



**Avid Configuration Guidelines
Dell 7910 workstation
Dual 8, 10, 12, 14, or 16-Core CPU**



1.) Dell 7910 AVID Qualified System Specification:

7910 Hardware Configuration

Supported v4 CPU Choices (shipped mid 2016)

- E5-2620v4 2.1Ghz 8-core / 2400Mhz Memory (Processor will run memory at 2133MHz)
- E5-2667v4 3.2Ghz 8-core / 2400Mhz Memory
- E5-2630v4 2.2Ghz 10-core / 2400Mhz Memory (Processor will run memory at 2133MHz)
- E5-2640v4 2.4Ghz 10-core / 2400Mhz Memory (Processor will run memory at 2133MHz)
- E5-2650v4 2.2Ghz 12-core / 2400Mhz Memory
- E5-2687v4 3.0Ghz 12-core / 2400Mhz Memory
- E5-2680v4 2.4Ghz 14-core / 2400Mhz Memory (MC 8.5 + required)
- E5-2690v4 2.6Ghz 14-core / 2400Mhz Memory (MC 8.5 + required)
- E5-2683v4 2.1Ghz 16-core / 2400Mhz Memory (MC 8.5 + required)

Supported v3 CPU Choices (shipped late 2014 through mid 2016)

- E5-2630v3 @ 2.4GHz 8-core / 1866MHz memory (Processor will run memory at 1866MHz)
- E5-2640v3 @ 2.6GHz 8-core / 1866MHz memory (Processor will run memory at 1866MHz)
- E5-2667v3 @ 3.2GHz 8-core / 2133MHz memory
- E5-2650v3 @ 2.3GHz 10-core / 2133MHz memory
- E5-2660v3 @ 2.6GHz 10-core / 2133MHz memory
- E5-2670v3 @ 2.3GHz 12-core / 2133MHz memory
- E5-2680v3 @ 2.5GHz 12-core / 2133MHz memory
- E5-2690v3 @ 2.6GHz 12-core / 2133MHz memory

Supported Video Card

- 1.) NVIDIA K4200 4GB PCI-e video board
- 2.) NVIDIA K5200 8GB PCI-e video board
- 3.) NVIDIA M4000 8GB PCI-e video board *
- 4.) NVIDIA M5000 8GB PCI-e video board *
- 5.) NVIDIA M6000 12GB PCI-e video board *
- 6.) AMD W7100 8GB PCI-e video board*
- 7.) AMD W8100 8GB PCI-e video board*

* MC 8.4.3 required for these graphics cards

System Disk Drive – 500 GB (recommended) SATA-II 3Gb/s 7200RPM. Dell offers higher performing solid-state and SAS boot drive options which are acceptable options. Recommend a Dell qualified drive be selected.

Standard AVID memory configuration:

- Systems using the newer gen v4 CPU's will use 2400MHz memory
- Systems using the older gen v3 CPU's will use 2133MHz memory

32GB (8 x 4GB) DDR4 2400MHz ECC memory – (Requires eight 4GB DIMMs, DIMM sizes cannot be mixed)

4GB memory modules must be installed in the following memory slots: CPU1-DIMM1, CPU1-DIMM2, CPU1-DIMM3, CPU1-DIMM4 CPU2-DIMM1, CPU2-DIMM2, CPU2-DIMM3, CPU2-DIMM4

Optional AVID memory configuration:

64GB (8 x 8GB) DDR4 2400 ECC memory – (Requires eight 8GB DIMMs, DIMM sizes cannot be mixed)

64GB (16 x 4GB) DDR4 2400 ECC memory – (Requires sixteen 4GB DIMMs, DIMM sizes cannot be mixed)

Memory configuration constraints

- No other memory configurations are formally supported in AVID environments. Only the 32GB (8 x 4GB), and 64 GB (8 x 8GB or 16 x 4GB) configurations are supported. Un-balanced memory configurations which mix and match memory module sizes and locations will result in a poor performing, non-optimal operating environment.
- NUMA should be disabled in BIOS

2.) Qualified Operating Systems, Avid Client Editing Applications, Hardware and Shared-Storage support for the Dell 7910:

Supported:

Microsoft® Windows 7 Professional 64-bit Edition with SP1 (SP1 required)

Microsoft® Windows 8.1 Professional / Enterprise 64-bit Edition

Microsoft® Windows 10 Professional / Enterprise 64-bit Edition – MC 8.5

Not Supported - Microsoft® Windows 7 – any 32-bit version, or Home or Ultimate

Application	Minimum Rev
For 2 nd Generation Dell 7910 with V4 CPUs Media Composer 8.x	8.5
Original Dell 7910 with V3 CPUs: Media Composer 8.x	8.2.0 *
Media Composer 7.x	7.0.4.1 **
NewsCutter 11.x	11.0.4.1 **

****** Requires specific driver files for support of the next generation Nvidia video cards used in this system , i.e. Nvidia K4200 , K5200

* Nvidia M4000, M5000, M6000 require Nvidia driver 353.82

* AMD W7100, W8100 require AMD driver [14.301.1019.1001](http://www.amd.com/drivers/14.301.1019.1001)

The required GPU files and installation instructions for Media Composer 7.0.4.1 can be found at the following Avid KB link:
http://avid.force.com/pkb/articles/en_US/compatibility/Media-Composer-7-0-4-1-Nvidia-GPU-Update

The required GPU files and installation instructions for NewsCutter 11.0.4.1 can be found at the following Avid KB link:
http://avid.force.com/pkb/articles/en_US/compatibility/NewsCutter-11-0-4-1-Nvidia-GPU-Update

The required GPU files and installation instructions for AMD graphics can be found at the following Avid KB link:
http://avid.force.com/pkb/articles/en_US/download/AMD-Supported-GPU-Drivers

