

## Cadalyst Labs Roundup: Budget Workstations

Workstation model name	Xi MTower PCIe	Precision T1650	HP Z220 CMT	ThinkStation S30
Company	@Xi Computer Corp.	Dell	HP	Lenovo
Web site	www.xicomputer.com	www.dell.com	www.hp.com	www.lenovo.com
Phone	800.432.0486	800.999.3355	800.289.6947	866.968.4465
Estimated street price, as delivered	\$1,990	\$1,889*  *As this article went to press, a \$265 discount was available on the Dell web site.	\$1,925, with eCoupon: WKS12	\$1,863
Dimensions (WxHxD in inches)	9.1" x 18.9" x 19.5"	7" x 14.25" x 17"	7" x 17.6" x 17.5"	6.75" x 16.6" x 18.5"
Weight	26 lbs	20.37 lbs	22.9– 32.6 lbs (typically 25.5 lbs)	38.5 lbs
CPU type	Intel Core i5-3570K	Intel Core i7-3770	Intel Xeon E3-1245v2	Intel Xeon E5-1620
CPU speed	4.6 GHz	3.4 GHz, 8 M, 1 GT	3.4 GHz	3.6 GHz
L2 cache size/speed	6 MB/4.6 GHz	8 MB/3.4 GHz	L2 cache: 256 KB L2 cache per core; L3 cache: 8 MB shared instruction/data third-level cache shared among all cores	1,024 KB max/3.60Ghz clock speed
Chipset	Intel Z77	Intel C216 Express chipset	Intel C216 chipset	Intel C602 Chipset Sandy Bridge EP 1SWS
Front-side bus speed	100 MHz	N/A	N/A	No front side bus on this platform. Includes QPI and supports speeds of 8.0, 7.2, and 6.4 GT per second
PCI bus size/speed	PCIe/up to 16 GB per second	PCIe/x 16 Gen 3, 8 GB per second	32-bit/33 MHz (also supports PCIe Gen2 and Gen3 slots)	32-bit/33MHz (standard PCI 2.3)
Motherboard	Asus P8Z77-M PRO	Dell	HP	Lenovo
Memory type/speed	DDR3 1,866-MHz	8 GB DDR3 1,600-MHz NON ECC	DDR3 1,600-MHz (ECC) RAM	UDIMM ECC PC3-10600
Memory Memory	8 GB as tested/32 GB maximum	8 GB (two 4 GB) as tested/32 GB (four 8 GB) maximum	8 GB (two 4 GB) as tested/32 GB maximum	8 GB as tested/64 GB maximum
Memory sockets: total/free	4/2	4/2	4/2	8/6
Supports ECC memory?	No	No	Yes	Yes
System BIOS, date	UEFI AMI BIOS, 6/2012	A00, 6/1/2012	1.02, June 2012	Version 35 (6/25/12)
Power supply vendor	Corsair		HP	Lenovo
Power supply capacity	850-W	320-W, 90% efficient	400-W, 90% efficient	610-W

