

Avid Configuration Guidelines Dell 3620 Workstation Tower & 3420 Workstation SFF Single Quad Core CPU Qualified for Software Only



1.) Dell 3620 Tower and 3420 SFF [Small Form Factor] AVID Qualified System Specification:

3420/3620 AVID Qualified Operating System:

- Supported: Microsoft® Windows 7 Professional 64-bit Edition withSP1 (SP1 required)
- Supported: Microsoft® Windows 8.1 Professional (64bit) and Windows 8.1 Enterprise (64bit)

Not Supported

- Not Supported Microsoft® Windows 7 any 32-bit version, or any version of Home, Ultimate or Enterprise editions.
- Not Supported Microsoft® Windows XP or Vista 32 or 64-bit (any version)

3420/3620 AVID Qualified Hardware Configuration

Qualified CPU

1.) Single Intel® Quad-Core Xeon® E3-1245 V5 Processor @ 3.5GHz / 8MB cache / 2133MHz DDR4 memory. The Xeon® E3-1245 V5 Processor includes Intel embedded graphics – HD P530

Video Card (GPU)

- 1. Embedded Intel HD Graphics P530 (The embedded Intel HD P530 graphics are supported for use with Media Composer. Dedicated memory for the HD P530 graphics must be set to 512MB or 1GB via the system BIOS. Refer to BIOS settings section of this document.
- 2. Optional NVIDIA Quadro K620, K1200, K2200 PCI-Express video board (not required)

O.S. System Hard Drive

- SATA 7200RPM Hard disk (good) or
- SATA 6Gbs SSD (better) or
- M.2 NVMe SSD (best high performance)

Supported Memory Configurations

- Memory: 8GB (2 x 4GB) DDR4 2133 ECC memory Requires two 4GB DIMMs installed in memory slots DIMM1 and DIMM3
- 2.) Memory: 16GB (4 x 4GB) DDR4 2133 ECC memory Requires four 4GB DIMMs installed in all 4 memory slots.
- Memory: 16GB (2 x 8GB) DDR4 2133 ECC memory Requires two 8GB DIMMs installed in memory slots DIMM1 and DIMM3
- 4.) Memory: 32GB (4 x 8GB) DDR4 2133 ECC memory Requires four 8GB DIMMs installed in all 4 memory slots.

Memory configuration constraints

Memory configurations which mix and match memory module sizes and locations should be avoided as they may potentially result in a poor performing, non-optimal Avid editing operating environment. **Memory Installation (same for SFF and Tower):**

Dell 3420/3620 Memory DIMM Installation order

DIMMs are labelled on the motherboard 1, 2, 3, 4. Load DIMMs in the following order:

Config	DIMM 1	DIMM 2	DIMM 3	DIMM 4
8GB (2 x 4GB)	Х		Х	
16GB (4 x 4GB)	Х	Х	Х	X
16GB (2 x 8GB)	X		Х	
32GB (4 x 8GB)	Х	Х	Х	X

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

Qualified Operating System	Win 7 Pro 64-bit SP1 Windows 8.1 - Professional (64bit) Windows 8.1 Enterprise (64bit)
Media Composer	M/C 8.2.5 (minimum)
ISIS 1Gb Ethernet Client (Minimum)	V4.7.x
ISIS 10Gb Hi-res Ethernet Client	Not Supported
StarTech 1394 PCIe Firewire adapter. 2 FW800 and 1 FW400 ports. Half height PCIe card (PEX1394B3)	The StarTech HBA is the only supported interface for 1394 camera or deck. Can also be used for 1394 disk drives (recommended only for file transfers).