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.x, Symphony 6.x and NewsCutter 10.x. As future Service Packs are released Avid will evaluate

3.) Qualified O.S., Hardware and shared storage supported:

	Qualified / Supported
Nitris DX / Mojo DX	Yes
Artist DNxIO	<p>Yes – Supported <u>Can connect via PCIe or Thunderbolt 2</u></p> <p><u>PCIe Guidance</u></p> <p>PCIe preferred as it requires less system over-head due to direct PCIe to PCIe connection between the host CPU and Artist DNxIO. (PCIe is limited to 3-meter cable max length).</p> <p><u>Thunderbolt 2 Guidance</u></p> <p>Thunderbolt 2 - higher system over-head, particularly if sharing additional Thunderbolt devices on the same Thunderbolt bus with DNxIO.</p> <p>DELL 7810 supports only one Thunderbolt HBA in a 7810 with single Thunderbolt port (resulting in Thunderbolt bus sharing for multiple Thunderbolt devices).</p> <p>Thunderbolt 2 offers support of cable lengths up to 60-meters <u>(via qualified Corning Thunderbolt cables)</u> for users needing to physically place the Artist DNxIO at longer distances from the host CPU Workstation.</p>
3 rd Party Qualified Hardware	See release notes and Avid website for information regarding supported 3 rd party hardware (vendor qualified)
NEXIS / ISIS Single 1Gb Ethernet Client ISIS Dual 1Gb Ethernet Client	ISIS 5500 / 5000 , 7500 / 7000 v4.0 NEXIS Pro, E2, E4, E5 V6.01
NEXIS / ISIS Hi-res (single10Gbit) client Myricom Single-Port 10Gbit	ISIS 5500 / 5000 , 7500 / 7000 v4.0 NEXIS Pro, E2, E4, E5 V6.01
NEXIS / ISIS Ultra Hi-res client (dual 10Gbit) Myricom Dual-Port 10Gbit	ISIS 5500 / 5000 v4.7 NEXIS Pro, E2, E4, E5 V6.01

AVID qualified HBA info

AVID qualified	AVID Part Number	Slot Location	Function
Vendor qualified 3 rd party X1 or x4 PCI-e	Not stocked by AVID	#1 ¾ Length PCI form factor or smaller	Vendor qualified 3 rd party hardware interface. See release notes and Avid website for information regarding supported 3 rd party hardware
Avid Artist DnxIO HBA **	Active: 7030-30048-02 Active: 7030-30048-01	#1	Avid Artist DnxIO interface HBA
Avid HIB, DX Interface	Active: 7030-30048-02 Active: 7030-30048-01 Active: 7030-20084-01	#3	Avid DX Hardware Interface HBA
Atto R680	Not stocked by AVID	#4	Local SAS Storage Support – Avid VideoRAID ST (5-bay) Xtore StudioRAID 5Ti
LSI 9200-8e SAS controller	7030-30036-01	#4	SAS Local Storage: Xtore StudioRAID 16Re (16-bay) chassis Xtore StudioRAID 5Te (5- bay) chassis
Vendor qualified 3 rd party hardware x8 PCI-E	Not stocked by AVID	#P2-1 *	Vendor qualified 3 rd party hardware interface. See release notes and Avid website for information regarding supported 3 rd party hardware
Intel PRO 1000 PT	7030-20139-01	#P2-2 *	Shared Storage: Unity ISIS Copper Gb- Ethernet Dual Gb ISIS Connectivity
Intel i350-T2 – Dual Gb NIC	Not stocked by AVID	#P2-2 *	Shared Storage: Unity ISIS Copper Gb- Ethernet Dual Gb ISIS Connectivity
Intel PRO 1000 PF - ISIS	Not stocked by AVID	#P2-2 *	Shared Storage: Unity ISIS Optical Gb-Ethernet
Myricom 10G-PCIE-8B-S Myricom 10G-PCIE-8B2- 2S	7030-30041-01	#P2-2 *	Shared Storage: Unity ISIS 10Gb- Ethernet for Hi-Res client (ISIS 5000 / 7000)
Red Rocket Accelerator	Not stocked by AVID	#P1-1 * or #P2-2 *	Accelerator for RED files

* Top slot 1&2 are running off the second CPU

** All 3 versions of the DX interface HBA are supported on the 5810 with Media Composer

- 1) Active DX interface HBA 7030-30048-01 (also for Artist DNxIO)
- 2) Active DX interface HBA 7030-30048-02 (also for Artist DNxIO)
- 3) Active DX interface HBA 7030-20084-01 (cannot be used with Artist DNxIO)

4.) Slot Configuration:

Slot Configuration Information			
Slot #	Electrical	Mechanical	
1	x4 PCI-E Gen 3	x8 Open-ended Connector	Vendor Qualified 3 rd Party Hardware PCI-e Interface requiring: X8 PCI-E or lesser interface ¾ Length PCI form factor or smaller Avid Artist DNxIO HBA
2	x16 PCI-E Gen 3 (225Watts)	x16	Graphics Card: Nvidia K4200, K5200*, M4000, M5000*, M6000* AMD W7100, W8100* <i>Please Note: Dual slot graphics cards will block access to slot #3</i>
3	X4 PCI-E Gen 2	x16	Avid HIB, Nitris/Mojo DX Interface HBA OR Dell Thunderbolt Adapter <i>Note – these must be installed in PCIe gen 2 slot</i> <i>For dual wide graphics, move graphics to slot 4&5 if you need Nitris DX in slot 3</i>
4	x16 PCI-E Gen 3 (225Watts)	x16	Local SAS Storage Controllers: Atto R680 LSI 9200-8e or Pro Tools HD h/w or Red Rocket Accelerator
5	PCI 32bit /33MHz	PCI 32/33	Not used
P2 1	x16 PCI-E Gen 3 (CPU2 75watts)	x16	Vendor Qualified 3 rd Party Hardware PCI-e Interface requiring: x8 PCI-E or greater interface Full - Length PCI form factor or Red Rocket Accelerator
P2 2	x16 PCI-E Gen 3 (CPU2 75watts)	x16	Shared Storage Controllers ISIS 500/7000: Intel PRO 1000 PT/PF Intel i350-T2 Myricom 10G-PCIE-8B-S or Red Rocket Accelerator
	Embedded Intel I217-LM Gb NIC	PCI-E x1 Gen 2	<u>Qualified for Avid ISIS 5000 / 7000 connectivity.</u>
	Embedded Intel I210 Gb NIC	PCI-E x1 Gen 2	<u>Qualified for Avid ISIS 5000 / 7000 connectivity.</u>

