



# *Personal Systems Reference Lenovo® ThinkServer™ Servers*

*November 2010 - Version 388*



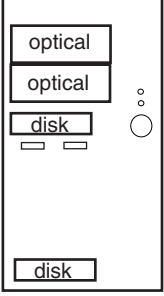
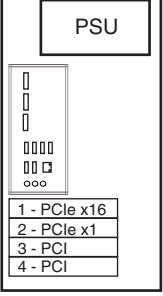
New Lenovo ThinkServer 200 Series Family  
TS200v/TD230/RD240

Visit [www.lenovo.com/psref](http://www.lenovo.com/psref) for the latest version



Type-model	Slot x bay	Processor	GHz	Cores	Memory DIMMs	Memory speed	Disk(s)	Disk size	Pre-conf RAID	Disk bays	SATA optical	Graphics adapter(s)	Windows Server preload	Power supply(s)	Avail date
0981-11U	4x4	G1101	2.26	2	1x1GB	1333MHz	1x250GB <sup>2</sup>	3.5"		2xDirect Cable	DVD	Intel HD		280W	Mar 10
0981-12U	4x4	G6950	2.80	2	1x2GB	1333MHz	1x250GB	3.5"		2xDirect Cable	DVD	Intel HD		280W	Mar 10
0981-18U	4x4	i5-650	3.20	2	1x2GB	1333MHz	2x250GB	3.5"	1	2xDirect Cable	DVD	Intel HD	2008 Foundations	280W	Mar 10
0981-19U	4x4	i5-650	3.20	2	1x2GB	1333MHz	1x500GB	3.5"		2xDirect Cable	DVD±RW	Intel HD		280W	Mar 10
0981-1AU	4x4	G6950	2.80	2	1x2GB	1333MHz	2x250GB	3.5"	1	2xDirect Cable	DVD	Intel HD	2008 Foundations	280W	Mar 10
0981-1BU	4x4	i5-650	3.20	2	2x2GB	1333MHz	2x250GB	3.5"	1	2xDirect Cable	DVD±RW	Intel HD	2008 SBS Std	280W	Jul 10
0981-1CU	4x4	X3450	2.66	4	1x2GB	1333MHz	1x500GB	3.5"		2xDirect Cable	DVD±RW	FX380		280W	Nov 10

- These models have a 1-year limited warranty<sup>1</sup>
- These small and medium business (SMB) models are part of the US TopSeller™ Program

Processor	<p><b>Intel® Celeron® Processor G1101*</b> with dual-core, Intel 64, Virtualization Technology, integrated 1066MHz dual-channel DDR3 memory controller, and 2MB cache or</p> <p><b>Intel Pentium® Processor G6950</b> with dual-core, Intel 64, Virtualization Technology, integrated 1066MHz dual-channel DDR3 memory controller, and 3MB cache or</p> <p><b>Intel Core™ i5 Processor i5-650</b> with dual-core, Intel 64, Hyper-Threading Technology, Turbo Boost Technology, Virtualization Technology, TXT, integrated 1333MHz dual-channel DDR3 memory controller, and 4MB cache or</p> <p><b>Intel Xeon® Processor X3450</b> with quad-core, Intel 64, Hyper-Threading Technology, Virtualization Technology, TXT, Turbo Boost Technology, integrated 1333MHz dual-channel DDR3 memory controller, and 8MB cache</p> <p>* Intel Celeron Processor G1101 is not recommended for applications requiring more than 5 clients or high web volume Processor in LGA1156 socket, up to one processor</p>	<p><b>Tower</b></p>  
Implementation		<ul style="list-style-type: none"> <li>• Raven black color; metal case</li> <li>• 6.9"W x 16.0"D x 14.9"H</li> <li>• 175mm W x 407mm D x 377mm H</li> <li>• 24.7 lb (11.2kg) max configuration</li> <li>• 25-liter</li> <li>• Toolless side cover removal</li> <li>• Toolless disk and optical drive removal</li> <li>• Toolless adapter retention</li> <li>• Illuminated front icons</li> </ul>
Memory	<p><b>1GB, 2GB, or 4GB</b> std, 16GB max, <b>UDIMM, PC3-10600 1333MHz DDR3**, ECC</b>, four 240-pin DIMM sockets</p> <p>** System automatically clocks down for processors with 1066MHz DDR3 memory controller</p>	<p><b>Disk Bays</b></p> <p>Bay 1 5.25", 1.6" high, external, std optical</p> <p>Bay 2 5.25", 1.6" high, external, optional optical</p> <p>Bay 3 3.5", 1" high, external, std disk</p> <p>Bay 4 3.5", 1" high, external, std or opt disk</p>
Graphics	<p><i>Some:</i> <b>Intel HD Graphics</b> in processor, one analog VGA DB-15 connector, one DisplayPort™ connector</p> <p><i>Some:</i> <b>NVIDIA® Quadro® FX 380</b>, PCIe x16 adapter, 256MB, two dual-link DVI-I, includes DVI to VGA converter, 35W</p>	<p><b>Expansion Slots</b></p> <p>Slot 1: half-length, full-height, PCI Express 2.0 x16</p> <p>Slot 2: half-length, full-height, PCI Express 2.0 x1</p> <p>Slot 3: half-length, full-height, 32-bit PCI</p> <p>Slot 4: half-length, full-height, 32-bit PCI</p>
Disk bays	<p>Two 3.5" SATA disk bays, no hot-swap, direct cable</p> <p><b>250GB or 500GB</b>, SATA 3.0Gb/s, 7200 rpm, 3.5"</p> <p><i>Some:</i> DVD-ROM DL SATA 1.5Gb/s 16X-48X Max<sup>4</sup> Drive</p> <p><i>Some:</i> Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive</p> <p>Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA connectors for disks, two SATA connectors for opticals</p>	<p><b>Software Management Tools</b></p> <ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> </ul>
SATA disk(s)		<p><b>Power-On Hotkey</b></p> <ul style="list-style-type: none"> <li>• Setup Utility: F1 at startup</li> <li>• Diagnostic: F2 at startup</li> <li>• Network Boot: F12 at startup</li> <li>• RAID Configuration Utility: Ctrl+I at startup</li> </ul>
SATA DVD		<p><b>Security</b></p> <ul style="list-style-type: none"> <li>• Security chip (see information on left)</li> <li>• Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)</li> <li>• Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)</li> <li>• Power-on password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (front or all)</li> </ul>
SATA DVD±RW		<p><b>Preloaded Operating System</b></p> <p><i>Some:</i> Genuine Windows Server® 2008 R2 Foundations</p> <p><i>Some:</i> Genuine Windows Small Business Server 2008 Standard SP2</p>
SATA controller		<p><b>ENERGY STAR® Server 1.0-compliant</b></p> <p>RoHS-compliant</p>
Chipset	<p><b>Intel 3450 Chipset</b>, Platform Controller Hub (PCH) for PCI, ethernet, and USB</p>	
Front ports	Two USB 2.0	
Rear ports	Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	
Ethernet	<i>Intel HD model(s):</i> one analog VGA DB-15, one DisplayPort	
Security chip	One gigabit ethernet on planar, Intel 82578DM	
Diagnostics	STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant	
Keyboard	None (use USB port)	
Mouse	None (use USB port)	
Power supply	One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified	
Cooling	4 fans (power supply, CPU, rear, front)	
Rack mount	Rack shelf support	
<p><b>Accessories</b></p> <p>1GB PC3-10600 DDR3 ECC UDIMM 67Y1387</p> <p>2GB PC3-10600 DDR3 ECC UDIMM 67Y1388</p> <p>500GB 3.5" SATA Cabled (7200 rpm) 67Y1401</p> <p>More accessories on O-RED sheet</p> <p>Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a></p>		
<p><b>Limited Warranty<sup>1</sup></b></p> <ul style="list-style-type: none"> <li>⇒ 1-year parts and labor</li> <li>⇒ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</li> <li>⇒ ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> </li> <li>⇒ 24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</li> </ul>		

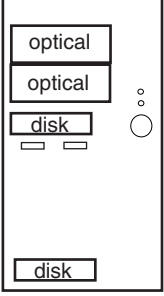
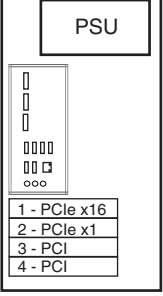
See footnotes for important warranty information

US model announced November 2, 2010; previous models on February 23, March 9, or July 6, 2010



Type-model	Slot x bay	Processor	GHz	Cores	Memory DIMMs	Memory speed	Disk(s)	Disk size	Pre-conf RAID	Disk bays	SATA optical	Graphics adapter(s)	Windows Server preload	Power supply(s)	Avail date
0992-19U	4x4	X3450	2.66	4	1x4GB	1333MHz	1x500GB <sup>2</sup>	3.5"	No	2xDirect Cable	DVD±RW	FX380	No	280W	Nov 10

- Real server class dependability at desktop price point
- Ideal entry single-socket tower server for growing enterprises, corporate branch offices and Managed Service Providers
- This model has a 3-year limited warranty<sup>1</sup>
- This small and medium business (SMB) model is part of the US TopSeller™ Program

Processor	<b>Intel® Xeon® Processor X3450</b> with quad-core, Intel 64, Hyper-Threading Technology, Virtualization Technology, TXT, Turbo Boost Technology, integrated 1333MHz dual-channel DDR3 memory controller, and 8MB cache Processor in LGA1156 socket, up to one processor																														
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Memory	<b>4GB</b> std, 16GB max, <b>UDIMM, PC3-10600 1333MHz DDR3, ECC</b> , four 240-pin DIMM sockets		<ul style="list-style-type: none"> <li>• Raven black color; metal case</li> <li>• 6.9"W x 16.0"D x 14.9"H</li> <li>• 175mm W x 407mm D x 377mm H</li> <li>• 24.7 lb (11.2kg) max configuration</li> <li>• 25-liter</li> <li>• Toolless side cover removal</li> <li>• Toolless disk and optical drive removal</li> <li>• Toolless adapter retention</li> <li>• Illuminated front icons</li> </ul>																												
Graphics	<b>NVIDIA® Quadro® FX 380</b> , PCIe x16 adapter, 256MB, two dual-link DVI-I, includes DVI to VGA converter, 35W																														
Disk bays	Two 3.5" SATA disk bays, no hot-swap, direct cable																														
SATA disk(s)	<b>500GB</b> , SATA 3.0Gb/s, 7200 rpm, 3.5"																														
SATA DVD±RW	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive																														
SATA controller	Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA connectors for disks, two SATA connectors for opticals																														
Chipset	<b>Intel 3450 Chipset</b> , Platform Controller Hub (PCH) for PCI, ethernet, and USB																														
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Ethernet	One gigabit ethernet on planar, Intel 82578DM																														
Security chip	STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant																														
Diagnostics	Two system status LEDs on front panel (disk drive activity, power/sleep)																														
Keyboard	None (use USB port)																														
Mouse	None (use USB port)																														
Power supply	One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified																														
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<b>Accessories</b>			<p style="text-align: center;"><b>Disk Bays</b></p> <table border="0"> <tr> <td>Bay 1</td> <td>5.25", 1.6" high,</td> <td>external,</td> <td>std optical</td> </tr> <tr> <td>Bay 2</td> <td>5.25", 1.6" high,</td> <td>external,</td> <td>optional optical</td> </tr> <tr> <td>Bay 3</td> <td>3.5", 1" high,</td> <td>external,</td> <td>std disk</td> </tr> <tr> <td>Bay 4</td> <td>3.5", 1" high,</td> <td>external,</td> <td>opt disk</td> </tr> </table> <p style="text-align: center;"><b>Expansion Slots</b></p> <table border="0"> <tr> <td>Slot 1:</td> <td>half-length, full-height,</td> <td>PCI Express 2.0 x16</td> </tr> <tr> <td>Slot 2:</td> <td>half-length, full-height,</td> <td>PCI Express 2.0 x1</td> </tr> <tr> <td>Slot 3:</td> <td>half-length, full-height,</td> <td>32-bit PCI</td> </tr> <tr> <td>Slot 4:</td> <td>half-length, full-height,</td> <td>32-bit PCI</td> </tr> </table> <p style="text-align: center;"><b>Software Management Tools</b></p> <ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> </ul> <p style="text-align: center;"><b>Power-On Hotkey</b></p> <ul style="list-style-type: none"> <li>• Setup Utility: F1 at startup</li> <li>• Diagnostic: F2 at startup</li> <li>• Network Boot: F12 at startup</li> <li>• RAID Configuration Utility: Ctrl+I at startup</li> </ul> <p style="text-align: center;"><b>Security</b></p> <ul style="list-style-type: none"> <li>• Security chip (see information on left)</li> <li>• Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)</li> <li>• Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)</li> <li>• Power-on password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (front or all)</li> </ul> <p style="text-align: center;"><b>ENERGY STAR® Server 1.0-compliant</b> RoHS-compliant</p>	Bay 1	5.25", 1.6" high,	external,	std optical	Bay 2	5.25", 1.6" high,	external,	optional optical	Bay 3	3.5", 1" high,	external,	std disk	Bay 4	3.5", 1" high,	external,	opt disk	Slot 1:	half-length, full-height,	PCI Express 2.0 x16	Slot 2:	half-length, full-height,	PCI Express 2.0 x1	Slot 3:	half-length, full-height,	32-bit PCI	Slot 4:	half-length, full-height,	32-bit PCI
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4GB PC3-10600 DDR3 ECC UDIMM	67Y1389																														
500GB 3.5" SATA Cabled (7200 rpm)	67Y1401																														
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See footnotes for important warranty information  
US model announced November 2, 2010

**Partial list of accessories supported on Lenovo® ThinkServer TS200v.**

ThinkServer Ready accessories are available through Lenovo Business Partners. Locate a Business Partner near you at: [bplocator.lenovo.com](http://bplocator.lenovo.com)

**Memory**

1GB PC3-10600 DDR3 ECC UDIMM	67Y1387	<i>ann 02/23/10</i>
2GB PC3-10600 DDR3 ECC UDIMM	67Y1388	<i>ann 02/23/10</i>
4GB PC3-10600 DDR3 ECC UDIMM	67Y1389	<i>ann 02/23/10</i>

**Backup**

Lenovo 160GB Internal USB RDX Bundle	67Y1394	<i>ann 02/23/10</i>
Lenovo 320GB Internal USB RDX Bundle	67Y1396	<i>ann 02/23/10</i>
Lenovo 500GB Internal USB RDX Bundle	67Y1398	<i>ann 02/23/10</i>
Lenovo 160GB RDX Data Cartridge	67Y1395	<i>ann 02/23/10</i>
Lenovo 320GB RDX Data Cartridge	67Y1397	<i>ann 02/23/10</i>
Lenovo 500GB RDX Data Cartridge	67Y1399	<i>ann 02/23/10</i>

**Connectivity**

Intel PRO/1000 PT Dual Port Ethernet	67Y1393	<i>ann 02/23/10</i>
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**Disk Drive**

*3.5" SATA Cabled:*

250GB <sup>2</sup> 3.5" SATA (7200 rpm)	67Y1400	<i>ann 02/23/10</i>
500GB 3.5" SATA (7200 rpm)	67Y1401	<i>ann 02/23/10</i>
1TB 3.5" SATA (7200 rpm)	67Y1402	<i>ann 02/23/10</i>

**Keyboard**

Preferred Pro USB Keyboard	73P5220	<i>ann 06/21/05</i>
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**Mouse**

Lenovo Optical Mouse (USB)	06P4069	<i>ann 05/21/03</i>
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For more information on server accessories, please visit:

- [www.lenovo.com/support/accessories](http://www.lenovo.com/support/accessories)
- [www.lenovo.com/support/thinkserveraccessories](http://www.lenovo.com/support/thinkserveraccessories)
- [www.lenovo.com/support/security](http://www.lenovo.com/support/security)

Other accessories at [www.lenovo.com/accessories](http://www.lenovo.com/accessories)

Accessories Guide pdf at [www.lenovo.com/accessoriesguide](http://www.lenovo.com/accessoriesguide)

**Partial list of Lenovo® ThinkPlus Services for ThinkServer TS200v**

For more information see:

[http://www.lenovo.com/services\\_warranty/us/en/index.html](http://www.lenovo.com/services_warranty/us/en/index.html)

**Training classes**

- The basics on components, diagnostics, troubleshooting, and managing Lenovo servers, delivered in interactive online format

Online Training, Understanding Lenovo Servers	45K4080
Online Training, Understanding Systems Management	45K4081
Installation, ThinkServer Hardware Only	45K4082

**ThinkPlus service upgrade options<sup>7</sup>**

*LOR = Lenovo Onsite Repair*

**TS200v with 1-year warranty**

3-year LOR 9x5 Next Business Day	45K4055
4-year LOR 9x5 Next Business Day	51J0723
5-year LOR 9x5 Next Business Day	51J0725

**TS200v with 3-year warranty**

4-year LOR 9x5 Next Business Day	51J0727
5-year LOR 9x5 Next Business Day	51J0729

**ThinkPlus Priority Support**

- 9x5 Next Business Day response Lenovo Onsite Repair
- 24x7 support with priority routing and advanced level technicians

**TS200v with 3-year warranty**

3-year Priority Support	45K4060
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**ThinkPlus Priority Support with Hard Disk Drive Retention**

- 9x5 Next Business Day response Lenovo Onsite Repair
- 24x7 support with priority routing and advanced level technicians
- Hard Disk Drive Retention (HDDR) means customer keeps disk

**TS200v with 3-year warranty**

3-year Priority Support with HDDR	45K5443
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**ThinkPlus Productivity**

- Priority Support
- Online Training, Understanding Lenovo Servers
- One-time hardware installation

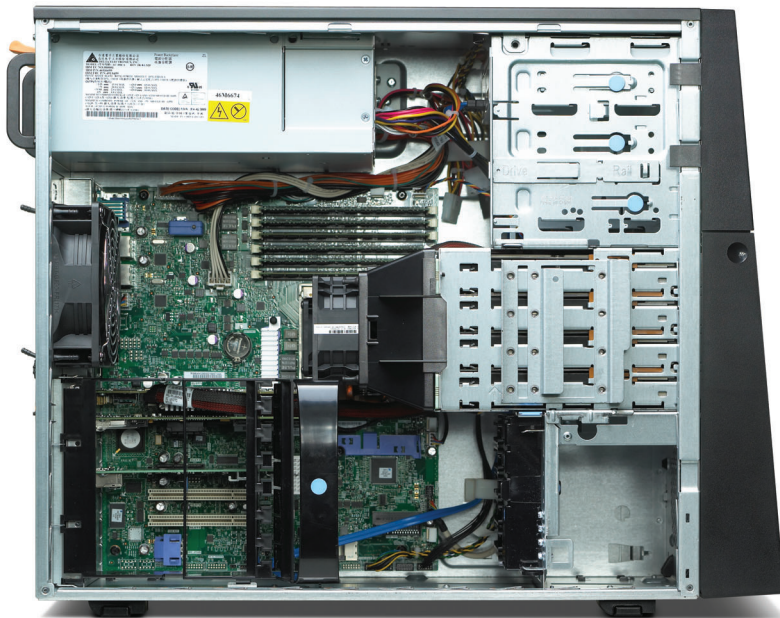
3-year ThinkPlus Productivity, TS200v (3-year)	45K4086
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Lenovo ThinkServer TS200



Lenovo ThinkServer TS200  
with Redundant Power Supply



Lenovo ThinkServer TS200  
with Redundant Power Supply

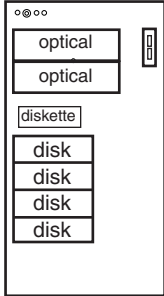
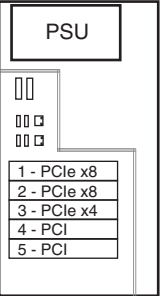


