



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 (no longer available)

- 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 6238 2.1 Ghz, turbo up to 3.7 Ghz 22-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 *

2nd Gen REFRESH early 2020 (faster and cheaper)

- Dual Xeon Gold 5218R 2.1 Ghz, turbo up to 4.0 Ghz 20-core *
- Dual Xeon Gold 5220R 2.2 Ghz, turbo up to 4.0 Ghz 24-core *
- Dual Xeon Gold 6226R 2.9 Ghz, turbo up to 3.9 Ghz 16-core * (Better - UHD editing)
- Dual Xeon Gold 6230R 2.1 Ghz, turbo up to 4.0 Ghz 26-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)
- 2nd CPU is configured on an optional board with CPU and memory

Supported Video Cards

- 1.) NVIDIA P2000 5GB PCI-e video board (no longer available)
- 2.) NVIDIA P4000 8GB PCI-e video board (no longer available)
- 3.) NVIDIA P5000 16GB PCI-e video board (no longer available)
- 4.) AMD Radeon Pro WX7100 8GB PCI-e video board (no longer available)
- 5.) AMD Radeon Pro WX9100 16GB PCIe video board (no longer available)
- 6.) NVIDIA RTX 4000 8GB PCI-e video board (Min 2018.12.2)
- 7.) NVIDIA RTX 5000 16GB PCI-e video board (Min 2018.12.2)
- 8.) NVIDIA RTX A4000 16GB PCI-e video board (Min 2019.12) (best price performance)
- 9.) NVIDIA RTX A5000 24GB PCI-e video board (Min 2019.12) (better performance – higher \$\$)
- 10.) AMD Radeon Pro WX5700 8GB PCI-e 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 2004 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 – any version**
- **Microsoft Windows 8 or 8.1 – any version**
- **Microsoft Windows 10 1909 or before**

Media Composer Application	Minimum Rev
Media Composer 19.12.x	19.12.x required for Nvidia RTX A series graphics
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 RTX 4000, RTX 5000 require Nvidia driver that ships with the version of MC 2018.12.2 and above
- * Nvidia RTX A4000, RTX A5000 require Nvidia driver 462.96 and above
- * AMD WX7100, WX9100 require AMD driver released 18.Q1 or later
- * AMD W5700 requires AMD driver 2020.Q2 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

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

	Qualified / Supported
Nitris DX/Mojo DX	NOT SUPPORTED EOL March 2020
Artist DNxIO/ DNxIQ (PCIe or thunderbolt connection) Artist DNxIV/DNxID/DNxIP (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 DNxIQ/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
3 rd Party Qualified Hardware	See release notes and Avid website for information regarding supported 3 rd party hardware (vendor qualified)
NEXIS Single 1Gb Ethernet Client NEXIS Dual 1Gb Ethernet Client Intel i350 T2V2, i219, X722	Avid NEXIS Pro, E2, E2 SSD, E4, E5, E5 NL V20.8
NEXIS Ultra Hi-res (10Gbit) client Atto FFRM-NS11, NS12 NT11, NT12 Intel X550, X520-T2, X540-T2, X710-DA2, X722 Atto FFRM-N322 (10 Gb only)	Avid NEXIS Pro, E2, E2 SSD, E4, E5, E5 NL V20.8
NEXIS 40Gigabit Atto FFRM-NQ 41/42 Atto FFRM-N351/N352 (40 Gb only) Atto FFRM-N311/N312 (40 Gb only)	Avid NEXIS Pro, E2, E2 SSD, E4, E5, E5 NL V20.8

4.) AVID qualified HBA info

AVID qualified HBA	AVID Part	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
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 rd party hardware x8 PCI-E	Not stocked by AVID	#4 or #6	Vendor qualified 3 rd party hardware interface. See release notes and Avid website for information regarding supported 3 rd party hardware
Atto FFRM-NQ 41/42 Atto FFRM-N351/N352 (40 Gb only) Atto FFRM-N311/N312 (40 Gb only)	Not stocked by AVID	#5	Shared Storage: NEXIS 40 Gb-Ethernet
Atto FFRM-NS11,NS12 NT11, NT12 Intel X550, X520-T2, X540-T2, X710-DA2, X722 Atto FFRM-N322 (10 Gb only)	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

