

Avid Configuration Guidelines
Lenovo ThinkStation C30 Dual Six-Core / Dual Eight-Core CPU Workstation
Media Composer 6.x, Symphony 6.x, NewsCutter 10.X and later



1.) LENOVO C30 AVID Qualified System Specification:

C30 / AVID Qualified Operating System:

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

C30 Hardware Configuration

Supported CPU Choices

- 1.) Dual Intel® 6-Core Xeon® E5-2640 Processors @ 2.5GHz 15MB cache / 1600MHz memory
(The 6-Core Xeon® E5-2640 Processors will run the 1600MHz memory at 1333MHz speed due to the speed limitation of the memory controller in the E5-2640 Processor).
- 2.) Dual Intel® 8-Core Xeon® E5-2665 Processors @ 2.4GHz 20MB cache / 1600MHz memory

Supported Video Card

NVIDIA Quadro 4000 2GB PCI-e video board

System Disk Drive - 1TB (minimum recommended) SATA-II 3Gb/s 7200RPM

Standard AVID memory configuration: 16GB (8 x 2GB) DDR3 1600 ECC memory –
(Requires eight 2GB DIMMs, DIMM sizes cannot be mixed sizes)

2GB 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

Memory configuration constraints

- No other memory configurations are formally supported in AVID environments. Only the 16GB (8 x 2GB), configuration is supported. Un-balanced 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 LENOVO C30 with Media Composer / Symphony 6.x , NewsCutter 10.x or later:

- **Supported: Only Microsoft® Windows 7 Professional 64-bit Edition with SP1 (SP1 required)**
- **Not Supported – Any version of Microsoft® Windows XP or Vista**
- **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.x, Symphony 6.x and NewsCutter 10.x. As future Service Packs are released Avid will evaluate and announce formal support when testing is completed.

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

	Qualified / Supported
Nitris DX / Mojo 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 1Gb Ethernet Client	ISIS 5000 / 7000 V4.0
Unity ISIS Hi-res (10 Gbit) client	ISIS 7000 only V4.0
Qualified Operating System	Win 7 Pro 64-bit
Service Pack	SP1 – Required
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
Atto R680	Not stocked by AVID	#1	Local SAS Storage Support – Avid VideoRAID ST (5-bay) Xtore StudioRAID 5Ti (5-bay)
LSI 9200-8e SAS controller	7030-30036-01	#1	SAS Local Storage: Xtore StudioRAID 16Re (16-bay) chassis Xtore StudioRAID 5Te (5-bay) chassis
Nvidia Quadro 4000	Not stocked by AVID	#2	Qualified graphics card
Intel PRO 1000 PT	7030-20139-01	#4	Shared Storage: Unity ISIS Copper Gb-Ethernet Dual Gb ISIS Connectivity
Intel i350-T2 – Dual Gb NIC	Not stocked by AVID	#4	Shared Storage: Unity ISIS Copper Gb-Ethernet Dual Gb ISIS Connectivity
Intel PRO 1000 PF - ISIS	Not stocked by AVID	#4	Shared Storage: Unity ISIS Optical Gb-Ethernet
Myricom 10G-PCIE-8B-S (ISIS 7000 only)	7030-30041-01	#4	Shared Storage: Unity ISIS 10Gb-Ethernet for Hi-Res client (ISIS 7000 only)
Avid HIB, DX Interface HBA **	Active: 7030-30048-01 Active: 7030-20084-01 Passive: 7030-30021-01	#5	Avid DX Hardware Interface HBA
Vendor qualified 3 rd party hardware interface requiring: X1, X4 or X8 PCI-E Full Length PCI form factor	Not stocked by AVID	#5	Vendor qualified 3 rd party hardware interface. See release notes and Avid website for information regarding supported 3 rd party hardware

**** [Avid DX Interface HBA Support Note: \(See reference pictures on page 7 of this guide\).](#)**

*All 3 versions of the DX interface HBA are supported on the C30 with 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 3	X16 Half Length	Local SAS Storage Controllers: Atto R680 LSI 9200-8e
2	x16 PCI-E Gen 3	x16	Graphics Card: Quadro 4000
3	PCI-E 32bit /33MHz	PCI 32/33	Not used
4	x16 PCI-E Gen 3	x16	Shared Storage Controllers ISIS 5000 / 7000: Intel PRO 1000 PT Intel PRO 1000 PF Intel i350-T2 Myricom 10G-PCIE-8B-S
5	x4 PCI-E Gen 2	X4	Avid HIB, DX Interface HBA OR Vendor Qualified 3 rd Party Hardware PCI-e Interface
6	PCI-E 32bit /33MHz	PCI 32/33	Not used
	Embedded Intel 82579LM Gb NIC	PCI-E x1 Gen 1	<u>Do not use for ISIS. Not qualified and is not functional with ISIS 5000 / 7000. This is the built in NIC port</u>

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

The C30 has only one embedded NIC ports - 82579LM. **The 82579LM will not work with ISIS and should never be connected to either ISIS 5000 or 7000. The 82579LM port is the only NIC port on the back of the chassis.**

6.) Utilization of the C30 embedded (on-board) 1394 ports for Camera / Deck / Disk Drive support

Media Composer / Symphony 6.x and NewsCutter 10.x do not support Avid 1394 hardware such as Adrenaline and 1394 Mojo-SDI. This simplifies utilization of the C30 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.x and NewsCutter 10.x.

7.) 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 C30 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.