Lenovo ThinkServer TS200



Type-model	Slot x bay	Proc-essor(s)	Base GHz	Max GHz	Cores	Memory DIMMs	Memory type	Memory speed	Disk size	RAID battery	Disk bays	Disk type	RAID Int	IMM Premium	Power supply(s)	Avail date
6525-11U	5x7	X3430	2.40	2.80	4	1x2GB	UDIMM	1333MHz	3.5"	None	4xSimple-swap	SATA	0/1		401W	Nov 09
6525-12U	5x7	X3450	2.66	3.20	4	1x4GB	RDIMM	1333MHz	3.5"	None	4xHot-swap	SATA/SAS <sup>4</sup>	0/1	IMM	401W	Nov 09
6525-16U	5x7	X3450	2.66	3.20	4	1x4GB	RDIMM	1333MHz	3.5"	None	4xHot-swap	SATA/SAS	0/1/10	IMM	401W	Jan 10

- These models have a 3-year limited warranty<sup>1</sup>
- These small and medium business (SMB) models are part of the US TopSeller™ Program

Processor(s)	Up to one processor, one processor standard, <b>Intel Xeon® Processor X3430 and X3450 with quad-core</b> , 2.5GT/s (giga-transfers/second) DMI (Direct Media Interface), Turbo Boost Technology, Hyper-Threading Technology (X3450 only), Intel 64, 1333MHz DDR3 memory controller, 8MB cache	<b>Front</b> 	<b>Rear</b> 
Implementation	One LGA1156 socket		
Memory	<b>2GB or 4GB std, UDIMM or RDIMM*, PC3-10600 1333MHz DDR3, Advanced ECC**, Memory Mirroring</b> <b>11U:</b> Four 240-pin DIMM sockets, 16GB max (Pending availability of 4GB UDIMM), std memory in 1 socket, 3 sockets available <b>12U/16U:</b> Six 240-pin DIMM sockets, supports up to 6 single- or dual-rank RDIMMs, or up to 4 quad-rank RDIMMs * Cannot intermix RDIMM and UDIMM memory ** Advanced ECC-enable DIMMs required	<ul style="list-style-type: none"> <li>• Tower mechanical</li> <li>• Business black color; metal case</li> <li>• 8.6"W x 21.3"D x 17.3"H</li> <li>• 218mm W x 540mm D x 440mm H</li> <li>• 56 lb (25.2kg) max configuration</li> <li>• Toolless side cover removal</li> </ul>	
Graphics	Matrox® G200eV, integrated in Integrated Management Module (IMM), one VGA DB-15 in rear; 128MB, shared with IMM; <i>Maximum resolution: 1024x768@85Hz</i>		
Disk bays	<b>11U:</b> four 3.5" simple-swap (SS) SATA disk bays <b>12U/16U:</b> four 3.5" hot-swap (HS) SATA/SAS disk bays		
Disk Controller	<b>11U/12U:</b> ServeRAID®-BR10iL, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID® 0, 1 support <b>16U:</b> ServeRAID M1015, PCI Express bus, SATA 6Gb/s, SAS 6Gb/s, RAID 0, 1, 10 support		
Optical	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s		
Diskette	None (use USB port)		
Ethernet	Two gigabit ethernet ports***, Intel 82574L *** One port shared with system management		
Chipset	<b>Intel 3420 Chipset</b> , Platform Controller Hub (PCH) for PCI, ethernet and USB		
Extender card	None		
Front ports	Two USB 2.0		
Rear ports	Four USB 2.0, external monitor (VGA DB-15), one ethernet (RJ-45), one ethernet/system management (RJ-45), serial (9-pin)		
Internal ports	One USB 2.0 for tape drive or embedded hypervisor		
Diagnostics	Diagnostic LEDs (error LEDs for fans and memory)		
Systems mgmt	Trusted Platform Module (TPM) 1.2 support, IPMI 2.0-compliant		
Prerequisites	<b>11U:</b> IMM Standard, upgradeable to IMM Premium <b>12U/16U:</b> IMM Premium Monitor, SATA/SAS disk, OS		
Keyboard	None (use USB port)		
Mouse	None (use USB port)		
Power supply(s)	One 401 watts standard, one maximum, universal, auto switch, no hot-swap, no redundancy		
Cooling	Three fans std (power supply, system, hard drive cage), three maximum, no hot-swap, no redundancy		
<b>Virtualization</b>		<b>Disk Bays</b>	
Virtualization ready, hypervisor connector embedded		Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical Bay 3 3.5", 1" high, external, optional diskette Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Bay 6 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk	
<b>Max memory capacity (RDIMM models)</b>		<b>Expansion Slots</b>	
<b>Single-rank RDIMM:</b> 6GB with six 1GB PC3-10600 DDR3 RDIMMs (using 67Y0014) <b>Dual-rank RDIMM:</b> 12GB with six 2GB PC3-10600 DDR3 RDIMMs (using 67Y0124) <b>Quad-rank RDIMM:</b> 16GB with four 4GB PC3-8500 DDR3 RDIMMs (using 67Y0125) 32GB with four 8GB RDIMMs (Pending availability)		Slot 1: full-length, full-height, PCI Express x8 Slot 2: full-length, full-height, PCI Express x8 Slot 3: full, PCI Express x4 (x1 electrical) Slot 4: full, 32-bit PCI Slot 5: full, 32-bit PCI	
<b>Max internal capacity</b>		<b>Power-On Hotkey</b>	
<b>11U:</b> 4.0TB with four 1TB SS SATA disks (using 67Y1380) <b>12U/16U:</b> 3.5" SATA HS: 4.0TB with four 1TB HS SATA disks (using 45J6204) 3.5" SAS HS: 2.4TB with four 600GB HS SAS disks (using 67Y1386)		<ul style="list-style-type: none"> <li>• Setup Utility: F1 at startup</li> <li>• Diagnostic: F2 at startup</li> <li>• Network Boot: F12 at startup</li> <li>• RAID Configuration Utility: Ctrl+C at startup</li> </ul>	
<b>Limited Warranty<sup>1</sup></b>		<b>Security</b>	
<ul style="list-style-type: none"> <li>↪ 3-year parts and labor</li> <li>↪ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</li> <li>↪ ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> </li> <li>↪ 24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</li> </ul>		<ul style="list-style-type: none"> <li>• Side cover lock (ships with two identical keys)                             <ul style="list-style-type: none"> <li>- prohibits removal of front panel and disks</li> </ul> </li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (all)</li> </ul>	
		<b>Software Management Tools</b>	
		<ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> </ul>	
		ThinkPlus Priority Support, 90-day Trial	
		RoHS-compliant	
		<b>Accessories</b>	
		450GB 3.5" 6Gb/s SAS Disk HS (15000 rpm) 67Y1385 1TB 3.5" SATA Disk SS 67Y1380 600GB 3.5" 6Gb/s SAS Disk HS 67Y1386 Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a>	

See footnotes for important warranty information

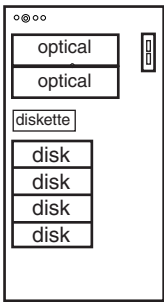
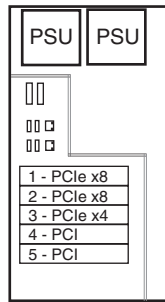
Ⓜ US model announced January 8, 2010; previous models on November 24, 2009



Type-model	Slot x bay	Proc-essor(s)	Base GHz	Max GHz	Cores	Memory DIMMs	Memory type	Memory speed	Disk size	RAID battery	Disk bays	Disk type	RAID Int	IMM Premium	Power supply(s)	Avail date
6530-13U	5x7	X3450	2.66	3.20	4	1x4GB	RDIMM	1333MHz	3.5"	None	4xHot-swap	SATA/SAS <sup>4</sup>	Multi*	IMM	2x430W	Nov 09

\* Multi = RAID-0/1/5/6/10 support

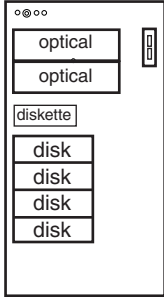
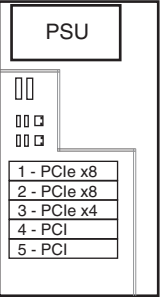
- **This model has a 3-year limited warranty<sup>1</sup>**
- **This small and medium business (SMB) model is part of the US TopSeller™ Program**

Processor(s)	Up to one processor, one processor standard, <b>Intel® Xeon® Processor X3450 with quad-core</b> , 2.5GT/s DMI, Turbo Boost Technology, Hyper-Threading Technology and Intel 64, 1333MHz DDR3 memory controller, 8MB cache																														
Implementation	One LGA1156 socket																														
Memory	<b>4GB std, RDIMM, PC3-10600 1333MHz DDR3, Advanced ECC**, Memory Mirroring</b> Six 240-pin DIMM sockets, supports up to <b>6</b> single- or dual-rank RDIMMs, or up to <b>4</b> quad-rank RDIMMs ** Advanced ECC-enable DIMMs required		<ul style="list-style-type: none"> <li>• Tower mechanical, rack-mountable to 5U rack</li> <li>• Business black color; metal case</li> <li>• 8.6"W x 21.3"D x 17.3"H</li> <li>• 218mm W x 540mm D x 440mm H</li> <li>• 56 lb (25.2kg) max configuration</li> <li>• Toolless side cover removal</li> <li>• Rack shelf support</li> </ul>																												
Graphics	Matrox® G200eV, integrated in Integrated Management Module (IMM), one VGA DB-15 in rear; 128MB, shared with IMM; <i>Maximum resolution: 1024x768 @85Hz</i>																														
Disk bays	Four 3.5" hot-swap (HS) SATA/SAS disk bays																														
Disk Controller	ServeRAID-MR10i, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID® 0, 1, 5, 6, 10 support																														
Optical	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s																														
Diskette	None (use USB port)																														
Ethernet	Two gigabit ethernet ports***, Intel 82574L *** One port shared with system management																														
Chipset	<b>Intel 3420 Chipset</b> , Platform Controller Hub (PCH) for PCI, ethernet and USB																														
Extender card	None																														
Front ports	Two USB 2.0																														
Rear ports	Four USB 2.0, external monitor (VGA DB-15), one ethernet (RJ-45), one ethernet/system management (RJ-45), serial (9-pin)																														
Internal ports	One USB 2.0 for tape drive or embedded hypervisor																														
Diagnostics	Diagnostic LEDs (error LEDs for fans and memory)																														
Systems mgmt	IMM Premium, Trusted Platform Module (TPM) 1.2 support, IPMI 2.0-compliant																														
Prerequisites	Monitor, SATA/SAS disk, OS																														
Keyboard	None (use USB port)																														
Mouse	None (use USB port)																														
Power supply(s)	Two 430 watts standard, two maximum, rear access, hot-swap, redundant with two power supplies																														
Cooling	Four fans std (two power supply fans, system fan, hard drive cage), four maximum, no hot-swap, no redundancy																														
<p align="center"><b>Max memory capacity</b></p> <p><i>Single-rank RDIMM:</i> 6GB with six 1GB PC3-10600 DDR3 RDIMMs (using 67Y0014)  <i>Dual-rank RDIMM:</i> 12GB with six 2GB PC3-10600 DDR3 RDIMMs (using 67Y0124)  <i>Quad-rank RDIMM:</i> 16GB with four 4GB PC3-8500 DDR3 RDIMMs (using 67Y0125)                      32GB with four 8GB RDIMMs (Pending availability)</p>			<p align="center"><b>Disk Bays</b></p> <table border="1"> <tr><td>Bay 1</td><td>5.25", 1.6" high,</td><td>external,</td><td>std optical</td></tr> <tr><td>Bay 2</td><td>5.25", 1.6" high,</td><td>external,</td><td>optional optical</td></tr> <tr><td>Bay 3</td><td>3.5", 1" high,</td><td>external,</td><td>optional diskette</td></tr> <tr><td>Bay 4</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 5</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 6</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 7</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> </table>	Bay 1	5.25", 1.6" high,	external,	std optical	Bay 2	5.25", 1.6" high,	external,	optional optical	Bay 3	3.5", 1" high,	external,	optional diskette	Bay 4	3.5", 1" high,	external,	optional disk	Bay 5	3.5", 1" high,	external,	optional disk	Bay 6	3.5", 1" high,	external,	optional disk	Bay 7	3.5", 1" high,	external,	optional disk
Bay 1	5.25", 1.6" high,	external,	std optical																												
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Bay 7	3.5", 1" high,	external,	optional disk																												
<p align="center"><b>Max internal capacity</b></p> <p><i>3.5" SATA HS:</i> 4.0TB with four 1TB HS SATA disks (using 45J6204)  <i>3.5" SAS HS:</i> 2.4TB with four 600GB HS SAS disks (using 67Y1386)</p>			<p align="center"><b>Expansion Slots</b></p> <p>Slot 1: full-length, full-height, PCI Express x8                      Slot 2: full-length, full-height, PCI Express x8                      Slot 3: full, PCI Express x4 (x1 electrical)                      Slot 4: full, 32-bit PCI                      Slot 5: full, 32-bit PCI</p>																												
<p align="center"><b>Virtualization</b></p> <p>Virtualization ready, hypervisor connector embedded</p>			<p align="center"><b>Software Management Tools</b></p> <ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> </ul>																												
<p align="center"><b>Accessories</b></p> <table border="1"> <tr><td>4GB PC3-8500 DDR3 ECC RDIMM (4Rx8)</td><td>67Y0125</td></tr> <tr><td>146GB 3.5" SAS HS (15000 rpm)</td><td>45J6211</td></tr> <tr><td>450GB 3.5" 6Gb/s SAS Disk HS (15000 rpm)</td><td>67Y1385</td></tr> <tr><td>1TB 3.5" SATA Disk HS</td><td>45J6204</td></tr> <tr><td>600GB 3.5" 6Gb/s SAS Disk HS</td><td>67Y1386</td></tr> </table> <p>Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a></p>			4GB PC3-8500 DDR3 ECC RDIMM (4Rx8)	67Y0125	146GB 3.5" SAS HS (15000 rpm)	45J6211	450GB 3.5" 6Gb/s SAS Disk HS (15000 rpm)	67Y1385	1TB 3.5" SATA Disk HS	45J6204	600GB 3.5" 6Gb/s SAS Disk HS	67Y1386	<p align="center"><b>Power-On Hotkey</b></p> <ul style="list-style-type: none"> <li>• Setup Utility: F1 at startup</li> <li>• Diagnostic: F2 at startup</li> <li>• Network Boot: F12 at startup</li> <li>• RAID Configuration Utility: Ctrl+C at startup</li> </ul>																		
4GB PC3-8500 DDR3 ECC RDIMM (4Rx8)	67Y0125																														
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600GB 3.5" 6Gb/s SAS Disk HS	67Y1386																														
<p align="center"><b>Limited Warranty<sup>1</sup></b></p> <p>⇒ <b>3-year parts and labor</b>                      ⇒ <b>Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</b>                      ⇒ <b>ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a></b></p> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> <p>⇒ <b>24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</b></p>			<p align="center"><b>Security</b></p> <ul style="list-style-type: none"> <li>• Side cover lock (ships with two identical keys)                             <ul style="list-style-type: none"> <li>- prohibits removal of front panel and disks</li> </ul> </li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (all)</li> </ul>																												
			ThinkPlus Priority Support, 90-day Trial																												
			RoHS-compliant																												

See footnotes for important warranty information  
 US model announced November 24, 2009

Type-model	Slot x bay	Processor	GHz	Cores	Memory DIMMs	Memory type	Memory speed	Disk size	RAID battery	Disk bays	Disk type	RAID Int	IMM Premium	Power supply(s)	Avail date
6524-11U	5x7	Pentium G6950	2.80	2	1x1GB	UDIMM	1333MHz	3.5"	None	4xSimple-swap	SATA	0/1	None	401W	Jan 10

- **This model has a 1-year limited warranty<sup>1</sup>**
- **This small and medium business (SMB) model is part of the US TopSeller™ Program**

Processor(s)	Up to one processor, one processor standard, <b>Intel® Pentium® Processor G6950</b> with <b>dual-core</b> , Intel 64, 1066MHz DDR3 memory controller, 3MB cache	<b>Front</b> 	<b>Rear</b> 																												
Implementation	One LGA1156 socket																														
Memory	<b>1GB</b> std, <b>UDIMM, PC3-10600 1333MHz DDR3*</b> , <b>Advanced ECC**</b> , <b>Memory Mirroring</b> Four 240-pin DIMM sockets, 16GB max (Pending availability of 4GB UDIMM), std memory in 1 socket, 3 sockets available * System automatically clocks down for processor with 1066MHz DDR3 memory controller ** Advanced ECC-enable DIMMs required	<ul style="list-style-type: none"> <li>• Tower mechanical</li> <li>• Business black color; metal case</li> <li>• 8.6"W x 21.3"D x 17.3"H</li> <li>• 218mm W x 540mm D x 440mm H</li> <li>• 56 lb (25.2kg) max configuration</li> <li>• Toolless side cover removal</li> </ul>																													
Graphics	Matrox® G200eV, integrated in Integrated Management Module (IMM), one VGA DB-15 in rear; 128MB, shared with IMM; <i>Maximum resolution: 1024x768 @85Hz</i>	<b>Disk Bays</b> <table border="1"> <tr><td>Bay 1</td><td>5.25", 1.6" high,</td><td>external,</td><td>std optical</td></tr> <tr><td>Bay 2</td><td>5.25", 1.6" high,</td><td>external,</td><td>optional optical</td></tr> <tr><td>Bay 3</td><td>3.5", 1" high,</td><td>external,</td><td>optional diskette</td></tr> <tr><td>Bay 4</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 5</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 6</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 7</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> </table>		Bay 1	5.25", 1.6" high,	external,	std optical	Bay 2	5.25", 1.6" high,	external,	optional optical	Bay 3	3.5", 1" high,	external,	optional diskette	Bay 4	3.5", 1" high,	external,	optional disk	Bay 5	3.5", 1" high,	external,	optional disk	Bay 6	3.5", 1" high,	external,	optional disk	Bay 7	3.5", 1" high,	external,	optional disk
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Bay 7	3.5", 1" high,	external,	optional disk																												
Disk bays	Four 3.5" simple-swap (SS) SATA disk bays	<b>Expansion Slots</b> Slot 1: full-length, full-height, PCI Express x8 Slot 2: full-length, full-height, PCI Express x8 Slot 3: full, PCI Express x4 (x1 electrical) Slot 4: full, 32-bit PCI Slot 5: full, 32-bit PCI																													
Disk Controller	ServerRAID®-BR10iI, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID® 0, 1 support	<b>Power-On Hotkey</b> <ul style="list-style-type: none"> <li>• Setup Utility: F1 at startup</li> <li>• Diagnostic: F2 at startup</li> <li>• Network Boot: F12 at startup</li> <li>• RAID Configuration Utility: Ctrl+C at startup</li> </ul>																													
Optical	DVD-ROM DL SATA 1.5Gb/s 16-48X Max Drive	<b>Security</b> <ul style="list-style-type: none"> <li>• Side cover lock (ships with two identical keys)                             <ul style="list-style-type: none"> <li>- prohibits removal of front panel and disks</li> </ul> </li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (all)</li> </ul>																													
Diskette	None (use USB port)	ThinkPlus Priority Support, 90-day Trial																													
Ethernet	Two gigabit ethernet ports***, Intel 82574L *** One port shared with system management	RoHS-compliant																													
Chipset	<b>Intel 3420 Chipset</b> , Platform Controller Hub (PCH) for PCI, ethernet and USB																														
Extender card	None																														
Front ports	Two USB 2.0																														
Rear ports	Four USB 2.0, external monitor (VGA DB-15), one ethernet (RJ-45), one ethernet/system management (RJ-45), serial (9-pin)																														
Internal ports	One USB 2.0 for tape drive or embedded hypervisor																														
Diagnostics	Diagnostic LEDs (error LEDs for fans and memory)																														
Systems mgmt	IMM standard, Trusted Platform Module (TPM) 1.2 support, IPMI 2.0-compliant																														
Prerequisites	Monitor, SATA disk, OS																														
Keyboard	None (use USB port)																														
Mouse	None (use USB port)																														
Power supply(s)	One 401 watts standard, one maximum, universal, auto switch, no hot-swap, no redundancy																														
Cooling	Three fans std (power supply, system, hard drive cage), three maximum, no hot-swap, no redundancy																														
<b>Accessories</b>																															
1GB PC3-10600 DDR3 1333MHz UDIMM	67Y0122																														
160GB 3.5" SATA Simple-swap	45J6195																														
250GB 3.5" SATA Simple-swap	45J6196																														
500GB 3.5" SATA Simple-swap	45J6197																														
750GB 3.5" SATA Simple-swap	45J6198																														
1TB 3.5" SATA Simple-swap	67Y1380																														
Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a>																															
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Virtualization ready, hypervisor connector embedded																															
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4.0TB with four 1TB SS SATA disks (using 67Y1380)																															
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⇒ <b>24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</b>																															

