



Avid Configuration Guidelines

HP Z800 Dual Six-Core / Dual Quad-Core CPU Workstation Media Composer 6.0, Symphony 6.0, NewsCutter 10 and later

(To configure a Z800 for prior versions of Avid software see the earlier version Z800 guide posted on the Avid KB)

1.) HP Z800 AVID Qualified System Specification:

Z800 / AVID Qualified Operating System choices:

- Microsoft® Windows 7 Professional 64-bit Edition with Service Pack 1

Z800 Hardware Configuration

Supported CPU Choices

- 1.) Dual Intel® 6-Core Xeon® X5650 Processors @ 2.66GHz 12MB cache / 1333MHz memory
- 2.) Dual Intel® Quad-Core Xeon® X5570 Processors @ 2.93GHz 8MB cache / 1333MHz memory **
- 3.) Dual Intel® Quad-Core Xeon® X5550 Processors @ 2.66GHz 8MB cache / 1333MHz memory **

****** *These processor selections have gone End-of-Life and are no longer available in new systems being purchased from H.P.*

Video Card Choices

- 1.) NVIDIA Quadro 4000 2GB PCI-e video board (qualified with 6-core X5650 2.66Ghz processors)
 - 2.) NVIDIA Quadro FX 3800 1GB PCI-e video board (qualified with 6-core X5650 2.66Ghz processors)
 - 3.) NVIDIA Quadro FX 4800 1.5GB PCI-e video board (qualified with 4-core X5570 2.93Ghz and 4-core X5550 2.66Ghz processors)
- 320GB (minimum) SATA-II 3Gb/s 7200RPM System Disk Drive
 - Standard AVID memory configuration: 6GB (6 x 1GB) DDR3 1333 ECC memory –
(Requires six 1GB DIMMs, DIMM sizes cannot be mixed sizes)
1GB memory modules must be installed in the following memory slots:
CPU0-DIMM1, CPU0-DIMM3, CPU0-DIMM5
CPU1-DIMM1, CPU1-DIMM3, CPU1-DIMM5

Optional 12GB memory configurations:

- 1) Optional AVID memory configuration: 12GB (12 x 1GB) DDR3 1333 ECC memory –
(Requires twelve 1GB DIMMs, DIMM sizes cannot be mixed sizes)
1GB memory modules must be installed in the following memory slots:
CPU0-DIMM1, CPU0-DIMM2, CPU0-DIMM3, CPU0-DIMM4, CPU0-DIMM5, CPU0-DIMM6
CPU1-DIMM1, CPU1-DIMM2, CPU2-DIMM3, CPU3-DIMM4, CPU4-DIMM5, CPU5-DIMM6
- 2) Optional AVID memory configuration: 12GB (6 x 2GB) DDR3 1333 ECC memory –
(Requires six 2GB DIMMs, DIMM sizes cannot be mixed sizes)
2GB memory modules must be installed in the following memory slots:
CPU0-DIMM1, CPU0-DIMM3, CPU0-DIMM5
CPU1-DIMM1, CPU1-DIMM3, CPU1-DIMM5

Memory configuration constraints

- No other memory configurations are formally supported in AVID environments. Only the 6GB (6 x 1GB), and two 12GB configurations (12 x 1GB) and (6 x 2GB) configurations are supported. Memory configurations which mix and match memory module sizes and locations will result in a poor performing, non-optimal operating environment.

2.) Qualified Operating Systems for Avid Client Editing Applications, Hardware and Shared-Storage connectivity for the HP Z800 with Media Composer / Symphony 6.0 , NewsCutter 10 or later:

- **Supported: Only Microsoft® Windows 7 Professional 64-bit Edition with SP1 (SP1 required)**
- **Not Supported - Microsoft® Windows XP 32-bit, 64-bit (any version)**
- **Not Supported - Microsoft® Windows Vista 32-bit, 64-bit (any version)**
- **Not Supported - Microsoft® Windows 7 – any 32-bit version, or any version of Home, Ultimate or Enterprise editions.**

Note regarding Service packs:

As of this writing Service Pack 1 is the current Service Pack release for Win7. SP1 is required for Media Composer 6.0, Symphony 6.0 and NewsCutter 10. As future Service Packs are released Avid will evaluate and announce formal support when testing is completed.

3.) Qualified Hardware and shared storage supported:

AVID qualified Hardware / Shared Storage

	Qualified / Supported
Mojo DX	Yes
Nitris DX	Yes
3 rd Party Qualified Hardware	See release notes and Avid website for information regarding supported 3 rd party hardware (vendor qualified)
Unity ISIS System Infrastructure	ISIS 1.4 Infrastructure
Unity ISIS 1 Gbit Ethernet Client	ISIS 2.03 Client
Unity ISIS Hi-res (10 Gbit) client	Requires minimum ISIS 2.2 ISIS 7000 only
Unity MediaNet Infrastructure	MediaNet 4.2.4 Infrastructure
Unity MediaNet Fibre	MediaNet 5.1.2 Client
Unity MediaNet AECIFs	MediaNet 5.1.2 Client
1394 Adrenaline DNA	N/A Not Supported
1394 Mojo-SDI DNA	N/A Not Supported
1394 Mojo-Analog DNA	N/A Not Supported

AVID qualified HBA info

AVID qualified HBA	AVID Part Number	Slot Location	Function
Avid HIB, DX Interface HBA **	Active: 7030-30048-01 Active: 7030-20084-01 Passive: 7030-30021-01	#1	Avid DX Hardware Interface HBA
Qualified 3 rd party hardware interface (vendor qualified)	Not stocked by AVID	#1	See release notes and Avid website for information regarding supported 3 rd party hardware
Atto FC-41ES	7030-20004-01	#4	Shared Storage: Unity MediaNet Fibre
Intel PRO 1000 PT - ISIS	7030-20139-01	#4	Shared Storage: Unity ISIS Copper Gb-Ethernet
Intel PRO 1000 PF - ISIS	Not stocked by AVID	#4	Shared Storage: Unity ISIS Optical Gb-Ethernet
Myricom 10G-PCIE-8B-S Requires minimum ISIS 2.2 (ISIS 7000 only)	7030-30041-01	#4	Shared Storage: Unity ISIS 10Gb-Ethernet Requires minimum ISIS 2.2 (ISIS 7000 only)
Atto R380	7030-20166-01	#5	Local SAS Storage Support – Avid VideoRAID ST (5-bay) Xtore StudioRAID 5Ti (5-bay)
Atto UL5D	7030-20002-01	#5	Local u320 SCSI Storage – VideoRAID RTR & Legacy Avid u320 SCSI storage <i>(The UL5D BIOS should be disabled)</i>

**** [Avid DX Interface HBA Support Note: \(See reference pictures on page 6 of this guide\).](#)**

All 3 versions of the DX interface HBA are supported with the Media Composer / Symphony 6.x and NewsCutter 10.x

- 1) Active DX interface HBA 7030-30048-01
- 2) Active DX interface HBA 7030-20084-01
- 3) Passive DX interface HBA 7030-30021-01

4.) Slot Configuration:

Slot Configuration Information			
Slot #	Electrical	Mechanical	
1	x4 PCI-E Gen 2	x8	<p>Avid HIB, DX Interface HBA</p> <p>Active: 7030-30048-01 & 7030-20084-01 Passive: 7030-30021-01</p> <p><u>OR</u></p> <p>Vendor Qualified 3rd Party Hardware PCI-e Interface <i>See release notes and Avid website for information regarding supported 3rd party hardware</i></p>
2	x16 PCI-E Gen 2 (225Watts)	x16	<p>Graphics Card:</p> <p>Quadro 4000** Quadro FX 3800** Quadro FX 4800 ***</p>
3	x4 PCI-E Gen 1	x8	<i>Not Used</i>
4	x8 PCI-E Gen 2	x16	<p>Shared Storage Controllers:</p> <p>Atto FC-41ES – MediaNet LAN Share Intel PRO 1000 PT – ISIS 5000 / 7000 Intel PRO 1000 PF – ISIS 5000 / 7000 Myricom 10G-PCIE-8B-S – ISIS 5000 / 7000</p>
5	x16 PCI-E Gen 2 (225Watts)	x16	<p>Local Storage Controllers:</p> <p>Atto R380 – SAS Avid VideoRAID ST (5-bay) support Atto R380 – SAS Xtore StudioRAID 5Ti (5-bay) support Atto UL5D - Legacy u320 SCSI support <i>(The UL5D BIOS should be disabled)</i></p>
6	PCI-E 32bit /33MHz	PCI 32/33	<i>Secondary SAS Port (Embedded)</i>
7	x8 PCI-E Gen 2	x16	<p><i>Optional if needed –</i> <i>Panasonic P2 PCI-E reader HBA, USB 3.0 HBA</i></p>
	Embedded Broadcom BCM5764 GbE NIC	PCI-E x1 Gen 1	<p><i><u>Not qualified</u> for Avid ISIS 5000 / 7000 Connectivity</i> <i><u>Qualified</u> for Avid MediaNetwork AECIFs</i></p>

