

Personal Systems Reference Lenovo® ThinkServer® Servers 2011 to 2013 - withdrawn

Januray 2014 - Version 449 (Western Europe)



Lenovo ThinkServer 200 Series Family

ThinkServer





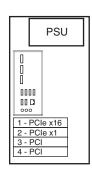


Type- model	Slot x bay	Processor	GHz	Cores / Threads	Memory DIMMs	Memory speed	Disk(s)		Pre-con RAID	f Disk bays	SATA optical	Graphics adapter(s)	Windows Server preload	Power supply(s)
1106-1G	G4x4	Xeon E3-1225	3.1	4C/4T	1x4GB	1333MHz	1x500GB	3.5"		2xDirect Cable	DVD±RW	/ Intel HD		280W
1106-A10	G 4x4	Xeon E3-1235	3.2	4C/8T	1x4GB	1333MHz	2x500GB	3.5"	1	2xDirect Cable	DVD±RW	/ Intel HD		280W
1106-1H	G 4x4	Xeon E3-1235	3.2	4C/8T	1x4GB	1333MHz	2x250GB	3.5"	1	2xDirect Cable	DVD±RW	Intel HD :	2008 Foundation	s 280W
1106-1E	G 4x4	Core i3-2120	3.3	2C/4T	1x2GB	1333MHz	1x500GB	3.5"		2xDirect Cable	DVD±RW	/ Intel HD		280W

- True server-class reliability and performance at desktop price
- These small and medium business (SMB) models are part of the EMEA TopSeller™ Program
- These models have a 3-year limited warranty

Processor Implementation	Intel® Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon® E3-1225 processor (4C/4T, 3.1GHz, 6MB Cache), Turbo Boost 2.0 (up to 3.4GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon E3-1235 processor (4C/8T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Processor in LGA1155 socket, up to one processor
Memory Additional memory disclaimers	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on proccessor memory controller speed and installed memory speed
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable 250GB or 500GB , SATA 3.0Gb/s, 7200 rpm, 3.5" Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors
Chipset Front ports Rear ports Audio Ethernet Security chip Diagnostics	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front)

Tower optical optical disk disk



- Raven black color; metal case
 6.9"W x 16.0"D x 14.9"H
- 175mm W x 407mm D x 377mm H
- 24.7 lb (11.2kg) max configuration
- 25-liter
- · Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons

Disk Bays

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Expansion Slots

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

Intel AMT

Intel AMT 7.0 with KVM support is available on model(s) with Xeon processor

Software Management Tools

ThinkServer EasyStartup

Power-On Hotkey

- Setup Utility: F1 at startupDiagnostic: F2 at startup
- Network Boot: F12 at startup
- RAID Configuration Utility: Ctrl+I at startup

Security

- Security chip (see information on left)
 Padlock loop (in rear for opt padlock;
- padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password Boot sequence control
- Boot without keyboard, mouse, diskette
- Serial port I/O control
- · USB port disablement (front or all)

ENERGY STAR® Server 1.1-compliant RoHS-compliant

Preloaded Operating System

Some: Genuine Windows Server® 2008 R2 Foundations

Max internal capacity

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

- 3-year parts and labor
- Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, during normal country office hours e.g. 8 am 5 pm, Mon Fri coverage excluding holidays, next business day response time)
- Onsite service upgrade options available (in eligible locations)
- Lenovo Priority Support Package available
- A-La-Carte Lenovo Services available
- **Online Data Backup**
- Onsite Hardware Installation
- Online Training

Type- model	Slot x bay	Processor	GHz	Cores / Threads	Memory DIMMs	Memory speed	Disk(s)	Disk size	Pre-con RAID	nf Disk bays	SATA optical	Graphics adapter(s)	Windows Server preload	Power supply(s)
1106-30	G 4v4	Xeon F3-1235	32	4C/8T	1y4GR	1333MHz	2v500GB	3 5"	1	2vDirect Cable	DVD+RV	V Intal HD	2008 Foundation	s 280W/

- True server-class reliability and performance at desktop price
 This small and medium business (SMB) model is part of the EMEA TopSeller™ Program
- This model has a 3-year limited warranty

Implementation Memory Additional memory disclaimers	Intel® Xeon® E3-1235 processor (4C/8T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Processor in LGA1155 socket, up to one processor 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on proccessor memory controller speed and installed memory speed	optical
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	1 - PCle x16 2 - PCle x1
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable 500GB , SATA 3.0Gb/s, 7200 rpm, 3.5" Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	disk 3 - PCI 4
Chipset Front ports Rear ports Audio	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort	24.7 lb (11.2kg) max configuration 25-liter Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons
Ethernet Security chip Diagnostics	High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)	Disk Bays Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front)	Expansion Slots 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
		Intel AMT Intel AMT 7.0 with KVM support is available on model(s) with Xeon processor
		Software Management Tools

Preloaded Operating System

Genuine Windows Server® 2008 R2 Foundations

Max internal capacity

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

- ⇒ 3-year parts and labor
- Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, during normal country office hours e.g. 8 am 5 pm, Mon Fri coverage excluding holidays, next business day response time)
- Onsite service upgrade options available (in eligible locations)⁷
 Lenovo Priority Support Package available
 A-La-Carte Lenovo Services available
- - **Online Data Backup**
 - Onsite Hardware Installation
- · Online Training

• ThinkServer EasyStartup

Power-On Hotkey

- Setup Utility: F1 at startupDiagnostic: F2 at startupNetwork Boot: F12 at startup
- RAID Configuration Utility: Ctrl+I at startup

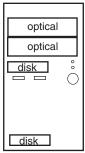
- Security chip (see information on left)Padlock loop (in rear for opt padlock;
- padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- · Boot without keyboard, mouse, diskette
- Serial port I/O control
- · USB port disablement (front or all)

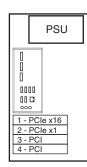
Type- model	Processor(s)	Memory speed	Memory DIMMs	Pre-conf RAID	Disk bays	Disk size	Disk(s)	SATA optical	Graphics adapter(s)	Windows Server preload	Power Supply	Ann date (mm/dd/yy)
1106-B4G	Xeon E3-1225V2	1333MHz	1x4GB		2xDirect Cable	3.5"	1x500GB	DVD±RW	Intel HD		280W	09/11/12
1106-B6G	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD±RW	Intel HD	2008 Foundations	280W	09/11/12
1106-B7G	Xeon E3-1245V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD±RW	Intel HD		280W	09/11/12
1106-B5G	i Core i3-3220	1333MHz	1x4GB		2xDirect Cable	3.5"	1x500GB	DVD±RW	Intel HD		280W	09/25/12

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- These models have a 3-year limited warranty

Processor Implementation	Intel® Xeon® E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Intel Xeon E3-1245V2 processor (4C/8T, 3.4GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.8GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Intel Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Processor in LGA1155 socket, up to one processor	
Memory Additional memory disclaimers	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed	
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable 500GB , SATA 6.0Gb/s, 7200 rpm, 3.5" Super Multi-Burner DL DVD±RW SATA 1.5Gb/s DriveSerial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	
Chipset Front ports Rear ports Audio Ethernet Security chip Diagnostics	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)	
Keyboard Mouse	None (use USB port) None (use USB port)	L
Power supply Cooling	One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front)	

Tower





- Raven black color; metal case6.9"W x 16.0"D x 14.9"H
- 175mm W x 407mm D x 377mm H • 24.7 lb (11.2kg) max configuration
- 25-liter
- · Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons

Disk Bays

5.25", 1.6" high, external, for optical Bav 1 3.5", 1" high, external, open (optical/tape) internal, for disk 3.5", 1" high, internal, for disk Bay 2 Ваў з

Bay 4

Expansion Slots

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

Intel AMT

Intel AMT is supported on Xeon-model(s)

Software Management Tools

ThinkServer EasyStartup

Power-On Hotkey

- Setup Utility: F1 at startup
- Diagnostic: F2 at startup
- Network Boot: F12 at startup
- RAID Configuration Utility: Ctrl+I at startup

- Security chip (see information on left)Padlock loop (in rear for opt padlock;
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- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- · Boot without keyboard, mouse, diskette
- · Serial port I/O control
- · USB port disablement (front or all)

ENERGY STAR® Server 1.1-compliant RoHS-compliant

Preloaded Operating System

Genuine Windows Server® 2008 R2 Foundations 2008 Foundations:

Max internal capacity

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

- 3-year parts and labor
- Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, during normal country office hours e.g. 8 am 5 pm, Mon Fri coverage excluding holidays, next business day response time)
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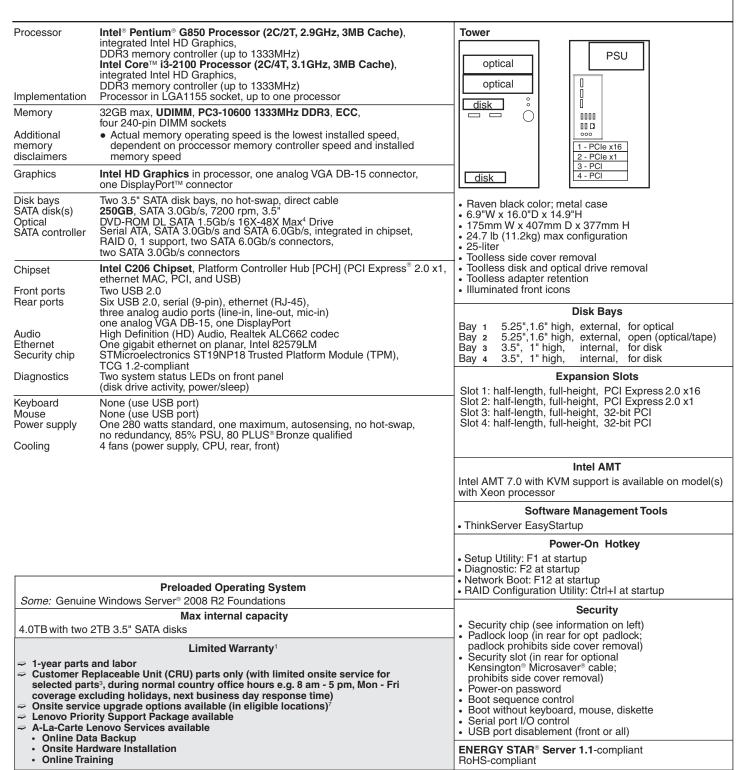
Type-		Memory		Pre-conf	Disk	Disk		SATA	Graphics	Windows Server	Ann date
model	Processor(s)	speed	DIMMs	RAID	bays	size	Disk(s)	optical	adapter(s)	preload	(mm/dd/yy)
1106-F5G	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD±RW	Intel HD	2012 Foundation	02/05/13

- True server-class reliability and performance at desktop price
 Part of the EMEA TopSeller™ Program
 3-year limited warranty¹

Processor Intel® Xeon® E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz)	DCII
Implementation Processor in LGA1155 socket, up to one processor optical	PSU
Memory 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed Optical	
Graphics Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	
Disk bays SATA disk(s) Optical SATA controller SATA controller SATA disk bays, no hot-swap, direct cable 500GB, SATA 6.0Gb/s, 7200 rpm, 3.5" Super Multi-Burner DL DVD±RW SATA 1.5Gb/s DriveSerial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors Two 3.5" SATA disk bays, no hot-swap, direct cable 500GB, SATA 6.0Gb/s, 7200 rpm, 3.5" Super Multi-Burner DL DVD±RW SATA 1.5Gb/s DriveSerial ATA, SATA 4.PCI 4.P	
Chipset Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Front ports Rear ports Rear ports Audio Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec	ration
Ethernet One gigabit ethernet on planar, Intel 82579LM Disk B	•
Diagnostics Two system status LEDs on front panel Bay 3 3.5", 1" high, interr	nal, for optical nal, open (optical/tape) nal, for disk nal, for disk
Keyboard Mouse Power supply Cooling None (use USB port) None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front) Expansio Slot 1: half-length, full-height, Slot 2: half-length, full-height, Slot 3: half-length, full-height, Slot 4: half-length, full-height,	PCI Express 2.0 x16 PCI Express 2.0 x1 32-bit PCI
Intel AMT is supported on Xeor	
Software Manag ThinkServer EasyStartup	gement Tools
Power-On Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup RAID Configuration Utility: Ct	·
Preloaded Operating System 2012 Foundation: Genuine Windows Server® 2012 Foundation • RAID Configuration Utility: Ctr	·
	•
4.0TB with two 2TB 3.5" SATA disks • Padlock loop (in rear for opt padlock prohibits side cover)	padlock; removal)
Limited Warranty¹ 3-year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, during normal country office hours e.g. 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time) Onsite service upgrade options available (in eligible locations)² Lenovo Priority Support Package available	ole; se, diskette
 A-La-Carte Lenovo Services available Online Data Backup Onsite Hardware Installation USB port disablement (front of the properties of the pr	

Type- Slot model ba	_	GHz	Cores / Threads	Memory DIMMs	Memory speed	Disk(s)	Pre-cor RAID	f Disk bays	SATA optical	Graphics adapter(s)	Windows Server preload	Power supply(s)
	Pentium G850 Core i3-2100	2.9 3.1	2C/2T 2C/4T	1x2GB 1x2GB		1x250GB 2x250GB		2xDirect Cable 2xDirect Cable	DVD DVD	Intel HD Intel HD	2008 Foundations	280W s 280W

- . True server-class reliability and performance at desktop price
- These small and medium business (SMB) models are part of the EMEA TopSeller™ Program
- These models have a 1-year limited warranty

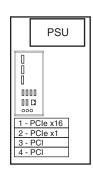


Type- model	Slot x bay	Processor	GHz	Cores / Threads	Memory DIMMs	Memory speed	Disk(s)	Disk size	Pre-conf RAID	Disk bays	SATA optical	Graphics adapter(s)		Power supply(s)
		Pentium G850	2.9		1x2GB	1333MHz	1x500GB	3.5"		2xDirect Cable		Intel HD		280W
1105-35G	4x4	Core i3-2100	3.1	2C/4T	1x2GB	1333MHz	2x500GB	3.5"	1	2xDirect Cable	DVD	Intel HD	2008 Foundations	280W
1105-36G	4x4	Xeon E3-1225	3.1	4C/4T	1x4GB	1333MHz	2x500GB	3.5"	1	2xDirect Cable	DVD	Intel HD	2008 Foundations	280W
1105-37G	4x4	Core i3-2120	3.3	2C/4T	1x2GB	1333MHz	1x500GB	3.5"		2xDirect Cable	DVD	Intel HD		280W
1105-38G	4x4	Xeon E3-1275	3.4	4C/8T	1x4GB	1333MHz		3.5"		2xDirect Cable	DVD	Intel HD		280W

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- These models have a 1-year limited warranty

Processor Intel® Pentium® G850 Processor (2C/2T, 2.9GHz, 3MB Cache), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Core™ i3-2100 Processor (2C/4T, 3.1GHz, 3MB Cache), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Core i3-2120 Processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon® E3-1225 processor (4C/4T, 3.1GHz, 6MB Cache), Turbo Recet 3.0 (up to 3.40 Up) interest in the second controller (up to 1333MHz) Turbo Boost 2.0 (up to 3.4GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon E3-1275 processor (4C/8T, 3.4GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.8GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Implementation Processor in LGA1155 socket, up to one processor Memory 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets Additional • Actual memory operating speed is the lowest installed speed, dependent on proccessor memory controller speed and installed memory disclaimers memory speed Graphics Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector Two 3.5" SATA disk bays, no hot-swap, direct cable Some: **500GB**, SATA 3.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, Disk bays SATA dísk(s) Optical SATA controller RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, Chipset ethernet MAC, PCI, and USB) Two USB 2.0 Front ports Six USB 2.0, serial (9-pin), ethernet (RJ-45), Rear ports three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec Audio One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), Ethernet Security chip TCG 1.2-compliant Diagnostics Two system status LEDs on front panel (disk drive activity, power/sleep) Keyboard None (use USB port) None (use USB port) Mouse One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front) Power supply Cooling

Tower optical optical disk 0



- Raven black color; metal case
 6.9"W x 16.0"D x 14.9"H
- 175mm W x 407mm D x 377mm H • 24.7 lb (11.2kg) max configuration
- 25-liter

disk

- Toolless side cover removal
- · Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons

Disk Bays

5.25", 1.6" high, external, for optical Bay 1 3.5", 1" high, external, open (optical/tape) internal, for disk 3.5", 1" high, internal, for disk Bay 2 Bay 3 Bay 4

Expansion Slots

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

Intel AMT

Intel AMT 7.0 with KVM support is available on model(s) with Xeon processor

Software Management Tools

ThinkServer EasyStartup

Power-On Hotkey

- Setup Utility: F1 at startupDiagnostic: F2 at startup
- Network Boot: F12 at startup
- RAID Configuration Utility: Ctrl+I at startup

Security

- Security chip (see information on left)
 Padlock loop (in rear for opt padlock;
- padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- · Boot without keyboard, mouse, diskette
- Serial port I/O control
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ENERGY STAR® Server 1.1-compliant RoHS-compliant

Preloaded Operating System

Some: Genuine Windows Server® 2008 R2 Foundations

Max internal capacity

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

- 1-year parts and labor
- Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts3, during normal country office hours e.g. 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time)
- Onsite service upgrade options available (in eligible locations)
- Lenovo Priority Support Package available
 A-La-Carte Lenovo Services available
- **Online Data Backup**
- Onsite Hardware Installation
- **Online Training**

Type-		Memory Memory Pre-conf		Disk	Disk		SATA Graphics		Windows Server	Power	Ann date	
model	Processor(s)	speed	DIMMs	RAID	bays	size	Disk(s)	optical	adapter(s)	preload	Supply	(mm/dd/yy)
1105-42G	E3-1225	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 R2 STD	280W	02/14/12
1105-43G	E3-1225	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011 Essentials	280W	02/28/12
1105-44G	E3-1225	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011	280W	02/28/12

- True server-class reliability and performance at desktop price
 Part of the EMEA TopSeller™ Program
- 1-year limited warranty¹

Processor	Intel® Xeon® E3-1225 processor (4C/4T, 3.1GHz, 6MB Cache), Turbo Boost 2.0 (up to 3.4GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Processor in LGA1155 socket, up to one processor	Tower PSU
Implementation Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed	optical
Additional memory disclaimers	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	1 - PCle x16 2 - PCle x1
Graphics Disk bays SATA disk(s) Optical	Two 3.5" SATA disk bays, no hot-swap, direct cable 500GB , SATA 6.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	• Raven black color; metal case • 6.9"W x 16.0"D x 14.9"H
Chipset Front ports Rear ports Audio Ethernet Security chip Diagnostics Keyboard Mouse Power supply Cooling	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep) None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front)	175mm W x 407mm D x 377mm H 24.7 lb (11.2kg) max configuration 25-liter Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Disk Bays Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk Expansion Slots 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
		Intel AMT Intel AMT 7.0 is supported on Xeon-model(s) Software Management Tools
		ThinkServer EasyStartup
	Preloaded Operating System Genuine Windows Server 2008 R2 Standard ntials: Genuine Windows® Small Business Server 2011 Essentials	Power-On Hotkey Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup RAID Configuration Utility: Ctrl+I at startup
SBS 2011:	Genuine Windows Small Business Server 2011Standard Max internal capacity 2TB 3.5" SATA disks	Security Security chip (see information on left)
□ 1-year parts a □ Customer Re selected part coverage exc □ Onsite servic □ Lenovo Prior □ A-La-Carte L □ Online Data	Limited Warranty ¹ and labor placeable Unit (CRU) parts only (with limited onsite service for s³, during normal country office hours e.g. 8 am - 5 pm, Mon - Fri sluding holidays, next business day response time) the upgrade options available (in eligible locations) ⁷ tity Support Package available enovo Services available a Backup dware Installation	Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) ENERGY STAR® Server 1.1-compliant RoHS-compliant

Type- model	Slot x bay	Processor	GHz	Cores / Threads	Memory DIMMs	Memory speed	Disk(s)	Disk I	Pre-conf RAID	Disk bays	SATA optical	Graphics adapter(s)	Windows Server preload	Power supply(s)
1105-92G	4x4 C	Ore i3-2100	3.1	2C/4T	1x2GB	1333MHz	No	3.5"	No	2xDirect Cable	DVD	Intel HD	None	280W

- True server-class reliability and performance at desktop price
 This small and medium business (SMB) models is part of the EMEA TopSeller™ Program
- This models has a 1-year limited warranty¹

