



**Avid Configuration Guidelines**  
**HP Z6 G4 workstation**  
**Dual 8 to 28 Core CPU System**



## 1.) HP Z6 G4 AVID Qualified System Specification:

### Z6 G4 Hardware Configuration

#### Supported Intel Xeon Scalable family (Skylake) CPU Choices

- Dual Xeon Silver 4114 2.2 Ghz, turbo up to 3.0Ghz 10-core
- Dual Xeon Silver 4116 2.1 Ghz, turbo up to 3.0Ghz 12-core
- Dual Xeon Gold 5118 2.3 Ghz, turbo up to 3.2Ghz 12-core (Good - SD, HD editing)
- Dual Xeon Gold 5120 2.2 Ghz, turbo up to 3.7Ghz 14-core
- Dual Xeon Gold 6130 2.1 Ghz, turbo up to 3.7Ghz 16-core
- Dual Xeon Gold 6132 2.6 Ghz, turbo up to 3.7Ghz 14-core
- Dual Xeon Gold 6134 3.2 Ghz, turbo up to 3.7Ghz 8-core
- Dual Xeon Gold 6136 3.0 Ghz, turbo up to 3.7Ghz 12-core
- Dual Xeon Gold 6140 2.3 Ghz, turbo up to 3.7Ghz 18-core \*
- Dual Xeon Gold 6142 2.6 Ghz, turbo up to 3.7Ghz 16-core (Better - UHD editing)
- Dual Xeon Gold 6148 2.4 Ghz, turbo up to 3.7Ghz 20-core \*
- Dual Xeon Gold 6152 2.1 Ghz, turbo up to 3.7Ghz 22-core \*
- Dual Xeon Platinum 8160 2.1 Ghz, turbo up to 3.7Ghz 24-core \*

#### Supported Intel Xeon Scalable family Gen 2 (Cascade lake) CPU Choices

- Dual Xeon Silver 4216 2.1 Ghz, turbo up to 3.2 Ghz 16-core \*
- Dual Xeon Gold 5215 2.5 Ghz, turbo up to 3.4 Ghz 10-core
- Dual Xeon Gold 5218 2.3 Ghz, turbo up to 3.9 Ghz 16-core \* (Good - SD, HD editing)
- Dual Xeon Gold 5220 2.2 Ghz, turbo up to 3.9 Ghz 18-core \*
- Dual Xeon Gold 6230 2.1 Ghz, turbo up to 3.9 Ghz 20-core \*
- Dual Xeon Gold 6240 2.6 Ghz, turbo up to 3.9 Ghz 18-core \*
- Dual Xeon Gold 6242 2.8 Ghz, turbo up to 3.9 Ghz 16-core \* (Better - UHD editing)
- Dual Xeon Gold 6244 3.6 Ghz, turbo up to 4.4 Ghz 8-core
- Dual Xeon Gold 6248 2.5 Ghz, turbo up to 3.9 Ghz 20-core \* (Best – UHD 5994 4 Stream XAVC)
- Dual Xeon Gold 6252 2.1 Ghz, turbo up to 3.7 Ghz 24-core \*

#### Notes –

- Higher CPU speeds are preferred over CPU core count for MC application
- Dual 6144, 6146, 6154, 8180, 6254, 8260 and 8280 are NOT supported in the Z6 (only supported in Z8)
- Dual 16+ Core CPUs require MC 8.9.3 or higher (64+ virtual CPUs)
- 2<sup>nd</sup> CPU is configured on an optional board with CPU and memory

#### Supported Video Cards

- 1.) NVIDIA RTX4000 8GB PCI-e video board (Min 2018.12.2) (best price performance)
- 2.) NVIDIA RTX5000 16GB PCI-e video board (Min 2018.12.2) (better performance – higher \$\$)
- 3.) NVIDIA P2000 5GB PCI-e video board
- 4.) NVIDIA P4000 8GB PCI-e video board (best price performance)
- 5.) NVIDIA P5000 16GB PCI-e video board
- 6.) AMD Radeon Pro WX7100 8GB PCI-e video board
- 7.) AMD Radeon Pro WX9100 16GB PCIe video board

System Disk Drive– 500 GB (recommended) SATA SSD. HP offers higher performing solid-state, NVMe, and SAS boot drive options which are acceptable. Recommend a HP qualified drive be selected.