See footnotes for important warranty information  
US model announced January 8, 2010

**Partial list of accessories supported on Lenovo® ThinkServer TS200, RS210.**

ThinkServer Ready accessories are available through Lenovo Business Partners. Locate a Business Partner near you at: [bplocator.lenovo.com](http://bplocator.lenovo.com)

**Memory<sup>53</sup>**

1GB PC3-10600 DDR3 1333MHz UDIMM	67Y0122	ann	11/24/09
2GB PC3-10600 DDR3 1333MHz UDIMM	67Y0123	ann	11/24/09
1GB PC3-10600 DDR3 RDIMM (1R x 8)	67Y0014	ann	05/05/09
2GB PC3-10600 DDR3 RDIMM (2R x 8)	67Y0124	ann	11/24/09
4GB PC3-8500 DDR3 RDIMM (4R x 8)	67Y0125	ann	11/24/09

<sup>53</sup>Mixing of UDIMM and RDIMM is not support

**Backup**

IBM® RDX 160GB Cartridge	67Y0169	ann	11/10/09
IBM RDX 320GB Cartridge	67Y0170	ann	11/10/09
IBM RDX 500GB Cartridge	67Y0171	ann	11/10/09
IBM DDS Generation 6 5-Pack Media	67Y1377	ann	11/10/09
IBM LTO Generation 3 5-Pack Media	67Y1379	ann	11/10/09

**Connectivity**

IBM 8Gb FC Single-port HBA by QLogic®	67Y0172	ann	11/10/09
IBM 8Gb FC Dual-port HBA by QLogic	67Y0173	ann	11/10/09
IBM 8Gb FC Single-port HBA by Emulex®	67Y0174	ann	11/10/09
IBM 8Gb FC Dual-port HBA by Emulex	67Y0175	ann	11/10/09
IBM 8Gb FC Single-port HBA by Brocade®	67Y0176	ann	11/10/09
IBM 8Gb FC Dual-port HBA by Brocade	67Y0177	ann	11/10/09

**ThinkServer IBM RAID controller**

SAS 3Gb HBA Controller V2	67Y0183	ann	11/10/09
ServeRAID® M1015	67Y1368	ann	12/08/09
ServeRAID M5015	67Y0184	ann	11/10/09
ServeRAID M5014	67Y0185	ann	11/10/09
ServeRAID M1000 Series Adv Feature Key	67Y1369	ann	12/08/09
ServeRAID M5000 Series Battery Kit	67Y0186	ann	11/10/09
ServeRAID M5000 Series Adv Feature Key	67Y0188	ann	12/08/09

**Keyboard**

Preferred Pro USB Keyboard	73P5220	ann	06/21/05
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**Mouse**

Lenovo Optical Mouse (USB)	06P4069	ann	05/21/03
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**Disk Drive**

<i>2.5" SAS Hot-swap (HS):</i>	
73GB <sup>2</sup> 2.5" SAS SFF HS (15000 rpm)	67Y0115 ann 05/05/09
146GB 2.5" SAS SFF HS (10000 rpm)	67Y0116 ann 05/05/09
146GB 2.5" SAS SFF HS (15000 rpm)	67Y0117 ann 05/05/09
300GB 2.5" SAS SFF HS (10000 rpm)	67Y0118 ann 05/05/09

<i>2.5" SATA Hot-swap (HS):</i>	
300GB 2.5" SATA SFF HS (10000 rpm)	67Y0002 ann 05/05/09
160GB 2.5" SATA SFF HS (7200 rpm)	67Y0120 ann 09/08/09
500GB 2.5" SATA SFF HS (7200 rpm)	67Y0121 ann 09/08/09

<i>3.5" SAS Hot-swap (HS):</i>	
146GB 3.5" SAS HS (15000 rpm)	45J6211 ann 09/30/08

<i>3.5" 6Gb/s SAS HS:</i>	
300GB 3.5" SAS HS (15000 rpm)	67Y1384 ann 01/26/10
450GB 3.5" SAS HS (15000 rpm)	67Y1385 ann 01/26/10
600GB 3.5" SAS HS (15000 rpm)	67Y1386 ann 01/26/10

<i>3.5" SATA Hot-swap (HS):</i>	
160GB 3.5" SATA HS (7200 rpm)	45J6200 ann 09/30/08
250GB 3.5" SATA HS (7200 rpm)	45J6201 ann 09/30/08
500GB 3.5" SATA HS (7200 rpm)	45J6202 ann 09/30/08
750GB 3.5" SATA HS (7200 rpm)	45J6203 ann 09/30/08
1TB 3.5" SATA HS (7200 rpm)	45J6204 ann 09/30/08

<i>3.5" SATA Simple-swap:</i>	
160GB 3.5" SATA Simple-swap (7200 rpm)	45J6195 ann 09/30/08
250GB 3.5" SATA Simple-swap (7200 rpm)	45J6196 ann 09/30/08
500GB 3.5" SATA Simple-swap (7200 rpm)	45J6197 ann 09/30/08
750GB 3.5" SATA Simple-swap (7200 rpm)	45J6198 ann 09/30/08
1TB 3.5" SATA Simple-swap (7200 rpm)	67Y1380 ann 11/24/09

For more information on server accessories, please visit:  
[www.lenovo.com/support/accessories](http://www.lenovo.com/support/accessories)  
[www.lenovo.com/support/thinkserveraccessories](http://www.lenovo.com/support/thinkserveraccessories)  
[www.lenovo.com/support/security](http://www.lenovo.com/support/security)

Other accessories at [www.lenovo.com/accessories](http://www.lenovo.com/accessories)

Accessories Guide pdf at [www.lenovo.com/accessoriesguide](http://www.lenovo.com/accessoriesguide)



**Partial list of Lenovo® ThinkPlus Services for ThinkServer**

For more information see:  
[http://www.lenovo.com/services\\_warranty/us/en/index.html](http://www.lenovo.com/services_warranty/us/en/index.html)

**Training classes**

- The basics on components, diagnostics, troubleshooting, and managing Lenovo servers, delivered in interactive online format

Online Training, Understanding Lenovo Servers	45K4080
Online Training, Understanding Systems Management	45K4081
Installation, ThinkServer Hardware Only	45K4082

**ThinkPlus service upgrade options<sup>7</sup>**

LOR = *Lenovo Onsite Repair*

**TS200 with 1-year warranty**

3-year LOR 9x5 Next Business Day	45K4055
3-year LOR 9x5 4 hour response	45K4056
4-year LOR 9x5 Next Business Day	51J0723
4-year LOR 9x5 4 hour response	51J0724
5-year LOR 9x5 Next Business Day	51J0725
5-year LOR 9x5 4 hour response	51J0726

**TS200 with 3-year warranty**

3-year LOR 9x5 4 hour response	45K4059
4-year LOR 9x5 Next Business Day	51J0727
4-year LOR 9x5 4 hour response	51J0728
5-year LOR 9x5 Next Business Day	51J0729
5-year LOR 9x5 4 hour response	51J0730

**RS210 with 1-year warranty**

3-year LOR, 9x5 Next Business Day	45K4069
3-year LOR, 4 hour response	45K4070
4-year LOR 9x5 Next Business Day	51J0739
4-year LOR 9x5 4 hour response	51J0740
5-year LOR 9x5 Next Business Day	51J0741
5-year LOR 9x5 4 hour response	51J0742

**RS210 with 3-year warranty**

3-year LOR, 4 hour response	45K4073
4-year LOR 9x5 Next Business Day	51J0743
4-year LOR 9x5 4 hour response	51J0744
5-year LOR 9x5 Next Business Day	51J0745
5-year LOR 9x5 4 hour response	51J0746

**ThinkPlus Priority Support**

- 9x5 Next Business Day response Lenovo Onsite Repair
- 24x7 4-hour response Lenovo Onsite Repair (for Priority 4 Support)
- 24x7 support with priority routing and advanced level technicians

**TS200 with 1-year warranty**

3-year Priority Support	45K4057
3-year Priority 4 Support	45K4058

**TS200 with 3-year warranty**

3-year Priority Support	45K4060
3-year Priority 4 Support	45K4061

**RS210 with 1-year warranty**

3-year Priority Support	45K4071
3-year Priority 4 Support	45K4072

**RS210 with 3-year warranty**

3-year Priority Support	45K4074
3-year Priority 4 Support	45K4075

**ThinkPlus Priority Support with Hard Disk Drive Retention**

- 9x5 Next Business Day response Lenovo Onsite Repair
- 24x7 4-hour response Lenovo Onsite Repair (for Priority 4 Support)
- 24x7 support with priority routing and advanced level technicians
- Hard Disk Drive Retention (HDDR) means customer keeps disk

HDDR = *Hard Disk Drive Retention*

**TS200 with 1-year warranty**

3-year Priority Support with HDDR	45K5441
3-year Priority 4 Support with HDDR	45K5442

**TS200 with 3-year warranty**

3-year Priority Support with HDDR	45K5443
3-year Priority 4 Support with HDDR	45K5444

**RS210 with 1-year warranty**

3-year Priority Support with HDDR	45K5449
3-year Priority 4 Support with HDDR	45K5450

**RS210 with 3-year warranty**

3-year Priority Support with HDDR	45K5451
3-year Priority 4 Support with HDDR	45K5452

**ThinkPlus Productivity**

- Priority Support
- Online Training, Understanding Lenovo Servers
- One-time hardware installation

3-year ThinkPlus Productivity, TS200 (1-year)	45K4084
3-year ThinkPlus Productivity, TS200 (3-year)	45K4086
3-year ThinkPlus Productivity, RS210 (1-year)	45K4092
3-year ThinkPlus Productivity, RS210 (3-year)	45K4094

# ThinkServer™



Lenovo ThinkServer TD230



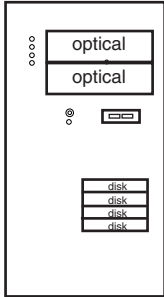
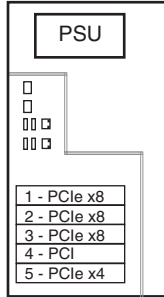
Lenovo ThinkServer TD230



Lenovo ThinkServer TD230 (Direct Cable)

Name	Type-model	Slot x bay	Proc-essor(s)	GHz	Cores	Memory DIMMs	Memory speed	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Ethernet	Avail date
TD230	1029-12U	5x6	1xE5507	2.26	4	1x4GB	1333MHz	3.5"	4x Hot-swap	ICH10R	SATA	0/1/10	IPMI	2xGb	Jul 10
TD230	1029-13U	5x6	1xE5620	2.40	4	1x4GB	1333MHz	3.5"	4x Hot-swap	9240-8i	SATA/SAS*	0/1/5/10	KVM	2xGb	Jul 10

- **These models have a 3-year limited warranty<sup>1</sup>**
- **Flexible and green tower computing at value price point**
- **These small and medium business (SMB) models are part of the US TopSeller™ Program**

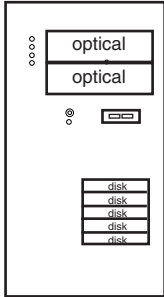
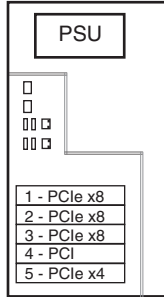
Processor(s)	Up to two processors, one processor standard, <b>Intel® Xeon® Processor E5507</b> with <b>quad-core</b> , 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache or <b>Intel Xeon Processor E5620</b> with <b>quad-core</b> , 5.86GT/s QPI, Intel 64, Hyper-Threading Technology, Virtualization Technology, Turbo Boost Technology, 1066MHz DDR3 memory controller, and 12MB cache Two LGA1366 sockets	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>Front</b></p>  </div> <div style="text-align: center;"> <p><b>Rear</b></p>  </div> </div>
Implementation		
Memory	<b>4GB</b> std, 32GB max (16GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring</b> , eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 800MHz or 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors	<ul style="list-style-type: none"> <li>• Tower mechanical</li> <li>• Business black color; metal case</li> <li>• 8.3"W x 20.1"D x 18.5"H</li> <li>• 210mm W x 510mm D x 470mm H</li> <li>• 57.6 lb (26.2kg) max configuration</li> <li>• Toolless side cover removal</li> <li>• Toolless disk and optical drive removal</li> </ul> <p>Bay 1 5.25", 1.6" high, external, std optical                      Bay 2 5.25", 1.6" high, external, optional optical                      Bay 3 3.5", 1" high, external, optional disk                      Bay 4 3.5", 1" high, external, optional disk                      Bay 5 3.5", 1" high, external, optional disk                      Bay 6 3.5", 1" high, external, optional disk</p> <p>Slot 1: half-length, full-height, PCI Express 2.0 x8                      Slot 2: half-length, full-height, PCI Express 2.0 x8                      Slot 3: half-length, full-height, PCI Express 2.0 x8***                      Slot 4: half-length, full-height, 32-bit PCI 2.3                      Slot 5: half-length, full-height, PCI Express x4                      *** x4 electrical</p>
Graphics	Onboard ServerEngines™ Pilot II graphics/management controller, one VGA DB-15 on rear, 32MB; <i>Maximum resolution: 1600x1200@52Hz</i>	
Disk bays	<i>Some:</i> Four 3.5" hot-swap (HS) SATA disk bays <i>Some:</i> Four 3.5" HS SATA/SAS disk bays	
Disk controller	<i>Some:</i> Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID <sup>0</sup> , 1, 10 support <i>Some:</i> ThinkServer SAS 9240-8i, PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support	
Optical	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s	
Diskette	None (use USB port)	
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82567	
Chipset	<b>Intel 5500 Chipset</b> , Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right) and links to 82574L; enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, slots 4-5, onboard SATA controller, and links to 82567	
Extender card	None	
Front ports	Two USB 2.0	
Rear ports	Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45)	
Internal ports	One USB 2.0 connector for optional tape drive	
Diagnostics	System status LEDs on front, Diagnostic LEDs on rear and board	
Systems mgmt	Onboard ServerEngines Pilot II graphics/management controller <i>IPMI model(s):</i> IPMI 2.0-compliant baseboard management controller (BMC) <i>KVM model(s):</i> IPMI functions <b>PLUS</b> KVM, ThinkServer Remote Management Module 3, supports one additional ethernet port	
Prerequisites	Monitor, SATA/SAS disk, OS	
Keyboard	None (use USB port)	
Mouse	None (use USB port)	
Power supply(s)	One fixed 625 watts standard, universal, 80 PLUS® Bronze qualified	
Cooling	Five fans std (power supply, two front, one rear, first processor), one optional processor fan for second processor	
<b>Max memory capacity</b>		<p style="text-align: center;"><b>Power-On Hotkey</b></p> <ul style="list-style-type: none"> <li>• Setup Utility: F2 at startup</li> <li>• Network Boot: F12 at startup</li> <li>• ICH10R RAID: Ctrl+E at startup</li> <li>• 9420-8i RAID: Ctrl+H at startup</li> </ul> <p style="text-align: center;"><b>Software Management Tools</b></p> <ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> </ul> <p style="text-align: center;"><b>Security</b></p> <ul style="list-style-type: none"> <li>• Administrator password</li> <li>• User password</li> <li>• Front panel key lock</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (all)</li> </ul> <p>RoHS-compliant</p>
32GB with eight 4GB PC3-10600 DDR3 RDIMMs (using 67Y1433)		
<b>Max internal capacity</b>		
3.5" SATA HS: 4.0TB with four 1TB SATA disks (using 67Y1402) 3.5" SAS HS: 1.8TB with four 450GB HS SAS disks (using 67Y1462)		
<b>Limited Warranty<sup>1</sup></b>		
<ul style="list-style-type: none"> <li>⇒ <b>3-year parts and labor</b></li> <li>⇒ <b>Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</b></li> <li>⇒ <b>ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a></b> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> </li> <li>⇒ <b>24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</b></li> </ul>		

See footnotes for important warranty information  
US models announced July 27, 2010



Name	Type-model	Slot x bay	Proc-essor(s)	GHz Cores	Memory DIMMs	Disk(s)	Disk size	Disk bays	Disk Controller	Disk type	SATA optical	RAID Int	System mgmt	Ethernet	Avail date	
<b>TD230</b>	1027-12U	5x7	1xE5506	2.13	4	1x2GB	1x250GB <sup>2</sup>	3.5"	5xDirect Cable	ICH10R	SATA	DVD±RW	0/1/10	IPMI	2xGb	Jul 10

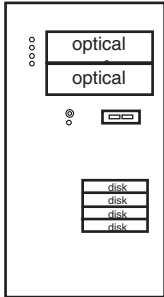
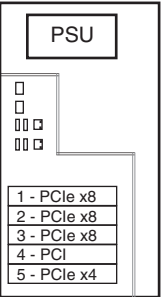
- **This model has a 1-year limited warranty<sup>1</sup>**
- **Flexible and green tower computing at value price point**
- **This small and medium business (SMB) model is part of the US TopSeller™ Program**

Processor(s)	Up to two processors, one processor standard, <b>Intel® Xeon® Processor E5506</b> with <b>quad-core</b> , 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache	<b>Front</b> 	<b>Rear</b> 
Implementation	Two LGA1366 sockets		
Memory	<b>2GB</b> std, 32GB max (16GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring</b> , eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors	<ul style="list-style-type: none"> <li>• Tower mechanical</li> <li>• Business black color; metal case</li> <li>• 8.3"W x 20.1"D x 18.5"H</li> <li>• 210mm W x 510mm D x 470mm H</li> <li>• 57.6 lb (26.2kg) max configuration</li> <li>• Toolless side cover removal</li> <li>• Toolless disk and optical drive removal</li> </ul> <p>Bay 1 5.25", 1.6" high, external, std optical                      Bay 2 5.25", 1.6" high, external, optional optical                      Bay 3 3.5", 1" high, external, std disk                      Bay 4 3.5", 1" high, external, optional disk                      Bay 5 3.5", 1" high, external, optional disk                      Bay 6 3.5", 1" high, external, optional disk                      Bay 7 3.5", 1" high, external, optional disk</p> <p>Slot 1: half-length, full-height, PCI Express 2.0 x8                      Slot 2: half-length, full-height, PCI Express 2.0 x8                      Slot 3: half-length, full-height, PCI Express 2.0 x8***                      Slot 4: half-length, full-height, 32-bit PCI 2.3                      Slot 5: half-length, full-height, PCI Express x4                      *** x4 electrical</p>	
Graphics	Onboard ServerEngines™ Pilot II graphics/management controller, one VGA DB-15 on rear, 32MB; <i>Maximum resolution: 1600x1200@52Hz</i>		
SATA disk(s)	<b>250GB</b> , SATA 3.0Gb/s, 7200 rpm		
Disk bays	Five 3.5" SATA disk bays, no hot-swap, direct cable (DC)		
Disk controller	Six SATA connectors for opticals and disks, Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID <sup>®</sup> 0, 1, 10 support		
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive		
Diskette	None (use USB port)		
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82567		
Chipset	<b>Intel 5500 Chipset</b> , Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right) and links to 82574L, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, slots 4-5, onboard SATA controller, and links to 82567		
Extender card	None		
Front ports	Two USB 2.0		
Rear ports	Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45)		
Internal ports	One USB 2.0 connector for optional tape drive		
Diagnostics	System status LEDs on front, Diagnostic LEDs on rear		
Systems mgmt	Onboard ServerEngines Pilot II graphics/management controller, IPMI 2.0-compliant baseboard management controller (BMC)		
Prerequisites	Monitor, SATA/SAS disk, OS		
Keyboard	None (use USB port)		
Mouse	None (use USB port)		
Power supply(s)	One fixed 625 watts standard, universal, 80 PLUS® Bronze qualified		
Cooling	Five fans std (power supply, two front, one rear, first processor), one optional processor fan for second processor		
<b>Accessories</b>			
Intel Xeon E5506 Processor Option Kit	67Y1449		
2GB PC3-10600 DDR3 1333 MHz RDIMM	67Y1432		
ThinkServer TD230 SATA RAID 5 Upgrade	67Y1459		
250GB 3.5" SATA (7200 rpm)	67Y1400		
More accessories on O-ARTsheet			
Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a>			
<b>Max memory capacity</b>		<b>Power-On Hotkey</b>	
32GB with eight 4GB PC3-10600 DDR3 RDIMMs (using 67Y1433)		<ul style="list-style-type: none"> <li>• Setup Utility: F2 at startup</li> <li>• Network Boot: F12 at startup</li> <li>• ICH10R RAID: Ctrl+E at startup</li> </ul>	
<b>Max internal capacity</b>		<b>Software Management Tools</b>	
5.0TB with five 1TB SATA disks (using 67Y1402)		<ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> </ul>	
<b>Limited Warranty<sup>1</sup></b>		<b>Security</b>	
<ul style="list-style-type: none"> <li>⇒ <b>1-year parts and labor</b></li> <li>⇒ <b>Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</b></li> <li>⇒ <b>ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a></b> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> </li> <li>⇒ <b>24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</b></li> </ul>		<ul style="list-style-type: none"> <li>• Administrator password</li> <li>• User password</li> <li>• Front panel lock out</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (all)</li> </ul>	
		RoHS-compliant	

