

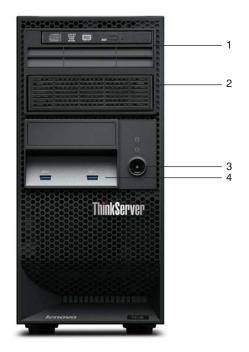
Product Specifications Reference Lenovo® ThinkServer® Servers

November 2013 - Version 446



ThinkServer RD640

ThinkServer® TS140 - Overview





Front view

- 1. Optional slim optical + 3.5" drive bay in standard 5.25" bay
- 2. Optional 3.5" hard drive bay
- 3. Power Button
- 4. Front I/O: 2 USB 3.0 (blue)

Rear view

- Power Supply: 280 watts 80 PLUS Bronze/450 watts 80 PLUS Platinum
- 6. Rear I/O: 2 USB 2.0 4 USB 3.0(blue) 1 serial (9-pin) 1 RJ-45 (GbE)

 - 1 line-in
 - line-out

 - 1 microphone-in
 2 DisplayPort (for Intel HD Graphics)
 1 VGA (for Intel HD Graphics)
- 7. 1 PCle 3.0 x16

 - 1 PCle 2.0 x1 1 PCle 2.0 x16 (x4 elec) 1 PCl

Internal

- One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3, Core-i3 4000, and Pentium families
- 4 DIMM sockets, supports up to 32GB ECC UDIMM memory
- Up to four 3.5" hard drive bays, two 3.5" hard drive bays standard

Mechanical

- Raven black color; metal case
- Rack-mountable to 5U
- 6.89"W x 16.97"D x 14.76"H
- 175mm W x 431mm D x 375mm H
- 28.66 lb (13kg) max configuration
- 25-liter

ThinkServer® TS140 Platform Specifications - I of III

Form factor Chipset I Systems management Processor Ci	Specification Tower, rack-mountable Intel C226 Chipset Intel Active Manager (KVM function needs EasyStartup EasyUpdate One LGA1150 socket, supports one processor integrated 2-channel D The following processor Processor Number Xeon E3-1285 v3 Xeon E3-1280 v3 Xeon E3-1270 v3 Xeon E3-1245 v3 Xeon E3-1245 v3 Xeon E3-1245 v3 Xeon E3-1240 v3 Xeon E3-1220 v3 Xeon E3-1220 v3	nent Tec Intel Xo or from I	chnology eon E3-12 ntel Xeon emory con	9 on mode 2x5 v3 prod 1 E3-1200 v ntroller, op	Is with Xeor cessors)	n proces	sor	000 families,	,						
Systems management Processor C	• Intel Active Manager (KVM function needs EasyStartup EasyUpdate One LGA1150 socket, supports one processor integrated 2-channel DThe following processor Number Xeon E3-1285 v3 Xeon E3-1280 v3 Xeon E3-1275 v3 Xeon E3-1245 v3 Xeon E3-1245 v3 Xeon E3-1240 v3 Xeon E3-1230 v3 Xeon E3-1225 v3 Xeon E3-1220 v3	or from I DR3 me ors are s # of Cores 4 4 4 4	ntel Xeon emory col supported # of Threads 8 8 8	E3-1200 vntroller, op	v3, Core-i3 tional integr	4000, ar ated pro	d Pentium G3 cessor graphi	es on selected							
Systems nanagement Processor C	(KVM function needs EasyStartup EasyUpdate One LGA1150 socket, supports one processor integrated 2-channel D The following processor Processor Number Xeon E3-1285 v3 Xeon E3-1280 v3 Xeon E3-1275 v3 Xeon E3-1270 v3 Xeon E3-1245 v3 Xeon E3-1245 v3 Xeon E3-1245 v3 Xeon E3-1240 v3 Xeon E3-1220 v3 Xeon E3-1220 v3	or from I DR3 me ors are s # of Cores 4 4 4 4	ntel Xeon emory col supported # of Threads 8 8 8	E3-1200 vntroller, op	v3, Core-i3 tional integr	4000, ar ated pro	d Pentium G3 cessor graphi	es on selected							
Processor (Signature)	One LGA1150 socket, supports one processor integrated 2-channel DThe following processor Number Xeon E3-1285 v3 Xeon E3-1280 v3 Xeon E3-1270 v3 Xeon E3-1270 v3 Xeon E3-1240 v3 Xeon E3-1240 v3 Xeon E3-1220 v3 Xeon E3-1220 v3	# of Cores 4 4 4 4 4	# of Threads 8 8 8	clock Speed 3.6 GHz	Max Turbo Frequency	ated pro	cessor graphic	es on selected							
	Processor Number Xeon E3-1285 v3 Xeon E3-1280 v3 Xeon E3-1275 v3 Xeon E3-1270 v3 Xeon E3-1245 v3 Xeon E3-1240 v3 Xeon E3-1220 v3 Xeon E3-1220 v3	# of Cores 4 4 4 4 4 4	# of Threads 8 8	Clock Speed 3.6 GHz	Frequency	Cache			Processor Graphics						
	Xeon E3-1285 v3 Xeon E3-1280 v3 Xeon E3-1275 v3 Xeon E3-1270 v3 Xeon E3-1245 v3 Xeon E3-1240 v3 Xeon E3-1230 v3 Xeon E3-1225 v3 Xeon E3-1220 v3	4 4 4 4 4 4 4	8 8 8	Speed 3.6 GHz	Frequency	Cache			Processor Graphics						
	Xeon E3-1280 v3 Xeon E3-1275 v3 Xeon E3-1270 v3 Xeon E3-1245 v3 Xeon E3-1240 v3 Xeon E3-1230 v3 Xeon E3-1225 v3 Xeon E3-1220 v3	4 4 4 4 4	8		4 GHz		# of # of Clock Max Turbo Cooks Memory ECC Memory Processor Craphics								
	Xeon E3-1275 v3 Xeon E3-1270 v3 Xeon E3-1245 v3 Xeon E3-1240 v3 Xeon E3-1230 v3 Xeon E3-1225 v3 Xeon E3-1220 v3	4 4 4 4	8	3.6 GHz		100 000 000 000 000 000									
	Xeon E3-1270 v3 Xeon E3-1245 v3 Xeon E3-1240 v3 Xeon E3-1230 v3 Xeon E3-1225 v3 Xeon E3-1220 v3	4 4 4			4 GHz	8 MB	DDR3-1600	Yes							
	Xeon E3-1245 v3 Xeon E3-1240 v3 Xeon E3-1230 v3 Xeon E3-1225 v3 Xeon E3-1220 v3	4 4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600						
	Xeon E3-1240 v3 Xeon E3-1230 v3 Xeon E3-1225 v3 Xeon E3-1220 v3	4		3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes	·						
	Xeon E3-1230 v3 Xeon E3-1225 v3 Xeon E3-1220 v3		8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600						
	Xeon E3-1225 v3 Xeon E3-1220 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	•						
	Xeon E3-1225 v3 Xeon E3-1220 v3		8	3.3 GHz	3.7 GHz	8 MB	DDR3-1600	Yes							
	Xeon E3-1220 v3	4	4		3.6 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600						
		4	4	3.1 GHz	3.5 GHz	8 MB	DDR3-1600	Yes							
	Core i3-4340	2	4	3.6 GHz	5.5 5.12	4 MB	DDR3-1600	Yes	Intel HD Graphics 4600						
	Core i3-4330	2	4	3.5 GHz		4 MB	DDR3-1600	Yes	Intel HD Graphics 4600						
	Core i3-4130	2	4	3.4 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics 4400						
	Pentium G3430	2	2	3.3 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics						
The state of the s	Pentium G3420	2	2	3.2 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics						
ll l	Pentium G3220	2	2	3.2 GHz		3 MB	DDR3-1000 DDR3-1333	Yes	Intel HD Graphics						
	All information is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is". Intel may update this information in non-scheduled. For latest information, please see http://ark.intel.com/ 1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available														
•	•	CKEIS													
, , , , , , , , , , , , , , , , , , ,	Up to 32GB (8GBx4) ECC														
Additional															
nemory disclaimers	 Actual memory operatir 	ig speed	depends d	on processor	r memory con	troller sp	eed, installed me	emory speed, a	nd quantity of memory DIMMs						
	Onboard ThinkServer		00 SATA c	ontroller in	n chipset, SA	ATA 6.00	ab/s,								
Drive bays	Note: 4x3.5" bays models: Bay 3x3.5" bays models: Bay 22x3.5" bays models: Bay 3x3.5" bays models: Bay	eft	are included e included	ed in models in models	bays (pendi	ng 2.5"	disk drives ava	1: Standard optional s 2: Optional s or optional s 3: Optional 3 4: Standard	5.25", 1.6" high optical or lim optical + 4th 3.5" drive bat 3rd 3.5" drive bay at 4th 2.5" drive bay 3.5" drive bay 3.5"/2.5" primary drive bay 3.5"/2.5" 2nd drive bay						

ThinkServer® TS140 Platform Specifications - II of III

Components	Specification									
Optical	Supports DVD±RW or DVD ROM, 1.6	high or slim, SATA interface								
•	 Integrated Intel HD Graphics on Xe 	on E3-12x5 v3, Core i3, and Pentium proc	essors, uses main memory,							
	works along with discrete graphics	to support multi-display,	•							
Graphics	enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section) Also supports the following optional discrete graphics adapters:									
Ciapilios	 (detailed information please see <i>Rear ports</i> section) Also supports the following optional discrete graphics adapters: NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB 									
	 Also supports the following optional discrete graphics adapters: NVIDIA Quadro NVS 300, PCle x16 adapter, 512MB NVIDIA Quadro 600, PCle x16 adapter, 1GB 									
Front ports	Two USB 3.0 (blue)									
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)									
	Slot 1: half-length, full-height, PCIe 3.		anding dudio porto (into in, into odi, fillo in)							
Evennoion Cloto	Slot 2: half-length, full-height, PCIe 2.	0 x1 `								
Expansion Slots	Slot 3: half-length, full-height, PCIe 2.									
Out a sud Eth and at	Slot 4: half-length, full-height, PCI 2.3									
Onboard Ethernet	One onboard gigabit ethernet, Intel I2 Supports the following:	17								
Discrete Ethernet	Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)								
(optional)	 Intel Ethernet Server Adapter I350 	-T2 (2xGbE, RJ-45)								
	Intel Ethernet Server Adapter I350	-T4 (4xGbE, RJ-45)								
Keyboard/mouse	None (use USB port)									
Power cupply	Supports one of the follwing, depending	ng on models:								
Power supply		85% PSU, 80 PLUS Bronze qualified 92% PSU, 80 PLUS Platinum qualified								
		P for TPM function, TCG 1.2-compliant								
		k; padlock prohibits side cover removal)								
	 Security slot (in rear for optional Kernetten) 	nsington Microsaver cable; prohibits side c	cover removal)							
Security	Power-on password Post on password									
•	Boot sequence controlBoot without keyboard, mouse, disk	ette								
	Serial port I/O control	otto								
	USB port disablement (front or all)									
	Raven black color; metal case									
Mechanical	• 6.89"W x 16.97"D x 14.76"H • 175mm W x 431mm D x 375mm H									
Wicerianical	28.66 lb (13kg) max configuration									
	• 25-liter									
	Toolless side cover removal									
Serviceability	 Toolless disk and optical drive removal (standard bays) Toolless adapter retention 									
	Illuminated front icons									
Environmental	GREENGUARD® certified									
certifications	Energy Star Server 1.1 qualified Ball S compliant									
EMC	RoHS-compliant FCC Class A									
240VA										
Temperature -	Supports									
operating	50 °F to 95 °F (10 °C to 35 °C)									
Temperature -										
non operating	-10 °C to 60 °C									
(no package)										
Temperature - non operating	-40 °C to 70 °C									
(with package)										
Altitude - operating	Supported Altitude (unpressurized): 0	-10000ft (0-3048m)								
Humidity - operating	10%~80%, non-condensing	, , ,								
Humidity -	, , , , , , , , , , , , , , , , , , , ,									
non operating	10%~90%, non-condensing									
(no package)										
Humidity - non operating	10%~90%, non-condensing									
(with package)	1.075 0076, Horr conditioning									
	Category	Min Configuration	Best Configuration							
	CPU 1 CPU 1 CPU									
	Optical Drive 0 DVD 1 DVD									
	Drive Bays Up to one Up to three									
A ! -	HDD 1x 500GB SATA 3x 500GB SATA									
Acoustic noise (idle/working mode)	Memory 1x 2GB UDIMM 1x 2GB UDIMM									
(idio/working initide)	PSU 280W 450W									
	RAID Embedded SATA Embedded RAID									
	Add-on card No 1xVGA									
	Sound Pressure (operating) 26 dB(A) 35 dB(A)									
	Sound Pressure (idle)	25 dB(A)	34 dB(A)							
	, ,		, ,							

ThinkServer® TS140 Platform Specifications - III of III

Components	Specification
Warranty	1 or 3-year limited warranty, parts and labor, more services information see <u>S-TS1</u> and <u>S-TS3</u> sheet
Preloaded operating systems	 Windows Server® 2012 Foundation Windows Server 2012 Essentials Windows Server 2012 Standard
Supported operating systems and virtualization software	Windows 7 Windows 8 Windows Server 2008 R2 Standard Windows Server 2008 R2 Enterprise Windows Small Business Server 2011 Essentials Windows Small Business Server 2011 Standard Windows Small Business Server 2011 Premium Add-On Notes: 1. Supported only, no preloaded models 2. Windows 7 and Windows 8 are not supported by EasyStartup

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A4001LUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001MUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001NUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001PUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001QUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	Foundation	1
70A4001RUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	Essentials	1
70A4001SUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD	No	No	280W	No	No	1

^{*} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

nkServer TS140 Platform Specifications sheet

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)
Chipset	Intel C226 Chipset
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)
Graphics	 Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section) Also supports the following optional discrete graphics adapters: NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB NVIDIA Quadro 600, PCIe x16 adapter, 1GB
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Up to four 3.5" hard drive bays (see right)
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface
Front ports	Two USB 3.0 (blue)
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45) three analog audio ports (line-in, line-out, mic-in)
Add-on ports (optional)	Supports the following: Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter(2xSerial PCIe)
Onboard Ethernet	One onboard gigabit ethernet, Intel I217
Discrete Ethernet (optional)	Supports the following: Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)
Keyboard/Mouse	None (use USB port)
Power supply	Supports one of the follwing, depending on models: One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)
Mechanical	 25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration
Serviceability	 Toolless side cover removal Toolless disk and optical drive removal (standard bays) Toolless adapter retention Illuminated front icons
Base warranty	1 or 3-year parts and labor limited warranty ¹
Environmental certifications	GREENGUARD® certified Energy Star Server 1.1 qualified/ ROHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet

Drive bays 2 3 Front

Left

Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay
 Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay
 Optional 3rd 2.5" drive bay
 Standard 3.5"/2.5" primary drive bay
 Standard 3.5"/2.5" 2nd drive bay

4x3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models

Expansion Slots

Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1 Slot 3: half-length, full-height, PCle 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCl 2.3

Security

- Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant
- 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® TS140 (70A5) - TopSeller (September 2013)

Personal Systems Reference (PSREF)

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet		Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	450W	No	No	1

^{*} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see <u>ThinkServer TS140 Platform Specifications</u> sheet

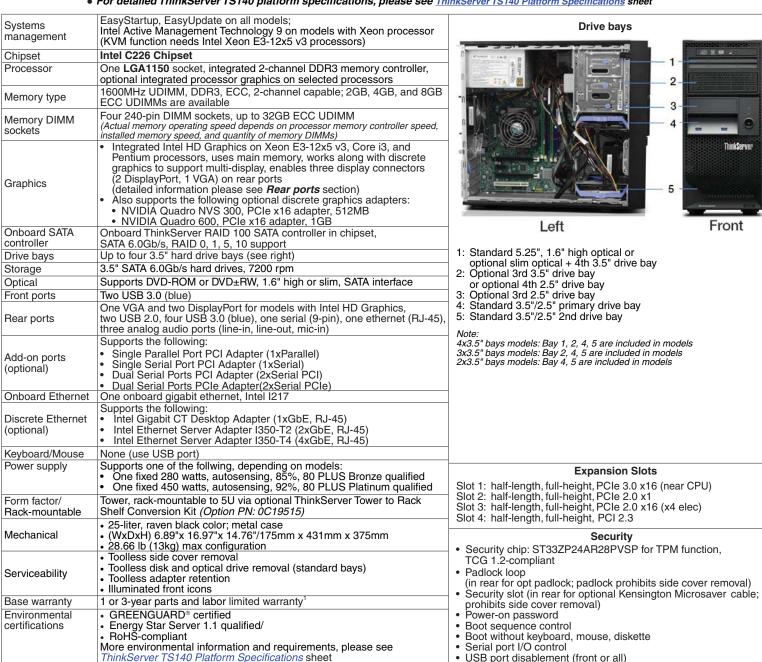
Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)	Drive bays
Chipset	Intel C226 Chipset	V
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors	
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available	7
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	4
Graphics	 Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section) Also supports the following optional discrete graphics adapters: NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB NVIDIA Quadro 600, PCIe x16 adapter, 1GB 	1 mint Server
Onboard SATA	Onboard ThinkServer RAID 100 SATA controller in chipset,	Left Front
controller	SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	1: Standard 5.25", 1.6" high optical or
Drive bays	Up to four 3.5" hard drive bays (see right)	optional slim optical + 4th 3.5" drive bay
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm	2: Optional 3rd 3.5" drive bay
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface	or optional 4th 2.5" drive bay
Front ports	Two USB 3.0 (blue)	3: Optional 3rd 2.5" drive bay 4: Standard 3.5"/2.5" primary drive bay
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	5: Standard 3.5"/2.5" 2nd drive bay Note:
Add-on ports (optional)	Supports the following: Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter(2xSerial PCIe)	4x3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	
Discrete Ethernet (optional)	Supports the following: Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	
Keyboard/Mouse	None (use USB port)	
Power supply	Supports one of the follwing, depending on models: One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified	
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)	Expansion Slots Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1
Mechanical	 25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration 	Slot 3: half-length, full-height, PCle 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCl 2.3
Serviceability	 Toolless side cover removal Toolless disk and optical drive removal (standard bays) Toolless adapter retention Illuminated front icons 	Security • Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant • Padlock loop
Base warranty	1 or 3-year parts and labor limited warranty ¹	(in rear for opt padlock; padlock prohibits side cover removal)
Environmental certifications	GREENGUARD® certified Energy Star Server 1.1 qualified/ RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet	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)
I		L >

