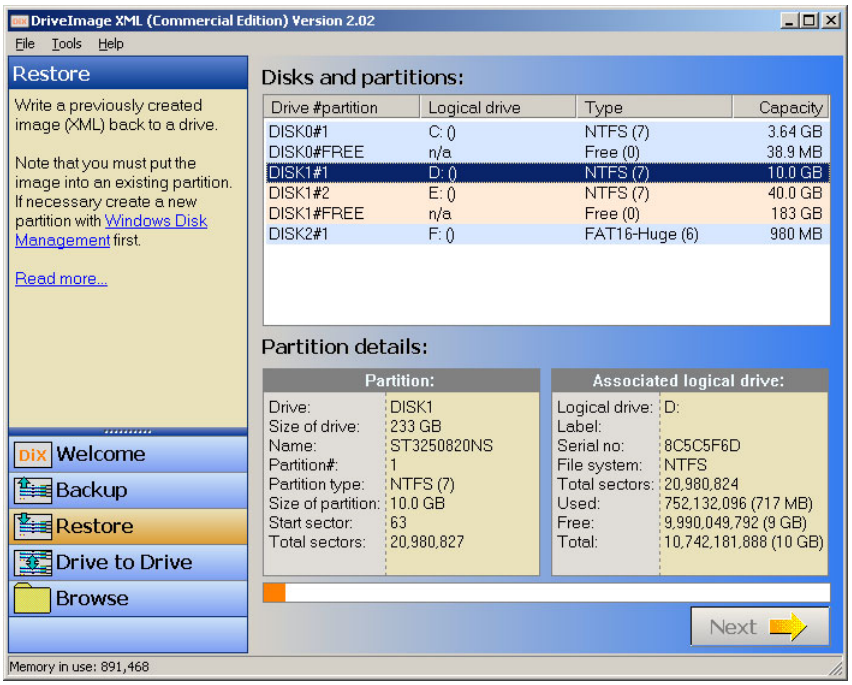
- The USB drive does not have to be bootable, but the SSD must be bootable into Windows XP embedded.

13 When everything is working, run `HDD_image.bat`, in the USB drive, to refresh the HDD.

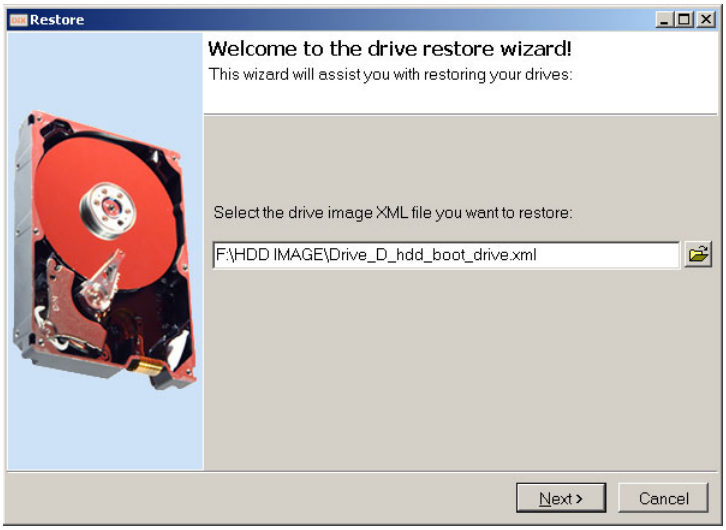
Doing so will clean, re-partition, and format the created partitions on the HDD. It will also create folders and copy files to the `E:` drive. .

14 Now run `Dixmlcom.exe` from the `Dixml` folder (on the USB drive). Choose ‘Restore’ on the left:

In the window that appears, select the D: partition, on the right:



Click ‘Next’. The “restore wizard” appears:



Click the “browse” icon. In the resulting ‘Save’ dialog, select `Drive_D_hdd_boot_drive.xml` in the `HDD IMAGE` folder (on the USB drive). Click ‘Next’ to proceed to restore the `D:` drive.

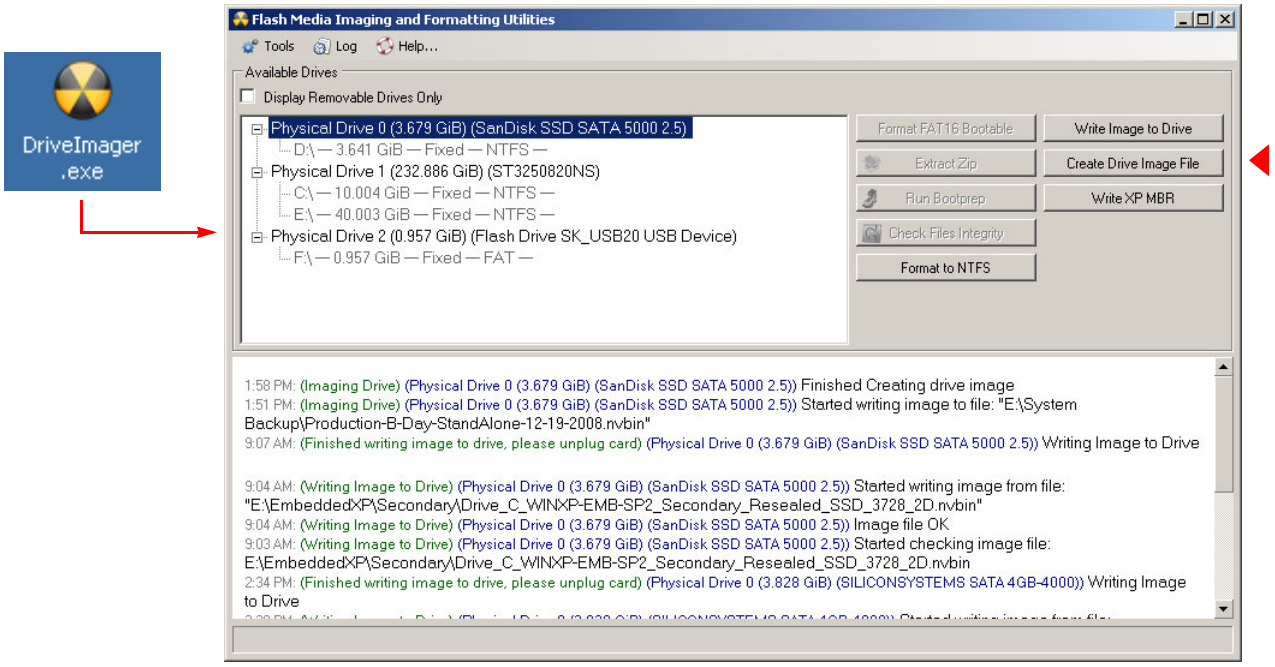
15 Restart the controller, holding the ‘Del’ key down to access the CMOS Setup page. Change the boot priority (as described in step 7) so that the HDD is first in the priority list. The controller will now boot from the HDD.

