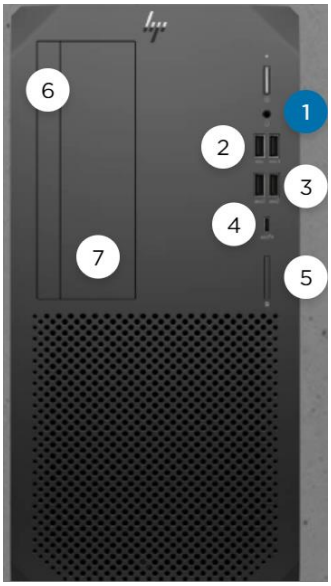
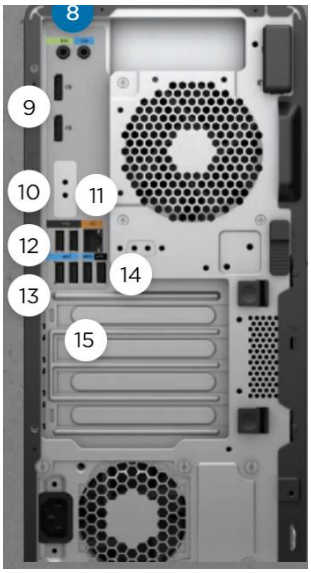
Avid Configuration Guidelines
HP Z2 G9 workstation tower and SFF
Intel Core i7/i9 CPU System





1. Universal Audio Jack
2. 2x Type-A USB 5Gbps signaling rate
3. 2x Type-A USB 10Gbps signaling rate
4. Type-C® USB 20Gbps signaling rate
5. SD Card Reader 4.0 (optional)
6. Slim ODD Bay
7. External 5.25” Bay
8. Audio Line In/Out
9. 2x DisplayPort™ 1.4
10. Optional Config. Port
11. RJ-45 (network)
12. 2x USB 480Mbps signaling rate
13. 2x Type-A USB 10Gbps signaling rate
14. 1x Type-A USB 5Gbps signaling rate
    1x USB 480 Mbps signaling rate
15. PCIe G4 x16
16. Type-C Thunderbolt (optional)

Tower Front and back

Small form factor

Dave Pimm – Avid Technology – May 20, 2022
Rev B

1.) HP Z2 G9 AVID Qualified System Specification:

Z2 G9 Hardware Configuration

Supported 11th Generation Intel Core i7/i9/Xeon CPU Choices

- Intel core i7-12700 2.1 Ghz, turbo up to 4.9 Ghz 8+4 core
- Intel core i7-12700K 3.6 Ghz, turbo up to 5.0 Ghz 8+4 core
- Intel core i9-12900 2.4 Ghz, turbo up to 5.1 Ghz 8+8 core
- Intel core i9-12900K 3.2 Ghz, turbo up to 5.2 Ghz 8+8 core (Best Performance with MC)

Supported Video Cards

1.) NVIDIA T600 4GB PCI-e Gen 3 low profile video board
2.) NVIDIA T1000 4/8 GB PCI-e Gen 3 low profile video board
3.) NVIDIA RTX A2000 6/12 GB PCI-e Gen 4 low profile video board (double wide)
4.) NVIDIA RTX A4000 16GB PCI-e Gen 4 video board
5.) NVIDIA RTX A4500 20GB PCI-e Gen 4 video board - Double wide (Best performance - Nvidia)
6.) AMD Radeon Pro W6600 8GB PCI-e Gen 4 video board
7.) AMD Radeon Pro W6800 8GB PCI-e Gen 4 video board- double wide (Best performance - AMD)

Notes –

- PCIe Gen 4 GPUs have better performance on system with PCIe gen 4 slots

System Disk Drive – 500 GB (recommended) M.2 PCIe NVMe . HP offers lower performing SATA SSD, and 7200 RPM SATA HDD (very slow) boot drive options which are acceptable. Recommend a HP qualified drive be selected.
Note – PCIe gen 4 M.2 drives are twice as fast as the PCIe gen 3 M.2 drives

Standard AVID memory configuration:

- Systems using core i7 or i9 will use DDR5-4800 Mhz ECC or non-ECC memory (up to 4 DIMMs per system)
- 128 GB memory max for this system
- current platform will only be able to support the maximum memory speed of 4400MHz
- Each CPU has 2 memory lanes - optimal bandwidth when 2 memory slots filled (speed drops with 4 DIMMs)
    - 32GB (2 x 16GB) DDR5 4800MHz memory – (Requires two 16GB DIMMs) (max speed 4400 Mhz)