ThinkServer® TS140 (70A0) - September 2013

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage (Drive bays)	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A00003US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	RAID 0	4x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	1xParallel	1x350-T2	280W	No	Foundation	1
70A00006US	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	RAID 0	4x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	2xIntel CT	280W	No	Foundation	1
70A00009UX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000AUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000BUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000CUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	No	1x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000DUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Foundation	1

^{*} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see ThinkServer TS140 Platform Specifications sheet



ThinkServer® TS140 (70A0) - September 2013 - II

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A0000EUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Essentials	1
70A0000FUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	RAID 1	2x500GB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Standard	1
70A0000GUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000HUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000JUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	Open (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	No	1
70A0000KUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Foundation	1
70A0000LUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Essentials	1

^{*} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see ThinkServer TS140 Platform Specifications sheet

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)	Drive bays					
Chipset	Intel C226 Chipset	Community of the second					
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors	1					
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available	3-					
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	4 0					
Graphics	 Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section) Also supports the following optional discrete graphics adapters: NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB NVIDIA Quadro 600, PCIe x16 adapter, 1GB 	Timit Server					
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	Left Front					
Drive bays	Up to four 3.5" hard drive bays (see right)	1: Standard 5.25", 1.6" high optical or					
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm	optional slim optical + 4th 3.5" drive bay 2: Optional 3rd 3.5" drive bay					
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface	or optional 4th 2.5" drive bay					
Front ports	Two USB 3.0 (blue)	3: Optional 3rd 2.5" drive bay					
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	4: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay					
Add-on ports (optional)	Supports the following: Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe)	Note: 4x3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models					
Onboard Ethernet	One onboard gigabit ethernet, Intel I217						
Discrete Ethernet (optional)	Supports the following: Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)						
Keyboard/Mouse	None (use USB port)						
Power supply	Supports one of the follwing, depending on models: One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified	Expansion Slots Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU)					
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)	Slot 2: half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCI 2.3					
Mechanical	25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration	Security • Security chip: ST33ZP24AR28PVSP for TPM function,					
Serviceability	 Toolless side cover removal Toolless disk and optical drive removal (standard bays) Toolless adapter retention Illuminated front icons 	TCG 1.2-compliant Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security slot (in rear for optional Kensington Microsaver cable;					
Base warranty	1 or 3-year parts and labor limited warranty	prohibits side cover removal)					
Environmental certifications	GREENGUARD® certified Energy Star Server 1.1 qualified/ RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet						

ThinkServer® TS140 (70A0) - September 2013 - III

Type- model	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power Supply	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70A0000MUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	RAID 1	2x1TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Standard	1
70A0000NUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx1	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3
70A0000PUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx2	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3
70A0000QUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	Intel HD P4600	No	2x2TB 3.5" SATA (4x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3

^{*} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see ThinkServer TS140 Platform Specifications sheet

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor	Drive bays					
	(KVM function needs Intel Xeon E3-12x5 v3 processors)	printers states					
Chipset	Intel C226 Chipset	Property of the Party of the Pa					
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors	2-					
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available	- 3					
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	4					
Graphics	 Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section) Also supports the following optional discrete graphics adapters: NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB NVIDIA Quadro 600, PCIe x16 adapter, 1GB 	Left Front					
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	Leit					
Drive bays	Up to four 3.5" hard drive bays (see right)	1: Standard 5.25", 1.6" high optical or					
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm	optional slim optical + 4th 3.5" drive bay					
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface	2: Optional 3rd 3.5" drive bay					
Front ports	Two USB 3.0 (blue)	or optional 4th 2.5" drive bay 3: Optional 3rd 2.5" drive bay					
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	4: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay					
	Supports the following:	Note:					
Add-on ports (optional)	 Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter(2xSerial PCIe) 	4x3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models					
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	-					
Discrete Ethernet (optional)	Supports the following: Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)						
Keyboard/Mouse	None (use USB port)						
Power supply	Supports one of the follwing, depending on models: One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified	Expansion Slots					
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)	Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1 Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)					
Mechanical	 25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration 	Slot 4: half-length, full-height, PCI 2.3					
	Toolless side cover removal	Security • Security chin: ST227D24AB28DVSD for TBM function					
Serviceability	 Toolless disk and optical drive removal (standard bays) Toolless adapter retention Illuminated front icons 	Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant Padlock loop Text for the aller to reliable problems into account remains.					
Base warranty	1 or 3-year parts and labor limited warranty ¹	(in rear for opt padlock; padlock prohibits side cover removal) • Security slot (in rear for optional Kensington Microsaver, cable					
Environmental certifications	GREENGUARD® certified Energy Star Server 1.1 qualified/ RoHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet	Security slot (in rear for optional Kensington Microsaver 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	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Power	Rack kit	Windows Server 2012 Preloaded	Base on-site warranty (-year)
	Xeon E3-1280 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	NVS 300	RAID 10		Slim DVD±RW	1xParallel	2xIntel CT	450W	No	Foundation	1
	Xeon E3-1280 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	Quadro 600	RAID 10		Slim DVD±RW	No	1xIntel CT	450W	No	Foundation	1

^{*} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system.

• For detailed ThinkServer TS140 platform specifications, please see <u>ThinkServer TS140 Platform Specifications</u> sheet

Systems management	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors)	Drive bays
Chipset	Intel C226 Chipset	Print trans B
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors	2
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable; 2GB, 4GB, and 8GB ECC UDIMMs are available	
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	4 0
Graphics	 Integrated Intel HD Graphics on Xeon E3-12x5 v3, Core i3, and Pentium processors, uses main memory, works along with discrete graphics to support multi-display, enables three display connectors (2 DisplayPort, 1 VGA) on rear ports (detailed information please see <i>Rear ports</i> section) Also supports the following optional discrete graphics adapters: NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB NVIDIA Quadro 600, PCIe x16 adapter, 1GB 	5 - Thinkserver
Onboard SATA	Onboard ThinkServer BAID 100 SATA controller in chipset.	Left Front
controller	SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	1: Standard 5.25", 1.6" high optical or
Drive bays	Up to four 3.5" hard drive bays (see right)	optional slim optical + 4th 3.5" drive bay
Storage	3.5" SATA 6.0Gb/s hard drives, 7200 rpm	2: Optional 3rd 3.5" drive bay
Optical	Supports DVD-ROM or DVD±RW, 1.6" high or slim, SATA interface	or optional 4th 2.5" drive bay 3: Optional 3rd 2.5" drive bay
Front ports	Two USB 3.0 (blue)	4: Standard 3.5"/2.5" primary drive bay
Rear ports	One VGA and two DisplayPort for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	5: Standard 3.5"/2.5" 2nd drive bay Note:
Add-on ports (optional)	Supports the following: Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe)	4x3.5" bays models: Bay 1, 2, 4, 5 are included in models 3x3.5" bays models: Bay 2, 4, 5 are included in models 2x3.5" bays models: Bay 4, 5 are included in models
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	
Discrete Ethernet (optional)	Supports the following: Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	
Keyboard/Mouse	None (use USB port)	
Power supply	Supports one of the follwing, depending on models: One fixed 280 watts, autosensing, 85%, 80 PLUS Bronze qualified One fixed 450 watts, autosensing, 92%, 80 PLUS Platinum qualified	Expansion Slots Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU)
Form factor/ Rack-mountable	Tower, rack-mountable to 5U via optional ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515)	Slot 2: half-length, full-height, PCle 2.0 x1 Slot 3: half-length, full-height, PCle 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCl 2.3
Mechanical	 25-liter, raven black color; metal case (WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm 28.66 lb (13kg) max configuration 	Security
Serviceability	Toolless side cover removal Toolless disk and optical drive removal (standard bays) Toolless adapter retention Illuminated front icons	Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security slot (in rear for optional Kensington Microsaver cable;
Base warranty	1 or 3-year parts and labor limited warranty	prohibits side cover removal)
Environmental certifications	GREENGUARD® certified Energy Star Server 1.1 qualified/ ROHS-compliant More environmental information and requirements, please see ThinkServer TS140 Platform Specifications sheet	Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control
	THINKOETVEL 13140 FIGUOITH SPECIFICATIONS SHEET	USB port disablement (front or all)

ThinkServer





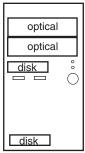


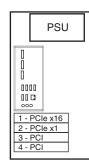
									Discrete			
Type-		Memory	Memory	Pre-conf	Disk	Disk		SATA	Ethernet	Windows Server	Power	Ann date
model	Processor(s)	speed	DIMMs	RAID	bays	size	Disk(s)	optical	adapter	preload	Supply	(mm/dd/yy)
1106-D3U	Xeon E3-1245V2	1333MHz	4x8GB	No	2xDirect Cable	3.5"	2x2TB	DVD	PRO/1000 PT	No	280W	11/13/12
1106-D4U	Xeon E3-1245V2	1333MHz	1x8GB	No	2xDirect Cable	3.5"	2x2TB	DVD	PRO/1000 PT	No	280W	11/13/12
1106-D5U	Xeon E3-1245V2	1333MHz	2x8GB	No	2xDirect Cable	3.5"	2x2TB	DVD	PRO/1000 PT	No	280W	11/13/12

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

Processor	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)	ا آ
Implementation	Processor in LGA1155 socket, up to one processor	Ш
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 2TB , 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® 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), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort	•
Audio	High Definition (HD) Audio, Realtek ALC662 codec	F
	One gigabit ethernet on planar, Intel 82579LM	E
Discrete Ethernet adapter	PRO/1000 PT: Intel PRO/1000 PT Dual Port Server Adapter on selected models, two gigabit ethernet	Ē
Security chip	STMicroelectronics ST19NP18 Trusted Platform Module (TPM),	E
Diagnostics	TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)	1
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)	
		1

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

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 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

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, 8 am 5 pm, Mon Fri coverage excluding holidays)
- Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html
- Onsite service upgrade options (in eligible locations)7
- Post warranty maintenance services 24 hour x 7 day¹⁴ toll-free support during the warranty period¹

US models announced November 13, 2012

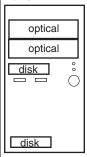
See footnotes for important warranty information

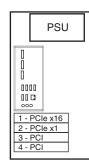
Type- model	Processor(s)	Memory speed	Memory DIMMs	Pre-conf RAID	Disk bavs	Disk size	Disk(s)	SATA optical	Discrete Ethernet adapter	Windows Server	Ann date (mm/dd/yy)
1106-G5U	Xeon E3-1245V2	1333MHz	4x8GB	No	2xDirect Cable	3.5"	2x2TB	DVD	Intel Gigabit ET	No	02/05/13
1106-G6U	Xeon E3-1245V2	1333MHz	1x8GB	No	2xDirect Cable	3.5"	2x2TB	DVD	Intel Gigabit ET	No	02/05/13
1106-G7U	Xeon E3-1245V2	1333MHz	2x8GB	No	2xDirect Cable	3.5"	2x2TB	DVD	Intel Gigabit ET	No	02/05/13

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

Processor	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)] [
Implementation	Processor in LGA1155 socket, up to one processor	Ш
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)	Two 3.5" SATA disk bays, no hot-swap, direct cable 2TB , SATA 6.0Gb/s, 7200 rpm, 3.5"	
Optical SATA controller	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® 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), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort	•
Audio	High Definition (HD) Audio, Realtek ALC662 codec	-
Onboard Ethernet	One gigabit ethernet on planar, Intel 82579LM	-
Discrete Ethernet adapter	Gigabit ET: Intel Gigabit ET Dual Port Server Adapter, two gigabit ethernet	E
Security chip	STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant	Е
Diagnostics	Two system status LEDs on front panel (disk drive activity, power/sleep)	5
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)	I.

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

Ваў з

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 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

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, 8 am 5 pm, Mon Fri coverage excluding holidays)

 Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html

 - Onsite service upgrade options (in eligible locations)7
- Post warranty maintenance services
 24 hour x 7 day¹⁴ toll-free support during the warranty period¹

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

	Туре-	D	Memory	Memory			Disk	D:-I-(-)	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)
	1105-67U	Core i3-2120	1333MHz	1x2GB	No	2xDirect Cable	3.5"		DVD	Intel HD		280W	08/21/12
	1105-68U	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"		DVD	Intel HD		280W	08/21/12
	1105-69U	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"	1x500GB	DVD	Intel HD		280W	08/21/12
><	1105-70U	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 Foundations	280W	08/21/12
	1105-71U	Xeon E3-1245V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"		DVD	Intel HD		280W	08/21/12
><	1105-72U	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011 Essentials	280W	08/21/12
*	1105-73U	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011 Standard	280W	08/21/12
><	1105-74U	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 R2 Standard	280W	08/21/12
	1105-75U	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 warranty¹

Processor Implementation	Intel® Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1333MHz) Intel Xeon® E3-1225V2 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 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	op disk
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	• Raver • 6.9"W • 175m
Disk bays SATA disk(s) Optical SATA controller	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 6.0Gb/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, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	• 24.7 l • 25-lite • Toolle • Toolle • Toolle • Illumii
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	Slot 1: Slot 2: Slot 2: Slot 3: Slot 4:
Keyboard Mouse Power supply Cooling	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)	Intel AN

Preloaded Operating System

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

Max internal capacity

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

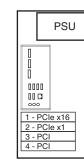
- 1-year parts and labor
- Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am 5 pm, Mon Fri coverage excluding holidays)
- Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html
- Onsite service upgrade options (in eligible locations)7

See footnotes for important warranty information

Post warranty maintenance services
 24 hour x 7 day¹⁴ toll-free support during the warranty period¹

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

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

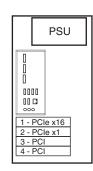
- Security chip (see information on left)Padlock loop (in rear for opt padlock;
- padlock prohibits side cover removal)
- Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
- Power-on password
- Boot sequence control
- · Boot without keyboard, mouse, diskette
- 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)
1105-B2U	Core i3-3220	1333MHz	1x4GB	No	2xDirect Cable	3.5"	No	DVD	Intel HD	No	280W	09/25/12
1105-B3U	Core i3-3240	1333MHz	1x4GB	No	2xDirect Cable	3.5"	No	DVD	Intel HD	No	280W	09/25/12

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

Processor	Intel® Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Intel Core i3-3240 processor (2C/4T, 3.4GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)		<u> </u>
Implementation	Processor in LGA1155 socket, up to one processor		L
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 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	•	•
Chipset Front ports	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0	•	
Audio Ethernet Security chip	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),	E	888
Diagnostics	TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)		s
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		S S S
Cooling	4 fans (power supply, CPU, rear, front)	H	_

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 Bay 2

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

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 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

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, 8 am 5 pm, Mon Fri coverage excluding holidays)

 Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html

 - Onsite service upgrade options (in eligible locations)7
- Post warranty maintenance services
 24 hour x 7 day¹⁴ toll-free support during the warranty period¹

Туре-		Memory	Memory	Pre-conf	Disk	Disk		SATA	Discrete Ethernet	Windows Server	Power	Ann date
model	Processor(s)	speed	DIMMs	RAID	bays	size	Disk(s)	optical	adapter	preload	Supply	(mm/dd/yy)
1105-D1U	Xeon E3-1245V2	1333MHz	1x8GB	No	2xDirect Cable	3.5"	No	DVD	No	No	280W	11/13/12
1105-D2U	Xeon E3-1275V2	1333MHz	1x8GB	No	2xDirect Cable	3.5"	No	DVD	No	No	280W	11/13/12

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

Processor	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 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)	Tower PSU optical optical				
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 	1 - PCle x16 2 - PCle x1 3 - PCl				
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	disk 4 - PCi				
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 Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1,	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				
Front ports Rear ports	ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45),	Toolless adapter retention Illuminated front icons				
Audio	three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec	Disk Bays Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape)				
Onboard Ethernet	One gigabit ethernet on planar, Intel 82579LM	Bay 3 3.5", 1" high, internal, for disk				
-	PRO/1000 PT: Intel PRO/1000 PT Dual Port Server Adapter on selected models, two gigabit ethernet	Bay 4 3.5", 1" high, internal, for disk Expansion Slots				
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)	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				
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)	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 - Security chip (see information on left)				
4.0TB with two 21	Max internal capacity TB 3.5" SATA disks	Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security slot (in rear for optional Kensington® Microsaver® cable;				
selected parts Lenovo Servic Onsite servi Post warrant	laceable Unit (CRU) parts only (with limited onsite service for	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				
≈ 24 hour x 7 day	y ¹⁴ toll-free support during the warranty period ¹	RoHS-compliant				

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-E6U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2012 Foundation	02/05/13
1105-E7U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2012 Essentials	02/05/13
1105-E8U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2012 Standard	02/05/13

- True server-class reliability and performance at desktop price
 Part of the US TopSeller™ Program

	 Part of the US TopSeller™ Program 1-year limited warranty¹ 				
Processor Implementation Memory Additional memory disclaimers Graphics Disk bays SATA disk(s) Optical SATA controller	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) 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 processor memory controller speed and installed memory speed 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 500GB, SATA 6.0Gb/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,	optical optical disk in the second of the s			
Chipset Front ports Rear ports Audio Ethernet Security chip Diagnostics Keyboard Mouse Power supply Cooling	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, 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)	• 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 dapter retention • Illuminated front icons Disk Bays			
		Intel AMT Intel AMT is supported on Xeon-model(s) Software Management Tools ThinkServer EasyStartup Power-On Hotkey			
2012 Foundatior 2012 Essentials: 2012 Standard:		Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup RAID Configuration Utility: Ctrl+I at startup			
 □ 1-year parts a □ Customer Reselected part coverage exc □ Onsite servic □ Lenovo Prior 	eplaceable Unit (CRU) parts only (with limited onsite service for self-during normal country office hours e.g. 8 am - 5 pm, Mon - Fri sluding holidays, next business day response time) see upgrade options available (in eligible locations)? sity Support Package available enovo Services available	Security Security 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® TS130 (1105) - TopSeller (May 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-H1U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 R2 Foundation	05/14/13
1105-H2U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011 Essentials	05/14/13
1105-H3U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011 Standard	05/14/13
1105-H4U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 R2 Standard	05/14/13