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 Or 3 rd party PCIe Open IO card
2	x16 PCI-E Gen 3 (75Watts)	x16	Nvidia or AMD Graphics Card <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 rd party x8 OpenIO controller
5	X16 PCI-E Gen 3	X16	Shared Storage Controllers Nexis Single or dual NIC 1Gb, 10Gb, 40Gb
6	X4 PCI-E Gen 3	X4 Open-ended Connector	HP Thunderbolt 3 adapter card restricted to slot 6 Or 3 rd 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
	Optional Intel X722 dual port 10Gb NIC module	Onboard plug in PCIe module	Qualified for Avid Nexis

6.) Use of embedded NIC ports for Nexis 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)

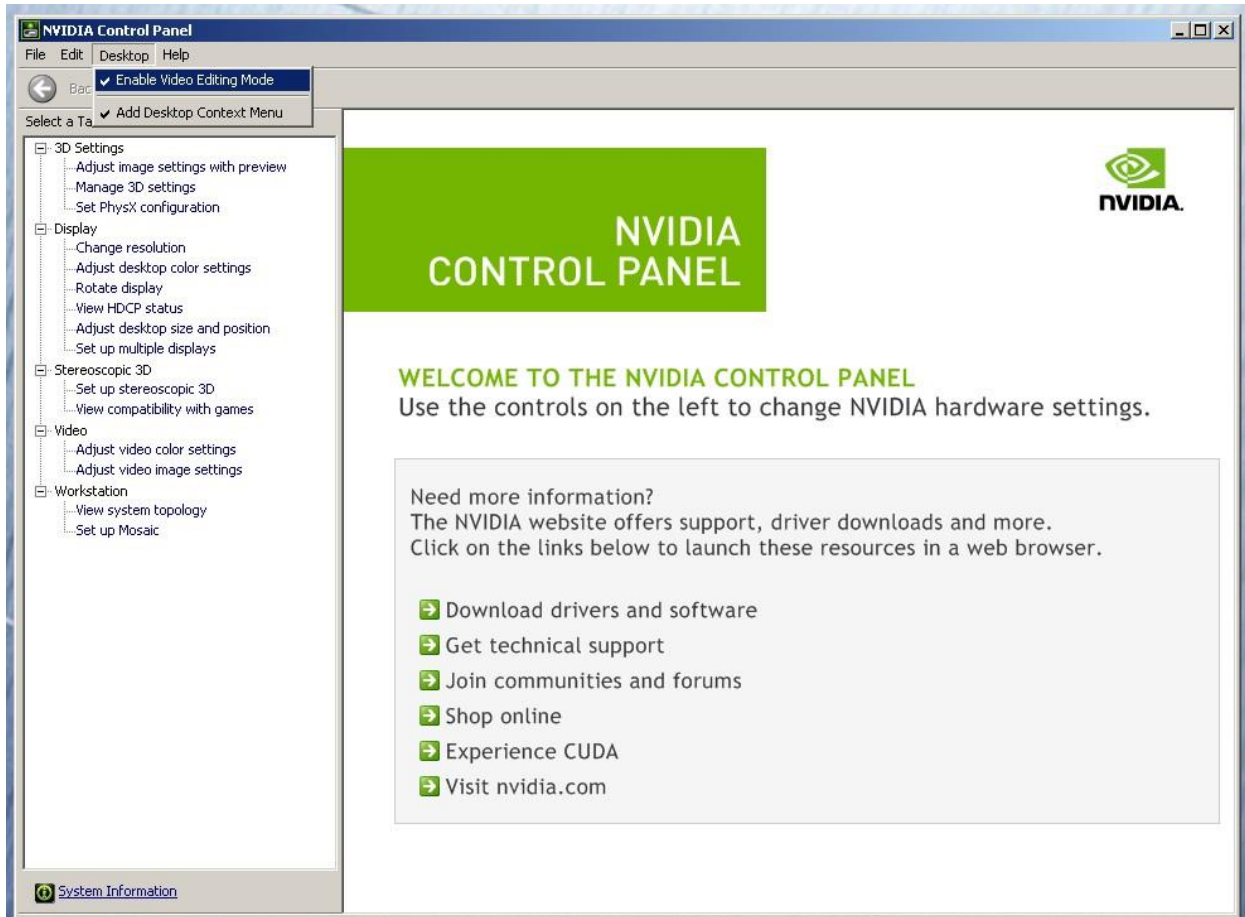
8.) Graphics Qualified Drivers:

AVID Software	Version(s)	GPU	Driver Required
Media Composer	2019.12	RTX A4000, A5000	462.96
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

**** Neither graphics driver is included with MC release builds. You can find links to this driver on the Avid Media Composer Documentation and Version Matrix web page**
http://avid.force.com/pkb/articles/en_US/compatibility/en267087

