Avid Configuration Guidelines
HP ZCentral 4R workstation
6 to 18 Core CPU System

Dave Pimm – Avid Technology – Feb 9, 2022

Rev C

1.) HP Z4R AVID Qualified System Specification:

Z4R Hardware Configuration

Intel Xeon W-series (Cascade lake – Q4 '19)

- Xeon W-2235 3.8 Ghz, turbo up to 4.6 Ghz 6-core
- Xeon W-2245 3.9 Ghz, turbo up to 4.5 Ghz 8-core
- Xeon W-2255 3.7 Ghz, turbo up to 4.5 Ghz 10-core
- Xeon W-2275 3.3 Ghz, turbo up to 4.6 Ghz 14-core
- Xeon W-2295 3.0 Ghz, turbo up to 4.6 Ghz 18-core (Best performance)

- Note – Higher CPU speeds are preferred over CPU core count for MC application (as turbo speeds are similar, higher core count will give better performance.

Single power supply 675W – dual redundant power supply option or 2 x 675 W (1350 W) option

Supported Video Cards

1.) NVIDIA P1000 4GB PCI-e video board
2.) NVIDIA P2200 5GB PCI-e video board
3.) NVIDIA T1000 4GB PCI-e video board
4.) NVIDIA RTX 4000 8GB PCI-e video board
5.) NVIDIA RTX 5000 16GB PCI-e video board
6.) NVIDIA RTX A4000 16GB PCI-e video board - (Best price/performance)
7.) NVIDIA RTX A4500 20GB PCI-e video board
8.) NVIDIA RTX A5000 24GB PCI-e video board (Best performance)

RTX 5000 & A5000 requires addition of Dual Slot Riser and High End Chassis with 1350W PSU

System Disk Drive – 500 GB NVMe or SATA SSD (recommended). 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 W Cascade lake CPUs use DDR4-2933MHz ECC memory (up to 4 DIMMs per system)
- Each CPU has 4 memory lanes - optimal bandwidth when all 4 memory lanes filled

  - 32GB (4 x 8GB) DDR4 2933 MHz memory – (Requires four 8GB DIMMs)

Memory modules must be installed according to manufacturer's requirements

Optional AVID memory configuration:

- 64GB (4 x 16GB) DDR4 2933 memory – (Requires four 16GB DIMMs)
- 128GB (4 x 32GB) DDR4 2933 memory – (Requires four 32GB DIMMs)

Memory configuration constraints

- No other memory configurations are formally supported in AVID environments.
- 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, Avid Client Editing Applications, Hardware and Shared-Storage support for the HP Z4R:

HP Supports:

- **Microsoft® Windows 11 Pro / Enterprise 64-bit Edition Version 21H2 or later – (MC 21.12 or above)**
- **Microsoft® Windows 10 Pro / Enterprise 64-bit Edition Version 20H2 or later**

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, 8, or 8.1 – any version**
- **Microsoft Windows 10 1909 or before**

Media Composer Application	Minimum Rev
Media Composer 2019.12.x, 2020.x	Min 2019.12.x required
Media Composer 2018.x, 2019.1-11	Not supported
Media Composer 7.x, 8.x	Not supported
NewsCutter 11.x	Not Supported

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

	Qualified / Supported
Nitris DX/Mojo DX	NOT SUPPORTED End of support 3/31/2020
Artist DNxIO/ DNxIQ	Yes – PCIe only
Artist DNxIV/DNxIP/DNxID	NOT SUPPORTED - No thunderbolt option on the Z4R
3rd Party Qualified Hardware	See release notes and Avid website for information regarding supported 3rd party hardware (vendor qualified)
NEXIS Single 1Gb Ethernet Client NEXIS Dual 1Gb Ethernet Client Intel i350 T2V2, i219	Avid NEXIS Pro, E2, E2|SSD, E4, E5, E5|NL V20.5
NEXIS Ultra Hi-res (10Gbit) client Myricom Single or dual Port 10Gbit Atto FFRM-NS11,NS12 NT11, NT12 Intel X550-T2, X722	Avid NEXIS Pro, E2, E2|SSD, E4, E5, E5|NL V20.5
NEXIS 40Gigabit Atto FFRM-NQ 41/42	Avid NEXIS Pro, E2, E2|SSD, E4, E5, E5|NL V20.5