Standard AVID memory configuration:

- Systems with Xeon scalable Skylake CPU's use DDR4-2666MHz memory (up to 12 DIMMs per system)
- Systems with Xeon scalable Gen2 Cascade Lake CPU's use DDR4-2933MHz memory (up to 12 DIMMs)
- Each CPU has 6 memory lanes - optimal bandwidth when all 12 memory lanes filled
  - 64GB (8 x 8GB) DDR4 2666/2933 MHz ECC memory – (Requires eight 8GB DIMMs) – minimum
  - 96GB (12 x 8GB) DDR4 2666/2933 ECC memory – (Requires twelve 8GB DIMMs) – **Best Performance**

Memory modules must be installed according to manufacturer's requirements

Optional AVID memory configuration:

- 128GB (8 x 16GB) DDR4 2666/2933 ECC memory – (Requires eight 16GB DIMMs)
- 192GB (12 x 16GB) DDR4 2666/2933 ECC memory – (Requires twelve 16GB DIMMs)

Memory configuration constraints

- No other memory configurations are formally supported in AVID environments.
- **Un-balanced memory configurations will result in a poor performing editor.**
- NUMA should be disabled in BIOS

## 2.) Qualified Operating Systems, Avid Client Editing Applications, Hardware and Shared-Storage support for the HP Z6 G4:

HP Supports:

- **Microsoft® Windows 10 Pro / Enterprise 64-bit Edition Version 1803 or later – (MC 8.8 or above)**

**See microsoft win 10 lifecycle fact sheet for supported Win 10 versions:**

<https://support.microsoft.com/en-us/help/13853/windows-lifecycle-fact-sheet>

**Not Supported –**

- **Microsoft® Windows 7 – any version**
- **Microsoft Windows 8 or 8.1 – any version**

Media Composer Application	Minimum Rev
Media Composer 18.12.x	18.12.2 required for Gen 2 Scalar CPUs and Nvidia RTX graphics
Media Composer 8.x	8.8 for Gen 1 Scalar CPUs, Nvidia Pascal graphics 8.9.3 required for CPU virtual core count > 64
Media Composer 7.x	Not supported
NewsCutter 11.x	Not Supported

\* Nvidia P2000, P4000, P5000 require Nvidia driver that ships with the version of MC 8.8 and above

\* Nvidia RTX4000, RTX5000 require Nvidia driver that ships with the version of MC 2018.12.2 and above

\* AMD WX7100, WX9100 require AMD driver released 18.Q1 or later

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](http://avid.force.com/pkb/articles/en_US/download/AMD-Supported-GPU-Drivers)