Processor Implementation	Intel® Core™ i3-2100 Processor (2C/4T, 3.1GHz, 3MB Cache), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Processor in LGA1155 socket, up to one processor	Tower PSU
Memory Additional memory disclaimers	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on proccessor memory controller speed and installed memory speed	
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	1 - PCle x16 2 - PCle x1
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable None DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	disk 3 - PCI 4
Chipset Front ports Rear ports Audio	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec	24.7 lb (11.2kg) max configuration 25-liter Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons
Ethernet Security chip Diagnostics	One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)	Disk Bays Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front)	Expansion Slots 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
		Intel AMT
		Intel AMT 7.0 with KVM support is available on model(s) with Xeon processor
		Software Management Tools • ThinkServer EasyStartup
		Power-On Hotkey

Max internal capacity

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

- 1-year parts and labor
- Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, during normal country office hours e.g. 8 am 5 pm, Mon Fri coverage excluding holidays, next business day response time)
- Onsite service upgrade options available (in eligible locations)7
- Lenovo Priority Support Package available
 A-La-Carte Lenovo Services available
- - · Online Data Backup
 - **Onsite Hardware Installation**
 - **Online Training**

Power-On Hotkey

- Setup Utility: F1 at startupDiagnostic: F2 at startupNetwork Boot: F12 at startup
- RAID Configuration Utility: Ctrl+I at startup

- Security chip (see information on left)Padlock loop (in rear for opt padlock;
- padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- · Boot without keyboard, mouse, diskette
- Serial port I/O control
- · USB port disablement (front or all)

ThinkServer® TS130 (1105) - TopSeller (August 2012)

Type-		Memory		Pre-conf	Disk	Disk		SATA	Graphics	Windows Server	Power	Ann date
model	Processor(s)	speed	DIMMs	RAID	bays	size	Disk(s)	optical	adapter(s)	preload	Supply	(mm/dd/yy)
1105-68G	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"		DVD	Intel HD		280W	08/21/12
1105-69G	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"	1x500GB	DVD	Intel HD		280W	08/21/12
1105-70G	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 Foundations	280W	08/21/12
1105-72G	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011 Essentials	280W	08/21/12
1105-74G	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 R2 Standard	280W	08/21/12
1105-75G	Xeon E3-1275V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"		DVD	Intel HD		280W	08/21/12

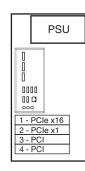
- · True server-class reliability and performance at desktop price
- Part of the US TopSeller™ Program
- 1-year limited warranty

Processor Implementation	Intel® Xeon® E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Intel Xeon E3-1275V2 processor (4C/8T, 3.5GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.9GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Processor in LGA1155 socket, up to one processor
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable <i>Some:</i> 500GB , SATA 6.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors
Chipset Front ports	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) 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)
Audio Ethernet Security chip	one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant
Diagnostics	Two system status LEDs on front panel (disk drive activity, power/sleep)
Keyboard Mouse Power supply	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze gualified
Cooling	4 fans (power supply, CPU, rear, front)

optical optical disk

disk

Tower



- Raven black color; metal case
 6.9"W x 16.0"D x 14.9"H
- 175mm W x 407mm D x 377mm H
- 24.7 lb (11.2kg) max configuration
- 25-liter
- · Toolless side cover removal
- Toolless disk and optical drive removal
- · Toolless adapter retention
- Illuminated front icons

Disk Bays

5.25", 1.6" high, external, for optical Bav 1 Bay 2

3.5", 1" high, external, open (optical/tape) internal, for disk 3.5", 1" high, internal, for disk Bay 3

Bay 4

Expansion Slots

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

Intel AMT

Intel AMT is supported on Xeon-model(s)

Software Management Tools

ThinkServer EasyStartup

Power-On Hotkey

- Setup Utility: F1 at startup
- Diagnostic: F2 at startup
- Network Boot: F12 at startup
- RAID Configuration Utility: Ctrl+I at startup

- Security chip (see information on left)Padlock loop (in rear for opt padlock;
- padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- · Boot without keyboard, mouse, diskette
- · Serial port I/O control
- · USB port disablement (front or all)

ENERGY STAR® Server 1.1-compliant RoHS-compliant

Preloaded Operating System

2008 Foundations: Genuine Windows Server® 2008 R2 Foundations 2008 R2 Standard: Genuine Windows Server 2008 R2 Standard
SBS 2011 Essentials: Genuine Windows® Small Business Server 2011 Essentials

Max internal capacity

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

- 1-year parts and labor
- Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, during normal country office hours e.g. 8 am 5 pm, Mon Fri coverage excluding holidays, next business day response time)
- Onsite service upgrade options available (in eligible locations)⁷
 Lenovo Priority Support Package available
 A-La-Carte Lenovo Services available
- - Online Data Backup
 - **Onsite Hardware Installation**
- **Online Training**

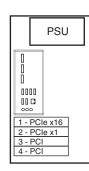
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Type- model	Processor(s)	Memory speed	Memory Pre-conf DIMMs RAID		Disk Disk bays size				Graphics adapter(s)	Windows Server preload	Power Supply	Power Ann date Supply (mm/dd/yy)	
	Xeon E3-1225V2 Core i3-3220	1333MHz 1333MHz	1x4GB 1x4GB		2xDirect Cable 2xDirect Cable	3.5" 3.5"	2x500GB	DVD DVD	Intel HD Intel HD	2008 Foundations	280W 280W	09/11/12 09/25/12	

- · True server-class reliability and performance at desktop price
- Part of the US TopSeller™ Program
- 1-year limited warranty

Processor	Intel® Xeon® E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Intel Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)
Implementation	Processor in LGA1155 socket, up to one processor
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable Some: 500GB , SATA 6.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors
Chipset	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express $^{\circ}$ 2.0 x1, ethernet MAC, PCI, and USB)
Front ports Rear ports	Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45),
Audio Ethernet Security chip	three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant
Diagnostics	Two system status LEDs on front panel (disk drive activity, power/sleep)
Keyboard Mouse Power supply	None (use USB port) None (use USB port) 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)

Tower optical optical disk disk



- Raven black color; metal case
 6.9"W x 16.0"D x 14.9"H
- 175mm W x 407mm D x 377mm H • 24.7 lb (11.2kg) max configuration
- 25-liter
- · Toolless side cover removal
- Toolless disk and optical drive removal
- Toolless adapter retention
- Illuminated front icons

Disk Bays

5.25", 1.6" high, external, for optical Bav 1 Bay 2

3.5", 1" high, external, open (optical/tape) internal, for disk 3.5", 1" high, internal, for disk Вау з

Bay 4

Expansion Slots

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

Intel AMT

Intel AMT is supported on Xeon-model(s)

Software Management Tools

ThinkServer EasyStartup

Power-On Hotkey

- Setup Utility: F1 at startup
- Diagnostic: F2 at startup
- Network Boot: F12 at startup
- RAID Configuration Utility: Ctrl+I at startup

- Security chip (see information on left)Padlock loop (in rear for opt padlock;
- padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable;
- prohibits side cover removal)
- Power-on password
- Boot sequence control
- · Boot without keyboard, mouse, diskette
- · Serial port I/O control
- · USB port disablement (front or all)

ENERGY STAR® Server 1.1-compliant RoHS-compliant

Preloaded Operating System Genuine Windows Server® 2008 R2 Foundations

2008 Foundations:

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

Max internal capacity

- 1-year parts and labor
- Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, during normal country office hours e.g. 8 am 5 pm, Mon Fri coverage excluding holidays, next business day response time)
- Onsite service upgrade options available (in eligible locations)⁷
 Lenovo Priority Support Package available
 A-La-Carte Lenovo Services available

- Online Data Backup
- **Onsite Hardware Installation**
- **Online Training**

ThinkServer® TS130 (1105) - TopSeller (February 2013)

Type- model	Processor(s)	Memory speed	Memory DIMMs	Pre-conf RAID	Disk bays	Disk size	Disk(s)	SATA optical	Graphics adapter(s)	Windows Server preload	Ann date (mm/dd/yy)
1105-F2G	Xeon E3-1225V2	1333MHz	1x4GB		2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2012 Standard	02/05/13
1105-F3G	Xeon E3-1225V2	1333MHz	1x4GB		2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2012 Foundation	02/05/13
1105-H1G	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 R2 Foundation	02/19/13
1105-H2G	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011 Essentials	02/19/13
1105-H3G	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011 Standard	02/19/13
1105-H4G	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 R2 Standard	02/19/13
1105-H5G	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 R2 Foundation	02/19/13
1105-H9G	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2012 Foundation	02/19/13
1105-J1G	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2012 Essentials	02/19/13

- · True server-class reliability and performance at desktop price
- Part of the US TopSeller™ Program
- 1-year limited warranty

Processor	Intel® Xeon® E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache),	Tower
Implementation	Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Processor in LGA1155 socket, up to one processor	optical
Memory Additional memory disclaimers	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed	optical disk ° 00000000000000000000000000000000000
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	1 - PCle x16 2 - PCle x1
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable 500GB , SATA 6.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	• Raven black color; metal case • 6.9"W x 16.0"D x 14.9"H • 175mm W x 407mm D x 377mm H
Chipset Front ports Rear ports Audio	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort	24.7 lb (11.2kg) max configuration 25-liter Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons
Ethernet	High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM	Disk Bays
Security chip Diagnostics	STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)	Bay 1 5.25",1.6" high, external, for o Bay 2 5.25",1.6" high, external, oper Bay 3 3.5", 1" high, internal, for d Bay 4 3.5", 1" high, internal, for d
Keyboard Mouse Power supply	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze gualified	Expansion Slots Slot 1: half-length, full-height, PCI Expre Slot 2: half-length, full-height, PCI Expre
Cooling	4 fans (power supply, CPÚ, rear, front)	Slot 3: half-length, full-height, 32-bit PC Slot 4: half-length, full-height, 32-bit PC

Preloaded Operating System Genuine Windows Server® 2008 R2 Foundation Genuine Windows Server 2008 R2 Standard 2008 R2 Foundations: 2008 R2 Standard: Genuine Windows® Small Business Server 2011 Essentials SBS 2011 Essentials: SBS 2011 Standard: Genuine Windows Small Business Server 2011 Standard 2012 Foundation: Genuine Windows Server 2012 Foundation 2012 Essentials: Genuine Windows Server 2012 Essentials 2012 Standard: Genuine Windows Server 2012 Standard

Max internal capacity

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

- 1-year parts and labor
- Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, during normal country office hours e.g. 8 am 5 pm, Mon Fri coverage excluding holidays, next business day response time)
- Onsite service upgrade options available (in eligible locations)⁷
 Lenovo Priority Support Package available
 A-La-Carte Lenovo Services available
- - **Online Data Backup**
 - **Onsite Hardware Installation**
 - Online Training

optical en (optical/tape)

disk disk

ress 2.0 x16 ress 2.0 x1

Intel AMT

Intel AMT is supported on Xeon-model(s)

Software Management Tools

ThinkServer EasyStartup

Power-On Hotkey

- Setup Utility: F1 at startupDiagnostic: F2 at startup
- Network Boot: F12 at startup
- RAID Configuration Utility: Ctrl+I at startup

- Security chip (see information on left)Padlock loop (in rear for opt padlock;
- padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- · Boot without keyboard, mouse, diskette
- Serial port I/O control
- · USB port disablement (front or all)

Type-		Memory	Memory	Pre-conf	Disk	Disk		SATA	Graphics	Windows Server	Power	Ann date
model	Processor(s)	speed	DIMMs	RAID	bays	size	Disk(s)	optical	adapter(s)	preload	Supply	(mm/dd/yy)
1100-91G	Xeon E3-1225	1333MHz	1x4GB	No	2xDirect Cable	3.5"	None	DVD	Intel HD	None	280W	05/29/12

- · True server-class reliability and performance at desktop price
- 3-year limited warranty

		_
Processor	Intel® Xeon® E3-1225 processor (4C/4T, 3.1GHz, 6MB Cache), Turbo Boost 2.0 (up to 3.4GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Processor in LGA1155 socket, up to one processor	Tower PSU
Implementation Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	optical
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	1 - PCle x16 2 - PCle x1
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable None DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	• Raven black color; metal case • 6.9"W x 16.0"D x 14.9"H • 175mm W x 407mm D x 377mm H
Chipset	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB)	24.7 lb (11.2kg) max configuration 25-liter
Front ports Rear ports	Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort	Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons
Audio Ethernet Security chip Diagnostics	High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)	Disk Bays Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk
Keyboard Mouse	None (use USB port) None (use USB port)	Expansion Slots
Power supply Cooling	One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front)	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
		Intel AMT 7.0 is supported on Your model(s)
		Intel AMT 7.0 is supported on Xeon-model(s) Software Management Tools
		ThinkServer EasyStartup
		Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+I at startup

Max internal capacity

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

- 3-year parts and labor
- Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, during normal country office hours e.g. 8 am 5 pm, Mon Fri coverage excluding holidays, next business day response time)
- Onsite service upgrade options available (in eligible locations)⁷ Lenovo Priority Support Package available A-La-Carte Lenovo Services available
- - Online Data Backup
 Onsite Hardware Installation
- · Online Training

Security

- Security chip (see information on left)
 Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- Boot without keyboard, mouse, diskette
 Serial port I/O control
- USB port disablement (front or all)

ThinkServer







Lenovo ThinkServer TS430 (Redundant PSU)



Lenovo ThinkServer TS430

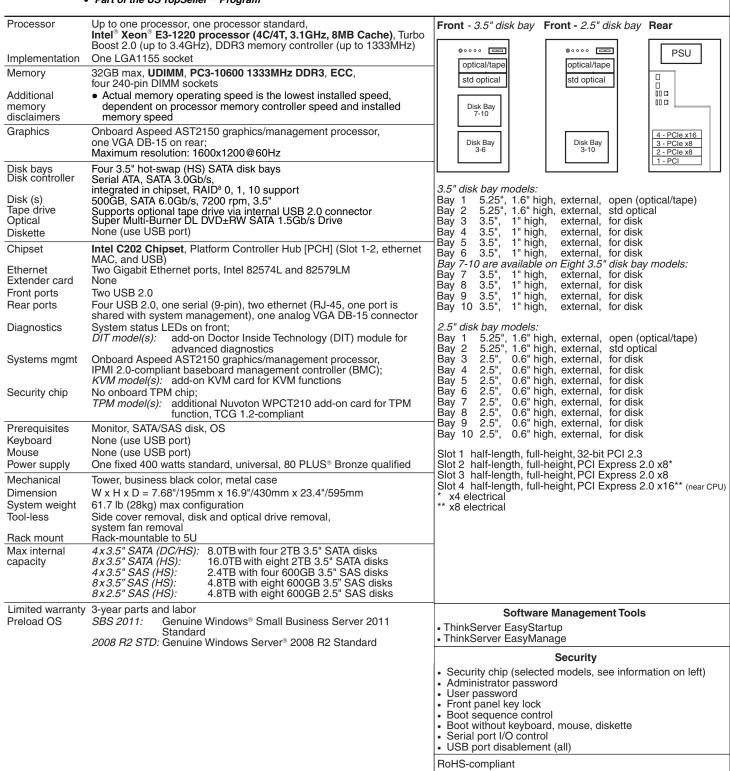
Type- model	Slot x bay	Processor(s)	GHz		Memory DIMMs			Disk Controller	Disk type	RAID Int	SATA optical	System I mgmt	Diagnostics (DIT)	ТРМ	Power Supply
0390-120	3 4x6	Xeon E3-1220 Xeon E3-1220 Core i3-2100	3.1	4C/4T	1x2GB	3.5"	4 x Hot-swap	Intel PCH 9240-8i v2 Intel PCH	SATA/SAS	0/1/10	DVD±RW DVD±RW DVD±RW	IPMI	None	TPM	1x Fixed 1x Fixed 1x Fixed

- Highly Reliable: ECC memory and enterprise-class SAS & SATA choices
 Highly Manageable: enhanced remote manageability with IPMI 2.0 BMC & optional KVM
 Room to Grow: highly modular hot-swap SATA/SAS design supports up to 8 hard drives (selected models)
 3-year limited warrange in the EMEAT-ROUGH STATE STATE
- Part of the EMEA TopSeller™ Program

•	 Part of the EMEA TopSeller™ Program 	
Processor	Up to one processor, one processor standard, Intel® Core™ i3-2100 processor (2C/4T, 3.1GHz, 3MB Cache), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon® E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.4GHz), DDR3 memory controller (up to 1333MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear optical/tape std optical std optical
Implementation	One LGA1155 socket	
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	Disk Bay 7-10
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 3-6 Disk Bay 3-10 Disk Bay 2 - PCle x8 2 - PCle x8
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	3.5" disk bay models:
Disk bays Disk controller	Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 support 9240-8i v2: ThinkServer RAID 9240-8i v2 RAID adapter, PCIe bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk
Tape drive Optical Diskette	RAID 0, 1, 10 support Supports optional tape drive via internal USB 2.0 connector Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive None (use USB port)	Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 10 3.5", 1" high, external, for disk
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)
Front ports	Two USB 2.0	Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Diagnostics	System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) module for advanced diagnostics	Bay 6 2.5", 0.6" high, external, for disk Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions	Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8
Prerequisites Keyboard	Monitor, SATA/SAS disk, OS None (use USB port)	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical
Mouse	None (use USB port) One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	AO GIOGINGII
Power supply Mechanical	Tower, business black color, metal case	-
Dimension System weight Tool-less	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal,	
Rack mount	system fan removal Rack-mountable to 5U	
Max internal capacity	4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks 8x3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4x3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8x2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage Security
Limited warranty	3-year parts and labor	Security Security Security Security Security Security Security Security Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) RoHS-compliant

Type- model	Slot x bay	Processor(s)	Memory DIMMs	Disk bays	Disk Controller	Disk type	Pre-conf RAID	Disk(s)	System mgmt	Diagnostics (DIT)	TPM	Windows Server preload	Power Supply
		Xeon E3-1220 Xeon E3-1220	_	_		_		2x500GB SATA 2x500GB SATA		None None	TPM TPM	SBS 2011 2008 R2 STD	1x Fixed 1x Fixed

- Highly Reliable: ECC memory and enterprise-class SAS & SATA choices
- Highly Manageable: enhanced remote manageability with IPMI 2.0 BMC & optional KVM
- Room to Grow: highly modular hot-swap SATA/SAS design supports up to 8 hard drives (selected models)
- 3-year limited warranty¹
- Part of the US TopSeller™ Program