5.) Use of embedded NIC ports for ISIS connectivity **Important Information**

The 7910 has two embedded NIC ports. Both ports are qualified for Isis

Embedded Intel network interface for ISIS connectivity:

For proper operation and connectivity of the Intel network interface with ISIS the following settings are required:

- For the Intel NIC driver, under the performance settings, change the following parameters:

- Receive Buffers to 1024

- Transmit Buffers to 1024

2. Disable the windows firewall.

C.) Required system BIOS settings for AVID environments:

Use latest version from Vendor website

Please Note: CPU Hyper-threading should be enabled in all configurations. It is currently enabled by default by Dell for shipping 7910 systems

7910 Required system BIOS changes:

1. Verify CPU Processors are set to Hyper-Threading
2. Memory option for NUMA – [Disable](#)

Set 7910 Required system BIOS changes:

- During boot up press F2 at the Dell splash screen to invoke Set Up.
- Select the Performance tab
- Select Hyper-Threading
- Verify setting is Enabled (or enable if currently set to disable)
- Select Non-Uniform Memory Access
- Uncheck the box (Avid MC runs best with NUMA disabled)

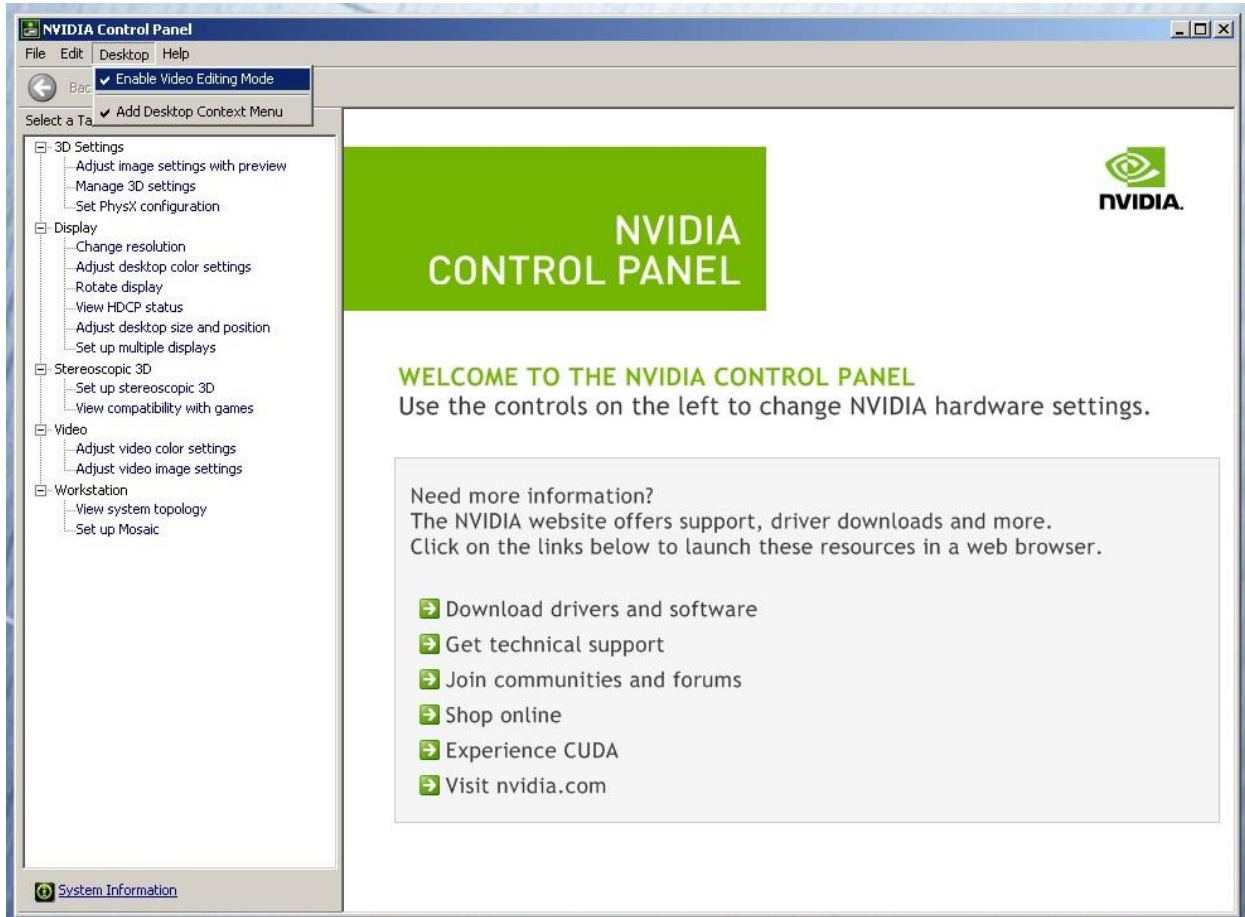
D.) Nvidia Qualified Driver:

AVID Software	Version(s)	GPU	Driver Required
Media Composer	8.6 and later	K4200, K5200 M4000, M5000, M6000	Nvidia 362.13
		W7100, W8100	AMD 15.20.1045
Media Composer	8.5 and later	K4200, K5200 M4000, M5000, M6000	Nvidia 353.82
		W7100, W8100	AMD 15.20.1045
Media Composer	8.4.3 and later	K4200, K5200 M4000, M5000, M6000	Nvidia 353.82
		W7100, W8100	AMD 14.301.1019.1001
Media Composer	8.2.0 and later	K4200 K5200	340.84
	7.0.4.1 and later **		
NewsCutter	(11.x) 11.0.4.1 and later **	K4200 K5200	340.84

After installation of the AVID software the supported Nvidia driver can be found in the following directory:
Program Files / Avid / Utilities / Nvidia. The Nvidia driver, 340.84, is NOT included with the 7.0.4.1/11.0.4.1 patch.
You can find this Nvidia driver on the Avid Knowledge Base.

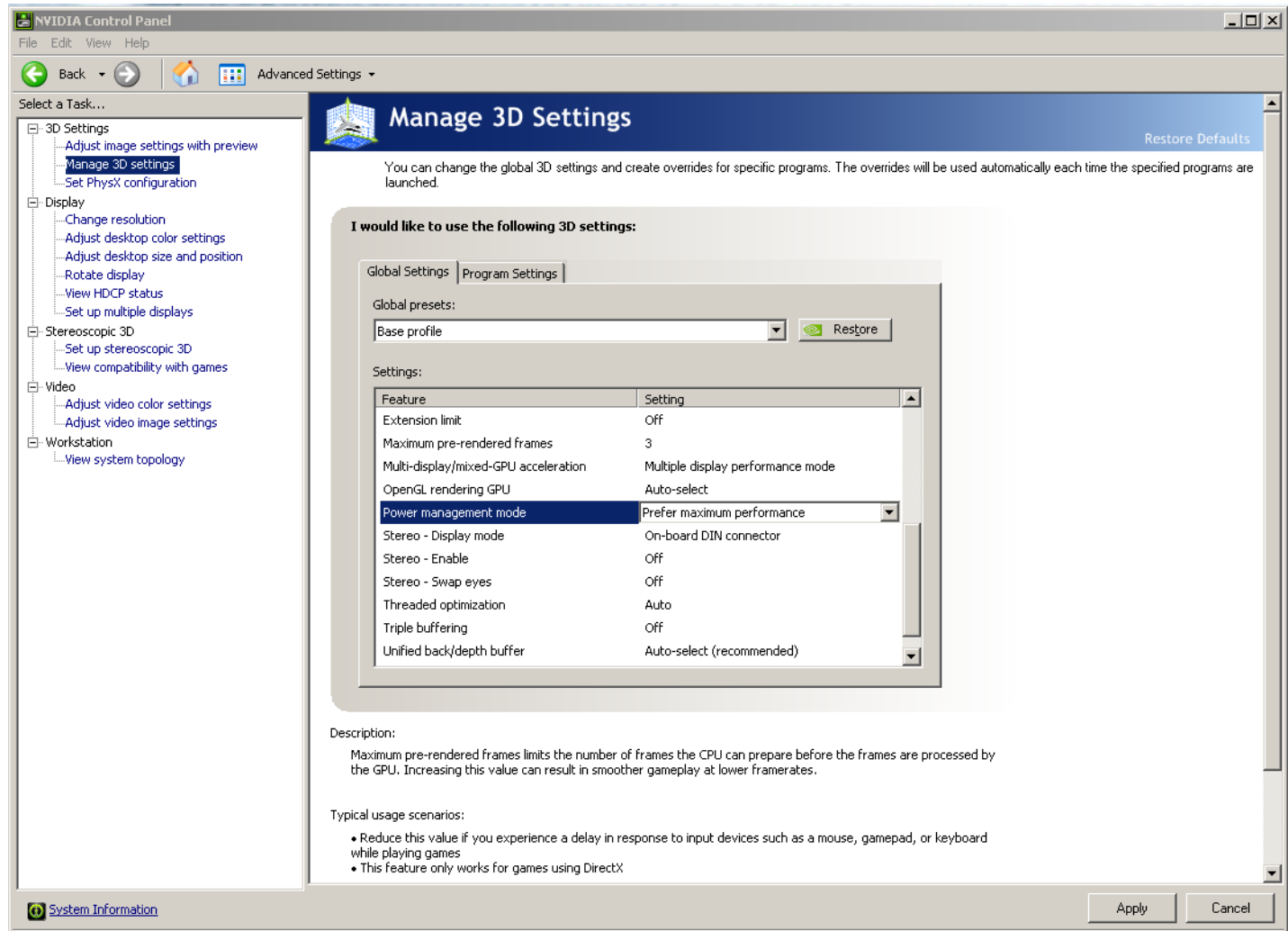
Set optimized Nvidia driver settings for Avid editing environments:

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 “3D App – Default Global Settings”
8. Scroll down and locate the “Power Management Mode” feature. The default setting is “Adaptive”

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



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

E.) Nvidia Quadro GPU monitor connectivity:

The Nvidia Quadro K4200 graphics card has a single DVI port and two Display-Port ports. All 3 ports can be used simultaneously.

The Nvidia Quadro K5200 graphics card has a two DVI ports and two Display-Port ports. All 4 ports can be used simultaneously.

The M4000, M5000, M6000 and AMD W7100, W8100 graphics cards all have 4 display-Ports. The M5000 and M6000 also have one DVI port.