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

	Qualified / Supported
Nitris DX	NOT SUPPORTED (requires PCIe gen 1 or 2 slot which is not available on this system) – causes system hang when MC upgraded
Mojo DX	SUPPORTED
Artist DNxIO/ DNxIQ (PCIe or thunderbolt connection)  Artist DNxIV/DnxID (thunderbolt only connection)	Yes – Supported  <u>PCIe Guidance</u>  PCIe preferred as it requires less system over-head due to direct PCIe to PCIe connection between the host CPU and Artist DNxIO.  <u>Thunderbolt Guidance</u>  Thunderbolt 2 & 3 - higher system over-head, not recommended to share Thunderbolt devices on the same TB bus with DNxIO, DNxIQ, DNxIV, DNxID  DNxIO would require TB3 to TB2 converter  Thunderbolt 2 offers support of cable lengths up to 60-meters <b>(via qualified Corning Thunderbolt cables)</b> for users needing to physically place the Artist DNxIO at longer distances from the host CPU Workstation.
3 <sup>rd</sup> Party Qualified Hardware	See release notes and Avid website for information regarding supported 3 <sup>rd</sup> party hardware (vendor qualified)
NEXIS / ISIS Single 1Gb Ethernet Client NEXIS Dual 1Gb Ethernet Client  Intel i350 T2V2, i219, X722	ISIS 5500 / 5000 , 7500 / 7000 Avid NEXIS Pro, E2, E2 SSD, E4, E5, E5 NL V18.x
NEXIS / ISIS Ultra Hi-res (10Gbit) client  Myricom Single or dual Port 10Gbit Atto FFRM-NS11, NS12 NT11, NT12 Intel X520-T2, X540-T2, X710-DA2, X722	ISIS 5500 / 5000 , 7500 / 7000 Avid NEXIS Pro, E2, E2 SSD, E4, E5, E5 NL V18.x
NEXIS 40Gigabit  Atto FFRM-NQ 41/42	Avid NEXIS Pro, E2, E2 SSD, E4, E5, E5 NL V18.x

#### 4.) AVID qualified HBA info

AVID qualified HBA	AVID Part Number	Slot Location	Function
Avid Artist DNxIO HBA Avid Artist DNxIQ HBA	Avid part # 7030-30048-02 BMD PCIe cable kit	#1	Avid Artist DnxIO interface HBA Avid Artist DNxIQ interface HBA
Mojo-DX Interface HBA	Active: 7030-30048-02 Active: 7030-30048-01 Active: 7030-20084-01	#1	Avid Mojo DX Hardware Interface HBA – Supported with any of the three listed Active HBA's
HP Thunderbolt 3 adapter card	Not stocked by AVID	#6	TB3 – HP restricted to slot 6
Atto R680, H680	Not stocked by AVID	#4	Local SAS Storage
LSI 9200-8e SAS controller	7030-30036-01	#4	Local SAS Storage
Vendor qualified 3 <sup>rd</sup> party hardware x8 PCI-E	Not stocked by AVID	#4 or #6	Vendor qualified 3 <sup>rd</sup> party hardware interface. See release notes and Avid website for information regarding supported 3 <sup>rd</sup> party hardware
Atto FFRM-NQ 41/42 Single or dual port 40Gb	Not stocked by AVID	#5	Shared Storage: NEXIS 40 Gb-Ethernet
Atto FFRM-NS11, NS12, NT11, NT12 10 Gb single or dual port	Not stocked by AVID	#5	Shared Storage: NEXIS 10 Gb-Ethernet
Intel i350-T2 – Dual Gb NIC	Not stocked by AVID	#5	Shared Storage: NEXIS Copper 1 Gb-Ethernet Dual Gb NEXIS Connectivity
Intel X520, X540, X710 single or dual port 10Gb	Not stocked by AVID	#5	Shared Storage: NEXIS 10 Gb-Ethernet
Myricom 10G-PCIE-8B-S, 10G-PCIE-8B2-2S, 10G-PCIE2-8C2-2T	7030-30041-01	#5	Shared Storage: NEXIS 10Gb-Ethernet

#### Notes:

- Avid HIB part # 7030-30048-01 is no longer supported with DNxIO (use # 7030-30048-02 only)
- Avid artist DnxIQ requires BMD cable kit and PCIe card – Avid HIB card is NOT supported with DNxIQ
- HP thunderbolt 3 PCIe card will be supported in Z8 G4, Z6 G4 and Z4 G4. For older HP workstations, use Thunderbolt 2 PCIe card from HP.
- Intel X710-DA2 only supported by HP on Win 10 – driver on HP web site