- Minimum BIOS ver A1KT39A

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. It is currently enabled by default by LENOVO for shipping C30's with BIOS ver A1KT39A

Software Version	Hyper-Threading Setting	
	Dual 6-core CPU	Dual 8-core CPU
Media Composer v6.x Symphony v6.x NewsCutter v10.x	Enabled (Mandatory)	Enabled (Mandatory)

C30 Required system BIOS changes:

1. Verify CPU Processors are set to Hyper-Threading – Set per chart above. Current version BIOS has Hyper-Threading enabled by default
2. Set Memory NUMA – Disable

C30 Optional system BIOS change:

1. Set Intel Turbo Mode** – 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 C30 Required system BIOS changes:

- During boot up press F1 at the LENOVO splash screen to invoke Set Up.
- Select the Advanced tab
- Select CPU Config <Enter>
- Select Hyper-Threading
- Verify setting is Enable
 - If Hyper-Threading is set for Disable then it must be changed to Enable
- Hi F10 to save the Hyper-Threading setting
- Select CPU Power Management configuration tab
- Select Intel Dynamic Power Technology <return>
- Default setting is Energy Efficient
 - Change this setting from Energy Efficient to Disable
- Hi F10 to save the Runtime Power Management settings
- Select Devices Tab
- Select North Bridge Tab
- Select NUMA
- Default setting is Enable
 - Change this setting from Enable to Disable
- Hi F10 to save the NUMA setting
- Press F10 twice to Save
- Save Changes and Exit
- System will Reboot

Set C30 Optional system BIOS setting: ** Only required if connecting USB audio I/O devices.

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

D.) Nvidia Qualified Driver:

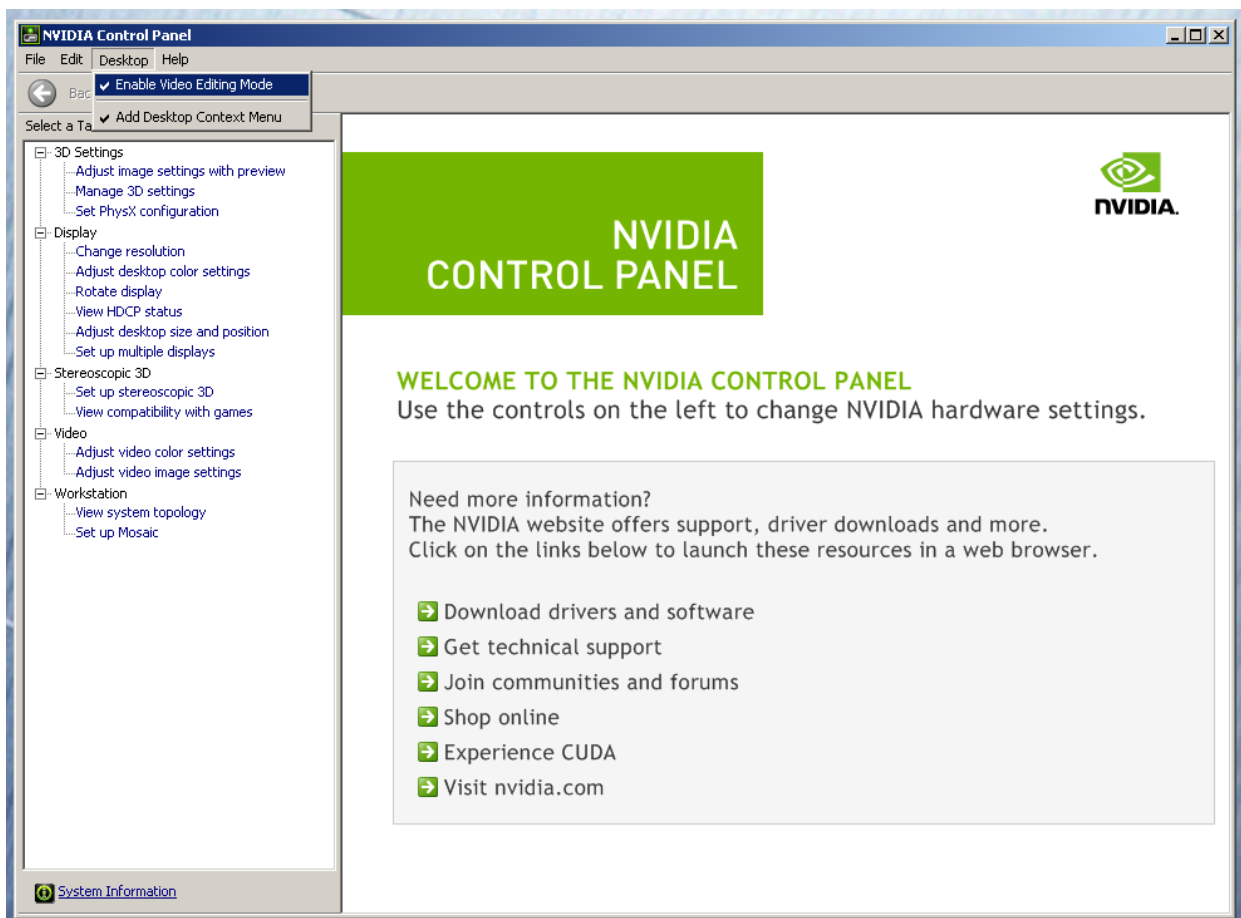
Nvidia qualified drivers

AVID Software	Version(s)	Nvidia GPU	Nvidia Driver Required
Media Composer / Symphony	6.x and later	Quadro 4000	275.89
NewsCutter	10.x and later		