(watts)				
Hard drive vendor	Corsair Force Series 3	Seagate	Varies	Seagate
Hard drive type	Solid-state drive Corsair SATA 6 Gb/second	500-GB, 7,200-rpm 3.5" SATA 6 Gb/second	7,200-rpm SATA HDD	3.5" SATA (2)
Hard drive size	120 GB	2 x 500 GB, RAID 0	1 TB	2 x 500 GB
CD-ROM drive vendor	LITE-ON	Varies	Varies	Varies
CD-ROM drive speeds	DVD+-R 24X, DVD+-RW 8X, CD-R 48X, CD-RW 32X, DVD+-R DL 12X	16X DVD-ROM, SATA	HP 16X DVD+-RW SuperMulti SATA	1.5 GB/second
Other drive	N/A	N/A	N/A	N/A
Sound card	Realtek ALC892 8-channel high- definition audio CODEC	Integrated 2.1-channel audio	Integrated Realtek HD ALC 221 audio	Realtek ACC 662 codec
Pointing device	Logitech Windows keyboard and Logitech 2+ optical wheel mouse	Dell MS111 USB optical mouse	HP USB scroll mouse	Optical wheel mouse (USB)
Graphics bus	PCI-Express	PCle x16, Gen 3	PCI Express Gen3 (backwards compatible with Gen2)	PCI-express
Expansion slots	2 x PCle 3.0/2.0 x16 (single at x16 or dual x8), one PCle 2.0 x16 (x16 or dual x8), one PCle 2.0 x16 (x4 mode, black), one PCle 2.0 x1	One PCI, one PCIe, one PCIe, x16, ne PCIe x16 (wired as x4)	One PCIe Gen3 x16 slot, one PCIe Gen2 x4 slot with x16 connector, one PCIe Gen2 x4 slot with x8 connector, two PCIe Gen 2 x1 slots, two PCI slots	Three PCle 3.0, one PCle 2.3, one PCle 2.0
Expansion slots filled	One PCle x16	One PCI x16	One PCIe Gen3 x16 slot	One PCIe with video card
Drive bays accessible (5.25"/3.5"/2.5")	4/0/0	2/0/0	3/0/0	1 or 2/3/0
Drive bays internal (5.25"/3.5"/2.5")	0/6/2	0/2 for 3.5" or 4 bays for 2.5"	0/3/0	0/4 to 6/0
USB ports (2.x/3.x)/FireWire	USB 8/4	12 (4 front panel, 6 rear panel, 2 internal)	Front, 2 USB 3.0, 1 USB 2.0; Rear, 2 USB 3.0, 4 USB 2.0; Internal, 5 USB 2.0 Available via headers. Optional FireWire ports (1x front port via header, 2x rear ports on card)	10 USB 2.0, 2 USB 3.0
Serial/parallel ports	1 serial port connector on the motherboard	1	1 optional serial/ 1 optional parallel port	One serial (9-pin) port
MIDI/game	via USB ports	0	N/A	No
External SCSI	2 x eSATA 6Gb/s	0	N/A	No support for external SAS or external SCSI
Network card/modem	1 x Gigabit LAN controller/0 modem	Integrated PCIE 10/100/1000	Integrated Intel 82579LM PCIe GbE controller	N/A
Graphics card bus	PCI-Express	PCIe x16	PCIe Gen3	PCI
Graphics card model	NVIDIA Quadro 2000	AMD FirePro V4900	NVIDIA Quadro 2000	NVIDIA Quadro 2000D
Graphics card chipset	GF106	_	Quadro 2000	Quadro 2000
Graphics card onboard	1 GB GDDR5	1 GB	1 GB GDDR5	1 GB

memory				
Graphic card driver version	296.88	AMD FirePro V4900	276.42	296.88
Graphics card 3D resolution, maximum	2,560 x 1,600	2,560 x 1,600	2,560 x 1,600	2,560 x 1,600
Colors/refresh rate at maximum 3D resolution	32-bit/60-Hz Digital	32-bit/60-Hz	32-bit per pixel color depth/60- Hz	32-bit/60-Hz
Special AutoCAD driver/version	None	None	None	None
Warranty	Three years parts and labor	Three-year basic hardware service with three-year NBD; limited on-site service after remote diagnosis; pro-support warranty available as upgrade	Three years parts, labor, and onsite service; one-year option available in specific countries	Three years parts and labor
24-hour replacement parts?	Yes	Yes http://www.dell.com/content/topics/topic.a spx/us/segments/bsd/services/services_s ystem_warranty?c=us&l=en&cs=04#prec n	Next business day, includes parts	Next business day, includes parts
24-hour telephone support?	Yes	Daytime only	Yes	Yes
Return policy/restocking fee	30-day, money-back guarantee; excludes software and shipping	Returns accepted within 30 days, less shipping costs and, unless the product is defective, a restocking fee of up to 15% of the purchase price	Defective product returns accepted within 90 days at no charge	Accepts returns for 30 days, subject to a 15% restocking fee; the customer pays for return shipping
Certified for use with which CAD-related software applications?	Contact company for more information.	Completed or pending certifications: Autodesk AutoCAD, Autodesk Inventor, Dassault CATIA, Dassault SolidWorks, PTC Creo, Siemens NX, Siemens NX I- deas, Siemens Teamcenter, Siemens Solid Edge, Bentley MicroStation	See HP Workstations and Product Development	See <u>Lenovo S30 ISV</u> <u>Certifications</u>