## 5.) Slot Configuration:

Slot Configuration Information			
Slot #	Electrical	Mechanical	
1	X4 PCI-E Gen 3	X4 Open-ended Connector	Avid/BMD HIB card for DNxIO/DNxIQ, Mojo DX Or 3 <sup>rd</sup> party PCIe Open IO card
2	x16 PCI-E Gen 3 (75Watts)	x16	Graphics Card: Nvidia P2000, P4000, P5000*, RTX4000, RTX 5000* AMD WX7100, WX9100 <i>Please Note: Dual slot graphics cards will block access to slot #3</i>
3	X4 PCI-E Gen 3	X4 Open-ended Connector	Optional HP Zturbo SSD storage cards
4	X8 PCI-E Gen 3 (x4 if M.2 slot 2 used)	X8 open ended	Local SAS Storage Controllers Or Qualified 3 <sup>rd</sup> party x8 OpenIO controller
5	X16 PCI-E Gen 3	X16	Shared Storage Controllers Nexis/ISIS Intel X710, i350-T2 Atto FFRM-NS11, NS12, NT11, NT12 Myricom 10Gb
6	X4 PCI-E Gen 3	X4 Open-ended Connector	HP Thunderbolt 3 adapter card restricted to slot 6 Or 3 <sup>rd</sup> party PCIe Open IO card
M 1	M.2 slot 1 PCI-E Gen 3	M.2 x4	HP nVMe storage cards
M 2	M.2 slot 2 PCI-E Gen 3	M.2 x4	HP nVMe storage cards
	Embedded Intel I219-LM Gb NIC and X722 1Gb NIC	Onboard PCI-e ports	Qualified for Avid Nexis/ISIS
	Optional Intel X722 dual port 10Gb NIC module	Onboard plug in PCIe module	Qualified for Avid Nexis/ISIS

## 6.) Use of embedded NIC ports for Nexis/ISIS connectivity **Important Information**

The Z6 G4 has two embedded NIC ports (i219LM and X722). Both ports are qualified for Nexis. The optional dual port X722 10Gb module is also supported for Nexis.

For proper operation and connectivity of the Intel network interface with NEXIS the following settings are required (this is done automatically by Nexis install):

1. 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.

## 7.) **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 HP for shipping Z6 G4 systems

### Z6 G4 Required system BIOS changes:

1. Verify CPU Processors are set to Hyper-Threading
2. Memory option for NUMA – **Disable**

### Set Z6 G4 Required system BIOS changes:

- During boot up press F10 at the HP 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)

