The new ThinkStation D20 with high-powered graphics support delivers the ultimate performance workstation

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At a glance

Benefits of the ThinkStation® D20 systems include:

- Microsoft® Windows® Vista Business 64 preload (select models)
- Microsoft Windows XP Professional 32 preload (select models)
- Outstanding performance and excellent room for growth:
  - High-performance Intel® processors (dual processor support)
  - ECC DDR3 SDRAM system memory standard
  - Outstanding high-performance video graphics adapters
  - Serial ATA and SAS device support
- Innovative mechanical design for easy upgrades and service support
- ThinkVantage® technologies that can help:
  - Make computing simpler
  - Lower your total cost
  - Increase PC availability and control

Overview

The new ThinkStation D20 series from Lenovo® includes feature improvements in security, system recovery, and location management. These new models offer a blend of essential features and technology, including:
• Microsoft Windows Vista Business 64 preload (select models)
• Microsoft Windows XP Professional 32 preload (select models)
• Enhanced ECC DDR3 SDRAM system memory standard
• Integrated dual Gigabit Ethernet
• High-performance Intel processor technology with dual processor support
• High-performance video graphics adapters
• Numerous data protection tools

**Easy to use and manage**

• Systems include a fully integrated recovery environment that works when your operating system is not working
• Innovative mechanical design for easy upgrades and service support
• ThinkVantage Rescue and Recovery® software: One-button recovery and restore solution that includes a set of self-recovery tools to help users diagnose, get help, and recover from system crashes quickly, even if the primary operating system will not boot
• ThinkVantage Productivity Center: Guides you to a host of information and tools to help you set up, understand, maintain, and enhance your computer
• System Migration Assistant™: Enables system administrators and individual users to migrate a work environment (operating system preferences, files and folders, customized application settings, and user accounts) from one computer to another
• System Update: Software program that helps you keep the software on your system current by downloading and installing software packages¹ (applications, device drivers, BIOS flashes, and other updates)
• Easy-to-service chassis design helps maximizes uptime Productivity Center program
• Easy-to-access high-speed USB 2.0 ports

**Optimized for connectivity**

Integrated dual Gigabit Ethernet

**Service and support**

Worldwide service and support²

For up-to-date marketing and technical information, visit

http://www.lenovo.com

¹ Requires Internet access account, not included. Support is available during the limited warranty period.

² International Warranty Service (IWS) is available in any country in which this product is sold and serviced. Service delivery methods and parts availability vary by country, may be different from that in the country of purchase, and are subject to change without notice. Fees and restrictions may apply in some countries.

**Planned availability date**

April 2009

**Description**

New ThinkStation D20 systems offer industry-leading technologies and excellent management capabilities.

**Industry-leading technologies**

• New ThinkStation tower models with seven slots and nine bays
• Intel high-performance processor technology (dual processor support)
• ECC DDR3 SDRAM memory standard with up to 48 GB maximum system memory supported
• Integrated dual Gigabit Ethernet
• Innovative toolless mechanical design for easy upgrades and service support

Leading business tools and data protection software

• Lenovo password management is easy to use. It enables secure access to your entire system and Web pages.
• Lenovo systems include a fully integrated recovery environment that works when your operating system is not working.
• Lenovo systems manage everything that changes when your location changes, not just your Internet connection.
• McAfee VirusScan Plus (with 30 days of virus definitions)

Diagnostics

PC-Doctor diagnoses common problems on major system components. Diagnostic tests are run either locally or remotely through the Internet or an intranet.

Hardware

• Support for up to 48 GB of DDR3 ECC system memory
• Integrated dual Gigabit Ethernet
• DVD Recordable
• Standard audio onboard
• Serial ATA HDD and SAS HDD support
• Advanced Configuration and Power Interface (ACPI) support
• Six USB 2.0 ports - two front and four rear for easy connection of peripherals
• Mouse, keyboard, and VGA monitor ports
• Line-out, line-in, microphone audio jack-in, and headphone-out ports

(7 x 9) Tower models

• Two full-length PCI Express x16
• One full-length PCI Express x1
• One full-length PCI Express x4
• Two full-length PCI v2.3
• Five 3.5-inch slim internal hidden bays (HDD)
• One 3.5-inch slim external accessible bay (FDD or card reader)
• Three 5.25-inch external half-high bays (optical drives)

Other software tools

The ThinkStation D20 includes a unique set of software tools to help you manage your desktop computing assets.