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

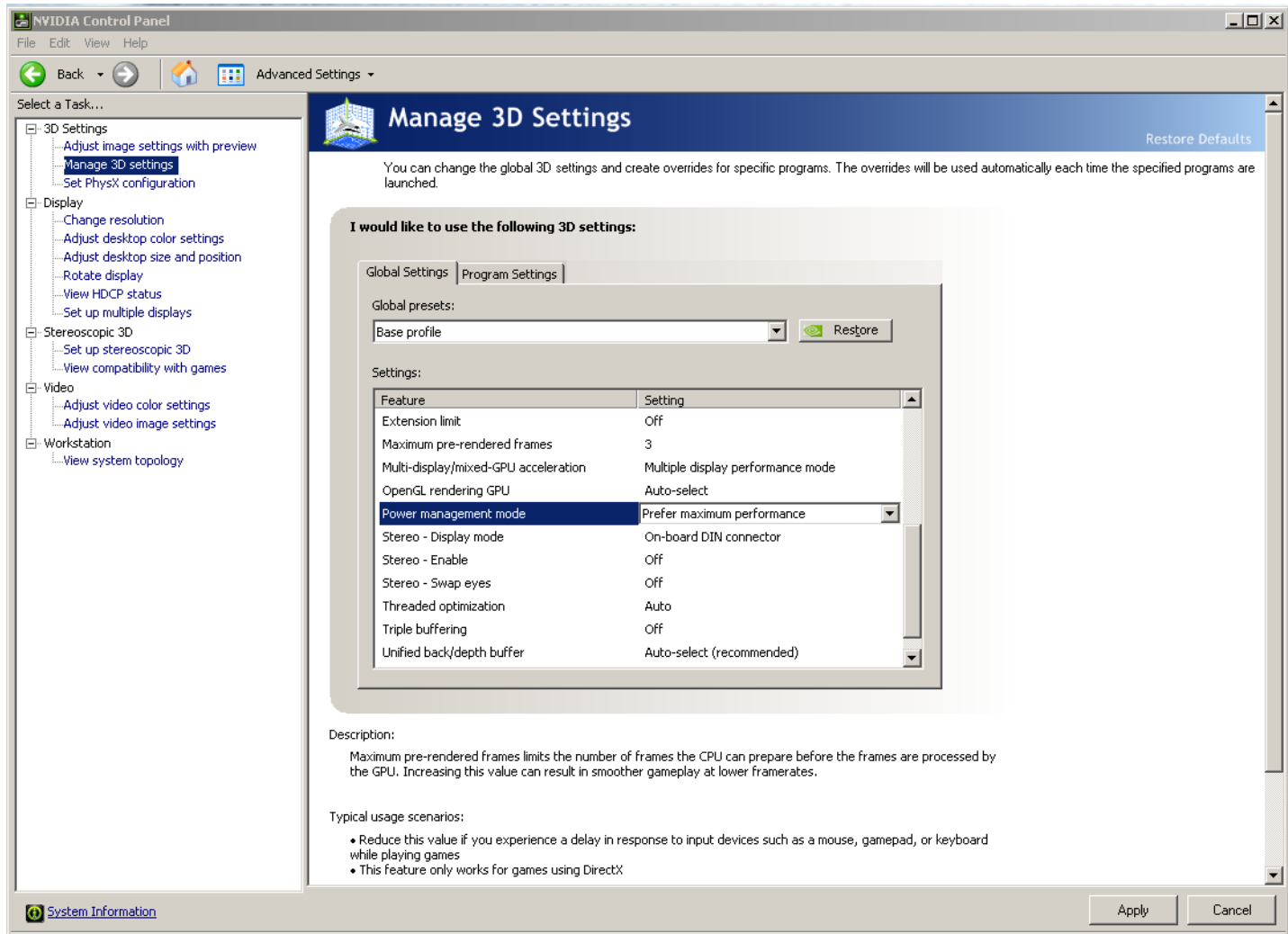
Set optimized Nvidia driver settings for Avid editing environments:

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

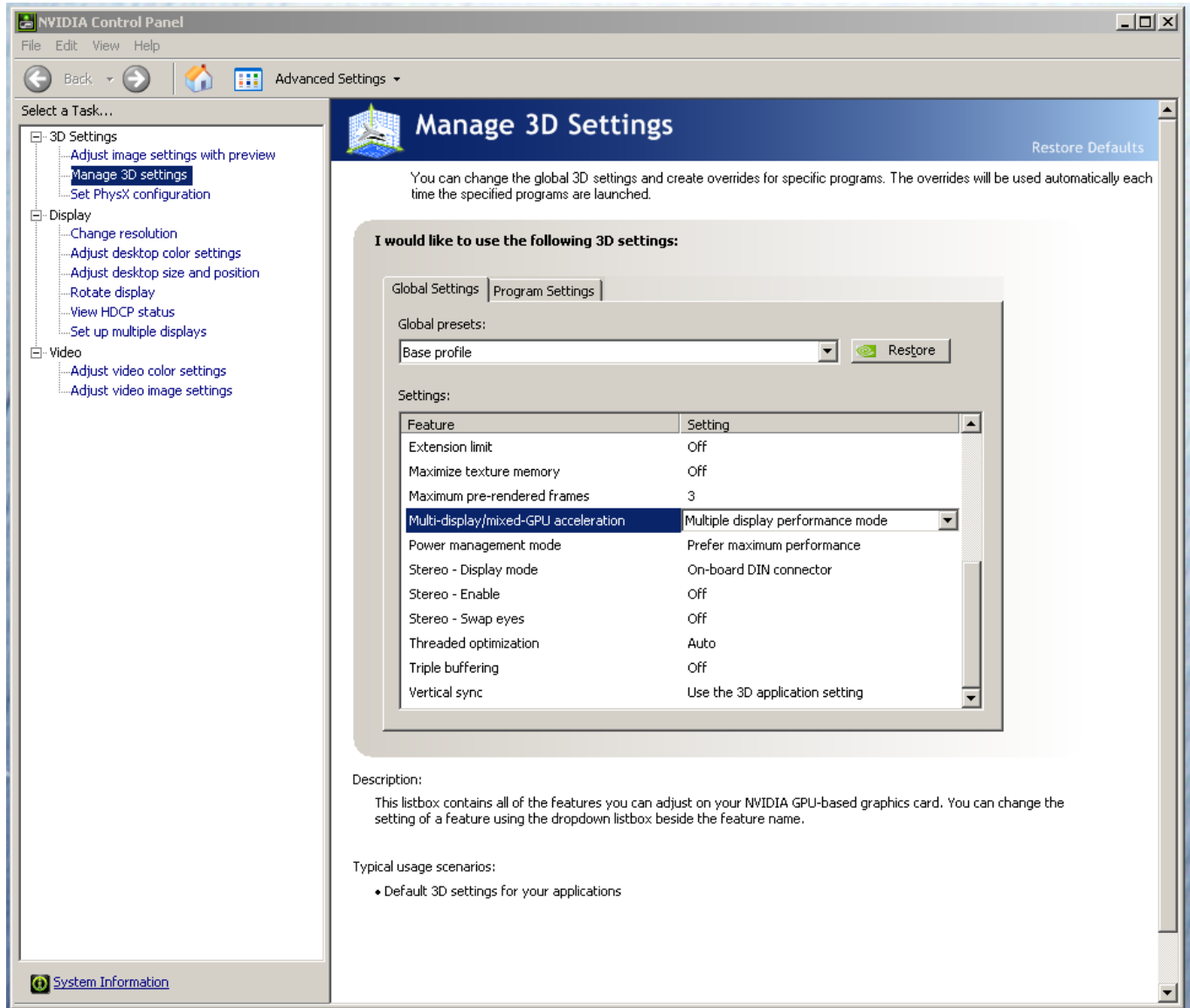
7. Under the “Global Settings” tab select “Base Profile
8. Scroll down and locate the “Power Management Mode” feature. Select “Prefer maximum performance” as shown in the picture below.