## 8.) Graphics Qualified Drivers:

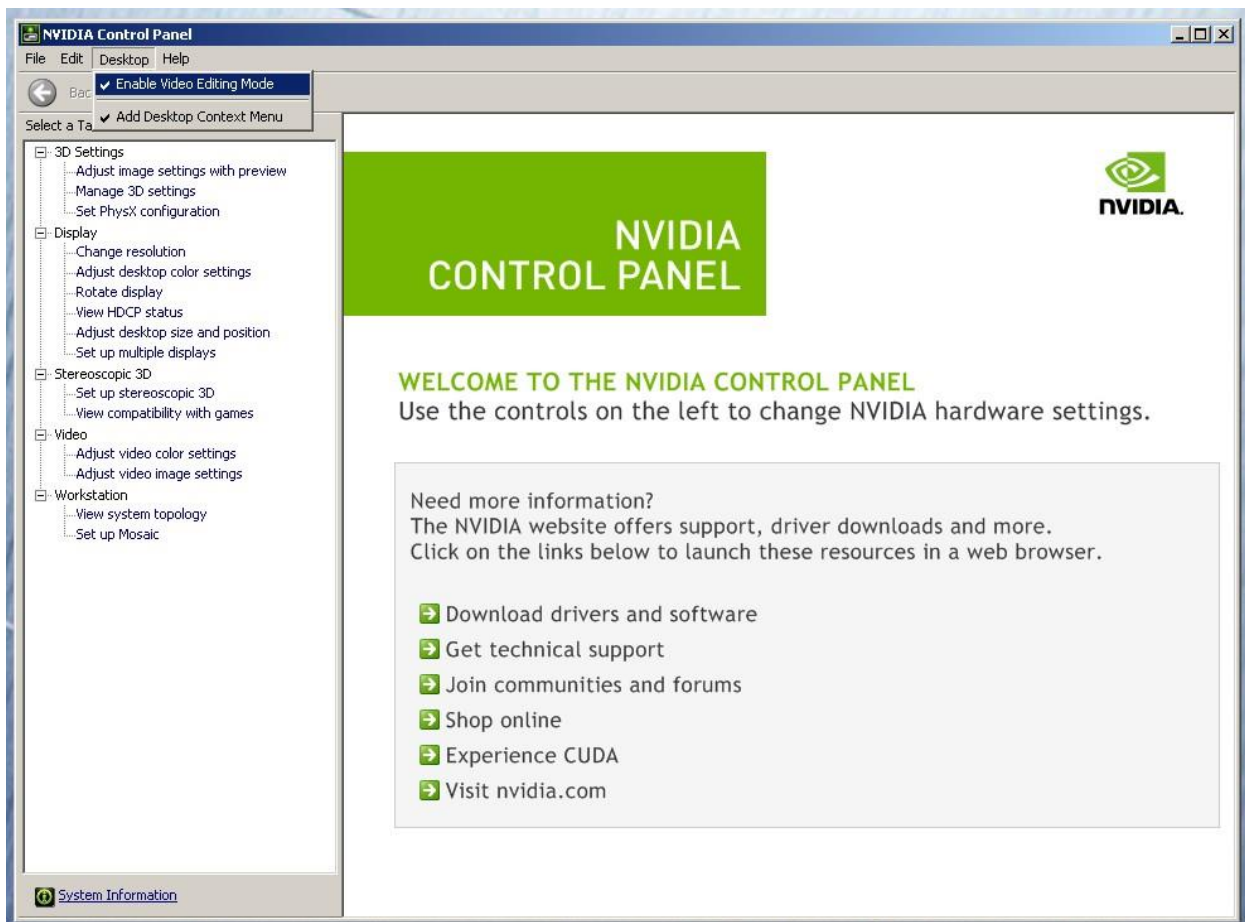
AVID Software	Version(s)	GPU	Driver Required
Media Composer	2018.12.2	RTX4000, RTX5000	411.95
Media Composer	8.8.x	Nvidia P2000, P4000, P5000	Nvidia 385.08
Media Composer	8.8.x	AMD WX7100, WX9100	AMD 18Q1

After installation of the AVID software the supported Nvidia driver can be found in the following directory:  
Program Files / Avid / Utilities / Nvidia.

\*\* The AMD graphics driver is NOT included with MC release builds. You can find this driver on the AMD web page  
<http://support.amd.com/en-us/download>