Backup copies of your software

The ThinkStation D20 has a product recovery program resident on the system HDD. The ThinkVantage Rescue and Recovery program can back up your system and restore it to its previously saved level.

A hidden service partition will provide preload recovery.

For up-to-date marketing and technical information on your ThinkStation D20 systems, visit

http://www.lenovo.com/support
Warranty information

For a copy of applicable product warranties, contact your authorized Lenovo Reseller or Lenovo representative.

Lenovo makes no representation or warranty regarding third-party products or services.

Telephone support may be subject to additional charges, even during the limited warranty period. For Lenovo machines with on-site labor, your service provider will attempt to diagnose and resolve the problem remotely before sending a technician.

All offers are subject to availability. Lenovo reserves the right to alter product offerings and specifications at any time without notice. Lenovo is not responsible for photographic or typographic errors.

Accessibility by people with disabilities

A U.S. Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at http://www-03.ibm.com/research/accessibility/requests/accvpat.nsf/lenovo-bidx?OpenForm

Product number

ThinkStation D20 (7 x 9 Tower Form Factor)

<table>
<thead>
<tr>
<th>Mach. Type</th>
<th>Model</th>
<th>Ordering Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel Quad Core Xeon® E5540</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.53GHz, 8MB cache, 4096MB memory(2 DIMMs), 3-250GB HDDs(3), windows Vista Business 64(4), DVD Recordable, 768MB nvidia Quadro FX-1800 Graphics Adapter</td>
<td>4158 32G</td>
<td>SNE32XX</td>
</tr>
<tr>
<td>2-2.53GHz, 8MB cache, 16384MB memory(4 DIMMS), 2-147GB SAS HDDs, Windows Vista Business 64, DVD Recordable, 768MB nvidia Quadro FX-1800 Graphics Adapter, Fingerprint reader keyboard</td>
<td>4158 42G</td>
<td>SNE42XX</td>
</tr>
<tr>
<td>2.53GHz, 8MB cache, 4096MB memory(2 DIMMs), 500GB HDD, Windows Vista Business 64, DVD Recordable, 256MB nvidia Quadro NVS-290 Graphics Adapter, IEEE 1394 Adapter, Fingerprint reader keyboard</td>
<td>4158 37G</td>
<td>SNE37XX</td>
</tr>
<tr>
<td>2.53GHz, 8MB cache, 8192MB memory(4 DIMMS), 750GB HDD, Windows XP64 Monolithic 3 with V64 RDVD, DVD Recordable, 768MB nvidia Quadro FX-1800 Graphics Adapter, Fingerprint reader keyboard, Laser mouse</td>
<td>4158 46G</td>
<td>SNE46XX</td>
</tr>
<tr>
<td>2.53GHz, 8MB cache, 4096MB memory(2 DIMMs), 500GB HDD, Windows Vista Business 64, DVD Recordable, 512MB ATI FirePro V5700 Graphics Adapter, Fingerprint reader keyboard, Laser mouse</td>
<td>4158 47G</td>
<td>SNE47XX</td>
</tr>
<tr>
<td>2.53GHz, 8MB cache, 4096MB memory(2 DIMMs), 150GB HDD, Windows XP Professional 32 with Vista Business 32 RDVD, Premium label, DVD Recordable, 768MB nvidia Quadro FX-1800 Graphics Adapter, Fingerprint reader keyboard</td>
<td>4158 34G</td>
<td>SNE34XX</td>
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</tbody>
</table>

Intel Quad Core Xeon X5560
2.80GHz, 8MB cache, 8192MB memory(4 DIMMs), 500GB HDD, Windows XP 64 Monolithic 3
with V864 RDVD, DVD Recordable, 1.5GB nVidia Quadro FX-4800 Graphics Adapter,
Fingerprint reader keyboard, Laser mouse