9. Depress the “Apply” button.

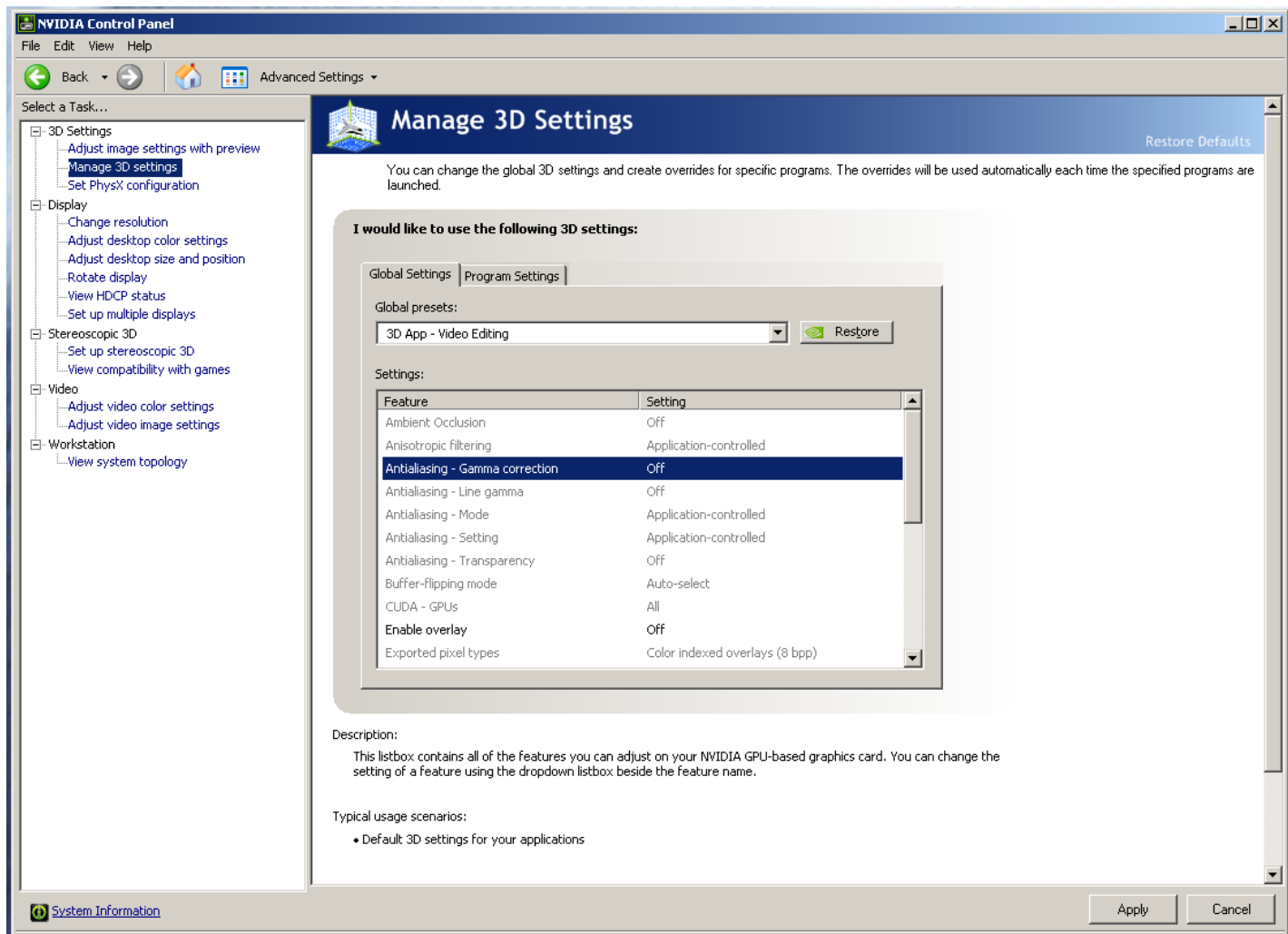
Make the following setting for “Multi-display/mixed-GPU acceleration”

10. 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”