**** qualified only with 6-core X5650 2.66 GHz processors**

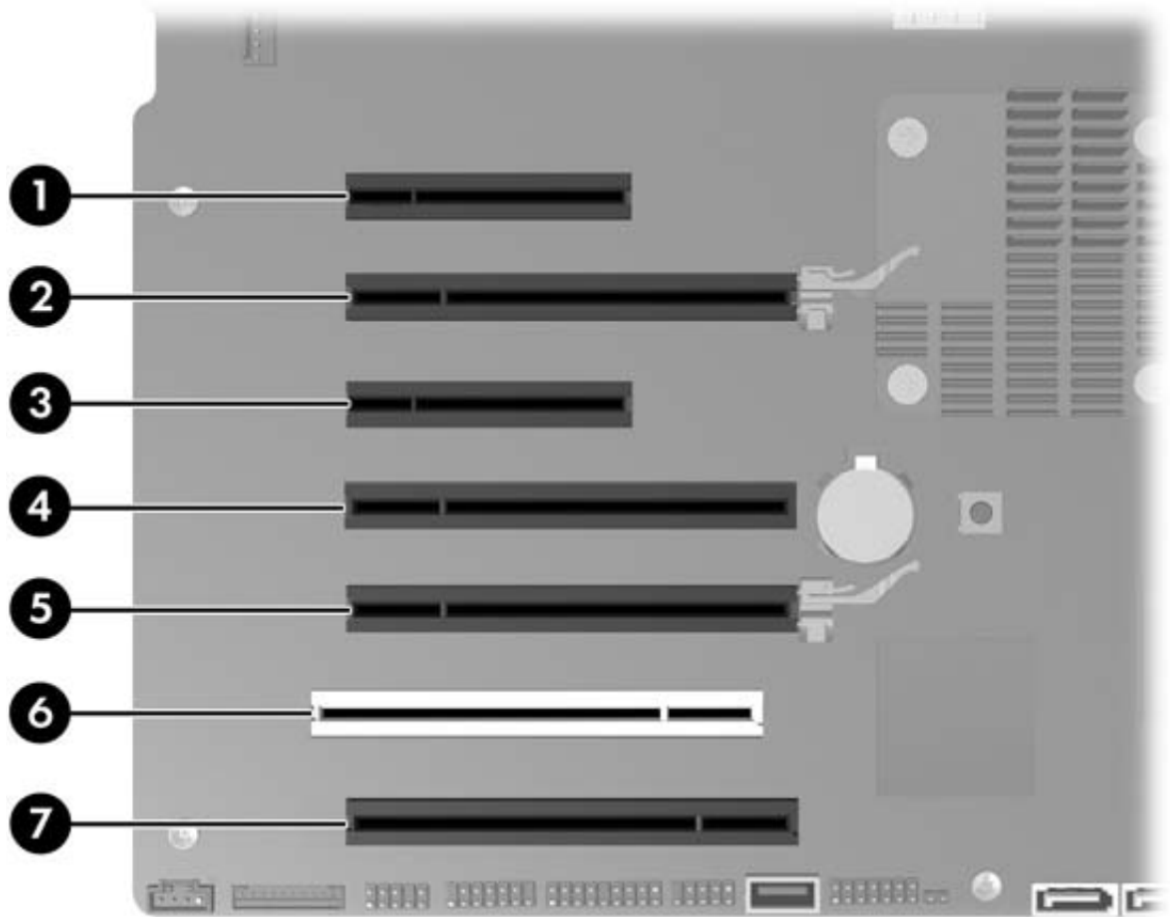
***** qualified only with 4-core X5570 2.93 GHz and 4-core X5550 2.66 GHz processors**

6.) Utilization of the Z800 embedded (on-board) 1394 ports for Camera / Deck / Disk Drive support

Media Composer / Symphony 6.0 and NewsCutter 10 do not support Avid 1394 hardware such as Adrenaline and 1394 Mojo-SDI. This simplifies utilization of the Z800 embedded 1394 ports. The embedded 1394 ports can and should be used for all 1394 Camera / Deck / Disk Drive connectivity for all configurations running Media Composer / Symphony 6.0 and NewsCutter 10.

<u>Configuration</u>	Embedded 1394 utilization for Camera / Deck / Disk Drive support
Avid DX Hardware	Yes - Supports 1394 Deck / Camera / Disk Drive (1394 disk drives are recommended only for file transfers)
Software Only	Yes - Supports 1394 Deck / Camera / Disk Drive (1394 disk drives are recommended only for file transfers)
Vendor Qualified 3 rd Party PCIe Hardware	Yes - Supports 1394 Deck / Camera / Disk Drive However 3rd party hardware and a 1394 Camera or Deck cannot be simultaneously connected. (1394 disk drives are recommended only for file transfers)

HP Z800 Slot Layout



8.) Various Configuration Details:

A.) D/X hardware configs –

All 3 versions of the DX interface HBA are supported with the Media Composer / Symphony 6.x and NewsCutter 10.x

- 1) Active DX interface HBA 7030-30048-01
- 2) Active DX interface HBA 7030-20084-01
- 3) Passive DX interface HBA 7030-30021-01

Active DX interface HBA 7030-30048-01



Active DX interface HBA 7030-20084-01



Passive DX interface HBA (7030-30021-01)



B.) Qualified Avid system BIOS version(s): (As of this writing):

Failure to update the Z800 to an "Avid qualified BIOS" and set the BIOS settings per the instructions below may result in non-optimal operation of the AVID software and hardware.

Quad-Core CPU configurations:

- Minimum BIOS ver 1.06
- Also qualified ver 1.14, ver 1.17, ver 3.07, ver 3.12, ver 3.13, ver 3.15, ver 3.16, ver 3.19, ver 3.20, *ver 3.21 (preferred)*

6-Core CPU configurations:

- Mandatory Minimum BIOS ver 3.12
- Also qualified ver 3.13, ver 3.15, ver 3.16, ver 3.16, ver 3.19, ver 3.20, *ver 3.21 (preferred)*

-
Current Avid qualified Z800 BIOS information is maintained at the following Avid KB link:

<http://avid.custkb.com/avid/app/selfservice/search.jsp?DocId=267609&Hilite=hp+bios>

C.) Required system BIOS settings for AVID environments:

Hyper-Threading Setting:

***Please Note:** CPU Hyper-threading should be enabled in all configurations per the chart below.*

Software Version	Hyper-Threading Setting	
	Dual 6-core CPU	Dual 4-core CPU
Media Composer v6.x Symphony v6.x NewsCutter v10.x	Enabled (Mandatory)	Enabled (Mandatory)

Z800 Required system BIOS changes:

1. Set CPU Processors Hyper-Threading – *Set per chart above*
2. Set Memory Mode Interleave – *Enable*
3. Set Runtime Power Management - *Disable*
4. Set MWAIT-Aware OS - *Disable*
5. Set Idle Power Savings - *Normal*

Z800 Optional system BIOS change:

1. Set Intel Turbo Boost Technology^{**} – *Disable*
^{**} Only required if connecting USB audio I/O devices. This setting will eliminate any audio "motor-boating" or audio "popping" which may be experienced with USB audio I/O devices.

Set Z800 Required system BIOS changes:

- During boot up press F10 at the HP splash screen to invoke Set Up.
- Select the Advanced tab
- Select Processors. <Enter>
- Select Hyper-Threading
- Default setting is Disable
 - Set for Disable or Enable per Hyper-Threading chart above
- Select Chipset / Memory. <Enter>
- Select Memory Mode Interleave
- Default setting is Disable
 - Change this setting from Disable to Enable
- Hi F10 to save the Hyper-Threading and Memory Mode Interleave settings
- Select the Power tab
- Select OS Power Management <return>
- Select Runtime Power Management
- Default setting is Enable
 - Change this setting from Enable to Disable
- Select MWAIT-Aware OS
- Default setting is Enable
 - Change this setting from Enable to Disable
- Select Idle Power Savings
- Default setting is Extended
 - Change this setting from Extended to Normal
- Hi F10 to save the Runtime Power Management, MWAIT-Aware OS, and Idle Power Savings
- Press F10 twice to Save
- Save Changes and Exit
- System will Reboot

Set Z800 Optional system BIOS setting:

- Select the Power tab
- Select Hardware Power Management <Enter>
- Select Intel Turbo Boost Technology
- Default setting is Enable
 - Change this setting from Enable to Disable
- Press F10 twice to Save
- Save Changes and Exit

D.) Nvidia Qualified Driver:

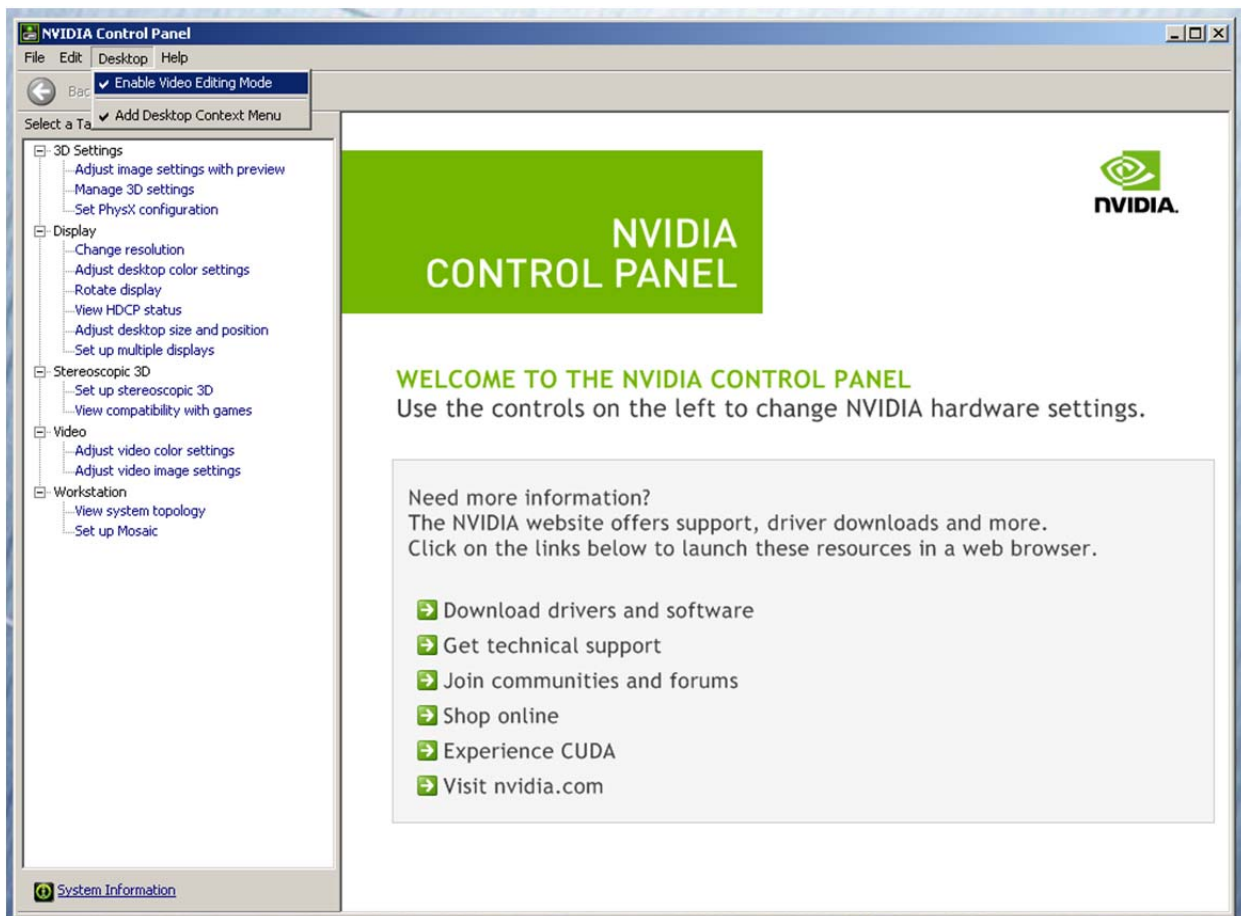
Nvidia qualified drivers

AVID Software	Version(s)	Nvidia GPU	Nvidia Driver Required
Media Composer / Symphony	6.0 and later	Quadro 4000 Quadro FX 4800 Quadro FX 3800	275.89
NewsCutter	10.0 and later	Quadro 4000 Quadro FX 4800 Quadro FX 3800	275.89

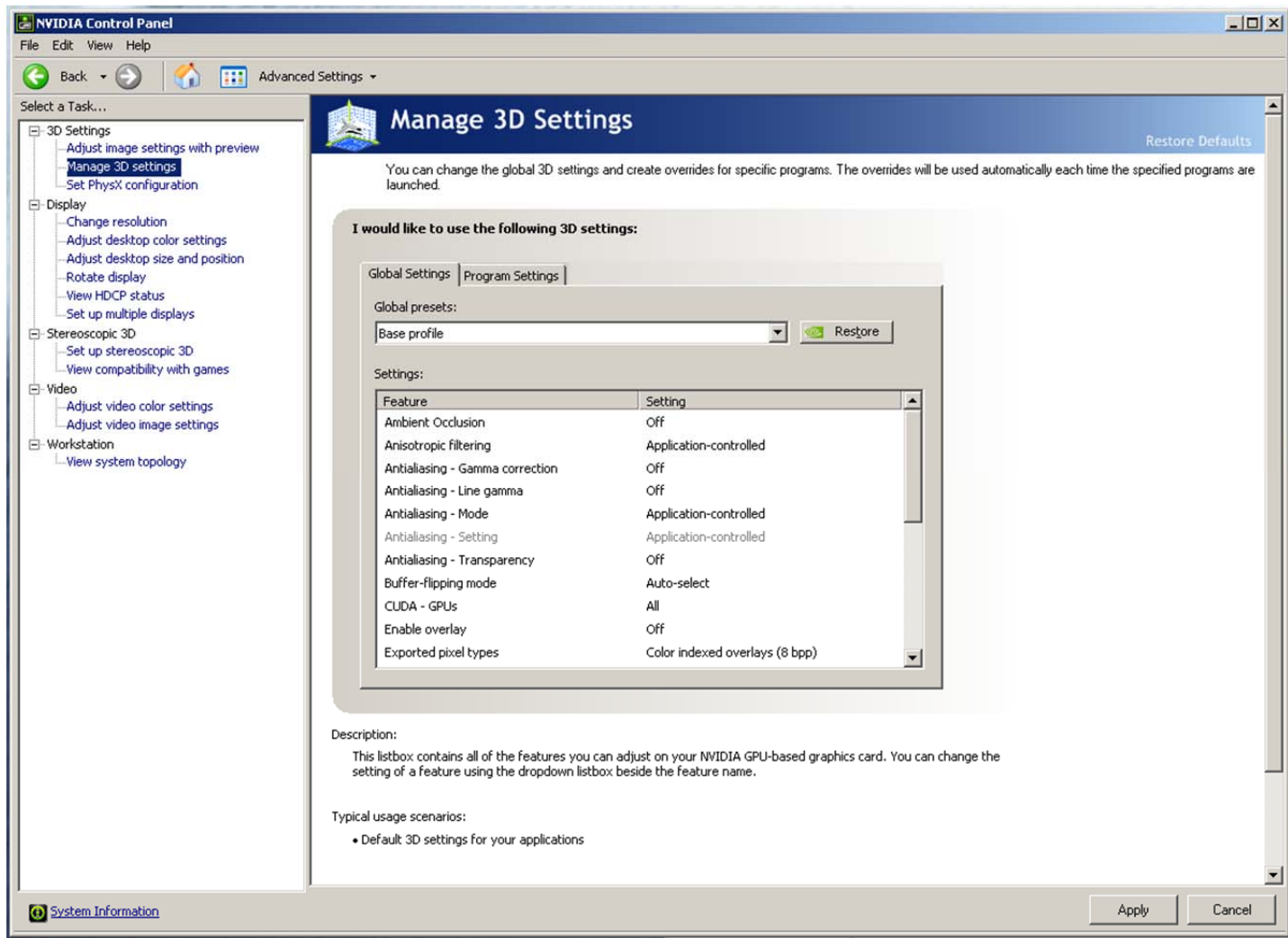
After installation of the AVID software the supported Nvidia driver can be found in the following directory:
[Program Files / Avid / Utilities / Nvidia](#)

Set optimized Nvidia driver settings for Avid editing environments:

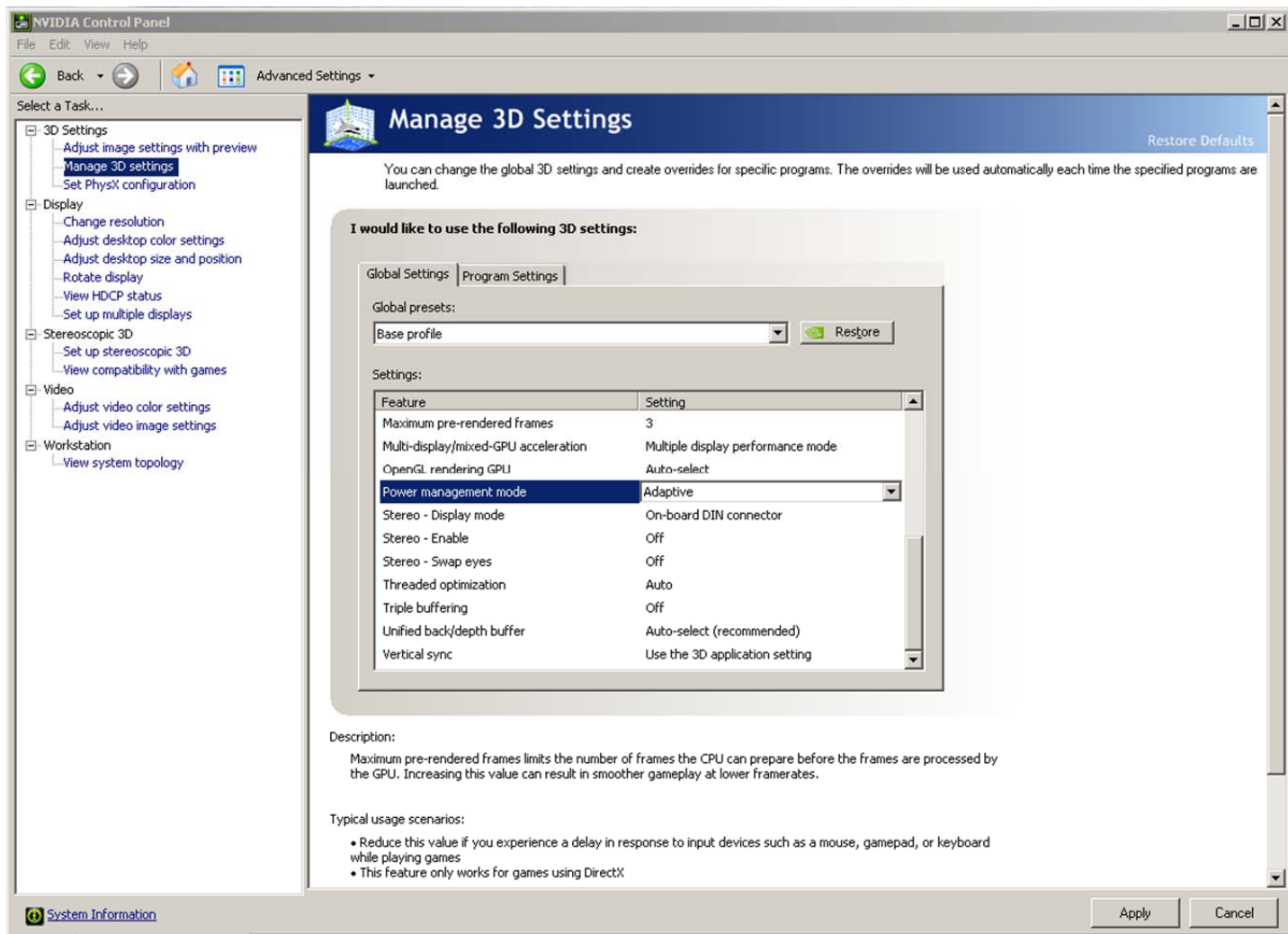
1. See picture below
2. Right-Click on the desktop and select Nvidia Control Panel
3. Select the “Desktop” menu selection in the control panel menu bar.
4. Enable “Desktop -> Video Editing Mode