Intel Quad Core Xeon X5550

2.66GHz, 8MB cache, 8192MB memory(4 DIMMs), 3-500GB HDDs, Windows Vista Business 64,
DVD Recordable, 1.5GB nVidia Quadro FX-4800 Graphics Adapter, IEEE 1394 Adapter,
Fingerprint reader keyboard, RAID 5,

2-2.66GHz, 8MB cache, 16384MB memory(4 DIMMs), 4158 41G SNE41XX
3-250GB HDDs, Windows Vista Business 64,
DVD Recordable, 1.5GB nVidia Quadro FX-4800 Graphics Adapter,
Fingerprint reader keyboard

2.66GHz, 8MB cache, 8192MB memory(4 DIMMs), 500GB HDD, Windows Vista Business 64,
DVD Recordable, 1GB ATI FirePro V7750 Graphics Adapter,
Fingerprint reader keyboard

2.66GHz, 8MB cache, 8192MB memory(2 DIMMs), 4158 43G SNE43XX
3-250GB HDDs, Windows Vista Business 64,
DVD Recordable, 512MB ATI FirePro V5700 Graphics Adapter,
Fingerprint reader keyboard

Intel Quad Core Xeon X5570

2.93GHz, 8MB cache, 8192MB memory(4 DIMMs), 147GB SAS HDD, Windows Vista Business 64,
DVD Recordable, 1.5GB nvidia Quadro FX-4800 Graphics Adapter,
Fingerprint reader keyboard

Intel Quad Core Xeon E5520

2.26GHz, 8MB cache, 4096MB memory(2 DIMMs), 4158 39G SNE39XX
2-150GB HDDs, Windows XP Professional 32 with Vista Business 32 RDVD, Premium label,
DVD Recordable, 768MB nvidia Quadro FX-1800 Graphics Adapter, IEEE 1394 Adapter,
Fingerprint reader keyboard

Intel Quad Core Xeon E5530

2.40GHz, 8MB cache, 4096MB memory(2 DIMMs), 4158 33G SNE33XX
750GB HDD, Windows XP Professional 32 with Vista Business 32 RDVD, Premium label,
DVD Recordable, 512MB ATI FirePro V5700 Graphics Adapter, IEEE 1394 Adapter

4 GB equals 1,000,000,000 bytes when referring to storage capacity. Accessible capacity is less; up to 4 GB is used in service partition.

5 Some software may differ from its retail version (if available), and may not include user manuals or all program functionality. Software license agreements may apply.

Note: All models include integrated dual Gigabit Ethernet, integrated audio, a USB Preferred Pro full-size keyboard, an optical wheel mouse, internal mono speaker, memory card reader, and no diskette drive unless stated otherwise.
HDD specifications

<table>
<thead>
<tr>
<th>Formatted capacity(3)</th>
<th>250 GB</th>
<th>500 GB</th>
<th>147 GB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>Serial ATA</td>
<td>Serial ATA</td>
<td>SAS</td>
</tr>
<tr>
<td>Rotational Speed</td>
<td>7200 rpm</td>
<td>7200 rpm</td>
<td>15000 rpm</td>
</tr>
<tr>
<td>Read/write cache</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3
GB equals 1,000,000,000 bytes when referring to storage capacity. Accessible capacity is less; up to 4 GB is used in service partition.

Mechanical specifications

- Width: 210 mm (8.0 in)
- Height: 485 mm (19.1 in)
- Depth: 579 mm (22.8 in)
- Weight: 24.95 kg (55.01 lbs) (maximum configuration)

Electrical power specifications

- Low range:
  - Minimum: 100 V ac
  - Maximum: 127 V ac
- High range:
  - Minimum: 200 V ac
  - Maximum: 240 V ac
- Input frequency range: 50/60 Hz
- Auto-sensing voltage switch

Note: Power consumption and heat output vary depending on the number and type of optional features installed and the power-management optional features in use.