Type- model Processor	Memory (MHz/type)	Memory DIMMs	Pre-conf	f Disk controller	Disk type	Disk size		Disk(s)	SATA optical	Intelligent Diagnostics		System mgmt	Preload OS
0390-16G Xeon E3-1240\\ 0390-17G Xeon E3-1220\\ 0390-18G Core i3-2120\\ 0390-19G Xeon E3-1220\\ 0390-14G Xeon E3-1220\\ 0390-1AG Xeon E3-1220\\	V2 1333MHz UDIMM 1333MHz UDIMM V2 1333MHz UDIMM	1x4GB 1x4GB 1x4GB	No No No No	Intel PCH 500 Intel PCH Intel PCH Intel PCH	SATA/SAS SATA SATA	3.5" 3.5" 3.5"		p		No No No	TPM TPM	KVM	SBS 2011 2008 R2 STD
Processor	Up to one process Intel® Core™ i3-2 integrated Intel HI 1333MHz) Intel Xeon® E3-12 Turbo Boost 2.0 (u 1600MHz) Intel® Xeon E3-12 Turbo Boost 2.0 (u 1600MHz) 1600MHz)	2120 prod D Graphic 220V2 pr up to 3.50 240V2 pr	cessor (cs 2000 cs 2000 cocesso GHz), D	(2C/4T, 3.3 , DDR3 me or (4C/4T, 3 DR3 memo or (4C/8T, 3	GHz, 3MB emory cont a.1GHz, 8N ory control a.4GHz, 8N	Front - 3.5" dis	y Rea	PSU					
Implementation	One LGA1155 so	cket									,	4 - F	PCle x16
Memory	32GB max, UDIM			333MHz D	DR3, ECC	; ,		Disk Bay 3-6		Disk Bay 3-10		3 - F	PCIe x8
Additional memory disclaimers	 four 240-pin DIMN Actual memory dependent on p memory speed 	operating processor	g speed					3.5" disk bay m				1 - F	PCI
Graphics	Onboard Aspeed one VGA DB-15 o Maximum resoluti	n rear;	0 .	ū	ment proc	essor	,	Bay 2 5.25", Bay 3 3.5",	1.6" high,	n, external, n, external, external, external,	std op for dis	itical k	l/tape)
Disk bays	Some: Four 3.5" Some: Four 3.5" Some: Four 3.5" Some: Eight 3.5" Some: Eight 2.5"	hot-swap hot-swap hot-swap) (HS) S) (HS) S) (HS) S	ATA disk ba ATA/SAS d SATA/SAS d	ays lisk bays disk bays	able		Bay 7-10 are a Bay 7 3.5", Bay 8 3.5",	1" high, 1" high,	external, external, on Eight 3.5" external, external,	for dis for dis disk ba for dis for dis	ik ik <i>ay mod</i> ik ik	dels:
Disk controller	Intel PCH: RAID 500: Upgrade for 500:	RAID® 0 ThinkSe PCI Exp RAID 0, Addition add RAI	, 1, 10 s rver RA ress® bu 1, 10 su al upgra D 5, 50	ID 500 ada us, SATA 6 upport ade kev for	apter (LSI® .0Gb/s, SA RAID 500	SAS AS 6.0 adap	9240-8i), 9Gb/s, ter,	Bay 10 3.5", 2.5" disk bay m Bay 1 5.25",	nodels: 1.6" hig 1.6" hig 0.6" hig	external, external, n, external, n, external, n, external, n, external,	open ostd op	k (optical otical sk	I/tape)
Disk(s)	3.5" SATA: SATA 3.5" SAS: SAS 6 2.5" SAS: SAS 6	6.0Gb/s, 6.0Gb/s,	7200 rp 15000 r	om pm	grit dioit be	ayo m	oder omy)	Bay 5 2.5", Bay 6 2.5", Bay 7 2.5", Bay 8 2.5",	0.6" hig 0.6" hig	n, external, n, external, n, external, n, external,	for dis	sk sk	
Tape drive	Supports optional	l tape driv	/e via in	ternal USB	2.0 conne	ector		Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk					
Optical	Super Multi-Burne		D±RW S	SATA 1.5Gb	o/s Drive				ŭ				
Diskette	None (use USB p							Slot 1 half-leng Slot 2 half-leng					*
Chipset	Intel C202 Chips MAC, and USB)	et, Platfo	rm Con	troller Hub	[PCH] (SI	ot 1-2,	, ethernet	Slot 3 half-lend	gth, full-h	eight, PCI Ex	xpress	2.0 x8	
Ethernet	Two Gigabit Ether	net ports	, Intel 8	2574L and	82579LM			Slot 4 half-leng * x4 electrical	gth, full-h	eight, PCI Ex	kpress	2.0 x1	6** (near CPU)
Extender card	None	·						** x8 electrical					
Front ports Rear ports	Two USB 2.0 Four USB 2.0, one shared with system	m manag	gement),	, one analo	g VGA DB	3-15 c							
Intelligent Diagnostics Module (IDM) Systems mgmt	Onboard Aspeed	advanced DM LED AST2150	l diagno lights in graphi	dicate failir cs/manage	ng compor ment proc	nent c	,						
Security chip	IPMI 2.0-complian KVM model(s): a No onboard TPM TPM model(s): a f	add-on K' chip; additional	VM card	I for KVM f	unctions 0 add-on	,	,,						
Prerequisites	Monitor, SATA/SA		S										
Keyboard	None (use USB p												
Mouse Power supply	None (use USB poone fixed 400 was		ard. univ	ersal. 80 F	PLUS® Bro	nze a	ualified		oftware	Manageme	nt Too	ls	
Mechanical	Tower, business b					4		• ThinkServer E	asyStar	tup			
Dimension	$W \times H \times D = 7.68$ "		,		23.4"/595m	nm		ThinkServer E	asyMan	age			
System weight	61.7 lb (28kg) ma			المالية المالية	marral					Security			
Tool-less	Side cover remove system fan remov		na optic	aı drive rer	noval,			Security chip Administrator			e infor	mation	on left)
Rack mount	Rack-mountable t							AdministratorUser passwo	rd	iu			
Limited warranty	3-year parts and I							Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control					
	Preloaded	•	•					 Serial port I/G USB port dis 					
2008 R2 STD: SBS 2011:	Genuine Windows Genuine Windows				11 Standa	rd		RoHS-complian		V., 1			
ODO 2011.	Genuine Willuows	JIIIAII D	uəii iess	Jerver 20	ı ı Jianud	ıu		L. IOI IO GOITIPIIAI					

Signature (1997) Section Section	Type- model Processor	Memory Memory Pre-conf Disk Disk Disk Disk (MHz/type) DIMMs RAID controller type size bays	SATA Intelligent System Preload Disk(s) optical Diagnostics TPM mgmt OS
Sign-Fig Xeen E-1220V2 1339Mit L00MM 1x6GE 1 Intel PCH SATA 3.5* 4x4ct-assep 2s00008 SATA DVL-RW No TPM KVM 2008 125 Sate Selections of the Common Selection of the Common Sel	390-1CG Xeon E3-1220	1333MHz UDIMM 1x4GB 1 Intel PCH SATA 3.5" 4xHot-swap	2x500GB SATA DVD±RW No TPM IPMI SBS 2011 Standa
Processor International Controller International International Controller International Contr			
Intel® Xeon* E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache), Turno Boosa U2 (pp to 3.4GHz). 1333MHz) Intel Xeon E3-1220 V2 processor (4C/4T, 3.1GHz, 8MB Cache), Turno Boosa U2 (pp to 3.5GHz). 1233MHz) DR3, ECC, turno Z4Chpin DMM scheles dependent on processor of the V2 (pp to 1.5GHz). 15 social demonry spend is the lowest installed speed, dependent on processor memory controller speed and installed memory spend with the Value of the			
Intel® Xeon* E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boosa (2.0 µp to 3.4GHz). 1333MHz) Intel® Xeon* E3-1220 Vg processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boosa (2.0 µp to 3.5GHz). 20 µp to 3.5GHz)	Processor	Up to one processor one processor standard	Front - 3.5" disk hav Front - 2.5" disk hav Rear
DDR3 memory cointroller (up to 1333MHz) Intel Xeon Ex 12020 processor (4CAT, 3.1 GHz, 8MB Cache), intel Xeon Ex 12020 processor (4CAT, 3.1 GHz, 8MB Cache), intel Xeon Ex 12020 processor (4CAT, 3.1 GHz, 8MB Cache), intel Xeon Ex 12020 processor (4CAT, 3.1 GHz, 8MB Cache), intel Xeon Ex 12020 processor memory controller speed and installed speed, dependent on processor memory controller speed and installed speed, dependent on processor memory controller speed and installed speed, dependent on processor memory controller speed and installed speed, dependent on processor memory controller speed and installed speed, dependent on processor memory controller speed and installed speed, dependent on processor memory controller speed and installed speed, dependent on processor memory controller speed and installed speed, dependent on processor memory controller speed and installed speed, dependent on processor memory controller speed and installed speed, speed and speed		Intel® Xeon® E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache),	Tronk 6.6 disk bay Fronk 2.6 disk bay from
Intel Xoon ES-1220V2 processor (4CAT, 3.1GHz, 8MB Cache), Turbo Bosot 20 Up to 3 SGPL and Up to 1 SGPL and U			
mplementation DDBR memory cointroller (up to 1600MHz) One LGA1155 scoket Memory 326B max, UDIMM, PC3-10600 1333MHz DDR3, ECC. tour 240-pn iDIMM sockutes dependent on processor memory controller speed and installed memory speed Graphics Onboard Aspeed AST2150 graphics/management processor, nev VGA DB-15 on rear: Maximum resolution: 1600x1200 660Hz Some: Four 3.5 Phat Satis bays, no hot-swap, direct cable Some: Four 3.5 Phat Satis bays, no hot-swap, direct cable Some: Four 3.5 Phat Satis bays, no hot-swap, direct cable Some: Four 3.5 Phat Satis bays, no hot-swap, direct cable Some: Eight 3.5 Phat Swap (HS) SATA/SAS disk bays Some: Eight 3.5 Phat Swap (HS) SATA/SAS disk bays Some: Eight 3.5 Phat Swap (HS) SATA/SAS disk bays Some: Eight 3.5 Phat Swap (HS) SATA/SAS disk bays Some: Eight 3.5 Phat Swap (HS) SATA/SAS disk bays Disk controller Intel PCH: FIRED CT, Intel RAID Scale adapter (LSI* SAS 9240-81), PCI Express* bus, SATA R oSCIBs, Integrated in chipsel, PCI Express* bus, SATA R oSCIBs, SAS 80.005,		Intel Xeon E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache),	
mplementation One LGA1155 socket without year of the processor of the pro			
Additional memory of the program of the controller of the controll	mplementation		
## Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed and installed memo	Memory		— Disk bay
Graphics Onboard Aspeed AST2150 graphics/management processor, one VGA Db-15 on rear. Maximum resolution: 1600x1200@60Hz Some: Four 3.5* Rol-Swap (HS) SATA disk bays Some: Four 3.5* Rol-swap (HS) SATA disk bays Some: Eight 3.5* Pot-swap (HS) SATA disk bays Some: Eight 3.5* Pot-swap (HS) SATASAS SOME (HS) S		 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed 	Disk Bay 3-6 Disk Bay 3-10 3 - PCle x8 2 - PCle x8
Maximum resolution: 1600x1200 @ 60Hz Some: Four 3.5" hot-swap (HS) SATA-SAS disk bays Some: Fight 3.5" hot-swap (HS) SATA-SAS disk bays Policy of the swap (HS) SATA-SAS disk bays Some: Fight 3.5" hot-swap (HS) SATA-SAS disk bays Some: Fight 3.5" hot	Graphics	Onboard Aspeed AST2150 graphics/management processor,	
Disk bays Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Egint 2.5" hot-swap (HS) SATA SAS disk bays Some: Egint 2.5" hot-swap (HS) SATA/SAS disk bays Disk controller Intel PCH: Some: Egint 2.5" hot-swap (HS) SATA/SAS disk bays Disk controller Intel PCH: RAIPO.1.10 support RAIPO.1.10 support Uggrade for 500: Additional upgrade key for RAID 500 adapter, add PAID 5.0 support Uggrade for 500: Additional upgrade key for RAID 500 adapter, add PAID 5.0 support Uggrade for 500: Additional upgrade key for RAID 500 adapter, add PAID 5.0 support Uggrade for 500: Additional upgrade key for RAID 500 adapter, add PAID 5.0 support Uggrade for 500: Additional upgrade key for RAID 500 adapter, add PAID 5.0 support Uggrade for 500: Additional upgrade key for RAID 500 adapter, add PAID 5.0 support Uggrade for 500: Additional upgrade key for RAID 5.0 support Uggrade for 500: Additional upgrade key for RAID 500 adapter, add PAID 5.0 support SASS SAS 5.0 Clobis, 15000 rpm 2.5" SATA: SATA COGNS, 2000 rpm 3.5" SATA: SATA COGNS, 2000 rpm 4.2" Supports optional tage drive via internal USB 2.0 connector Optical Super Multi-Burner DL DVD_RNW SATA 1.5Gb/s Drive None (use USB port) None (use USB	·		
Some: Four 3.5° hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5° hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5° hot-swap (HS) SATA/SAS disk bays Disk controller Intel PCH: Serial ATA, SATA 3.050bs, integrated in chipset, RAID 500: RAID 500: RAID 500: RAID 500: PCH Express* bus, SATA 6.050bs, and the period of period period of the period of period of the period of period of the period of	Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable	
Some: Eight 3.5° hot-swap (HS) SATN/SAS disk bays Some: Eight 3.5° hot-swap (HS) SATN/SAS disk bays Disk controller Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 500. Think/Server RAID 5.00 adapter (LSI° SAS 9.0Gb/s). PAID 5.00 SATA 6.0Gb/s, SAS 6.0Gb/s PAID 5.00 SAY 6.0Gb/s PAID 5.0Gb/s PAID 5.00 SAY 6.0Gb/s PAID 5.00 SAY 6.0Gb/s PAID 5.00 SAY 6.0Gb/s PAID 5.0Gb/s	-	Some: Four 3.5" hot-swap (HS) SATA disk bays	Bay 3 3.5", 1" high, external, for disk
Some: Eight 2.5" hot-swap (Hs) SATA/SAS disk bays		Some: Four 3.5" not-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays	Bay 5 3.5", 1" high, external, for disk
RAID* 0.1. 10 support: RAID 500: ThinkServer RAID 500 datapter (LSI* SAS 9240-8I), PCI Express* bus, SATA 6.0db/s, SAS 6.		Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Bay 6 3.5", 1" high, external, for disk
## PAID 500: ThinkServer PAID 500 adapter (LSP SAS 9240-8), PCI Express* bus, SATA 6.005/s, SAS 6.006/s, RAID 0.1, 1.0 support (PAID 500 adapter, add RAID 5.0 support (RAID 501 savalible on eight disk bays model only) Disk(s)	Disk controller		
PCI Express* bus, SATA 6.0db/s, SAS 6.0db/s, Page 19 3.5*, 1* high, average 1, retained for 500. In Jugrade for 500. Additional upgrade key for RAID 5.00 adapter, add RAID 5.05 support (RAID 5.00 savaliable on eight disk bays model only). Bay 1 5.25*, 1.6* high, external, open (optical/tape) and 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,			
Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 501 savailable on eight disk bays model only) Disk(s) 3.5° SATA: SATA 6.0Gb/s, 7200 rpm (RAID 501 savailable on eight disk bays model only) Rape drive Supports optional tage drive via internal USB 2.0 connector Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive Diskette None (use USB port) Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethermet MAC, and USB) Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Two USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Two USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Rear ports Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Recurity chip Onboard Aspeed AST2150 graphics/management processor, IDM LED lights indicate failing component category Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management processor, PMI 2.0-compliant baseboard m		PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Bay 9 3.5", 1" high, external, for disk
add RAID 5, 50 support (RAID 5) is available on eight disk bays model only) Disk(s) 3.5° SATA: SATA 6.0Gb/s, 7200 rpm 2.5° SAS: SAS 6.0Gb/s, 15000 rpm 3.7° SAS: SAS 6.0Gb/s, 15000 rpm 2.5° SAS: SAS 6.0Gb/s, 15000 rpm 3.7° SAS: SAS 6.0Gb/s, 15000 rpm 3.7° SAS: SAS 6.0Gb/s, 15000 rpm 3.8° SAS: SAS 6.0Gb/s, 15000 rpm 3.9° SAS: SAS 6.0Gb/s, 15000 rpm 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional tape drive via internal USB 2.0 connector 3.9° Supports optional USB 2.0 conne			Bay 10 3.5", 1" nign, external, for disk
(RAID 50 is available on eight disk bays model only) Disk(s) 3.5° SATA: SATA GOGNS, 7200 pm 2.5° SAS: SAS 6.0Gb/s, 15000 pm Rape drive Supports optional tape drive via internal USB 2.0 connector Supports optional tape drive via internal USB 2.0 connector Optical Super Multi-Burner DL DVD-RW SATA 1.5Gb/s Drive Chipset Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet RAC, and USB) Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Extender card Two Gugabit Ethernet ports, Intel 82574L and 82579LM None Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Module (IDM) Systems mgmt Monitor, SATA/SAS disk, OS Monocard TPM chip; TPM model(s): add-on Intelligent Diagnostics IDM LED lights indicate failing component category Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management proc			
Jisk(s) 3.5° SAIA: SAIA 6.0Gb/s, 15000 rpm 8, 2.5° SAS: SAIS 6.0Gb/s, 15000 rpm 8ay 3 2.5°, 0.6° high, external, for disk 2.5° SAS: SAIS 6.0Gb/s, 15000 rpm 8ay 4 2.5°, 0.6° high, external, for disk 8ay 5 2.5°, 0.6° high, external, for disk 8ay 5 2.5°, 0.6° high, external, for disk 8ay 6 2.5°, 0.6° high, external, for disk 8ay 7 2.5°, 0.6° high, external, for disk 8ay 8 2.5°, 0.6° high, external, for disk 8ay 9 2.5°, 0.6° high, external, for disk 8ay 9 2.5°, 0.6° high, external, for disk 8ay 8 2.5°, 0.6° high, external, for disk 8ay 9 2.5°, 0.6° high, external, for disk			
2.5° SAS: SAS 6.0Gb/s, 10000 rpm Supports optional tape drive via internal USB 2.0 connector Optical Optical Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive None (use USB port) Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB) Ethernet Extender card Extender ports Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VAB AB-15 connector Intelligent Diagnostics Module (IDM) Systems mgmt Monoard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management processor	Disk(s)	·	Bay 3 2.5", 0.6" high, external, for disk
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Ethernet Extender and Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Rear ports Two USB 2.0 Rear ports Two USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector intelligent Diagnostics IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics. IDM LED lights indicate failing component category Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); RVM model(s): add-on KVM functions Security chip No onboard TPM chip; TPM model(s): add-on KVM functions No noboard TPM chip; TPM model(s): add-on KVM functions No noboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Prerequisites Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified Mechanical Tower, business black color, metal case Dimension W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm System weight 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack mount 1 Rack-mountable to 5U Preloaded Operating System Genuine Windows Server® 2008 B2 Standard Tool BP Standard: Two Gigabit Ethernet ports, Intelegit, PC is Express 2.0 x8* Stot 3 half-length, full-height, PC is Express 2.0 x8* Stot 3 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Express 2.0 x8* Stot 4 half-length, full-height, PC is Expre	Chipset		
Exterior Card Front ports Front ports Front ports Front ports Frour USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Intelligent Diagnostics Module (IDM) Intelligent Diagnostics Module (IDM) Onboard Aspeed AST2150 graphics/management category Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions No onboard TPM chip; TPM model(s): add-on KVM card for KVM functions No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant None (use USB port) None (use USB port) Power supply One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified Mechanical Dimension Wx H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm System weight Tool-less Side cover removal, disk and optical drive removal, system fan removal Rack mount Rack-mountable to 5U Preloaded Operating System Preloaded Operating System Genuine Windows Server® 2008 B2 Standard Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, PCI Express 2.0 x 16** (neal Solt A half-length, full-height, place		Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Slot 2 half-length, full-height, PCI Express 2.0 x8*
Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector (Module (IDM) (IDM) model(s): Module (IDM) model(s): Module (IDM) model(s): Module (IDM) Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): Monitor, SATA/SAS disk, OS (Monitor, SATA/SAS disk, OS (Mone (use USB port)) Prerequisites (Monitor, SATA/SAS disk, OS (Mone (use USB port)) Mone (use USB port) Mone (use USB port) Mechanical (System weight) (10-28kg) max configuration (3ick and optical drive removal, system fan removal (3-year parts and labor Pack-mountable to 5U Security chip (Selected models, see information on left (4-dministrator password) Mack-mountable to 5U Preloaded Operating System Preloaded Operating System Genuine Windows Server® 2008 R2 Standard: Feloaded Operating System Genuine Windows Server® 2008 R2 Standard: ** x8 electrical			Slot 3 half-length, full-height, PCI Express 2.0 x8
shared with system management), one analog VGA DB-15 connector Module (IDM) Intelligent Diagnostics Module (IDM) Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions Security chip No onboard TPM chip; TPM model(s): add-on KVM card for KVM functions No onboard TPM chip; TPM model(s): add-on KVM card for KVM functions No onboard TPM chip; TPM model(s): add-on KVM card for KVM functions No no hoard TPM chip; TPM model(s): add-on KVM card for KVM functions No no hoard TPM chip; TPM model(s): add-on KVM card for KVM functions Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified Mechanical Dimension Wx H x D = 7.68*/195mm x 16.9*/430mm x 23.4*/595mm System weight 10-1 fol (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack mount Hack-mountable to 5U Preloaded Operating System Preloaded Operating System Preloaded Operating System Genuine Windows Server® 2008 R2 Standard Preloaded Operating System Genuine Windows Server® 2008 R2 Standard ** x8 electrical	_ '		
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Security chip KVM model(s): add-on KVM card for KVM functions No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	Systems mgmt		
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Mechanical Dimension Wx Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm System weight Tool-less Side cover removal, disk and optical drive removal, system fan removal Rack mount Limited warranty Preloaded Operating System Preloaded Operating System Rock mount Preloaded Operating System Genuine Windows Server® 2008 B2 Standard Tower, business black color, metal case Nx H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage Security Security Security chip (selected models, see information on left Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)			
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System weight Tool-less 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack mount Rack-mountable to 5U 3-year parts and labor Preloaded Operating System Genuine Windows Server® 2008 B2 Standard 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system (and optical drive removal) Security Security chip (selected models, see information on left of Administrator password of Front panel key lock of Boot sequence control of Boot without keyboard, mouse, diskette of Serial port I/O control of USB port disablement (all)		•	Software Management Tools
Tool-less Side cover removal, disk and optical drive removal, system fan removal Rack mount Rack-mountable to 5U 3-year parts and labor Preloaded Operating System Genuine Windows Server® 2008 B2 Standard Security Security chip (selected models, see information on left Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)			_
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Security chip (selected models, see information on left Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)	Rack mount	•	Security
Administrator password User password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)			
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Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) Output USB port disablement (all)			
Preloaded Operating System 2008 B2 Standard: Genuine Windows Server® 2008 B2 Standard Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)			Boot sequence control
• USB port disablement (all)			Boot without keyboard, mouse, diskette
2008 R2 Standard: Genuine Windows Server® 2008 R2 Standard		Preloaded Operating System	
SBS 2011 Standard: Genuine Windows® Small Business Server 2011 Standard RoHS-compliant			RoHS-compliant

