

Lenovo® recommends Windows Vista® Business.

PERFORMANCE FOR THE NEXT LEVEL. THINKSTATION ACCESSORIES TO TAKE YOU THERE.

The Lenovo ThinkStation™ S20 and D20 are professional workstations created for users of intensive software applications such as CAD/CAM, 3D, DCC, video creation and editing. Lenovo accessories are engineered to perform in perfect harmony with ThinkStation workstations. Whether you are purchasing a new ThinkStation, or upgrading an existing system, Lenovo offers a complete line of accessories to help you increase performance to make you more productive.



THE MERITS OF USING LENOVO ACCESSORIES:

COMPATIBILITY – Rigorous testing to ensure flawless compatibility with ThinkStation.

SAFETY – For both users and the environment.

SERVICE AND SUPPORT – Virtually anywhere and any way you want it.



ThinkStation™ Ideas
Energy Efficient
Low Operating Noise
Greater Expandability
Extreme Performance

lenovo®

NEW WORLD. NEW THINKING.™

ACCESSORIES FOR THE THINKSTATION S20 AND D20 WORKSTATIONS.

GRAPHICS


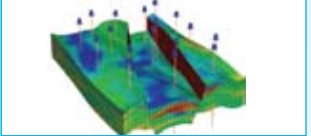


The highest-quality workstation graphics and the fastest application performance.

NVIDIA® graphics solutions combine the most advanced feature set, including largest frame buffers and a C programming environment to solve the most complex challenges. They take Computer Aided

Design (CAD), Digital Content Creation (DCC) and visualization applications to a new level of interactivity by enabling unprecedented capabilities in performance, programmability and precision.

Lenovo now proudly offers ATI™ FirePro™ professional graphic solutions providing power users with a complete range of graphic capabilities.

Visualizing the world's most demanding applications just got easier.

ENVIRONMENT/USAGE	APPLICATIONS	GRAPHICS CARD	
High-end 3D: Large datasets, models and complex shading	Manufacturing Computer Aided Design (MCAD), High-end 3D, Animation, Computer Aided Engineering (CAE) and scientific-research	NVIDIA® Quadro® FX 4800 192-cores, 1.5GB*(45K1674) NVIDIA® Quadro® FX 3800 192-cores, 1GB*(45K1673) ATI™ FirePro™ V7750* 1GB (51J0511)	
Mid-range 3D: Medium-size datasets, models and scenes	Mid-range Digital Content Creation (DCC) and Computer Aided Design (CAD), Manufacturing CAD (MCAD), Computer Aided Engineering (CAE) and scientific-research	NVIDIA® Quadro® FX 1800 64-cores, 768MB* (45K1672) ATI™ FirePro™ V5700* 512MB (51J0510)	
Entry 3D: Simple datasets and models	Simple Digital Content Creation (DCC) and Computer Aided Design (CAD)	NVIDIA® Quadro® FX 580 32-cores, 512MB* (45K1671) NVIDIA® Quadro® FX 380 16-cores, 256MB (45K1670) ATI™ FirePro™ V3700 256MB (51J0509)	
2D Business Graphics: Multiple monitors, view more applications and data	Everyday office applications, finance and financial analysis	NVIDIA® Quadro® NVS 290 (43R1765) NVIDIA® Quadro® NVS 295 (43K1669)	

*Only two of three monitor (two DisplayPort and one DVI) ports are active at a time.

NVIDIA® Quadro® FX 4800

Option Part Number:
45K1674



NVIDIA® SLI Connector:
Option Part Number:
55Y8963



Quad Monitors:
Increase productivity
by installing two graphic cards



SLI Connection Adapter:

Dynamically scale graphics performance, enhance image quality by combining two Quadro® FX 4800 graphic cards by uniting them as a single graphics card within a ThinkStation D20 system.

Features and Benefits:

SLI Frame Rendering: Transparently scale application performance that benefits visual simulation, broadcast and video applications which are fill rate-limited, using the Split Frame Rendering (SFR) mode
SLI Full Screen Anti Aliasing (FSAA): Transparently scale image quality. FSAA increases the FSAA level up to 32x to remove jaggies from contours of geometries in real time that benefits design review and Digital Mockup (DMU), visual simulation, broadcast and video applications.

ATI™ FirePro™ V7750

Option Part Number:
51J0511



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MEMORY

Boost your workstation's capabilities.

Extra memory is a cost-effective way to increase the performance of applications like CAD programs, streaming video and computational intensive applications. Lenovo memory solutions provide additional reliability and performance for the ThinkStation.

What makes Lenovo Memory solutions ideal?

- Lenovo memory is developed together with ThinkStation systems to optimize performance



	UDIMM
S20	6 memory slots
D20	12 memory slots
	RDIMM
D20	12 memory slots

- ^[1] ThinkStation supports a maximum of three 1333MHz modules per CPU. If more than three are installed, the ThinkStation operates at 1066MHz.
- ThinkStation D20 does not support mixing of UDIMM and RDIMM memory.
 - For best performance, memory speeds should match Intel® Xeon® processor memory bus speed.
 - 4GB and 8GB RDIMM memory modules includes a memory fan cooler. ThinkStation D20 supports a maximum of two fan coolers.