11. Under “Global Settings” tab select “3D App-Video Editing” setting as shown in picture below:



12. Depress the “Apply” button

13. Nvidia driver optimization settings for Avid environments are complete.

E.) Nvidia Quadro GPU monitor connectivity:

The Nvidia Quadro 4000 graphics card has a single DVI port and two Display-Port ports

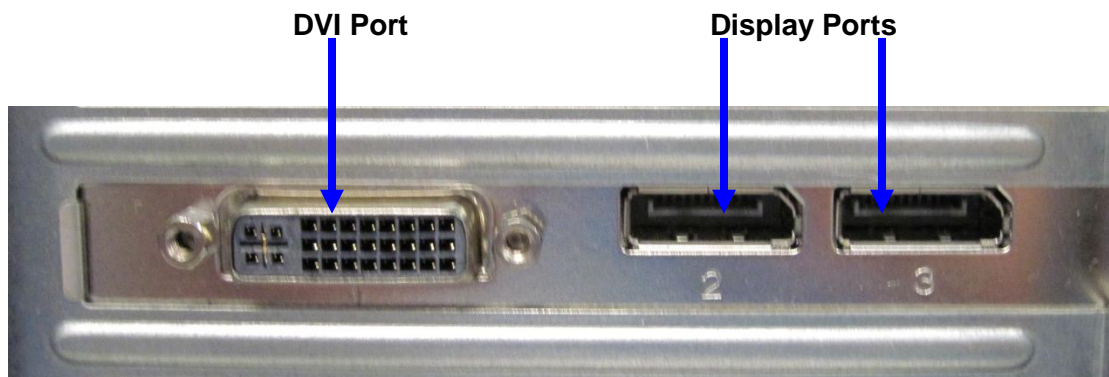
(Important: Display-ports are not HDMI ports; at first glance they do look very similar to HDMI ports)

(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.)

Display Ports are digital only. The display port to DVI adapter is also digital only. You can only connect a VGA monitor to the DVI port through an adapter.

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).***



F.) Serial Port Deck Control:

Serial Port Deck Control:

The LENOVO C30 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 C30 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 C30 USB port.
- Once the Keyspan 19HS driver is installed then plug the Keyspan 19HS into a C30 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.

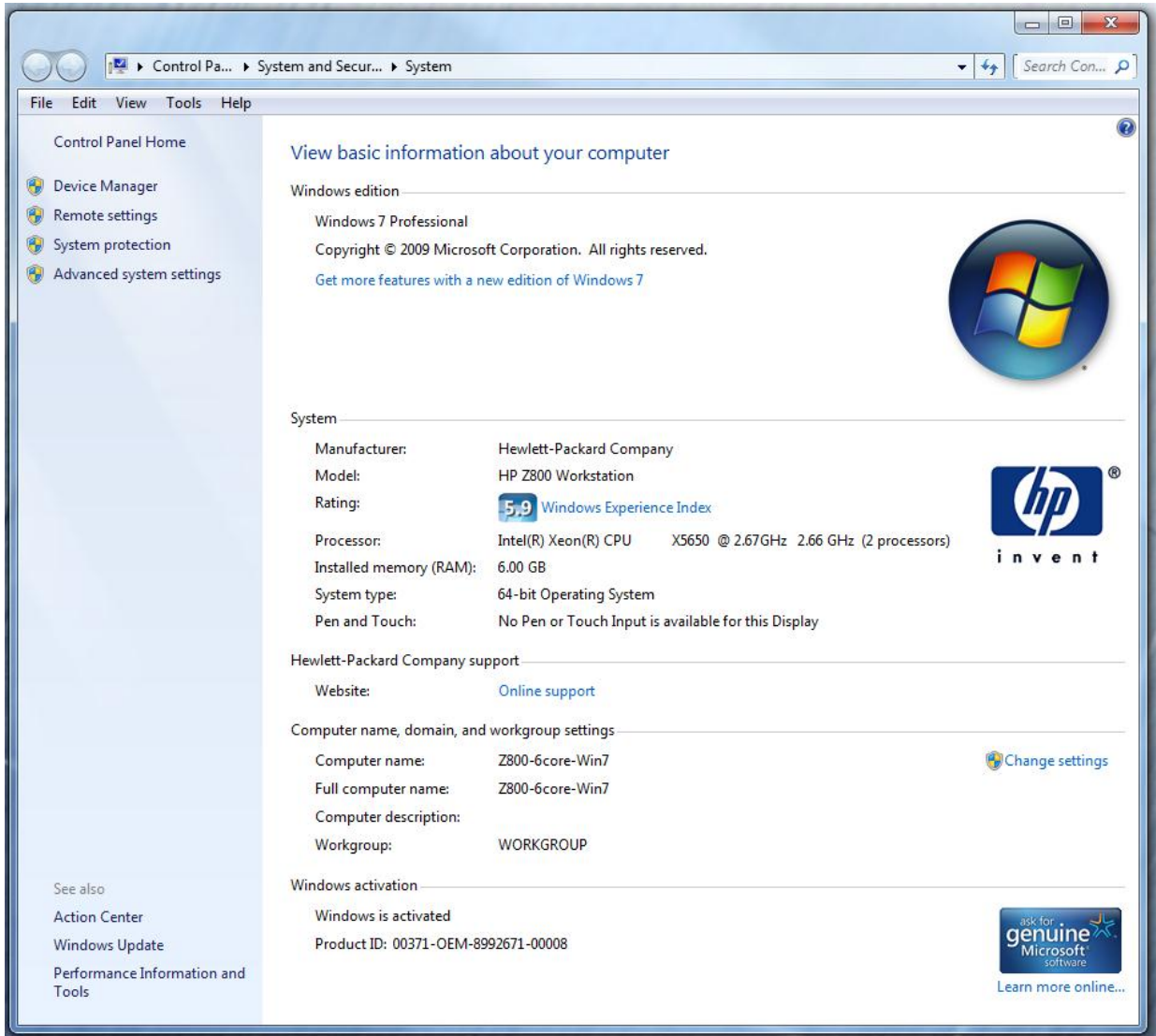
- Optimizations for Video Editors - Windows 7