- 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), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Implementation Processor in LGA1155 socket, up to one processor	PSU
Memory 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets Additional memory dependent on processor memory controller speed and installed memory speed Optical Optical Odisk Object Optical	
Graphics Intel UD Craphics in processor and analog VCA DD 15 connector	Cle x16 Cle x1
Disk bays SATA disk(s) Optical SATA controller SATA controller SATA 3.0Gb/s and SATA 6.0Gb/s, rounectors, two SATA 3.0Gb/s connectors Two 3.5" SATA disk bays, no hot-swap, direct cable 3.PC 4.PC Gisk Wash Alice to table SOUD-ROM DL 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 cases 6.9"W x 16.0"D x 14.9"H **175mm W x 407mm D x 373	CI
Chipset Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Front ports Rear ports Rear ports Six 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 Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet Six USB 2.0 x1, ethernet MAC, PCI, and USB) 24.7 lb (11.2kg) max configured to 25-liter Toolless side cover removal to 75-liter to 75	uration I
Ethernet One gigabit ethernet on planar, Intel 82579LM Disk	Bays
TCG 1.2-compliant Diagnostics Two system status LEDs on front panel Bay 2 5.25",1.6" high, external bay 3 3.5", 1" high, inte	ernal, for optical ernal, open (optical/tape) ernal, for disk ernal, for disk
Mouse None (use USB port)	ion Slots
Power supply One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified Cooling Slot 1: half-length, full-height, Slot 2: half-length, full-height, full-height, full-height, full-height, full-height, slot 3: half-length, full-height, slot 4: half-length, slot	t, PCI Express 2.0 x1 t, 32-bit PCI
Intel Intel AMT is supported on Xe	AMT eon-model(s)

Preloaded Operating System

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

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)

Type-		Memory	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)
1105-J2U	Xeon E3-1225V2	1333MHz	1x8GB	1	2xDirect Cable	3.5"	2x1TB	DVD±RW	Intel HD	2012 Foundation	06/18/13

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

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) Processor in LGA1155 socket, up to one processor	Tower PSU				
Memory	32GB max. UDIMM. PC3-10600 1333MHz DDR3. ECC.	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					
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 1TB, 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	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1,	24.7 lb (11.2kg) max configuration				
Front ports Rear ports	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	 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	STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant	Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape)				
Diagnostics	Two system status LEDs on front panel (disk drive activity, power/sleep)	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 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				
2012 Foundation	Preloaded Operating System as: Genuine Windows Server® 2012 Foundation	, ,				
ZUIZ FUUIIUAIIUI	Max internal capacity	Security Security chip (see information on left)				
4.0TB with two 2	PTB 3.5" SATA disks Limited Warranty ¹	Padlock loop (in rear for opt_padlock; padlock prohibits side cover removal)				
selected part coverage exc → Onsite servic → Lenovo Prior	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 luding holidays, next business day response time) the upgrade options available (in eligible locations) ⁷ tity Support Package available enovo Services available	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)				

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)
1100-91U	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 Implementation	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
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	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 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
		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
		Security
		Security chip (see information on left) Padlock loop (in rear for opt padlock:

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, 8 am 5 pm, Mon Fri coverage excluding holidays)

 Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html

 Onsite service upgrade options (in eligible locations)

 Post warranty maintenance services

 24 hour x 7 day¹⁴ toll-free support during the warranty period¹

- Security clip (see information of relative 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)

Туре-		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)
1100-54L	J Core i3-2120	1333MHz	1x4GB	No	2xDirect Cable	3.5"		DVD	Intel HD	No	280W	08/21/12
1100-55L	J Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"		DVD	Intel HD	No	280W	08/21/12
1100-56L	J Xeon E3-1225V2	1333MHz	2x4GB	No	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	No	280W	08/21/12

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

Processor Implementation	Intel® Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1333MHz) Intel Xeon® E3-1225V2 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) Processor in LGA1155 socket, up to one processor	Tower optical optical 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	disk 0
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	3 - PCI 4 - PCI
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	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
Chipset Front ports Rear ports	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0	Toolless disk and optical drive rem Toolless adapter retention Illuminated front icons
Audio Ethernet Security chip Diagnostics	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	Bay 1 5.25",1.6" high, external, Bay 2 5.25",1.6" high, external, Bay 3 3.5", 1" high, internal, Bay 4 3.5", 1" high, internal, Expansion Slo
Keyboard Mouse Power supply	(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	Slot 1: half-length, full-height, PCI E Slot 2: half-length, full-height, PCI E Slot 3: half-length, full-height, 32-bi Slot 4: half-length, full-height, 32-bi
Cooming	4 fans (power supply, CPU, rear, front)	Intel AMT is supported on Xeon-more

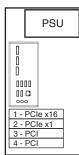
Max internal capacity

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, 8 am 5 pm, Mon Fri coverage excluding holidays)
 ⇒ Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html
 Onsite service upgrade options (in eligible locations)⁷

- Post warranty maintenance services
 24 hour x 7 day¹⁴ toll-free support during the warranty period¹



- noval

for optical open (optical/tape) for disk

for disk

ots

Express 2.0 x16 Express 2.0 x1 bit PCI

oit PCI

Intel AMT is supported on Xeon-model(s)

Software Management Tools

• 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

- 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)
1100-94U	Core i3-3220	1333MHz	1x4GB	No	2xDirect Cable	3.5"	No	DVD	Intel HD	No	280W	09/25/12

- True server-class reliability and performance at desktop price
 3-year limited warranty¹

Processor	Intel [®] Core [™] i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)	Tower				
Implementation	Processor in LGA1155 socket, up to one processor	optical P30				
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 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	One gigabit ethernet on planar, Intel 82579LM	Disk Bays				
Security chip	STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant	Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape)				
Diagnostics	Two system status LEDs on front panel (disk drive activity, power/sleep)	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 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				
		Security chip (see information on left) Padlock loop (in rear for opt padlock;				
	Max internal capacity	padlock prohibits side cover removal)				
4.0TB with two 2	TB 3.5" SATA disks	Security slot (in rear for optional Kensington® Microsaver® cable;				
selected parts ⇒ Lenovo Servi • Onsite serv	placeable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ces available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html ice upgrade options (in eligible locations) ⁷	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)				
	nty maintenance services ay14 toll-free support during the warranty period1	RoHS-compliant				

Type- model	Processor(s)	Memory speed	Memory Pre-conf DIMMs RAID		Disk bavs	Disk size	Disk(s)	SATA Graphics optical adapter(s)		Windows Server preload	Power Supply	Ann date (mm/dd/yy)
	Core i3-2120	1333MHz	1x4GB	No	2xDirect Cable		No	DVD	Intel HD	No	280W	08/21/12
1098-52U	Xeon E3-1225V2	1333MHz	1x4GB	No	2xDirect Cable	3.5"	No	DVD	Intel HD	No	280W	08/21/12

- True server-class reliability and performance at desktop price
- These models have a 1-year limited warranty

Processor	Intel® Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache),	Tower	
	integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1333MHz) Intel Xeon® E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache),	optical	PSU
	Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz)	optical	
Implementation	Processor in LGA1155 socket, up to one processor	disk	
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets		0000
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 		1 - PCle x16 2 - PCle x1 3 - PCl
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	disk	4 - PCI
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 colo 6.9"W x 16.0"D x 175mm W x 407r 24.7 lb (11.2kg) r 25-liter Toolless side covi	14.9"H mm D x 377mm H max configuration
Chipset Front ports	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0		optical drive remov retention
Rear ports	Six USB 2.0, serial (9-pin), ethernet (RJ-45),		Disk Bays
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		high, external, for high, external, op igh, internal, for
Diagnostics	Two system status LEDs on front panel (disk drive activity, power/sleep)	Slot 1: half-length,	Expansion Slots full-height, PCI Exp
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	Slot 2: half-length, Slot 3: half-length,	full-height, PCI Ext full-height, 32-bit P full-height, 32-bit P
Cooling	4 fans (power supply, CPU, rear, front)		Intel AMT
		Intel AMT is suppo	rted on Xeon-model

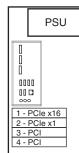
Max internal capacity

4.0TB with two 2TB 3.5" SATA disks

Limited Warranty¹

- 1-year parts and labor
- I-year parts and labor
 Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am 5 pm, Mon Fri coverage excluding holidays)
 Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html
 Onsite service upgrade options (in eligible locations)

- Post warranty maintenance services
 24 hour x 7 day¹⁴ toll-free support during the warranty period¹



- val

or optical open (optical/tape) or disk

or disk

xpress 2.0 x16 xpress 2.0 x1 PCI

PCI

Intel AMT is supported on Xeon-model(s)

Software Management Tools

• 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

- 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/vv)
1098-92U	Core i3-3220	1333MHz		No	2xDirect Cable	3.5"	No	DVD	Intel HD	No	280W	09/25/12

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

Tower Intel® Corpi® 13,920 processor (20/47, 3.30Hz, 3MB Cache) Implementation Intel MG Graphics 2009 DDR3 memory controller (up to 1600MHz) DDR3 memory controller (up to 1600MHz) DDR3 memory controller (up to 1600MHz) DDR3 memory controller speed is the lowest installed speed, dependent on processor memory disciolament of processor in the Processor in LGMM sockets Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed (graphics in processor) PDR3 memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed (graphics in processor) PDR3 memory operating speed is the lowest installed speed, dependent on processor memory operating speed is the lowest installed speed, dependent on processor memory operating speed is the lowest installed speed, dependent on processor memory speed (graphics in the LHD Graphics in processor) PDR3 memory speed (graphics in the LHD Graphics in processor) PDR3 memory speed (graphics in the LHD Graphics in processor) PDR3 memory speed (graphics in proces			
Memory 3/3GB max; UDIMM PG2-10600 1333MHz DDR3, ECC.		integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)	PSU
Additional memory operating speed is the lowest 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 speed Intel HO Graphics in processor, one analog VGA DB-15 connector, one Display/Fort™ connector Two 3.5° SATA disk bays, no hot-swap, direct cable None OxPort 10 Latt 12 Latt		32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	
Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort! connector one DisplayPort! connector one DisplayPort! connector one DisplayPort! connector one DisplayPort one DisplayPort one DisplayPort one DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ATA 3.05b) as 87.48 (ASA May.* Drive DYD-9 (DIS ASA	memory	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed 	
SARA digs(s) Copical SATA controller SATA 3.06b/s connectors SATA 3.06b/s connectors SATA 3.06b/s connectors Serial ATA, SATA 3.06b/s connectors Two USB 2.0 Six USB 2.0, serial (9-pin), ethermet (RJ-45), thorizen analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort Security chip Security chip Security chip Security chip Diagnostics Sata Sata Sata Sata Sata Sata Sata Sata	Graphics		1 - PCle x16 2 - PCle x1
ethernet MAC, PCI, and USB) Rear ports Rear ports Rear ports Rear ports 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) None (use USB port) One 280 wasta standard, one maximum, autosensing, no hot-swap, no redundancy, 65% PSU, 80 PLUS* Bronze qualified 4 fans (power supply, CPU, rear, front) Aution Max internal capacity 4.0TB with two 2TB 3.5* SATA disks Max internal capacity 1-year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service or selected parts) 8 am - 5 pm, Mon - F1 coverage excluding holidays) Lenovo Services available; see lenovo com/services, warranty/usinternance services Post warranty mainternance services 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period* 2 thour X 7 day* tol-free support during the warranty period*	SATA dísk(s) Optical	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,	• Raven black color; metal case • 6.9"W x 16.0"D x 14.9"H
Front ports Rear ports 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 ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TGG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep) 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 Cooling Nan (power supply) CPU, rear, front) 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 parts), each of post warranty waintenance services 2 thour x 7 day* toll-free support during the warranty period¹ FREERY STAP Server 1.1-compliant Rolls.	Chipset		
Audio High Definition (HD) Audio, Reatlek ALC662 codec Cone gigoth ethernet on planar, Intel 82679LM Security chip Cone gigoth ethernet on planar, Intel 82679LM 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)		Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	Toolless disk and optical drive removal Toolless adapter retention
Security chip Diagnostics TXG 1.2-compliant TXG		High Definition (HD) Audio, Realtek ALC662 codec	Disk Bays
None (use USB port) None (use Usp port)		STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel	Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk
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 RAID Configuration Utility: Ctrl+I at startup Security Security A.OTB 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, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html Onsite service upgrade options (in eligible locations)² Post warranty maintenance services 24 hour x 7 day¹⁴ toll-free support during the warranty period¹ Limited Warranty period¹ Limited Warranty en and labor Elenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html Post warranty maintenance services Post	Mouse Power supply	None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified	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
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 Raid Configuration Utility: Ctrl+I at startup Security 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) Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Power-on password Boot sequence control Boot sequence control Boot sequence control Soci without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) ENERGY STAR® Server 1.1-compliant RoHS-compliant			Intel AMT
- 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 Security Security Security Security chip (see information on left) Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security sto (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Limited Warranty¹ 1-year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html Onsite service upgrade options (in eligible locations)² Post warranty maintenance services 24 hour x 7 day¹⁴ toll-free support during the warranty period¹ ThinkServer EasyStartup Setup Utility: F1 at startup Network Boot: F12 at startup			Intel AMT is supported on Xeon-model(s)
Power-On Hotkey Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 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) Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) 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) Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Security chip (see information on left) Security chip (see information			_
Diagnostic: F2 at startup Network Boot: F12 at startup Network Boot: F12 at startup RAID Configuration Utility: Ctrl+I at startup Security 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) Security slot (in rear for optional Kensington® Microsaver® cable; 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			, ,
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) Limited Warranty¹ 1-year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html Onsite service upgrade options (in eligible locations)² Post warranty maintenance services 24 hour x 7 day¹⁴ toll-free support during the warranty period¹ Security chip (see information on left) Padlock loop (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			Diagnostic: F2 at startup Network Boot: F12 at startup
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, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html Onsite service upgrade options (in eligible locations)² Post warranty maintenance services 24 hour x 7 day¹⁴ toll-free support during the warranty period¹ Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security slot (in rear for opt padlock; padlock 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			1
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, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html Onsite service upgrade options (in eligible locations)³ Post warranty maintenance services 24 hour x 7 day¹⁴ toll-free support during the warranty period¹ Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, diskette service of the service upgrade options (in eligible locations)³ USB port disablement (front or all) ENERGY STAR® Server 1.1-compliant RoHS-compliant			Padlock loop (in rear for opt padlock;
Limited Warranty¹ I-year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html Onsite service upgrade options (in eligible locations)² Post warranty maintenance services 24 hour x 7 day¹⁴ toll-free support during the warranty period¹ Limited Warranty¹ 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	4 OTB with two	· · ·	Security slot (in rear for optional
24 hour x 7 day ¹⁴ toll-free support during the warranty period ¹ RoHS-compliant	 → 1-year parts a → Customer Reselected part → Lenovo Servi • Onsite serv 	Limited Warranty¹ and labor placeable Unit (CRU) parts only (with limited onsite service for s³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) ces available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html vice upgrade options (in eligible locations) ⁷	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)
See featpates for important warranty information	≈ 24 hour x 7 d	ay ¹⁴ toll-free support during the warranty period ¹	

ThinkServer®TS130 Accessories

Partial list of accessories supported on Lenovo® ThinkServer TS130.

ThinkServer Ready accessories are available through Lenovo Business Partners. Locate a Business Partner near you at: bplocator.lenovo.com

Memory 2GB PC3-10600 DDR3 ECC UDIMM (1Rx8) 4GB PC3-10600 DDR3 ECC UDIMM (2Rx8) 8GB PC3-10600 DDR3 ECC UDIMM (2Rx8) 67Y2606 67Y2607 0A89461

Connectivity

Lenovo Gigabit ET Dual Port Server Adapter 0A89423 Intel Ethernet I340 Quad Port Server Adapter 0A89424

3.5" SATA Cabled: 500GB 7.2K Enterprise 6Gbps SATA 0A89470 1TB 7.2K Enterprise 6Gbps SATA 2TB 7.2K Enterprise 6Gbps SATA 0A89471 0A89472 3TB 7.2K Enterprise 6Gbps SATA 0A89478

Keyboard

Preferred Pro USB Keyboard 73P5220

Lenovo Optical Mouse (USB) 06P4069

For more information on server accessories, please visit: www.lenovo.com/support/accessories
www.lenovo.com/support/thinkserveraccessories www.lenovo.com/support/security

Other accessories at www.lenovo.com/accessories

Accessories Guide pdf at www.lenovo.com/accessoriesguide

ThinkServer®TS130 Accessories

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Memory 2GB PC3-10600 DDR3 ECC UDIMM (1Rx8) 4GB PC3-10600 DDR3 ECC UDIMM (2Rx8) 8GB PC3-10600 DDR3 ECC UDIMM (2Rx8) 67Y2606 67Y2607 0A89461

Connectivity

Lenovo Gigabit ET Dual Port Server Adapter 0A89423 Intel Ethernet I340 Quad Port Server Adapter 0A89424

3.5" SATA Cabled: 500GB 7.2K Enterprise 6Gbps SATA 0A89470 1TB 7.2K Enterprise 6Gbps SATA 2TB 7.2K Enterprise 6Gbps SATA 0A89471 0A89472 3TB 7.2K Enterprise 6Gbps SATA 0A89478

Keyboard

Preferred Pro USB Keyboard 73P5220

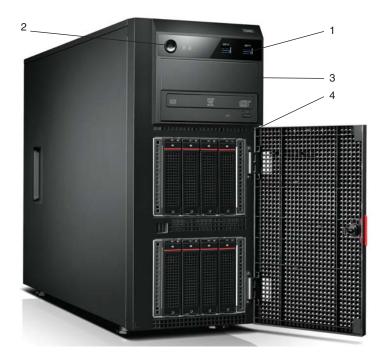
Lenovo Optical Mouse (USB) 06P4069

For more information on server accessories, please visit: www.lenovo.com/support/accessories
www.lenovo.com/support/thinkserveraccessories www.lenovo.com/support/security

Other accessories at www.lenovo.com/accessories

Accessories Guide pdf at www.lenovo.com/accessoriesguide

ThinkServer® TS440 - Overview



Rear view

- Power Supply: Up to two redundant 450 watts 80 PLUS Gold or fixed one 450 watts 80 PLUS Platinum
- 6. Rear I/O: 2 USB 2.0 4 USB 3.0(blue) 1 serial (9-pin) 1 RJ-45 (GbE) 1 VGA (for Intel HD Graphics)
- 7. 1 PCIe 3.0 x16 (with optional RAID adapter)
 1 PCIe 2.0 x1
 1 PCIe 2.0 x16 (x4 elec, with optional ethernet adapter)
 1 PCI

Front view

- 1. Front I/O: 2 USB 3.0 (blue)
- 2. Power Button
- Two 5.25" optical drive bays (up to one optical on models with onboard SATA controller)
- 4. Eight 3.5" hot-swap drive bays (Also supports: 4 x 3.5" direct cable bays, or 4 x 3.5" hot-swap bays, or 8 x 2.5" hot-swap bays)



Internal

- One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3 family
- 4 DIMM sockets, supports up to 32GB ECC UDIMM memory
- Up to eight hard drive bays