### **Set optimized Nvidia driver settings for Avid editing environments:**

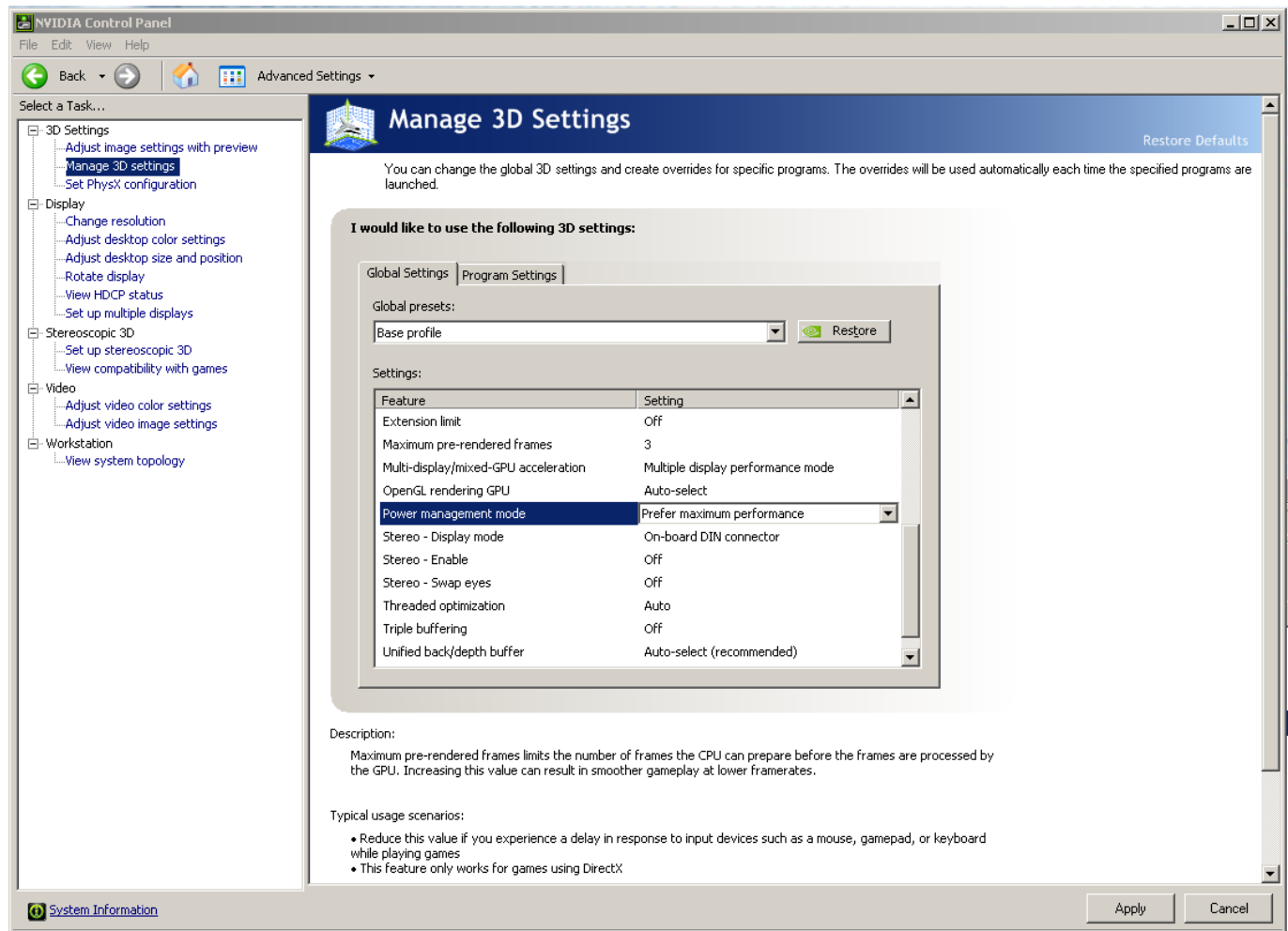
1. See picture below
2. Right-Click on the desktop and select Nvidia Control Panel
3. Select the “Desktop” menu selection in the control panel menu bar.
4. Enable “Desktop -> Video Editing Mode



5. Select Manage 3D Settings
6. Select “Global Settings” Tab
7. Under the “Global Settings” tab select “3D App – Default Global Settings” or “Base Profile”
8. Scroll down and locate the “Power Management Mode” feature. The default setting is “Adaptive”



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



10. Depress the “Apply” button.

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

## **E.) GPU monitor connectivity:**

The Nvidia Quadro P2000 & P4000 graphics card has four Display-Port ports. All 4 ports can be used simultaneously.

The Nvidia Quadro P5000 graphics cards have one DVI port and four Display-Port ports. 4 of the 5 ports can be used simultaneously.

The RTX 4000 has 3 Display Ports. The RTX5000 has 4 Display Ports.

The AMD WX7100 graphics card has four full size display ports.

The AMD WX9100 graphics card has 6 mini display ports.