3.) AVID qualified HBA info

AVID qualified HBA	AVID Part Number	Slot	Function
Optional - NVIDIA Quadro K620, K1200, K2200 PCI- Express video	Not stocked by AVID	#1	Optional Graphics GPU
LSI 9200-8e SAS controller	7030-30036-01	#3	SAS Local Storage: Xtore StudioRAID 16Re (16-bay) chassis Xtore StudioRAID 5Te (5-bay) chassis
Atto H680	7030-30028-01	#3	SAS Local Storage – Avid VideoRAID SR (16-bay)
Atto R680	7030-30435-00	#3	SAS Local Storage – Avid VideoRAID ST (5-bay) and Xtore StudioRAID 5Ti (5-bay) chassis
StarTech PCle 1394 Firewire adapter. (PEX1394B3)	Not stocked by AVID (Available direct from StarTech) More info below	#4	Mandatory primary 1394 connectivity for 1394 camera / deck

Slot #	Electrical	Mechanical	Utilization
1	X16 PCI-E Gen 3	X16	Graphics Card Nvidia Quadro K620, K2200
2	PCI	32/33	Not defined for use.
3	X1 PCI-E Gen 3	X1	Optional StarTech PCIe 1394 controller
4	X4 PCI-E Gen 3	X16	Local Storage HBA (low profile cards) Atto H680 – Avid SAS VideoRAID SR (16-bay) support Atto R680 – Avid SAS VideoRAID ST (5-bay) support Atto R680 – SAS Xtore StudioRAID 5Ti (5-bay) support LSI 9200-8e SAS Xtore 16Re (16-bay) support LSI 9200-8e SAS Xtore 5Te (5-bay) support
	Embedded Intel i219-LM GbE NIC		Use for connectivity to Avid ISIS 5000 / 7000 Requires Windows 20.4.1 Intel ProSet Driver (see below):
	X4 PCI-E Gen 3	M.2	NVMe High Performance Local storage option

Config for the 3420 SFF:

Slot #	Electrical	Mechanical	Utilization
1	X16 PCI-E Gen 3	X16 Half Height	Graphics Card Nvidia Quadro K620, K1200 half height cards
2	X4 PCI-E Gen 3	X16 Half Height	Local Storage HBA: Atto H680 – Avid SAS VideoRAID SR (16-bay) support Atto R680 – Avid SAS VideoRAID ST (5-bay) support Atto R680 – SAS Xtore StudioRAID 5Ti (5-bay) support LSI 9200-8e SAS Xtore 16Re (16-bay) support LSI 9200-8e SAS Xtore 5Te (5-bay) support
	Embedded Intel i219-LM GbE NIC		Use for connectivity to Avid ISIS 5000 / 7000 Requires Windows 20.4.1 Intel ProSet Driver (see below):
	X4 PCI-E Gen 3	M.2	NVMe High Performance Local storage option

6.) Clarification / Utilization of optional add-in 1394 controllers for camera / deck control.

Add-in 1394 Controller	Utilization for 1394 Camera / Deck connectivity with Media Composer & NewsCutter
Optional StarTech PCIe 1394 3-port controller (PEX1394B3)	Mandatory requirement. Yes - Supports 1394 Deck / Camera
Optional Dell or 3 rd party FireWire IEEE 1394 PCI-Express x1 HBA	Cannot be used for connectivity to a 1394 Deck / Camera which is being interfaced to Media Composer or NewsCutter
	It is alright for this HBA to reside in the system. It will not cause any functional problem as long as it is not used for 1394 Camera / Deck connectivity for Media Composer or NewsCutter.

http://www.startech.com/Cards-Adapters/FireWire/3-Port-2b-1a-1394-PCI-Express-FireWire-Card-Adapter~PEX1394B3

7.) Various Configuration Issues:

A.) Dell 3620 Tower and 3420 SFF System BIOS settings:

- 1.) Verify CPU Hyper-Threading Enable
- 2.) 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 3620 (Tower and SFF) Required system BIOS settings:

- During boot up press F1 to invoke BIOS Set Up.
- Select the Advanced tab
- Select CPU Setup
- Select Intel ® Hyper-Threading
- Default setting is Enable verify that this is set
- Select Turbo Mode
- Default setting is Enable
 - Change this setting from Enable to Disable (Only required if connecting USB audio I/O devices)
- Press F10 to Save and Exit