Mechanical

- · Tower, business black color, metal case
- Rack-mountable to 5U
- W x H (without foot) x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
- 61.7 lb (28kg) max configuration

ThinkServer® TS440 Platform Specifications - I of III

Components	Specification													
Form factor Chipset		to 5U v	na ThinkS	erver Towe	er to Rack S	nelf Cor	nversion Kit (C	ption PN: 0C	19515)					
		ent Ter	chnology (Q (K\/M fur	nction needs	Intal X	20n F3-12v5 v	3 nrocessors	1					
Systems	EasyStartup	ieni ied	orinology s	3 (ICVIVI IUI	iction needs	inter X	5011 L3-12X3 V	o processors	,					
management	EasyUpdate													
Processor	supports one processo					ated pro	cessor graphi	cs on Xeon E	5-12X5 v3 processors.					
	Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12x5 v3 processors) EasyStartup EasyStartup Cacket Management Technology 9 (KVM function needs Intel Xeon E3-12x5 v3 processors) EasyStartup EasyStartup Corest Triangle 12 (Corest Triang													
	Tower, rack-mountable to 5U via ThinkServer Tower to Rack Shelf Conversion Kit (Option PN: 0C19515) Intel C226 Chipset Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12x5 v3 processors) EasyStartup EasyUpdate One LGA1150 socket, Supports one processor from Intel Xeon E3-1200 v3 family, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on Xeon E5-12X5 v3 processors. The following processors are supported: Processor Number # of # of Cores Threads Speed Max Turbo Cores Threads Speed Frequency Processor Graphics Xeon E3-1285 v3 4 8 3.6 GHz 4 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4700 Xeon E3-1275 v3 4 8 3.5 GHz 3 9 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1275 v3 4 8 3.5 GHz 3 9 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1245 v3 4 8 3.4 GHz 3.8 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1245 v3 4 8 3.4 GHz 3.8 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1245 v3 4 8 3.4 GHz 3.8 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1240 v3 4 8 3.4 GHz 3.8 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1240 v3 4 8 3.4 GHz 3.8 GHz 8 MB DDR3-1600 Yes Xeon E3-1220 v3 4 8 3.3 GHz 3.7 GHz 8 MB DDR3-1600 Yes Xeon E3-1220 v3 4 8 3.3 GHz 3.6 GHz 8 MB DDR3-1600 Yes Xeon E3-1220 v3 4 4 3.3 GHz 3.6 GHz 8 MB DDR3-1600 Yes Xeon E3-1220 v3 4 4 3.3 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1220 v3 4 4 3.3 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1220 v3 4 4 3.3 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1220 v3 4 4 3.3 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1220 v3 4 4 3.3 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1220 v3 4 4 4 3.2 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1220 v3 4 4 4 3.2 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1220 v3 4 4 4 3.2 GHz 3.6 GHz 8 MB DDR3-1600 Yes Intel HD Graphics P4600 Xeon E3-1220 v3 4 4 4 3.2 GHz 3.6 GHz 8 MB DDR3-1600 Yes Int													
	Xeon E3-1285 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4700					
	Xeon E3-1280 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes						
	Xeon E3-1275 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics P4600					
	Xeon E3-1270 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes						
	Xeon E3-1245 v3	4	8			8 MB	DDR3-1600	Yes	Intel HD Graphics P4600					
	Xeon E3-1240 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	·					
									Intel HD Graphics P4600					
									micris Grapinos i 4000					
				0.1 GHZ	0.5 GHZ	OWD	DD110-1000	103						
	otes: Il information is provided by Intel and may be changed at any time without notice. The information herein is provided "as-is". Itel may update this information in non-scheduled. For latest information, please see http://ark.intel.com/													
Memory type														
Memory DIMM sockets	Four 240-pin DIMM soc													
Memory capacity	<u>'</u>	'												
Memory protection	· · · · · ·													
Additional														
memory disclaimers	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support													
Onboard SATA controller														
Discreted SATA/SAS controller (optional)	 ThinkServer RAID 50 optional upgrade key add RAID 5, 50 supp ThinkServer RAID 70 RAID 0, 1, 5, 6, 10, 5 optional Intelligent Ballottes: 	for Thi oort (RA 00 adap 50, 60 s attery E	nkSèrver AID 50 is a oter (LSI S support; Backup Ur	RAID 500 available o SAS 9260- nit (iBBU08	adapter, n eight disk 8i), PCI Exp 3) for ThinkS	bays mo ress bus	odel only) s, SATA 6.0Gb	/s, SAS 6.0G						
Drive bays	RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter Notes: RAID 50 and 60 are supported on 8 hard drive bays models Supports two 5.25" optical bay, up to two optical drives (up to one optical on models with onboard SATA controller); supports up to eight hard drive bays, one of the following are supported: 4 x 3.5" DC: Four 3.5" hard drive bays, no hot-swap, direct cable (onboard RAID 100 controller, SATA only) 4 x 3.5" HS: Four 3.5" hot-swap hard drive bays (onboard RAID 100 controller for SATA, discrete RAID adapter for SATA/SAS) 8 x 3.5" HS: Eight 3.5" hot-swap hard drive bays (needs discrted RAID adapter, supports SATA/SAS) 8 x 2.5" HS: Eight 2.5" hot-swap hard drive bays (needs discrted RAID adapter, supports SATA/SAS)													

ThinkServer® TS440 Platform Specifications - II of III

Components	Specification		
Optical	Supports DVD±RW or DVD ROM, 1.6	high, SATA interface	
P		on E3-12X5 v3 processors, uses main mem	ory,
	works along with discrete graphics		o. _j ,
Graphics	enables VGA connector on rear		
·	(detailed information please see <i>Re</i> • Also supports the following optional	discrete graphics adapters:	
	NVIDIA Quadro NVS 300, PCIe x	1 adapter, 512MB	
Front ports	Two USB 3.0 (blue)	•	
Rear ports	One VGA for models with Intel HD Gra	aphics,	
riodi porto	two USB 2.0, four USB 3.0 (blue), one		
	Slot 1: half-length, full-height, PCIe 3.0 Slot 2: half-length, full-height, PCIe 2.0	X16 (near CPU)	
Expansion Slots	Slot 3: half-length, full-height, PCle 2.0		
	Slot 4: half-length, full-height, PCI 2.3	,	
Onboard Ethernet	One onboard gigabit ethernet, Intel I2	17	
Diagrata Ethania	Supports the following:	(vChE_DL4E)	
Discrete Ethernet (optional)	 Intel Gigabit CT Desktop Adapter (*) Intel Ethernet Server Adapter I350- 	TXGDE, HJ-45) T2 (2xGhF R.I-45)	
(optional)	Intel Ethernet Server Adapter I350-		
Keyboard/mouse	None (use USB port)		
	Supports one of the follwing, dependir		
Power supply	• One fixed 450 watts, universal, 80 F	PLUS® Platinum qualified	Cold qualified reduced and with the second
			Gold qualified, redundant with two power supplies
	Security chip (selected models, seeAdministrator password	information on left)	
	User password		
Security	Front panel key lock		
	Boot sequencé control Boot without keyboard, mouse, disk	atta	
	Serial port I/O control	elle	
	USB port disablement (front or all)		
	Tower, business black color, metal call to the color of the color		
Mechanical	W x H (without foot) x D = 7.68"/19561.7 lb (28kg) max configuration	mm x 16.9°/430mm x 23.4°/595mm	
	Rack-mountable to 5U		
	Toolless side cover removal		
Serviceability	Toolless disk and optical drive remove	/al	
,	Toolless adapter retention Illuminated front icons		
Environmental	GREENGUARD® certified		
Environmental certifications	 Energy Star Server 1.1 qualified 		
	RoHS-compliant		
EMC	FCC Class A		
240VA	Supports		
Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)		
Temperature -	, ,		
non operating	-10 °C to 60 °C		
(no package)			
Temperature -	40.00 1. 70.00		
non operating (with package)	-40 °C to 70 °C		
Altitude - operating	Supported Altitude (unpressurized): 0-	-10000ft (0-3048m)	
Humidity - operating	10%~80%, non-condensing		
Humidity -	1070 0070, Horr condensing		
non operating	10%~90%, non-condensing		
(no package)			
Humidity - non operating	10% 00% non condensing		
(with package)	10%~90%, non-condensing		
, , , , , , , , , , , , , , , , , , , ,			
	Category	Mainstream Configuration	Full Configuration
	CPU	Xeon	Xeon
	Optical Drive	DVD-ROM	DVD-ROM
	HDD Controller	onboard SATA	SAS Controller
Acoustic noise	HDD Bays	4 x 3.5" SATA (direct cable)	8 x 3.5" SAS (hot-swap)
(idle/working mode)	HDD bays	4x 1TB SATA	8x 600GB SAS
,	Memory	1 x 2GB UDIMM ECC	4 x 4GB UDIMM ECC
	PSU	Fixed	Redundant
	Management	Basic IPMI mgmt, reporting	Basic IPMI mgmt, reporting
	RAID	SATA RAID 0/1	SAS RAID 5
	Sound Pressure (operating)	40.5 dB(A)	42.0 dB(A)
	Sound Pressure (idle)	32.0 dB(A)	38.0 dB(A)
	(5.5)	(·-/	

ThinkServer® TS440 Platform Specifications - III of III

Components	Specification
Warranty	1 or 3-year limited warranty, parts and labor, more services information see <u>S-TS1</u> and <u>S-TS3</u> sheet
Preloaded operating systems	Windows Server® 2012 Foundation Windows Server 2012 Essentials Windows Server 2012 Standard
Supported operating systems and virtualization software	Windows Server 2008 R2 Standard Windows Server 2012 Datacenter Windows Server 2012 Datacenter Windows Small Business Server 2011 Essentials Windows Small Business Server 2011 Standard Windows Small Business Server 2011 Premium Add-On Red Hat Enterprise Linux 6.4 VMware ESXi 5.1 U1 (Discrete RAID controller, add-on ethernet controller, and Intel Xeon E3-12x5 v3 processors are needed) Notes: Supported only, no preloaded models For latest VMware compatibility list for ThinkServer, please see https://www.vmware.com/resources/compatibility/search.php For latest Red Hat compatibility list for ThinkServer, please see https://htmadware.redhat.com/ These supported operating systems are also supported by EasyStartup

ThinkServer® TS440 (70AQ) - TopSeller (September 2013)

Personal Systems Reference (PSREF)

Type- model ¹	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AQ0005US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Foundation	1x450W (hot-swap, redundant with 2)	3
70AQ0006US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Essentials	1x450W (hot-swap, redundant with 2)	3
70AQ0007US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD±RW	No	No	Standard	1x450W (hot-swap, redundant with 2)	3
70AQ0009UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	1
70AQ000AUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000BUX	Xeon E3-1245 v3 (4C/3.4GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000CUX	Xeon E3-1245 v3 (4C/3.4GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3

^{1.} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

• For detailed ThinkServer TS440 platform specifications, please see ThinkServer TS440 Platform Specifications sheet

	For detailed I ninkServer I S440 platform specifications, please see	
Systems	Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors)	Optical Bays
management	• EasyStartup	Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)
	EasyUpdate	Hard Drive Bays
Chipset	Intel C226 Chipset	• Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	Four 3.5" hot-swap hard drive bays (4x3.5" HS) Eight 3.5" hot-swap hard drive bays (8x3.5" HS)
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	
Graphics	Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section) Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
Discreted SATA/ SAS controller (optional)	 Supports the following: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter 	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
Onting	Notes: RAID 50 and 60 are supported on 8 hard drive bays models only	Markarian
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Front ports	Two USB 3.0 (blue) One VGA for models with Intel HD Graphics,	Tower, business black color, metal case W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm
Rear ports	two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	04.7 (0.00)
Add-on ports (optional)	Supports the following: Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe)	(via optional Tower to Rack Shelf Conversion Kit, not included in standard model) Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention
Onboard Ethernet	One onboard gigabit ethernet, Intel I217 Supports the following:	Illuminated front icons
Discrete Ethernet	Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45)	Expansion Slots
(optional)	Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCIe 2.0 x1
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Power supply	Supports one of the follwing, depending on models:	Slot 4: half-length, full-height, PCI 2.3
	 One fixed 450 watts, universal, 80 PLUS® Platinum qualified Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies 	Security • Security chip: ST33ZP24AR28PVSP for TPM function,
Base warranty	1 or 3-year parts and labor limited warranty ¹	TCG 1.2-compliant
Environmental certifications	GREENGUARD® certified Energy Star Server 1.1 qualified RoHS-compliant More environmental information and requirements, please see ThinkServer TS440 Platform Specifications sheet	Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all)

ThinkServer® TS440 (70AQ) - TopSeller (September 2013) - II

Personal Systems Reference (PSREF)

Type- model ¹	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AQ000DUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000EUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x2.5 HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000FUX	Xeon E3-1245 v3 (4C/3.4GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x2.5 HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000GUX	Xeon E3-1275 v3 (4C/3.5GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000HUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	8x3.5" HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	No	Open	1xDVD±RW	No	No	No	1x450W (hot-swap, redundant with 2)	3
70AQ000NUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	1
70AQ000PUX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 500 (discrete, 0/1/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	3

^{1.} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

• For detailed ThinkServer TS440 platform specifications, please see ThinkServer TS440 Platform Specifications sheet

	To ructuiled Timinociver 10440 platform openinoations, piedoe oct	
Systems	Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors)	Optical Bays
management	• ÈasyStartup	Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)
Chipset	EasyUpdate Intel C226 Chipset	Hard Drive Bays
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller,	• Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)
1 10063301	optional integrated Intel HD Graphics on selected processors	Four 3.5" hot-swap hard drive bays (4x3.5" HS) Eight 3.5" hot-swap hard drive bays (8x3.5" HS)
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)
	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM	- Eight 2.5 Hot swap hard drive bays (0x2.5 Ho)
Memory DIMM sockets	(Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	○ · A —
	Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors,	THE RESERVE THE PERSON NAMED IN COLUMN TWO IN COLUMN TO SERVE THE PERSON NAMED IN COLUMN TO SERVE THE
	uses main memory, works along with discrete graphics to support multi-display,	
Graphics	enables VGA connector on rear	
	(detailed information please see <i>Rear ports</i> section)	
	Supports optional discrete NVIDIA NVS 300 adapter, PCle x1, 512MB	
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	
	Supports the following:	
	ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support;	
	optional upgrade key for ThinkServer RAID 500 adapter,	
Discreted SATA/	add RAID 5, 50 support	
SAS controller	ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus,	
(optional)	SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support;	
	optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID	
	700 adapter	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS
	Notes:	
	RAID 50 and 60 are supported on 8 hard drive bays models only	
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical
Front ports	Two USB 3.0 (blue)	Tower, business black color, metal case Wild D. 7.68 (105 mm v. 16.0) (120 mm v. 22.4) (505 mm)
Rear ports	One VGA for models with Intel HD Graphics,	• W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm • 61.7 lb (28kg) max configuration
	two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	Rack-mountable to 5U
	Supports the following: • Single Parallel Port PCI Adapter (1xParallel)	(via optional Tower to Rack Shelf Conversion Kit,
Add-on ports	 Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) 	not included in standard model)
(optional)	Dual Serial Ports PCI Adapter (2xSerial PCI)	Toolless side cover removal Toolless disk and optical drive removal
	Dual Serial Ports PCle Adapter (2xSerial PCle)	Toolless disk and optical drive removal Toolless adapter retention
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	Illuminated front icons
Discrete Ethernet	Supports the following:	Expansion Slots
(optional)	 Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) 	Slot 1: half-length, full-height, PCIe 3.0 x16 (near CPU)
(optional)	Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	Slot 2: half-length, full-height, PCIe 2.0 x10 (flear of 0)
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)
Power supply	Supports one of the follwing, depending on models:	Slot 4: half-length, full-height, PCI 2.3
66.7	One fixed 450 watts, universal, 80 PLUS® Platinum qualified	Security
	• Up to two redundant 450 watts, two maximum, rear access, hot-swap,	Security chip: ST33ZP24AR28PVSP for TPM function,
	80 PLUS Gold qualified, redundant with two power supplies	TCG 1.2-compliant
Base warranty	1 or 3-year parts and labor limited warranty ¹	Administrator password
	GREENGUARD® certified Energy Stor Server 1.1 qualified	User password
Environmental	Energy Star Server 1.1 qualified RoHS-compliant	Front panel key lock
Environmental certifications	More environmental information and requirements, please see	Boot sequence control Boot without keyboard, mouse, diskette
ooi anoanono	ThinkServer TS440 Platform Specifications sheet	Serial port I/O control
		USB port disablement (front or all)
	nnortant warranty information	@ Longue

ThinkServer® TS440 (70AN) - TopSeller (September 2013)

Personal Systems Reference (PSREF)

Type- model ¹	Processor	Memory type		Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	1
70AN0002UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3

^{1.} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

• For detailed ThinkServer TS440 platform specifications, please see <u>ThinkServer TS440 Platform Specifications</u> sheet

Systems management	Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors) EasyStartup	Optical Bays • Two 5.25" optical bays for all models (Up to one optical on onboard SATA controller models)					
Chipset	EasyUpdate Intel C226 Chipset	Hard Drive Bays					
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors	 Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC Four 3.5" hot-swap hard drive bays (4x3.5" HS) Eight 3.5" hot-swap hard drive bays (8x3.5" HS) 					
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)					
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)						
Graphics	 Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section) Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB 						
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support						
Discreted SATA/ SAS controller (optional)	 Supports the following: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter Notes:	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS					
	RAID 50 and 60 are supported on 8 hard drive bays models only						
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical					
Front ports	Two USB 3.0 (blue)	 Tower, business black color, metal case W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 					
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	61.7 lb (28kg) max configuration					
Add-on ports (optional) Onboard Ethernet	Supports the following: Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe) One onboard gigabit ethernet, Intel I217	Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) Toolless side cover removal Toolless adapter retention					
Official Effettet	Supports the following:	Illuminated front icons					
Discrete Ethernet (optional)	 Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45) 	Expansion Slots Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1					
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCle 2.0 x16 (x4 elec)					
Power supply	Supports one of the follwing, depending on models: One fixed 450 watts, universal, 80 PLUS® Platinum qualified Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Slot 4: half-length, full-height, PCI 2.3 Security Security chip: ST33ZP24AR28PVSP for TPM function, TCG 1.2-compliant					
Base warranty	1 or 3-year parts and labor limited warranty ¹	Administrator password					
Environmental certifications	GREENGUARD® certified Energy Star Server 1.1 qualified RoHS-compliant More environmental information and requirements, please see ThinkServer TS440 Platform Specifications sheet	Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all)					