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

## **F.) Serial Port Deck Control**

The HP Z6 G4 workstation does NOT have an embedded serial port. 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 2<sup>nd</sup> 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 10

[http://avid.force.com/pkb/articles/en\\_US/Troubleshooting/Media-Composer-Windows-10-Optimizations-and-Troubleshooting](http://avid.force.com/pkb/articles/en_US/Troubleshooting/Media-Composer-Windows-10-Optimizations-and-Troubleshooting)

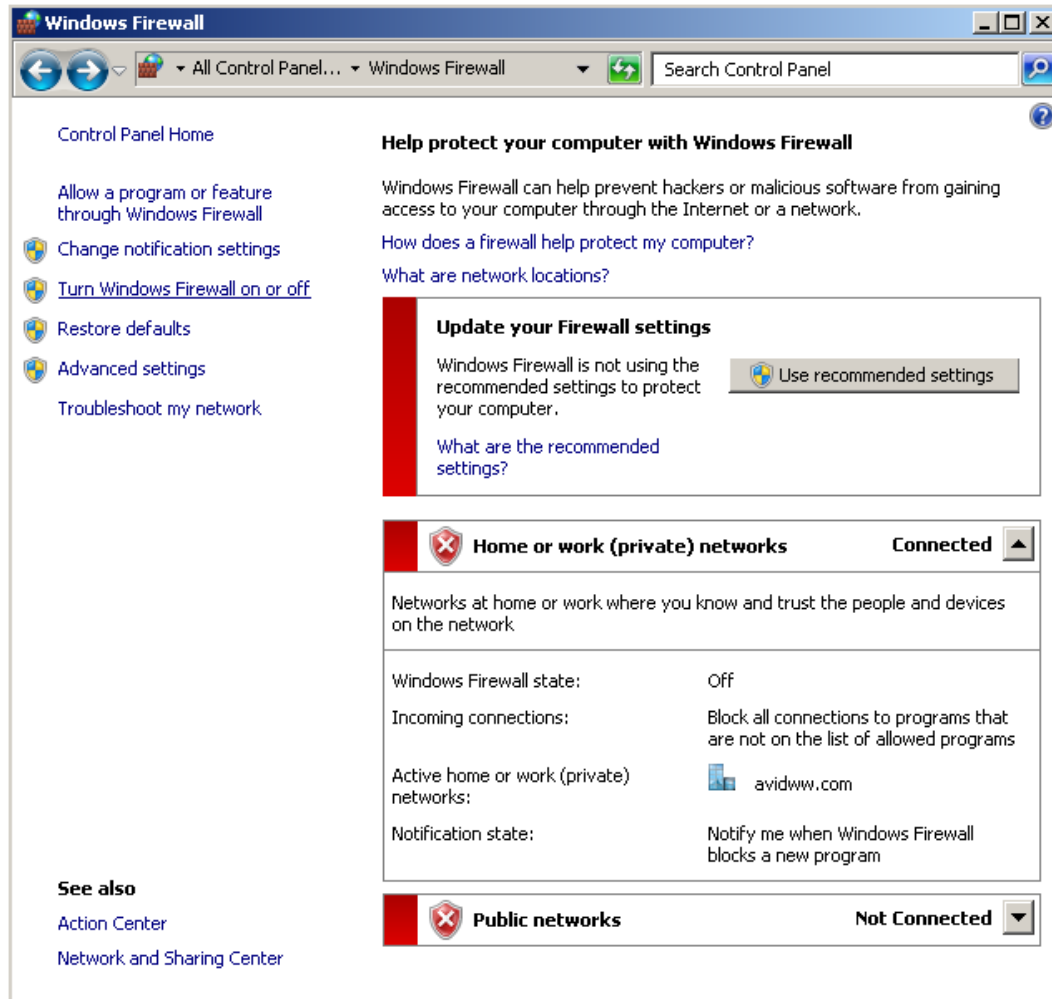
I.) **Intel NIC Port(s) for NEXIS connectivity:**

For proper operation and connectivity of any Intel NIC port used with NEXIS the settings below are required. Example below is for the Intel PRO 1000 PT.

