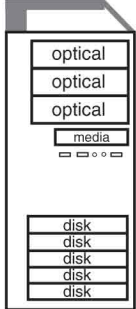


Name	Type-model	Slot x bay	Processor(s)	GHz	Memory	Disk(s)	Disk type	Disk type	RAID	SATA optical	Diskette or Media reader	Graphics adapter(s)	1394 adptr	ENERGY STAR 5.0	Preload	Avail date
D20	4158-21U	6x9	2 x E5506	2.13	4 x 1GB	2 x 147GB	3.5"	SAS	0	DVD±RW	Media	1 x FX1800	1394	None	Bus64	Apr 09
D20	4158-22U	6x9	1 x X5560	2.80	2 x 1GB	1 x 250GB	3.5"	SATA		DVD±RW	Media	1 x FX1800		None	Bus32	Apr 09
D20	4158-52U	6x9	2 x E5540	2.53	4 x 1GB	2 x 147GB	3.5"	SAS	0	DVD±RW	Media	1 x FX4800		None	Pro64	Apr 09
D20	4158-53U	6x9	2 x E5540	2.53	4 x 1GB	2 x 300GB	2.5"	SATA	1	DVD±RW	Media	1 x FX4800		None	Pro64	Apr 09

- High performance workstation with premium graphics for specialized professionals
- Environmentally friendly, cool, and quiet with rock solid engineering

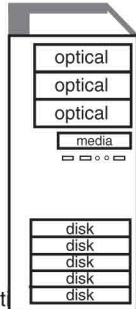
Processor(s)	Up to two processors, one or two processors standard, Intel® Xeon® Processor E5540 with quad-core , 5.86GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 1066MHz DDR3 memory controller, and 8MB cache or Intel Xeon Processor X5550 or X5560 with quad-core , 6.4GT/s QPI, 1333MHz DDR3 memory controller, and 8MB cache	Tower <ul style="list-style-type: none"> • Raven black color; metal case • 8.3"W x 23.7"D x 19.1"H (with handle) • 210mm W x 602mm D x 485mm H • 60 lb (27.1kg) max configuration • 55-liter • Removable handle on top front • Toolless side cover removal • Toolless disk and optical drive removal • Toolless adapter retention • Illuminated front icons • Rack shelf support or optional rail kit 	
Implementation	Processor uses FC-LGA8 package, two LGA1366 sockets		
Memory	2GB or 4GB std, 192GB max (pending 16GB RDIMM availability), RDIMM, PC3-8500 1066MHz DDR3, ECC , registered, 6-channel capable, twelve 240-pin DIMM sockets** ** Over six DIMMs requires dual processors	Bay ① 5.25", 1.6" high, external, std optical Bay ② 5.25", 1.6" high, external, open Bay ③ 5.25", 1.6" high, external, open Bay ④ 3.5", 1" high, external, std media reader Bay ⑤ 3.5", 1" high, internal, std disk Bay ⑥ 3.5", 1" high, internal, std or opt disk Bay ⑦ 3.5", 1" high, internal, opt disk Bay ⑧ 3.5", 1" high, internal, opt disk Bay ⑨ 3.5", 1" high, internal, opt disk	
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * Adapters >75W use auxiliary power connector(s) from PSU <i>Some: NVIDIA® Quadro® FX 1800, PCIe x16 adapter, 768MB, two DisplayPort, one dual-link DVI-I***, 59W</i> <i>Some: NVIDIA Quadro FX 4800, PCIe x16 adapter, 1.5GB, two slot width, 2 DisplayPort, 1 dual-link DVI-I***, 121W</i> *** Only two display connectors are active at a time	Slot 1: half-length, full-height, PCIe x1 Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max) Slot 3: full-length, full-height, 32-bit PCI 2.3 Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max) Slot 5: full-length, full-height, PCIe x4 (x16 mechanical) Slot 6: full-length, full-height, 32-bit PCI 2.3	
Diskette drive	None (use optional USB diskette)		
Media reader	20-in-1 media reader		
SATA disk(s)	<i>Some: 250GB or 500GB, SATA 3.0Gb/s, 7200 rpm, 3.5"</i> <i>Some: 300GB, SATA 3.0Gb/s, 10000 rpm, 2.5"</i> <i>Some: 146GB, SAS 3.0Gb/s, 15000 rpm</i>		
SAS disk(s)	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s		
SATA DVD±RW	3 SATA connectors for opticals, SATA 3.0Gb/s, integrated in ICH10;		
Disk controller	5 SATA/SAS ⁴ connectors for disks, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID ⁵ 0, 1, 5, 10, integrated in Marvell® 88SE6480		
Chipset	Intel 5520 Chipset , Intel ICH10, Winbond® W83627DHG-P Super I/O		
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394a)	SECURITY <ul style="list-style-type: none"> • Security chip (see information on left) • Side cover lock (ships with two identical keys) • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) • Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) • Power-on password • Administrator password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (front or all) 	
Rear ports	Eight USB 2.0, eSATA, serial (9-pin), two ethernet (RJ-45), FireWire 400 (IEEE 1394a), six analog audio ports (line-in, mic-in, front-out, rear-out, center/sub-out, side out), Optical SPDIF digital out, Optical SPDIF digital in		
IEEE 1394 adptr	<i>Some: FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear</i>		
Audio	High Definition (HD) Audio, Analog Devices ADI 1988A codec		
Speaker	Internal speaker for business audio		
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5755 and BCM5754		
Security chip	Broadcom Trusted Platform Module, TCG 1.2-compliant		
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black		
Mouse	Optical Wheel Mouse (USB connector), black		
Power supply	1060 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Bronze, 80 PLUS® Bronze qualified		
Cooling	Five fans (power supply, first processor, second processor, rear, front disk)		
Rack mount	Rack shelf support or optional sliding rack mount rail kit support		