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

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

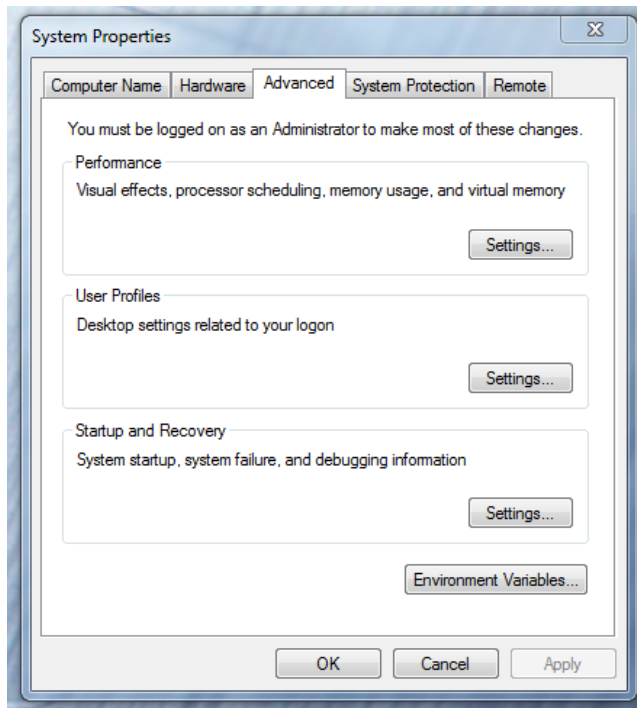
1. Right-Click on My Computer / Computer

2. Select Properties
3. The screen below will be displayed:

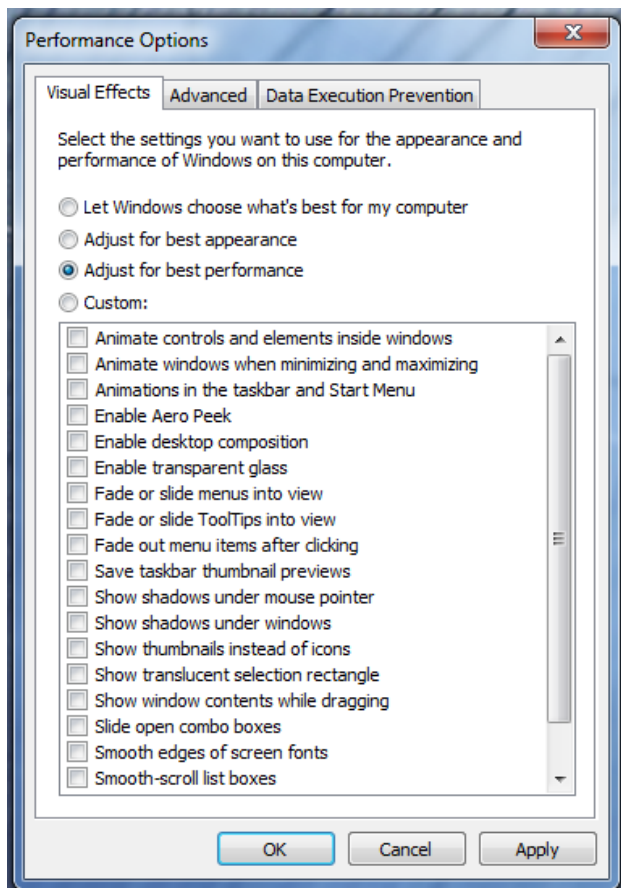


4. On the left side of the screen above, locate and select “Advanced system settings”

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

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

Intel PRO 1000 Dual Gb HBA / Intel i350-T2 Dual Gb NIC HBA

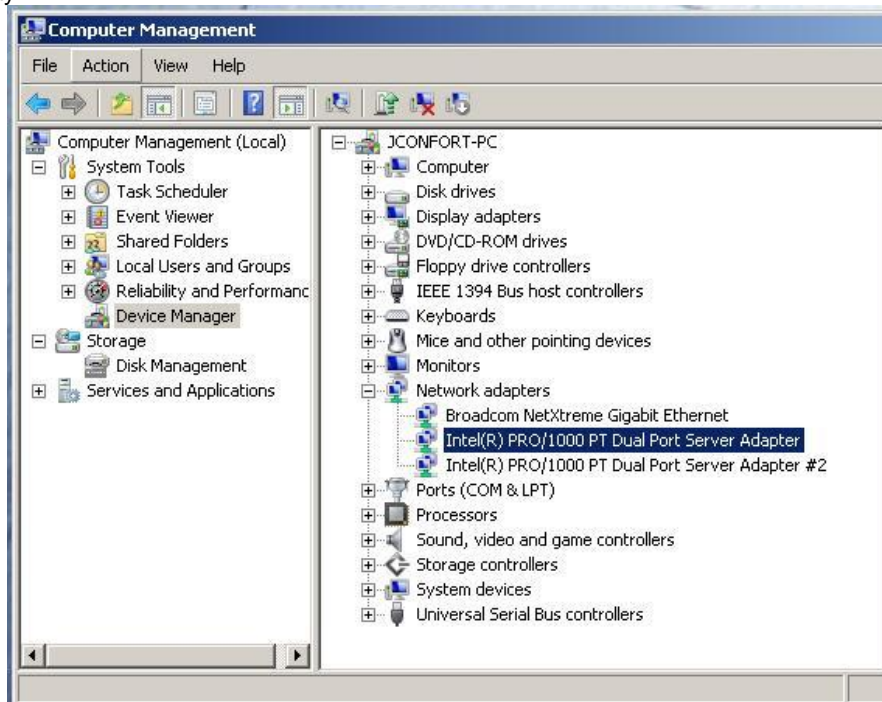
Intel PRO 1000 PT Driver: The proper driver can be found in the ISIS software directory: Tools_3rdParty / Drivers_and_Firmware

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.