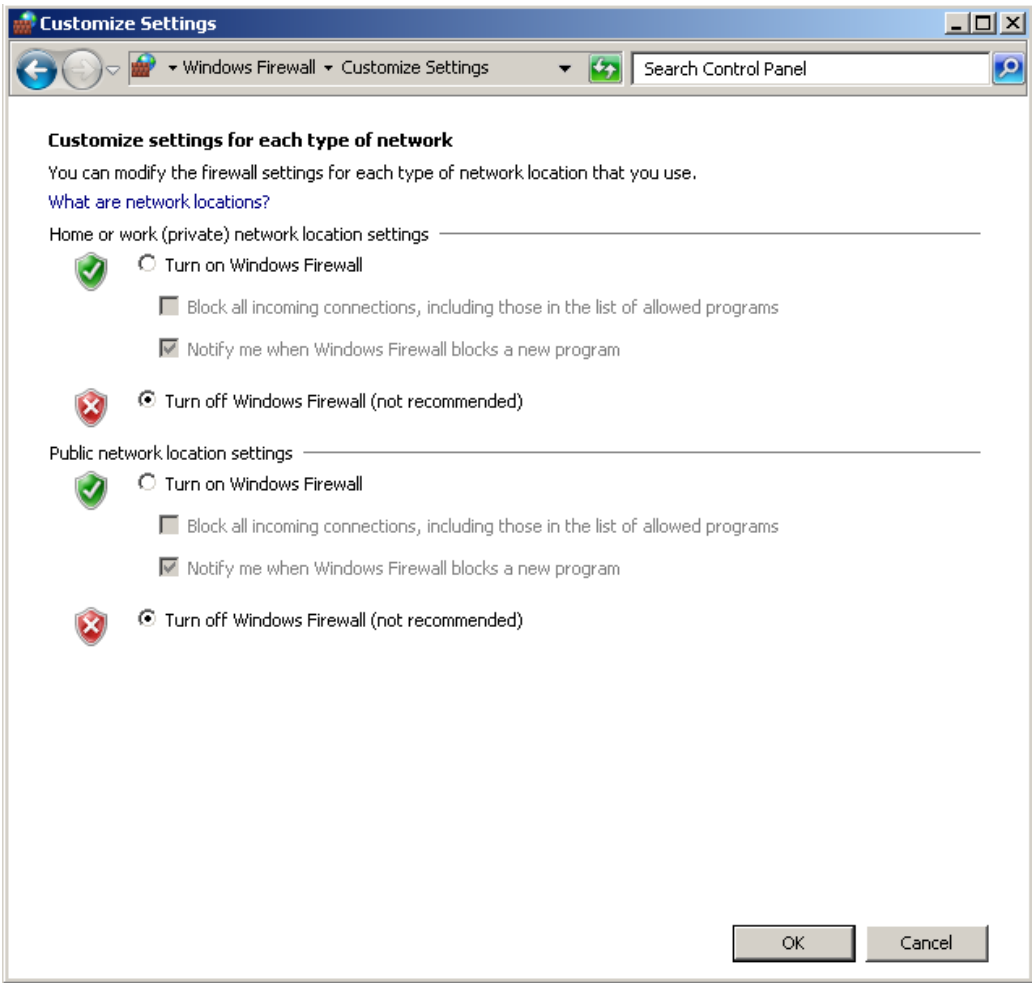
1. For the performance settings, change the following parameters:
  - Receive Buffers to 1024
  - Transmit Buffers to 1024
2. Disable the windows firewall.

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	Jan 4, 2018	Dave Pimm	Initial release of the HP Z6 G4 configuration guide
Rev B	Feb 20, 2018	Dave Pimm	Updates from HP site
Rev C	April 23, 2018	Dave Pimm	Corrections
Rev D	Oct 15, 2018	Dave Pimm	Update to HP TB card slot restrictions
Rev E	March 8, 2019	Dave Pimm	Add Nvidia RTX cards
Rev F	June 24, 2019	Dave Pimm	Add 2 <sup>nd</sup> Gen Scalar CPUs, 40 Gb NICs