See footnotes for important warranty information  
 US model announced July 27, 2010

Name	Type-model	Slot x bay	Proc-essor(s)	GHz	Cores	Memory DIMMs	Memory speed	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Ethernet	Avail date
TD230	1040-11U	5x7	1xE5503	2.00	2	1x2GB	1333MHz	3.5"	5xDirect Cable	ICH10R	SATA	0/1/10	IPMI	2xGb	Jul 10
TD230	1040-12U	5x6	1xE5503	2.00	2	1x2GB	1333MHz	3.5"	4xHot-swap	ICH10R	SATA	0/1/10	IPMI	2xGb	Jul 10
TD230	1040-13U	5x6	1xE5506	2.13	4	1x4GB	1333MHz	3.5"	4xHot-swap	9240-8i	SATA/SAS <sup>†</sup>	0/1/5/10	IPMI	2xGb	Jul 10

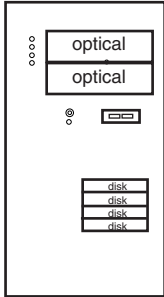
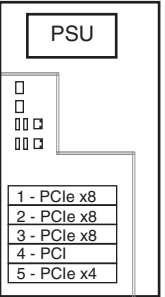
- *These models have a 3-year limited warranty<sup>1</sup>*
- *Flexible and green tower computing at value price point*

Processor(s)	Up to two processors, one processor standard, <b>Intel® Xeon® Processor E5503</b> with <b>dual-core</b> , 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache <b>Intel Xeon Processor E5506</b> with <b>quad-core</b> , 4.8GT/s QPI, Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache	<b>Front - (Hot-swap)</b> 	<b>Rear</b> 																											
Implementation	Two LGA1366 sockets																													
Memory	<b>2GB</b> or <b>4GB</b> std, 32GB max (16GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring</b> , eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors	<ul style="list-style-type: none"> <li>• Tower mechanical</li> <li>• Business black color; metal case</li> <li>• 8.3"W x 20.1"D x 18.5"H</li> <li>• 210mm W x 510mm D x 470mm H</li> <li>• 57.6 lb (26.2kg) max configuration</li> <li>• Toolless side cover removal</li> <li>• Toolless optical drive removal</li> </ul>																												
Graphics	Onboard ServerEngines™ Pilot II graphics/management controller, one VGA DB-15 on rear, 32MB; <i>Maximum resolution: 1600x1200@52Hz</i>	<p><b>Hot-swap model(s):</b></p> <table border="1"> <tr><td>Bay 1</td><td>5.25", 1.6" high,</td><td>external,</td><td>std optical</td></tr> <tr><td>Bay 2</td><td>5.25", 1.6" high,</td><td>external,</td><td>optional optical</td></tr> <tr><td>Bay 3</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 4</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 5</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 6</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> </table>	Bay 1	5.25", 1.6" high,	external,	std optical	Bay 2	5.25", 1.6" high,	external,	optional optical	Bay 3	3.5", 1" high,	external,	optional disk	Bay 4	3.5", 1" high,	external,	optional disk	Bay 5	3.5", 1" high,	external,	optional disk	Bay 6	3.5", 1" high,	external,	optional disk				
Bay 1	5.25", 1.6" high,	external,	std optical																											
Bay 2	5.25", 1.6" high,	external,	optional optical																											
Bay 3	3.5", 1" high,	external,	optional disk																											
Bay 4	3.5", 1" high,	external,	optional disk																											
Bay 5	3.5", 1" high,	external,	optional disk																											
Bay 6	3.5", 1" high,	external,	optional disk																											
Disk bays	<i>Some:</i> Five 3.5" SATA disk bays, no hot-swap, direct cable (DC) <i>Some:</i> Four 3.5" hot-swap (HS) SATA disk bays <i>Some:</i> Four 3.5" HS SATA/SAS disk bays	<p><b>Direct cable model(s):</b></p> <table border="1"> <tr><td>Bay 1</td><td>5.25", 1.6" high,</td><td>external,</td><td>std optical</td></tr> <tr><td>Bay 2</td><td>5.25", 1.6" high,</td><td>external,</td><td>optional optical</td></tr> <tr><td>Bay 3</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 4</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 5</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 6</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> <tr><td>Bay 7</td><td>3.5", 1" high,</td><td>external,</td><td>optional disk</td></tr> </table>	Bay 1	5.25", 1.6" high,	external,	std optical	Bay 2	5.25", 1.6" high,	external,	optional optical	Bay 3	3.5", 1" high,	external,	optional disk	Bay 4	3.5", 1" high,	external,	optional disk	Bay 5	3.5", 1" high,	external,	optional disk	Bay 6	3.5", 1" high,	external,	optional disk	Bay 7	3.5", 1" high,	external,	optional disk
Bay 1	5.25", 1.6" high,	external,	std optical																											
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Bay 6	3.5", 1" high,	external,	optional disk																											
Bay 7	3.5", 1" high,	external,	optional disk																											
Disk controller	<i>Some:</i> Serial ATA, SATA 3.0Gb/s, integrated in ICH10R, RAID <sup>®</sup> 0, 1, 10 support <i>Some:</i> ThinkServer SAS 9240-8i, PCI Express <sup>®</sup> bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support <i>DC Model(s):</i> Six SATA connectors for opticals and disks	<p>Slot 1: half-length, full-height, PCI Express 2.0 x8 Slot 2: half-length, full-height, PCI Express 2.0 x8 Slot 3: half-length, full-height, PCI Express 2.0 x8*** Slot 4: half-length, full-height, 32-bit PCI 2.3 Slot 5: half-length, full-height, PCI Express x4 *** x4 electrical</p>																												
Optical	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s																													
Diskette	None (use USB port)																													
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82567																													
Chipset	<b>Intel 5500 Chipset</b> , Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right) and links to 82574L, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, slots 4-5, onboard SATA controller, and links to 82567																													
Extender card	None																													
Front ports	Two USB 2.0																													
Rear ports	Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45)																													
Internal ports	One USB 2.0 connector for optional tape drive																													
Diagnostics	System status LEDs on front, Diagnostic LEDs on rear																													
Systems mgmt	Onboard ServerEngines Pilot II graphics/management controller, IPMI 2.0-compliant baseboard management controller (BMC)																													
Prerequisites	Monitor, SATA/SAS disk, OS																													
Keyboard	None (use USB port)																													
Mouse	None (use USB port)																													
Power supply(s)	One fixed 625 watts standard, universal, 80 PLUS <sup>®</sup> Bronze qualified																													
Cooling	Five fans std (power supply, two front, one rear, first processor), one optional processor fan for second processor																													
<p align="center"><b>Max memory capacity</b></p> <p>32GB with eight 4GB PC3-10600 DDR3 RDIMMs (using 67Y1433)</p>		<p align="center"><b>Power-On Hotkey</b></p> <ul style="list-style-type: none"> <li>• Setup Utility: F2 at startup</li> <li>• Network Boot: F12 at startup</li> <li>• ICH10R RAID: Ctrl+E at startup</li> <li>• LSI 9420-8i RAID: Ctrl+H at startup</li> </ul>																												
<p align="center"><b>Max internal capacity</b></p> <p>3.5" SATA HS: 4.0TB with four 1TB SATA disks (using 67Y1402) 3.5" SATA DC: 5.0TB with five 1TB SATA disks (using 67Y1402) 3.5" SAS HS: 1.8TB with four 450B 3.5" SAS disks (using 67Y1462)</p>		<p align="center"><b>Software Management Tools</b></p> <ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> </ul>																												
<p align="center"><b>Limited Warranty<sup>1</sup></b></p> <p>⇒ <b>3-year parts and labor</b> ⇒ <b>Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</b> ⇒ <b>ThinkPlus™ services available; see lenovo.com/thinkplus/warranty</b></p> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> <p>⇒ <b>24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</b></p>		<p align="center"><b>Security</b></p> <ul style="list-style-type: none"> <li>• Administrator password</li> <li>• User password</li> <li>• Front panel lock out</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (all)</li> </ul>																												
		RoHS-compliant																												

See footnotes for important warranty information  
US models announced July 27, 2010

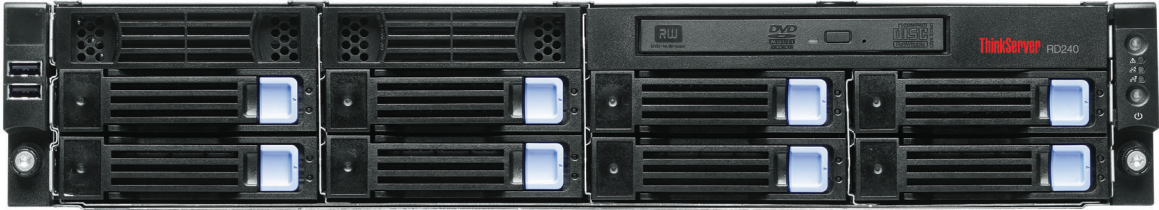
Name	Type-model	Slot x bay	Proc-essor(s)	GHz	Cores	Memory DIMMs	Memory speed	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Ethernet	Avail date
TD230	1039-11U	5x7	1x E5503	2.00	2	1x 2GB	1333MHz	3.5"	5x Direct Cable	ICH10R	SATA	0/1/10	IPMI	2x Gb	Jul 10
TD230	1039-12U	5x6	1x E5503	2.00	2	1x 2GB	1333MHz	3.5"	4x Hot-swap	ICH10R	SATA	0/1/10	IPMI	2x Gb	Jul 10

- **This model has a 1-year limited warranty<sup>1</sup>**
- **Flexible and green tower computing at value price point**

Processor(s)	Up to two processors, one processor standard, <b>Intel® Xeon® Processor E5503</b> with <b>dual-core</b> , 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache	<b>Front - (Hot-swap)</b> 	<b>Rear</b> 
Implementation	Two LGA1366 sockets		
Memory	<b>2GB</b> std, 32GB max (16GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring</b> , eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors	<ul style="list-style-type: none"> <li>• Tower mechanical</li> <li>• Business black color; metal case</li> <li>• 8.3"W x 20.1"D x 18.5"H</li> <li>• 210mm W x 510mm D x 470mm H</li> <li>• 57.6 lb (26.2kg) max configuration</li> <li>• Toolless side cover removal</li> <li>• Toolless optical drive removal</li> </ul>	
Graphics	Onboard ServerEngines™ Pilot II graphics/management controller, one VGA DB-15 on rear, 32MB; <i>Maximum resolution: 1600x1200@52Hz</i>	<b>Hot-swap model(s):</b> Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Bay 6 3.5", 1" high, external, optional disk	
Disk bays	<i>Some:</i> Five 3.5" SATA disk bays, no hot-swap, direct cable (DC) <i>Some:</i> Four 3.5" hot-swap (HS) SATA disk bays	<b>Direct cable model(s):</b> Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Bay 6 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk	
Disk controller	Serial ATA, SATA 3.0Gb/s, integrated in ICH10R, RAID <sup>0</sup> 0, 1, 10 support <i>DC Model(s):</i> Six SATA connectors for opticals and disks	Slot 1: half-length, full-height, PCI Express 2.0 x8 Slot 2: half-length, full-height, PCI Express 2.0 x8 Slot 3: half-length, full-height, PCI Express 2.0 x8*** Slot 4: half-length, full-height, 32-bit PCI 2.3 Slot 5: half-length, full-height, PCI Express x4 *** x4 electrical	
Optical Diskette	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s		
Ethernet	None (use USB port)		
Chipset	<b>Intel 5500 Chipset</b> , Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right) and links to 82574L, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, slots 4-5, onboard SATA controller, and links to 82567		
Extender card	None		
Front ports	Two USB 2.0		
Rear ports	Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45)		
Internal ports	One USB 2.0 connector for optional tape drive		
Diagnostics	System status LEDs on front, Diagnostic LEDs on rear		
Systems mgmt	Onboard ServerEngines Pilot II graphics/management controller, IPMI 2.0-compliant baseboard management controller (BMC)		
Prerequisites	Monitor, SATA/SAS disk, OS		
Keyboard	None (use USB port)		
Mouse	None (use USB port)		
Power supply(s)	One fixed 625 watts standard, universal, 80 PLUS® Bronze qualified		
Cooling	Five fans std (power supply, two front, one rear, first processor), one optional processor fan for second processor		
<b>Accessories</b>			
Intel Xeon E5506 Processor Option Kit		67Y1449	
2GB PC3-10600 DDR3 1333 MHz RDIMM		67Y1432	
ThinkServer TD230 SATA RAID 5 Upgrade		67Y1459	
250GB 3.5" SATA (7200 rpm)		67Y1400	
More accessories on O-ARTsheet			
Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a>			
<b>Max memory capacity</b>			
32GB with eight 4GB PC3-10600 DDR3 RDIMMs (using 67Y1433)			
<b>Max internal capacity</b>			
3.5" SATA HS: 4.0TB with four 1TB SATA disks (using 67Y1402)			
3.5" SATA DC: 5.0TB with five 1TB SATA disks (using 67Y1402)			
<b>Limited Warranty<sup>1</sup></b>			
⇒ <b>1-year parts and labor</b>			
⇒ <b>Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</b>			
⇒ <b>ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a></b>			
• Onsite service upgrade options (in eligible locations) <sup>7</sup>			
• Post warranty maintenance services			
⇒ <b>24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</b>			
<b>Power-On Hotkey</b>			
• Setup Utility:		F2 at startup	
• Network Boot:		F12 at startup	
• ICH10R RAID:		Ctrl+E at startup	
<b>Software Management Tools</b>			
• ThinkServer EasyStartup			
<b>Security</b>			
• Administrator password			
• User password			
• Front panel lock out			
• Boot sequence control			
• Boot without keyboard, mouse, diskette			
• Serial port I/O control			
• USB port disablement (all)			
RoHS-compliant			

See footnotes for important warranty information  
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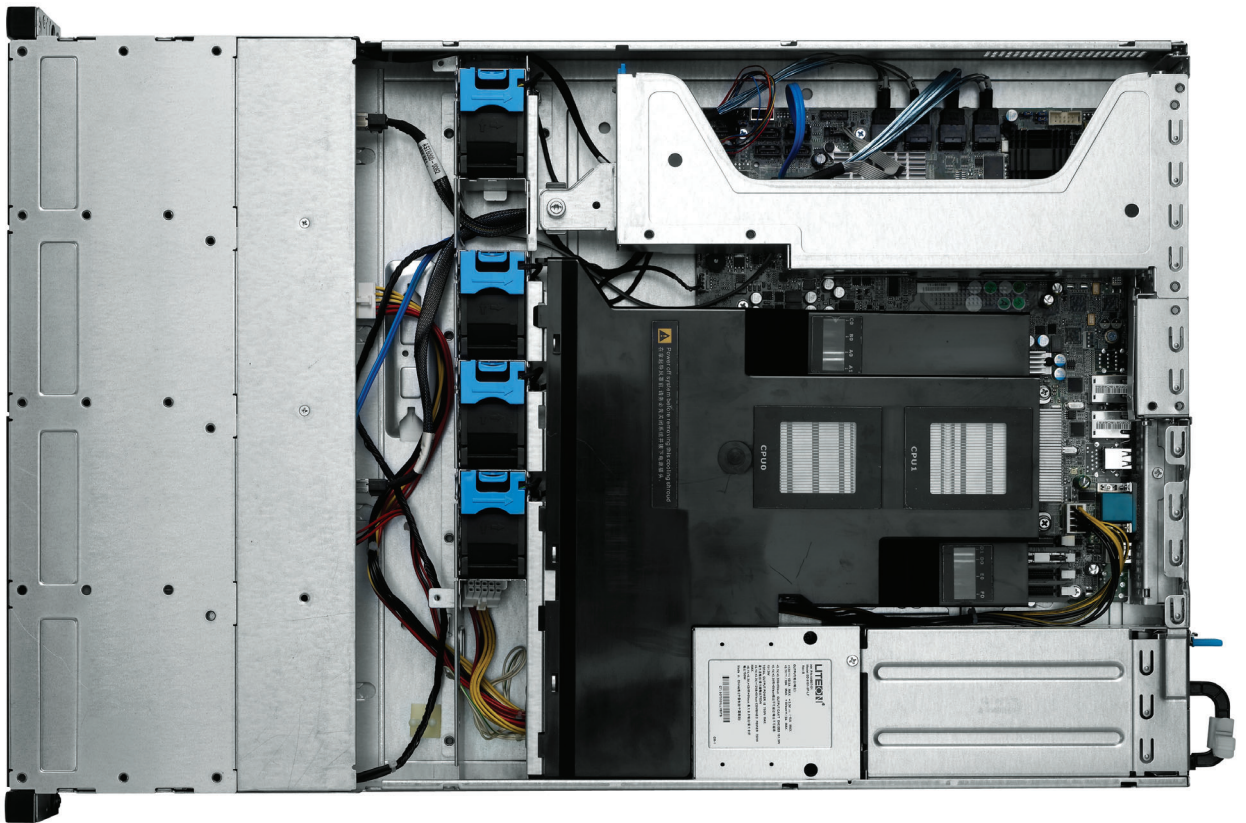




Lenovo ThinkServer RD240



Lenovo ThinkServer RD240



Lenovo ThinkServer RD240

Name	Type-model	Slot x bay	Proc-essor(s)	GHz Cores	Memory DIMMs	Disk size	RAID Battery	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Power supply(s)	Ethernet	Avail date
RD240	1046-11U	3x9	1x E5506	2.13	4	1x 2GB	3.5"	8x Hot-swap	1068E	SATA/SAS <sup>4</sup>	0/1/1E	IPMI	1x 750W	2x Gb	Jul 10
RD240	1046-12U	3x9	1x E5507	2.26	4	1x 4GB	3.5"	8x Hot-swap	8708E	SATA/SAS	Multi*	KVM	1x 750W	2x Gb	Jul 10
RD240	1046-13U	3x9	1x E5620	2.40	4	1x 4GB	3.5" Battery	8x Hot-swap	8708E	SATA/SAS	Multi	KVM	2x 750W	2x Gb	Jul 10
RD240	1046-14U	3x9	2x E5640	2.66	8	2x 4GB	3.5" Battery	8x Hot-swap	8708E	SATA/SAS	Multi	KVM	2x 750W	2x Gb	Jul 10