Type- model ¹	Processor	Memory type	Memory DIMMs	l	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AM0000US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	2GBx2	Intel HD P4600	4x3.5" DC	RAID 100 (onboard, 0/1/5/10)	RAID 1	2x500GB 3.5" SATA	1xDVD	No	1xIntel CT	Foundation	1x450W (hot-swap, redundant with 2)	1
70AM0001US	Xeon E3-1275 v3 (4C/3.5GHz/ 8MB/1600MHz)	1600MHz ECC	2GBx4	Intel HD P4600	8x3.5" HS	RAID 500+key (discrete, 0/1/5/10/50)	RAID 50	8x2TB 3.5" SATA	2xDVD±RW	No	1xIntel CT	Foundation	2x450W (hot-swap, redundant with 2)	1
70AM0002UX	Xeon E3-1280 v3 (4C/3.6GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx3	NVS 300	8x2.5 HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	RAID 6	3x600GB 2.5" SAS	1xDVD	No	1x350-T4	No	1x450W (hot-swap, redundant with 2)	1
70AM0003US	Xeon E3-1285 v3 (4C/3.6GHz/ 8MB/1600MHz)	1600MHz ECC	8GBx4	Intel HD P4700	8x2.5 HS	RAID 700 (discrete, 0/1/5/6/10/50/60)	RAID 60	8x900GB 2.5" SAS	1xDVD±RW	No	1x350-T2	Foundation	2x450W (hot-swap, redundant with 2)	1
70AM0004UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	1x450W (hot-swap, redundant with 2)	3

^{1.} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

• For detailed ThinkServer TS440 platform specifications, please see <u>ThinkServer TS440 Platform Specifications</u> sheet

	Intel Active Management Technology 9	Ontical Paya					
Systems	(KVM function needs Intel Xeon E3-12X5 v3 processors)	Optical Bays Two 5.25" optical bays for all models					
management	EasyStartup	(Up to one optical on onboard SATA controller models)					
Chinaat	EasyUpdate Intel C226 Chipset	Hard Drive Bays					
Chipset Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller,	• Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)					
FIOCESSOI	optional integrated Intel HD Graphics on selected processors	 Four 3.5" hot-swap hard drive bays (4x3.5" HS) Eight 3.5" hot-swap hard drive bays (8x3.5" HS) 					
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	• Eight 2.5" hot-swap hard drive bays (8x2.5" HS)					
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)						
Graphics	Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section) Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB	100 mm or mm					
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support						
Discreted SATA/ SAS controller (optional)	 Supports the following: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter 	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS					
Ontinal	Notes: RAID 50 and 60 are supported on 8 hard drive bays models only Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Markanian					
Optical Front ports	Two USB 3.0 (blue)	Mechanical Tower, business black color, metal case					
·	One VGA for models with Intel HD Graphics,	• W x Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm					
Rear ports	two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	61.7 lb (28kg) max configuration					
Add-on ports (optional) Onboard Ethernet	Supports the following: Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe) One onboard gigabit ethernet, Intel I217	Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention					
Onboard Euromet	Supports the following:	Illuminated front icons					
Discrete Ethernet (optional)	 Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) 	Expansion Slots Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU)					
, ,	Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45)	Slot 2: half-length, full-height, PCIe 2.0 x1					
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec) Slot 4: half-length, full-height, PCI 2.3					
Power supply	Supports one of the follwing, depending on models: One fixed 450 watts, universal, 80 PLUS® Platinum qualified Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies	Security • Security chip: ST33ZP24AR28PVSP for TPM function,					
Base warranty	1 or 3-year parts and labor limited warranty ¹	TCG 1.2-compliant • Administrator password					
Environmental certifications	GREENGUARD® certified Energy Star Server 1.1 qualified RoHS-compliant More environmental information and requirements, please see ThinkServer TS440 Platform Specifications sheet	User password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all)					

Type- model ¹	Processor	Memory type	Memory DIMMs	Graphics	Disk Bays²	RAID controller	Pre- conf RAID	Storage	Optical	Add-on ports	Discrete ethernet	Windows Server 2012 Preloaded	Power Supply	Base on-site warranty (-year)
70AL0000US	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	8GBx3	NVS 300	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	RAID 5	3x3TB 3.5" SATA	1xDVD±RW	No	1x350-T2	Foundation	Fixed 450W (non-hot swap, no redundant)	1
70AL0002UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	1x500GB 3.5" SATA	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3
70AL0003UX	Xeon E3-1225 v3 (4C/3.2GHz/ 8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD P4600	4x3.5" HS	RAID 100 (onboard, 0/1/5/10)	No	Open	1xDVD	No	No	No	Fixed 450W (non-hot swap, no redundant)	3

^{1.} Model in italics shows that this is a Global Model. "UX" model does not include preloaded operating system. 2. HS = Hot-swap, DC = Direct cable, non-hot swap

• For detailed ThinkServer TS440 platform specifications, please see <u>ThinkServer TS440 Platform Specifications</u> sheet

Systems	Intel Active Management Technology 9 (KVM function needs Intel Xeon E3-12X5 v3 processors) Easy-Otantus	Optical Bays • Two 5.25" optical bays for all models					
management	EasyUpdate	(Up to one optical on onboard SATA controller models)					
Chipset	Intel C226 Chipset	Hard Drive Bays • Four 3.5" hard drive bays, no hot-swap, direct cable (4x3.5" DC)					
Processor	One LGA1150 socket, integrated 2-channel DDR3 memory controller, optional integrated Intel HD Graphics on selected processors • Four 3.5" hot-swap hard drive bays (4x3.5" HS) • Eight 3.5" hot-swap hard drive bays (8x3.5" HS)						
Memory type	1600MHz UDIMM, DDR3, ECC, 2-channel capable	Eight 2.5" hot-swap hard drive bays (8x2.5" HS)					
Memory DIMM sockets	Four 240-pin DIMM sockets, up to 32GB ECC UDIMM (Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs)	0 x / £ = 0 x / £ =					
Graphics	 Integrated Intel HD Graphics on Xeon E3-12X5 v3 processors, uses main memory, works along with discrete graphics to support multi-display, enables VGA connector on rear (detailed information please see <i>Rear ports</i> section) Supports optional discrete NVIDIA NVS 300 adapter, PCIe x1, 512MB 						
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support						
Discreted SATA/ SAS controller (optional)	Supports the following: ThinkServer RAID 500 adapter (LSI SAS 9240-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support; optional upgrade key for ThinkServer RAID 500 adapter, add RAID 5, 50 support ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support; optional Intelligent Battery Backup Unit (iBBU08) for ThinkServer RAID 700 adapter	8 x 2.5" HS 4 x 3.5" HS 8 x 3.5" HS					
	Notes: RAID 50 and 60 are supported on 8 hard drive bays models only						
Optical	Supports DVD±RW or DVD ROM, 1.6" high, SATA interface	Mechanical					
Front ports	Two USB 3.0 (blue)	Tower, business black color, metal case Tower, business black color, metal case Tower, business black color, metal case					
Rear ports	One VGA for models with Intel HD Graphics, two USB 2.0, four USB 3.0 (blue), one serial (9-pin), one ethernet (RJ-45)	W X Hx D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration Rack-mountable to 5U (via optional Tower to Rack Shelf Conversion Kit, not included in standard model) Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention					
Add-on ports (optional)	Supports the following: Single Parallel Port PCI Adapter (1xParallel) Single Serial Port PCI Adapter (1xSerial) Dual Serial Ports PCI Adapter (2xSerial PCI) Dual Serial Ports PCIe Adapter (2xSerial PCIe)						
Onboard Ethernet	One onboard gigabit ethernet, Intel I217 Supports the following:	Illuminated front icons					
Discrete Ethernet (optional)	 Intel Gigabit CT Desktop Adapter (1xGbE, RJ-45) Intel Ethernet Server Adapter I350-T2 (2xGbE, RJ-45) Intel Ethernet Server Adapter I350-T4 (4xGbE, RJ-45) 	Expansion Slots Slot 1: half-length, full-height, PCle 3.0 x16 (near CPU) Slot 2: half-length, full-height, PCle 2.0 x1					
Keyboard/Mouse	None (use USB port)	Slot 3: half-length, full-height, PCIe 2.0 x16 (x4 elec)					
Power supply	 Supports one of the follwing, depending on models: One fixed 450 watts, universal, 80 PLUS® Platinum qualified Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, redundant with two power supplies 	Slot 4: half-length, full-height, PCI 2.3 Security Security Security chip: ST33ZP24AR28PVSP for TPM function,					
Base warranty	1 or 3-year parts and labor limited warranty ¹	TCG 1.2-compliant					
Environmental certifications	GREENGUARD® certified Energy Star Server 1.1 qualified RoHS-compliant More environmental information and requirements, please see ThinkServer TS440 Platform Specifications sheet	Administrator password User password Front panel key lock 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 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				
	V2 1333MHz UDIMM 1x4GB No Intel PCH SATA 3.5" 4xHot-swa	() ()				
	V2 1333MHz UDIMM 1x4GB No 500 SATA/SAS 3.5" 4xHot-swa					
0390-18U Core i3-2120	1333MHz UDIMM 1x4GB No Intel PCH SATA 3.5" 4xHot-swa	Transfer of the control of the contr				
		ap 2x500GB SATA DVD±RW No TPM KVM SBS 2011 ap 2x500GB SATA DVD±RW No TPM KVM 2008 R2 STD				
Processor	Up to one processor, one processor standard,	Front - 3.5" disk bay Front - 2.5" disk bay Rear				
	Intel [®] Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache),	From 2.0 diok bay From				
	integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1333MHz)	● · · · · □ □ □ □ □ □ □ □ □ □ □ □ □ □ □				
	Intel Xeon® E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache),	optical/tape optical/tape				
	Turbo Boost 2.0 (up to 3.5GHz), DDR3 memory controller (up to	std optical std optical				
	1600MHz) Intel® Xeon E3-1240V2 processor (4C/8T, 3.4GHz, 8MB Cache),					
	Turbo Boost 2.0 (up to 3.8GHz), DDR3 memory controller (up to	Disk Bay				
	1600MHz)	7-10				
Implementation	One LGA1155 socket	4 - PCle x16				
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	Disk Bay 3 - PCle x8 2 - PCle x8 2 - PCle x8				
Additional mamory	four 240-pin DIMM sockets	1 - PCI				
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed 					
alooiao	memory speed	3.5" disk bay models:				
Graphics	Onboard Aspeed AST2150 graphics/management processor,	Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical				
	one VGA DB-15 on rear;	Bay 3 3.5", 1" high, external, for disk				
	Maximum resolution: 1600x1200@60Hz	Bay 4 3.5", 1" high, external, for disk				
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays	Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk				
	Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays	Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models:				
	Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays	Bay 7 3.5", 1" high, external, for disk				
	Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Bay 8 3.5", 1" high, external, for disk Bay 9 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;	Bay 10 3.5", 1" high, external, for disk				
	RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i),					
	PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)				
	RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter,	Bay 2 5.25", 1.6" high, external, std optical				
	add RAID 5, 50 support	Bay 3 2.5", 0.6" high, external, for disk				
	(RAID 50 is available on eight disk bays model only)	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk				
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm	Bay 6 2.5", 0.6" high, external, for disk				
	3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Bay 7 2.5", 0.6" high, external, for disk				
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk				
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 10 2.5", 0.6" high, external, for disk				
Diskette	None (use USB port)	Slot 1 half-length, full-height, 32-bit PCI 2.3				
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet	Slot 2 half-length, full-height, PCI Express 2.0 x8*				
Onipact	MAC, and USB)	Slot 3 half-length, full-height, PCI Express 2.0 x8 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)				
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	* x4 electrical				
Extender card	None Two USB 2.0	** x8 electrical				
Front ports Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is					
riour porto	shared with system management), one analog VGA DB-15 connector					
Intelligent Diagnostics	IDM model(s): add-on Intelligent Diagnostics Module for	1				
Module (IDM)	advanced diagnostics,					
Systems mgmt	IDM LED lights indicate failing component category Onboard Aspeed AST2150 graphics/management processor,					
Systems mgillt	IPMI 2.0-compliant baseboard management controller (BMC);					
0 " 1"	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	Software Management Tools				
Power supply Machanical		ThinkServer EasyStartup				
Mechanical	Tower, business black color, metal case W x H x D = 7.69"/195mm x 16.0"/420mm x 23.4"/595mm	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				
Tool-less	Side cover removal, disk and optical drive removal,	Security Security chip (selected models, see information on left)				
	system fan removal	Administrator password				
Rack mount	Rack-mountable to 5U	User password Front panel key look				
Limited warranty Accessories	3-year parts and labor; more Lenovo Services information see S-TOR For more accessories, see O-TOR sheet	Front panel key lock Boot sequence control				
. 10000001100	. 55.0 40000001100, 000 0 1011011001	 Boot without keyboard, mouse, diskette 				
	Preloaded Operating System	Serial port I/O control USB port disablement (all)				
2008 R2 STD:	Genuine Windows Server 2008 R2 Standard	USB port disablement (all)				
SBS 2011:	Genuine Windows Small Business Server 2011 Standard	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
0390-1BU	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD±RW	No	TPM	IPMI	No	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
Implementation	DDÄ3 memory controller (up to 1600MHz) 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 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 Disk Bay 3-10 4 - PCle x16 3 - PCle x8 2 - 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, 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 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	Baý 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 Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	Bay 9 2.5", 0.6" high, external, for disk 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 shared with system management), one analog VGA DB-15 connector	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
Intelligent Diagnostics Module (IDM)	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 Fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	
Mechanical Dimension System weight Tool-less	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	Software Management Tools
Rack mount	Rack-mountable to 5U	ThinkServer EasyStartup
Limited warranty Accessories	3-year parts and labor; more Lenovo Services information see S-TS For more accessories, see O-TOR sheet	ThinkServer EasyManage
Accessories	TOI MOTE accessories, see O-TON SHEEL	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)
		Serial port I/O control

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
0390-1EU	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	1	Intel PCH	SATA	3.5"	4xHot-swap	2x500GB SATA	DVD±RW	No	TPM	KVM	SBS 2011 Standard
0390-1FU	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	1	Intel PCH	SATA	3.5"	4xHot-swap	2x500GB SATA	DVD±RW	No	TPM	KVM	2008 R2 Standard

Processor	Up to one processor, one processor standard, Intel® Xeon® E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.5GHz),	Front - 3.5" disk bay Front - 2.5" disk bay Rear
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 3-6 Disk Bay 3-10 Disk Bay 3-10 4 - PCle x16 3 - PCle x8 2 - 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, RAID® 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)	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	Bay 9 2.5", 0.6" high, external, for disk 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 shared with system management), one analog VGA DB-15 connector	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
Intelligent Diagnostics Module (IDM)	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	Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	
Power supply 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 Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal,	Software Management Tools ThinkServer EasyStartup
Rack mount	system fan removal Rack-mountable to 5U	• ThinkServer EasyManage
Limited warranty	3-year parts and labor, more Lenovo Services information see S-TS	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	RoHS-compliant
2008 R2 Standard:	Genuine Windows Server® 2008 R2 Standard	'
SBS 2011 Standard:	Genuine Windows® Small Business Server 2011 Standard	For more accessories, see O-TOR sheet

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
0389-1211	Core i3-2120	1333MHz UDIMM	1x2GB	Nο	Intel PCH	SATA	3.5"	4xDirect Cable	Nο	DVD	No	TPM	IPMI	Nο	1xFixed

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	Front - 3.5" disk bay Front - 2.5" disk bay Rear				
Implementation	1333MHz) One LGA1155 socket	optical/tape optical/tape				
Implementation Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	std optical std optical				
Additional mamory	four 240-pin DIMM sockets	000				
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,	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk				
	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	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				
	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				
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	70 5.55t.15d.				
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 Accessories	1-year parts and labor; more Lenovo Services information see S-TOR For more accessories, see O-TOR sheet	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				
		<u>'</u>				

Type-	Me	emory P	re-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model Prod	cessor D	IMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	PSU
0389-13U Core i3	3-3220 1)	x4GB	No	Intel PCH	SATA	3.5	4xDirect Cable	No	DVD	No	TPM	IPMI	No	1 x Fixed
0389-14U Core i3	3-3240 1>	x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD	No	TPM	IPMI	No	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, DDR3 memory controller (up to 1600MHz) Intel Core i3-3240 processor (2C/4T, 3.4GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear optical/tape std optical std optical optical/tape std optical
Implementation	One LGA1155 socket	
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	7-10 UISK 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 4 - PCle x16 3 - PCle x8 2 - PCle x8 1 - 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	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
Disk controller	Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset,	Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models:
	RAID® 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 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 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	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 7 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
Ethernet Extender card Front ports	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Two USB 2.0	- 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 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)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category Onboard Aspeed AST2150 graphics/management processor,	
Systems mgmt	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	Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port)	Software Management Tools
Power supply	One Fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	ThinkServer EasyStartup ThinkServer EasyManage
Mechanical Dimension System weight Tool-less Rack mount	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	Security Security chip (selected models, see information on left) Administrator password User password
Limited warranty Accessories	1-year parts and labor; more Lenovo Services information see S-TS For more accessories, see O-TOR sheet	 Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant
		•

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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
0388-18U	Core i3-2120	1333MHz UDIMM	1x4GB	No	Intel PCH	SATA	3.5"	4xDirect Cable		DVD		TPM	IPMI	No
0388-19U	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	500	SATA/SAS	3.5"	4xHot-swap	3x500GB SATA	DVD	IDM	TPM	KVM	No
0388-1AU	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	500	SATA/SAS	3.5"	8xHot-swap		DVD	IDM	TPM	IPMI	No
0388-1BL	J Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	500	SATA/SAS	2.5"	8xHot-swap		DVD	IDM	TPM	IPMI	No
0388-1CL	J Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	500	SATA/SAS	3.5"	4xHot-swap		DVD	IDM	TPM	KVM	No

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 1600MHz) One LGA1155 socket	Front - 3.5" disk bay Front - 2.5" disk bay Rear optical/tape std optical std optical				
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	Disk Bay 7-10				
Womory	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 3-6 Disk Bay 3-10 Disk Bay 3-10 A - PCle x16 3 - PCle x8 2 - PCle x8 1 - PCl				
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)				
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 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 **00.1, 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	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:				
	(RAID 50 is available on eight disk bays model only)	Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical				
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 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	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ 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)	Baý 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk				
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)					
Ethernet Extender card Front ports Rear ports	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	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 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical				
Intelligent Diagnostics Module (IDM)	<u> </u>	70 5155111541				
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	Monitor, SATA/SAS disk, OS					
Keyboard Mouse	None (use USB port) None (use USB port)	Software Management Tools				
Power supply	One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	ThinkServer EasyStartup				
Mechanical	Tower, business black color, metal case	ThinkServer EasyManage				
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	Security				
System weight Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal	Security chip (selected models, see information on left) Administrator password User password				
Rack mount	Rack-mountable to 5U	Front panel key lock Post assurance postrol				
Limited warranty Accessories	3-year parts and labor; more Lenovo Services information see S-TOR For more accessories, see O-TOR sheet	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)				
		RoHS-compliant				
		Tior to compilant				