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	#2	Avid Artist DnxIO interface HBA Avid Artist DNxIQ interface HBA
Atto R680, H680	Not stocked by AVID	#3	Local SAS Storage
LSI 9200-8e SAS controller	7030-30036-01	#3	Local SAS Storage:
Vendor qualified 3rd party hardware x8 PCI-E	Not stocked by AVID	#2	Vendor qualified 3rd party hardware interface. See release notes and Avid website for information regarding supported 3rd party hardware
Atto FFRM-NS11,NS12, NT11, NT12 10 Gb single or dual port	Not stocked by AVID	#3	Shared Storage: NEXIS Optical Gb-Ethernet
Intel i350-T2 – Dual Gb NIC	Not stocked by AVID	#3	Shared Storage: NEXIS Copper 1 Gb-Ethernet Dual Gb NEXIS Connectivity
Intel X550, X722 single or dual port 10Gb	Not stocked by AVID	#3	Shared Storage: NEXIS Optical 10 Gb-Ethernet
Myricom 10G-PCIE-8B-S 10G-PCIE-8B2-2S, 10G-PCIE-8C2-2T	7030-30041-01	#3	Shared Storage: NEXIS 10Gb-Ethernet
Atto FFRM-NQ 41/42 40 Gb single or dual port	Not stocked by AVID	#3	Shared Storage: NEXIS Optical 40Gb-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**
- **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 - Single slot riser	x16 PCI-E Gen 3	X16	Nvidia graphics cards – single slot Or HIB card, local or shared storage if dual slot graphics
2 - Dual slot riser top slot	X8 PCI-E Gen 3	X16	Avid/BMD HIB card for DNxIO, DNxIQ Or 3rd party PCIe OpenIO card Nvidia graphics - Dual slot
3 - Dual slot riser bottom slot	X8 PCI-E Gen 3	X8	Shared Storage Controllers Nexis Or Local SAS storage Nvidia graphics - Dual slot
M1	M.2 slot 1 PCI-E Gen 3	M.2 x4	HP M.2 nVMe storage cards
M2	M.2 slot 2 PCI-E Gen 3	M.2 x4	HP M.2 nVMe storage cards
	Embedded Intel I219 1 GbE NIC	PCI-E x1	Qualified for Avid Nexis
	Embedded Marvell AQC-107 10GbE	PCI-E x4	Qualified for Avid Nexis

** NOTE: Dual graphics configuration requires Dual Slot Riser and High End Chassis with 1350 W PSU

6.) Use of embedded NIC ports for Nexis connectivity Important Information

The Z4R has two embedded NIC ports (Intel 1GbE and Marvell 10GbE).. Both ports are qualified for Nexis

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

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 Z4R systems*

Z4R Required system BIOS changes:

1. Verify CPU Processors are set to Hyper-Threading

Set Z4R 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)