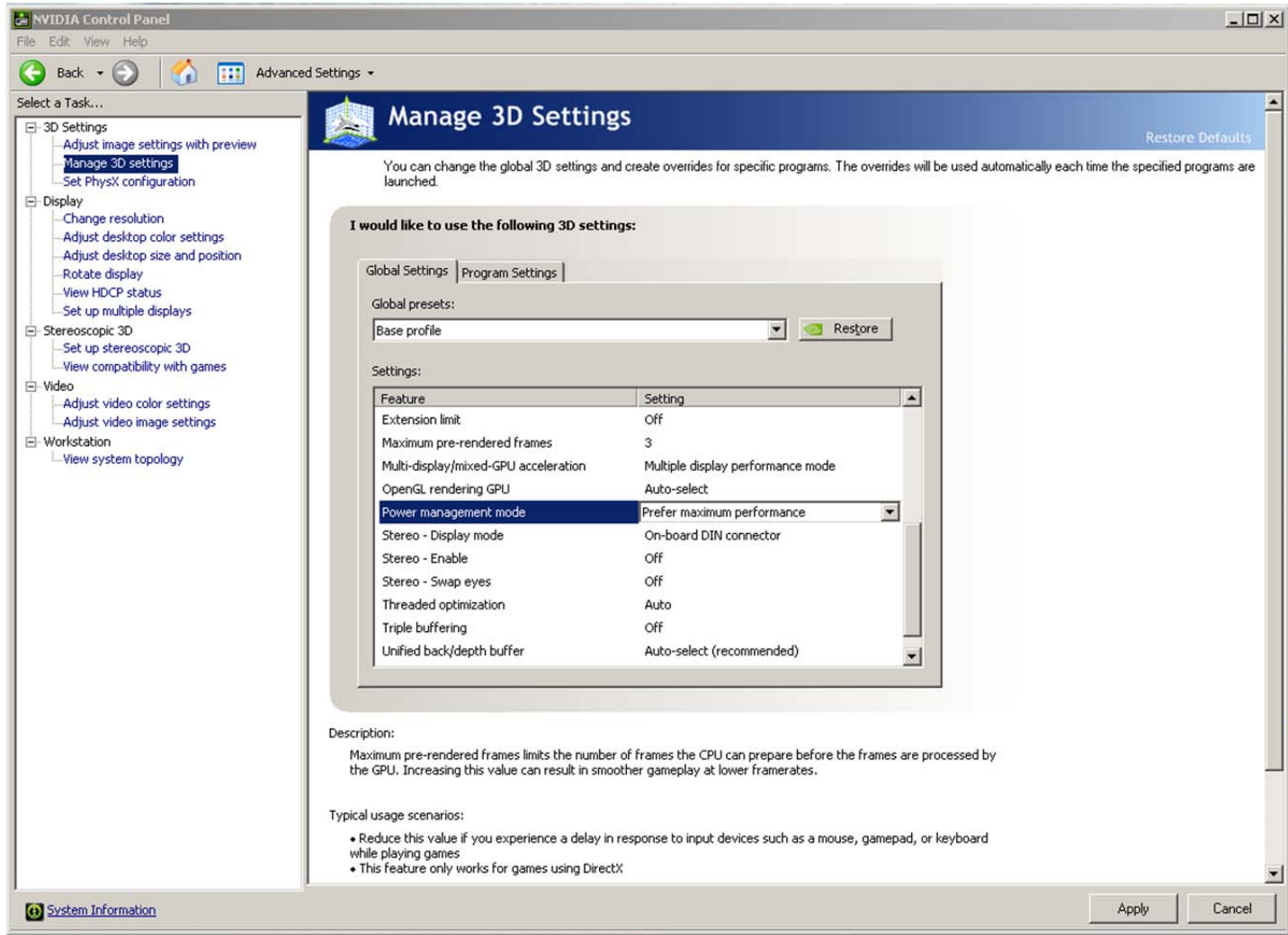
5. Select Manage 3D Settings
6. Select "Global Settings" Tab
7. Under the "Global Settings" tab select "Base Profile" as shown in the picture below:



8. Scroll down and locate the “Power Management Mode” feature. The default setting is “Adaptive” as shown in the picture below.



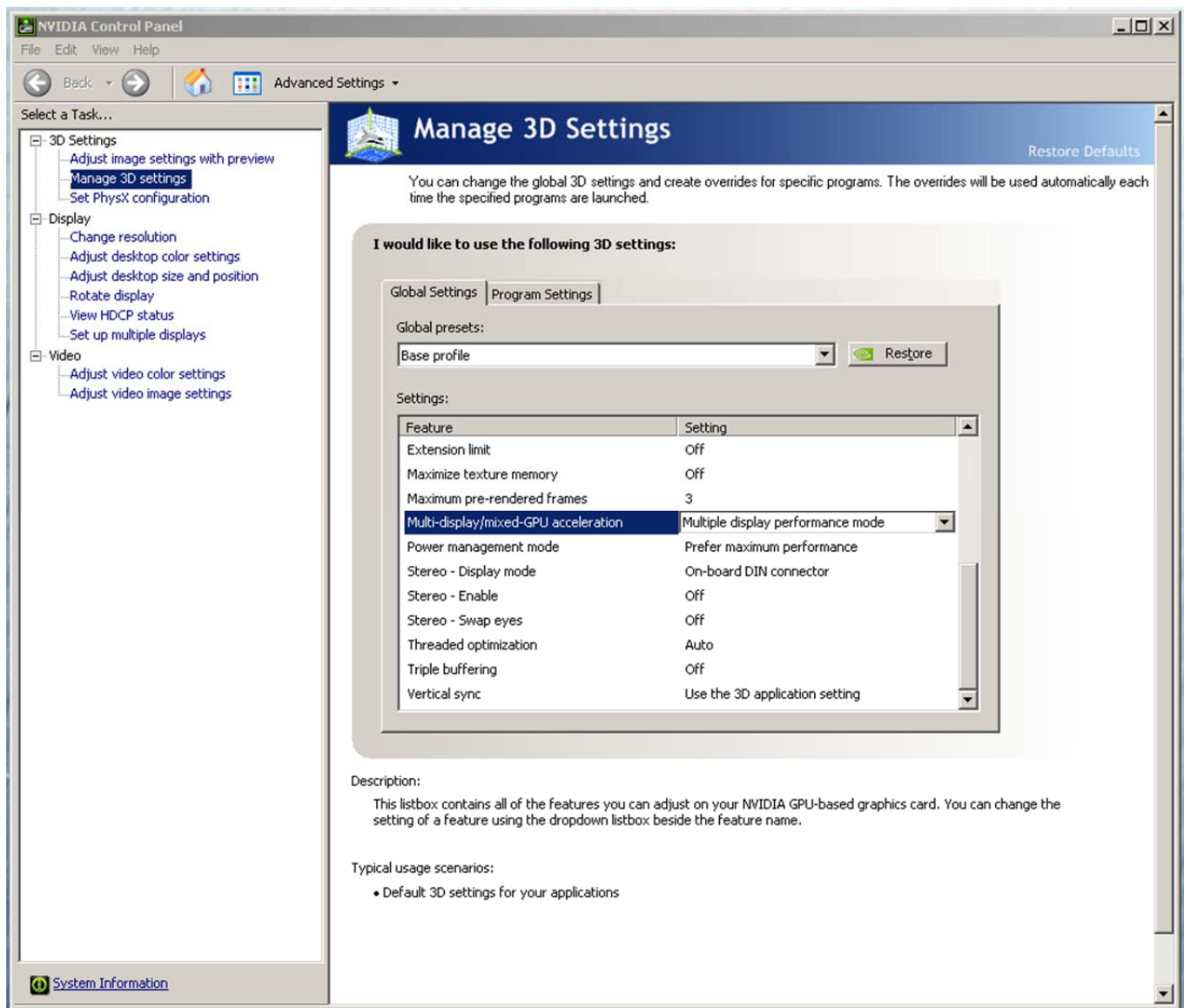
9. For the “Power management mode” feature, select “Prefer maximum performance” as shown in the picture below.