2008 R2 Standard: SBS 2011 Standard:

Genuine Windows Server® 2008 R2 Standard Genuine Windows® Small Business Server 2011 Standard

RoHS-compliant

Type- model	Slot x bay	Processor(s)	Cores of GHz Threads	Memory DIMMs	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	SATA optical	System mgmt	Diagnostic (DIT)	S TPM	Power Supply
0389-11G	4x6	Core i3-2100	3.1 2C/4T	1x2GB	3.5"	4 x Direct Cable	Intel PCH	SATA	0/1/10	DVD	IPMI	None	TPM	1x Fixed

- Highly Reliable: ECC memory and enterprise-class SAS & SATA choices
 Highly Manageable: enhanced remote manageability with IPMI 2.0 BMC & optional KVM
 Room to Grow: highly modular hot-swap SATA/SAS design supports up to 8 hard drives (selected models)
 1-year limited warranty¹
 Part of the EMEA TopSeller™ Program

Processor	Up to one processor, one processor standard, Intel® Core™ i3-2100 processor (2C/4T, 3.1GHz, 3MB Cache), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) One I GA1155 socket	Front - 3.5" disk bay Front - 2.5" disk bay Rear Optical/tape
Implementation	One LGA1155 socket 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	std ontical std ontical
Memory	four 240-pin DIMM sockets	
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10 4 - PCle x16
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 Disk Bay 3-10 Disk Bay 3-PCle x8 1-PCl
Disk bays Disk controller Tape drive Optical Diskette	Four 3.5" SATA disk bays, no hot-swap, direct cable Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 support Supports optional tape drive via internal USB 2.0 connector DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive None (use USB port)	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models:
Extender card	None	Bay 7 3.5", 1" high, external, for disk
Front ports Rear ports	Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is	Bay 8 3.5", 1" high, external, for disk
riear ports	shared with system management), one analog VGA DB-15 connector	Bay 9 3.5", 1" high, external, for disk
Diagnostics	System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) module for advanced diagnostics	Bay 10 3.5", 1" high, external, for disk 2.5" disk bay models:
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions	Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk Bay 6 2.5", 0.6" high, external, for disk Bay 7 2.5", 0.6" high, external, for disk
Prerequisites	Monitor, SATA/SAS disk, OS	Bay 8 2.5", 0.6" high, external, for disk
Keyboard	None (use USB port)	Bay 9 2.5", 0.6" high, external, for disk
Mouse	None (use USB port)	Bay 10 2.5", 0.6" high, external, for disk
Power supply	One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	Slot 1 half-length, full-height, 32-bit PCI 2.3
Mechanical	Tower, business black color, metal case	Slot 2 half-length, full-height, PCI Express 2.0 x8*
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	Slot 3 half-length, full-height, PCI Express 2.0 x8 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)
System weight Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal	* x4 electrical ** x8 electrical
Rack mount	Rack-mountable to 5U	
Max internal capacity	4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks 8x3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4x3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8x2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks	
Limited warranty	1-year parts and labor	
		Software Management Tools
		ThinkServer EasyStartup ThinkServer EasyManage
		Security
		Security chip (selected models, see information on left) Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant

Type-		Memory	Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	(MHz/type)	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	PSU
0389-12G	Core i3-2120	1333MHz UDIMM	1x2GB	Nο	Intel PCH	SATA	3.5"	4xDirect Cable	Nο	DVD	Nο	TPM	IPMI	Nο	1xFixed

Processor Implementation	Up to one processor, one processor standard, Intel® Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1333MHz) One LGA1155 socket	Front - 3.5" disk bay Front - 2.5" disk bay Rear optical/tape optical/tape					
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	std optical std optical					
	four 240-pin DIMM sockets						
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10 4 - PCle x16					
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 Disk Bay 3-10 Disk Bay 3-PCle x8 1 - PCl					
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk					
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset,	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk					
	RAID® 0, 1, 10 support; ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk					
	RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk					
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical					
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 3 2.5", 0.6" high, external, for disk					
Optical	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk					
Diskette	None (use USB port)	Bay 6 2.5", 0.6" high, external, for disk					
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk					
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	Bay 10 2.5", 0.6" high, external, for disk					
Front ports Rear ports	Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*					
rical porto	shared with system management), one analog VGA DB-15 connector	Slot 3 half-length, full-height, PCI Express 2.0 x8					
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical					
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions						
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant						
Prerequisites	Monitor, SATA/SAS disk, OS						
Keyboard	None (use USB port)						
Mouse Power supply	None (use USB port) One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified						
Mechanical	Tower, business black color, metal case	Coffware Management Tools					
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	Software Management Tools ThinkServer EasyStartup					
System weight	61.7 lb (28kg) max configuration	ThinkServer EasyStartup ThinkServer EasyManage					
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	Security					
Rack mount	Rack-mountable to 5U	Security chip (selected models, see information on left)					
Limited warranty	1-year parts and labor	Administrator password					
-		User password Front panel key lock					
		Boot sequence control					
		Boot without keyboard, mouse, diskette					
		Serial port I/O control USB port disablement (all)					
		RoHS-compliant					
		1 tot to compilant					

Type-		Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	PSU
0389-13G	Core i3-3220	1x4GB	Nο	Intel PCH	SATA	3.5	4xDirect Cable	Nο	DVD	Nο	TPM	IPMI	Nο	1 x Fixed

Processor	Up to one processor, one processor standard, Intel® Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500,	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	DDR3 memory controller (up to 1600MHz)	● · · · · □ □ □ □ □ PSU □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □
Implementation	One LGA1155 socket	optical/tape optical/tape std optical
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	Sid opilear Sid opilear
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10 [4 - PCle x16]
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 Disk Bay 3-10 Disk Bay 3-10
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 500: RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk
	Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 3 2.5", 0.6" high, external, for disk
Optical	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 6 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk
Extender card	None	
Front ports Rear ports	Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*
rical ports	shared with system management), one analog VGA DB-15 connector	Slot 3 half-length, full-height, PCI Express 2.0 x8
Intelligent Diagnostics Module (IDM)	advanced diagnostics,	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical
Systems mgmt	IDM LED lights indicate failing component category Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions	7.0 5.0503.
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	
Keyboard	None (use USB port)	
Mouse Power supply	None (use USB port) One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	
Mechanical	Tower, business black color, metal case	0.4
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	Software Management Tools
System weight	61.7 lb (28kg) max configuration	ThinkServer EasyStartup ThinkServer EasyManage
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	Security
Rack mount	Rack-mountable to 5U	Security chip (selected models, see information on left)
Limited warranty	1-year parts and labor	Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant

Type- Slot x model bay Processor(s)	Cores / GHz Threads	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	SATA optical	System I mgmt	Diagnostics (DIT)	TPM	Power Supply
0388-12G 4x10 Core i3-2100 0388-13G 4x10 Core i3-2100				9240-8i v2 9240-8i v2		0/1/10 0/1/10	DVD DVD	IPMI IPMI	None None		1x Fixed 1x Fixed

- Highly Reliable: ECC memory and enterprise-class SAS & SATA choices
 Highly Manageable: enhanced remote manageability with IPMI 2.0 BMC & optional KVM
 Room to Grow: highly modular hot-swap SATA/SAS design supports up to 8 hard drives (selected models)
 3-year limited warranty¹

Processor Implementation Memory	Up to one processor, one processor standard, Intel® Core™ i3-2100 processor (2C/4T, 3.1GHz, 3MB Cache), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) One LGA1155 socket 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	Front - 3.5" disk bay Front - 2.5" disk bay Rear optical/tape std optical optical std optical
Additional memory disclaimers	 four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 3 - PCle x16 3 - PCle x8 1 - PCl
Disk bays Disk controller Tape drive Optical Diskette	Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SAS disk bays ThinkServer RAID 9240-8i v2 RAID adapter, PCIe bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Supports optional tape drive via internal USB 2.0 connector DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive None (use USB port)	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk
Chipset Ethernet Extender card Front ports Rear ports Diagnostics Systems mgmt Security chip Prerequisites Keyboard Mouse Power supply Mechanical Dimension System weight Tool-less Rack mount Max internal capacity	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB) Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) module for advanced diagnostics Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified Tower, business black color, metal case W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack-mountable to 5U 4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks 8x3.5" SATA (HS): 2.4TB with eight 2TB 3.5" SAS disks 8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8x2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks	Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk Bay 1 5.25", 1.6" high, external, std optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk Bay 6 2.5", 0.6" high, external, for disk Bay 7 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, e
Limited warranty	3-year parts and labor	Software Management Tools ThinkServer EasyStartup
		ThinkServer EasyManage
		Security Security Security Security chip (selected models, see information on left) Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) RoHS-compliant

	lot x bay	Processor(s)	GHz	Cores / Threads	Memory DIMMs		Disk bays	Disk Controller	Disk type	RAID Int	SATA optical	System I mgmt	Diagnostics (DIT)	TPM	Power Supply
0388-15G 4x	x6)	Xeon E3-1220	3.1	4C/4T	1x4GB	3.5"	4 x Hot-swap	Intel PCH	SATA	0/1/10	DVD	IPMI	None	TPM	1x Fixed
0388-16G 4x	x10)	Xeon E3-1220	3.1	4C/4T	1x4GB	3.5"	8 x Hot-swap	9240-8i v2	SATA/SAS	0/1/10	DVD	IPMI	None	TPM	1x Fixed
0388-17G 4x	x10)	Xeon E3-1220	3.1	4C/4T	1x4GB	2.5"	8 x Hot-swap	9240-8i v2	SAS	0/1/10	DVD	IPMI	None	TPM	1x Fixed

- Highly Reliable: ECC memory and enterprise-class SAS & SATA choices
 Highly Manageable: enhanced remote manageability with IPMI 2.0 BMC & optional KVM
 Room to Grow: highly modular hot-swap SATA/SAS design supports up to 8 hard drives (selected models)
 3-year limited warranty¹

Processor	Up to one processor, one processor standard, Intel® Xeon® E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo	Front - 3.5" disk bay Front - 2.5" disk bay Rear
Implementation	Boost 2.0 (up to 3.4GHz), DDR3 memory controller (up to 1333MHz) One LGA1155 socket	◎ · · · · □ □ PSU
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	optical/tape optical/tape std optical std optical
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 4 - PCle x16 3 - PCle x8 2 - PCle x8 1 - PCl
Disk bays Disk controller	Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SAS disk bays Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID® 0, 1, 10 support 9240-8i v2: ThinkServer RAID 9240-8i v2 RAID adapter,	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk
Tape drive Optical Diskette	PCIe bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Supports optional tape drive via internal USB 2.0 connector DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive None (use USB port)	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 10 3.5", 1" high, external, for disk
Extender card Front ports	None Two USB 2.0	2.5" disk bay models:
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk
Diagnostics	System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) module for advanced diagnostics	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions	Bay 6 2.5", 0.6" high, external, for disk Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	Bay 10 2.5", 0.6" high, external, for disk Slot 1 half-length, full-height, 32-bit PCI 2.3
Prerequisites	Monitor, SATA/SAS disk, OS	Slot 2 half-length, full-height, PCI Express 2.0 x8*
Keyboard	None (use USB port)	Slot 3 half-length, full-height, PCI Express 2.0 x8 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)
Mouse Power supply	None (use USB port) One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	* x4 electrical
Mechanical	Tower, business black color, metal case	** x8 electrical
Dimension System weight Tool-less Rack mount	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack-mountable to 5U	
Max internal	4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks	-
capacity	8 x 3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4 x 3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 4.8TB with eight 600GB 3.5" SAS disks	Software Management Tools • ThinkServer EasyStartup
Limited warrant	8x2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks	ThinkServer EasyManage
Limited warranty	3-year parts and labor	Security
		Security chip (selected models, see information on left) Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant

Type- model	Slot x bay	Processor(s)	GHz	Cores / Threads	Memory DIMMs	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	SATA optical	System mgmt	Diagnostics (DIT)	ТРМ	Power Supply
		Core i3-2100 Core i3-2100			-		4 x Direct Cable 4 x Hot-swap	Intel PCH Intel PCH	SATA SATA	0/1/10 0/1/10	DVD DVD	IPMI IPMI			1x Fixed 1x Fixed

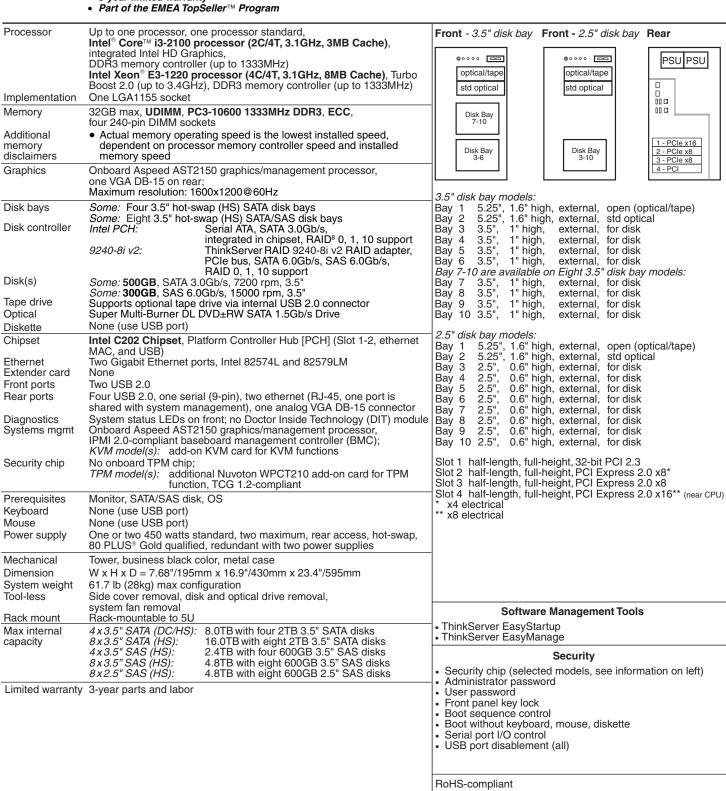
- Highly Reliable: ECC memory and enterprise-class SAS & SATA choices
 Highly Manageable: enhanced remote manageability with IPMI 2.0 BMC & optional KVM
 Room to Grow: highly modular hot-swap SATA/SAS design supports up to 8 hard drives (selected models)
 1-year limited warranty¹

Processor	Up to one processor, one processor standard, Intel® Core™ i3-2100 processor (2C/4T, 3.1GHz, 3MB Cache), integrated Intel HD Graphics,	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	DDR3 memory controller (up to 1333MHz)	◎ · · · · □ PSU PSU
Implementation	One LGA1155 socket	optical/tape optical/tape
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	std optical std optical
Additional	 Actual memory operating speed is the lowest installed speed, 	Disk Bay
memory	dependent on processor memory controller speed and installed	7-10
disclaimers	memory speed	4 - PCle x16
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 Disk Bay 3-10 Disk Bay 3-10
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable	
•	Some: Four 3.5" hot-swap (HS) SATA disk bays	3.5" disk bay models:
Disk controller	Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 support	Bay 1 5.25", 1.6" high, external, open (optical/tape)
Tape drive Optical	Supports optional tape drive via internal USB 2.0 connector DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 2 5.25", 1.6" high, external, std optical
Diskette	None (use USB port)	Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet	Bay 5 3.5", 1" high, external, for disk
Chipset	MAC, and USB)	Bay 6 3.5", 1" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 7-10 are available on Eight 3.5" disk bay models:
Extender card	None	Bay 7 3.5", 1" high, external, for disk
Front ports	Two USB 2.0	Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Bay 10 3.5", 1" high, external, for disk
Diagnostics	System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) module for	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)
Systems mgmt	advanced diagnostics Onboard Aspeed AST2150 graphics/management processor,	Bay 2 5.25", 1.6" high, external, std optical
Cyclonic mgm	IPMI 2.0-compliant baseboard management controller (BMC);	Bay 3 2.5", 0.6" high, external, for disk
	KVM model(s): add-on KVM card for KVM functions	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Security chip	No onboard TPM chip;	Bay 6 2.5", 0.6" high, external, for disk
	TPM model(s): additional Nuvoton WPCT210 add-on card for TPM	Bay 7 2.5", 0.6" high, external, for disk
	function, TCG 1.2-compliant	Bay 8 2.5", 0.6" high, external, for disk
Prerequisites	Monitor, SATA/SAS disk, OS	Bay 9 2.5", 0.6" high, external, for disk
Keyboard	None (use USB port)	Bay 10 2.5", 0.6" high, external, for disk
Mouse	None (use USB port)	Slot 1 half-length, full-height, 32-bit PCI 2.3
Power supply	One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	Slot 2 half-length, full-height, PCI Express 2.0 x8*
Mechanical	Tower, business black color, metal case	Slot 3 half-length, full-height, PCI Express 2.0 x8
Dimension	$W \times H \times D = 7.68$ "/195mm × 16.9"/430mm × 23.4"/595mm	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)
System weight	61.7 lb (28kg) max configuration	* x4 electrical ** x8 electrical
Tool-less	Side cover removal, disk and optical drive removal,	XO electrical
	system fan removal	
Rack mount	Rack-mountable to 5U	
Max internal	4 x 3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks	
capacity	8 x 3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4 x 3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks	
	8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks	
	8x2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks	
Limited warranty	1-year parts and labor	Software Management Tools
,	•	Software Management Tools
		ThinkServer EasyStartup ThinkServer EasyManage
		Security
		Security chip (selected models, see information on left) Administrator password User password Front panel key lock
		Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant
		Tiono compilant

Type- Slot x model bay		Disk ntroller		AID SATA nt optical	System D mgmt	iagnostics (DIT)	TPM	Power Supply
0441-12G 4x10 > 0441-13G 4x6 0 0441-14G 4x6 > 0441-15G 4x10 >	Keon E3-1240 3.3 4C/8T 1x4GB 2.5" 8x Hot-swap 924C Core i3-2100 3.1 2C/4T 1x2GB 3.5" 4x Hot-swap Intel Keon E3-1230 3.2 4C/8T 1x4GB 3.5" 4x Hot-swap Intel Keon E3-1270 3.4 4C/8T 1x4GB 2.5" 8x Hot-swap 924C	0-8i v2 S I PCH S I PCH S 0-8i v2 S	SATA 0/1 SATA 0/1 SAS 0/1	/10 DVD±RV /10 DVD±RV /10 DVD±RV /10 DVD±RV /10 DVD±RV /10 DVD±RV	/ KVM / IPMI / IPMI / KVM	None None None None	TPM ⁻ TPM ⁻ TPM ⁻	1x 450W 1x 450W 1x 450W 1x 450W 1x 450W 1x 450W
Processor	 Part of the EMEA TopSeller™ Program Up to one processor, one processor standard, Intel® Core™ i3-2100 processor (2C/4T, 3.1GHz, 3MB Cache 	e),	Front - 3.5'	disk bay Fro	nt - 2.5" d	isk bay R	ear	
Implementation	integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon® E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache) Boost 2.0 (up to 3.4GHz), DDR3 memory controller (up to 1333 Intel Xeon E3-1230 processor (4C/8T, 3.2GHz, 8MB Cache), Boost 2.0 (up to 3.6GHz), DDR3 memory controller (up to 1333 Intel Xeon E3-1240 processor (4C/8T, 3.3GHz, 8MB Cache), Boost 2.0 (up to 3.7GHz), DDR3 memory controller (up to 1333 Intel Xeon E3-1270 processor (4C/8T, 3.4GHz, 8MB Cache), Boost 2.0 (up to 3.8GHz), DDR3 memory controller (up to 1333 One LGA1155 socket	3MHz) Turbo 3MHz) Turbo 3MHz) Turbo	optical/t std optic Disk Ba 7-10	ape aal	optical/tape std optical Disk Bay 3-10		PSU 1 - PCle 2 - PCle 3 - PCle	x16 x8
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,			╝			4 - PCI	
Additional memory disclaimers	 four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed dependent on processor memory controller speed and instal memory speed 		3.5" disk ba Bay 1 5.2 Bay 2 5.2 Bay 3 3.5	5", 1.6" high, 5", 1.6" high,	external, external, external,	std optical	cal/tap	e)
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz		Bay 4 3.5 Bay 5 3.5	", 1" high, ", 1" high,	external, external,	for disk for disk		
Disk bays	Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SAS disk bays		Bay 6 3.5 Bay 7-10 ar Bay 7 3.5 Bay 8 3.5	<i>e available on</i> ", 1" high,	external, Eight 3.5" external, external,	<i>disk bay n</i> for disk	nodels	:
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID® 0, 1, 10 st 9240-8i v2: ThinkServer RAID 9240-8i v2 RAID ad PCle bus, SATA 6.0Gb/s, SAS 6.0Gb/s	dapter,	Bay 9 3.5 Bay 10 3.5	", 1" high, ", 1" high,	external, external,	for disk		
Tape drive Optical Diskette	RAID 0, 1, 10 support Supports optional tape drive via internal USB 2.0 connector Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive None (use USB port)	5 ,	Bay 1 5.2 Bay 2 5.2 Bay 3 2.5 Bay 4 2.5	25", 1.6" high, 25", 1.6" high, 5", 0.6" high, 5", 0.6" high,	external, external, external,	std optical for disk for disk	cal/tap	e)
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, e	ethernet	Bay 5 2.5 Bay 6 2.5		external, external,			
Ethernet Extender card Front ports	MAC, and USB) Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Two USB 2.0		Bay 7 2.5 Bay 8 2.5 Bay 9 2.5	5", 0.6" high, 5", 0.6" high,	external, external, external,	for disk for disk		
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port		Bay 10 2.5		•			
Diagnostics	shared with system management), one analog VGA DB-15 con System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) modul-		Slot 2 half- Slot 3 half-	ength, full-hei ength, full-hei ength, full-hei	ght, PCI Ex ght, PCI Ex	press 2.0 press 2.0	x8	(ODU)
Systems mgmt	advanced diagnostics Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions		* x4 electri	ength, full-hei cal cal	yni, POI Ex	tpress 2.0	хіо	(near CPU)
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for function, TCG 1.2-compliant	TPM						
Prerequisites Keyboard	Monitor, SATA/SAS disk, OS None (use USB port)							
Mouse Power supply	None (use USB port) One or two 450 watts standard, two maximum, rear access, ho	ot-swap,		Software M	anagemei	nt Tools		
Mechanical	80 PLUS® Gold qualified, redundant with two power supplies Tower, business black color, metal case			er EasyStartu er EasyManag				
Dimension System weight Tool-less Rack mount	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack-mountable to 5U		Security of	hip (selected ator password	Security	e informat	ion on	left)
Max internal capacity	4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks 8x3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4x3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8x2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks	S (S	Front panBoot sequenceBoot withSerial por			kette		
Limited warranty	3-year parts and labor							
			RoHS-comp	oliant				