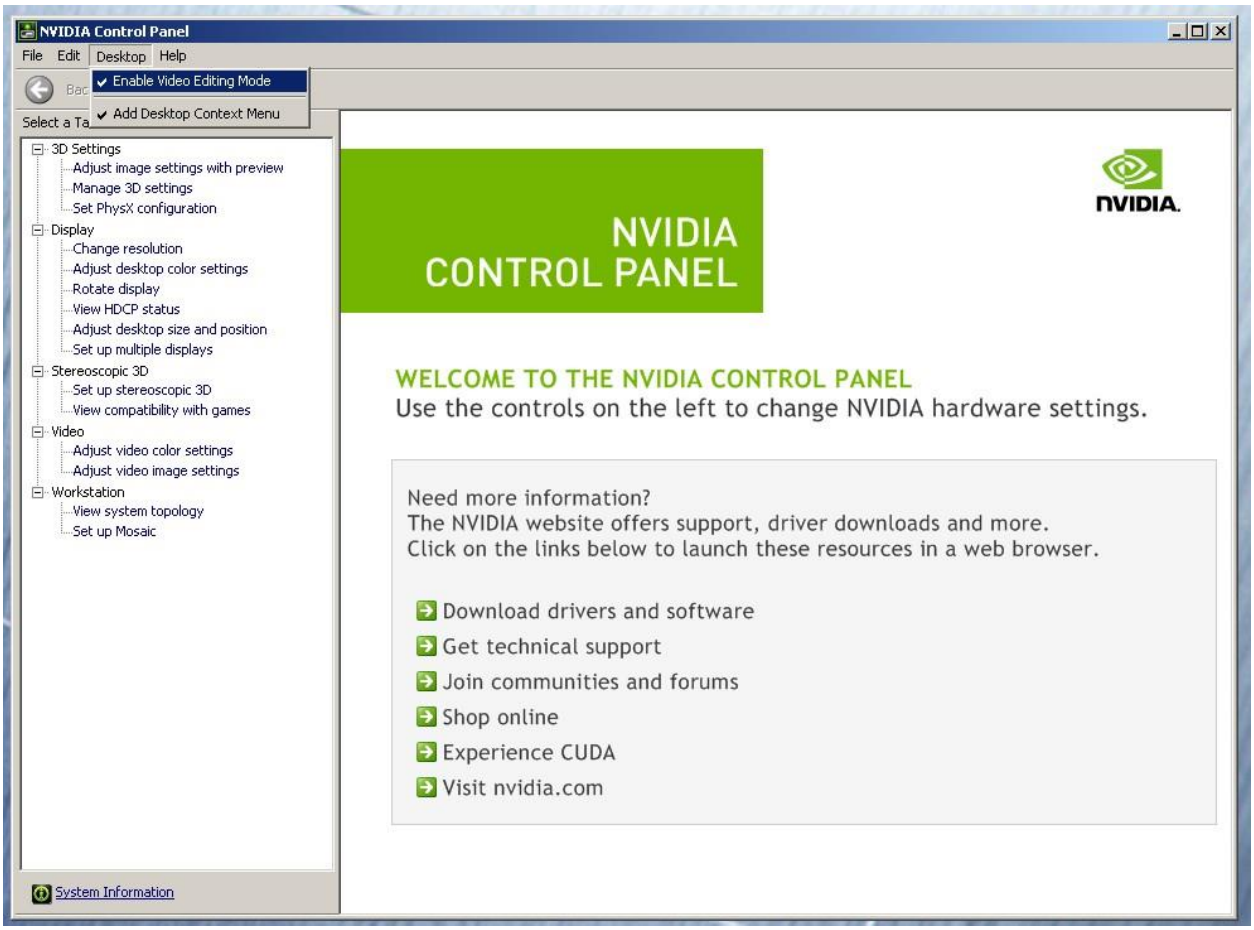
8.) Graphics Qualified Drivers:

AVID Software	Version(s)	GPU	Driver Required
Media Composer	2021.12	All Nvidia	472.47
Media Composer	2020.12.x and later	All Nvidia	462.96
Media Composer	2020.5 and later	All Nvidia	442.50
Media Composer	2019.12.x	All Nvidia	441.28

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:

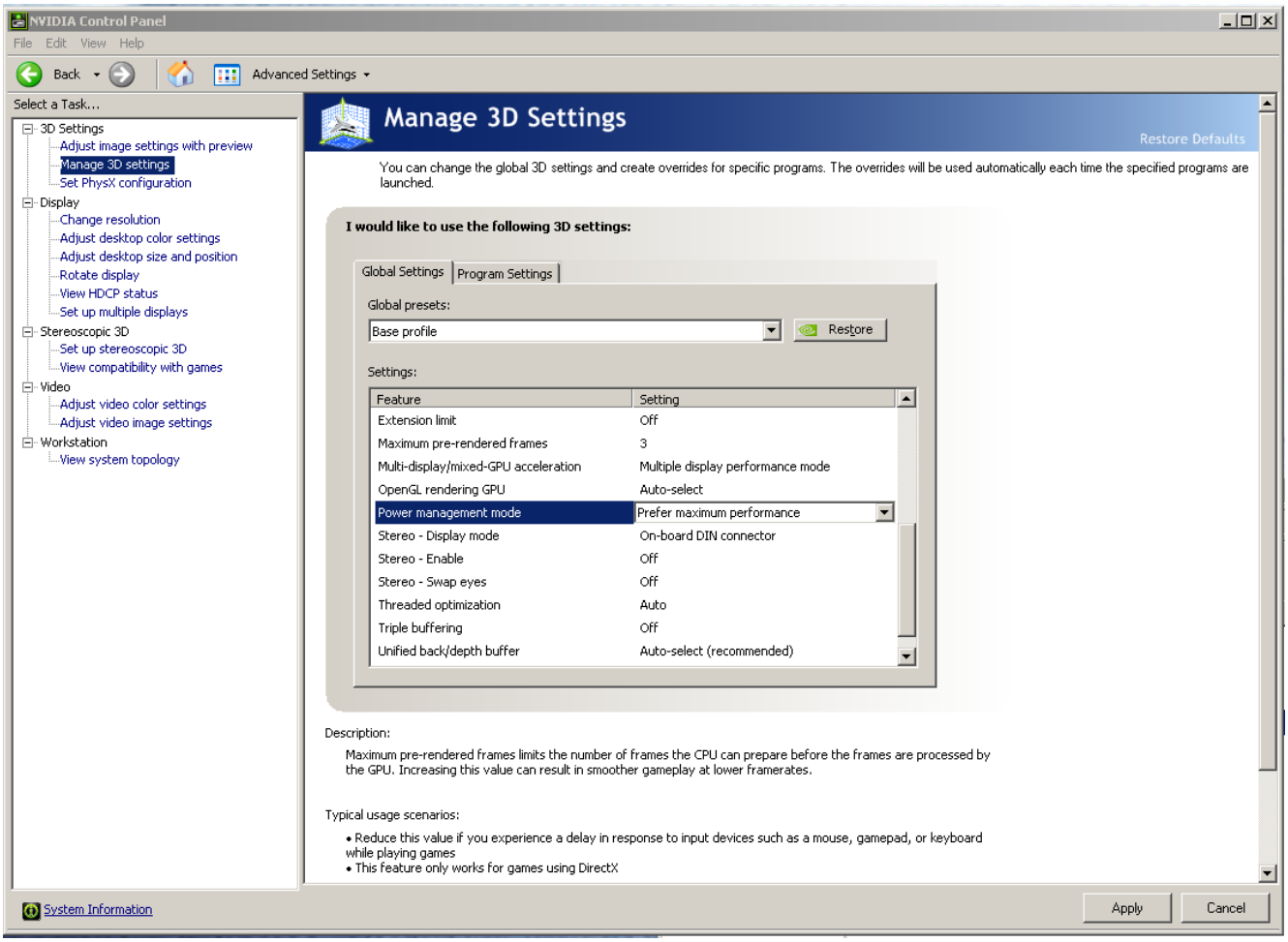
1. See picture below
2. Right-Click on the desktop and select Nvidia Control Panel
3. Select the “Desktop” menu selection in the control panel menu bar.
4. Enable “Desktop -> Video Editing Mode



5. Select Manage 3D Settings
6. Select “Global Settings” Tab
7. Under the “Global Settings” tab select “3D App – Default Global Settings” (Same as 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.

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9.) GPU monitor connectivity:

The Nvidia Quadro P4000, P2200 graphics cards have four Display-Port ports. The P1000 has 4 mini-display ports. The RTX 4000 has 3 Display Ports. The RTX 5000 & RTX A5000 have 4 Display Ports

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

10.) Serial Port Deck Control

The HP Z4R workstation does NOT have an embedded serial port. Primary or secondary / additional serial port deck control can be established using USB to serial port adapters. See the Avid KB for more info.

11.) 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

Revision Update

Revision	Date	Name	Update
Rev A	Nov 17, 2020	Dave Pimm	Initial release of the HP Z4R configuration guide
Rev B	Aug 9, 2021	Dave Pimm	Add Nvidia cards
Rev C	Feb 9, 2022	Dave Pimm	Add Nvidia cards, win 11