\*Multi = RAID 0/1/5/6/10/50/60

<p><b>Processor(s)</b> Up to two processors, one or two processors standard, <b>Intel® Xeon® Processor E5506</b> with <b>quad-core</b>, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache or <b>Intel Xeon Processor E5507</b> with <b>quad-core</b>, 4.8GT/s QPI, Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache or <b>Intel Xeon Processor E5620</b> or <b>E5640</b> with <b>quad-core</b>, 5.86GT/s QPI, Intel 64, Hyper-Threading Technology, Virtualization Technology, Turbo Boost Technology, 1066MHz DDR3 memory controller, and 12MB cache</p> <p><b>Implementation</b> Two LGA1366 sockets</p> <p><b>Memory</b> <b>2GB, 4GB, or 8GB</b> std, 64GB max (32GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3**, ECC, Memory Mirroring</b>, eight 240-pin DIMM sockets****, ** System automatically clocks down for processors with 800MHz or 1066MHz DDR3 memory controller *** Over four DIMMs requires dual processors</p> <p><b>Graphics</b> Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; <i>Maximum resolution: 1600x1200@60Hz</i></p> <p><b>Disk bays</b> Eight 3.5" hot-swap (HS) SATA/SAS disk bays</p> <p><b>Disk controller</b> <i>Some:</i> LSI™ LSISAS1068E, PCI Express® bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID<sup>®</sup> 0, 1, 1E support <i>Some:</i> ThinkServer 8708ELP SAS RAID Controller, PCI Express bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support <i>Some:</i> Battery backed cache integrated</p> <p><b>Optical</b> UltraSlim Enhanced DVD±RW</p> <p><b>Diskette</b> None (use USB port)</p> <p><b>Ethernet</b> Two Gigabit Ethernet ports, dual Intel 82574L controllers</p> <p><b>Chipset</b> <b>Intel 5500 Chipset</b>, Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right), links to LSISAS1068E, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB</p> <p><b>Riser card</b> (See Right) One PCI Express 2.0 x8, two PCI Express 2.0 x8 (x4 electrical) slots standard</p> <p><b>Front ports</b> Two USB 2.0</p> <p><b>Rear ports</b> Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45)</p> <p><b>Internal port</b> One USB 2.0 connector</p> <p><b>Diagnostics</b> Diagnostic and system status LEDs on front panel</p> <p><b>Systems mgmt</b> Onboard Aspeed AST2050 graphics/management processor <i>IPMI model(s):</i> IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub <i>KVM model(s):</i> IPMI functions <b>PLUS</b> KVM supported, 24bit high quality video compression</p> <p><b>Prerequisites</b> Monitor, keyboard, mouse, SATA/SAS disk, rack, OS</p> <p><b>Keyboard</b> None (use USB port)</p> <p><b>Mouse</b> None (use USB port)</p> <p><b>Power supply(s)</b> One or two 750 watts standard, two maximum, variable speed fan, auto-sensing, redundant with two power supplies</p> <p><b>Cooling</b> Four fans standard, four maximum, variable speed</p>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>2U Rack top</b></p> </div> <div style="width: 45%;"> <p><b>Front</b></p> <p><b>Rear</b></p> </div> </div> <ul style="list-style-type: none"> <li>• 2U Mechanical</li> <li>• Designed for EIA-310 standard 19-inch rack only</li> <li>• Black color front; metal case</li> <li>• 19"W x 27.6"D x 3.44"H</li> <li>• 483mm W x 700mm D x 87.5mm H</li> <li>• 66.6 lb (30kg) max configuration</li> <li>• Toolless top cover removal</li> <li>• Toolless disk and removal</li> <li>• Toolless adapter retention</li> </ul> <p>Bay 1 5.25", 0.5" high, external, std optical              Bay 2 3.5", 1" high, external, optional disk              Bay 3 3.5", 1" high, external, optional disk              Bay 4 3.5", 1" high, external, optional disk              Bay 5 3.5", 1" high, external, optional disk              Bay 6 3.5", 1" high, external, optional disk              Bay 7 3.5", 1" high, external, optional disk              Bay 8 3.5", 1" high, external, optional disk              Bay 9 3.5", 1" high, external, optional disk</p> <p>Slot 1: full-length, full-height, PCI Express 2.0 x8              Slot 2: full-length, full-height, PCI Express 2.0 x8****              Slot 3: half-length, full-height, PCI Express 2.0 x8****              **** x4 electrical</p>
<p><b>Max memory capacity</b> 64GB with eight 8GB PC3-10600 DDR3 RDIMMs (using 67Y1464)</p> <p><b>Max internal capacity</b> 3.5" SATA HS: 8.0TB with eight 1TB HS SATA disks (using 67Y1480) 3.5" SAS HS: 3.6TB with eight 450GB HS SAS disks (using 67Y1482)</p> <p><b>Limited Warranty<sup>1</sup></b>              ⇒ 3-year parts and labor              ⇒ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)              ⇒ ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a>              • Onsite service upgrade options (in eligible locations)<sup>7</sup>              • Post warranty maintenance services              ⇒ 24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</p>	<p><b>Virtualization</b> Virtualization ready, VMWare Ready™ certified</p> <p><b>Power-On Hotkey</b></p> <ul style="list-style-type: none"> <li>• Setup Utility: DEL at startup</li> <li>• Network Boot: F12 at startup</li> <li>• 1068E RAID: Ctrl+C at startup</li> <li>• 8708ELP RAID: Ctrl+H at startup</li> </ul> <p><b>Software Management Tools</b></p> <ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> </ul> <p><b>Security</b></p> <ul style="list-style-type: none"> <li>• Administrator password</li> <li>• User password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (all)</li> </ul> <p>RoHS-compliant</p>

See footnotes for important warranty information  
US models announced July 27, 2010



Name	Type-model	Slot x bay	Proc-essor(s)	GHz Cores	Memory DIMMs	Disk size	RAID Battery	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Power supply(s)	Ethernet	Avail date
RD240	1048-11U	3x9	1xE5503	2.00	2	1x2GB	3.5"	8xHot-swap	1068E	SATA/SAS <sup>4</sup>	0/1/1E	IPMI	1x750W	2xGb	Jul 10
RD240	1048-12U	3x9	1xE5640	2.66	4	1x4GB	3.5"	Battery	8708E	SATA/SAS	Multi*	KVM	1x750W	2xGb	Jul 10
RD240	1048-13U	3x9	2XE5650	2.66	12	2x4GB	3.5"	Battery	8708E	SATA/SAS	Multi	KVM	2x750W	2xGb	Jul 10

\*Multi = RAID 0/1/5/6/10/50/60

Processor(s)	Up to two processors, one or two processors standard, <b>Intel® Xeon® Processor E5503</b> with <b>dual-core</b> , 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache or <b>Intel Xeon Processor E5640</b> with <b>quad-core</b> , 5.86GT/s QPI, Intel 64, Hyper-Threading Technology, Virtualization Technology, Turbo Boost Technology, 1066MHz DDR3 memory controller, and 12MB cache or <b>Intel Xeon Processor X5650</b> with <b>six-core</b> , 6.4GT/s QPI, Intel 64, Hyper-Threading Technology, Virtualization Technology, Turbo Boost Technology, 1333MHz DDR3 memory controller, and 12MB cache
Implementation	Two LGA1366 sockets
Memory	<b>2GB, 4GB, or 8GB</b> std, 64GB max (32GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring</b> , eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 800MHz or 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors
Graphics	Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; <i>Maximum resolution: 1600x1200@60Hz</i>
Disk bays	Eight 3.5" hot-swap (HS) SATA/SAS disk bays
Disk controller	<i>Some:</i> LSI™ LSISAS1068E, PCI Express® bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID® 0, 1, 1E support <i>Some:</i> ThinkServer 8708ELP SAS RAID Controller, PCI Express bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support <i>Some:</i> Battery backed cache integrated
Optical	UltraSlim Enhanced DVD±RW
Diskette	None (use USB port)
Ethernet	Two Gigabit Ethernet ports, dual Intel 82574L controllers
Chipset	<b>Intel 5500 Chipset</b> , Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right), links to LSISAS1068E, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB
Riser card	(See Right) One PCI Express 2.0 x8, two PCI Express 2.0 x8 (x4 electrical) slots standard
Front ports	Two USB 2.0
Rear ports	Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45)
Internal port	One USB 2.0 connector
Diagnostics	Diagnostic and system status LEDs on front panel
Systems mgmt	Onboard Aspeed AST2050 graphics/management processor <i>IPMI model(s):</i> IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub <i>KVM model(s):</i> IPMI functions <b>PLUS</b> KVM supported, 24bit high quality video compression
Prerequisites	Monitor, keyboard, mouse, SATA/SAS disk, rack, OS
Keyboard	None (use USB port)
Mouse	None (use USB port)
Power supply(s)	One or two 750 watts standard, two maximum, variable speed fan, auto-sensing, redundant with two power supplies
Cooling	Four fans standard, four maximum, variable speed

**2U Rack top**

**Front**

**Rear**

- 2U Mechanical
- Designed for EIA-310 standard 19-inch rack only
- Black color front; metal case
- 19"W x 27.6"D x 3.44"H
- 483mm W x 700mm D x 87.5mm H
- 66.6 lb (30kg) max configuration
- Toolless top cover removal
- Toolless disk removal
- Toolless adapter retention

Bay 1	5.25", 0.5" high, external, std optical
Bay 2	3.5", 1" high, external, optional disk
Bay 3	3.5", 1" high, external, optional disk
Bay 4	3.5", 1" high, external, optional disk
Bay 5	3.5", 1" high, external, optional disk
Bay 6	3.5", 1" high, external, optional disk
Bay 7	3.5", 1" high, external, optional disk
Bay 8	3.5", 1" high, external, optional disk
Bay 9	3.5", 1" high, external, optional disk

Slot 1: full-length, full-height, PCI Express 2.0 x8  
 Slot 2: full-length, full-height, PCI Express 2.0 x8\*\*\*  
 Slot 3: half-length, full-height, PCI Express 2.0 x8\*\*\*  
 \*\*\* x4 electrical

<b>Max memory capacity</b>
64GB with eight 8GB PC3-10600 DDR3 RDIMMs (using 67Y1464)
<b>Max internal capacity</b>
3.5" SATA HS: 8.0TB with eight 1TB HS SATA disks (using 67Y1480) 3.5" SAS HS: 3.6TB with eight 450GB HS SAS disks (using 67Y1482)
<b>Limited Warranty<sup>1</sup></b>
<ul style="list-style-type: none"> <li>⇒ 3-year parts and labor</li> <li>⇒ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</li> <li>⇒ ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> </li> <li>⇒ 24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</li> </ul>

**Virtualization**

Virtualization ready, VMWare Ready™ certified

**Power-On Hotkey**

- Setup Utility: DEL at startup
- Network Boot: F12 at startup
- 1068E RAID: Ctrl+C at startup
- 8708ELP RAID: Ctrl+H at startup

**Software Management Tools**

- ThinkServer EasyStartup

**Security**

- Administrator password
- User password
- Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- USB port disablement (all)

RoHS-compliant

See footnotes for important warranty information  
 US models announced July 27, 2010



Name	Type-model	Slot x bay	Proc-essor(s)	GHz Cores	Memory DIMMs	Disk size	RAID Battery	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Power supply(s)	Ethernet	Avail date
RD240	1047-11U	3x9	1xE5503	2.00 2	1x2GB	3.5"	None	8xHot-swap	1068E	SATA/SAS <sup>4</sup>	0/1/1E	IPMI	1x750W	2xGb	Jul 10

- **This model has a 1-year limited warranty<sup>1</sup>**
- **High performance, scalability, and remote management supported at value price point**

<p>Processor(s) Up to two processors, one processor standard, <b>Intel® Xeon® Processor E5503</b> with <b>dual-core</b>, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache</p> <p>Implementation Two LGA1366 sockets</p> <p>Memory <b>2GB</b>, 64GB max (32GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring</b>, eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors</p> <p>Graphics Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; <i>Maximum resolution: 1600x1200@60Hz</i></p> <p>Disk bays Eight 3.5" hot-swap (HS) SATA/SAS disk bays</p> <p>Disk controller LSI™ LSI SAS1068E, PCI Express® bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID<sup>8</sup> 0, 1, 1E support</p> <p>Optical UltraSlim Enhanced DVD±RW</p> <p>Diskette None (use USB port)</p> <p>Ethernet Two Gigabit Ethernet ports, dual Intel 82574L controllers</p> <p>Chipset <b>Intel 5500 Chipset</b>, Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right), links to LSI SAS1068E, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB</p> <p>Riser card (See Right) One PCI Express 2.0 x8, two PCI Express 2.0 x8 (x4 electrical) slots standard</p> <p>Front ports Two USB 2.0</p> <p>Rear ports Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45)</p> <p>Internal port One USB 2.0 connector</p> <p>Diagnostics Diagnostic and system status LEDs on front panel</p> <p>Systems mgmt Onboard Aspeed AST2050 graphics/management processor IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub</p> <p>Prerequisites Monitor, keyboard, mouse, SATA/SAS disk, rack, OS</p> <p>Keyboard None (use USB port)</p> <p>Mouse None (use USB port)</p> <p>Power supply(s) One 750 watts standard, two maximum, variable speed fan, auto-sensing, redundant with two power supplies</p> <p>Cooling Four fans standard, four maximum, variable speed</p>	<p><b>2U Rack top</b></p> <p><b>Front</b></p> <p><b>Rear</b></p> <ul style="list-style-type: none"> <li>• 2U Mechanical</li> <li>• Designed for EIA-310 standard 19-inch rack only</li> <li>• Black color front; metal case</li> <li>• 19"W x 27.6"D x 3.44"H</li> <li>• 483mm W x 700mm D x 87.5mm H</li> <li>• 66.6 lb (30kg) max configuration</li> <li>• Toolless top cover removal</li> <li>• Toolless disk removal</li> <li>• Toolless adapter retention</li> </ul> <p>Bay 1 5.25", 0.5" high, external, std optical</p> <p>Bay 2 3.5", 1" high, external, optional disk</p> <p>Bay 3 3.5", 1" high, external, optional disk</p> <p>Bay 4 3.5", 1" high, external, optional disk</p> <p>Bay 5 3.5", 1" high, external, optional disk</p> <p>Bay 6 3.5", 1" high, external, optional disk</p> <p>Bay 7 3.5", 1" high, external, optional disk</p> <p>Bay 8 3.5", 1" high, external, optional disk</p> <p>Bay 9 3.5", 1" high, external, optional disk</p> <p>Slot 1: full-length, full-height, PCI Express 2.0 x8</p> <p>Slot 2: full-length, full-height, PCI Express 2.0 x8***</p> <p>Slot 3: half-length, full-height, PCI Express 2.0 x8***</p> <p>*** x4 electrical</p>												
<p style="text-align: center;"><b>Accessories</b></p> <table border="0"> <tr> <td>Intel Xeon E5503 Processor Option Kit</td> <td>67Y1466</td> </tr> <tr> <td>2GB PC3-10600 DDR3 1333 MHz RDIMM</td> <td>67Y1432</td> </tr> <tr> <td>8GB PC3-10600 DDR3 1333 MHz RDIMM</td> <td>67Y1464</td> </tr> <tr> <td>ThinkServer 8708ELP RAID Controller</td> <td>67Y1494</td> </tr> <tr> <td>1TB 3.5" SATA HS (7200 rpm)</td> <td>67Y1480</td> </tr> <tr> <td>450GB<sup>2</sup> 3.5" SAS HS (15000 rpm)</td> <td>67Y1482</td> </tr> </table> <p>More accessories on O-ARTsheet</p> <p>Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a></p>	Intel Xeon E5503 Processor Option Kit	67Y1466	2GB PC3-10600 DDR3 1333 MHz RDIMM	67Y1432	8GB PC3-10600 DDR3 1333 MHz RDIMM	67Y1464	ThinkServer 8708ELP RAID Controller	67Y1494	1TB 3.5" SATA HS (7200 rpm)	67Y1480	450GB <sup>2</sup> 3.5" SAS HS (15000 rpm)	67Y1482	<p style="text-align: center;"><b>Virtualization</b></p> <p>Virtualization ready, VMWare Ready™ certified</p> <p style="text-align: center;"><b>Power-On Hotkey</b></p> <ul style="list-style-type: none"> <li>• Setup Utility: DEL at startup</li> <li>• Network Boot: F12 at startup</li> <li>• LSI 1068E RAID: Ctrl+C at startup</li> </ul> <p style="text-align: center;"><b>Software Management Tools</b></p> <ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> </ul> <p style="text-align: center;"><b>Security</b></p> <ul style="list-style-type: none"> <li>• Administrator password</li> <li>• User password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (all)</li> </ul> <p>RoHS-compliant</p>
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<p style="text-align: center;"><b>Max memory capacity</b></p> <p>64GB with eight 8GB PC3-10600 DDR3 RDIMMs (using 67Y1464)</p> <p style="text-align: center;"><b>Max internal capacity</b></p> <p>3.5" SATA HS: 8.0TB with eight 1TB HS SATA disks (using 67Y1480)</p> <p>3.5" SAS HS: 3.6TB with eight 450GB HS SAS disks (using 67Y1482)</p> <p style="text-align: center;"><b>Limited Warranty<sup>1</sup></b></p> <ul style="list-style-type: none"> <li>⇒ 1-year parts and labor</li> <li>⇒ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</li> <li>⇒ ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> </li> <li>⇒ 24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</li> </ul>													

See footnotes for important warranty information  
US model announced July 27, 2010

**Partial list of accessories supported on Lenovo® ThinkServer TD230, RD240.**

ThinkServer Ready accessories are available through Lenovo Business Partners. Locate a Business Partner near you at: [bplocator.lenovo.com](http://bplocator.lenovo.com)

**Processor<sup>50</sup>**

<i>TD230:</i>		
Intel® Xeon® E5503 Processor Option Kit	67Y1448	ann 07/27/10
Intel Xeon E5506 Processor Option Kit	67Y1449	ann 07/27/10
Intel Xeon E5507 Processor Option Kit	67Y1458	ann 07/27/10
Intel Xeon E5620 Processor Option Kit	67Y1457	ann 07/27/10

*RD240:*

Intel Xeon E5503 Processor Option Kit	67Y1466	ann 07/27/10
Intel Xeon E5506 Processor Option Kit	67Y1467	ann 07/27/10
Intel Xeon E5507 Processor Option Kit	67Y1476	ann 07/27/10
Intel Xeon E5620 Processor Option Kit	67Y1475	ann 07/27/10
Intel Xeon E5640 Processor Option Kit	67Y1471	ann 07/27/10

<sup>50</sup> Additional processor must match the existing processor

**Memory<sup>53</sup>**

<i>All:</i>		
2GB PC3-10600 DDR3 RDIMM (2R x 8)	67Y1432	ann 07/27/10
4GB PC3-10600 DDR3 RDIMM (2R x 4)	67Y1433	ann 07/27/10

*RD240:*

8GB PC3-10600 DDR3 RDIMM (2R x 4)	67Y1464	ann 07/27/10
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**Backup**

Lenovo 160GB Internal USB RDX Bundle	67Y1394	ann 02/23/10
Lenovo 320GB Internal USB RDX Bundle	67Y1396	ann 02/23/10
Lenovo 500GB Internal USB RDX Bundle	67Y1398	ann 02/23/10
Lenovo 160GB RDX Data Cartridge	67Y1395	ann 02/23/10
Lenovo 320GB RDX Data Cartridge	67Y1397	ann 02/23/10
Lenovo 500GB RDX Data Cartridge	67Y1399	ann 02/23/10

**Connectivity**

Intel PRO/1000 PT Dual Port Ethernet	67Y1393	ann 02/23/10
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**ThinkServer RAID controller**

<i>TD230:</i>		
ThinkServer TD230 SATA RAID 5 Upgrade	67Y1459	ann 07/27/10
ThinkServer 9240-8i RAID Controller	67Y1460	ann 07/27/10

*RD240:*

ThinkServer 8708ELP Controller (256MB)	67Y1494	ann 07/27/10
ThinkServer 8708ELP RAID Controller Battery	67Y1495	ann 07/27/10

**Keyboard**

Preferred Pro USB Keyboard	73P5220	ann 06/21/05
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**Mouse**

Lenovo Optical Mouse (USB)	06P4069	ann 05/21/03
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**System Management**

<i>TD230:</i>		
Remote Management Module 3	67Y1461	ann 07/27/10

**Redundant Power Supply**

<i>RD240:</i>		
ThinkServer RD240 Redundant PSU	67Y1497	ann 07/27/10

**Disk Drive**

<i>3.5" SATA Direct Cable (DC) and Hot-swap (HS):</i>		
<i>TD230:</i>		
250GB <sup>2</sup> 3.5" SATA DC/HS (7200 rpm)	67Y1400	ann 02/23/10
500GB 3.5" SATA DC/HS (7200 rpm)	67Y1401	ann 02/23/10
1TB 3.5" SATA DC/HS (7200 rpm)	67Y1402	ann 02/23/10