B.) O.S. setting recommendations for optimum performance with Avid Editing applications:

Page 5 of 12 Dave Pimm – Avid Technology – Jan 5 2016 Dell 3620 Workstation – Tower / SFF Rev A Config Guide The following link provides O.S. setting suggestions for ensuring optimum performance when working with your Avid editing application with either Windows 7 or Windows 8.1 O.S.

http://avid.force.com/pkb/articles/en_US/troubleshooting/en390339

C.) Qualified Video Drivers:

AVID Software	Min Version(s)	GPU	Driver Required
Media Composer	8.4.3	K620/K1200/K2200	Nvidia 353.82
Media Composer	8.2.5	K620/K2200	Nvidia 347.52*
Media Composer	8.2.5	Intel HD P530	Recommend using latest posted on Dell's website

NOTE: K1200 requires Nvidia 353.82 driver (347.52 does not support this card)

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

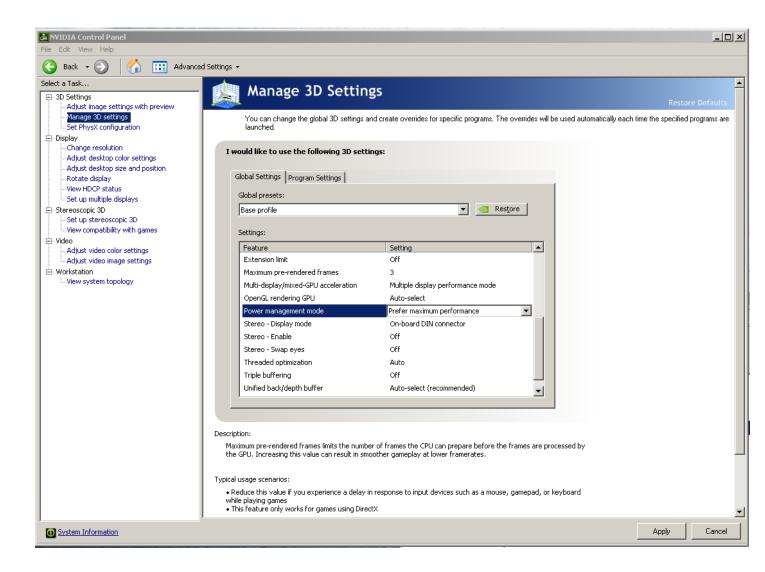
If a specified Nvidia driver is NOT included with the patch Avid installer, the required Nvidia driver can typically be found on the Avid Knowledge Base.

The supported Intel HD P530 driver can be found on the Dell support website for the 3620.

Refer to the ReadMe for driver information for the specific version of Media Composer or NewsCutter being installed

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 Manage 3D Settings
- 4. Select "Global Settings" Tab
- 5. Under the "Global Settings" tab select "Base Profile".
- 6. 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.



7. Depress the "Apply" button.

- 8. Set the PhysX device configuration
- 9. Under 3D Settings select "Set PhysX Configuration" (See picture below)
- 10. Under "Select a PhysX processor:", Change the setting to Quadro K620, K1200 or K2200
- 11. Depress the "Apply" button.

NVIDIA Control Panel		-O×
File Edit Desktop 3D Settings Help		
🕝 Back 👻 🚫		
Select a Task Select a Task Solution Adjust image settings with preview Manage 3D settings Adjust image settings with preview Manage 3D settings Set Physix Configuration Change resolution Adjust desktop color settings Rotate display View HDCP status Set up digital audio Adjust desktop ise and position Set up multiple displays Stereoscopic 3D Set up stereoscopic 3D View compatibility with games Video Adjust video color settings Adjust video color settings Adjust video image settings Wideo Adjust video color settings Adjust video image settings Workstation View system topology Set up Mosaic	Set PhysX configuration WIDIA® PhysX® is a powerful physics engine that can utilize GPU acceleration to provide amazing real-time physics of Select a PhysX processor: Quadro K600 PhysX PhysX UP2400x UP2400x UP2400x	▲ Restore Defaults effects.
System Information	Αρ	ply Cancel

12. Nvidia driver optimization settings for Avid environments are complete

D.) Serial Port Deck Control:

The Dell 3620 Tower and SFF workstation(s) do have an embedded serial port. This serial port can be used for deck I/O control.