Air temperature specifications

- System on at 3000 ft: 10 to 35°C (50 to 95°F)
- System on at 3000 ft - 7000 ft: 10 to 32°C (50 to 89.6°F)
- System off: 10 to 43°C (50 to 110°F)

Noise level specifications

Declared acoustical noise emissions

- Declared sound-power levels for SATA hard drive systems:
  - Idle: 4.3 bels
  - Bystander: 32 dB
  - Operator: 35 dB
  - Compute: 4.6 bels
  - Bystander: 35 dB
  - Operator: 37 dB
- Declared sound-power levels for SAS hard drive systems:
  - Idle: 4.8 bels
  - Bystander: 36 dB
  - Operator: 39 dB
  - Compute: 5.0 bels
  - Bystander: 39 dB
Operator: 40 dB

**Note:** These levels were measured in controlled acoustical environments according to the procedures specified by the American National Standards Institute (ANSI) S12.10 and ISO 7779 and are reported in accordance with ISO 9296. Actual sound-pressure levels in a given location might exceed the average values stated because of room reflections and other nearby noise sources. The declared sound-power levels indicate an upper limit, below which a large number of computers will operate.

Selected models of the ThinkStation D20 systems are designed to meet the EPA ENERGY STAR requirements.

**Note:** As an ENERGY STAR partner, Lenovo has determined that this product meets the ENERGY STAR guidelines for energy efficiency.

**Industry standards**

ThinkStation D20 systems conforms to the following industry standards:

- ATAPI
- DMI v2.0
- IEEE 802.3 (Ethernet)
- JEDEC 240-pin DIMM memory
- PC 2001
- USB v2.0

**Certifications**

ThinkStation D20 systems carry the following certifications:

- EMC
  - FCC - Part 15, Class B (US, Canada)
  - CE Mark (Europe)
  - VCCI V-3/V-4, Class B (Japan, radiated)
  - JEITA (Japan, harmonic)
  - ACA C-Tick (Australia, New Zealand)
  - BMSI - CNS13438, Class B (Taiwan)
  - MCI (Korea)
- Safety
  - UL (US)
  - CUL (Canada)
  - CB Certificate (Worldwide)
  - TUV-GS (Europe)
  - NOM (Mexico)
  - SABS (South Africa)
  - Hong Kong
  - PST (Singapore)
  - IRAM (Argentina)
- EMC and Safety
  - CCC (China)
  - GOST (Russia)
  - SASO (Saudi Arabia)
- Other
  - ENERGY STAR (US)
  - PC Green Label (Japan)
– ISO 9241-3 capable (full compliance requires a certified monitor and fonts)

ThinkStation D20 systems may carry other certifications that are not listed above.

**Operating environment**

**ThinkStation D20 tower systems**

- Relative humidity
  - System on: 10% to 80%
  - System off: 10% to 90%
  - Transit: 10% to 90%
  - Max altitude: 7000 ft (2133.6 m)

**Operating system support**

ThinkStation D20 systems are either preloaded or tested for compatibility with the following operating systems. Lenovo will provide problem determination for this operating system and device driver support for the hardware installed from the factory.

Preloaded: Microsoft Windows Vista Business 64 or Windows XP Professional 32 (select models)

Tested software:

- Microsoft Windows Vista Business 32 and 64
- Microsoft Windows XP Professional 32
- Linux®
- PC DOS (limited)

Operating system video graphics driver support is required for graphics capabilities. Although these systems have been compatibility tested with the above operating systems, additional video driver support may be required from the operating system vendor.

Other operating systems have not been tested and Lenovo does not provide problem determination or device driver support.

**BIOS**

Flash ROM supports Compatibility BIOS (CBIOS) and POST.

**Plug-and-play support**

Systems support the plug-and-play specifications that make it easier for you to install, upgrade, and make changes to the PC. Plug-and-play systems that use plug-and-play adapter cards are self-configuring.

**ACPI**

ACPI provides an industry-standard method to control system-level resources via the operating system.

**BIOS setup utility**

The BIOS setup utility program implements power-saving functions.
Planning information

Customer responsibilities
Systems are designated as customer setup (CSU). CSU allowance is one day.