*3.5" SATA HS:*

<i>RD240:</i>		
250GB 3.5" SATA HS (7200 rpm)	67Y1478	ann 07/27/10
500GB 3.5" SATA HS (7200 rpm)	67Y1479	ann 07/27/10
1TB 3.5" SATA HS (7200 rpm)	67Y1480	ann 07/27/10

*3.5" SAS HS:*

<i>TD230 preconfigured with SAS controller:</i>		
300GB 3.5" SAS HS (15000 rpm)	67Y1437	ann 07/27/10
450GB 3.5" SAS HS (15000 rpm)	67Y1462	ann 07/27/10

*RD240:*

300GB 3.5" SAS HS (15000 rpm)	67Y1481	ann 07/27/10
450GB 3.5" SAS HS (15000 rpm)	67Y1482	ann 07/27/10

For more information on server accessories, please visit:

- [www.lenovo.com/support/accessories](http://www.lenovo.com/support/accessories)
- [www.lenovo.com/support/thinkserveraccessories](http://www.lenovo.com/support/thinkserveraccessories)
- [www.lenovo.com/support/security](http://www.lenovo.com/support/security)

Other accessories at [www.lenovo.com/accessories](http://www.lenovo.com/accessories)

Accessories Guide pdf at [www.lenovo.com/accessoriesguide](http://www.lenovo.com/accessoriesguide)

**Partial list of Lenovo® ThinkPlus Services for ThinkServer™ TD230, RD240**

For more information see:

[http://www.lenovo.com/services\\_warranty/us/en/index.html](http://www.lenovo.com/services_warranty/us/en/index.html)

**Training classes**

- The basics on components, diagnostics, troubleshooting, and managing Lenovo servers, delivered in interactive online format

Online Training, Understanding Lenovo Servers	45K4080
Online Training, Understanding Systems Management	45K4081
Installation, ThinkServer Hardware Only	45K4082

**ThinkPlus service upgrade options<sup>7</sup>**

LOR = *Lenovo Onsite Repair*

**TD230 with 1-year warranty**

3-year LOR 9x5 Next Business Day	45K4062
3-year LOR 9x5 4 hour response	45K4063
4-year LOR 9x5 Next Business Day	51J0731
4-year LOR 9x5 4 hour response	51J0732
5-year LOR 9x5 Next Business Day	51J0733
5-year LOR 9x5 4 hour response	51J0734

**TD230 with 3-year warranty**

3-year LOR 9x5 4 hour response	45K4066
4-year LOR 9x5 Next Business Day	51J0735
4-year LOR 9x5 4 hour response	51J0736
5-year LOR 9x5 Next Business Day	51J0737
5-year LOR 9x5 4 hour response	51J0738

**RD240 with 1-year warranty**

3-year LOR 9x5 Next Business Day	45K5305
3-year LOR 9x5 4 hour response	45K5306
4-year LOR 9x5 Next Business Day	51J0747
4-year LOR 9x5 4 hour response	51J0748
5-year LOR 9x5 Next Business Day	51J0749
5-year LOR 9x5 4 hour response	51J0750

**RD240 with 3-year warranty**

3-year LOR 9x5 4 hour response	45K4076
4-year LOR 9x5 Next Business Day	51J0751
4-year LOR 9x5 4 hour response	51J0752
5-year LOR 9x5 Next Business Day	51J0753
5-year LOR 9x5 4 hour response	51J0754

**ThinkPlus Priority Support**

- 9x5 Next Business Day response Lenovo Onsite Repair
- 24x7 4-hour response Lenovo Onsite Repair (for Priority 4 Support)
- 24x7 support with priority routing and advanced level technicians

**TD230 with 1-year warranty**

3-year Priority Support	45K4064
3-year Priority 4 Support	45K4065

**TD230 with 3-year warranty**

3-year Priority Support	45K4067
3-year Priority 4 Support	45K4068

**RD240 with 1-year warranty**

3-year Priority Support	45K5307
3-year Priority 4 Support	45K5308

**RD240 with 3-year warranty**

3-year Priority Support	45K4077
3-year Priority 4 Support	45K4078

**ThinkPlus Priority Support with Hard Disk Drive Retention**

- 9x5 Next Business Day response Lenovo Onsite Repair
- 24x7 4-hour response Lenovo Onsite Repair (for Priority 4 Support)
- 24x7 support with priority routing and advanced level technicians
- Hard Disk Drive Retention (HDDR) means customer keeps disk

HDDR = *Hard Disk Drive Retention*

**TD230 with 1-year warranty**

3-year Priority Support with HDDR	45K5445
3-year Priority 4 Support with HDDR	45K5446

**TD230 with 3-year warranty**

3-year Priority Support with HDDR	45K5447
3-year Priority 4 Support with HDDR	45K5448

**RD240 with 1-year warranty**

3-year Priority Support with HDDR	45K5453
3-year Priority 4 Support with HDDR	45K5454

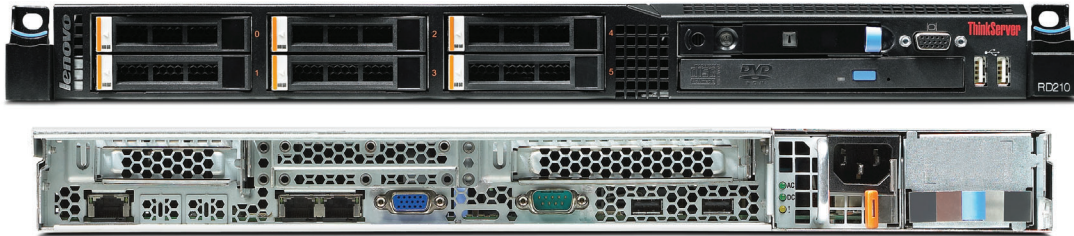
**RD240 with 3-year warranty**

3-year Priority Support with HDDR	45K5455
3-year Priority 4 Support with HDDR	45K5456

**ThinkPlus Productivity**

- Priority Support
- Online Training, Understanding Lenovo Servers
- One-time hardware installation

3-year ThinkPlus Productivity, TD230 (1-year)	45K4088
3-year ThinkPlus Productivity, TD230 (3-year)	45K4090
3-year ThinkPlus Productivity, RD240 (1-year)	45K5309
3-year ThinkPlus Productivity, RD240 (3-year)	45K4096



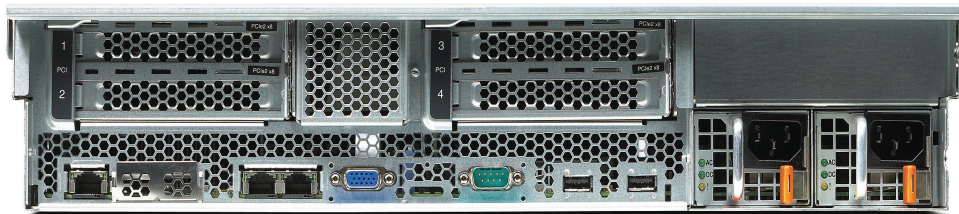
Lenovo® ThinkServer RD210



Lenovo ThinkServer RD220  
(8 Disk Bays plus Tape Drive)



Lenovo ThinkServer RD220  
(12 Disk Bays)



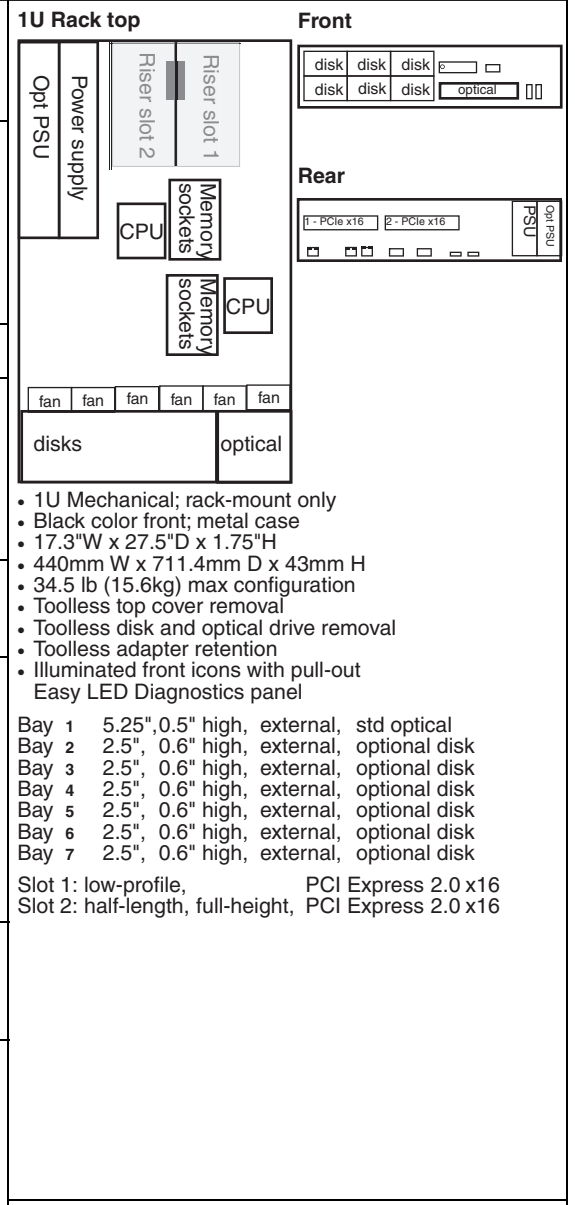
Lenovo ThinkServer RD220



Name	Type-model	Slot x bay	Proc-essor(s)	GHz	Cores	Memory DIMMs	Memory speed	Disk size	RAID Battery	Disk bays	Disk type	RAID Int	IMM Premium	Power supply(s)	Ethernet	Avail date
RD210	3795-21U	2x7	1xE5502	1.86	2	1x1GB	1333MHz	2.5"	None	6xHot-swap	SATA/SAS <sup>4</sup>	0/1	None	1x675W	2xGb	May 09

- **This model has a 1-year limited warranty<sup>1</sup>**
- **This small and medium business (SMB) model is part of the US TopSeller™ Program**

Processor(s)	Up to two processors, one processor standard, <b>Intel® Xeon® Processor E5502</b> with <b>dual-core</b> , 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 800MHz DDR3 memory controller, and 4MB cache
Implementation	Processor uses FC-LGA package, two LGA1366 sockets
Memory	<b>1GB</b> std, 128GB max (64GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3**</b> , <b>Advanced ECC***</b> , <b>Memory Mirroring</b> , sixteen 240-pin DIMM sockets, standard memory in 1 socket, 15 sockets available****, eight sockets distributed into 3-channel per processor (3-3-2) ** System automatically clocks down for processor with 800MHz DDR3 memory controller *** Advanced ECC-enable DIMMs required **** Over eight DIMMs requires dual processors
Graphics	Matrox® G200e, integrated, two VGA DB-15 (front and rear), 8MB; <i>Maximum resolution: 1280x1024@60Hz</i>
Disk bays	6 hot-swap (HS) disk bays on 2.5" Slim-Form-Factor (SFF) std
Disk Controller	ServeRAID®-BR10i, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID <sup>5</sup> 0, 1 support
Optical	UltraSlim Enhanced DVD±RW
Diskette	None (use USB port)
Ethernet	Two Gigabit Ethernet ports, TCP/IP Offload Engine(TOE), Broadcom® 5709C operated over PCIe bus, load balancing, upgradeable to 4 int ethernet ports via optional daughter card
Chipset	<b>Intel 5520 Chipset</b> , Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O
Riser card	(See Right) Two PCI Express 2.0 x16 slots std, convertible via optional riser card(s) to 64-bit 133MHz PCI-X
Front ports	Two USB 2.0, external monitor (VGA DB-15)
Rear ports	Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45)
Internal port	One USB connector for embedded hypervisor
Diagnostics	Easy LED Diagnostics (pull-out operator information panel with information LED and system-error LED)
Systems mgmt	Integrated Management Module (IMM) std, IPMI 2.0-compliant, Trusted Platform Module (TPM) 1.2 support, upgradeable to IMM Premium
Prerequisites	Monitor, keyboard, mouse, SATA/SAS disk, rack, OS
Keyboard	None (use USB port)
Mouse	None (use USB port)
Power supply(s)	One 675 watts standard, two maximum, hot-swap, auto-sensing, redundant with two power supplies
Cooling	Six fans std, six maximum, variable speed, hot-swap



- 1U Mechanical; rack-mount only
  - Black color front; metal case
  - 17.3"W x 27.5"D x 1.75"H
  - 440mm W x 711.4mm D x 43mm H
  - 34.5 lb (15.6kg) max configuration
  - Toolless top cover removal
  - Toolless disk and optical drive removal
  - Toolless adapter retention
  - Illuminated front icons with pull-out Easy LED Diagnostics panel
- Bay 1 5.25", 0.5" high, external, std optical  
 Bay 2 2.5", 0.6" high, external, optional disk  
 Bay 3 2.5", 0.6" high, external, optional disk  
 Bay 4 2.5", 0.6" high, external, optional disk  
 Bay 5 2.5", 0.6" high, external, optional disk  
 Bay 6 2.5", 0.6" high, external, optional disk  
 Bay 7 2.5", 0.6" high, external, optional disk
- Slot 1: low-profile, PCI Express 2.0 x16  
 Slot 2: half-length, full-height, PCI Express 2.0 x16

Accessories	
Intel Xeon Dual-Core Processor E5502	67Y0004
1GB PC3-10600 DDR3 1333 MHz RDIMM	67Y0014
2GB PC3-10600 DDR3 1333 MHz RDIMM	67Y0015
4GB PC3-10600 DDR3 1333 MHz RDIMM	67Y0016
73GB <sup>2</sup> 2.5" SAS SFF HS (15000 rpm)	67Y0115
146GB 2.5" SAS SFF HS (10000 rpm)	67Y0116
300GB 2.5" SAS SFF HS (10000 rpm)	67Y0118
500GB 2.5" SATA SFF HS (7200 rpm)	67Y0121
Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a>	

<b>Max internal capacity</b>	3.0TB with six 500GB SATA SFF disks
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<b>Virtualization</b>	Virtualization ready, hypervisor connector embedded
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<b>Limited Warranty<sup>1</sup></b>	
⇒ 1-year parts and labor	
⇒ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts <sup>3</sup> , 8 am - 5 pm, Mon - Fri coverage excluding holidays)	
⇒ ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a>	
• Onsite service upgrade options (in eligible locations) <sup>7</sup>	
• Post warranty maintenance services	
⇒ 24 hour x 7 day <sup>14</sup> toll-free support during the warranty period <sup>1</sup> via 800-426-7378	

<b>Power-On Hotkey</b>	
• Setup Utility: F1 at startup	
• Diagnostic: F2 at startup	
• Network Boot: F12 at startup	

<b>Software Management Tools</b>	
• ThinkServer EasyStartup	
• ThinkServer EasyManage	

<b>Security</b>	
• Power-on password	
• Administrator password	
• Boot sequence control	
• Boot without keyboard, mouse, diskette	
• Serial port I/O control	
• USB port disablement (front or all)	

ThinkPlus Priority Support, 90-day Trial
RoHS-compliant

See footnotes for important warranty information  
 US model announced May 5, 2009

# ThinkServer™ RD210 (3796) - TopSeller (2GB RDIMM)

Personal Systems Reference (PSREF)

Name	Type-model	Slot x bay	Proc-essor(s)	GHz	Cores	Memory DIMMs	Memory speed	Disk size	RAID Battery	Disk bays	Disk type	RAID Int	IMM Premium	Power supply(s)	Ethernet	Avail date
RD210	3796-27U	2x7	1xE5504	2.00	4	1x2GB	1333MHz	2.5"	None	6xHot-swap	SATA/SAS <sup>4</sup>	0/1	None	2x675W	2xGb	May 09
RD210	3796-23U	2x7	1xE5506	2.13	4	1x2GB	1333MHz	2.5"	None	6xHot-swap	SATA/SAS	Multi*	None	2x675W	2xGb	May 09

\* Multi = RAID-0/1/5/6/10/50/60 support

- **These models have a 3-year limited warranty<sup>1</sup>**
- **Easy to use with ThinkServer EasyStartup and EasyManage software**
- **These small and medium business (SMB) models are part of the US TopSeller™ Program**

Processor(s)	Up to two processors, one processor standard, <b>Intel® Xeon® Processor E5504 or E5506 with quad-core</b> , 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 800MHz DDR3 memory controller, and 4MB cache	<p><b>1U Rack top</b></p> <p><b>Front</b></p> <p><b>Rear</b></p> <ul style="list-style-type: none"> <li>• 1U Mechanical; rack-mount only</li> <li>• Black color front; metal case</li> <li>• 17.3"W x 27.5"D x 1.75"H</li> <li>• 440mm W x 711.4mm D x 43mm H</li> <li>• 34.5 lb (15.6kg) max configuration</li> <li>• Toolless top cover removal</li> <li>• Toolless disk and optical drive removal</li> <li>• Toolless adapter retention</li> <li>• Illuminated front icons with pull-out Easy LED Diagnostics panel</li> </ul> <p>Bay 1 5.25", 0.5" high, external, std optical                      Bay 2 2.5", 0.6" high, external, optional disk                      Bay 3 2.5", 0.6" high, external, optional disk                      Bay 4 2.5", 0.6" high, external, optional disk                      Bay 5 2.5", 0.6" high, external, optional disk                      Bay 6 2.5", 0.6" high, external, optional disk                      Bay 7 2.5", 0.6" high, external, optional disk</p> <p>Slot 1: low-profile, PCI Express 2.0 x16                      Slot 2: half-length, full-height, PCI Express 2.0 x16</p>							
Implementation	Processor uses FC-LGA package, two LGA1366 sockets								
Memory	<b>2GB</b> std, 128GB max (64GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3**, Advanced ECC***, Memory Mirroring</b> , sixteen 240-pin DIMM sockets, standard memory in 1 socket, 15 sockets available****, eight sockets distributed into 3-channel per processor (3-3-2) ** System automatically clocks down for processors with 800MHz or 1066MHz DDR3 memory controller *** Advanced ECC-enable DIMMs required **** Over eight DIMMs requires dual processors								
Graphics	Matrox® G200e, integrated, two VGA DB-15 (front and rear), 8MB; <i>Maximum resolution: 1280x1024@60Hz</i>								
Disk bays	6 hot-swap (HS) disk bays on 2.5" Slim-Form-Factor (SFF) std								
Disk Controller	27U: ServeRAID®-BR10i, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID <sup>0</sup> 0, 1 support 23U: ServeRAID-MR10i, PCIe bus, SATA 3Gb/s, SAS 3Gb/s, RAID 0, 1, 5, 6, 10, 50 support								
Optical Diskette	UltraSlim Enhanced DVD±RW None (use USB port)								
Ethernet	Two Gigabit Ethernet ports, TCP/IP Offload Engine(TOE), Broadcom® 5709C operated over PCIe bus, load balancing, upgradeable to 4 int ethernet ports via optional daughter card								
Chipset	<b>Intel 5520 Chipset</b> , Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O								
Riser card	(See Right) Two PCI Express 2.0 x16 slots std, convertible via optional riser card(s) to 64-bit 133MHz PCI-X								
Front ports	Two USB 2.0, external monitor (VGA DB-15)								
Rear ports	Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45)								
Internal port	One USB connector for embedded hypervisor								
Diagnostics	Easy LED Diagnostics (pull-out operator information panel with information LED and system-error LED)								
Systems mgmt	Integrated Management Module (IMM) std, IPMI 2.0-compliant, Trusted Platform Module (TPM) 1.2 support, upgradeable to IMM Premium								
Prerequisites	Monitor, keyboard, mouse, SATA/SAS disk, rack, OS								
Keyboard	None (use USB port)								
Mouse	None (use USB port)								
Power supply(s)	Two 675 watts standard, two maximum, hot-swap, auto-sensing, redundant with two power supplies								
Cooling	Six fans std, six maximum, variable speed, hot-swap								
<b>Accessories</b>	<table border="0"> <tr> <td>Intel Xeon Dual-Core Processor E5504</td> <td>67Y0007</td> </tr> <tr> <td>2GB PC3-10600 DDR3 1333 MHz RDIMM</td> <td>67Y0015</td> </tr> <tr> <td>300GB<sup>2</sup> 2.5" SAS SFF HS (10000 rpm)</td> <td>67Y0118</td> </tr> <tr> <td>500GB 2.5" SATA SFF HS (7200 rpm)</td> <td>67Y0121</td> </tr> </table> Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a>	Intel Xeon Dual-Core Processor E5504	67Y0007	2GB PC3-10600 DDR3 1333 MHz RDIMM	67Y0015	300GB <sup>2</sup> 2.5" SAS SFF HS (10000 rpm)	67Y0118	500GB 2.5" SATA SFF HS (7200 rpm)	67Y0121
Intel Xeon Dual-Core Processor E5504	67Y0007								
2GB PC3-10600 DDR3 1333 MHz RDIMM	67Y0015								
300GB <sup>2</sup> 2.5" SAS SFF HS (10000 rpm)	67Y0118								
500GB 2.5" SATA SFF HS (7200 rpm)	67Y0121								
<b>Max internal capacity</b>	3.0TB with six 500GB SATA SFF disks								
<b>Limited Warranty<sup>1</sup></b>	<ul style="list-style-type: none"> <li>⇒ <b>3-year parts and labor</b></li> <li>⇒ <b>Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</b></li> <li>⇒ <b>ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a></b> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> </li> <li>⇒ <b>24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</b></li> </ul>								
<b>Virtualization</b>									
Virtualization ready, hypervisor connector embedded									
<b>Power-On Hotkey</b>									
<ul style="list-style-type: none"> <li>• Setup Utility: F1 at startup</li> <li>• Diagnostic: F2 at startup</li> <li>• Network Boot: F12 at startup</li> </ul>									
<b>Software Management Tools</b>									
<ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> <li>• ThinkServer EasyManage</li> </ul>									
<b>Security</b>									
<ul style="list-style-type: none"> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (front or all)</li> </ul>									
ThinkPlus Priority Support, 90-day Trial									
RoHS-compliant									