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

For dual monitor connectivity:

1. Use 2 DVI ports on the K5200
2. 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).
3. Or use two Display-Ports (**Requires monitors with native display-port connections**)

F.) Serial Port Deck Control

The Dell 7910 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 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 USB port.
- Once the Keyspan 19HS driver is installed then plug the Keyspan 19HS into a 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.) O.S. setting recommendations for optimum performance with Avid Editing applications:

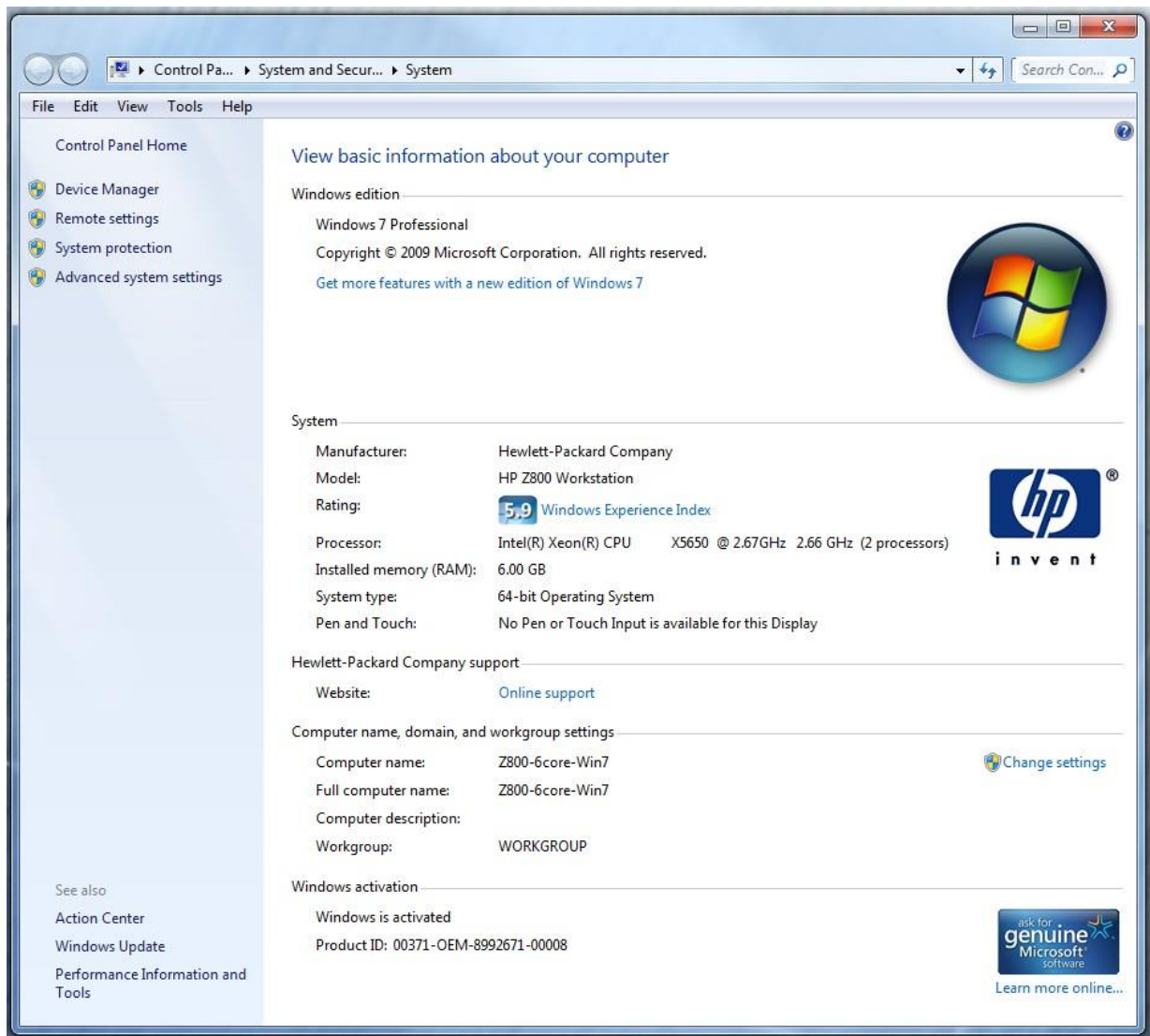
The following links provide O.S. setting suggestions for ensuring optimum performance when working with your Avid editing application with a Windows operating system.

- Optimizations for Video Editors - Windows 7

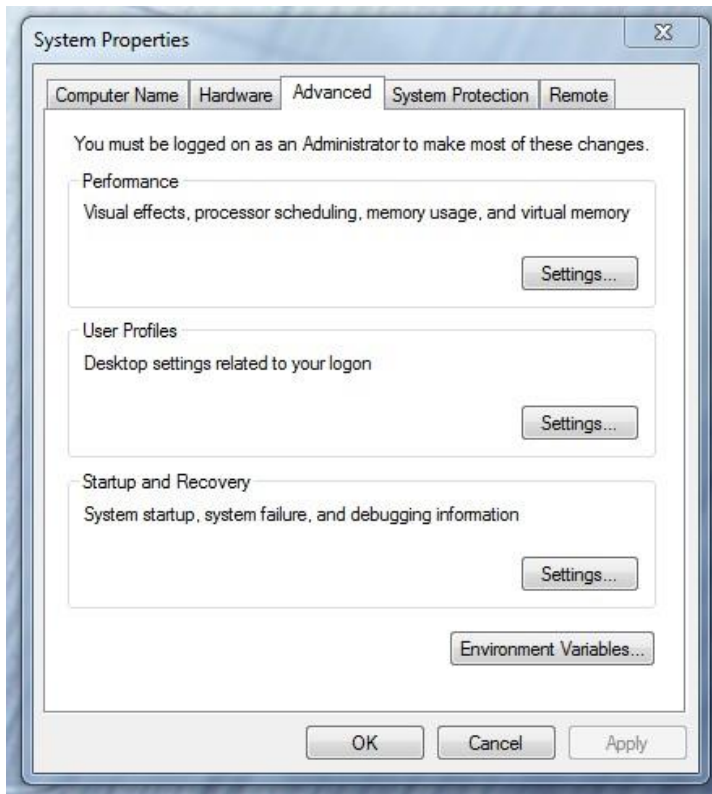
http://avid.force.com/pkb/articles/en_US/troubleshooting/en349411