Preloaded operating system²⁰ - <i>Some:</i> Genuine Windows® XP Professional 64-bit (preinstalled via downgrade rights in Windows Vista® Business 64-bit) - <i>Some:</i> Genuine Windows Vista Business 32 - <i>Some:</i> Genuine Windows Vista Business 64 ♦ <i>Vista models:</i> Vista Premium logo	Accessories 2GB PC3-8500 DDR3 ECC RDIMM 43R2035 4GB PC3-8500 DDR3 ECC RDIMM 43R2036 8GB PC3-8500 DDR3 ECC RDIMM 43R2037 Blu-ray™ Burner SATA 1.5Gb/s 45K1675 750GB SATA 3.0Gb/s Disk (7200 rpm) 43R1991 1TB SATA 3.0Gb/s Disk (7200 rpm) 45J7918 150GB SATA 3.0Gb/s Disk (10000 rpm) 2.5" 43R2030 300GB SATA 3.0Gb/s Disk (10000 rpm) 2.5" 43R2031 300GB SAS 3.0Gb/s Disk (15000 rpm) 43R1994 ThinkStation Rail Kit 43R1964 ThinkVision® L2440p Wide 24" Monitor 4420HB2 ATI™ FirePro™ 256MB V3700 51J0509 ATI FirePro 512MB V5700 51J0510 ATI FirePro 1GB V7750 51J0511 Other accessories at lenovo.com/accessories	Supports ThinkVantage® technologies GREENGUARD® certified RoHS-compliant LIMITED WARRANTY¹ ⇨ 3-year parts and labor ⇨ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time) ⇨ ThinkPlus™ services available; see http://lenovo.com/thinkplus/warranty ⇨ 24x7 ¹⁴ toll-free support for warranty issues during the warranty period ¹ via 800-426-7378
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See footnotes for important warranty information
 US models announced March 31, 2009

Type- Name	Slot x model bay	Processor(s)	GHz	Memory Cores	Memory DIMMs	Memory speed	Disk(s)	Disk size	Pre-config RAID	SATA optical	Diskette or Media reader	Graphics adapter(s)	1394 adptr	ENERGY STAR	Win7 5.0 preload	Avail date
D20	4158-79U 6x9	2xE5520	2.26	8	2x4GB	1066MHz	2x500GB ²	SATA 3.5"	No	DVD±RW	Media	1xFX1800	1394	Pending	Pro64	Oct 09

- **Faster, more efficient architecture with the latest Intel® workstation technology**
- **High performance workstation with premium graphics for specialized professionals**
- **Environmentally friendly, cool, and quiet with rock solid engineering**
- **Innovative thermal design with optimized fan placement, for a cooler, quieter, more reliable PC**
- **This model has a 3-year limited warranty¹**