See footnotes for important warranty information  
 US models announced May 5, 2009

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 (TIT1-4) September 2009

Name	Type-model	Slot x bay	Proc-essor(s)	GHz	Cores	Memory DIMMs	Memory speed	Disk size	RAID Battery	Disk bays	Disk type	RAID Int	IMM Premium	Power supply(s)	Ethernet	Avail date
RD210	3796-2CU	2x7	1xE5540	2.53	4	2x2GB	1333MHz	2.5"	Battery	6xHot-swap	SATA/SAS <sup>4</sup>	Multi*	Premium	2x675W	2xGb	May 09

\* Multi = RAID-0/1/5/6/10/50/60 support

- **This model has a 3-year limited warranty<sup>1</sup>**
- **Easy to use with ThinkServer EasyStartup and EasyManage software**
- **This small and medium business (SMB) model is part of the US TopSeller™ Program**

Processor(s)	Up to two processors, one processors standard, <b>Intel® Xeon® Processor E5540</b> with <b>quad-core</b> , 5.86GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 1066MHz DDR3 memory controller, and 8MB cache	<b>1U Rack top</b> 	<b>Front</b> 																											
Implementation	Processor uses FC-LGA package, two LGA1366 sockets																													
Memory	<b>4GB</b> std, 128GB max (64GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3**</b> , <b>Advanced ECC***</b> , <b>Memory Mirroring</b> , sixteen 240-pin DIMM sockets, std memory in 1 socket, 15 sockets available****, eight sockets distributed into 3-channel per processor (3-3-2) ** System automatically clocks down for processors with 800MHz or 1066MHz DDR3 memory controller ***Advanced ECC-enable DIMMs required **** Over eight DIMMs requires dual processors	<b>Rear</b> 																												
Graphics	Matrox® G200e, integrated, two VGA DB-15 (front and rear), 8MB; <i>Maximum resolution: 1280x1024@60Hz</i>																													
Disk bays	6 hot-swap (HS) disk bays on 2.5" Slim-Form-Factor (SFF) std																													
Disk Controller	ServeRAID®-MR10i, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID <sup>5</sup> 0, 1, 5, 6, 10, 50 support, Battery backed cache integrated																													
Optical	UltraSlim Enhanced DVD±RW	<ul style="list-style-type: none"> <li>• 1U Mechanical; rack-mount only</li> <li>• Black color front; metal case</li> <li>• 17.3"W x 27.5"D x 1.75"H</li> <li>• 440mm W x 711.4mm D x 43mm H</li> <li>• 34.5 lb (15.6kg) max configuration</li> <li>• Toolless top cover removal</li> <li>• Toolless disk and optical drive removal</li> <li>• Toolless adapter retention</li> <li>• Illuminated front icons with pull-out Easy LED Diagnostics panel</li> </ul> <table border="0"> <tr> <td>Bay 1</td> <td>5.25", 0.5" high,</td> <td>external,</td> <td>std optical</td> </tr> <tr> <td>Bay 2</td> <td>2.5", 0.6" high,</td> <td>external,</td> <td>optional disk</td> </tr> <tr> <td>Bay 3</td> <td>2.5", 0.6" high,</td> <td>external,</td> <td>optional disk</td> </tr> <tr> <td>Bay 4</td> <td>2.5", 0.6" high,</td> <td>external,</td> <td>optional disk</td> </tr> <tr> <td>Bay 5</td> <td>2.5", 0.6" high,</td> <td>external,</td> <td>optional disk</td> </tr> <tr> <td>Bay 6</td> <td>2.5", 0.6" high,</td> <td>external,</td> <td>optional disk</td> </tr> <tr> <td>Bay 7</td> <td>2.5", 0.6" high,</td> <td>external,</td> <td>optional disk</td> </tr> </table> <p>Slot 1: low-profile, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x16</p>	Bay 1	5.25", 0.5" high,	external,	std optical	Bay 2	2.5", 0.6" high,	external,	optional disk	Bay 3	2.5", 0.6" high,	external,	optional disk	Bay 4	2.5", 0.6" high,	external,	optional disk	Bay 5	2.5", 0.6" high,	external,	optional disk	Bay 6	2.5", 0.6" high,	external,	optional disk	Bay 7	2.5", 0.6" high,	external,	optional disk
Bay 1	5.25", 0.5" high,		external,	std optical																										
Bay 2	2.5", 0.6" high,		external,	optional disk																										
Bay 3	2.5", 0.6" high,		external,	optional disk																										
Bay 4	2.5", 0.6" high,		external,	optional disk																										
Bay 5	2.5", 0.6" high,		external,	optional disk																										
Bay 6	2.5", 0.6" high,		external,	optional disk																										
Bay 7	2.5", 0.6" high,		external,	optional disk																										
Ethernet	Two Gigabit Ethernet ports, TCP/IP Offload Engine(TOE), Broadcom® 5709C operated over PCIe bus, load balancing, upgradeable to 4 int ethernet ports via optional daughter card																													
Chipset	<b>Intel 5520 Chipset</b> , Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O																													
Riser card	(See Right) Two PCI Express 2.0 x16 slots std, convertible via optional riser card(s) to 64-bit 133MHz PCI-X																													
Front ports	Two USB 2.0, external monitor (VGA DB-15)																													
Rear ports	Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45)																													
Internal port	One USB connector for embedded hypervisor																													
Diagnostics	Easy LED Diagnostics (pull-out operator information panel with information LED and system-error LED)																													
Systems mgmt	Integrated Management Module (IMM) Premium, IPMI 2.0-compliant, Trusted Platform Module (TPM) 1.2 support																													
Prerequisites	Monitor, keyboard, mouse, SATA/SAS disk, rack, OS																													
Keyboard	None (use USB port)																													
Mouse	None (use USB port)																													
Power supply(s)	Two 675 watts standard, two maximum, variable speed fan, hot-swap, auto-sensing, redundant with two power supplies																													
Cooling	Six fans std, six maximum, variable speed, hot-swap																													
<b>Accessories</b>	<table border="0"> <tr> <td>Intel Xeon Quad-Core Processor E5540</td> <td>67Y0096</td> </tr> <tr> <td>73GB<sup>2</sup> 2.5" SAS SFF HS (15000 rpm)</td> <td>67Y0115</td> </tr> <tr> <td>146GB 2.5" SAS SFF HS (10000 rpm)</td> <td>67Y0116</td> </tr> <tr> <td>300GB 2.5" SAS SFF HS (10000 rpm)</td> <td>67Y0118</td> </tr> <tr> <td>500GB 2.5" SATA SFF HS (7200 rpm)</td> <td>67Y0121</td> </tr> </table> <p>Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a></p>	Intel Xeon Quad-Core Processor E5540	67Y0096	73GB <sup>2</sup> 2.5" SAS SFF HS (15000 rpm)	67Y0115	146GB 2.5" SAS SFF HS (10000 rpm)	67Y0116	300GB 2.5" SAS SFF HS (10000 rpm)	67Y0118	500GB 2.5" SATA SFF HS (7200 rpm)	67Y0121																			
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300GB 2.5" SAS SFF HS (10000 rpm)	67Y0118																													
500GB 2.5" SATA SFF HS (7200 rpm)	67Y0121																													
<b>Max internal capacity</b>	3.0TB with six 500GB SATA SFF disks	<p><b>Power-On Hotkey</b></p> <ul style="list-style-type: none"> <li>• Setup Utility: F1 at startup</li> <li>• Diagnostic: F2 at startup</li> <li>• Network Boot: F12 at startup</li> </ul>																												
<b>Virtualization</b>	Virtualization ready, hypervisor connector embedded	<p><b>Software Management Tools</b></p> <ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> <li>• ThinkServer EasyManage</li> </ul>																												
<b>Limited Warranty<sup>1</sup></b>	<ul style="list-style-type: none"> <li>⇒ <b>3-year parts and labor</b></li> <li>⇒ <b>Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</b></li> <li>⇒ <b>ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a></b> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> </li> <li>⇒ <b>24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</b></li> </ul>	<p><b>Security</b></p> <ul style="list-style-type: none"> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (front or all)</li> </ul> <p>ThinkPlus Priority Support, 90-day Trial</p> <p>RoHS-compliant</p>																												

See footnotes for important warranty information  
US model announced May 5, 2009



# ThinkServer™ RD220 (3798) - TopSeller (8 Disk Bays)

Personal Systems Reference (PSREF)

Name	Type-model	Slot x bay	Proc-essor(s)	GHz	Cores	Memory DIMMs	Memory speed	Disk size	RAID Battery	Disk bays	Disk type	RAID Int	IMM Premium	Power supply(s)	Ethernet	Avail date
RD220	3798-16U	4x9	1xE5502	1.86	2	1x2GB	1333MHz	2.5"	None	8xHot-swap	SATA/SAS <sup>4</sup>	0/1		2x675W	2xGb	May 09
RD220	3798-1FU	4x9	1xE5520	2.26	4	1x2GB	1333MHz	2.5"	None	8xHot-swap	SATA/SAS	Multi*	Premium	2x675W	2xGb	May 09
RD220	3798-1LU	4x9	2xE5540	2.53	8	2x2GB	1333MHz	2.5"	None	8xHot-swap	SATA/SAS	Multi	Premium	2x675W	2xGb	May 09

\* Multi = RAID-0/1/5/6/10/50/60 support

- **These models have a 3-year limited warranty<sup>1</sup>**
- **Easy to use with ThinkServer EasyStartup and EasyManage software**
- **These small and medium business (SMB) models are part of the US TopSeller™ Program**

Processor(s)	Up to two processors, one or two processors standard, <b>Intel® Xeon® Processor E5502</b> with <b>dual-core</b> , 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 800MHz DDR3 memory controller, and 4MB cache or <b>Intel Xeon Processor E5520</b> or <b>E5540</b> with <b>quad-core</b> , 5.86GT/s QPI, 1066MHz DDR3 memory controller, and 8MB cache Processor uses FC-LGA package, two LGA1366 sockets	
Implementation	Memory	
Memory	<b>2GB or 4GB</b> std, 128GB max (64GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3**</b> , <b>Advanced ECC***</b> , <b>Memory Mirroring</b> , sixteen 240-pin DIMM sockets, std memory in 1 or 2 sockets, 15 or 14 sockets available****, eight sockets distributed into 3-channel per processor (3-3-2) ** System automatically clocks down for processors with 800MHz or 1066MHz DDR3 memory controller ***Advanced ECC-enable DIMMs required **** Over eight DIMMs requires dual processors	
Graphics	Matrox® G200e, integrated, two VGA DB-15 (front and rear), 16MB; <i>Maximum resolution: 1280x1024@60Hz</i>	
Disk bays	8 hot-swap (HS) disk bays on 2.5" Slim-Form-Factor (SFF) std	
Disk Controller	<i>16U:</i> ServeRAID®-BR10i, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID® 0, 1 support <i>1FU/1LU:</i> ServeRAID-MR10i, PCIe bus, SATA 3Gb/s, SAS 3Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support	
Optical	UltraSlim Enhanced DVD±RW	
Diskette	None (use USB port)	
Ethernet	Two Gigabit Ethernet ports, Broadcom® 5709C, PCI Express bus, TCP/IP Offload Engine (TOE), load balancing, upgradeable to 4 int ethernet ports via optional daughter card	
Chipset	<b>Intel 5520 Chipset</b> , Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O	
Riser card	(See Right) Four PCI Express 2.0 x8 slots std, convertible via optional riser card(s) to 64-bit 133MHz PCI-X	
Front ports	Two USB 2.0, external monitor (VGA DB-15)	
Rear ports	Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45)	
Internal port	One USB connector for embedded hypervisor	
Diagnostics	Easy LED Diagnostics (pull-out operator information panel with information LED and system-error LED)	
Systems mgmt	Trusted Platform Module (TPM) 1.2 support <i>16U:</i> Integrated Management Module (IMM) std, IPMI 2.0-compliant, upgradeable to IMM Premium <i>1FU/1LU:</i> IMM Premium, IPMI 2.0-compliant	
Prerequisites	Monitor, keyboard, mouse, SATA/SAS disk, rack, OS	
Keyboard	None (use USB port)	
Mouse	None (use USB port)	
Power supply(s)	Two 675 watts standard, two maximum, variable speed fan, hot-swap, auto-sensing, redundant with two power supplies	
Cooling	Three fans std, three maximum, variable speed, hot-swap	
<b>Max internal capacity</b>	4.0TB <sup>2</sup> with eight 500GB SATA SFF disks	
<b>Virtualization</b>	Virtualization ready, hypervisor connector embedded	
<b>Limited Warranty<sup>1</sup></b>		
<ul style="list-style-type: none"> <li>⇒ <b>3-year parts and labor</b></li> <li>⇒ <b>Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</b></li> <li>⇒ <b>ThinkPlus™ services available; see lenovo.com/thinkplus/warranty</b> <ul style="list-style-type: none"> <li>• Onsite service upgrade options (in eligible locations)<sup>7</sup></li> <li>• Post warranty maintenance services</li> </ul> </li> <li>⇒ <b>24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</b></li> </ul>		
<p><b>2U Rack top</b></p> <p><b>Front</b></p> <p><b>Rear</b></p> <ul style="list-style-type: none"> <li>• 2U Mechanical; rack-mount only</li> <li>• Black color front; metal case</li> <li>• 17.5"W x 27.5"D x 3.36"H</li> <li>• 443.6mm W x 698mm D x 85.4mm H</li> <li>• 65 lb (29.5kg) max configuration</li> <li>• Toolless top cover removal</li> <li>• Toolless disk and optical drive removal</li> <li>• Toolless adapter retention</li> <li>• Illuminated front icons with pull-out Easy LED Diagnostics panel</li> </ul> <p>Bay 1 5.25", 0.5" high, external, std optical            Bay 2 2.5", 0.6" high, external, optional disk            Bay 3 2.5", 0.6" high, external, optional disk            Bay 4 2.5", 0.6" high, external, optional disk            Bay 5 2.5", 0.6" high, external, optional disk            Bay 6 2.5", 0.6" high, external, optional disk            Bay 7 2.5", 0.6" high, external, optional disk            Bay 8 2.5", 0.6" high, external, optional disk            Bay 9 2.5", 0.6" high, external, optional disk</p> <p>Slot 1: full-length, full-height, PCI Express 2.0 x8            Slot 2: low-profile, PCI Express 2.0 x8            Slot 3: full-length, full-height, PCI Express 2.0 x8            Slot 4: half-length, full-height, PCI Express 2.0 x8</p> <p style="text-align: center;"><b>Power-On Hotkey</b></p> <ul style="list-style-type: none"> <li>• Setup Utility: F1 at startup</li> <li>• Diagnostic: F2 at startup</li> <li>• Network Boot: F12 at startup</li> </ul> <p style="text-align: center;"><b>Software Management Tools</b></p> <ul style="list-style-type: none"> <li>• ThinkServer EasyStartup</li> <li>• ThinkServer EasyManage</li> </ul> <p style="text-align: center;"><b>Security</b></p> <ul style="list-style-type: none"> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard, mouse, diskette</li> <li>• Serial port I/O control</li> <li>• USB port disablement (front or all)</li> </ul> <p>ThinkPlus Priority Support, 90-day Trial</p> <p>RoHS-compliant</p>		

See footnotes for important warranty information  
US models announced May 5, 2009



# ThinkServer™ RD220 (3798) - TopSeller (Tape Drive)

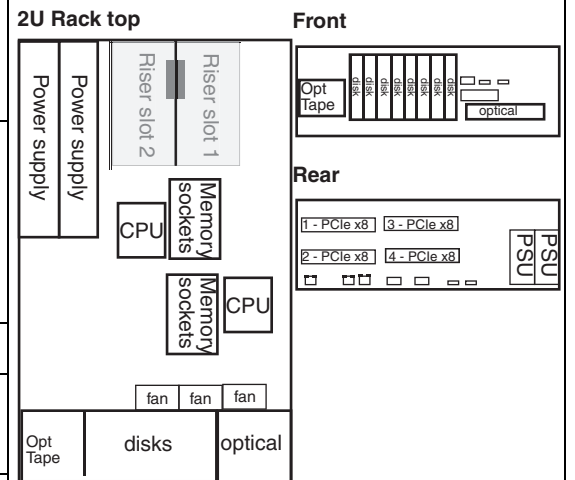
Personal Systems Reference (PSREF)

Name	Type-model	Slot x bay	Proc-essor(s)	GHz	Cores	Memory DIMMs	Memory speed	Disk size	RAID Battery	Disk bays	Disk type	RAID Int	IMM Premium	Power supply(s)	Ethernet	Avail date
<b>RD220</b>	3798-13U	4x10	1xE5506	2.13	4	1x2GB	1333MHz	2.5"	None	8xHot-swap	SATA/SAS <sup>4</sup>	Multi*	None	2x675W	2xGb	May 09

\* Multi = RAID-0/1/5/6/10/50/60 support

- **This model has a 3-year limited warranty<sup>1</sup>**
- **Easy to use with ThinkServer EasyStartup and EasyManage software**
- **This small and medium business (SMB) model is part of the US TopSeller™ Program**