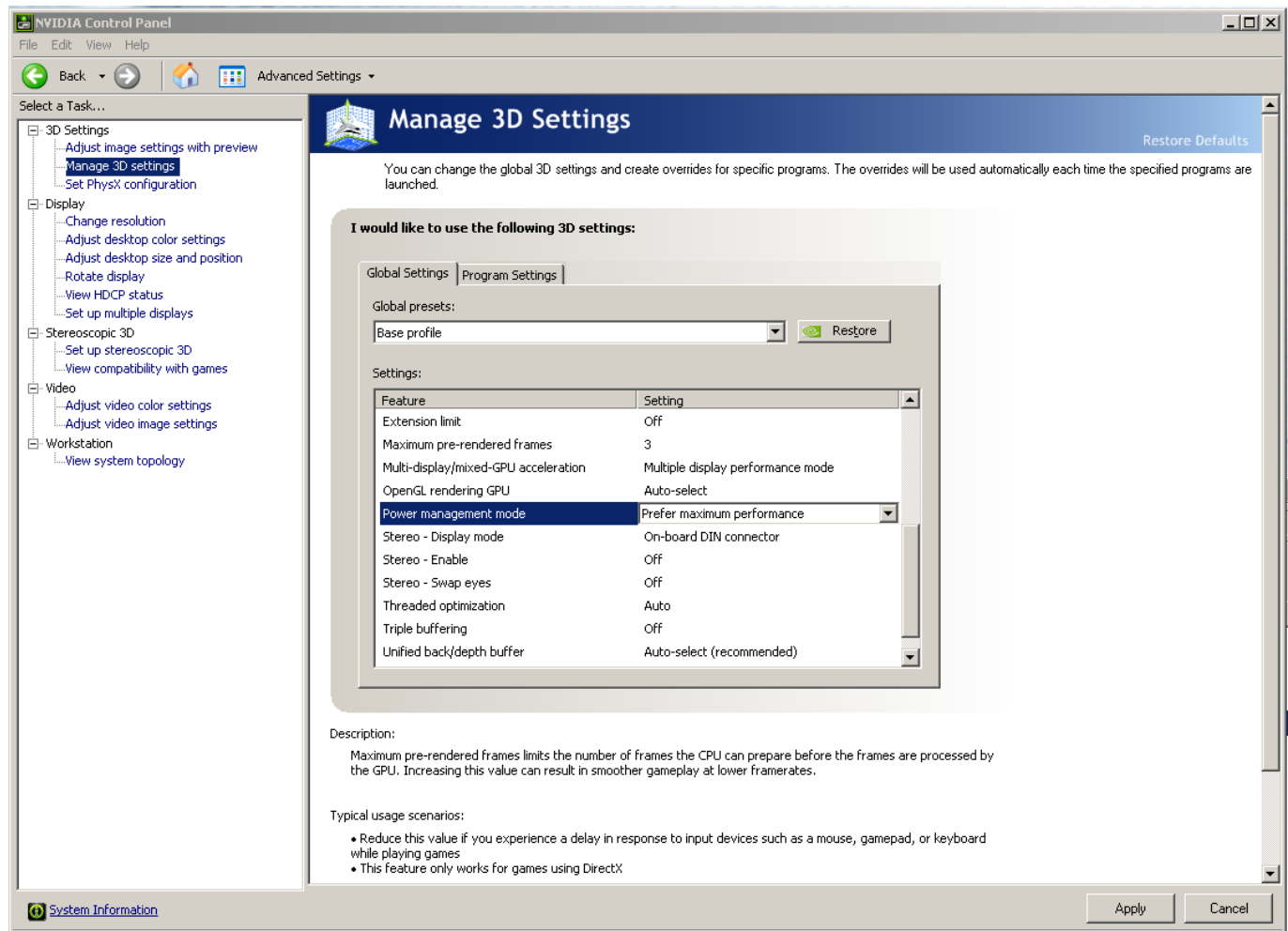
Set optimized Nvidia driver settings for Avid editing environments:

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”

- 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.

9.) **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)*

10.) **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 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	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 nd Gen Scalar CPUs, 40 Gb NICs
Rev G	July 24, 2020	Dave Pimm	Add 2 nd Gen Scalar REFRESH processors (faster and cheaper)
Rev H	Oct 28, 2020	Dave Pimm	Clean up
Rev J	Aug 9, 2021	Dave Pimm	Add Nvidia cards