10. Depress the “Apply” button.

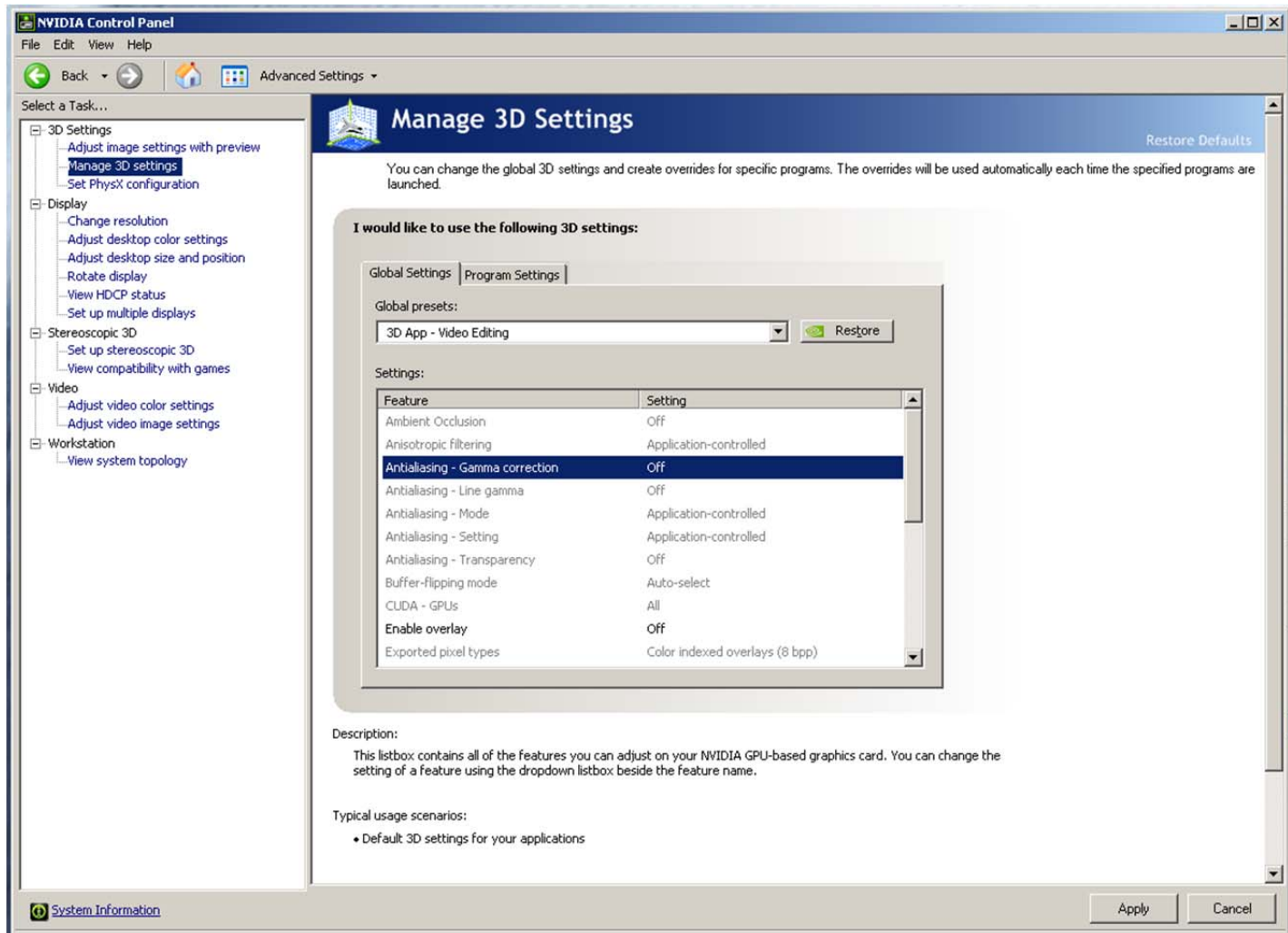
Make the following setting for “Multi-display/mixed-GPU acceleration”

11. Stay in the “Manage 3D Settings” and “Base Profile” area
12. Select “Global Settings” Tab
13. Scroll down and locate the “Multi-display/mixed-GPU acceleration” feature. See picture below. The setting should be set to “Multiple display performance mode”. If not set properly, select Multiple display performance mode and depress the “Apply” button. (The other settings are “Single display performance mode” and “Compatibility performance mode”. These settings are not recommended for Avid editing environments).



Make the following additional setting for “3D App-Video Editing”

14. Stay in the “Manage 3D Settings” area
15. Select “Global Settings” Tab
16. Under “Global Settings” tab select “3D App-Video Editing” setting as shown in picture below:



17. Depress the “Apply” button
18. Nvidia driver optimization settings for Avid environments are complete.

E.) Nvidia Quadro GPU monitor connectivity:

The Nvidia Quadro 4000, Quadro FX 4800 and Quadro FX 3800 graphics card have a single DVI port and two Display-Port ports

(Important: Display-ports are not HDMI ports; at first glance they do look very similar to HDMI ports)

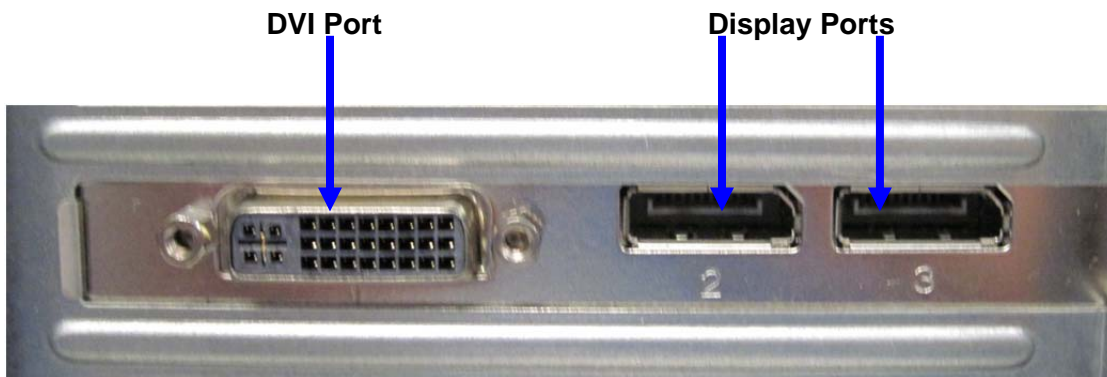
(Please Note: Only two of the three video ports can simultaneously be used. Connecting to all three video ports at the same time will result in non-functioning video output from the Nvidia GPU video card.)

The HP Z800 includes one Display-Port-to-DVI adapter. HP P/N 481409-001

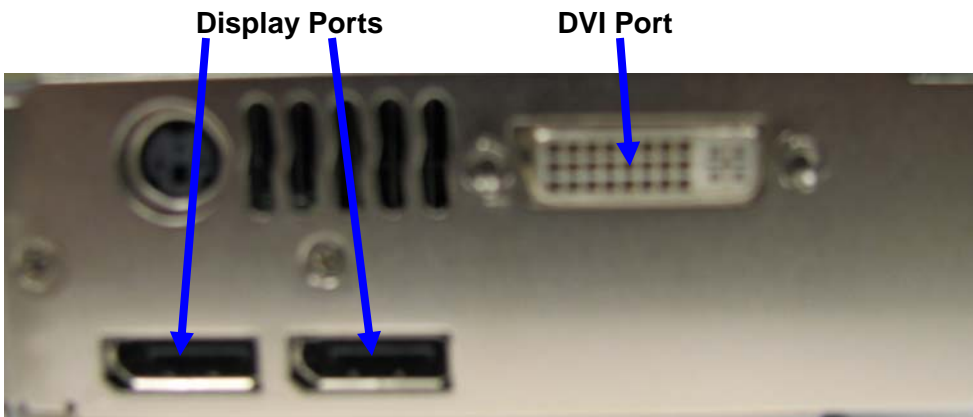
For dual monitor connectivity:

1. Use the DVI port and one Display-Port (Display-Port connection can be native display-port to monitor via display-port connection, or use the display-port-to-DVI-adapter supplied with the system to connect to a native DVI monitor).
2. Or use two Display-Ports *(Requires monitors with native display-port connections, two display-port to DVI adapters are not recommended when using dual display-port connections).*

Reference picture Quadro FX 3800 (similar to Quadro 4000)



Reference picture Quadro FX 4800



F.) Serial Port Deck Control:

Serial Port Deck Control:

The HP Z800 workstation does have an embedded serial port. The embedded serial-port has been qualified by Avid and will maintain frame accuracy in Avid environments. Primary or secondary / additional serial port deck control can be established via two methods (both of which have been qualified by Avid and will maintain frame accuracy in Avid environments)

1. Addenda model **RS-USB / 4** direct USB-to-RS422 serial adapter. This is a simple device which connects directly from a USB port of the Z800 directly to the RS422 port of a deck.
<http://www.addenda.com/addenda-elect/products/rsUSB4.php>
2. Combination of a Keyspan (Tripp-Lite) Model USA-19HS USB-to-serial-port adapter with Addenda Rosetta Stone model RS – 2/8 RS232-to-RS422 converter
 - Keyspan (Tripp-Lite) Model USA-19HS (AVID P/N 7080-20013-01)
<http://www.tripplite.com/en/products/model.cfm?txtSeriesID=518&EID=13384&txtModelID=3914>
 - Addenda Rosetta Stone (or equivalent) model RS – 2/8 RS232-to-RS422 converter (AVID P/N 7070-00507-01)
<http://www.addenda.com/addenda-elect/products/rs28.php>

To connect the Keyspan 19HS / Addenda RS -2/8 combination:

- Install the Keyspan 19HS driver before plugging the device into a Z800 USB port.
- Once the Keyspan 19HS driver is installed then plug the Keyspan 19HS into a Z800 USB port.
- The Keyspan 19HS will now show up in device driver.
- Using a serial cable, connect the 9-pin serial port of the Keyspan 19HS USB adapter to the port of the Addenda marked RS232 from PC
- Using a 2nd serial port cable connect the port of the Addenda marked “RS422 to VTR” to the deck control serial port of the deck.

- G.) ATTO UL5D issue:** When an ATTO UL5D PCI-E u320 SCSI controller is installed in slot #5, the UL5D BIOS must be disabled or the following warning may be reported during system boot: (Also the UL5D BIOS must be disabled for proper operation when connected to an AVID VideoRAID RTR u320 SCSI).

110 – Out of memory space for option ROMS.