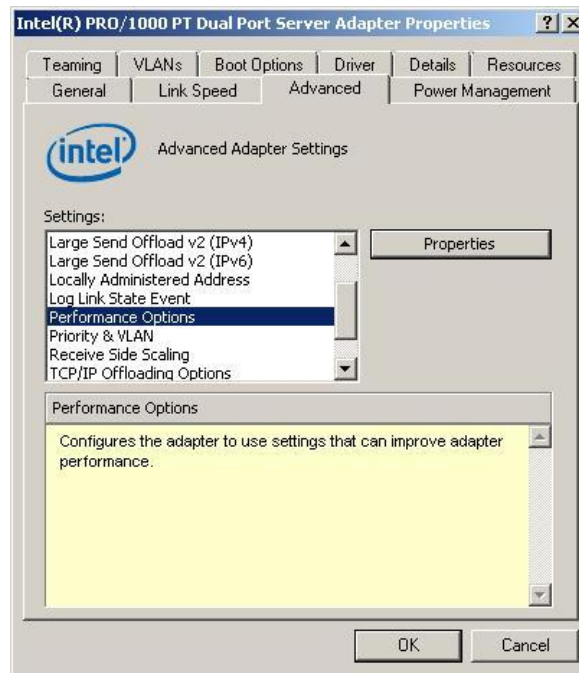
1. For the performance settings, change the following parameters:
 - Receive Buffers to 1024
 - Transmit Buffers to 1024
2. Disable the windows firewall.

To set the Intel NIC Receive / Transmit buffers:

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

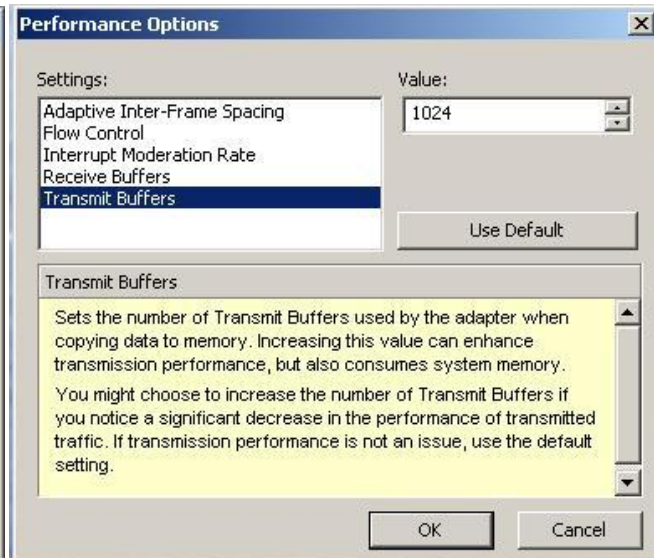
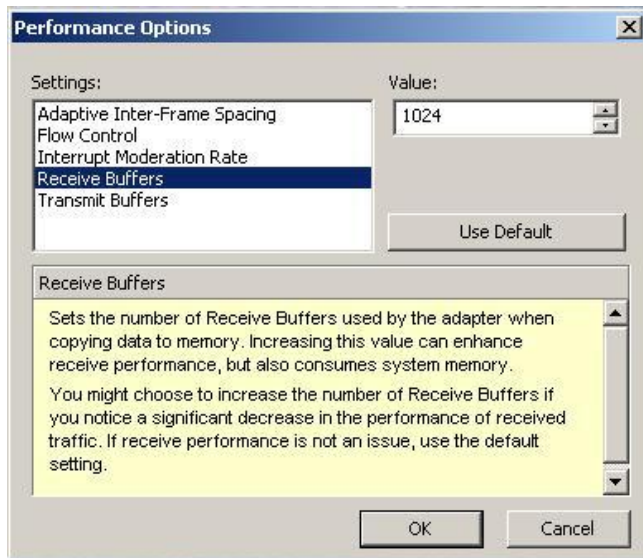


Select performance options and then select Properties.