Processor	Up to two processors, two processors standard, Intel Xeon® Processor E5520 with quad-core , 5.86GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 1066MHz DDR3 memory controller, and 8MB cache		Tower	
Implementation	Processor uses FC-LGA8 package, two LGA1366 sockets		<ul style="list-style-type: none"> • Raven black color; metal case • 8.3"W x 23.7"D x 19.1"H (with handle) • 210mm W x 602mm D x 485mm H • 60 lb (27.1kg) max configuration • 55-liter • Removable handle on top front • Toolless side cover removal • Toolless disk and optical drive removal • Toolless adapter retention • Illuminated front icons • Rack shelf support or optional rail kit 	
Memory	8GB std, 192GB max (Pending availability of 16GB RDIMM), RDIMM, PC3-8500 1066MHz DDR3, ECC , twelve 240-pin DIMM sockets** ** Over six DIMMs requires dual processors			
Graphics	Two PCI Express® x16 adapters required for quad monitor support, * Adapters >75W use auxiliary power connector(s) from PSU NVIDIA® Quadro® FX 1800 , PCIe x16 adapter, 768MB, two DisplayPort, one dual-link DVI-I***, 59W *** Only two display connectors are active at a time		Bay ① 5.25", 1.6" high, external, std opt Bay ② 5.25", 1.6" high, external, open Bay ③ 5.25", 1.6" high, external, open Bay ④ 3.5", 1" high, external, std media reader Bay ⑤ 3.5", 1" high, internal, std disk Bay ⑥ 3.5", 1" high, internal, std disk Bay ⑦ 3.5", 1" high, internal, opt disk Bay ⑧ 3.5", 1" high, internal, opt disk Bay ⑨ 3.5", 1" high, internal, opt disk	
Diskette drive	None (use optional USB diskette)		Slot 1: half-length, full-height, PCIe x1	
Media reader	20-in-1 media reader		Slot 2: full-length, full-height, PCIe 2.0 x16 (75W* max)	
SATA disk(s)	500GB , SATA 3.0Gb/s, 7200 rpm, 3.5"		Slot 3: full-length, full-height, 32-bit PCI 2.3	
SAS disk(s)	None		Slot 4: full-length, full-height, PCIe 2.0 x16 (75W* max)	
SATA DVD±RW	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s		Slot 5: full-length, full-height, PCIe x4 (x16 mechanical)	
Disk Controller	3 SATA connectors for opticals, SATA 3.0Gb/s, integrated in ICH10; 5 SATA/SAS ⁴ connectors for disks, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID ⁵ 0, 1, 5, 10, integrated in Marvell® 88SE6480		Slot 6: full-length, full-height, 32-bit PCI 2.3	
Chipset	Intel 5520 Chipset , Intel ICH10, Winbond® W83627DHG-P Super I/O			
Front ports	Two USB 2.0, microphone (3.5mm), headphone (3.5mm), FireWire 400 (IEEE 1394a)			
Rear ports	Eight USB 2.0, eSATA, serial (9-pin), two ethernet (RJ-45), FireWire 400 (IEEE 1394a), six analog audio ports (line-in, mic-in, front-out, rear-out, center/sub-out, side out), Optical SPDIF digital out, Optical SPDIF digital in		SECURITY	
IEEE 1394 adptr	FireWire PCI adapter, 1394a-2000, 400Mbps, two 6-pin ports on rear		<ul style="list-style-type: none"> • Security chip (see information on left) • Side cover lock (ships with two identical keys) • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) • Security slot (in rear for optional Kensington® Microsave® cable; prohibits side cover removal) • Power-on password • Administrator password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (front or all) 	
Audio	High Definition (HD) Audio, Analog Devices AD1988A codec		Supports ThinkVantage® technologies	
Speaker	Internal speaker for business audio		GREENGUARD® certified	
Ethernet	Dual gigabit ethernet on planar, Broadcom® BCM5755 and BCM5754		RoHS-compliant	
Security chip	Broadcom Trusted Platform Module, TCG 1.2-compliant		<i>Pending:</i> ENERGY STAR® 5.0-compliant	
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black		LIMITED WARRANTY¹	
Mouse	Optical Wheel Mouse (USB connector), black		<ul style="list-style-type: none"> ↪ 3-year parts and labor ↪ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time) ↪ ThinkPlus™ services available; see http://thinkplus.com • Onsite service upgrade options (in eligible locations)⁷ • Post warranty maintenance services ↪ 24 hour x 7 day¹⁴ toll-free support during the warranty period¹ via 800-426-7378 	
Power supply	1060 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Bronze, 80 PLUS® Bronze qualified			
Cooling	Five fans (power supply, first processor, second processor, rear, front disk)			
Rack mount	Rack shelf support or optional sliding rack mount rail kit support			
Preloaded operating system²⁰	Accessories			
- Genuine Windows® 7 Professional 64	2GB PC3-8500 DDR3 ECC RDIMM 43R2035			
	4GB PC3-8500 DDR3 ECC RDIMM 43R2036			
	8GB PC3-8500 DDR3 ECC RDIMM 43R2037			
Preloaded applications⁵ (only some listed)	750GB SATA 3.0Gb/s Disk (7200 rpm) 43R1991			
• Rescue and Recovery™	1TB SATA 3.0Gb/s Disk (7200 rpm) 45J7918			
• ThinkVantage System Update	Blu-ray™ Burner SATA 1.5Gb/s 45K1675			
• Norton Internet Security™ (30 days of virus definitions)	ThinkVision® L2440p Wide 24" Monitor 4420HB2			
• Adobe® Reader	NVIDIA Quadro NVS 290 43R1765			
• Microsoft® Office 2007 Trial (60-day)	NVIDIA Quadro FX 580 45K1671			
• Roxio® Creator® Business Edition (DVD±RW)	ATI™ FirePro™ 1GB V7750 51J0511			
• Roxio MyDVD® (DVD±RW)	Other accessories at lenovo.com/accessories			
• Corel® WinDVD® (DVD±RW)				