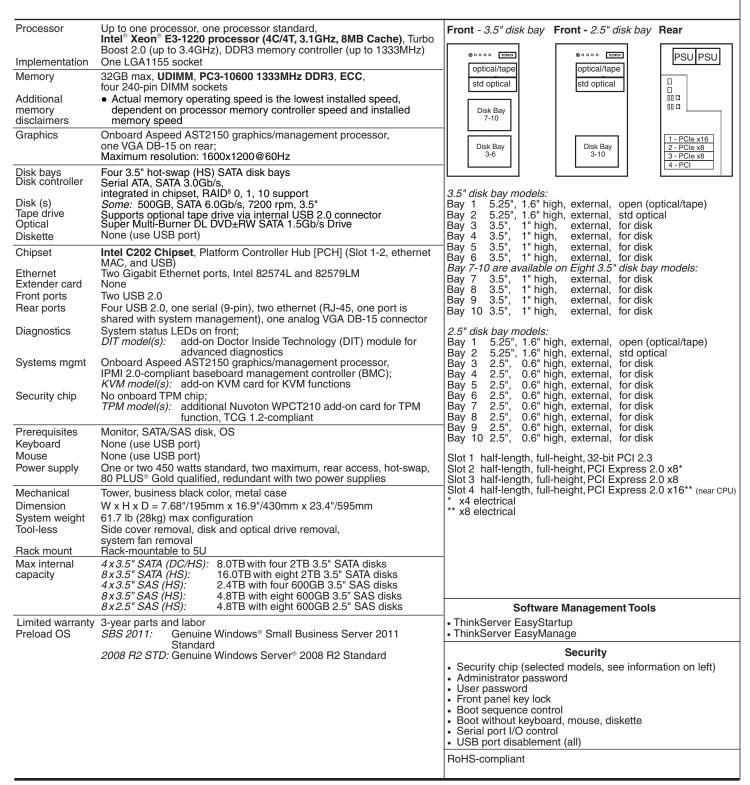
Type- model	Slot x bay	Processor(s)	Memory DIMMs		Disk bays	Disk Controller	Disk type	RAID Int	Pre-cor RAID	nf Disk(s)	SATA optical	System mgmt	TPM	Power Supply
0441-17G	4x6	Xeon E3-1220	1x4GB	3.5"	4 x Hot-swap	Intel PCH	SATA	0/1/10	No	2x500GB SATA	DVD±RW	IPMI	TPM	1x 450W
0441-18G	4x6	Core i3-2100	1x2GB	3.5"	4 x Hot-swap	Intel PCH	SATA	0/1/10	No	2x500GB SATA	DVD±RW	IPMI	TPM	1x 450W
0441-19G	4x10	Xeon E3-1220	1x4GB	3.5"	8 x Hot-swap	9240-8i v2	SATA/SAS	0/1/10	No	2x300GB SAS	DVD±RW	IPMI	TPM	1x 450W

- 3-year limited warranty¹



Type- Slo model ba		Memory DIMMs		Disk bays	Disk Controller	Disk type	Pre-conf RAID	Disk(s)	System mgmt	Diagnostics (DIT)	TPM	Windows Server preload	Power Supply
0441-1BG 4x6	Xeon E3-1220 Xeon E3-1220 Xeon E3-1220	1x4GB	3.5"	4xHS	Intel PCH	_	No	2x500GB SATA 2x500GB SATA		None None None	TPM TPM TPM	SBS 2011 2008 R2 STD	1x 450W 1x 450W 1x 450W

- Highly Reliable: redundant PSU, ECC memory, and enterprise-class SAS & SATA choices
- Highly Manageable: enhanced remote manageability with IPMI 2.0 BMC & optional KVM Room to Grow: highly modular hot-swap SATA/SAS design supports up to 8 hard drives (selected models)
- 3-year limited warranty
- Part of the US TopSeller™ Program



Type- model Processo	Memory Pre-co		Disk type	Disk size	Disk bays	Disk(s	SAT) optic		ntelligen		System mgmt	Prelo	
0441-1DG Xeon E3-124	0V2 1x4GB No	500	SATA/SAS	2.5"	8xHot-swap		DVD±	:RW	IDM	TPM	IPMI		1x450W
0441-1EG Xeon E3-124		Intel PCH	SATA	3.5"	4xHot-swap		DVD±		IDM	TPM	IPMI		1x450W
0441-1FG Xeon E3-1220		500 500	SATA/SAS SATA/SAS		8xHot-swap		DVD± DVD±		IDM IDM	TPM TPM	IPMI IPMI		1x450W
0441-1GG Xeon E3-124 0441-1HG Xeon E3-127		Intel PCH	SATA/SAS	3.5"	8xHot-swap 4xHot-swap		DVD± DVD±		IDM	TPM	IPMI		1x450W 1x450W
0441-1JG Xeon E3-1220		500	SATA/SAS		8xHot-swap		DVD±		IDM	TPM	IPMI		1x450W
0441-1KG Xeon E3-122		Intel PCH	SATA	3.5"	4xHot-swap	2x500GB S	SATA DVD±		IDM	TPM		SBS 2011	
0441-1LG Xeon E3-1220		Intel PCH	SATA	3.5"	4xHot-swap	2x500GB 9	SATA DVD±		IDM	TPM		2008 R2 S	
0441-1MG Xeon E3-1220	0V2 1x4GB No	Intel PCH	SAIA	3.5"	4xHot-swap		DVD±	:HVV	IDM	TPM	IPMI		1x450W
Processor	Up to one proces Intel® Xeon® E3-				1GHz. 8MB (Cache).	Front - 3	.5" dis	sk bay	Front -	2.5" dis	k bay Re	ear
	Turbo Boost 2.0 (-]	000	🗀] Г	DOM DOM
	1600MHz)		,.				II —	al/tape	il		cal/tape		PSU PSU
	Intel Xeon E3-12 Turbo Boost 2.0 (ıı ⊢—			<u> -</u> -			<u> </u>
	1600MHz)	up to 5.601 12	2), DD11011	ileilloi :	y controller (c	ip to	I Sid o	ptical		Siu	optical	[] [
	Intel Xeon E3-12						Diele	Bay					10 0
	Turbo Boost 2.0 (up to 3.9GHz	z), DDR3 n	nemory	y controller (ι	ıp to	7-	10					
Implementation	1600MHz) One LGA1155 so	cket					∥	_					
	32GB max, UDIM		00 1222M	⊔ ~ DD	D2 ECC		Disk	Bay		Di	sk Bay		1 - PCle x16 2 - PCle x8
Memory	four 240-pin DIM		UU 1333IVII	חב טט	H3, ECC,] 3-	6		'	3-10		3 - PCle x8
Additional memory	Actual memory		peed is the	lowes	t installed spe	eed.]			J Ľ	4 - PCI
disclaimers	dependent on p	processor me					3.5" disk	bay m	nodels:				
Graphics	Onboard Aspeed		aphics/ma	nagem	ent processo	ır.	Bay 1	5.25",	1.6" hig			pen (option	cal/tape)
апартноо	one VGA DB-15 o		артноолта	nagom	ioni processe	'',		5.25", 3.5",	1.6" high	h, exte	rnal, s rnal, fo	td optical	
	Maximum resolut	ion: 1600x12	200@60Hz					3.5 , 3.5",	1" high		rnal, fo		
Disk bays	Some: Four 3.5"	SATA disk ba	ays, no ho	t-swap,	, direct cable		Bay 5	3.5",	1" high	exte	rnal, fo	or disk	
-	Some: Four 3.5"	hot-swap (H	S) SATA di	isk bay	'S				1" high		rnal, fo		1 - 1 -
	Some: Four 3.5" Some: Eight 3.5"	not-swap (H	S) SAIA/S	AS dis	K bays		Bay 7-10	<i>are a</i> 3.5",	<i>vallable</i> 1" high		<i>t 3.5" a</i> rnal, fo		oaeis:
	Some: Eight 2.5'	hot-swap (F	IS) SATA/S	SAS dis	sk bays			3.5", 3.5",	1" high		rnal, fo		
Disk controller	Intel PCH:				tegrated in cl	nipset,		3.5",	1" high	exte	rnal, fo		
		RAID8 0, 1,	10 suppor	t;	Ü	•	Bay 10	3.5",	1" high	exte	rnal, fo	or disk	
	RAID 500:	ThinkServe	r RAID 500	0 adap	ter (LSI® SAS	9240-8i),	2.5" disk	bav n	nodels:				
		RAID 0, 1,	s° bus, sa 10 support	11A 6.0	Gb/s, SAS 6.	ugb/s,	Bay 1	5.25",	1.6" hig			pen (option	cal/tape)
	Upgrade for 500:				AID 500 ada	oter,						td optical	
		add RAID 5						2.5", 2.5",		jh, exte jh, exte			
Diala(a)	0.5".0.4740.474	`		on eigr	nt disk bays n	nodel only)	Bay 5	2.5",	0.6" hig	h, exte	rnal, fo	or disk	
Disk(s)	3.5" SATA: SATA 3.5" SAS: SAS							2.5", 2.5",		h, exte			
	2.5" SAS: SAS							2.5 , 2.5",		jh, exte jh, exte			
Tape drive	Supports optiona			USB 2	2.0 connector		Bay 9	2.5",	0.6" hig	h, exte	rnal, fo	or disk	
Optical	Super Multi-Burne	er DL DVD±F	RW SATA 1	1.5Gb/s	s Drive		Bay 10	2.5",	0.6" hig	jh, exte	rnal, fo	or disk	
Diskette	None (use USB p						Slot 1 ha	ılf-len	gth, full-l	neight, 3	32-bit P	CI 2.3	
Chipset	Intel C202 Chips		Controller	Hub [F	PCH1 (Slot 1-2	ethernet	Slot 2 ha	ulf-leng	gth, full-l	neight, F	PCI Exp	ress 2.0	
	MAC, and USB)				- `		Slot 3 ha	ulf-lenç ulf-lenc	gth, full-l gth, full-l	neight, F neight, F	CI Exp	ress 2.0) ress 2.0)	<8 <16** (near CPU)
Ethernet	Two Gigabit Ethe	rnet ports, In	tel 82574L	and 8	2579LM		1 * x4 elec	ctrical					(
Extender card Front ports	None Two USB 2.0						** x8 elec	ctrical					
Rear ports	Four USB 2.0, on	e serial (9-pi	n), two eth	ernet ((BJ-45, one n	ort is							
p 31.00	shared with syste												
Intelligent Diagnostics		add-on Intelli		nostics	Module for		-						
Module (IDM)		advanced dia		failina	component	natedony							
Systems mgmt	Onboard Aspeed												
_ , 5.5 mg.m.	IPMI 2.0-complian	nt baseboard	l managen	nent co	ontroller (BMC								
	KVM model(s):	add-on KVM	card for K	VM fun	nctions `								
Security chip	No onboard TPM		u coton M/D	OT010	add an aard	for TDM							
	TPM model(s):	functional INC			auu-on card	IUI I PIVI							
Prerequisites	Monitor, SATA/SA												
Keyboard	None (use USB p								Software	•	gement	Tools	
Mouse	None (use USB p						• ThinkSe						
Power supply	One or two 450 w	atts standar	d, two max	imum,	rear access,	hot-swap,	• ThinkSe	erver E	=asyMar	nage			
	80 PLUS® Gold q			i two p	ower supplies	3				Secu	rity		
Mechanical	Tower, business b			_	411/205		Securit	y chip	(selecte	ed mode	els, see	informati	on on left)
Dimension System weight	$W \times H \times D = 7.68$			m x 23	3.4"/595mm		 Adminis 	strato	r passwo				,
System weight Tool-less	61.7 lb (28kg) ma Side cover remov	ix configurati	UN ontical driv	o roma	oval		User pa Front p						
1001-1692	system fan remov		optical UNV	e remo	ovai,		Front pBoot se			ol			
Rack mount	Rack-mountable						 Boot wi 	thout	keyboar	d, mous	se, disk	ette	
		d Operating	System				 Serial p 	ort I/0	O contro	l i			
2008 R2 STD:	Genuine Windows			dard			USB po			nt (all)			
SBS 2011:	Genuine Windows				Standard		RoHS-co	mplia	nt				
	tant warranty inform								_	_			

Type-		Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	PSU
0441-1NG	Xeon E3-1230	2x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	2x500GB SATA	DVD±RW	No	TPM	IPMI	No	2x450W

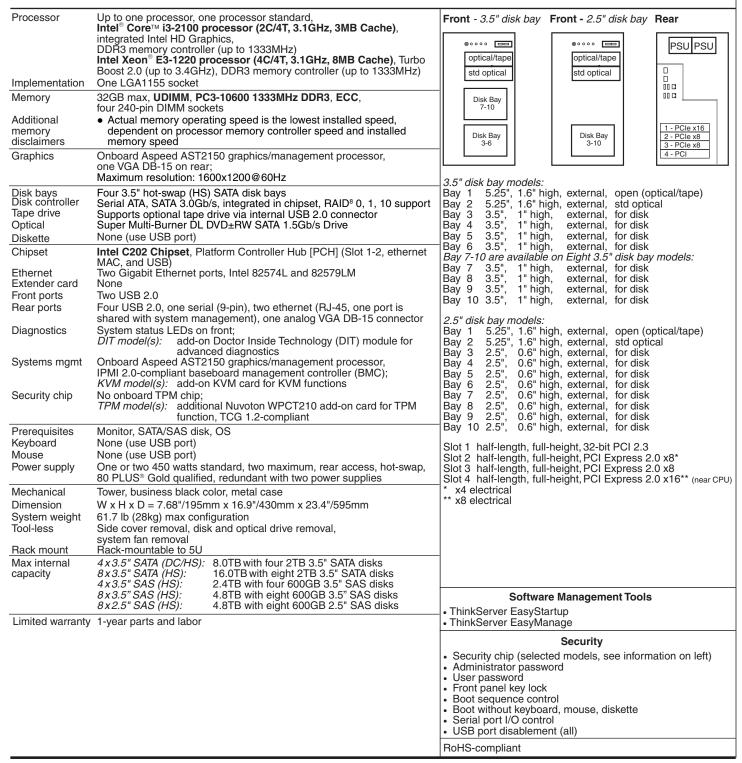
Processor	Up to one processor, one processor standard,	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	Intel® Xeon® E3-1230 processor (4C/8T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz),	
	DDR3 memory controller (up to 1333MHz)	PSU PSU
Implementation	One LGA1155 socket	optical/tape optical/tape std optical optical
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	Std Optical Std Optical
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10 11-PCle x16
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 Disk Bay 3-10 Disk Bay 3-10
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 8 0, 1, 10 support; ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 3 2.5", 0.6" high, external, for disk
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 6 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Baý 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 10 2.5", 0.6" high, external, for disk
Extender card Front ports	None Two USB 2.0	Slot 1 half-length, full-height, 32-bit PCI 2.3
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites Keyboard Mouse Power supply	Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) One or two 450 watts standard, two maximum, rear access, hot-swap,	
Machanical	80 PLUS® Gold qualified, redundant with two power supplies	Software Management Tools
Mechanical Dimension	Tower, business black color, metal case W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	ThinkServer EasyStartup
System weight	61.7 lb (28kg) max configuration	ThinkServer EasyManage
Tool-less	Side cover removal, disk and optical drive removal,	Security
Rack mount	system fan removal Rack-mountable to 5U	Security chip (selected models, see information on left) Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		3-year parts and labor
		RoHS-compliant

Type-		Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	PSU
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	qty
0441-1TG	Xeon E3-1220	1x4GB	1	Intel PCH	SATA	3.5"	4xHot-swap	2x500GB SATA	DVD±RW		TPM	IPMI	SBS 2011 Standard	1
0441-1UG	Xeon E3-1220	1x4GB	1	Intel PCH	SATA	3.5"	4xHot-swap	2x500GB SATA	DVD±RW		TPM	IPMI	Server 2008 R2 Standard	1
0441-1VG	Xeon E3-1220V2	1x4GB	1	Intel PCH	SATA	3.5"	4xHot-swap	2x500GB SATA	DVD±RW	IDM	TPM	IPMI	SBS 2011 Standard	1
0441-1WG	Xeon E3-1220V2	1x4GB	1	Intel PCH	SATA	3.5"	4xHot-swap	2x500GB SATA	DVD±RW	IDM	TPM	IPMI	Server 2008 R2 Standard	1

Processor	Up to one processor, one processor standard, Intel® Xeon® E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.4GHz), DDR3 memory controller (up to 1333MHz) Intel Xeon E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.5GHz), DDR3 memory controller (up to 1600MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear Optical/tape std optical Std optical
Implementation	One LGA1155 socket	
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	Disk Bay 7-10
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 3-6 Disk Bay 3-10 Disk Bay 3-10 1 - PCle x6 2 - PCle x6 3 - PCle x8 4 - PCl
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	3.5" disk bay models:
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk 2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 6 2.5", 0.6" high, external, for disk
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 10 2.5", 0.6" high, external, for disk Slot 1 half-length, full-height, 32-bit PCI 2.3
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8
Front ports Rear ports	Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	
Keyboard	None (use USB port)	Software Management Tools
Mouse Power supply	None (use USB port) One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	ThinkServer EasyStartup ThinkServer EasyManage
Mechanical	Tower, business black color, metal case	- ,
Dimension System weight Tool-less Rack mount	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack-mountable to 5U	Security Security chip (selected models, see information on left) Administrator password User password Front panel key lock Boot sequence control
		Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
	Preloaded Operating System	3-year parts and labor
2008 R2 Standard: SBS 2011 Standard:	Genuine Windows Server® 2008 R2 Standard Genuine Windows® Small Business Server 2011 Standard	RoHS-compliant
See footnotes for import		© Lenov

Type- Slot x model bay	Processor(s)	Cores / GHz Threads		Disk Controller	Disk type	RAID Int	SATA optical	System I mgmt	Diagnostics (DIT)	TPM	Power Supply
0393-11G 4x6 C				Intel PCH Intel PCH	SATA SATA		DVD±RW DVD±RW		None None		1x 450W 1x 450W

- Highly Reliable: redundant PSU, ECC memory, and enterprise-class SAS & SATA choices
- Highly Manageable: enhanced remote manageability with IPMI 2.0 BMC & optional KVM
- Room to Grow: highly modular hot-swap SATA/SAS design supports up to 8 hard drives (selected models)
- 1-year limited warranty¹
 Part of the EMEA TopSeller™ Program