The option ROM for the following device was unable to run due to memory constraints. If you choose to continue, one or more PCI devices may not work properly

To disable the UL5D BIOS and eliminate the above warning, perform one of the following:

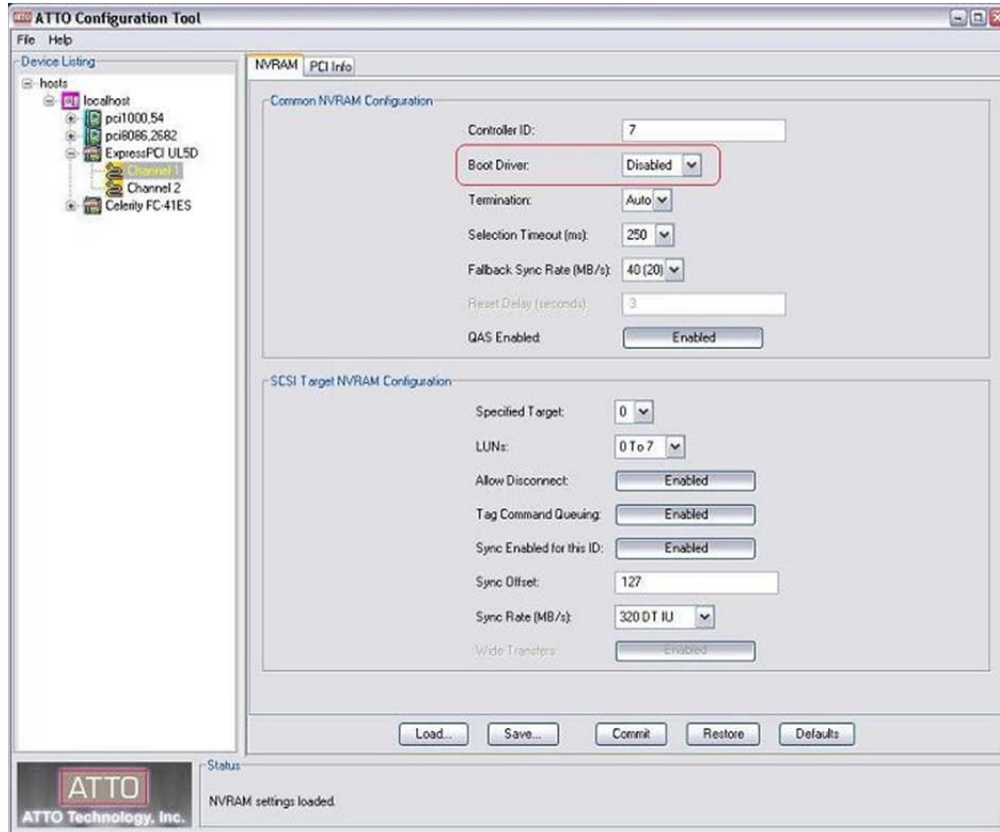
- A. AVID Knowledge Base article 273945,
<http://avid.custkb.com/avid/app/selfservice/search.jsp?DocId=273945&Hilite=UL5D>

Install Atto UL5D configuration tool and launch the software.

Expand the Express PCI UL5D menu, and click on Channel.

The Boot Driver has to be disabled on both channels of the UL5D.

Configure the UL5D per this screenshot, and do this for both Channel 1 and Channel 2



B. Or during system boot perform the following:

1. Reboot the system
2. Hit "Escape" to clear the HP splash screen
3. Hit Ctrl-Z when the following Atto UL5D BIOS message prompts

** ATTO ExpressPCI™ Version 2.10 **
***** Press [Ctrl + Z] for Setup Utility *****
4. Select 1 - Adapter menu
5. Select 2 - Configure Both Adapter Channels
6. For ver 2.10 firmware
 - Select Host Adapter BIOS
 - Select "Disabled" using [Page Up] / [Page Down]
7. For ver 2.27 firmware
 - Select Boot Driver
 - Select "Disabled" using [Page Up] / [Page Down]
8. Press "ESC"
9. Press "ESC"
10. Select 4 – Save Parameters and Exit

H.) Supported external local SAS storage connectivity via embedded SAS controller ports:

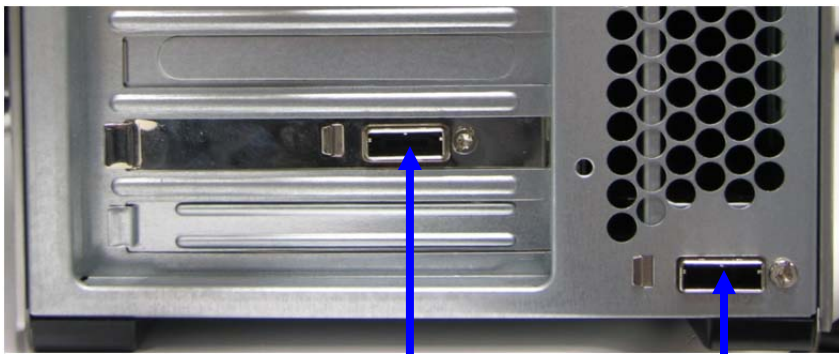
Supported

- AVID VideoRAID SR (16-bay)
- Xtore StudioRAID 16Re (16-bay) / 5Te (5-bay) chassis

The Z800 can support:

- Up to two external AVID VideoRAID SR (16-bay) SAS local storage chassis
- Mix and match of up to two external Xtore StudioRAID 16Re (16-bay) / 5Te (5-bay) chassis

Simultaneous connectivity of AVID VideoRAID and Xtore chassis is not formally qualified or recommended.



External SAS Port 2

External SAS Port 1

I.) O.S. setting recommendations for optimum performance with Avid Editing applications:

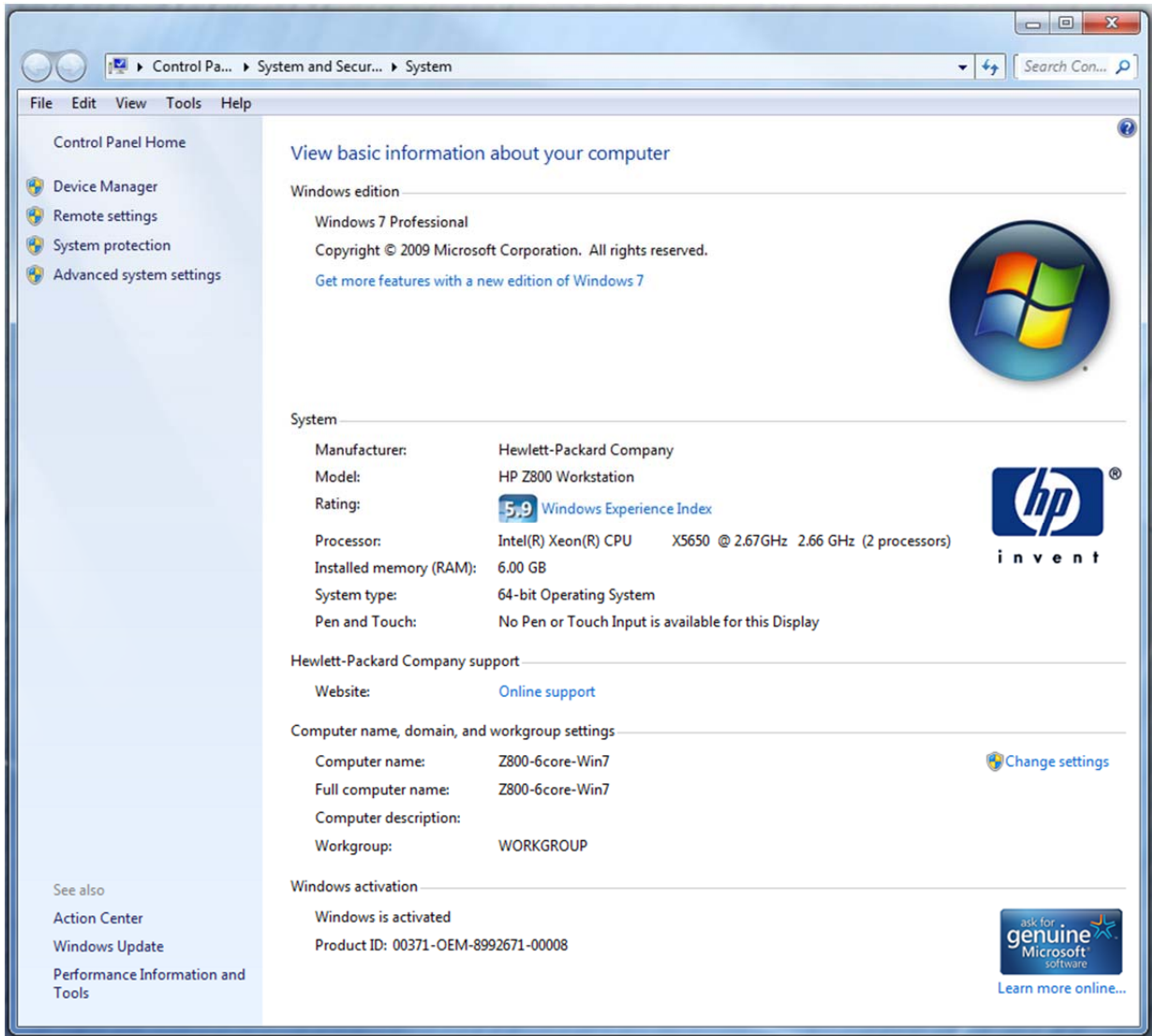
The following links provide O.S. setting suggestions for ensuring optimum performance when working with your Avid editing application with a Windows operating system.