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

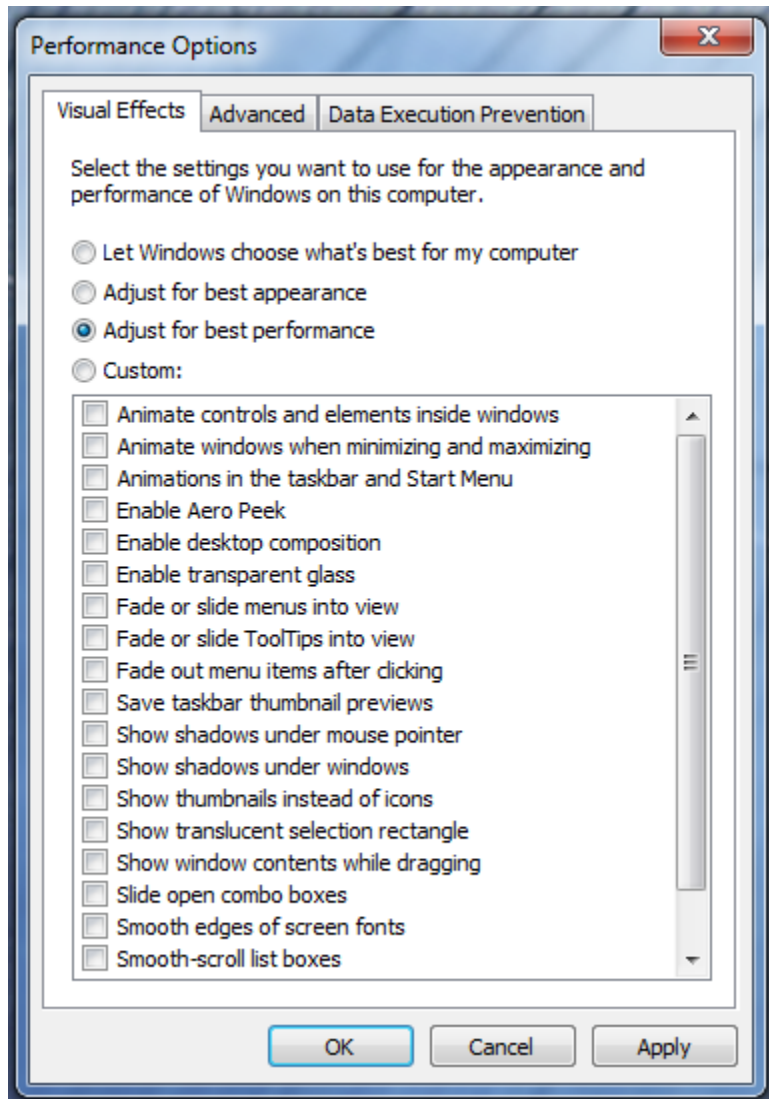
1. Right-Click on My Computer / Computer
2. Select Properties
3. The screen below will be displayed:



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



9. Depress the “Apply” button

10. Required Windows visual performance settings for Avid environments are now complete.

I.) Intel NIC Port(s) for ISIS connectivity:

Embedded I217/I210 ports / Intel PRO 1000 Dual Gb HBA / Intel i350-T2 Dual Gb NIC HBA

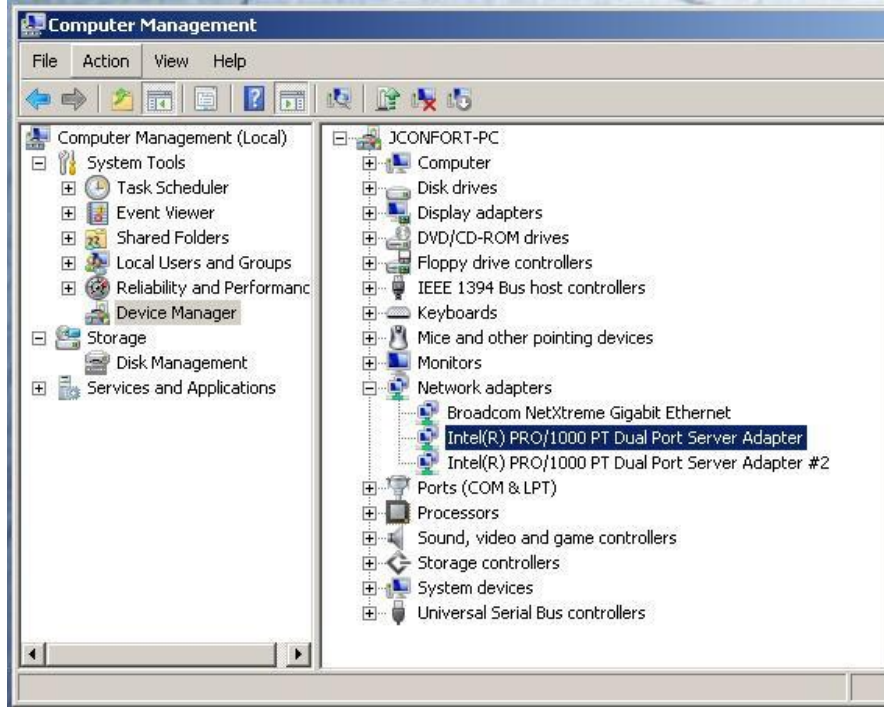
For proper operation and connectivity of any Intel NIC port used with ISIS the settings below are required.