Type- model	Slot x bay	Processor(s)	GHz	Cores / Threads	Memory DIMMs	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	SATA optical	System I mgmt	Diagnostics (DIT)	ТРМ	Power Supply
0393-13G	4x10	Core i3-2100	3.1	2C/4T	1x2GB	2.5"	8 x Hot-swap	9240-8i v2	SAS	0/1/10	DVD±RW	IPMI	None	TPM	1x 450W

- Highly Reliable: redundant PSU, ECC memory, and enterprise-class SAS & SATA choices
 Highly Manageable: enhanced remote manageability with IPMI 2.0 BMC & optional KVM
 Room to Grow: highly modular hot-swap SATA/SAS design supports up to 8 hard drives (selected models)
 1-year limited warranty¹
 Part of the EMEA TopSeller™ Program

Processor	Up to one processor, one processor standard, Intel® Core™ i3-2100 processor (2C/4T, 3.1GHz, 3MB Cache),	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz)	e···· 🗇 PSUPSU
Implementation	One LGA1155 socket	optical/tape optical/tape
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	std optical std optical std optical
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10 1 - PCIe x16
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 Disk Bay 3-10 Disk Bay 3-10
Disk bays Disk controller	Eight 2.5" hot-swap (HS) SAS disk bays ThinkServer RAID 9240-8i v2 RAID adapter, PCIe bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID ⁸ 0, 1, 10 support	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)
Tape drive Optical	Supports optional tape drive via internal USB 2.0 connector Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk
Diskette	None (use USB port)	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models:
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	Bay 7 3.5", 1" high, external, for disk
Front ports	Two USB 2.0	Bay 8 3.5", 1" high, external, for disk
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
Diagnostics	System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) module for advanced diagnostics	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions	Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	Bay 6 2.5", 0.6" high, external, for disk Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Prerequisites Keyboard	Monitor, SATA/SAS disk, OS None (use USB port)	Baý 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk
Mouse	None (use USB port)	Slot 1 half-length, full-height, 32-bit PCI 2.3
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8
Mechanical	Tower, business black color, metal case	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	** x8 electrical
System weight Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal,	
1001 1000	system fan removal	
Rack mount	Rack-mountable to 5U	
Max internal	4 x 3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks	
capacity	8 x 3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4 x 3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks	
	8 x 3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8 x 2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks	Coffware Management Tools
Limited warranty	1-year parts and labor	Software Management Tools
Limited warranty	r-year parts and labor	ThinkServer EasyStartup ThinkServer EasyManage
		Security
		Security chip (selected models, see information on left) Administrator password
		User password Front panel key lock
		Boot sequence control
		Boot without keyboard, mouse, diskette
		Serial port I/O control USB port disablement (all)
		RoHS-compliant

Type-	Memory	Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model Proce	ssor (MHz/type)	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	PSU
0393-14G Core i3-2	20 1333MHz UDIMI	M 1x2GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W
0393-15G Xeon E3-	220V2 1333MHz UDIMI	M 1x4GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W

Processor	Up to one processor, one processor standard, Intel® Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1333MHz) Intel Xeon® E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.5GHz), DDR3 memory controller (up to	Front - 3.5" disk bay Front - 2.5" disk bay Rear optical/tape std optical std optical
	1600MHz)	Sid Optical
Implementation	One LGA1155 socket	Disk Bay
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	7-10
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 3-6 Disk Bay 3-10 Disk Bay 3-10 1 - PCle x16 2 - PCle x8 3 - PCle x8 4 - PCl
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	3.5" disk bay models:
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID® 0, 1, 10 support; RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk 2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 6 2.5", 0.6" high, external, for disk
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 9 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 10 2.5", 0.6" high, external, for disk Slot 1 half-length, full-height, 32-bit PCI 2.3
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8
Front ports	Two USB 2.0	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	* x4 electrical ** x8 electrical
Intelligent Diagnostics Module (IDM) Systems mgmt	add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category Onboard Aspeed AST2150 graphics/management processor,	
	IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites Keyboard	Monitor, SATA/SAS disk, OS	
Keyboard Mouse	None (use USB port) None (use USB port)	
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Software Management Tools ThinkServer EasyStartup
Mechanical	Tower, business black color, metal case	ThinkServer EasyManage
Dimension System weight	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration	Security
System weight Tool-less	Side cover removal, disk and optical drive removal,	Security chip (selected models, see information on left) Administrator password
Rack mount	system fan removal Rack-mountable to 5U	User password
Limited warranty	1-year parts and labor	Front panel key lock Boot sequence control
		Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant

Type-		Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	PSU
0393-16G	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD+RW	No	TPM	IPMI	No	1x450W

Processor	Up to one processor, one processor standard, Intel® Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache),	Front - 3.5" disk bay Front - 2.5" disk bay Rear					
	integrated Intel HD Graphics 2500,	•···· 😑 •···· 😑 PSU PSU					
Implementation	DDR3 memory controller (up to 1600MHz) One LGA1155 socket	optical/tape optical/tape					
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC ,	std optical std optical					
Additional memory disclaimers	 four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10					
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-10 Disk Bay 3-10 Disk Bay 3-10 1 - PCle x16 2 - PCle x8 3 - PCle x8 4 - PCl					
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk					
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 80, 1, 10 support; ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk					
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical					
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk					
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 5 2.5", 0.6" high, external, for disk					
Diskette	None (use USB port)	Bay 6 2.5", 0.6" high, external, for disk Bay 7 2.5", 0.6" high, external, for disk					
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Baý 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk					
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	Bay 10 2.5", 0.6" high, external, for disk					
Front ports	Two USB 2.0	Slot 1 half-length, full-height, 32-bit PCI 2.3					
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8					
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical					
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions						
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant						
Prerequisites	Monitor, SATA/SAS disk, OS None (use USB port)						
Keyboard Mouse	None (use USB port) None (use USB port)						
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies						
Mechanical	Tower, business black color, metal case	Software Management Tools					
Dimension System weight	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration	ThinkServer EasyStartup					
Tool-less	Side cover removal, disk and optical drive removal,	ThinkServer EasyManage					
Rack mount	system fan removal Rack-mountable to 5U	Security					
Limited warranty	1-year parts and labor	Security chip (selected models, see information on left) Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)					
		RoHS-compliant					

Type- model	Slot x bay	Processor(s)						Disk Controller	Disk type	RAID Int	SATA optical	System I mgmt	Diagnostic (DIT)	s TPM	Power Supply
0392-16G	4x6	Xeon E3-1220	3.1	4C/4T	1x4GB	3.5"	4 x Hot-swap	Intel PCH	SATA	0/1/10	DVD	IPMI	None	TPM	1x 450W
0392-17G	4x10	Xeon E3-1220	3.1	4C/4T	1x4GB	3.5"	8 x Hot-swap	9240-8i v2	SATA/SAS	0/1/10	DVD	IPMI	None	TPM	1x 450W
0392-18G	4x10	Xeon E3-1220	3.1	4C/4T	1x4GB	2.5"	8 x Hot-swap	9240-8i v2	SAS	0/1/10	DVD	IPMI	None	TPM	1x 450W

- Highly Reliable: redundant PSU, ECC memory, and enterprise-class SAS & SATA choices
 Highly Manageable: enhanced remote manageability with IPMI 2.0 BMC & optional KVM
 Room to Grow: highly modular hot-swap SATA/SAS design supports up to 8 hard drives (selected models)
 3-year limited warranty¹

Processor	Up to one processor, one processor standard, Intel® Xeon® E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.4GHz), DDR3 memory controller (up to 1333MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear
Implementation	One LGA1155 socket	
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	std optical std optical
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 1 - PCle x16 2 - PCle x8 3 - PCle x8 4 - PCl
Disk bays Disk controller	Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SAS disk bays Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 support 9240-8i v2: ThinkServer RAID 9240-8i v2 RAID adapter, PCIe bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk
Tape drive Optical	Supports optional tape drive via internal USB 2.0 connector DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models:
Diskette	None (use USB port)	Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk
Chipset Ethernet	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB) Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
Extender card	None	2.5" disk bay models:
Front ports	Two USB 2.0	Bay 1 5.25", 1.6" high, external, open (optical/tape)
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk
Diagnostics	System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) module for advanced diagnostics	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk Bay 6 2.5", 0.6" high, external, for disk
Systems mgmt Security chip	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions No onboard TPM chip;	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk
	TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	Slot 1 half-length, full-height, 32-bit PCI 2.3
Prerequisites	Monitor, SATA/SAS disk, OS	Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8
Keyboard	None (use USB port)	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)
Mouse	None (use USB port)	* x4 electrical
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	** x8 electrical
Mechanical Dimension	Tower, business black color, metal case $W \times H \times D = 7.68"/195mm \times 16.9"/430mm \times 23.4"/595mm$	
System weight	61.7 lb (28kg) max configuration	
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	
Rack mount	Rack-mountable to 5U	
Max internal capacity	4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks 8x3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4x3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8x2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage Security
Limited warranty	3-year parts and labor	Security chip (selected models, see information on left)
	- ,	Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant
		· ·









Lenovo ThinkServer TD230

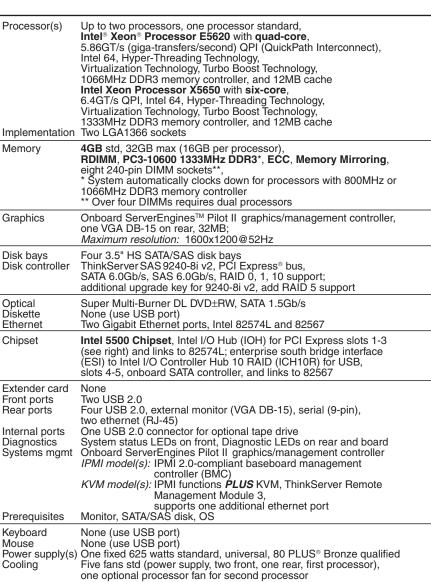
Lenovo ThinkServer TD230

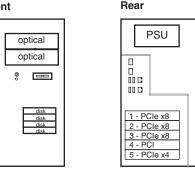


Lenovo ThinkServer TD230 (Direct Cable)

ThinkServer TD230 (1029) - TopSeller - withdrawn

Name	Type- model	Slot x bay	Proc- essor(s)	GHz C		Memory DIMMs	Memory speed	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Ann date (mm/dd/yy
TD230 TD230			1 x E5620 1 x X5650							9240-8i(v2)+Upgrade 9240-8i(v2)+Upgrade			KVM KVM	07/27/10 10/12/10
TD230 1029-14G 5x6 1xX5650 2.66 6 1x4GB 1333MHz 3.5" 4xHot-swap 9240-8i(v2)+Upgrade SATA/SAS 0/1/5/10 KVM 10/12/10 • These models have a 3-year limited warranty¹ • Flexible and green tower computing at value price point • These small and medium business (SMB) models are part of the EMEA TopSeller™ Program														





- Tower mechanical
- · Business black color; metal case
- 8.3"W x 20.1"D x 18.5"H
- 210mm W x 510mm D x 470mm H
- 57.6 lb (26.2kg) max configuration
- Toolless side cover removal
- Toolless disk and optical drive removal

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

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

Power-On Hotkey

Setup Utility:
Network Boot:
ICH10R RAID:
9420-8i RAID:
F2 at startup
Ctrl+E at startup
Ctrl+H at startup

Software Management Tools

ThinkServer EasyStartup

Security

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

RoHS-compliant

Max memory capacity 32GB with eight 4GB PC3-10600 DDR3 RDIMMs

Max internal capacity

3.5" SATA HS: 8.0TB with four 2TB 3.5" SATA disks 3.5" SAS HS: 2.4TB with four 600GB 3.5" SAS disks

Name	Type- model	Slot x bay	Proc- essor(s)	GHz C		Memory DIMMs	Disk(s)	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Ann date (mm/dd/yy)
TD230 TD230 TD230 TD230 TD230 TD230	1029-15G 1029-16G 1029-17G 1029-18G 1029-1AG 1029-19G 1029-1BG	5x7 5x6 5x6 5x6 5x6	1xE5606 1xE5606 1xE5607 1xE5645 1xE5620	2.13 2.13 2.26 2.40 2.40	4 4 4 6 4	1x2GB 1x2GB 1x2GB 1x4GB 1x4GB 1x4GB 1x4GB	None None None None None None	3.5" 3.5" 3.5" 3.5" 3.5" 3.5" 3.5"	4 x Hot-swap 4 x Hot-swap 4 x Hot-swap					03/01/11 03/01/11 03/01/11 03/01/11 03/01/11 03/15/11

These models have a 3-vear limited warrantv¹

These small and medium business (SMB) models are part of the EMEA TopSeller™ Program Up to two processors, one processor standard, Intel® Xeon® Processor E5603 with quad-core, Processor(s) Front - (Hot-swap) Rear 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 4MB cache or PSU optical Intel Xeon Processor E5606 with quad-core, optical 4.8GT/s QPI. Intel 64, Virtualization Technology 000 1066MHz DDR3 memory controller, and 8MB cache or Intel Xeon Processor E5607 with quad-core, 4.8GT/s QPI. 1 - PCle x8 Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 8MB cache or Intel Xeon Processor E5620 with quad-core, 2 - PCle x8 3 - PCle x8 4 - PCI Virtualization Technology, Virtualization Technology, Virtualization Technology, Turbo Boost Technology, 1066MHz DDR3 memory controller, and 12MB cache or Intel Xeon Processor E5645 with six-core, 5 - PCIe x4 Tower mechanical · Business black color; metal case 5.86GT/s QPI, Intel 64, Virtualization Technology, • 8.3"W x 20.1"D x 18.5"H • 210mm W x 510mm D x 470mm H 1333MHz DDR3 memory controller, and 12MB cache 57.6 lb (26.2kg) max configuration Toolless side cover removal Implementation Two LGA1366 sockets 2GB or 4GB std, 32GB max (16GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, · Toolless optical drive removal Memory Hot-swap model(s): Bay 1 5.25",1.6" high, external, std optical Bay 2 5.25",1.6" high, external, optional op eight 240-pin DIMM sockets** System automatically clocks down for processors with 1066MHz DDR3 Bay 2 optional optical memory controller 3.5", 1" high, 3.5", 1" high, 3.5", 1" high, 3.5", 1" high, external, optional disk Bay з ** Over four DIMMs requires dual processors Bay 4 external, optional disk Graphics Onboard ServerEngines™ Pilot II graphics/management controller, one Bay 5 external, optional disk VGA DB-15 on rear, 32MB; Bay 6 external, optional disk Maximum resolution: 1600x1200@52Hz Direct cable model(s): Disk bays Five 3.5" SATA disk bays, no hot-swap, Some: 5.25", 1.6" high, external, std optical 5.25", 1.6" high, external, optional optical Bav 1 direct cable (DC) Bay 2 Four 3.5" hot-swap (HS) SATA disk bays Serial ATA, SATA 3.0Gb/s, integrated in ICH10R, Some: 3.5", 3.5", 3.5", 3.5", 1" high, 1" high, Bay 3 external, optional disk Disk controller Some: optional disk Bay 4 external. RAID⁸ 0, 1, 10 support 1" high, 1" high, external, optional disk Bay 5 ThinkServer SAS 9240-8i v2, PCI Express® bus, Some: external, optional disk Bay 6 SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support 1" high, 3.5", Bay 7 external, optional disk Some: Additional upgrade key for 9240-8i v2, 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 add RAID 5 support DC Model(s): Six SATA connectors for opticals and disks Optical Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive None (use USB port) Diskette Two Gigabit Ethernet ports, Intel 82574L and 82567 Ethernet x4 electrical Chipset Intel 5500 Chipset, 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 None Extender card Two USB 2.0 Front ports Rear ports Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), Power-On Hotkey two ethernet (RJ-45) Setup Utility: F2 at startup Internal ports One USB 2.0 connector for optional tape drive Network Boot F12 at startup Diagnostics System status LEDs on front, Diagnostic LEDs on rear ICH10R RAID: Ctrl+E at startup Onboard ServerEngines Pilot II graphics/management controller Systems mgmt IPMI model(s): IPMI 2.0-compliant baseboard management **Software Management Tools** controller (BMC) KVM model(s): IPMI functions PLUS KVM, ThinkServer Remote ThinkServer EasyStartup Management Module 3, supports one additional ethernet port Security Prerequisites Monitor, disk, OS Administrator password Keyboard None (use USB port) User password Front panel lock out None (use USB port) Mouse Boot sequence control One fixed 625 watts standard, universal, 80 PLUS® Bronze qualified Power supply(s) Boot without keyboard, mouse, diskette Cooling Five fans std (power supply, two front, one rear, first processor), Serial port I/O control one optional processor fan for second processor USB port disablement (all)

RoHS-compliant

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	Ann date (mm/dd/yy)
TD230	1027-13G	5×7	1 x F5603	1.60	4	1 x 2 G B	None	35" 5	x Direct Cable	ICH10B	SATA	DVD	0/1/10	IPMI	2xGh	03/01/11

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

	Inis small and medium dusiness (SMB) model is part of the EME	4 TopSeller™ Program	
Processor(s)	Up to two processors, one processor standard, Intel® Xeon® Processor E5603 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets	Front Rear Optical optical optical PSU PS	
Memory	2GB std, 32GB max (16GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors		
Graphics	Onboard ServerEngines™ Pilot II graphics/management controller, one VGA DB-15 on rear, 32MB; Maximum resolution: 1600x1200@52Hz	3 - PCle x8 4 - PCl 5 - PCle x4	
Disk bays Disk controller	Five 3.5" SATA disk bays, no hot-swap, direct cable (DC) Six SATA connectors for opticals and disks, Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 support	Tower mechanical Business black color; metal case 8.3"W x 20.1"D x 18.5"H 210mm W x 510mm D x 470mm H	
Optical Diskette Ethernet	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive None (use USB port) Two Gigabit Ethernet ports, Intel 82574L and 82567	57.6 lb (26.2kg) max configuration Toolless side cover removal Toolless disk and optical drive removal	
Chipset	Intel 5500 Chipset, 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	Bay 1 5.25", 1.6" high, external, std optic Bay 2 5.25", 1.6" high, external, optional Bay 3 3.5", 1" high, external, optional Bay 4 3.5", 1" high, external, optional	optical disk
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites Keyboard Mouse Power supply(s) Cooling	None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector for optional tape drive System status LEDs on front, Diagnostic LEDs on rear Onboard ServerEngines Pilot II graphics/management controller, IPMI 2.0-compliant baseboard management controller (BMC) Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) One fixed 625 watts standard, universal, 80 PLUS® Bronze qualified Five fans std (power supply, two front, one rear, first processor), one optional processor fan for second processor	Bay 5 3.5", 1" high, external, optional Bay 6 3.5", 1" high, external, optional Bay 7 3.5", 1" high, external, optional Slot 1: half-length, full-height, PCI Express 2 Slot 2: half-length, full-height, PCI Express 2 Slot 3: half-length, full-height, PCI Express 2 Slot 4: half-length, full-height, PCI Express 2 Slot 5: half-length, full-height, PCI Express x *** x4 electrical	disk disk 2.0 x8 2.0 x8 2.0 x8***
		Power-On Hotkey Setup Utility: F2 at startup Network Boot: F12 at startup ICH10R RAID: Ctrl+E at startup	
		Software Management Tools • ThinkServer EasyStartup	
32GB with eight	Max memory capacity 4GB PC3-10600 DDR3 RDIMMs Max internal capacity	Security • 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)	
10.0TB with five	2TB 3.5" SATA disks	RoHS-compliant	

ThinkServer TD230 (1039) - March 2011 - withdrawn

Name	Type- model	Slot x bay	Proc- essor(s)	GHz C	ores	Memory DIMMs	Disk(s)	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Ethernet	Ann date (mm/dd/yy)
	1039-13G 1039-14G		1 x E5603 1 x E5603	1.60 1.60	4 4	1x2GB 1x2GB	None None	3.5" 3.5"	5 x Direct Cable 4 x Hot-swap	ICH10R ICH10R	SATA SATA	0/1/10 0/1/10	IPMI IPMI	2xGb 2xGb	03/01/11 03/01/11

- These models have a 1-year limited warrantyⁱ
 Flexible and green tower computing at value price point