- Optimizations for Video Editors - Windows 7

<http://avid.custkb.com/avid/app/selfservice/search.jsp?DocId=390339>

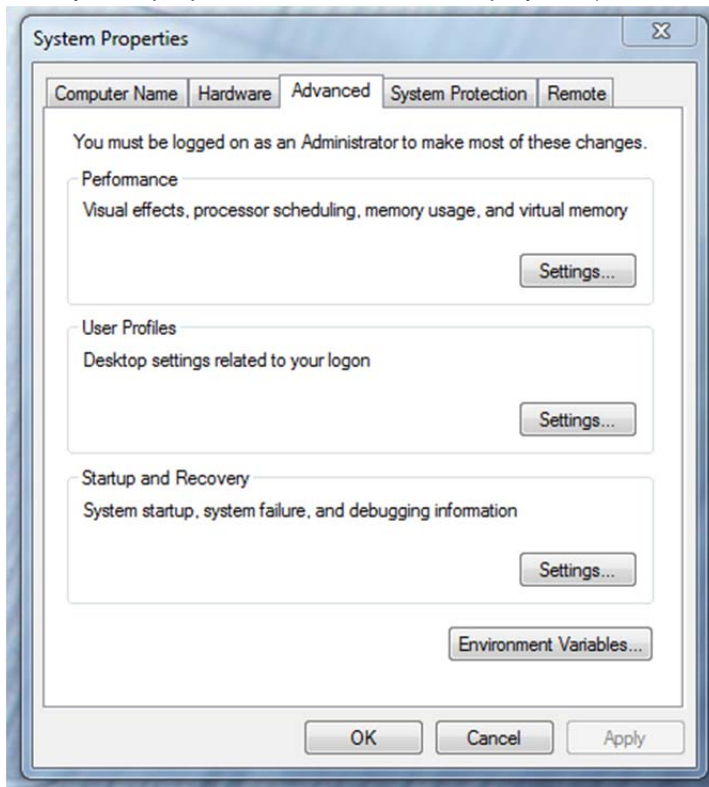
J.) Set Windows “Visual Effects” for “best performance”:

1. Right-Click on My Computer / Computer
2. Select Properties
3. The screen below will be displayed:

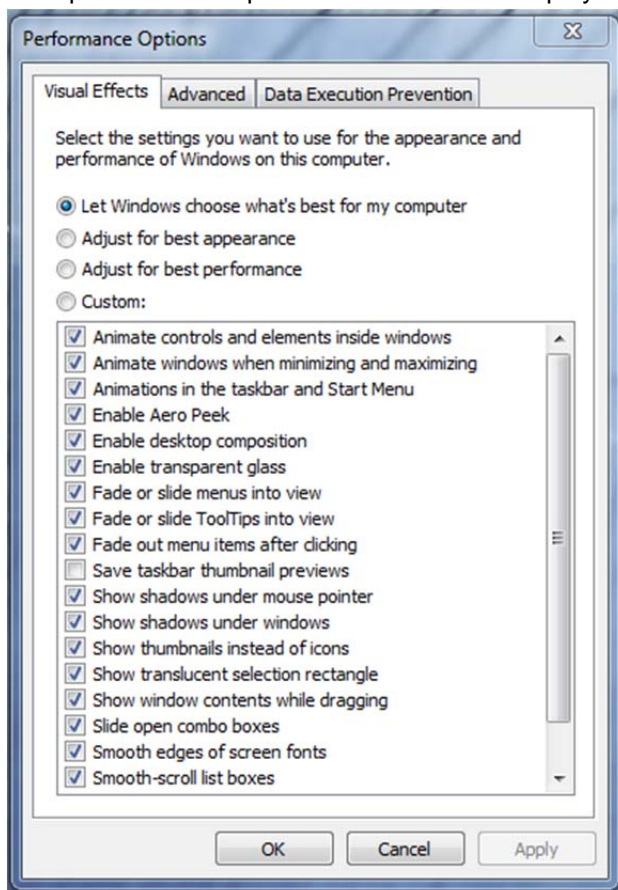


4. On the left side of the screen above, locate and select “Advanced system settings”

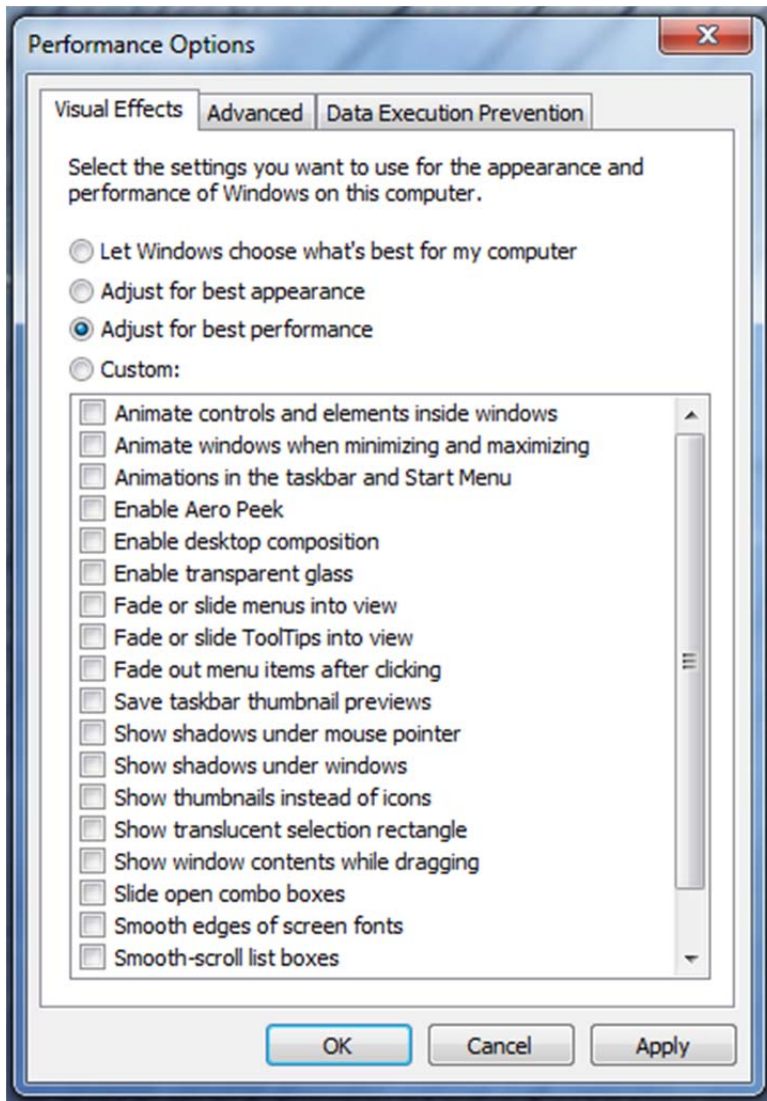
5. The System properties window will be displayed. (Picture below).



6. Under the "Advanced" tab depress the "Settings..." button for performance.
7. The "performance Options" window will be displayed. (Picture below).



8. Under the “Visual Effects” tab select the “Adjust for best performance” selection. (Picture below).



9. Depress the “Apply” button
10. Reboot Windows
11. Required Windows visual performance settings for Avid environments are now complete.

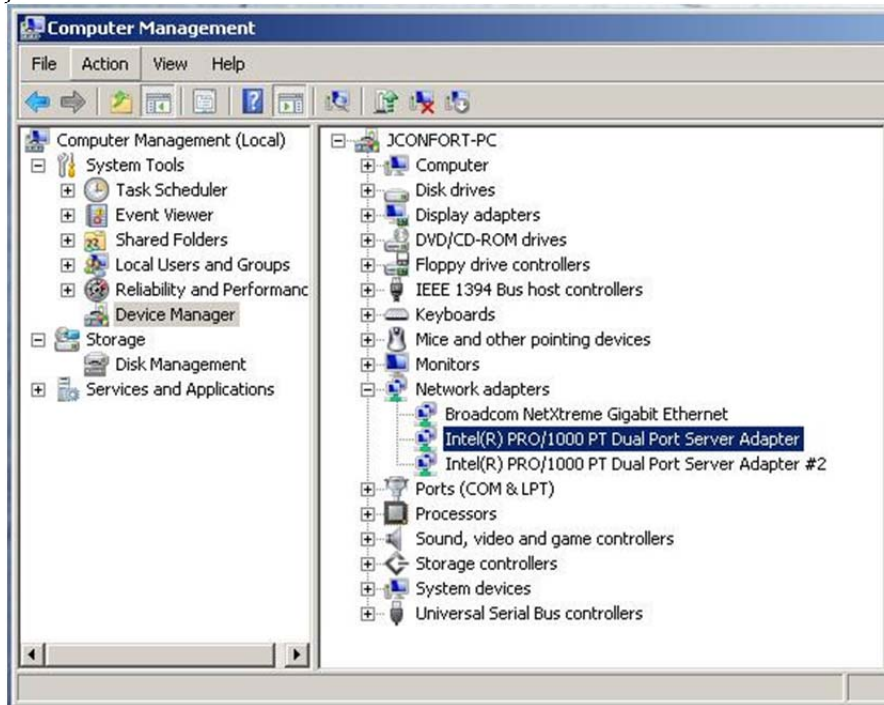
K.) Intel PRO 1000 PT for ISIS connectivity: For proper operation and connectivity of the Intel PRO 1000 PT with ISIS the following are required:

1. For the Intel PRO 1000 PT driver, under the performance settings, change the following parameters:
 - Receive Buffers to 1024
 - Transmit Buffers to 1024
2. Disable the windows firewall.