ThinkServer® TS430 Fixed PSU (0388) - September 2012

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
0388-1KU	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD	No	TPM	IPMI	No	1 x Fixed
0388-1LU	Core i3-3220	1x4GB	No	500	SATA/SAS	3.5	8xHot-swap	No	DVD	No	TPM	IPMI	No	1 x Fixed
0388-1MU	Core i3-3220	1x4GB	No	500	SATA/SAS	2.5	8xHot-swap	No	DVD	No	TPM	IPMI	No	1 x Fixed
0388-1NU	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xDirect Cable	No	DVD	No	TPM	IPMI	No	1 x Fixed

Processor Implementation	Up to one processor, one processor standard, Intel® Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) One LGA1155 socket	Front - 3.5" disk bay Front - 2.5" disk bay Rear optical/tape PSU PSU
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 3-10
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,	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, RAID 0, 1, 10 support	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
	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	0.00
Dimension	Tower, business black color, metal case $W \times H \times D = 7.68"/195 \text{mm} \times 16.9"/430 \text{mm} \times 23.4"/595 \text{mm}$	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 Security chip (selected models, see information on left)
Limited warranty Accessories	3-year parts and labor; more Lenovo Services information see S-TS For more accessories, see O-TOR sheet	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

ThinkServer® TS430 Fixed PSU (0387) - June 12, 2012

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
0387-13U	Core i3-2120	1333MHz UDIMM	1x2GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD	No	TPM	IPMI	No	1xFixed
0387-14U	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	Intel PCH	SATA	3.5"	4xDirect Cable	No	DVD	No	TPM	IPMI	No	1xFixed
0387-15U	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD	No	TPM	IPMI	No	1xFixed

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 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 A - PCle x16 3 - PCle x8 2 - PCle x8 1 - PCl				
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)				
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 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: 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 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				
	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)	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	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	2.5" SAS: SAS 6.0Gb/s, 10000 rpm Supports optional tape drive via internal USB 2.0 connector	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				
Optical Diskette	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 8 2.5", 0.6" high, external, for disk				
Chipset	None (use USB port) Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet	Baý 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk				
	MAC, and USB)	Slot 1 half-length, full-height, 32-bit PCI 2.3				
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Slot 2 half-length, full-height, PCI Express 2.0 x8*				
Extender card Front ports	None Two USB 2.0	Slot 3 half-length, full-height, PCI Express 2.0 x8				
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical				
riear ports	shared with system management), one analog VGA DB-15 connector	** 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)	Cottoner Management T				
Mouse	None (use USB port)	Software Management Tools				
Power supply	One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	ThinkServer EasyStartup ThinkServer EasyManage				
Mechanical	Tower, business black color, metal case	, ,				
Dimension	W x H x D = 7.68 "/195mm x 16.9 "/430mm x 23.4 "/595mm	Security				
System weight Tool-less	61.7 lb (28kg) max configuration 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 Front panel key look				
Limited warranty	1-year parts and labor; more Lenovo Services information see S-TOR	Front panel key lock Boot sequence control				
Accessories	For more accessories, see O-TOR sheet	Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)				
		RoHS-compliant				

Type-	Memory	Pre-con	f Disk	Disk	Disk	Disk			SATA	Intelligent		System	ı Preloa	ad
model Processor	DIMMs	RAID	controller	type	size	bays	Disk(s))	optical	Diagnostics	TPM	mgmt	OS	PSU
0441-1DU Xeon E3-1240 0441-1EU Xeon E3-1240		No No	500 Intel PCH	SATA/SAS SATA	2.5" 3.5"	8xHot-swap 4xHot-swap			DVD±RW DVD±RW	IDM IDM	TPM TPM	IPMI IPMI		1x450W 1x450W
0441-1FU Xeon E3-1220		No	500	SATA/SAS		8xHot-swap			DVD±RW	IDM	TPM	IPMI		1x450W
0441-1GU Xeon E3-1240		No	500	SATA/SAS		8xHot-swap			DVD±RW	IDM	TPM	IPMI		1x450W
0441-1HU Xeon E3-1270 0441-1JU Xeon E3-1220		No No	Intel PCH 500	SATA SATA/SAS	3.5" 3.5"	4xHot-swap 8xHot-swap			DVD±RW DVD±RW	IDM IDM	TPM TPM	IPMI IPMI		1x450W 1x450W
		No	Intel PCH		3.5"	4xHot-swap	2x500GB S	SATA		IDM	TPM	IPMI	SBS 2011	1x450W
		No	Intel PCH	SATA	3.5"	4xHot-swap	2x500GB S	SATA		IDM	TPM	IPMI	2008 R2 S	
0441-1MU Xeon E3-1220		No	Intel PCH		3.5"	4xHot-swap		_	DVD±RW	IDM	TPM	IPMI		1x450W
Processor	Up to one Intel® Xeo					1GHz, 8MB	Cache).	Fro	nt - 3.5" c	lisk bay F	ront -	2.5" dis	k bay Re	ar
	1600MHz) Intel Xeon Turbo Boos 1600MHz)	E3-124 st 2.0 (u _l	0V2 proce to 3.8GH	e ssor (4C/8 z), DDR3 r	ST, 3.40 nemor	y controller (u GHz, 8MB Ca y controller (u	i che) , up to		optical/tap	ре	opti	cal/tape		PSU PSU
	Turbo Boos 1600MHz)	st 2.0 (u _l	to 3.9GH			GHz, 8MB Ca y controller (u			Disk Bay 7-10					
Implementation	One LGA1			200 400014	U- DD	D0 F00		-	Disk Bay	11	Di	sk Bay		- PCle x16 - PCle x8
Memory	32GB max four 240-pi			00 1333WI	HZ DD	R3, ECC,			3-6			3-10	3	- PCle x8 - PCl
Additional memory disclaimers	 Actual m 	emory o	perating s			t installed spe speed and ins			" disk bay		- Outo] =	
Graphics	Onboard A one VGA D Maximum)B-15 or	rear;			ent processo	or,	Bay Bay Bay Bay	2 5.25 3 3.5"	.", 1.6" high .", 1.6" high , 1" high, , 1" high,	n, exte	rnal, o rnal, si rnal, fo rnal, fo	td optical or disk	яларе)
Disk bays	Some: Fo Some: Fo	ur 3.5" h ur 3.5" h ght 3.5" l	ot-swap (H ot-swap (H not-swap (H	IŚ) ŚATA d IS) SATA/S HS) SATA/S	isk bay AS dis SAS dis	k bays sk bays		Bay Bay Bay Bay Bay	6 3.5", 7-10 are 7 3.5"	, 1" high, available o , 1" high, , 1" high,	exte n Eigh exte	rnal, fo rnal, fo t 3.5" d rnal, fo rnal, fo	or disk <i>lisk bay mo</i> or disk	odels:
Disk controller	Intel PCH:					tegrated in cl	nipset,	Bay	9 3.5". 10 3.5".			rnal, fo rnal, fo		
	RAID 500:	- !	ThinkServe PCI Expres	ss® bus, SA	dadap TA 6.0	ter (LSI® SAS Gb/s, SAS 6.		1	" disk bay				pen (optica	al/tane)
	Upgrade fo	or 500: i	Additional and RAID 5	5, 50 suppo	y for R ort	AID 500 ada nt disk bays n		Bay Bay Bay Bay	2 5.25 3 2.5" 4 2.5"	i", 1.6" higl , 0.6" higl , 0.6" higl	n, exte n, exte n, exte	rnal, s rnal, fo rnal, fo		αν ταρο)
Disk(s)	3.5" SATA: 3.5" SAS: 2.5" SAS:	SAS 6		000 rpm				Bay Bay Bay	/ 6 2.5" / 7 2.5" / 8 2.5"	, 0.6" high , 0.6" high , 0.6" high	n, exte n, exte n, exte	rnal, for rnal, for rnal, for	or disk or disk or disk	
Tape drive	Supports of	ptional t	ape drive v	/ia internal	USB 2	2.0 connector		Bay	/ 9 2.5" / 10 2.5"				or disk or disk	
Optical	Super Mult	ti-Burner	DL DVD±	RW SATA 1	1.5Gb/s	s Drive				•				
Diskette	None (use									ngth, full-h ngth, full-h				8*
Chipset	MAC, and	USB)				PCH] (Slot 1-2	2, ethernet	Slo	t 3 half-le	ngth, full-h	eight, F	CI Exp	ress 2.0 x	8 16** (near CPU)
Ethernet Extender card	Two Gigab None	it Ethern	et ports, Ir	ntel 82574L	. and 8	2579LM		* X	4 electrica 8 electrica	al ,	0 /			,
Front ports Rear ports	Two USB 2 Four USB	2.0, one				(RJ-45, one p VGA DB-15		×	o electrica	a l				
Intelligent Diagnostics Module (IDM)	IDM mode	à	dvanced dia	agnostics,		Module for component	category							
Systems mgmt	Onboard A IPMI 2.0-co KVM mode	speed A	ST2150 gi baseboard	raphics/ma d managen	nagem nent co	ent processontroller (BMC	or,							
Security chip	No onboar	d TPM c $el(s): ac$	hip; Iditional Nu		CT210	add-on card	for TPM			Software EasyStart EasyMan	up	gement	Tools	
Prerequisites	Monitor, S							-	VOCI VEI	Lasyiviali				
Keyboard	None (use							_	001144	in (calc=+-	Secu	•	inform - 4' -	n on latt)
Mouse Power supply	None (use One or two 80 PLUS®	450 wa	tts standar	d, two max undant with	timum, n two p	rear access, ower supplies	hot-swap,	• A	dministrat ser passv			eis, see	informatio	n on lett)
Mechanical	Tower, bus	iness bla	ack color, n	netal case			_		ront panel	key lock ence contro	ı			
Dimension					m x 23	.4"/595mm		• B	oot withou	ıt keyboard		se, disk	ette	
System weight Tool-less	61.7 lb (28 Side cover				e rema	oval				I/O control isablement	(ااد)			
1001-1033	system fan			opucai uilv	O I CITIC	ovai,			•		(all)			
Rack mount	Rack-moul								HS-compli	ant and labor; r	nore L	anovo G	Services in	formation
			Operating						S-TOR	and labor, I	HOIE L	STIOVO C	DOLVICES III	ionnauon
2008 R2 STD: SBS 2011:	Genuine W Genuine W					Standard		For	more acc	essories, s	ee O-T	OR sh	eet	
JDU LUII.	JOHUINE W	11100113	oman Dusi		/1 ∠ UI	Junualu				•				

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
0441-1PU	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)	optical/tape optical/tape
Implementation Memory	One LGA1155 socket 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	std optical Std optical Std optical
Additional memory	 four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, 	Disk Bay 7-10
disclaimers	dependent on processor memory controller speed and installed memory speed	1 - 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 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 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 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)	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	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 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)
Intelligent Diagnostics Module (IDM)	advanced diagnostics, IDM LED lights indicate failing component category	* 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 Mouse	None (use USB port) None (use USB port)	Software Management Tools
Power supply	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	Security
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 chip (selected models, see information on left)
Tool-less	Side cover removal, disk and optical drive removal,	Administrator password
Rack mount	system fan removal Rack-mountable to 5U	User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control
		USB port disablement (all) Bolds compliant
		RoHS-compliant 3-year parts and labor; more Lenovo Services information see S-TS
		For more accessories, see O-TOR sheet

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
0441-1RU	Xeon E3-1240V2	1x4GB	No	700	SATA/SAS	3.5	8xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W
0441-1SU	Core i3-3240	1x4GB	No	500	SATA/SAS	2.5	8xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W

Processor Up to one processor canadard, Intel [®] Core Ra2424 processor (2C4T3.4AH2.3BB Cache), migrated intel H2 Oraphics 2000 120 pt on 25-120 pt on 25-120 pt on 25-120 pt on 120 pt on 12			
Implementation One LGA1155 socket Memory S2GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC. to 2/40-pin DIMM sockets Additional memory peral memory operating speed is the lowest installed speed. Additional memory speed: Graphics Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear controller speed and installed memory speed: Graphics Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear controller speed and installed memory speed: Graphics Some: Four 3.5* NATA disk bays, no hot-swap, direct cable Some: Four 3.5* Not-swap (145) SATA disk bays Some: Equil 3.5* Not-swap (145) SATA disk bays Some: Four 3.5* Not-swap	Processor	Intel® Core™ i3-3240 processor (2C/4T, 3.4GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Intel Xeon® E3-1240V2 processor (4C/8T, 3.4GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.8GHz),	optical/tape std optical std optical
Additional memory 32GB max, UDIMM, PC3-10800 1333MHz DDR3, ECC, four 240-pin DIMM sockets Additional memory Additional	Implementation		
Additional memory operating speed is the lowest installed speed. dependent on processor, edependent on processor, ememory controller speed and installed memory speed Onboard Aspeed AST2150 graphics/management processor, Makamum resolution; 1600x1200 @60Hz Some: Four 3.5° Phot-swap (HS) SATA/SAS (disk bays Some: Four 3.5° Phot-swap (HS) SATA/SAS (AS So, Cobis, Four 3.5° Phot-swap (HS) SATA/SAS (AS So, Cobis, F		32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC ,	⊒I I DISK BAV I I I I I I I I I I I I I I I I I I I
One VGA DB-15 on reart Maximum resolution: 1600x1200 @60Hz Bay 5.25; 1.6° high, external, open (optical/tape)		 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed 	Disk Bay Disk Bay 2 - PCle x8 3 - PCle x8
Disk controller Some: Four 3.5' hot-swap (HS) SATA disk bays Some: Four 3.5' hot-swap (HS) SATA disk bays Some: Four 3.5' hot-swap (HS) SATA SAS disk bays Some: Figure 3.5' hot-swap (HS) SATA SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS disk bays Some: Figure 3.5' hot-swap (HS) SATAS SAS SAS SAS SAS SAS SAS SAS SAS S	Graphics	one VGA DB-15 on rear;	
Intel PCH: Serial ATIA, SATA 3.0Gb/s, integrated in chipset, HAIPO 1, 1 to support; ThinkServer RAID 500 adapter (LSIF) SAS 9240-81), PCI Express Pus, SATA 6.0Gb/s, SAS 6.0	Disk bays	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	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
Bay 1 5.25°, 1.6° high, external, open (optical/tape)	Disk controller	Intel PCH: RAID 500: RAID 500: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 500 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,	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
Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID Bay 5 2.5°, 0.6° high, external, for disk 8 2.5°, 0.6° high, external, for disk 8 2.7° SAS: SAS 6.0Gb/s, 15000 rpm		(RAID 50 is available on eight disk bays model only) RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express 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 2.5", 0.6" high, external, for disk
Disk(\$) 3.5° SAIA: SAIA 6.0Gb/s, 15000 rpm 2.5° SAIS: SAS 6.0Gb/s, 15000 rpm 2.5° SAIS: SAS 6.0Gb/s, 15000 rpm 2.5° SAIS: SAS 6.0Gb/s, 15000 rpm 3.8° SAIS:		Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID	Bay 5 2.5", 0.6" high, external, for disk Bay 6 2.5", 0.6" high, external, for disk
Tape drive Optical Optical Optical Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive Diskette None (use USB port) Chipset Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB) Ethernet Extender card Front 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 Intelligent Diagnostics Module (IDM) Security chip Prerequisites Monitor, SATA/SAS disk, OS Keyboard Mouse Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies Mechanical Dimension Rack mount Back mount Back mount Solt 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, PCI Express 2	Disk(s)	3.5" SAS: SAS 6.0Gb/s, 15000 rpm	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
Super Multi-Burner DL DVDEHW SAIA 1.5Gb/s Drive Diskette None (use USB port)	Tape drive		
Diskettle None (use USB port) Chipset Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB) Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Front 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 Module (IDM) Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IDM LED lights indicate failing component category Systems mgmt Onboard Aspeed AST2150 graphics/management controller (BMC); AVM model(s): add-on KVM card for KVM functions Security chip None one of the compliant baseboard management controller (BMC); AVM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Frerequisites Monitor, SATA/SAS disk, OS Keyboard 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 Mechanical Tower, business black color, metal case Dimension Wx x x 0 = Cx 7.68*(195mm x 16.9*(430mm x 23.4*(595mm System weight 10 (28kg)) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack mount Rack-mountable to 5U	Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	
Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Front ports None Front 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 Intelligent Diagnostics Module (IDM) Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management processor, IPMI model(s): add-on KVM card for KVM functions Security chip No onboard TPM chip; TPM model(s): add-ion KVM card for KVM functions Frerequisites Monitor, SATA/SAS disk, OS Keyboard None (use USB port) None (use USB port) None (use USB port) 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 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 fan removal System fan removal Rack mount Rack-mountable to 5U ** 4 electrical *** x8 electrical **	Diskette	None (use USB port)	Slot 3 half-length, full-height, PCI Express 2.0 x8
Extender card None Front ports 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 Intelligent Diagnostics Module (IDM) Intelligent Diagnostics Module (IDM) Intelligent Diagnostics Module (IDM) Intelligent Diagnostics Module (IDM) Intelligent Diagnostics Module (IDM) Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IPM 2.0-compliant baseboard management processor, IPM 2.0-compliant baseboard management processor, IPM cadditional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Prerequisites Monitor, SATA/SAS disk, OS Keyboard None (use USB port) 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 Mechanical Intelligent Diagnostics Monitor, SATA/SAS disk, OS Keyboard 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 Mechanical Tower, business black color, metal case Dimension Wx H x D = 7.68*/195mm x 16.9*/430mm x 23.4*/595mm System weight G1.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack mount Rack-mountable to 5U	Chipset		* x4 electrical
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	Extender card	None	xo electrical
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 Keyboard None (use USB port) 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 Dimension System weight Tool-less Side cover removal, disk and optical drive removal, system fan removal Rack mount Advanced diagnostics, IDM LED lights indicate failing component category Software Management Tools ThinkServer EasyStartup * Administrator password * User password * Front panel key lock * Boot without keyboard, mouse, diskette * Serial port I/O control * User password * B		Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is	
Security chip Software Management Tools Software Management Tools No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Tool-less Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) Security Secu	Module (IDM)	advanced diagnostics, IDM LED lights indicate failing component category	
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 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 Dimension System weight Tool-less No onboard TPM chip; Additional Nuvoton WPCT210 add-on card for TPM Security Security Security chip (selected models, see information on left) Administrator password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) RoHS-compliant 3-year parts and labor; more Lenovo Services information see S-TS	Systems mgmt	IPMI 2.0-compliant baseboard management controller (BMC);	
Prerequisites Keyboard 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 Dimension System weight Tool-less Rack mount Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) 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 3-year parts and labor; more Lenovo Services information see S-TS	Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM	ThinkServer EasyManage
Keyboard 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 Dimension System weight Tool-less Side cover removal, disk and optical drive removal, system fan removal Rack mount None (use USB port) 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 3-year parts and labor; more Lenovo Services information see S-TS	Prerequisites		-
Mouse Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Mechanical Dimension System weight Tool-less Side cover removal, disk and optical drive removal, system fan removal Rack mount None (use USB port) 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 3-year parts and labor; more Lenovo Services information see S-TS	Keyboard	None (use USB port)	
Boot sequencé control		None (use USB port)	User password
Dimension System weight Tool-less Side cover removal, disk and optical drive removal, system fan removal Rack mount Side cover removal Rack-mountable to 5U Serial port I/O control USB port disablement (all) RoHS-compliant 3-year parts and labor; more Lenovo Services information see S-TS		80 PLUS® Gold qualified, redundant with two power supplies	Boot sequence control
System weight Tool-less Side cover removal, disk and optical drive removal, system fan removal Rack mount System weight Rack-mountable to 5U System x 16.97430mm x 23.47595mm • USB port disablement (all) RoHS-compliant 3-year parts and labor; more Lenovo Services information see S-TS		•	Serial port I/O control
Tool-less Side cover removal, disk and optical drive removal, system fan removal Rack mount Rack-mountable to 5U RoHS-compliant 3-year parts and labor; more Lenovo Services information see S-TS			
system fan removal Rack mount System fan removal Rack-mountable to 5U 3-year parts and labor; more Lenovo Services information see S-TS			RoHS-compliant
For more accessories, see O-TOR sheet		system fan removal	
			For more accessories, see O-TOR sheet