Processor(s)	Up to two processors, one processor standard, Intel® Xeon® Processor E5603 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets	Front - (Hot-swap) Rear Optical Optical
Memory	2GB std, 32GB max (16GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors	
Graphics	Onboard ServerEngines™ Pilot II graphics/management controller, one VGA DB-15 on rear, 32MB; Maximum resolution: 1600x1200@52Hz	4 - PCI 5 - PCIe x4
Disk bays Disk controller	Some: Five 3.5" SATA disk bays, no hot-swap, direct cable (DC) Some: Four 3.5" hot-swap (HS) SATA disk bays Serial ATA, SATA 3.0Gb/s, integrated in ICH10R, RAID ⁸ 0, 1, 10 support DC Model(s): Six SATA connectors for opticals and disks	Tower mechanical Business black color; metal case 8.3"W x 20.1"D x 18.5"H 210mm W x 510mm D x 470mm H 57.6 lb (26.2kg) max configuration
Optical Diskette Ethernet	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive None (use USB port) Two Gigabit Ethernet ports, Intel 82574L and 82567	Toolless side cover removal Toolless optical drive removal Hot-swap model(s):
Chipset	Intel 5500 Chipset, 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	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
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites	None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector for optional tape drive System status LEDs on front, Diagnostic LEDs on rear Onboard ServerEngines Pilot II graphics/management controller, IPMI 2.0-compliant baseboard management controller (BMC) Monitor, disk, OS	Bay 6 3.5", 1" high, external, optional disk Direct cable model(s): 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 6 3.5", 1" high, external, optional disk
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One fixed 625 watts standard, universal, 80 PLUS® Bronze qualified Five fans std (power supply, two front, one rear, first processor), one optional processor fan for second processor	Bay 7 3.5", 1" high, external, optional disk 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
		Power-On Hotkey Setup Utility: F2 at startup Network Boot: F12 at startup
		Ctrl+E at startup Software Management Tools ThinkServer EasyStartup
32GB with eight	Max memory capacity 4GB PC3-10600 DDR3 RDIMMs Max internal capacity	Security 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)
	8.0TB with four 2TB 3.5" SATA disks 10.0TB with five 2TB 3.5" SATA disks	RoHS-compliant

ThinkServer TD230 (1040) - March 2011 - withdrawn

Name	Type- model	Slot x bay	Proc- essor(s)	GHz (Cores	Memory DIMMs	Disk(s)	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Ethernet	Ann date (mm/dd/yy)
TD230	1040-14G	5x7	1 x E5603	1.60	4	1x2GB	None	3.5"	5 x Direct Cable	ICH10R	SATA	0/1/10	IPMI	2xGb	03/01/11
TD230	1040-15G	5x6	1 x E5603	1.60	4	1x2GB	None	3.5"	4 x Hot-swap	ICH10R	SATA	0/1/10	IPMI	2xGb	03/01/11
TD230	1040-16G	5x6	1 x E5603	1.60	4	1x2GB	None	3.5"	4 x Hot-swap	9240-8i(v2)	SATA/SAS4	0/1/10	IPMI	2xGb	03/15/11

- These models have a 3-year limited warranty
 Flexible and green tower computing at value price point

Processor(s) Implementation	Up to two processors, one processor standard, Intel® Xeon® Processor E5603 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets	Front - (Hot-swap) Rear poptical optical
Memory	2GB std, 32GB max (16GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors	
Graphics	Onboard ServerEngines™ Pilot II graphics/management controller, one VGA DB-15 on rear, 32MB; Maximum resolution: 1600x1200@52Hz	4 - PCI 5 - PCIe x4
Disk bays Disk controller	Some: Five 3.5" SATA disk bays, no hot-swap, direct cable (DC) Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Serial ATA, SATA 3.0Gb/s, integrated in ICH10R, RAID® 0, 1, 10 support Some: ThinkServer SAS 9240-8i v2, PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support DC Model(s): Six SATA connectors for opticals and disks	Tower mechanical Business black color; metal case 3.3"W x 20.1"D x 18.5"H 210mm W x 510mm D x 470mm H 57.6 lb (26.2kg) max configuration Toolless side cover removal Toolless optical drive removal
Optical Diskette Ethernet	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive None (use USB port) Two Gigabit Ethernet ports, Intel 82574L and 82567	Hot-swap model(s): Bay 1 5.25",1.6" high, external, std optical Bay 2 5.25",1.6" high, external, optional optical
Chipset	Intel 5500 Chipset, 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	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
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites	None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector for optional tape drive System status LEDs on front, Diagnostic LEDs on rear Onboard ServerEngines Pilot II graphics/management controller, IPMI 2.0-compliant baseboard management controller (BMC) Monitor, disk, OS	Direct cable model(s): 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
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One fixed 625 watts standard, universal, 80 PLUS® Bronze qualified Five fans std (power supply, two front, one rear, first processor), one optional processor fan for second processor	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
		Power-On Hotkey Setup Utility: F2 at startup Network Boot: F12 at startup ICH10R RAID: Ctrl+E at startup LSI 9420-8i RAID: Ctrl+H at startup
		Software Management Tools ThinkServer EasyStartup
		Security Administrator password User password
22GB with sight	Max memory capacity 4GB PC3-10600 DDR3 RDIMMs	Front panel lock out Boot sequence control
	Max internal capacity 8.0TB with four 2TB 3.5" SATA disks	Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
	10.0TB with five 2TB 3.5" SATA disks	RoHS-compliant





Lenovo ThinkServer RD230



Lenovo ThinkServer RD230



Lenovo ThinkServer RD230

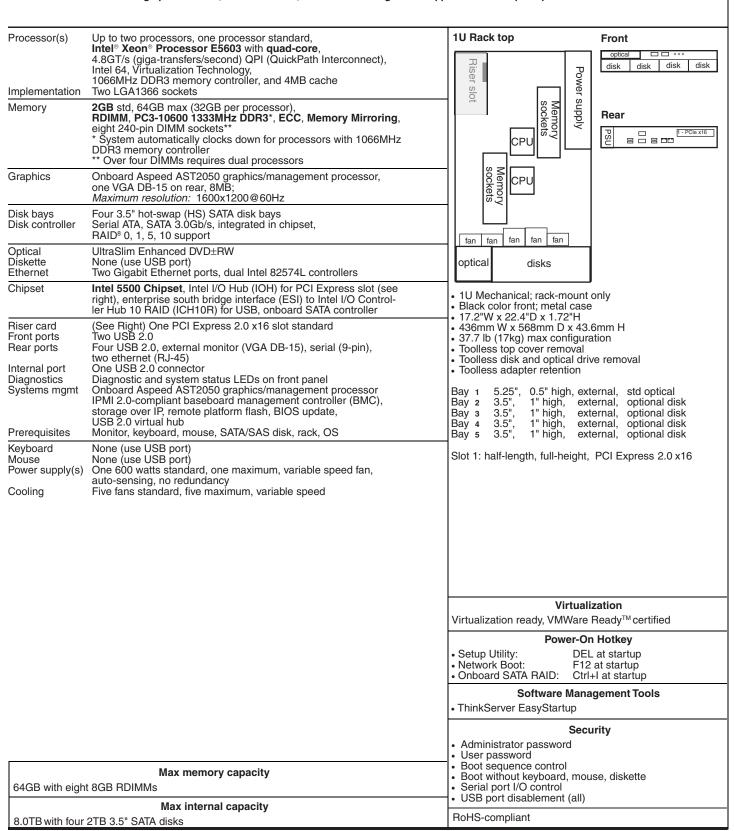
ThinkServer RD230 (4011) - TopSeller (March 2011) - withdrawn

						Dist.	DAID	D'. I									
Name model	Slot x bay	Proc- essor(s)	GHz Co	Memory res DIMMs	Memory speed		RAID Battery	Disk bays	Disk type	SATA optical	RAID Int	System mgmt E	Ethernet	Ann date (mm/dd/yy)			
RD230 4011-16 RD230 4011-17 RD230 4011-18 RD230 4011-19 RD230 4011-16 RD230 4011-10 RD230 4011-10	G 1x5 1 G 1x5 1 G 1x5 1 G 1x5 1 G 1x5 2	1 x E5606 1 x E5607 1 x E5620 1 x E5645 2 x X5650	2.13 4 2.26 4 2.40 4 2.40 6 2.66	1 1x4GB 1 1x4GB 1 1x4GB 1 1x8GB 12 2x8GB	1333MHz	3.5" 3.5" 3.5" 3.5" 3.5"		4 x Hot-swap 4 x Hot-swap 4 x Hot-swap 4 x Hot-swap 4 x Hot-swap 4 x Hot-swap 4 x Hot-swap	SATA SATA SATA/SAS ⁴ SATA/SAS		0/1/5/10 0/1/5/10 0/1/5/10 0/1/5/6/1 0/1/5/6/1	KVM 0 KVM 0 KVM	2xGb 2xGb 2xGb 2xGb 2xGb	03/01/11 03/01/11 03/01/11 03/01/11 03/01/11 03/01/11 03/01/11			
				ave a 3-yea I medium bu				are part of the	EMEA TopS	eller™ Prog	gram						
Processor(s)				e or two pro			ard,		1U Rack	top		Front					
	4.8GT/: Intel 64 1066Mi Intel X: 4.8GT/: 1066Mi Intel X: 5.86GT Virtuali: 1066Mi Intel X: 5.86GT Virtuali: 1333Mi Intel X: 6.4GT/: Virtuali: 1333Mi	s (giga-tra , Virtualiz , Virtualiz DDR3 eon Proc s QPI, Int Hz DDR3 eon Proc 7/s QPI, Int zation Tea Hz DDR3 eon Proc S QPI, Int Hz DDR3 eo QPI, Int Hz DDR3 eo QPI, Int Hz DDR3	ansfers/s action Te memory essor E el 64, Vi memory essor E tel 64, Vi memory essor K el 64, Vi memory essor X essor X en e	E5603 with econd) QPI chnology, a controller, 5606 with q rtualization a controller, 5607 with q rtualization a controller, 5620 with q rtualization a controller, 5645 with s firtualizatior a controller, 5650 with s firtualizatior a controller, 5650 with s controller, 5650 with s a controller, 5650 with s controller,	(QuickPa and 4MB uad-core, lechnolog and 8MB uad-core, ding Technol and 12ME ix-core, lechnolog and 12ME ix-core, ing Technolog	th Into	e or e or y, ne or	ct),	Riser slot sockets fan far optical	CPU CPU	Power supply Memory fan s	Rear	disk di	isk disk			
Implementation Memory	Two LGA1366 sockets 4GB, 8GB, or 16GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** * System automatically clocks down for processors with 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors									Optical disks 1U Mechanical; rack-mount only Black color front; metal case 17.2"W x 22.4"D x 1.72"H 436mm W x 568mm D x 43.6mm H 37.7 lb (17kg) max configuration Toolless top cover removal							
Graphics	one VG	ia di-15	on rear,	50 graphics 8MB; 00x1200@6	Ü	nent p	or,	 Toolles 	s top cover s disk and o s adapter r	optical dri	ve remov	⁄al					
Disk bays	16G/17	7G/18G/1	9G/1DG.	Four 3	3.5" hot-sv	vap (H	HS) SAT	A				ternal, s					
Disk controller	1BG/10 16G/17 1BG/10	7G/18G/1	9G/1DG.	Four 3 disk b Serial integr RAID Think Contro SATA RAID	3.5" hot-sv	A 3.00 ipset, 0 sup 08EM Expre	Gb/s, port I2 SAS Fess® bus 3.0Gb/s, upport,	RAID						disk disk			
Optical Diskette Ethernet	None (ı Two Gi	0	port) ernet poi	ts, dual Inte													
Chipset	enterpr	ise south	bridge i	I/O Hub (IC nterface (ES ard SATA co	(SI) to Intel	I Exp I/O C	ress slo	t (see right), r Hub 10 RAID		ution readv.	Virtual VMWare		certified				
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt	Diagnostic and system status LEDs on front panel gmt Onboard Aspeed AST2050 graphics/management processor IPMI model(s): IPMI 2.0-compliant baseboard management controller (BMC), storage over IP,								Virtualization ready, VMWare Ready™ certified Power-On Hotkey • Setup Utility: DEL at startup • Network Boot: F12 at startup • Onboard SATA RAID: Ctrl+I at startup • Add-on SATA/SAS RAID: Ctrl+H at startup Software Management Tools								
	KVM m	r	emote p JSB 2.0	(BMC), sto latform flash virtual hub ctions PLUS	ı, BIOS up	date,			ThinkServer EasyStartup Security								
Prerequisites Keyboard	Monitor	r, keyboar use USB	24bit high d, mous port)	quality vide e, SATA/SA	eo compre	essior	า		User paBoot seBoot w	equence co ithout keyb	ntrol oard, mou	use, diske	ette				
Mouse Power supply(s)	One 60 auto-se	ensing, no	tandard, redund				eed fan,		• USB po	oort I/O cor ort disablen							
Cooling				naximum, v	ariable spe	eed			RoHS-co	mpliant							

ThinkServer RD230 (1043) - March 2011 - withdrawn

Name	Type- model	Slot x bay	Proc- essor(s)	GHz	Cores	Memory DIMMs	Memory speed	Disk RAID size Battery	Disk bays	Disk type	SATA optical	RAID Int	System mgmt	Ethernet	Ann date (mm/dd/yy)
RD230	1043-12G	1 x 5	1 x E5603	1.60	4	1x2GB	1333MHz	2 3.5" None	4 x Hot-swap	SATA	DVD±RW	0/1/5/10	IPMI	2xGb	03/01/11

- This model has a 1-year limited warranty
- · High performance, advanced RAID, and remote management supported at value price point



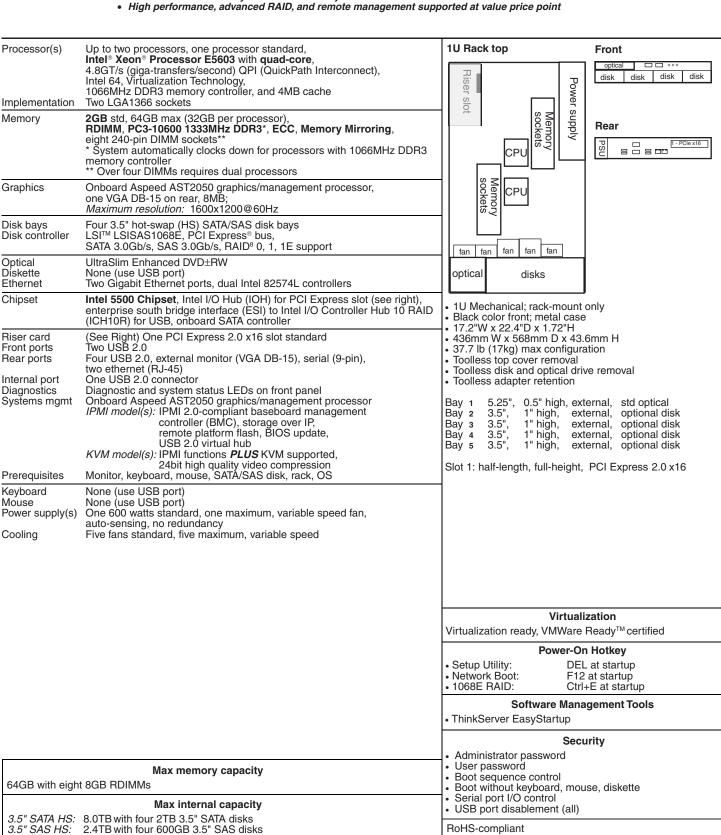
ThinkServer RD230 (1044) - March 2011 - withdrawn

Name model Day essorts DHs Core DMMs speed size Battery bays type optical int mignt Ethernet mimidal m		OLL D. Marrow Diele DAID Diele	Did GATA BAID Contain
Processor(s) IUp to two processors, one processor standard, intel* Neon* Processor E5603 with quad-core, 4,63T's (gigat-nafeer/second.) OPI (douckPath Interconnect), Intel 64, Virtualization Technology, 1004,041 of Path 1004,0	Name model	Slot x Proc- Memory Memory Disk RAID Disk bay essor(s) GHz Cores DIMMs speed size Battery bays	Disk SATA RAID System Ann date type optical Int mgmt Ethernet (mm/dd/yy)
Processor(s) Up to two processors, one processor standard, intel Xeon' Processor (S00 with quad-core, intel 64 Virtualization Technology, Clusterial interconnect), intel 64 Virtualization Technology, Clusterial interconnect, Clusterial intel Societies, Clusterial intelligence in Clusterial intellige	RD230 1044-16	G 1x51xE5603 1.60 4 1x2GB 1333MHz 3.5" None 4xHot-swap	SATA DVD±RW 0/1/5/10 IPMI 2xGb 03/01/11
Intel® Xeon® Processor £5603 with quad-core, 4.80Tis (gipa-transfers/second) QPI (QuickPath Interconnect), Intel 64. Virtualization Technology, 1.80Tis (gipa-transfers/second) QPI (QuickPath Interconnect), Intel 64. Virtualization Echnology, 2.80 at 6.468 max (32.68 per processor). RDIMM. PC3-10600 1333MHz DDR3*; ECC, Memory Mirroring, eight 240-pin DIMM sockets* System automatically clocks down for processors with 1066MHz DDR3 memory controller. System automatically clocks down for processors. Maximum resolution: 1600 x100 @0.0Hz DDR3 memory controller. System automatically clocks down for processors. Maximum resolution: 1600 x100 @0.0Hz DDR3 memory controller. Serial ATA, SATA 3.0Gbis, integrated in chipset, BAID® 0, 1, 5, 10 support. Optical UltraSilin Enhanced DYD-RW none (use USB port). None (use USB port). Serial ATA, SATA 3.0Gbis, integrated in chipset, BAID® 0, 1, 5, 10 support. Diagnostic and system status LEDs on front panel ports. Provided and system status LEDs on front panel Diagnostics. Systems mgmt. Processor (PMI model(s): IPMI 2.0-compliant baseboard management controller (BAID® processor). IPMI model(s): IPMI 2.0-compliant baseboard management controller (BAID® processor). IPMI model(s): IPMI 2.0-compliant baseboard management controller (BAID® processor). IPMI model(s): IPMI 2.0-compliant baseboard management controller (BAID® processor). IPMI model(s): IPMI 2.0-compliant baseboard management controller (BAID® processor). IPMI model(s): IPMI 2.0-compliant baseboard management controller (BAID® processor). IPMI model(s): IPMI 2.0-compliant baseboard management controller (BAID® processor). IPMI model(s): IPMI 2.0-compliant baseboard management controller (BAID® processor). IPMI model(s): IPMI 2.0-compliant baseboard management controller (BAID® processor). IPMI 2.0-compliant baseboard management controller (BAID® processor). IPMI 2.0-compliant baseboard management controller based		 This model has a 3-year limited warranty¹ High performance, advanced RAID, and remote management support 	ported at value price point
Virtualization ready, VMWare Ready™ certified Power-On Hotkey • Setup Utility: DEL at startup • Network Boot: F12 at startup • Onboard SATA RAID: Ctrl+I at startup • Add-on SATA/SAS RAID: Ctrl+H at startup Software Management Tools	Implementation Memory Graphics Disk bays Disk controller Optical Diskette Ethernet Chipset Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites Keyboard Mouse Power supply(s)	Up to two processors, one processor standard, Intel® Xeon® Processor E5603 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets 2GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** *System automatically clocks down for processors with 1066MHz DDR3 memory controller **Over four DIMMs requires dual processors Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz Four 3.5" hot-swap (HS) SATA disk bays Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID® 0, 1, 5, 10 support UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slot (see right), enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, onboard SATA controller (See Right) One PCI Express 2.0 x16 slot standard Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor IPMI model(s): IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub Monitor, keyboard, mouse, SATA/SAS disk, rack, OS None (use USB port) None (use USB port) One 600 watts standard, one maximum, variable speed fan, auto-sensing, no redundancy	Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention Toolless adapter retention
ThinkServer EasyStartup Security Administrator password User password User password Boot sequence control Boot without keyboard, mouse, diskette Max internal capacity 3.5" SATA HS: 8.0TB with four 2TB 3.5" SATA disks 3.5" SAS HS: 2.4TB with four 600GB 3.5" SAS disks **RoHS-compliant** RoHS-compliant**	3.5" SATA HS:	8GB RDIMMs Max internal capacity 8.0TB with four 2TB 3.5" SATA disks	Virtualization ready, VMWare Ready™ certified Power-On Hotkey • Setup Utility: DEL at startup • Network Boot: F12 at startup • Onboard SATA RAID: Ctrl+I at startup • Add-on SATA/SAS 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)

ThinkServer RD230 (1043) - May 2011 - withdrawn

Name		Proc- essor(s)	GHz	Cores	Memory DIMMs	Memory speed	RAID Battery	Disk bays	Disk type	SATA optical	RAID Int	System mgmt	Ethernet	Ann date (mm/dd/yy)
								4 x Hot-swap 4 x Hot-swap						05/31/11 05/31/11

These models have a 1-year limited warranty



3.5" SAS HS:

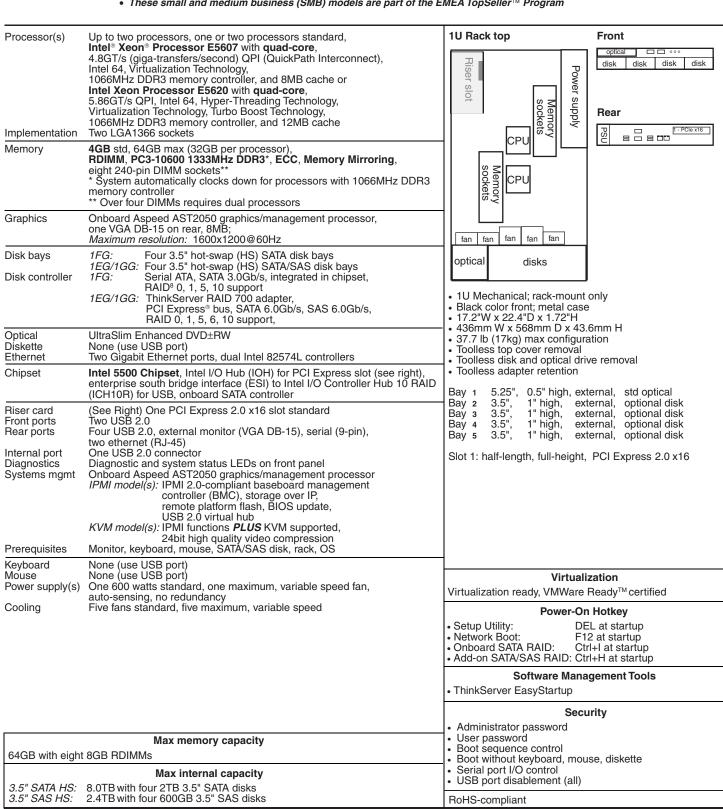
RoHS-compliant

ThinkServer RD230 (1044) - May 2011 -withrawn

Type-	Slot x Proc-	CU- Core	Memory	Memory Disk speed size	RAID Battery	Disk bays	Disk	SATA	RAID	System	Ethernet	Ann date
Name model RD230 1044-180 RD230 1044-190	3 1x5 1xE5603 • <i>These</i>	1.60 4 1.60 4 <i>models ha</i>	1 x 2 G B 1 x 2 G B ave a 3-yea	1333MHz 3.5" 1333MHz 3.5" ar limited warra ed RAID, and re	None None	4xHot-swap 4xHot-swap	SATA/SAS	DVD±RW	0/1/1E	IPMI	2xGb 2xGb	(<i>mm/dd/yy</i>) 05/31/11 05/31/11
Implementation Memory Graphics Disk bays Disk controller Optical Diskette Ethernet Chipset Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites Keyboard Mouse Power supply(s) Cooling	DDR3 memory ** Over four DIP Onboard Aspec one VGA DB-1! Maximum reso. Four 3.5" hot-si LSI™ LSISAS1 SATA 3.0Gb/s, UltraSlim Enha None (use USE Two Gigabit Eth Intel 5500 Chip enterprise sout RAID (ICH10R) (See Right) On Two USB 2.0, two ethernet (R One USB 2.0, two ethernet (R One USB 2.0, c Diagnostic and Onboard Aspec IPMI model(s): KVM model(s):	rocessor I ransfers/se ization Tec ization I izatically close izatically close izatically close izatically close izatically close ization: 160 wap (HS) ization: 160 w	E5603 with econd) QP honology, controller, controller, estate process dual interface (Econboard Service) process dual interface (Econboard Service) duality (BMC), statform flass duality vice, satform flass compliant by quality vice, satform flass duality	and quad-core, I (QuickPath In and 4MB cach cessor), 13*, ECC, Mem for processors cocessors commanagement 60Hz disk bays bus, 0, 1, 1E suppout 182574L controller 1961 (1961) to Intel I/O (ATA controller 1961) to Intel I/O (ATA controller 1961), serial confront panel s/management passeboard man prage over IP, h, BIOS update 1965 (1961) to Intel I/O (1961) to Intel	ory Mirr with 106 processo rt rt collers processo did (9-pin), processo agemen e, ed, n S	oring, 66MHz or, t (see right), r Hub 10	fan fa optical 1 U Me Black o 17.2"W 436mn 37.7 lb Toolles Toolles Toolles Bay 1 Bay 2 Bay 3 Bay 4 Bay 5	chanical; recolor front; / x 22.4 "D n W x 568n (17kg) mas stop cove ss disk and standard results adapter 5.25", 0.8 3.5", 1" 3.5", 1"	ks ack-mount metal cas x 1.72"H nm D x 43 x configui r removal optical dr retention 5" high, ex high, ex high, ex high, ex	e 3.6mm H ration rive remo kternal, kternal, kternal, kternal, kternal,	oval std optica optional o optional o optional o	al disk disk disk disk disk disk
		lax memo	ry capaci	ty			• Setup I • Networ • 1068E • Add-on • ThinkS • Admin • User p • Boot s	rk Boot: RAID: SATA/SAS	Power-O Power-O F C RAID: C ware Man Startup Sec ssword ontrol	n Hotke EL at sta 12 at sta 11 at sta trl+E at strl+H at agemen	ey artup irtup startup startup	
64GB with eight		Max intern	al capaci	ty			 Serial 	port I/O co ort disable	ntrol		kette	

Name	Type- model	Slot x bay	Proc- essor(s)	GHz	Cores	Memory DIMMs			RAID Battery	Disk bays	Disk type	SATA optical		System mgmt	Ethernet	Ann date (mm/dd/yy)
RD230	4011-1EG	1x5	1 x E5607	2.26	4	1x4GB	1333MHz	3.5"	None	4 x Hot-swap	SATA/SAS4	DVD±RW	0/1/5/6/10	KVM	2xGb	11/08/11
	4011-1FG									4 x Hot-swap		DVD±RW				11/08/11
RD230	4011-1GG	1 x 5	1 x E5620	2.40	4	1x4GB	1333MHz	3.5"	None	4 x Hot-swap	SATA/SAS	DVD±RW	0/1/5/6/10) KVM	2 x Gb	11/08/11

- These models have a 3-year limited warranty
- These small and medium business (SMB) models are part of the EMEA TopSeller™ Program







Lenovo ThinkServer RD240



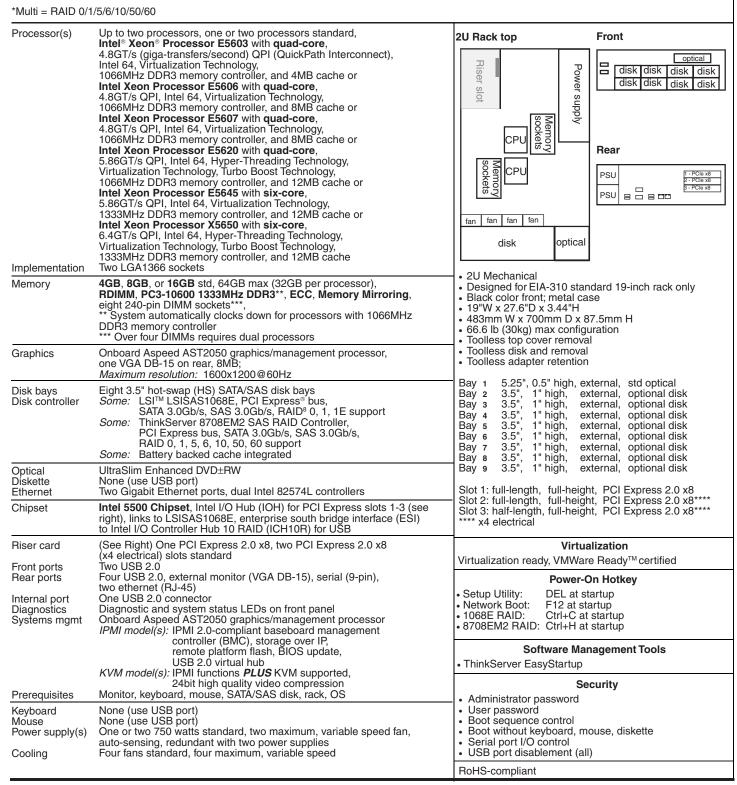
Lenovo ThinkServer RD240



Lenovo ThinkServer RD240

Name							Disk RAID size Battery	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Power supply(s) Et	thernet	Ann date (mm/dd/yy)
RD240 RD240 RD240 RD240 RD240	1046-18G 1046-19G 1046-1AG 1046-1BG 1046-1CG	3x9 3x9 3x9 3x9 3x9 3x9		2.13 2.26 2.40 2.40 2.40	4 4 6 6	1x4GB 1x4GB 1x4GB 1x4GB 1x8GB	3.5" 3.5" 3.5" 3.5" 3.5" Battery		1068E 8708EM2 8708EM2 1068E 8708EM2	SATA/SAS SATA/SAS SATA/SAS SATA/SAS SATA/SAS	0/1/1E Multi* Multi 0/1/1E Multi	IPMI KVM KVM KVM	1x750W 2 1x750W 2 1x750W 2 1x750W 2 2x750W 2	2xGb 2xGb 2xGb 2xGb 2xGb	03/01/11 03/01/11 03/01/11 03/01/11 03/01/11 03/01/11
RD240	1046-1D0	33x9	2 x X5650	2.66	12	2x8GB	3.5" Battery	8 x Hot-swap	8708EM2	SATA/SAS	Multi	KVM	2x750W 2	2 x Gb	03/01/11

- These models have a 3-year limited warranty¹
- These small and medium business (SMB) models are part of the EMEA TopSeller™ Program



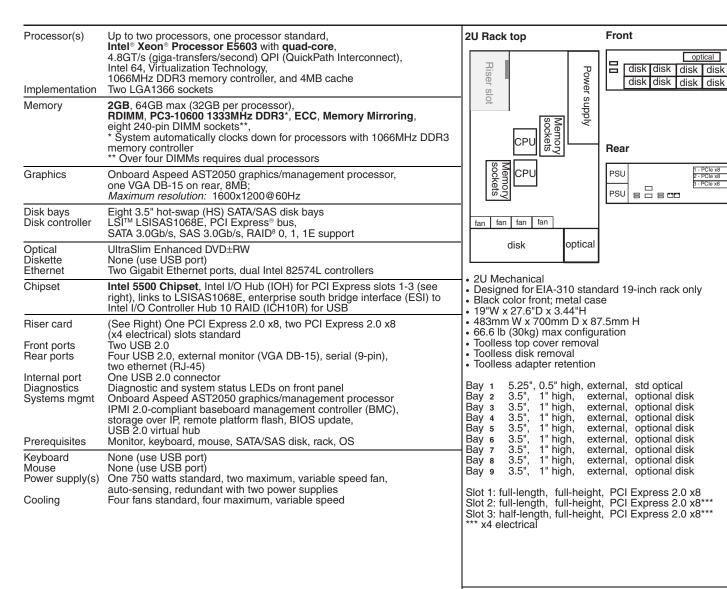
		Slot x	Proc-		Memory		RAID	Disk	Disk	Disk	RAID	System	Power	Fab a second	Ann date
Name RD240 1	model 048-14G	3x9 ⁻	. ,	1.60 4	1x2GB		None None	bays 8 x Hot-swar	Controller 1068E	type SATA/SAS	Int 4 0/1/1E	mgmt IPMI	1 x 750W	Ethernet 2xGb	(<i>mm/dd/yy</i>) 03/01/11
		•	These r	nodels have											
Process	or(s)	Intel® 4.8G	Xeon® P /s (giga-		5603 wit cond) QF	h qua	d-core,	nterconnect)),	2U Rack	top		Front		optical
Impleme	entation	1066		ization Tech 3 memory o sockets		, and	4MB cad	che		Riser slot		Power	di di		disk disk disk disk
Memory		eight * Syst memo	M, PC3-1 240-pin E em autor ory contro	IMM socke natically clo	MHz DDI ts**, cks dowr	R3 *, E n for p	CC, Mei	mory Mirror				Power supply Memory Sockets	Rear		
Graphic	S	one V <i>Maxir</i>	GA DB-1 num reso	5 on rear, 8 <i>lution:</i> 160	MB; 0x1200@	60Hz		t processor,		sockets	CPU		PSU PSU E	= = = ==	1 - PCle x8 2 - PCle x8 3 - PCle x8
Disk bay Disk cor		LSI™	LSISAS1	wap (HS) 9 068E, PCI SAS 3.0Gb	Express®	bus,		oort		fan far		<u> </u>			
Optical Diskette Etherne		None	(use USI	nced DVD± 3 port) nernet ports		el 825	574L con	ntrollers			disk	optica	al _		
Chipset		right),	links to L		BE, enter	prise :	south bri	xpress slots dge interface B		DesignBlack (19"W)	color fron k 27.6"D	it; metal c x 3.44"H			only
Riser ca	rd			e PCI Expr		8, two	PCI Exp	oress 2.0 x8		• 66.6 lb	(30kg) r	nax confi		H	
Front po Rear po	rts	Four two e	thernet (F		onitor (VG	A DB	-15), ser	rial (9-pin),		 Toolles 	s disk re	ver remov moval er retentio			
Internal Diagnos Systems	tics	Diagn Onbo <i>IPMI</i>	ostic and ard Aspe model(s):	system sta ed AST2050 IPMI 2.0-co controller (remote pla USB 2.0 vi IPMI functi 24bit high	O graphic ompliant BMC), st tform flas rtual hub ons PLU	s/mar baseb orage sh, BIC	agemen oard ma over IP, OS upda	nt processor inagement te, rted,		Bay 1 Bay 2 Bay 3 Bay 4 Bay 5 Bay 6 Bay 7 Bay 8	3.5", 1 3.5", 1 3.5", 1 3.5", 1 3.5", 1 3.5", 1 3.5", 1	" high, 6 or high, 6 o	external, external, external, external, external, external, external, external,	optional d optional d optional d optional d optional d optional d optional d	isk isk isk isk isk isk
Reyboar Mouse Power s	rd	None None One 7 auto-s	(use USI (use USI '50 watts sensing, r		wo maxin	num, v	ariable s	speed fan,		Slot 2: fu	ıll-length ıll-length alf-length	, full-heig , full-heig	external, ght, PCI E ght, PCI E ght, PCI E	xpress 2.	0 x8 0 x8***
										Virtualiz	ation rea		ualization are Ready		
										viitualiz	unon rea		On Hotke		4
										Setup INetwor1068E8708EI	k Bóot: RAID:	DEL at s F12 at s Ctrl+C a Ctrl+H a	tartuṗ it startup		
										• ThinkS		ftware MassyStartup	anageme	nt Tools	
													ecurity		
64GB v	vith eight	8GB F	C3-1060	lax memor 0 DDR3 RD	IMMs					User pBoot sBoot w	equence vithout ke	control yboard, r	nouse, dis	skette	
3.5" SA 3.5" SA	TA HS:	16.0TB 4.8TB	with eigh	Max interna it 2TB HS S 600GB HS	ATA disk	s					ort disab ompliant	lement (a	ıll)		
				v informatio						1	p ======				© Lenovo

ThinkServer RD240 (1047) - March 2011 - withdrawn

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	Ann date (mm/dd/yy)

RD240 1047-12G 3x9 1xE5603 1.60 4 1x2GB 3.5" None 8xHot-swap 1068E SATA/SAS4 0/1/1E IPMI 1x750W 2xGb 03/01/11

- This model has a 1-year limited warranty
- . High performance, scalability, and remote management supported at value price point



Virtualization

Virtualization ready, VMWare Ready™ certified

Power-On Hotkey

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

Max memory capacity 64GB with eight 8GB PC3-10600 DDR3 RDIMMs

Max internal capacity

3.5" SATA HS: 16.0TB with eight 2TB HS SATA disks 3.5" SAS HS: 4.8TB with eight 600GB HS SAS disks

ThinkServer RD240 (1046) - TopSeller (Nov 2011) - withdrawn

Type- model	Proc- essor(s)	GHz	Core	Memory s DIMMs	Disk size	RAID Battery	Disk bays	Disk Controller	Disk(s)	Disk type	RAID Int	System mgmt	Power supply(s) I	Ethernet(Ann date mm/dd/yy)
1046-A1G 1046-A2G 1046-A3G	1 x E5606 1 x E5607	2.13 2.26	4	1 x 4GB 1 x 4GB	3.5" 3.5"		8 x Hot-swap 8 x Hot-swap 8 x Hot-swap	1068E 1068E	2x300GB SAS		0/1/1 0/1/1	E KVM E KVM	1 x 750W 1 x 750W	2xGb 2xGb	11/08/11 11/08/11
1046-A4G	1 x E5645	2.40	6	1 x 8GB	3.5"	Battery	8 x Hot-swap	RAID 700	2x300GB SAS	SATA/SAS	Multi	KVM	1 x 750W	2 x Gb	11/08/11

- These models have a 3-year limited warranty¹
 These small and medium business (SMB) models are part of the EMEA TopSeller™ Program

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

2 1 2 3 4 5 5 6	Up to two processors, one processors standard, Intel® Xeon® Processor E5606 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 8MB cache or Intel Xeon Processor E5607 with quad-core, 4.8GT/s QPI, Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 8MB cache or Intel Xeon Processor E5645 with six-core, 5.86GT/s QPI, Intel 64, Virtualization Technology, 1333MHz DDR3 memory controller, and 12MB cache Two LGA1366 sockets	Power supply Power supply Memory sockets Piser slot	Front Optical disk disk disk disk Rear
, , ,	4GB, 8GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3**, ECC, Memory Mirroring, eight 240-pin DIMM sockets***, ** System automatically clocks down for processors with 1066MHz DDR3 memory controller *** Over four DIMMs requires dual processors	Sockets Fan Fan Fan	PSU
Graphics	Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz	disk optical	
Disk controller	Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: LSI™ LSISAS1068E, PCI Express® bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID® 0, 1, 1E support Some: ThinkServer RAID 700 adapter, PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support, Some: Battery backed cache integrated	 2U Mechanical Designed for EIA-310 stan Black color front; metal ca: 19"W x 27.6"D x 3.44"H 483mm W x 700mm D x 8 66.6 lb (30kg) max configu Toolless top cover remova 	se 7.5mm H uration
Diskette 1	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers	Toolless disk and removal Toolless adapter retention	
' r	Intel 5500 Chipset, 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	Bay 3 3.5", 1" high, ex	kternal, std optical kternal, optional disk kternal, optional disk kternal, optional disk
Front ports Rear ports Internal port Diagnostics Systems mgmt	See Right) One PCI Express 2.0 x8, two PCI Express 2.0 x8 (x4 electrical) slots standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor IPMI model(s): IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub	Bay 5 3.5", 1" high, ex Bay 6 3.5", 1" high, ex Bay 7 3.5", 1" high, ex Bay 8 3.5", 1" high, ex Bay 9 3.5", 1" high, ex Slot 1: full-length, full-heigh Slot 2: full-length, full-heigh **** x4 electrical	Atternal, optional disk sternal, PCI Express 2.0 x8**** att, PCI Express 2.0 x8****
	KVM model(s): IPMI functions PLUS KVM supported, 24bit high quality video compression	Virtualization ready, VMWare	e Ready [™] certified
Keyboard Mouse Power supply(s)	Monitor, keyboard, mouse, SATÁ/SAS disk, rack, OS None (use USB port) None (use USB port) One or two 750 watts standard, two maximum, variable speed fan, auto-sensing, redundant with two power supplies Four fans standard, four maximum, variable speed	• Setup Utility: DEL at st • Network Boot: F12 at sta • 1068E RAID: Ctrl+C at • RAID 700 RAID: Ctrl+H at	artup startup
	and speed	Software Mar ThinkServer EasyStartup	nagement Tools
		Se Administrator password	curity
	Max memory capacity GB PC3-10600 DDR3 RDIMMs Max internal capacity	Administrator password User password Boot sequence control Boot without keyboard, mo Serial port I/O control USB port disablement (all	
3.5" SATA HS: 16. 3.5" SAS HS: 4.8	.0TB with eight 2TB HS SATA disks BTB with eight 600GB HS SAS disks	RoHS-compliant	,

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.

- Limited warranty: Support unrelated to a warranty issue may be subject to additional charges.
- ² **Hard drive:** GB = billion bytes, TB = trillion bytes. Accessible capacity is less.
- ³ 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.
- 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.
- 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.

8 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.

- 10 Modem speeds: Public network download speeds are limited to 53Kbps. Upload speeds are limited to 48Kbps for V.92 modems. Actual speeds depend on many factors and are often less than the maximum possible. V.92 functions and speeds require compatible phone line and server equipment. Check with your telephone and ISP service providers for availability.
- 11 For combination drives, maximum speeds only are given in the following order: CD read, CD write, CD re-write, DVD read.
- ¹⁴ Response times may vary. May exclude some holidays. Telephone support may be subject to additional charges.
- 15 Update Connector is available at no charge to registered customers during the limited warranty period. Line charges may apply.
- 16 Embedded Security Subsystem works with optional VPN software.