Cable orders
Except for system power, keyboard, and mouse connections, there are no cabling requirements. All cables are provided with the system unit. Instructions are provided as part of initial setup.

Installability
Following the set up instructions, attach the keyboard and peripherals then turn on the power. Setup is run after the computer has successfully completed its initial self tests.

The setup utility resides in flash ROM. In some instances, you are prompted to run this utility, or you can invoke it by pressing the F1 key when prompted during system startup.

Packaging
ThinkStation D20 systems:

System unit carton

- System unit
- Hardware assembly package
  - Power cord
  - Keyboard
  - Mouse
  - Publications

Security, auditability, and control

The ThinkStation D20 systems support the following security features:

- User and administrator passwords for BIOS access
- Support for the addition of an integrated cable lock (Kensington lock)
- Startup sequence control
- Startup without keyboard, mouse, diskette drive
- Unattended start mode
- Diskette and hard disk I/O control
- Serial and parallel port I/O control
- Security profile by device

The following is also visible on the outside of the system unit:

- Machine type and model
- System serial number

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communications facilities.

Terms and conditions

To obtain copies of the Lenovo Limited Warranty, contact your reseller or Lenovo.
Warranty period for machine type 4158

- System hardware - three years on site on parts and labor NBD

Warranty period

- System hardware - three years on parts and labor on machine type 4158

Optional Lenovo features initially installed in a Lenovo system carry the same warranty period as the system. If installed after the initial system installation, they carry the balance of the system warranty or the optional feature warranty, whichever is greater.

Warranty service

If required, your Service Provider provides repair or exchange service depending on the type of warranty service specified below for the Machine. A service technician will attempt to resolve your problem over the telephone, you must follow the problem determination and resolution procedures. Scheduling of service will depend upon the time of your call and is subject to parts availability. Service levels are response time objectives and are not guaranteed. The specified level of warranty service may not be available in all worldwide locations, additional charges may apply outside your Service Providers normal service area, contact your local Service Provider representative or your reseller for country and location specific information. Service Provider contact information can be found at

http://www.lenovo.com/support

Customer Replaceable Unit (CRU) service

Under CRU Service, your Service Provider will ship CRUs to you for installation by you. CRU information and replacement instructions are shipped with your product and are available from Lenovo at any time upon request. CRUs that are easily installed by you are called Self-service CRUs, while Optional-service CRUs may require some technical skill and tools. Installation of Self-service CRUs is your responsibility. You may request that a Service Provider install Optional-service CRUs under one of the other types of warranty service designated for your product. An optional service offering may be available from Lenovo to have Lenovo install Self-service CRUs for you. You may find a list of CRUs and their designation in the publication that ships with your product or visit

http://www.lenovo.com/CRUs

The requirement to return a defective CRU, if any, will be specified in the materials shipped with a replacement CRU. When return is required, return instructions, a prepaid return shipping label, and a container will be included with the replacement CRU and you may be charged for the replacement CRU if your Service Provider does not receive the defective CRU within thirty (30) days of your receipt of the replacement.

On-site service

Your Service Provider will either repair or exchange the failing Machine at your location and verify its operation. You must provide suitable working area to allow disassembly and reassembly of the Machine. The area must be clean, well lit and suitable for the purpose. For some Machines, certain repairs may require sending the Machine to a designated service center.

International Warranty Service (IWS)

IWS is available during the warranty period to customers who travel or relocate to countries where their computer is sold and serviced by a Service Provider authorized to perform warranty service. Eligible Lenovo computers are identified by their four-digit machine type.

You can obtain IWS through the method of service, such as CRU, depot, carry-in or on-site, provided in the servicing country. Service methods and procedures vary by country, and some service or parts may not be available in all countries. Service centers in certain countries may not be able to service all models of a particular machine type. In addition, some countries may have fees and restrictions that apply at the time of service.
**Note:** Due to the earth's magnetic field, CRT monitors are manufactured to work in northern, southern, and equatorial regions of the earth and may not produce a satisfactory image when moved between them. Any required adjustment (if possible) is not covered under IWS and may be subject to a chargeable action. The magnetic field does not affect flat-panel LCD monitors and ThinkPad® LCD displays.