Example below is for the Intel PRO 1000 PT.

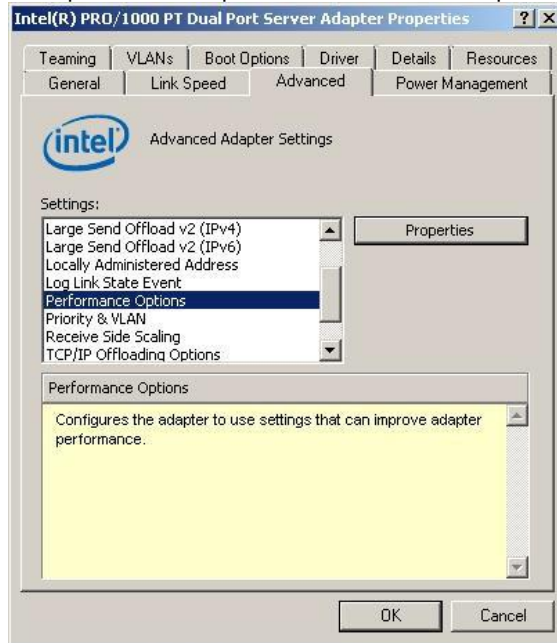
1. For the performance settings, change the following parameters:
 - Receive Buffers to 1024
 - Transmit Buffers to 1024
2. Disable the windows firewall.

To set the Intel NIC Receive / Transmit buffers:

Go to device manager and select each instance of the network adapter device which will be used for ISIS connectivity.

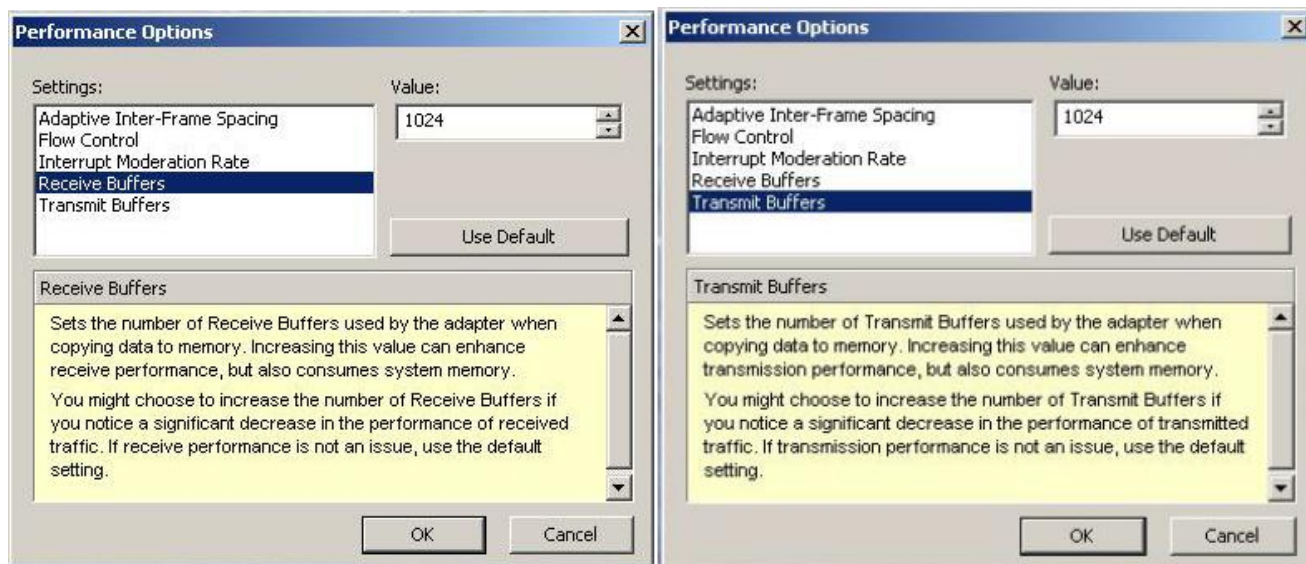


Select performance options and then select Properties.