Processor(s)	Up to two processors, one processor standard, <b>Intel® Xeon® Processor E5506</b> with <b>quad-core</b> , 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 800MHz DDR3 memory controller, and 4MB cache
Implementation	Processor uses FC-LGA package, two LGA1366 sockets
Memory	<b>2GB</b> std, 128GB max (64GB per processor), <b>RDIMM, PC3-10600 1333MHz DDR3**</b> , <b>Advanced ECC***</b> , <b>Memory Mirroring</b> , sixteen 240-pin DIMM sockets, std memory in 1 socket, 15 sockets available****, eight sockets distributed into 3-channel per processor (3-3-2) ** System automatically clocks down for processors with 800MHz or 1066MHz DDR3 memory controller ***Advanced ECC-enable DIMMs required **** Over eight DIMMs requires dual processors
Graphics	Matrox® G200e, integrated, two VGA DB-15 (front and rear), 16MB; <i>Maximum resolution: 1280x1024@60Hz</i>
Disk bays	8 hot-swap (HS) disk bays on 2.5" Slim-Form-Factor (SFF) std
Disk Controller	ServeRAID®--MR10i, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID <sup>5</sup> 0, 1, 5, 6, 10, 50, 60 support
Tape backup	Optional, internal/external, 3.5", USB or SATA via disk controller
Optical	UltraSlim Enhanced DVD±RW
Diskette	None (use USB port)
Ethernet	Two Gigabit Ethernet ports, Broadcom® 5709C, PCI Express bus, TCP/IP Offload Engine(TOE), load balancing, upgradeable to 4 int ethernet ports via optional daughter card
Chipset	<b>Intel 5520 Chipset</b> , Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O
Riser card	(See Right) Four PCI Express 2.0 x8 slots std, convertible via optional riser card(s) to 64-bit 133MHz PCI-X
Front ports	Two USB 2.0, external monitor (VGA DB-15)
Rear ports	Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45),
Internal port	One USB connector for embedded hypervisor
Diagnostics	Easy LED Diagnostics (pull-out operator information panel with information LED and system-error LED)
Systems mgmt	Integrated Management Module (IMM) std, IPMI 2.0-compliant, Trusted Platform Module (TPM) 1.2 support, upgradeable to IMM Premium
Prerequisites	Monitor, keyboard, mouse, SATA/SAS disk, rack, OS
Keyboard	None (use USB port)
Mouse	None (use USB port)
Power supply(s)	Two 675 watts standard, two maximum, variable speed fan, hot-swap, auto-sensing, redundant with two power supplies
Cooling	Three fans std, three maximum, variable speed, hot-swap



- 2U Mechanical; rack-mount only
  - Black color front; metal case
  - 17.5"W x 27.5"D x 3.36"H
  - 443.6mm W x 698mm D x 85.4mm H
  - 65 lb (29.5kg) max configuration
  - Toolless top cover removal
  - Toolless disk and optical drive removal
  - Toolless adapter retention
  - Illuminated front icons with pull-out Easy LED Diagnostics panel
- | Bay    | Width | Height    | Configuration | Drive Type    |
|--------|-------|-----------|---------------|---------------|
| Bay 1  | 5.25" | 0.5" high | external      | std optical   |
| Bay 2  | 2.5"  | 0.6" high | external      | optional disk |
| Bay 3  | 2.5"  | 0.6" high | external      | optional disk |
| Bay 4  | 2.5"  | 0.6" high | external      | optional disk |
| Bay 5  | 2.5"  | 0.6" high | external      | optional disk |
| Bay 6  | 2.5"  | 0.6" high | external      | optional disk |
| Bay 7  | 2.5"  | 0.6" high | external      | optional disk |
| Bay 8  | 2.5"  | 0.6" high | external      | optional disk |
| Bay 9  | 2.5"  | 0.6" high | external      | optional disk |
| Bay 10 | 3.5"  | 1.6" high | external      | optional tape |
- Slot 1: full-length, full-height, PCI Express 2.0 x8
  - Slot 2: low-profile, PCI Express 2.0 x8
  - Slot 3: full-length, full-height, PCI Express 2.0 x8
  - Slot 4: half-length, full-height, PCI Express 2.0 x8

Accessories	
Intel Xeon Quad-Core Processor E5506	67Y0005
2GB PC3-10600 DDR3 1333 MHz RDIMM	67Y0015
300GB <sup>2</sup> 2.5" SAS SFF HS (10000 rpm)	67Y0118
500GB 2.5" SATA SFF HS (7200 rpm)	67Y0121
Lenovo® TV L151 15-inch Analog TFT Monitor	9165AC6
Other accessories at <a href="http://lenovo.com/accessories">lenovo.com/accessories</a>	

Max internal capacity
4.0TB with eight 500GB SATA SFF disks

Virtualization
Virtualization ready, hypervisor connector embedded

Limited Warranty <sup>1</sup>
⇒ <b>3-year parts and labor</b>
⇒ <b>Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts<sup>3</sup>, 8 am - 5 pm, Mon - Fri coverage excluding holidays)</b>
⇒ <b>ThinkPlus™ services available; see <a href="http://lenovo.com/thinkplus/warranty">lenovo.com/thinkplus/warranty</a></b>
• Onsite service upgrade options (in eligible locations) <sup>7</sup>
• Post warranty maintenance services
⇒ <b>24 hour x 7 day<sup>14</sup> toll-free support during the warranty period<sup>1</sup> via 800-426-7378</b>

Power-On Hotkey
• Setup Utility: F1 at startup
• Diagnostic: F2 at startup
• Network Boot: F12 at startup

Software Management Tools
• ThinkServer EasyStartup
• ThinkServer EasyManage

Security
• Power-on password
• Administrator password
• Boot sequence control
• Boot without keyboard, mouse, diskette
• Serial port I/O control
• USB port disablement (front or all)

ThinkPlus Priority Support, 90-day Trial
RoHS-compliant

See footnotes for important warranty information  
US model announced May 5, 2009

**Partial list of accessories supported on Lenovo® ThinkServer TD200, TD200x, RD210, RD220**

ThinkServer Ready accessories are available through Lenovo Business Partners. Locate a Business Partner near you at: [bplocator.lenovo.com](http://bplocator.lenovo.com)

**Processors<sup>55</sup>**

*TD200:*

Intel® Xeon® Dual-Core Processor E5502	67Y0008	ann	10/06/09
Intel Xeon Quad-Core Processor E5504	67Y0009	ann	10/06/09
Intel Xeon Quad-Core Processor E5506	67Y0010	ann	10/06/09

*TD200x:*

Intel Xeon Quad-Core Processor E5520	67Y0011	ann	06/30/09
Intel Xeon Quad-Core Processor E5530	67Y0102	ann	06/30/09
Intel Xeon Quad-Core Processor E5540	67Y0103	ann	03/02/10

*RD210, RD220:*

Intel Xeon Dual-Core Processor E5502	67Y0004	ann	05/05/09
Intel Xeon Quad-Core Processor E5504	67Y0007	ann	05/05/09
Intel Xeon Quad-Core Processor E5506	67Y0005	ann	05/05/09
Intel Xeon Quad-Core Processor E5520	67Y0006	ann	05/05/09
Intel Xeon Quad-Core Processor E5540	67Y0096	ann	05/05/09

<sup>55</sup> Additional Processor must match the existing processor

**Memory**

1GB PC3-10600 DDR3 ECC RDIMM	67Y0014	ann	05/05/09
2GB PC3-10600 DDR3 ECC RDIMM	67Y0015	ann	05/05/09
4GB PC3-10600 DDR3 ECC RDIMM	67Y0016	ann	05/05/09

**Backup**

*All:*

IBM® RDX 160GB Cartridge	67Y0169	ann	11/10/09
IBM RDX 320GB Cartridge	67Y0170	ann	11/10/09
IBM RDX 500GB Cartridge	67Y0171	ann	11/10/09

*RD210, RD220:*

IBM LTO Generation 3 5-Pack Media	67Y1379	ann	11/10/09
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**ThinkServer IBM RAID controller**

SAS 3Gb HBA Controller V2	67Y0183	ann	11/10/09
ServeRAID® M1015	67Y1368	ann	12/08/09
ServeRAID M5015	67Y0184	ann	11/10/09
ServeRAID M5014	67Y0185	ann	11/10/09
ServeRAID M1000 Series Adv Feature Key	67Y1369	ann	12/08/09
ServeRAID M5000 Series Battery Kit	67Y0186	ann	11/10/09
ServeRAID M5000 Series Adv Feature Key	67Y0188	ann	12/08/09

**Connectivity**

IBM 8Gb FC Single-port HBA by QLogic®	67Y0172	ann	11/10/09
IBM 8Gb FC Dual-port HBA by QLogic	67Y0173	ann	11/10/09
IBM 8Gb FC Single-port HBA by Emulex®	67Y0174	ann	11/10/09
IBM 8Gb FC Dual-port HBA by Emulex	67Y0175	ann	11/10/09
IBM 8Gb FC Single-port HBA by Brocade®	67Y0176	ann	11/10/09
IBM 8Gb FC Dual-port HBA by Brocade	67Y0177	ann	11/10/09

**Keyboard**

Preferred Pro USB Keyboard	73P5220	ann	06/21/05
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**Mouse**

Lenovo Optical Mouse (USB)	06P4069	ann	05/21/03
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**Disk Drive**

*All:*

*2.5" SAS Hot-swap (HS):*

73GB² 2.5" SAS SFF HS (15000 rpm)	67Y0115	ann	05/05/09
146GB 2.5" SAS SFF HS (10000 rpm)	67Y0116	ann	05/05/09
146GB 2.5" SAS SFF HS (15000 rpm)	67Y0117	ann	05/05/09
300GB 2.5" SAS SFF HS (10000 rpm)	67Y0118	ann	05/05/09

*2.5" SATA HS:*

300GB 2.5" SATA SFF HS (10000 rpm)	67Y0002	ann	05/05/09
160GB 2.5" SATA SFF HS (7200 rpm)	67Y0120	ann	09/08/09
500GB 2.5" SATA SFF HS (7200 rpm)	67Y0121	ann	09/08/09

*3.5" SAS HS:*

146GB 3.5" SAS HS (15000 rpm)	45J6211	ann	09/30/08
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*3.5" SATA HS:*

160GB 3.5" SATA HS (7200 rpm)	45J6200	ann	09/30/08
250GB 3.5" SATA HS (7200 rpm)	45J6201	ann	09/30/08
500GB 3.5" SATA HS (7200 rpm)	45J6202	ann	09/30/08
750GB 3.5" SATA HS (7200 rpm)	45J6203	ann	09/30/08
1TB 3.5" SATA HS (7200 rpm)	45J6204	ann	09/30/08

*3.5" SATA Simple-swap:*

160GB 3.5" SATA Simple-swap (7200 rpm)	45J6195	ann	09/30/08
250GB 3.5" SATA Simple-swap (7200 rpm)	45J6196	ann	09/30/08
500GB 3.5" SATA Simple-swap (7200 rpm)	45J6197	ann	09/30/08
750GB 3.5" SATA Simple-swap (7200 rpm)	45J6198	ann	09/30/08

*TD200:*

*3.5" 6Gb/s SAS HS:*

300GB 3.5" SAS HS (15000 rpm)	67Y1384	ann	01/26/10
450GB 3.5" SAS HS (15000 rpm)	67Y1385	ann	01/26/10
600GB 3.5" SAS HS (15000 rpm)	67Y1386	ann	01/26/10

For more information on server accessories, please visit:  
[www.lenovo.com/support/accessories](http://www.lenovo.com/support/accessories)  
[www.lenovo.com/support/thinkserveraccessories](http://www.lenovo.com/support/thinkserveraccessories)  
[www.lenovo.com/support/security](http://www.lenovo.com/support/security)

Other accessories at [www.lenovo.com/accessories](http://www.lenovo.com/accessories)

Accessories Guide pdf at [www.lenovo.com/accessoriesguide](http://www.lenovo.com/accessoriesguide)

**Partial list of Lenovo® ThinkPlus Services for ThinkServer™ TD200x, RD210, RD220**

For more information see:

[http://www.lenovo.com/services\\_warranty/us/en/index.html](http://www.lenovo.com/services_warranty/us/en/index.html)

**Training classes**

- The basics on components, diagnostics, troubleshooting, and managing Lenovo servers, delivered in interactive online format

Online Training, Understanding Lenovo Servers	45K4080
Online Training, Understanding Systems Management	45K4081
Installation, ThinkServer Hardware Only	45K4082

**ThinkPlus service upgrade options<sup>7</sup>**

LOR = *Lenovo Onsite Repair*

**TD200x with 1-year warranty**

3-year LOR 9x5 Next Business Day	45K4062
3-year LOR 9x5 4 hour response	45K4063
4-year LOR 9x5 Next Business Day	51J0731
4-year LOR 9x5 4 hour response	51J0732
5-year LOR 9x5 Next Business Day	51J0733
5-year LOR 9x5 4 hour response	51J0734

**TD200x with 3-year warranty**

3-year LOR 9x5 4 hour response	45K4066
4-year LOR 9x5 Next Business Day	51J0735
4-year LOR 9x5 4 hour response	51J0736
5-year LOR 9x5 Next Business Day	51J0737
5-year LOR 9x5 4 hour response	51J0738

**RD210, RD220 with 1-year warranty**

3-year LOR 9x5 Next Business Day	45K5305
3-year LOR 9x5 4 hour response	45K5306
4-year LOR 9x5 Next Business Day	51J0747
4-year LOR 9x5 4 hour response	51J0748
5-year LOR 9x5 Next Business Day	51J0749
5-year LOR 9x5 4 hour response	51J0750

**RD210, RD220 with 3-year warranty**

3-year LOR 9x5 4 hour response	45K4076
4-year LOR 9x5 Next Business Day	51J0751
4-year LOR 9x5 4 hour response	51J0752
5-year LOR 9x5 Next Business Day	51J0753
5-year LOR 9x5 4 hour response	51J0754

**ThinkPlus Priority Support**

- 9x5 Next Business Day response Lenovo Onsite Repair
- 24x7 4-hour response Lenovo Onsite Repair (for Priority 4 Support)
- 24x7 support with priority routing and advanced level technicians

**TD200x with 1-year warranty**

3-year Priority Support	45K4064
3-year Priority 4 Support	45K4065

**TD200x with 3-year warranty**

3-year Priority Support	45K4067
3-year Priority 4 Support	45K4068

**RD210, RD220 with 1-year warranty**

3-year Priority Support	45K5307
3-year Priority 4 Support	45K5308

**RD210, RD220 with 3-year warranty**

3-year Priority Support	45K4077
3-year Priority 4 Support	45K4078

**ThinkPlus Priority Support with Hard Disk Drive Retention**

- 9x5 Next Business Day response Lenovo Onsite Repair
- 24x7 4-hour response Lenovo Onsite Repair (for Priority 4 Support)
- 24x7 support with priority routing and advanced level technicians
- Hard Disk Drive Retention (HDDR) means customer keeps disk

HDDR = *Hard Disk Drive Retention*

**TD200x with 1-year warranty**

3-year Priority Support with HDDR	45K5445
3-year Priority 4 Support with HDDR	45K5446

**TD200x with 3-year warranty**

3-year Priority Support with HDDR	45K5447
3-year Priority 4 Support with HDDR	45K5448

**RD210, RD220 with 1-year warranty**

3-year Priority Support with HDDR	45K5453
3-year Priority 4 Support with HDDR	45K5454

**RD210, RD220 with 3-year warranty**

3-year Priority Support with HDDR	45K5455
3-year Priority 4 Support with HDDR	45K5456

**ThinkPlus Productivity**

- Priority Support
- Online Training, Understanding Lenovo Servers
- One-time hardware installation

3-year ThinkPlus Productivity, TD200x (1-year)	45K4088
3-year ThinkPlus Productivity, TD200x (3-year)	45K4090
3-year ThinkPlus Productivity, RD210, RD220 (1-year)	45K5309
3-year ThinkPlus Productivity, RD210, RD220 (3-year)	45K4096



**Microsoft® Windows Server® for Lenovo ThinkServer**  
(ROK = Reseller Option Kits)

**All Lenovo ThinkServer:**

*English language*

Small Business Server 2008 Std SP2 ROK (64, 4GB) <sup>61</sup>	84978ME
Small Business Server 2008 Premium SP2 ROK (64, 4GB)	84978NE
Server 2008 R2 Standard ROK (64) <sup>62</sup>	84978KE
Server 2008 R2 Enterprise ROK (64)	84978LE

*French language*

Server 2008 Standard ROK (32, 64) <sup>60</sup>	84978BF
Server 2008 Enterprise ROK (32, 64)	84978DF
Small Business Server 2008 Standard SP2 ROK (64, 4GB)	84978MF

*Spanish language*

Server 2008 Standard ROK (32, 64)	84978BS
Server 2008 Enterprise ROK (32, 64)	84978DS

*German language*

Server 2008 Standard ROK (32, 64)	84978BG
Server 2008 Enterprise ROK (32, 64)	84978DG
Server 2008 R2 Standard ROK (64)	84978KG
Server 2008 R2 Enterprise ROK (64)	84978LG
Small Business Server 2008 Standard SP2 ROK (64, 4GB)	84978MG

*Multi-Language (English/Japanese)*

Server 2008 R2 Standard ROK (64)	84978OA
Server 2008 R2 Enterprise ROK (64)	84978PA

*Multi-Language (English/French/Italian/German/Spanish)*

Server 2008 R2 Standard ROK (64)	84978OE
Server 2008 R2 Enterprise ROK (64)	84978PE

**TS200, RS210:**

*Multi-Language (English/Japanese)*

Server 2008 R2 Foundations ROK (64)	84978HA
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*Multi-Language (English/French/Italian/German/Spanish)*

Server 2008 R2 Foundations ROK (64)	84978HE
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<sup>60</sup> 32, 64 = available in both 32-bit and 64-bit  
<sup>61</sup> 64, 4GB = available in 64-bit only, 4GB memory required  
<sup>62</sup> 64 = available in 64-bit only

**Microsoft Windows Client Access License(s)**

*Multi-Language*

Server 2008 1 user	849781A
Server 2008 5 user	849785A
Server 2008 Terminal Services 5 user	849785B
Small Business Server 2008 Standard 1 user	849781C
Small Business Server 2008 Standard 5 user	849785C
Small Business Server 2008 Premium 1 user	849781D
Small Business Server 2008 Premium 5 user	849785D

**Novell® Server Software - SLES for Lenovo ThinkServer**  
(SLES = SUSE® Linux® Enterprise Server)

1-year SLES plus 1-year Standard support	55Y7037
1-year SLES plus 1-year Priority support	55Y7038
3-year SLES plus 3-year Standard support	55Y7039
3-year SLES plus 3-year Priority support	55Y7040

**Availability:** All offers 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.

**Warranty:** For a copy of applicable product warranties, write to: Warranty Information, 500 Park Offices Drive, RTP, NC, 27709, Attn: Dept ZPYA/B600. Lenovo makes no representation or warranty regarding third party products or services.

- <sup>1</sup> **Limited warranty:** Support unrelated to a warranty issue may be subject to additional charges.
- <sup>2</sup> **Hard drive:** GB = billion bytes, TB = trillion bytes. Accessible capacity is less.
- <sup>3</sup> **Systems with limited onsite service** are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by Lenovo. Lenovo will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by Lenovo for onsite replacement. For a list of onsite replaceable parts, contact Lenovo. In the United States call 1-800-426-7378. Support unrelated to a warranty issue may be subject to additional charges.
- <sup>4</sup> **SATA/SAS:** The system configuration supports the installation of either SATA or SAS disks. A configuration including both SATA and SAS disks is not supported.
- <sup>7</sup> **ThinkPlus Services:** These services are available for machines normally used for business, professional, or trade purposes, rather than personal, family, or household purposes. Not all machine types and models are covered. Service period begins with the equipment date of purchase. Service must be purchased during the original limited product warranty period. Service levels are response time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), a part will be express shipped to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. P&L means parts and labor. P/U means pick-up. See ThinkPlus terms and conditions for complete details and restrictions.

<sup>8</sup> **RAID:** Supported RAID levels for a system will vary from the stated capabilities of the RAID controller due to dependencies on the number and capacity of physical disks in the system and on customer requirements for performance, fault tolerance, or data redundancy.

RAID levels and requirements:

- **RAID 0 (striping)** provides increased performance by writing data across multiple drives.
- **RAID 1 (mirroring)** provides fault tolerance by writing the data on two drives.
- **RAID 5 (striping with parity)** uses distributed parity data to provide fault tolerance more efficiently than RAID 1. Requires three or more drives.
- **RAID 6 (striped set with dual distributed parity)** provides fault tolerance from two drive failures; array continues to operate with up to two failed drives. Requires four drives.
- **RAID 10 (or RAID 1+0)** combines RAID 1 and RAID 0 to create a stripe of mirrors that is fault tolerant while offering increased performance. Requires four drives.
- **RAID 50 (or RAID 5+0)** combines RAID 5 and RAID 0 to create block-level striping with distributed parity improving performance over RAID 5. Requires six drives.
- **RAID 60 (or RAID 6+0)** combines RAID 6 and RAID 0 to create block-level striping with distributed double parity improving performance over RAID 6. Requires eight drives.

<sup>14</sup> **Response times may vary.** May exclude some holidays. Telephone support may be subject to additional charges.



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