**Licensing**

Programs included with this product are licensed under the terms and conditions of the license agreements that are shipped with the system.

**ThinkPlus Services**

**Warranty and maintenance options**

The announced products may be eligible for ThinkPlus® and LenovoCare Services, convenient prepackaged offerings for warranty service upgrades and maintenance services.

**Installation services**

The announced products may be eligible for ThinkPlus Installation Services, convenient prepackaged offerings for installation services.

Refer to the **Prices** section for information on the availability of ThinkPlus and LenovoCare Services.

**Lenovo ThinkPlus Warranty Upgrades**

The announced Lenovo ThinkStation machine types are also eligible for Lenovo ThinkPlus warranty upgrades. Lenovo ThinkPlus provides a higher level of warranty service than that provided by the Lenovo base warranty.

**Note:** Only one warranty upgrade per machine serial number can be active. A post warranty offering can be added when a warranty upgrade is active. The Post Warranty offering will only become active at the end date of the Warranty upgrade or Base Warranty period if later.

**LENOVO BUSINESS PARTNERS AND DISTRIBUTOR CHANNELS PAN-EMEA**

Lenovo ThinkPlus warranty upgrade offerings are specific to the Machines Types and products listed.

<table>
<thead>
<tr>
<th>Lenovo ThinkPlus Offering</th>
<th>Upgrade</th>
<th>Ordering</th>
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<tr>
<td></td>
<td>L No</td>
<td>Type</td>
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<tr>
<td>For 4158 with 3 Yr On-Site Service NBD* Base Warranty:</td>
<td></td>
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<tr>
<td>(High End)</td>
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<tr>
<td>4 Yr On-Site Service NBD*</td>
<td>L644</td>
<td>ThinkPlus</td>
</tr>
<tr>
<td>5 Yr On-Site Service NBD*</td>
<td>L645</td>
<td>ThinkPlus</td>
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</table>

**Notes**

* NBD = Next Business Day Response Target

**ANNOUNCEMENT COUNTRIES FOR THE INCLUDED LENOVO THINKPLUS L.NO PACS.**

Announcement is restricted to the following countries:

- Austria
- Belgium
- Bulgaria*
- Croatia
- Czech Republic
- Denmark
- Finland
- France**
- Germany
- Greece
- Hungary
- Ireland
- Israel
- Italy
- Luxemburg
- Netherlands
- Norway
- Poland
- Portugal
- Romania
- Russia***
- Slovakia
- Slovenia****
- South Africa
- Spain
- Sweden
- Switzerland
- Turkey
- UK*****

* Bulgaria is limited to the capital Sofia for On-Site Service.
** Excludes DOM/TOM and all other overseas territories and
dependencies.
*** Russia is limited to 100 km of Moscow for Service provision.
**** Slovenia is limited to 50 km of Ljubljana for On-Site Service.
***** Mainland UK only for On-Site Service.

One,
Two,
Three,
Four

Field-installable features
Yes

Model conversions
No

Machine installation
Customer setup. Customers are responsible for installation according to the instructions Lenovo provides with the machine.

Graduated program license charges apply
No

Licensed internal code and licensed machine code
These products do not contain licensed internal code and licensed machine code.

Prices

For all local charges, contact your sales representative.

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IBM Global Financing offerings are provided through IBM Credit LLC in the United States, and other IBM subsidiaries and divisions worldwide to qualified commercial and government customers. Rates are based on a customer's credit rating, financing terms, offering type, equipment type, and options, and may vary by country. Other restrictions may apply. Rates and offerings are subject to change, extension, or withdrawal without notice.

Announcement countries

All European, Middle Eastern, and African Countries.

Additional external attachment

ThinkAccessories
For the latest information on options available for ThinkStation D20 systems, visit
http://www.lenovo.com/options

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System Migration Assistant is a trademark of Lenovo Corporation in the United States, other countries, or both.

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