Or, serial port deck control can also be established via two methods below (both of which have been qualified by Avid and will maintain frame accuracy in Avid environments)

- Addenda model RS-USB / 4 direct USB-to-RS422 serial adapter. This is a simple device which connects directly from a USB 2.0 port of the 3620 directly to the RS422 port of a deck. <u>http://www.addenda.com/addenda-elect/products/rsUSB4.php</u>
- 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 3620 USB port.
- Once the Keyspan 19HS driver is installed then plug the Keyspan 19HS into a 3620 USB 2.0 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.

E.) Set Windows "Visual Effects" for "best performance":

- 1. Right-Click on Computer icon
- 2. Select Properties
- 3. The screen below will be displayed:

Control Pa → Sy	stem and Secur > System		Search Con P
File Edit View Tools Help			
Control Panel Home	View basic information	about your computer	0
🛞 Device Manager	Windows edition		
🛞 Remote settings	Windows 7 Professional		\frown
🛞 System protection	Copyright © 2009 Microso	ft Corporation. All rights reserved.	
8 Advanced system settings	Get more features with a n	ew edition of Windows 7	
	System		
	Manufacturer:	Hewlett-Packard Company	
	Model:	HP Z800 Workstation	8
	Rating:	5.9 Windows Experience Index	
	Processor:	Intel(R) Xeon(R) CPU X5650 @ 2.67GHz 2.66 GHz (2 processors)	
	Installed memory (RAM):	6.00 GB	invent
	System type:	64-bit Operating System	
	Pen and Touch:	No Pen or Touch Input is available for this Display	
	Hewlett-Packard Company su	pport	
	Website:	Online support	
	Computer name, domain, and	workgroup settings	
	Computer name:	Z800-6core-Win7	🚱 Change settings
	Full computer name:	Z800-6core-Win7	2002 2000 2000 2000 2000 2000 2000 200
	Computer description:		
	Workgroup:	WORKGROUP	
See also	Windows activation		
Action Center	Windows is activated		ask for
Windows Update	Product ID: 00371-OEM-89	92671-00008	genuine Microsoft
Performance Information and Tools			software Learn more online

- 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).

ystem Properties
Computer Name Hardware Advanced System Protection Remote
You must be logged on as an Administrator to make most of these changes.
Performance
Visual effects, processor scheduling, memory usage, and virtual memory
Settings
User Profiles
Desktop settings related to your logon
Settings
Startup and Recovery
System startup, system failure, and debugging information
System statup, system tallare, and debugging information
Settings
Environment Variables
OK Cancel Apply

- 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).

Performance Options
Visual Effects Advanced Data Execution Prevention
Select the settings you want to use for the appearance and performance of Windows on this computer.
Let Windows choose what's best for my computer
Adjust for best appearance
 Adjust for best performance
Custom:
 Animate controls and elements inside windows Animate windows when minimizing and maximizing Animations in the taskbar and Start Menu Enable Aero Peek Enable desktop composition Enable transparent glass Fade or slide menus into view Fade or slide ToolTips into view Fade out menu items after clicking Save taskbar thumbnail previews Show shadows under windows Show thumbnails instead of icons Show translucent selection rectangle
 Show window contents while dragging Slide open combo boxes Smooth edges of screen fonts Smooth-scroll list boxes
OK Cancel Apply

- 9. Depress the "Apply" button
- 10. Required Windows visual performance settings for Avid environments are now complete

F.) Embedded Intel i219-LM 1G/b network interface for ISIS connectivity:

For proper operation and connectivity of the Intel i219-LM network interface with ISIS the following are required (these settings will be made automatically by the ISIS 4.7 client installer if the 18.3 driver is installed prior to the ISIS client)

1. Requires Windows 20.4.1 Intel ProSet Driver available at:

https://downloadcenter.intel.com/download/18713/Network-Adapter-Driver-for-Windows-7https://downloadcenter.intel.com/download/21642/Network-Adapter-Driver-for-Windows-8-

- 2. For the Intel i219-LM driver, under the performance settings, change the following parameters:
 - Receive Buffers to 1024
 - Transmit Buffers to 1024
- 3. Disable the windows firewall.
- 4. The i219-LM has an ultra-low power mode that may exhibit connection issues with older switches:
 - a. If you boot with the cable disconnected then connect a "live" cable the link does not come active. You have to disable/enable the adapter at the OS level to wake it.
 - b. If you disconnect an active link then reconnect it, it does not become active again unless you disable/re-enable the adapter at the OS level.

To set the Intel i219-LM Receive / Transmit buffers:

Go to device manager. Under "Network adapters" select the device named "Intel Ethernet Connection i219-LM", which will be used for ISIS connectivity.

1) Right-click, Select properties, select "Advanced" tab.

Intel(R) Ethernet Connection I217-LM #2 Properties	×
Teaming VLANs Driver Details Resources General Link Speed Advanced Power Management	
Advanced Adapter Settings	
Settings:	
Interrupt Moderation Jumbo Packet Large Send Offload V2 (IPv4) Large Send Offload V2 (IPv6) Locally Administered Address Log Link State Event Performance Options	
Priority & VLAN	
Configures the adapter to use settings that can improve adapter performance.	
OK Cancel	

Set Receive Buffers to 1024

Set Transmit Buffers to 1024

Page 11 of 12 Dave Pimm – Avid Technology – Jan 5 2016 Dell 3620 Workstation – Tower / SFF Rev A Config Guide

Performance Options		Performance Options	
Settings:	Value:	Settings:	Value:
Adaptive Inter-Frame Spacing Flow Control Interrupt Moderation Rate Receive Buffers Transmit Buffers	1024	Adaptive Inter-Frame Spacing Flow Control Interrupt Moderation Rate Receive Buffers Transmit Buffers	1024
	Use Default		Use Default
Receive Buffers		Transmit Buffers	
Sets the number of Receive Buffe copying data to memory. Increasin receive performance, but also com You might choose to increase the you notice a significant decrease is traffic. If receive performance is n setting.	g this value can enhance sumes system memory. number of Receive Buffers if n the performance of received	Sets the number of Transmit Buffet copying data to memory. Increasing transmission performance, but also You might choose to increase the r you notice a significant decrease in traffic. If transmission performance setting.	g this value can enhance o consumes system memory. number of Transmit Buffers if n the performance of transmitted
	OK Cancel		OK Cancel

Disable Windows Firewall Select Control Panel / System and Security / Windows Firewall / Customize Settings

🐭 Customize Settings					
😋 🕞 🗢 🖆 🔹 Control Panel 🔹	System and Security 🔹 Windows Firewall 👻 Customize Settings 🔹 🔹 🚺 Search Control Panel	2			
You can n	ize settings for each type of network modify the firewall settings for each type of network location that you use.				
	network locations? work (private) network location settings				
•	Block all incoming connections, including those in the list of allowed programs Motify me when Windows Firewall blocks a new program				
8	Turn off Windows Firewall (not recommended)				
Public net	twork location settings				
	Block all incoming connections, including those in the list of allowed programs Ivality me when Windows Firewall blocks a new program				
8	Iurn off Windows Firewall (not recommended)				
	OK Cancel				

Revision Update

Revision	Date	Name	Update
А	Jan 5th , 2016	Dave Pimm	Initial Release of the Dell 3620 Workstation Tower and SFF configuration guide for Media Composer [Software only]