Set Receive Buffers to 1024

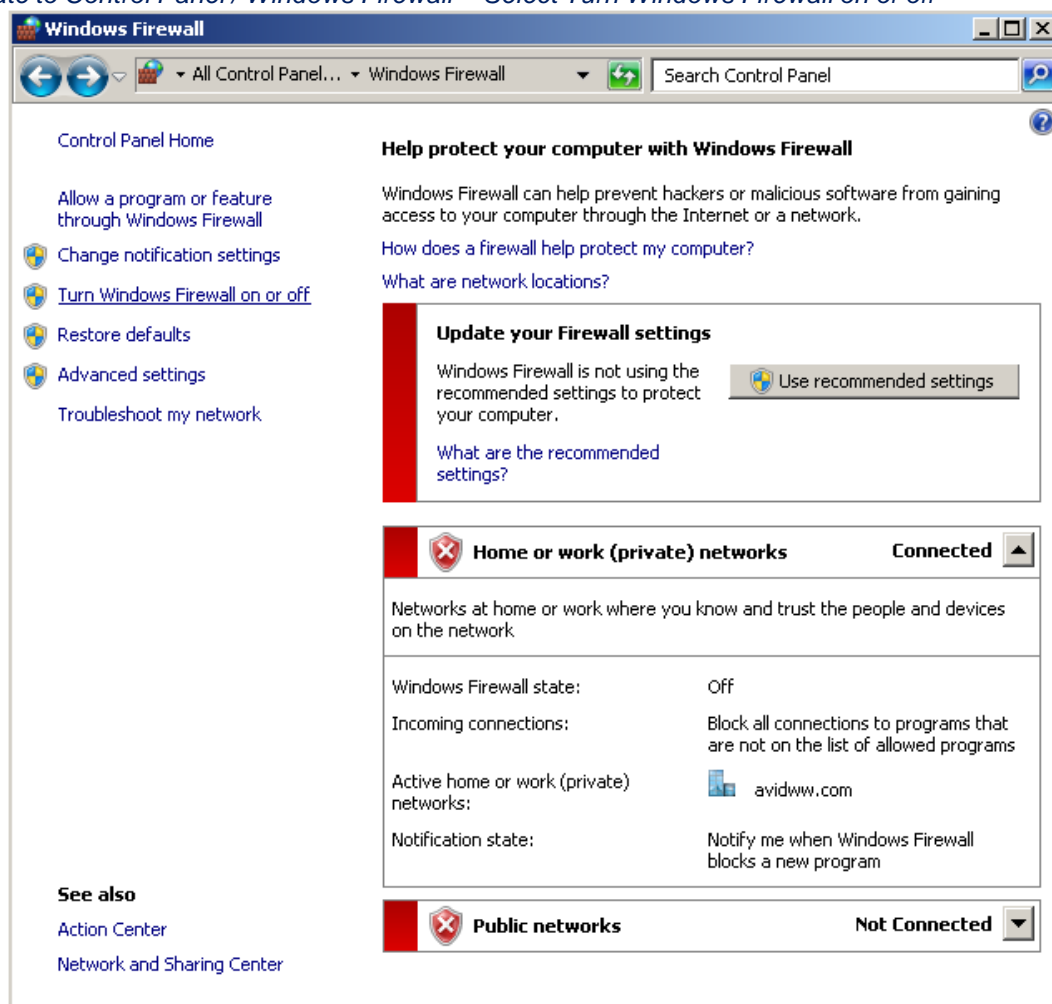
Set Transmit Buffers to 1024



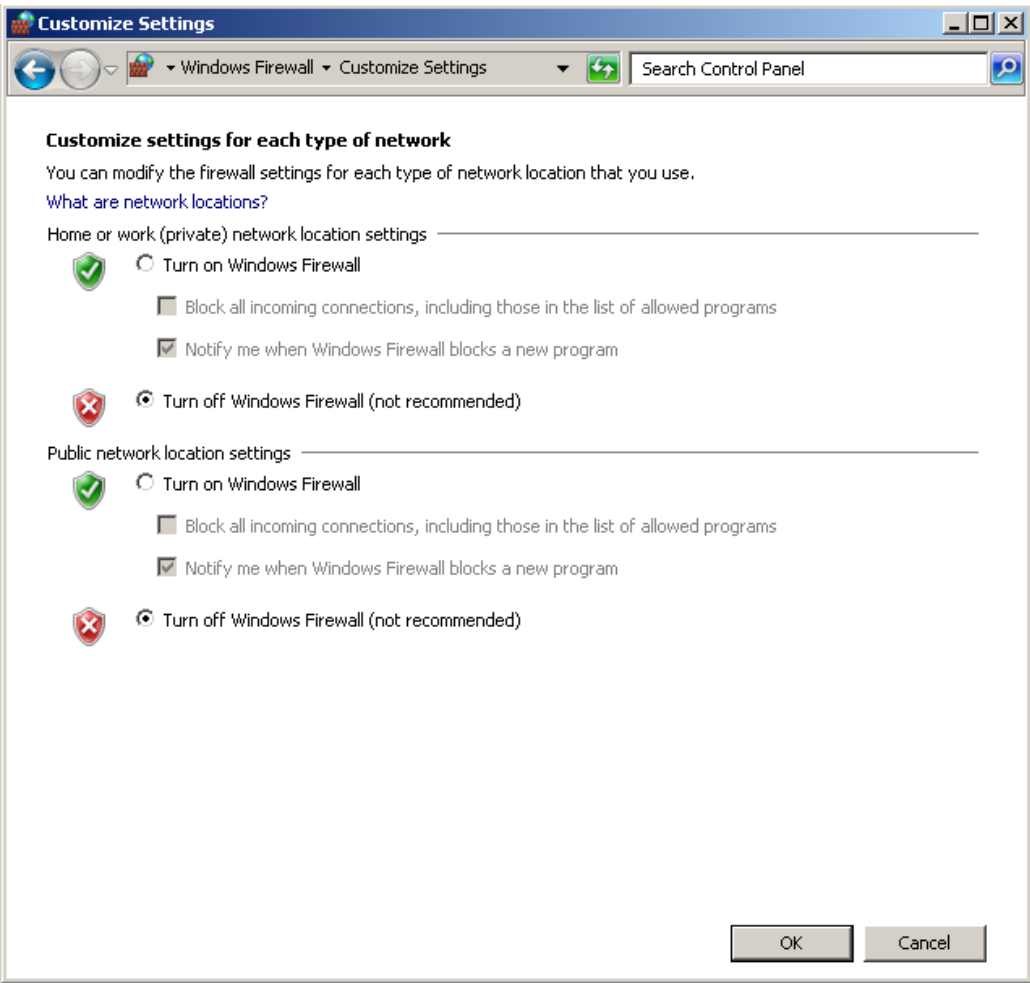
Perform this for each instance of and Intel NIC port which will be used for ISIS connectivity.

J.) 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
Rev A	Dec 24 th , 2014	Dave Pimm	Initial release of the Dell 7910 configuration guide
Rev B	Feb 8 th , 2016	Dave Pimm	Add AMD graphics and new Nvidia graphics, Win 10, DNxIO
Rev C	Sept 1 st , 2016	Dave Pimm	Add Gen 2 system with V4 CPUs, DDR4-2400 memory, Nexis