When Windows’ startup completes, login. You will see the *DriveImager* icon on the desktop.

16 Backup the client’s system SSD to the `E:` drive using *DriveImager*.

Follow these steps:

1 Double-click DriveImager.exe to launch it:

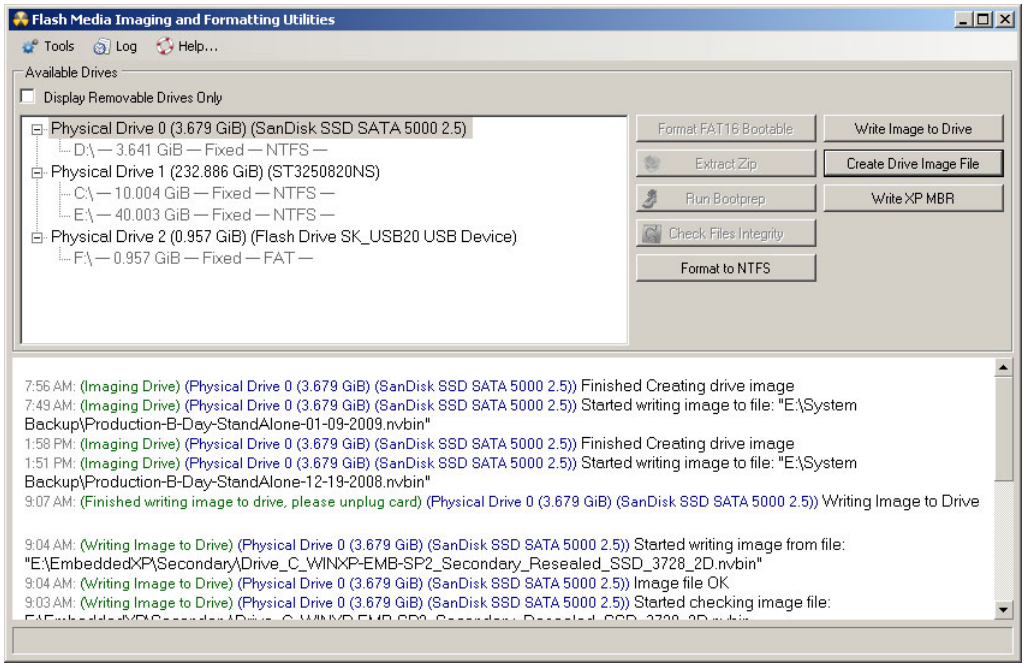


2 Click ‘Create Drive Image File’. A ‘Save’ dialog appears in which you may name the backup image file. The directory is `E:\System Backup`. You should not select a different directory.

Name the backup you create

`Upgrade_B-DAY-`*mm-dd-yyyy*

where *mm*, *dd*, and *yyyy* are the month, day, and year of the backup. After a few minutes, the backup completes and you will see a completion message:



17 When the backup in step 16 is complete, restart the controller, holding the ‘Del’ key to access CMOS Setup. Set the boot priority (as in step 7) so that the SSD is first in the list. The controller will thereafter boot from the SSD.

18 At this point, the upgrade is complete, and you may shut down the controller.

Kits

This is the list of FRUs (field replaceable units) for which we intend to create BOMs in regard to the NV9000 system controller.

- SSD FRU

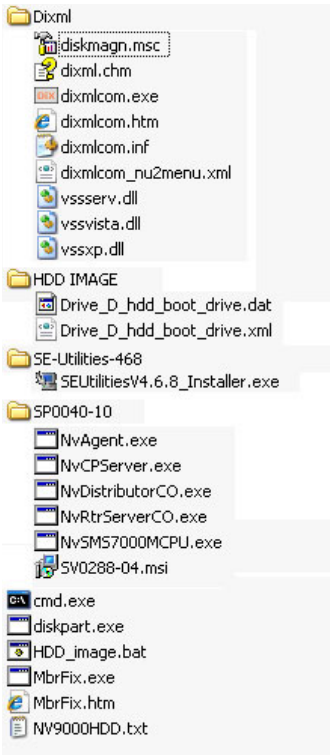
  SSD (solid state drive)
  Drive tray
  Required screws
  XP embedded image loaded

- HDD FRU

  HDD (hard disk drive)
  Drive tray
  Required screws
  Bootable partition with recovery image

Files for the USB Drive

This is the suggested directory structure for the USB drive used in step 12.



Version numbers can vary.