Memory modules must be installed according to manufacturer's requirements

Optional AVID memory configuration:

- 16GB (2 x 8GB) DDR5 4800 memory – (Requires two 8GB DIMMs) (max speed 4400 Mhz)
- 32GB (4 x 8GB) DDR5 4800 memory – (Requires four 8GB DIMMs) (max speed 4000 Mhz)
- 64GB (4 x 16GB) DDR5 4800 memory – (Requires four 16GB DIMMs) (max speed 4000 Mhz)
- 64GB (2 x 32GB) DDR5 4800 memory – (Requires two 32GB DIMMs) (max speed 4400 Mhz)
- 128GB (4 x 32GB) DDR5 4800 memory – (Requires four 32GB DIMMs) (max speed 3600 Mhz)

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.

- **Most Avid configs require the 450 or 550 Watt chassis power option for SFF, 500 or 700 Watt option for Tower**

2.) Qualified Operating Systems and Avid Client Editing Applications for the HP Z2 G9:

HP Supports and ships with:

- **Microsoft® Windows 11 Pro 64-bit Edition Version 21H2 or later – (MC 21.12 or later)**
- **Microsoft® Windows 10 Pro for workstations 64-bit Version 21H2 or later**

Not Supported –

- **Microsoft® Windows 7 – any version**
- **Microsoft Windows 8 or 8.1 – any version**
- **Microsoft Windows 10 Pro versions no longer supported by Microsoft - before version 21H1**

Media Composer Application	Minimum Rev
Media Composer	2020.12.5 (win 10) 2021.12.x, 2022.x (win 10 or 11)
Media Composer 7.x, 8.x, 2018.x, 2019.x	Not supported
NewsCutter 11.x	Not Supported

* See Avid Media Composer version matrix for Nvidia driver version
https://avid.secure.force.com/pkb/articles/en_US/Compatibility/en267087

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 (PCIe or thunderbolt connection). SFF requires TB connection as the BMD HIB is full size PCIe only Artist DNxIV/DNxIP/DNxID (thunderbolt only connection) HP TB4 PCI card available Q2 2022	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 <u>Thunderbolt Guidance</u> Thunderbolt 2 & 3 - higher system over-head, not recommended to share Thunderbolt devices on the same Thunderbolt bus with DNxID, DNxIV. DNxIP DNxIO would require TB3 to TB2 converter
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, X722	Avid NEXIS Pro, E2, E2|SSD, E4, E5, E5|NL V21.12
NEXIS Ultra Hi-res (10Gbit) client Atto FFRM-NS11,NS12 NT11, NT12 Atto FFRM-N322 (10 Gb only) Intel X550, X520-T2, X540-T2, X710-DA2, X722	Avid NEXIS Pro, E2, E2|SSD, E4, E5, E5|NL V21.12
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 V21.12

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	#4 Tower 2R SFF1 #3 SFF2	Avid Artist DnxIO interface HBA Avid Artist DNxIQ interface HBA
HP Thunderbolt 4 adapter card	Not stocked by AVID	#4 Tower 2R SFF1 #3 SFF2	Single TB4 connector on PCIe card for IO or local storage
Vendor qualified 3rd party hardware X4 PCI-e	Not stocked by AVID	#4 Tower 2R SFF1 #3 SFF2	Vendor qualified 3rd party hardware interface. See release notes and Avid website for information regarding supported 3rd 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	#3 Tower 2R SFF1 #2 SFF2	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	#3 Tower 2R SFF1 #2 SFF2	Shared Storage: NEXIS 10 Gb-Ethernet
Intel i350-T2 – Dual Gb NIC	Not stocked by AVID	#3 Tower 2R SFF1 #2 SFF2	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 4 PCIe card will be supported in Z2 G9 once qualified by HP & Avid**
- Note: PCIe half height cards required for SFF without the full height PCIe option

5.) Slot Configurations:

Slot Configuration Information (Tower)			
Slot #	Electrical	Mechanical	
1	x16 PCI-e Gen 5	X16 75 Watts	Graphics Card: Nvidia T600, T1000, RTX3000 (double wide) RTX A2000 (double wide, half height) RTX A4000 A4500 (double wide), AMD W6600, W6800 (double wide)
2	X1 PCI-e Gen 3	X4 open ended	Not Used (PCIe x1) – double wide graphics would cover this slot
3	X4 PCI-e Gen 3	x16	Shared storage controller (PCIe x8 cards will connect at x4 only)
4	X4 PCI-e Gen 3	X4 open ended	Avid/BMD HIB card for DNxIO,DNxIQ, HP Thunderbolt 4 adapter card for DNxIV/DNxIP/DNxID 3rd party PCIe Open IO card
M1	M.2 slot 1 PCI-e Gen 4	M.2 x4	HP M.2 NVMe SSD storage cards PCIe gen 4 (2x faster than Gen 3)
M2	M.2 slot 2 PCI-e Gen 4	M.2 x4	HP M.2 NVMe SSD storage cards PCIe gen 4 (2x faster than Gen 3)
M3	M.2 slot 3 PCI-e Gen 4	M.2 x4	HP M.2 NVMe SSD storage cards PCIe gen 4 (2x faster than Gen 3)
	Embedded Intel I219-LM Gb NIC	PCI-e x1 Gen 3	Qualified for Avid Nexis

Slot Configuration Information SFF1 (SFF with PCIe full height chassis option)			
Slot #	Electrical	Mechanical	
1	x16 PCI-e Gen 4	X16 75 Watts	Holds the PCIe riser card
1R on riser card	x16 PCI-e Gen 4	X16 75 Watts Full height and width OK	Graphics Card (single width cards only- full height OK) Nvidia T600, T1000 RTX A4000 , AMD W6600
2R on riser card	X8 PCI-e Gen 4	X16 75 Watts Full height and width OK	Shared storage Avid/BMD HIB card or 3rd party Open IO card HP Thunderbolt 4 PCIe card
2, 3 & 4	PCIe Gen 3	PCIe – under fan	Not accessible – under fan and riser card
M1	M.2 slot 1 PCI-e Gen 4	M.2 x4	HP M.2 NVMe SSD storage cards PCIe gen 4 (2x faster than Gen 3)
M2	M.2 slot 2 PCI-e Gen 4	M.2 x4	HP M.2 NVMe SSD storage cards PCIe gen 4 (2x faster than Gen 3)
M3	M.2 slot 3 PCI-e Gen 4	M.2 x4	HP M.2 NVMe SSD storage cards PCIe gen 4 (2x faster than Gen 3)
	Embedded Intel I219-LM Gb NIC	PCI-e x1 Gen 3	Qualified for Avid Nexis

Slot Configuration Information SFF2 (SFF – 4 PCIe slots – low profile only)			
Slot #	Electrical	Mechanical	
1	x16 PCI-e Gen 4	X16 75 Watts	Graphics Card (low profile cards only) Nvidia T600, T1000 RTX A2000 (double wide)
2	X4 PCI-e Gen 3	X4 open ended	Shared storage controller or 2nd slot for GPU double wide (PCIe x8 cards will connect at x4 only)
3	X4 PCI-e Gen 3	Tower:x16	Avid/BMD HIB card for DNxIO,DNxIQ, HP Thunderbolt 4 adapter card for DNxIV/DNxIP/DNxID 3rd party PCIe Open IO card
4	X1 PCI-e Gen 3	X4 open ended	Not Used (PCIe x1)
M1	M.2 slot 1 PCI-e Gen 4	M.2 x4	HP M.2 NVMe SSD storage cards PCIe gen 4 (2x faster than Gen 3)
M2	M.2 slot 2 PCI-e Gen 4	M.2 x4	HP M.2 NVMe SSD storage cards PCIe gen 4 (2x faster than Gen 3)
M3	M.2 slot 3 PCI-e Gen 4	M.2 x4	HP M.2 NVMe SSD storage cards PCIe gen 4 (2x faster than Gen 3)
	Embedded Intel I219-LM Gb NIC	PCI-e x1 Gen 3	Qualified for Avid Nexis

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

The Z2 G9 has one embedded NIC ports. This port is qualified for Nexis

For proper operation and connectivity of the Intel network interface with NEXIS the following settings are required (these should be set automatically when Nexis is installed):

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 for shipping Z2 G9 systems*

8.) Graphics Drivers:

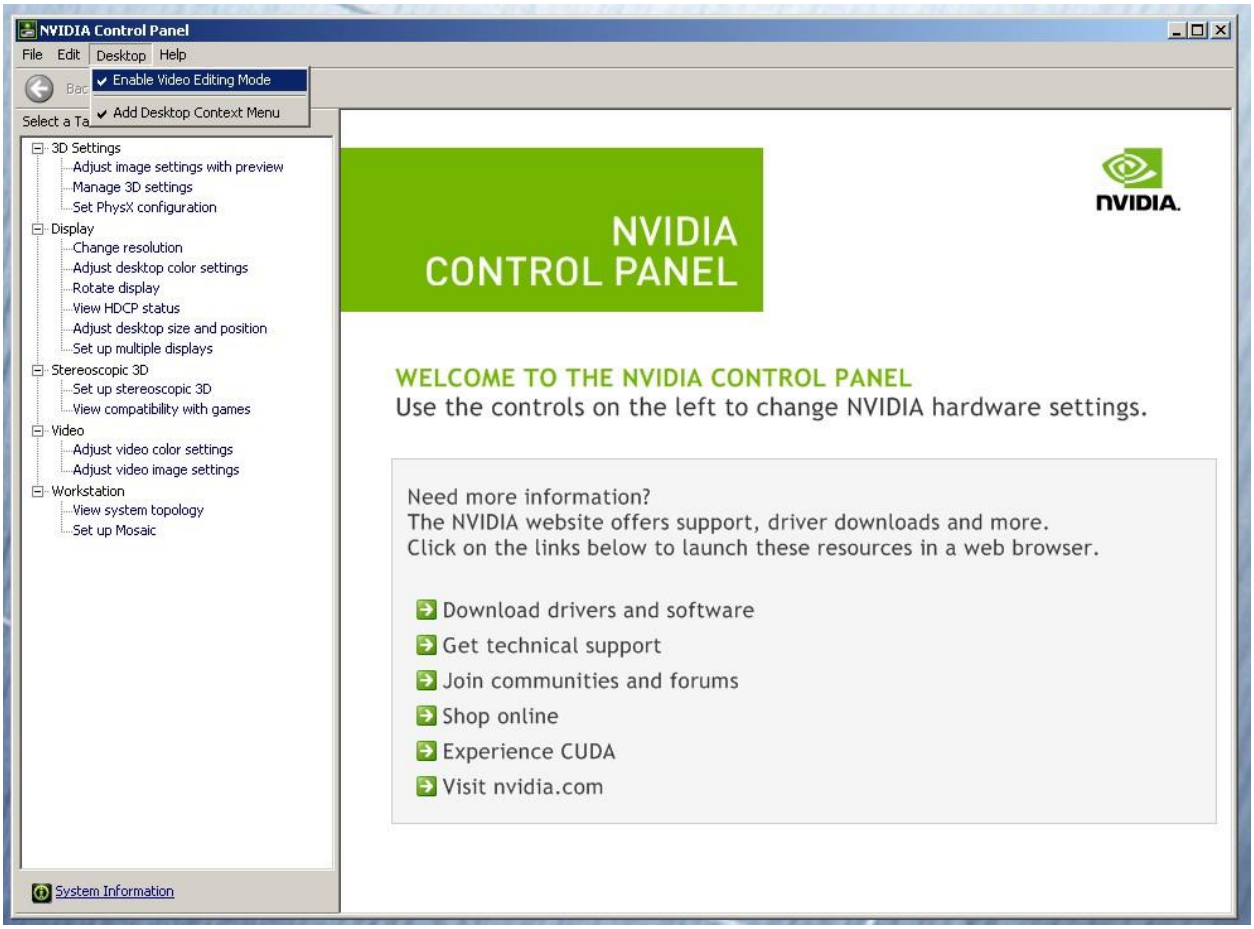
AVID Software	Version(s)	GPU	Driver Required
Media Composer	2022.x 2021.12.x 2020.12.x	Nvidia cards AMD W6600	Nvidia 472.98 AMD driver 2021.Q4

** The AMD graphics driver is NOT included with MC release builds. You can find this driver on the AMD web page https://www.amd.com/en/support

See Avid Media Composer version matrix for Nvidia driver version and download
https://avid.secure.force.com/pkb/articles/en_US/Compatibility/en267087

Set optimized Nvidia driver settings for Avid editing environments:

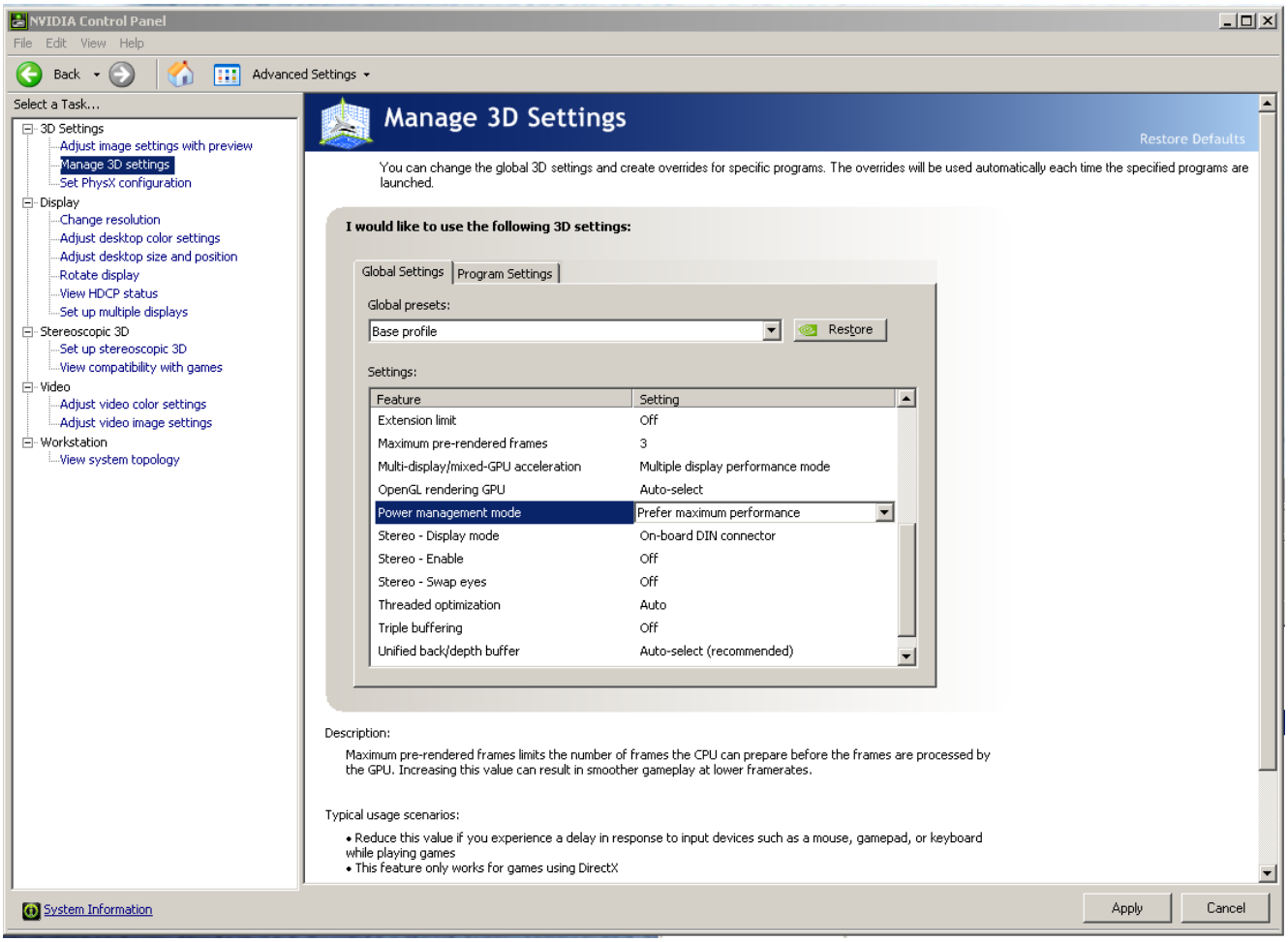
1. See picture below
2. Right-Click on the desktop and select Nvidia Control Panel
3. Select the “Desktop” menu selection in the control panel menu bar.
4. Enable “Desktop -> Video Editing Mode



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

9.) GPU monitor connectivity:

The Nvidia RTX A4000 graphics card has four Display-Port ports. The T600, T1000, RTX 3000 has 4 mini-display ports. All 4 ports can be used simultaneously.

The AMD W6600 graphics card has four full size 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 Z2 G9 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	Mar 29, 2022	Dave Pimm	Initial release of the HP Z2 G9 configuration guide
Rev B	May 20, 2022	Dave Pimm	Add graphics cards