- Lenovo certifies each memory manufacturer to ensure quality and reliability
- Lenovo tests every possible memory combination for complete system compatibility
- Lenovo consistently monitors component production so that only the highest quality components are used

Key Features for UDIMM and RDIMM Memory¹:

- DDR3 provides lower power consumption and faster performance
- Error Correcting Code (ECC) offers protection of memory errors which results in greater data integrity and system uptime

UDIMM

- 1GB PC3-8500 1066MHz DDR3 ECC UDIMM Memory (51J0503)
- 2GB PC3-8500 1066MHz DDR3 ECC UDIMM Memory (51J0504)
- 1GB PC3-10600 1333MHz DDR3 ECC UDIMM Memory (43R2032)
- 2GB PC3-10600 1333MHz DDR3 ECC UDIMM Memory (43R2033)

RDIMM

ThinkStation D20 solutions to maximize memory capacity (96GB maximum memory)

- 1GB PC3-8500 1066MHz DDR3 1Rx8 ECC RDIMM Memory (43R2034)
- 2GB PC3-8500 1066MHz DDR3 2Rx8 ECC RDIMM Memory (43R2035)
- 4GB PC3-8500 1066MHz DDR3 2Rx4 ECC RDIMM Memory (43R2036)
- 8GB PC3-8500 1066MHz DDR3 4Rx4 ECC RDIMM Memory (43R2037)

HARD DISK DRIVES

High-performance, mass storage solutions for the ThinkStation.

Always insist on a high-performance, hard disk drive that can complement the performance of your ThinkStation. The speedy new Lenovo 300GB 10K rpm Serial ATA Hard Disk Drive increases storage expansion and supports RAID to enable high levels of storage reliability. Even faster Serial Attached SCSI (SAS) Hard Disk Drive options such as the ThinkStation 300GB 15K rpm SAS Hard Disk Drive provides reliable storage expansion for SAS Hard Disk Drive equipped ThinkStation workstations.

Lenovo Hard Disk Drive solutions include:

- Lenovo 300GB 10K rpm Serial ATA Hard Disk Drive – 2.5" (43R2031)
- ThinkStation 300GB 15K rpm SAS Hard Disk Drive (43R1994)
- Lenovo 500GB 7200 rpm Serial ATA Hard Disk Drive (43R1990)
- Lenovo 1TB 7200 rpm Serial ATA Hard Disk Drive (45J7918)



Note: Mixing of Serial ATA and SAS Hard Disk Drives is not supported by Lenovo.

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OPTICAL DRIVES

Rewritable technology for high-capacity data archiving or authoring and playback of high-definition video.

The new Lenovo Blu-ray™ Burner enhances the ThinkStation visual experience by offering state-of-the-art high-definition video playback. In addition, this new option has the capability to store up to 50GB on a single Blu-ray™ disc. It's perfect for video editing, file sharing and data backup. This new drive also reads and writes to inexpensive CD and DVD media.

- Lenovo Blu-ray™ Burner Serial ATA (45K1675)

INTEL® PROCESSORS FOR THE THINKSTATION D20

Performance with energy-efficient multi-core processing.

Upgrade from the ThinkStation D20 to a faster processor or add a second processor¹ to solve complex problems and build business advantage. In addition, reduce energy costs with an intelligent, reliable, energy-saving design that reduces processor power during low-use periods.

The benefits of Intel® processors:

- Engineers can iterate through design options faster; resulting in faster time-to-market with more innovative products.
- Animators can create and render simultaneously with no loss in workstation responsiveness. They can work interactively with ultra high-resolution imagery, experiment quickly and be creative; resulting in faster digital storyboarding and animation.
- Financial analysts, traders and portfolio managers can monitor complex options positions while concurrently analyzing the effects of changes in market conditions and price over time; resulting in better informed, higher quality decisions in less time.

¹ When adding a second processor, the second processor must match the installed processor.



Intel® processors include:

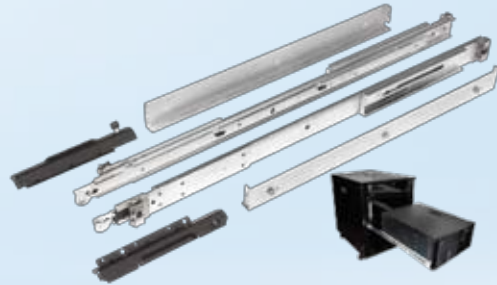
- Intel® Xeon® E5520 2.26GHz, 1066MHz processor (43R2038)
- Intel® Xeon® E5530 2.40GHz, 1066MHz processor (43R2039)
- Intel® Xeon® E5540 2.53GHz, 1066MHz processor (43R2040)
- Intel® Xeon® X5550 2.66GHz, 1333MHz processor (43R2042)
- Intel® Xeon® X5560 2.80GHz, 1333MHz processor (43R2043)

THINKSTATION RAIL KIT

Effortlessly install the ThinkStation D20 into a rack for data center environments.

The ThinkStation Rail Kit fits most 19" cabinet style racks with square or round holes that occupies 5U rack space. The slide rails snap easily into the rack and the handles enable easy removal of the system, at the time of service.

- ThinkStation Rail Kit (43R1964)



FOR MORE INFORMATION:

www.lenovo.com/support/thinkstationaccessories
www.lenovo.com/support/graphiccards



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