Set Receive Buffers to 1024

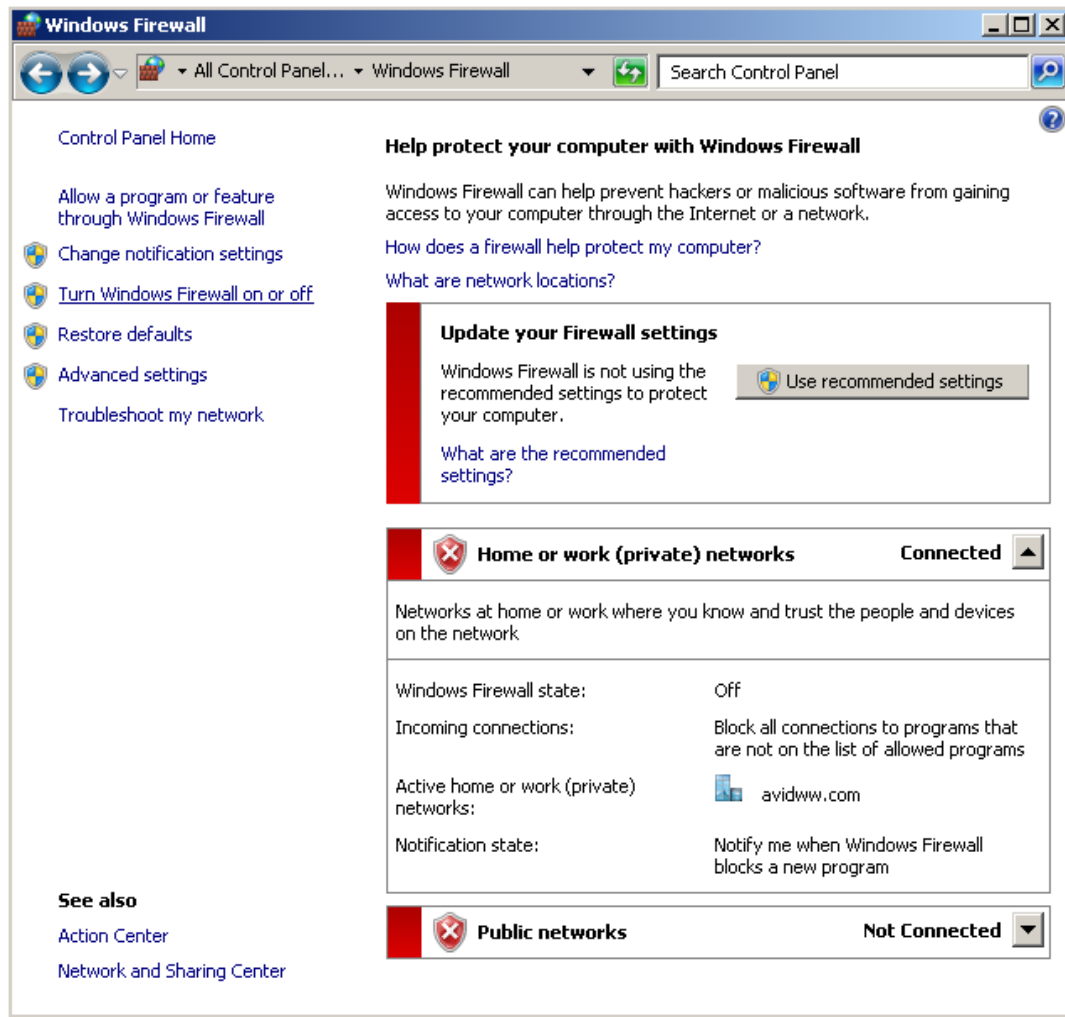
Set Transmit Buffers to 1024



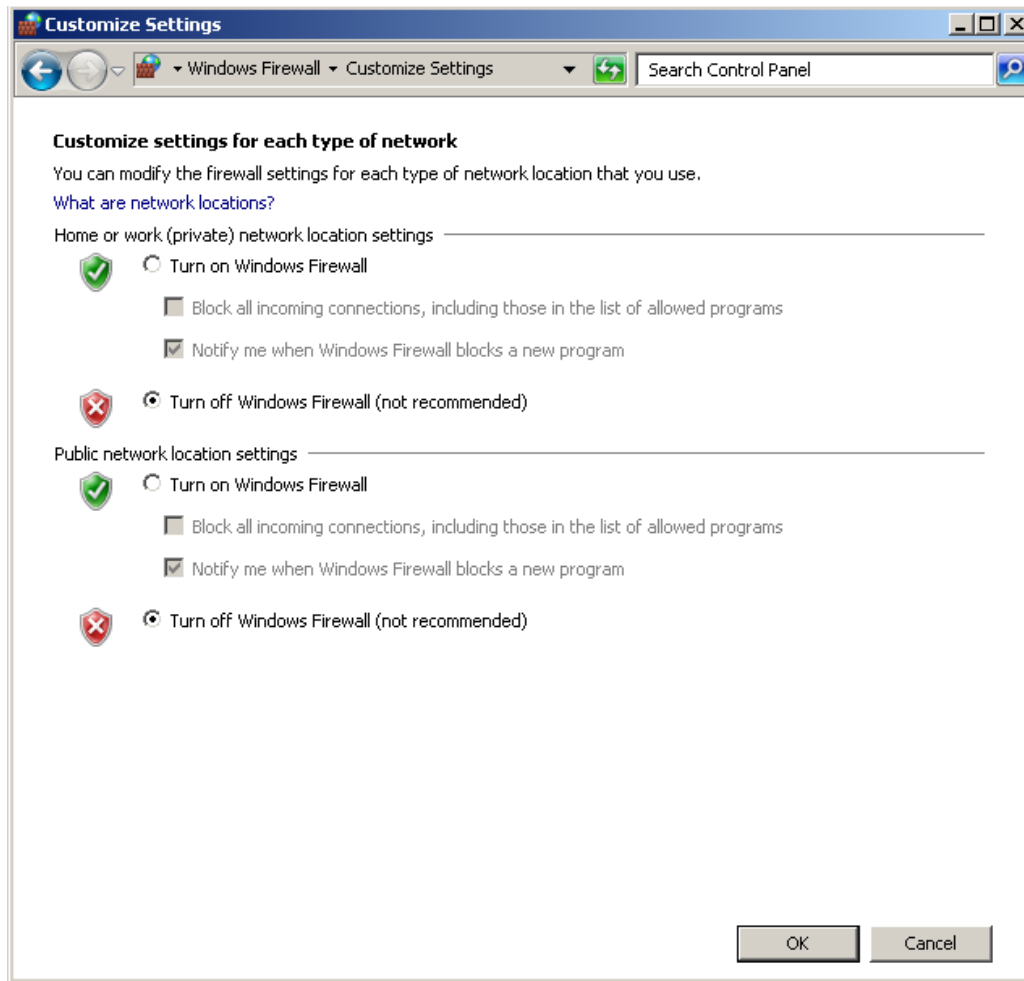
Perform this for each instance of and Intel NIC port which will be used for ISIS connectivity.

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	September 14 th , 2012	Dave Pimm	Initial draft of the C30 configuration guide for support of Media Composer 6.x, Symphony 6.x and NewsCutter 10.x