Intel PRO 1000 PT Driver: The proper driver can be found in the ISIS software directory: Tools_3rdParty / Drivers_and_Firmware

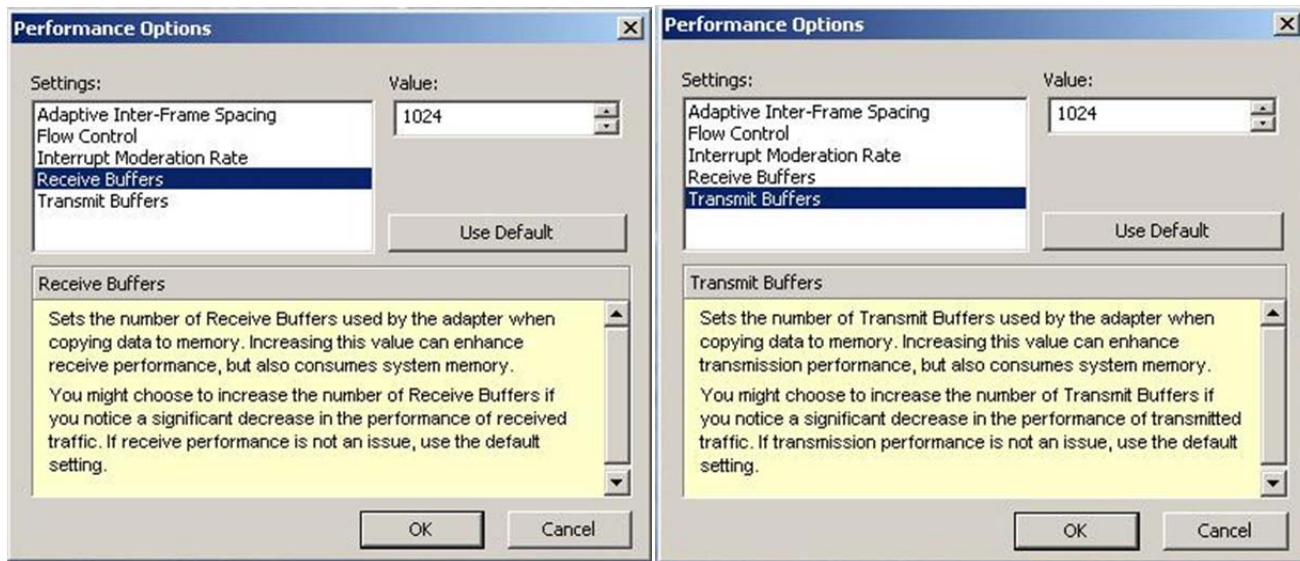
To set the Intel PRO 1000 PT Receive / Transmit buffers:

Go to device manager and select each instance of the device named Intel(R) PRO/1000 PT Dual Port Server Adapter which will be used for ISIS connectivity.



Select performance options and then select Properties.

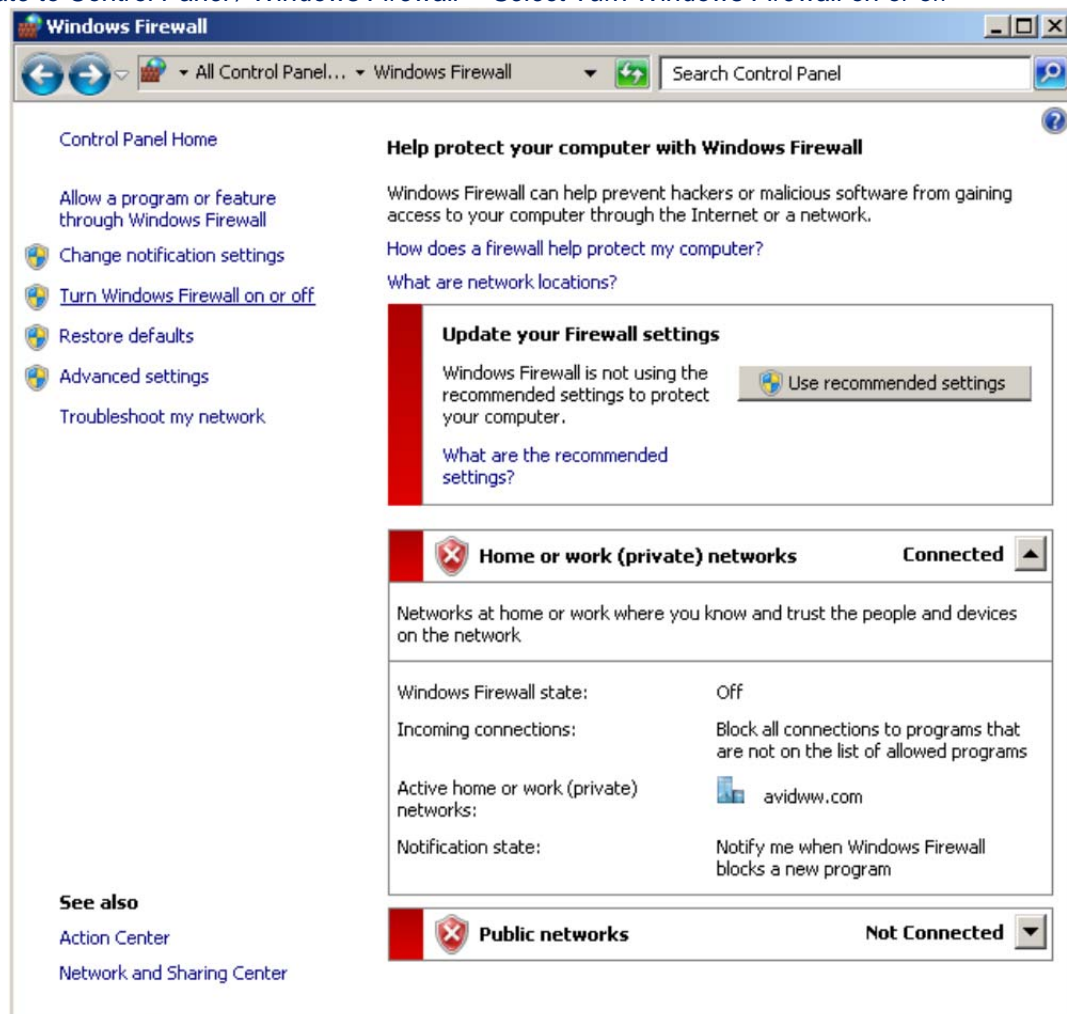




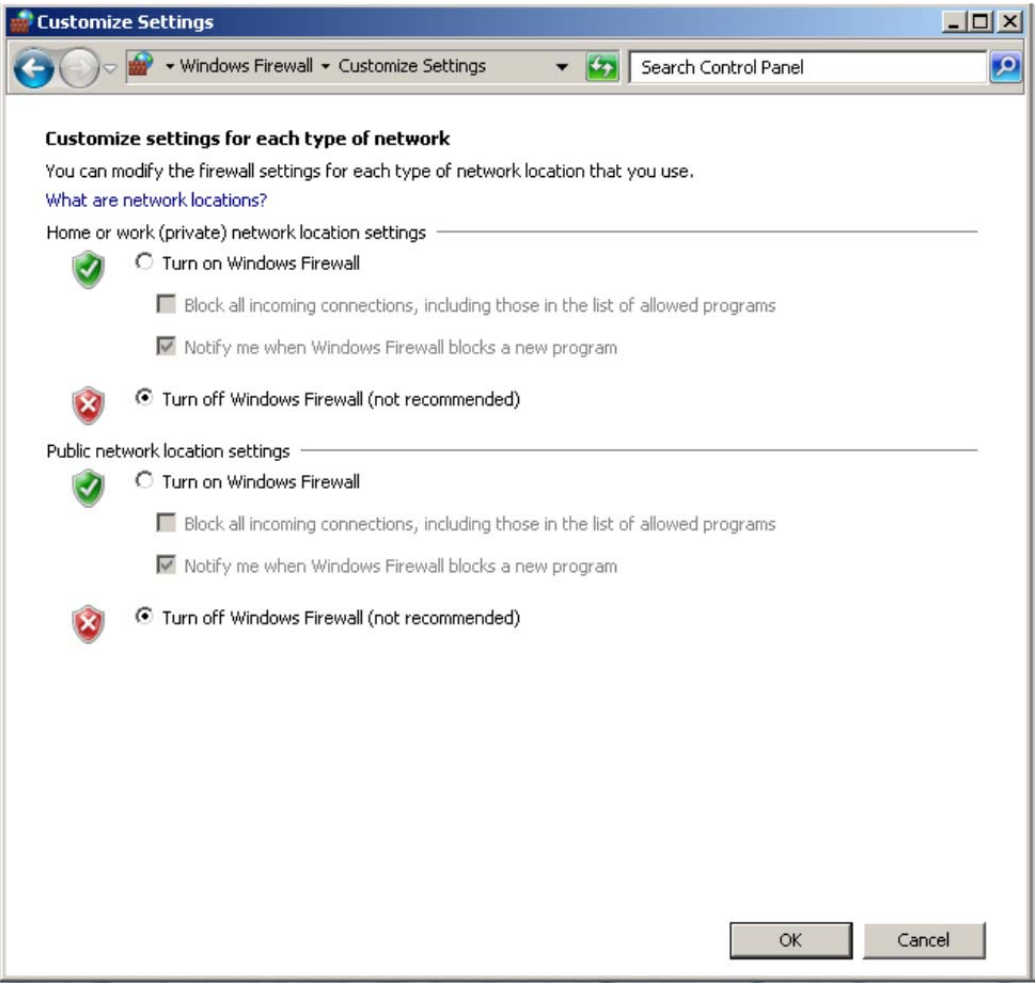
Perform this for each instance of the device named "Intel(R) PRO/1000 PT Dual Port Server Adapter" which will be used for ISIS connectivity.

L.) Disable the windows firewall:

Navigate to Control Panel / Windows Firewall -- Select Turn Windows Firewall on or off



Select Turn off windows firewall in both network locations, OK to save



Revision Update

Revision	Date	Name	Update
A	Oct 27 th , 2011	Joe Conforti	Initial public release of the Z800 configuration guide for support of Media Composer 6.0, Symphony 6.0 and NewsCutter 10