Type-		Memory Pre-conf		f Disk Disk Disk Dis		Disk		SATA Intelligent			System	Preload	PSU	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	qty
0441-1VU	Xeon E3-1220V2	1x4GB	1	Intel PCH	SATA	3.5"	4xHot-swap 2	2x500GB SATA	DVD±RW	IDM	TPM	IPMI	SBS 2011 Standard	1
0441-1WU	Xeon E3-1220V2	1x4GB	1	Intel PCH	SATA	3.5"	4xHot-swap 2	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),	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	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),	optical/tape optical/tape
	Turbo Boost 2.0 (up to 3.5GHz),	std optical std optical
Implementation	DDR3 memory controller (up to 1600MHz) One LGA1155 socket	
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC ,	- Disk Bay 7-10
Additional memory	 four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, 	1 - PCle x16
disclaimers	dependent on processor memory controller speed and installed memory speed	Disk Bay 3-6 Disk Bay 3-10 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: Bay 1 5.25", 1.6" high, external, open (optical/tape)
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 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,	Bay 7-10 are available on Eight 3.5" disk bay models:
	RAID® 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	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
	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)	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
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm	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	2.5" SAS: SAS 6.0Gb/s, 10000 rpm 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 Rear ports	Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical
rical ports	shared with system management), one analog VGA DB-15 connector	** 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	Software Management Tools
Keyboard .	None (use USB port)	ThinkServer EasyStartup ThinkServer EasyManage
Mouse Power supply	None (use USB port) One or two 450 watts standard, two maximum, rear access, hot-swap.	, ,
i owei suppiy	80 PLUS® Gold qualified, redundant with two power supplies	Security - Security chip (selected models, see information on left)
Mechanical	Tower, business black color, metal case	Administrator password
Dimension System weight	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	User password Front panel key lock
System weight Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal,	Boot sequence control
Rack mount	system fan removal Rack-mountable to 5U	Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		3-year parts and labor, more Lenovo Services information see S-TS
	Preloaded Operating System	RoHS-compliant
2008 R2 Standard: SBS 2011 Standard:	Genuine Windows Server® 2008 R2 Standard Genuine Windows® Small Business Server 2011 Standard	For more accessories, see O-TOR sheet
	Genuine Windows® Small Business Server 2011 Standard	For more accessories, see O-TOR sneet

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-ABU	Xeon E3-1220V2	1x8GB	5	500+Upgrade	SATA/SAS	3.5"	8xHot-swap	3x1TB SATA	DVD±RW	No	TPM	IPMI	2012 Standard	1

Processor	Up to one processor, one processor standard, Intel® Xeon® E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache),	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	Turbo Boost 2.0 (up to 3.5GHz), DDR3 memory controller (up to 1600MHz)	optical/tape PSU PSU PSU PSU PSU PSU PSU PSU PSU PSU PSU PSU
Implementation Memory	One LGA1155 socket 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	std optical std optical
Additional memory	four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed,	
disclaimers	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 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 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 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 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)	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
Ethernet Extender card Front ports	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Two USB 2.0	Bay 10 2.5", 0.6" high, external, for disk 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 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU
Intelligent Diagnostics Module (IDM)	advanced diagnostics, IDM LED lights indicate failing component category	* 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	Monitor, SATA/SAS disk, OS	
Mouse	None (use USB port) None (use USB port)	Software Management Tools
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	ThinkServer EasyStartup
Mechanical	Tower, business black color, metal case	ThinkServer EasyManage
Dimension	$W \times H \times D = 7.68''/195 \text{mm} \times 16.9''/430 \text{mm} \times 23.4''/595 \text{mm}$	Security
System weight Tool-less Rack mount	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack-mountable to 5U	 Security chip (selected models, see information on left) Administrator password User password Front panel key lock
HOA HOUIL	TRON HIGHRADIC TO SO	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		3-year parts and labor, more Lenovo Services information see S-TS
	Preloaded Operating System	RoHS-compliant
2012 Standard:	Genuine Windows Server® 2012 Standard	For more accessories, see O-TOR sheet

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
0393-14U	Core i3-2120	1333MHz UDIMM	1x2GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W
0393-15U	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W

Implementation Memory Additional memory disclaimers	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 1600MHz) One LGA1155 socket 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	Front - 3.5" disk bay Front - 2.5" disk bay Rear optical/tape std optical Disk Bay 7-10 Disk Bay 3-6 Disk Bay 3-10 Disk Bay 3-10 Disk Bay 3-10
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 Front ports Rear ports	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	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, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical
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): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites Keyboard Mouse	Monitor, SATA/SAS disk, OS 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 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, system fan removal	Security • Security chip (selected models, see information on left) • Administrator password • User password
Rack mount Limited warranty	Rack-mountable to 5U 1-year parts and labor; more Lenovo Services information see S-TOR	Front panel key lock Reat acquires control
Accessories	For more accessories, see O-TOR sheet	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant

Type-		Memory	Pre-con	f Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	PSU
0393-1611	Core i3-3220	1x4GB	Nο	Intel PCH	SATA	3.5	4xHot-swap	No	DVD+RW	No	TPM	IPMI	Nο	1x450W

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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,	• · · · · · · · · · · · · · · · · · · ·
Implementation	DDR3 memory controller (up to 1600MHz) 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 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	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 Bay 4 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)	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 shared with system management), one analog VGA DB-15 connector	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
Intelligent Diagnostics Module (IDM)	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 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	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	ThinkServer EasyStartup
System weight Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal,	ThinkServer EasyManage
Rack mount	system fan removal Rack-mountable to 5U	Security Security chip (colocted models, and information on left)
Limited warranty Accessories	1-year parts and labor; more Lenovo Services information see S-TS For more accessories, see O-TOR sheet	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 Processo	Memory Pre-conf Disk r DIMMs RAID controlle	Disk Disk r type size	Disk bays	D)isk(s)	SATA optical	Intelligent Diagnostics		n Preload OS	PSU
0392-19U Core i3-2120	1x2GB No Intel PCH		4xHot-swap			DVD	IDM	TPM IPMI		1x450W
0392-1AU Xeon E3-124 0392-1BU Xeon E3-122		SATA 3.5" SATA 3.5"	4xHot-swap 4xHot-swap			DVD DVD	IDM IDM	TPM IPMI		1x450W 1x450W
0392-1CU Xeon E3-122	OV2 1x4GB No 500	SATA/SAS 3.5"	8xHot-swap			DVD	IDM	TPM IPMI	No	1x450W
0392-1DU Xeon E3-122 0392-1EU Xeon E3-122		SATA/SAS 2.5" SATA/SAS 3.5"	8xHot-swap 4xHot-swap	4×500	OGB SATA	DVD DVD+RW	IDM IDM	TPM IPMI		1x450W 2x450W
0392-1EU Xeon E3-122		SATA/SAS 2.5"	8xHot-swap			DVD±RW	IDM	TPM KVM		2x450W
Processor	Up to one processor, one pro				Front - 3.	5" disk bay	Front - 2.	.5" disk bay	Rear	
	Intel [®] Core™ i3-2120 proces integrated Intel HD Graphics			, lı						$\neg \neg$
	1333MHz)	,	, , , ,		optica			ol/topo	PSUF	'SU
	Intel Xeon® E3-1220V2 prod Turbo Boost 2.0 (up to 3.5GH				std op		std or	al/tape		
	1600MHz)	,,	` .		ota op	willout	ota of	Stiour		
	Intel Xeon E3-1240V2 proce Turbo Boost 2.0 (up to 3.8GH				Disk I	Bay			000	
	1600MHz)	_,,	(4)		/-1	<u> </u>				
Implementation	One LGA1155 socket				Disk E	Bav	Disk	Bav	1 - PCle x1 2 - PCle x8	
Memory	32GB max, UDIMM , PC3-100 four 240-pin DIMM sockets	500 1333MHz DDH	13, ECC,		3-6	5	3-	10	3 - PCle x8	
Additional memory	 Actual memory operating s 								4-101	
disclaimers	dependent on processor m memory speed	emory controller sp	beed and installed		3.5" disk b	ay models	::			
Graphics	Onboard Aspeed AST2150 g	raphics/manageme	ent processor.		Bay 1 5	5.25", 1.6"	high, exterr	nal, open (o		e)
G. ap.iioo	one VGA DB-15 on rear;		p. 000000.,			.25", 1.6" 5.5", 1" hi		nal, std optional, for disk	cai	
Diels herre	Maximum resolution: 1600x1		divant as Isla		Bay 4 3	.5", 1" hi	gh, exterr	nal, for disk		
Disk bays	Some: Four 3.5" SATA disk to Some: Four 3.5" hot-swap (H	ays, no not-swap, IS) SATA disk bavs	direct cable		Bay 5 3 Bay 6 3	.5", 1" hi .5", 1" hi	gn, exterr ah. exterr	nal, for disk		
	Some: Four 3.5" hot-swap (F	IS) SATA/SAS disk	bays		Bay 7-10 a	are availab	le on Eight	3.5" disk bay	/ models:	
	Some: Eight 3.5" hot-swap (Some: Eight 2.5" hot-swap (.5", 1" hi .5", 1" hi		nal, for disk nal, for disk		
Disk controller		SATA 3.0Gb/s, into			Bay 9 3	.5", 1" hi	gh, exterr	nal, for disk		
		, 10 support;	~ /I CI® CAC 0040		Bay 10 3	i.5", 1" hi	gn, exterr	nal, for disk		
		ss® bus, SATA 6.00	er (LSI® SAS 9240- ab/s, SAS 6.0Gb/s,	· 1		pay models				,
	RAID 0, 1,	10 support						nal, open (o nal, std optid		*)
	Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support						high, exterr	nal, for disk		
	· · · · · · · · · · · · · · · · · · ·		disk bays model o					nal, for disk nal, for disk		
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 72 3.5" SAS: SAS 6.0Gb/s, 15	•			Bay 6 2	2.5", 0.6"	high, exterr	nal, for disk		
	2.5" SAS: SAS 6.0Gb/s, 10							nal, for disk nal, for disk		
Tape drive	Supports optional tape drive	via internal USB 2.	0 connector		Bay 9 2 Bay 10 2			nal, for disk nal, for disk		
Optical	Some: DVD-ROM DL SATA				•	-	0	•		
Diskette	Some: Super Multi-Burner D None (use USB port)	L DVD±NW SAIA	1.5Gb/S Drive		Slot 1 hal Slot 2 hal	t-length, fu f-length, fu	ıll-height, 32 ıll-height, P(2-bit PCI 2.3 CI Express 2	.0 x8*	
Chipset	Intel C202 Chipset, Platform	Controller Hub [Po	CH] (Slot 1-2, ether	un at	Slot 3 hal	f-lenath, fu	ıll-heiaht. PO	CI Express 2	.0 x8	
Ethernet	MAC, and USB) Two Gigabit Ethernet ports, In	tal 905741 and 90	1570LM		x4 elect	trical	ılı-neignt, Pt	CI Express 2	.U X 16*** (n	ear CPU)
Extender card	None	itel 62374L and 62	.579LIVI		** x8 elect	trical				
Front ports	Two USB 2.0		21.45							
Rear ports	Four USB 2.0, one serial (9-p shared with system manager	nn), two etnernet (F nent), one analog \	RJ-45, one port is /GA DB-15 connec	tor						
Intelligent Diagnostics	IDM model(s): add-on Intel	igent Diagnostics I								
Module (IDM)	advanced di	agnostics, hts indicate failing	component categor	rv						
Systems mgmt	Onboard Aspeed AST2150 g	raphics/manageme	ent processor,	. у						
-	IPMI 2.0-compliant baseboar KVM model(s): add-on KVM									
Security chip	No onboard TPM chip;									
, .	TPM model(s): additional N	uvoton WPCT210 a G 1.2-compliant	add-on card for TPN	М						
Prerequisites	Monitor, SATA/SAS disk, OS	G 1.2-compilant				Softw	are Manage	ement Tools		
Keyboard	None (use USB port)					rver EasyS				
Mouse	None (use USB port)	al Accessor		_	• i ninkSei	rver EasyN				
Power supply	One or two 450 watts standar 80 PLUS® Gold qualified, red			' '			Securi	•		**
Mechanical	Tower, business black color, r	·				rchip (sele trator pass		s, see inform	ation on le	ett)
Dimension	$W \times H \times D = 7.68"/195 mm \times 10^{-1}$	16.9"/430mm x 23.4	4"/595mm		 User pa 	ssword				
System weight	61.7 lb (28kg) max configurat		val.			inel key loo guence co				
Tool-less	Side cover removal, disk and system fan removal	optical unive remov	vai,		 Boot wit 	hout keybo	oard, mouse	e, diskette		
Rack mount	Rack-mountable to 5U				 Serial po USB po 	ort I/O con rt disablem	trol			
Limited warranty	3-year parts and labor; more	Lenovo Services ir	formation see S-T0	UR -			ioni (ali)			
Accessories	For more accessories, see O	- IUH SNEET			RoHS-cor	прпапт				

Type-		Memory	Pre-conf	f Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	PSU
0392-1RU	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xDirect Cable	No	DVD	No	TPM	IPMI	No	1x450W
0392-1SU	Core i3-3240	1x4GB	No	500	SATA/SAS	3.5	4xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W
0392-1TU	Core i3-3240	1x4GB	No	500	SATA/SAS	2.5	8xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W

Implementation Memory	Up to one processor, one processor standard, Intel® Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Intel Core i3-3240 processor (2C/4T, 3.4GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) One LGA1155 socket 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, fore 340 siz DIMM, pc45tate	Front - 3.5" disk bay Front - 2.5" disk bay Rear optical/tape std optical Disk Bay 7-10 PSU PSU Disk Bay 7-10
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 3-10 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	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ 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 x6
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)	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 Mouse	None (use USB port) None (use USB port)	
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap,	Software Management Tools
Mechanical	80 PLUS® Gold qualified, redundant with two power supplies Tower, business black color, metal case	ThinkServer EasyStartup ThinkServer EasyManage
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	Security
System weight Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal	Security chip (selected models, see information on left) Administrator password
Rack mount	Rack-mountable to 5U	User password Front panel key lock
Limited warranty Accessories	3-year parts and labor; more Lenovo Services information see S-TS For more accessories, see O-TOR sheet	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 Proces	or (MHz/type)	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	PSU
0391-12U Core i3-21	0 1333MHz UDIMN	/I 1x4GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W
0391-13U Xeon E3-1	20V2 1333MHz UDIMN	/I 1x4GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD	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 1600MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear Optical/tape std optical Std optical Std optical
Implementation	One LGA1155 socket	Diek Box
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 x16 2 - PCle x8 3 - PCle x8 4 - PCl
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear;	3.5" disk bay models:
	Maximum resolution: 1600x1200@60Hz	Bay 1 5.25", 1.6" high, external, open (optical/tape)
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 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; 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 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) Bay 2 5.25", 1.6" high, external, std optical
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 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	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 7 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
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*
Extender card	None	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)	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)	
Mouse	None (use USB port)	Software Management Tools
Power supply	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	Security
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 chip (selected models, see information on left)
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	Administrator password User password
Rack mount	Rack-mountable to 5U	Front panel key lock Reet seguence control
Limited warranty Accessories	1-year parts and labor; more Lenovo Services information see S-TOR For more accessories, see O-TOR sheet	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant
		Horio compilant

Type-		Memory	Pre-con	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	os	PSU
0391-15U	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W
0391-16U	Core i3-3240	1x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W

Processor	Up to one processor, one processor standard, Intel® Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Intel Core i3-3240 processor (2C/4T, 3.4GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear Optical/tape std optical Std optical Std optical
Implementation	One LGA1155 socket	Disk Bay
Memory Additional memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed,	7-10
disclaimers	dependent on processor memory controller speed and installed memory speed	3-6 3-10 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; 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 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) Bay 2 5.25", 1.6" high, external, std optical
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 3 2.5", 0.6" high, external, std optical 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	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ 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)	Baý 10 2.5", 0.6" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*
Extender card	None	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) x x4 electrical
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	** 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)	
Mouse	None (use USB port)	Software Management Tools
Power supply	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	Security
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 chip (selected models, see information on left)
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	Administrator password User password
Rack mount	Rack-mountable to 5U	Front panel key lock Boot sequence control
Limited warranty Accessories	1-year parts and labor; more Lenovo Services information see S-TS For more accessories, see O-TOR sheet	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant

ThinkServer®TS430 Accessories

Partial list of accessories supported on Ler TS430.	novo® ThinkServer	Keyboard Preferred Pro USB Keyboard	73P5220
ThinkServer Ready accessories are available Business Partners. Locate a Business Partner bplocator.lenovo.com		Mouse Lenovo Optical Mouse (USB)	06P4069
Memory 2GB PC3-10600 DDR3 ECC UDIMM (1Rx8) 4GB PC3-10600 DDR3 ECC UDIMM (2Rx8) 8GB PC3-10600 DDR3 ECC UDIMM (2Rx8)	67Y2606 67Y2607 0A89461		
Connectivity Lenovo Gigabit ET Dual Port Server Adapter Intel Ethernet I340 Quad Port Server Adapter	0A89423 0A89424		
Disk Drive ⁶ 3.5" SATA Cabled: 500GB 7.2K Enterprise 6Gbps SATA 1TB 7.2K Enterprise 6Gbps SATA 2TB 7.2K Enterprise 6Gbps SATA 3TB 7.2K Enterprise 6Gbps SATA	0A89470 0A89471 0A89472 0A89478		
3.5" SATA HS: 500GB Enterprise 6Gbps SATA HS (7200 rpm 1TB Enterprise 6Gbps SATA HS (7200 rpm) 2TB Enterprise 6Gbps SATA HS (7200 rpm) 3TB Enterprise 6Gbps SATA HS (7200 rpm)) 0A89473 0A89474 0A89475 0A89477		
3.5" SAS HS: TS430 preconfigured with SAS controller: 300GB 3.5" SAS 6Gbps HS (15000 rpm) 450GB 3.5" SAS 6Gbps HS (15000 rpm) 600GB 3.5" SAS 6Gbps HS (15000 rpm)	67Y2616 67Y2617 67Y2618		
2.5" SAS HS: TS430 preconfigured with SAS controller: 300GB 2.5" SAS 6Gbps HS (10000 rpm) 450GB 2.5" SAS 6Gbps HS (10000 rpm) 600GB 2.5" SAS 6Gbps HS (10000 rpm) 900GB 2.5" SAS 6Gbps HS (10000 rpm)	67Y2619 67Y2620 67Y2621 0A89409		
ThinkServer RAID controller and RAID upgr RAID 100 Upgrade key for onboard RAID RAID 500 Adapter II RAID 500 Upgrade key for Advanced RAID	rade 67Y2626 0A89464 0A89407		
System Management Management Controller Premium	67Y2624	For more information on server accessories www.lenovo.com/support/accessories	
Tower to Rack Shelf Conversion Kit TS430 Tower to Rack Shelf Conversion Kit	67Y2641	www.lenovo.com/support/thinkserverace www.lenovo.com/support/security	
Redundant Power Supply TS430 with Redundant PSU: 450W hot-swap Redundant PSU	67Y2625	Other accessories at www.lenovo.com/acc Accessories Guide pdf at www.lenovo.com	















IninkServer®	RD330 with 3.5" Disk Bay (4304) - TopSeller	Personal Systems Reference (PSREF)
4304-E2U 1xE5-2403 4304-E3U 1xE5-2420 4304-E4U 1xE5-2420 4304-E5U 1xE5-2450 4304-E6U 2xE5-2420 4304-E7U 1xE5-2420	(MHz/type) DIMMs RAID controller Disk(s) bays ty 1333MHz RDIMM 1x4GB No 300 4xHS SATA 1333MHz RDIMM 1x4GB No 300 4xHS SATA 1333MHz RDIMM 1x8GB No 500 4xHS SATA 1333MHz RDIMM 1x8GB No 500 4xHS SATA 1333MHz RDIMM 1x8GB No 500+Upgrade 4xHS SATA 1333MHz RDIMM 2x8GB No 500+Upgrade 4xHS SATA 1333MHz RDIMM 1x16GB No 500 4xHS SATA	VSAS DVD±RW No TPM IPMI No No 1
Limited warranty	3-year parts and labor; more services information see S-RAL sheet	1U Rack top
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)	
Implementation	Two LGA1356 sockets	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	fan
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported 	Front Optical Odisk disk d
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Rear 2-PClex8 [1-PClex16]
Disk bays Disk controller RAID Support Disk(s)	Four 3.5" hot-swap SATA/SAS disk bays (see right) RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 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 support ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support Intelligent Battery backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter 3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SATA: SAS 6.0Gb/s, 15000 rpm	PSU PSU DDDDDDDDDDDDDDDDDDDDDDDDDDDDDDDD
Tape drive	3.5" SAS: SAS 6.0Gb/s, 15000 rpm None	<u> </u>
Optical	DVD±RW or DVD ROM, slim	Mechanical • 1U rack
Diskette Chipset	None (use USB port) Intel C606 Chipset	• 10 fack • 19"W x 28.9"D x 1.72"H (with rack handles)
Ethernet	Two Gigabit Ethernet ports by Intel i350,	482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured
Riser card	one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2	Disk Bays
Front ports	Two USB 2.0	Bay 1 5.25", 0.5" high, external, for optical
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Bay 2-5 3.5", 1" high, external, for disk
Intelligent Diagnostics Module (IDM)	Supports IDM on selected models; Basic: IDM LED lights indicate failing component category	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM	Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec) Security Security chip (selected models, see information on left)
Security chip Prerequisites	functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS	Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette
Keyboard/mouse Power supply	None (use USB port) One or two 550 watts standard, two maximum, rear access, hot-swap,	Serial port I/O control USB port disablement (all)
	80 PLUS® Gold qualified, redundant with two power supplies	Software Management Tools
Rack kit Cable management	Includes rack kit Optional cable management arm on selected models	ThinkServer EasyStartup ThinkServer EasyManage
Cooling	Six fans, non-hot swap	Energy Management Technology • Lenovo® SmartGrid Manager
		ENERGY STAR® Server 1.1-compliant RoHS-compliant
Saa faatnataa far impart	ant warranty information	For more accessories, see O-RAL sheet © Lenovo

ThinkServer® RD330 with 3.5" Disk Bay (4304) - TopSeller (June 2013)

Personal Systems Reference (PSREF)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
4304-F5	U 1xE5-2407	1600MHz RDIMN	/I 1x8GB	No	300	2x1TB 3.5" SATA	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1

Limited warranty	3-year parts and labor; more services information see S-RAL sheet	1U Rack top
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz)	Power supply Power supply Riser card 2 Riser card 1
Implementation	Two LGA1356 sockets	wer su
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported 	CPU1 CPU2
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	disks optical
Disk bays Disk controller	Four 3.5" hot-swap SATA/SAS disk bays (see right) RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 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 support ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 15 6 40 support	Front Optical Odisk disk disk Rear PSU PSU PSU PSU PSU PSU PSU PSU
	Battery for 700: RAID 0, 1, 5, 6, 10 support Intelligent Battery Backup Unit (iBBU08) for RAID 700	
RAID Support	Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter	
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	
Chipset	Intel C606 Chipset	
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2 Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Mechanical • 1U rack • 19"W x 28.9"D x 1.72"H (with rack handles)
Intelligent Diagnostics Module (IDM)	Basic: IDM LED lights indicate failing component category	178 W x 26.9 D x 1.72 H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-5 3.5", 1" high, external, for disk
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Expansion Slots
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec) Security Security chip (selected models, see information on left)
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Six fans, non-hot swap	Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		Software Management Tools
		ThinkServer EasyStartup ThinkServer EasyManage
		Energy Management Technology • Lenovo® SmartGrid Manager
		ENERGY STAR® Server 1.1-compliant RoHS-compliant
		For many accession and O DAL about

For more accessories, see O-RAL sheet

ThinkServer® RD330 with 3.5" Disk Bay (4305)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
4305-B1U	1xE5-2407	1333MHz RDIMN	/I 1x4GB	No	300	No	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
4305-B2U	1xE5-2403	1333MHz RDIMM	/I 1x8GB	No	300	No	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
4305-B3U	1xE5-2420	1333MHz RDIMM	/I 1x8GB	No	300	No	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
4305-B4U	1xE5-2450	1333MHz RDIMM	/I 1x8GB	No	500+Upgrade	No	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	1
4305-B5U	1xE5-2450	1333MHz RDIMM	/ 1x16GB	No	500+Upgrade	No	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RD sheet	1U Rack top
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)	
Implementation	Two LGA1356 sockets	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	fan fan fan fan fan fan fan disks optical
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported 	Front optical
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	disk disk disk disk disk
Disk bays Disk controller	Four 3.5" hot-swap SATA/SAS disk bays (see right) RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support	PSU PSU 2-PClex8 [I-PClex16]
	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 support	
	RAID 700: RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support	
DAID Commant	Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700	
RAID Support Disk(s)	Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter 3.5" SATA: SATA 6.0Gb/s, 7200 rpm	-
Tana district	3.5" SAS: SAS 6.0Gb/s, 15000 rpm	-
Tape drive Optical	None DVD±RW or DVD ROM, slim	Mechanical
Diskette	None (use USB port)	• 1U rack • 19"W x 28.9"D x 1.72"H (with rack handles)
Chipset Ethernet	Intel C606 Chipset Two Gigabit Ethernet ports by Intel i350,	482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured
Riser card	one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2	Disk Bays
Front ports Rear ports	Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Bay 1 5.25", 0.5" high, external, for optical Bay 2-5 3.5", 1" high, external, for disk
Intelligent Diagnostics Module (IDM)	Supports IDM on selected models; Basic: IDM LED lights indicate failing component category	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM	Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec) Security
Security chip	functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Security chip (selected models, see information on left) Administrator password User password Beet page acounts.
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 550 watts standard, two maximum, rear access, hot-swap,	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
Rack kit	80 PLUS® Gold qualified, redundant with two power supplies Includes rack kit	Software Management Tools ThinkServer EasyStartup
Cable management	Optional cable management arm on selected models	ThinkServer EasyManage
Cooling	Six fans, non-hot swap	Energy Management Technology • Lenovo® SmartGrid Manager
		ENERGY STAR® Server 1.1-compliant RoHS-compliant
	ant warranty information	For more accessories, see O-RAL sheet

ThinkServer® RD330 with 3.5" Disk Bay (4305) - September 2012

Personal Systems Reference (PSREF)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
4305-F2U	1xE5-2407	1600MHz RDIMM	1x4GB	No	300		4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
4305-F3U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x500GB 3.5" SATA	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
4305-F4U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 3.5" SAS	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet	1U Rack top
Processor Implementation	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Two LGA1356 sockets	Power supply Power supply Riser card 2
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor,	
•	240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	Sockets CPU1
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported 	fan fan fan fan fan fan disks optical
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Front
Disk bays Disk controller	Four 3.5" hot-swap SATA/SAS disk bays (see right) RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i),	rear PSU PSU
	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 support ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support	
DAID Cumport	Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter	
RAID Support		_
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	
Chipset	Intel C606 Chipset	
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2 Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45),	 Mechanical 1U rack 19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles)
Intelligent Diagnostics	one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM on selected models;	17kg (37.5 lb) when fully configured Pick Page P
Module (IDM)	Basic: IDM LED lights indicate failing component category	Disk Bays
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Bay 1 5.25", 0.5" high, external, for optical Bay 2-5 3.5", 1" high, external, for disk Expansion Slots
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec) Security
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Security Security chip (selected models, see information on left) Administrator password User password Boot sequence control
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Six fans, non-hot swap	Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
		Energy Management Technology
		Lenovo® SmartGrid Manager The Coverage of the Covera
		ENERGY STAR® Server 1.1-compliant RoHS-compliant
0 () ()	ant warranty information	For more accessories, see O-RAL sheet

Type: Type	ThinkServer®	RD330 with	2.5"	Disk	Bay (3	3073	3) - TopSe	eller					Perso	nal Syste	ems Rei	ference (F	SREF)
2073-CFL 11-65-240 1330MHz F30MM 14-606 No 500 60-45 SATA-SAS DVD-HW No 17-64 F30M No 10-50							Disk(s)						TPM				
S072-GU 185-9469 1353MH FDIMM 1966 No 500	3073-C1U 1xE5-2403	1333MHz RDIMM	1x4GB	No	300		- (-)	6xHS	SATA	/SAS	DVD±RW	No	TPM	IPMI	No	No	1
S073-C4U 14-55-2450 13308MHz FDIMM 1-96801 No 500-lignates B45 SATA-SAS DUD-HW No 17M H2M No No 2 2 3073-C70 List 5-2450 13308MHz FDIMM 1-9680 No 500-lignates B45 SATA-SAS DUD-HW No 17M H2M No No 2 3073-C70 14-55-2420 13308MHz FDIMM 1-9680 No 500-lignates 2-2000 SSD 845 SATA-SAS DUD-HW No 17M H2M No No 2 3073-C70 14-55-2420 13308MHz FDIMM 1-9680 No 500-lignates 2-2000 SSD 845 SATA-SAS DUD-HW No 17M H2M No No 2 3073-C70 14-55-2420 13308MHz FDIMM 1-9680 No 500-lignates 2-2000 SSD 845 SATA-SAS DUD-HW No 17M H2M No No 2 3073-C70 14-55-2420 13308MHz FDIMM 1-9680 No 500-lignates 2-2000 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M No No 2 3073-C70 Lignates 2-2000 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M No No 2 3073-C70 Lignates 2-2000 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M No No 2 3073-C70 Lignates 2-2000 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M No No 2 3073-C70 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M No No 2 3073-C70 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M No No 2 3073-C70 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M No No 2 3073-C70 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M No No 2 3073-C70 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M No No 2 3073-C70 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M No No 2 3073-C70 SSD 845 SATA-SAS DUD-HW No 17M H2M H2M NO NO 2 3073-C70 SSD 845 SATA-SAS DUD-HW NO 17M H2M H2M H2M H2M H2M H2M H2M H2M H2M H2																	
S072-GPU 162-52-620 SSSSMH-FRIDMIN 2565B No 5000-1907-00 Actility 162-52-620 SSSMH-FRIDMIN 2565B No 5000 Actility 162-52-620 SSSMH-FRIDMIN 2565B No 5000-1908-1908-1908-1908-1909-1909-1909-1	3073-C4U 1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upg			6xHS	SATA	/SAS	DVD±RW		TPM	IPMI	No	No	2
S075-CPU 1455-2500 1353/MH-RDIMM MSDB No 00 100 100 100 100 100 100 100 100 100							2x200G SSD										
Unack top	3073-C7U 1xE5-2420	1333MHz RDIMM	1x16GB		500	iaac	ZAZOOG GOD						TPM	IPMI			
Processor Intel Xeon ES-2403 processor (CACT, 1.6Hz, 2.0MB, 6.4 GT/s OPI x1), 3-channel DUB3-memory controller (up to 1060MHz) Intel Xeon ES-2403 processor (CACT, 1.6Hz, 2.0MB, 6.4 GT/s OPI x1), 3-channel DUB3-memory controller (up to 1060MHz) Intel Xeon ES-2420 processor (CACT, 1.6Hz, 2.0MB, 8.4 GT/s OPI x1), Intel Xeon ES-2420 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2420 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2420 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT, 1.6Hz, 2.0MB, 8.0 GT/s OPI x1), Intel Xeon ES-2430 processor (CACT	3073-C8U 1xE5-2450								SATA	/SAS	DVD±RW	No	TPM	IPMI	No	No	1
Intel Xeon ES-2403 processor (4C/4T, 180Hz, 10MB, 5.4 GT/s QPl x1), 3-charnel DDR3 memory controller (up to 1068MHz) intel Xeon ES-2403 processor (6C/12T, 196Hz, 19MB, 7.2 GT/s QPl x1), 10 controller (up to 1068MHz) intel Xeon ES-2403 processor (6C/12T, 196Hz, 20MB, 8.0 GT/s QPl x1), 10 controller (up to 1068MHz) intel Xeon ES-2403 processor (6C/12T, 196Hz, 20MB, 8.0 GT/s QPl x1), 10 controller (up to 1080MHz) intel Xeon ES-2403 processor (6C/12T, 196Hz, 20MB, 8.0 GT/s QPl x1), 10 controller (up to 1500MHz) intel Xeon ES-2403 processor (6C/16T, 196Hz, 20MB, 8.0 GT/s QPl x1), 10 controller (up to 1500MHz) intel Xeon ES-2403 processor (6C/16T, 196Hz, 20MB, 8.0 GT/s QPl x1), 10 controller (up to 1500MHz) intel Xeon ES-2403 processor (6C/16T, 196Hz, 20MB, 8.0 GT/s QPl x1), 10 controller (up to 1500MHz) intel Xeon ES-2403 processor (6C/16T, 196Hz, 20MB, 8.0 GT/s QPl x1), 10 controller (up to 1500MHz) intel Xeon ES-2403 processor (6C/16T, 196Hz, 20MB,		<u> </u>						sheet		10	Rack top						
Memory UDIMM, EDIMM oct IV FDIMM, DDR, ECC, 3-channel per processor, 240-ipin, 120MM sockets for concessor), 240-ipin, 120MM sockets for concessor), 240-ipin, 120MM sockets for concessor), 240-ipin, 120MM sockets for concessor memory greated paged depends on processor memory controller speed, installed memory spead, and quantity of memory DIMMs sociations and processors one VGA DB-15 on front, previous VGA DB-15 on rear; Maximum resolutions 120Mm speed AST2300 graphics/management processor, one VGA DB-15 on front, previous VGA DB-15 on rear; VGA DB-15 on front, previous VGA DB-15 on rear; V		Intel Xeon E5-2 3-channel DDR3 Intel Xeon E5-2 3-channel DDR3 Intel Xeon E5-2 Turbo Boost 2.0 3-channel DDR3 Intel Xeon E5-2 Turbo Boost 2.0 3-channel DDR3	2403 pro 3 memor 2407 pro 3 memor 2420 pro (up to 2 3 memor 2450 pro (up to 2 3 memor	cessor ry contro cessor ry contro cessor .4GHz), ry contro cessor .9GHz),	(4C/4T, 1. oller (up to (4C/4T, 2. oller (up to (6C/12T, 1 oller (up to (8C/16T, 2	8GHz 1066 2GHz 1066 1.9GH 1333 2.1GH	, 10MB, 6.4 G MHz) , 10MB, 6.4 G MHz) z, 15MB, 7.2 (MHz) z, 20MB, 8.0 (T/s QPI GT/s QF	x1), x1),		N		Power supply				
Additional memory disclaimers 240-pin, 12 DIMM sockets (6 sockets per processor) 1924B max (FDIMM/N PDM M). 1216 BGD v46B max (UDIMM. 1244B) 1924B max (FDIMM/N PDM BDM). 1216 BGD v66B max (UDIMM. 1244B) 1924B max (FDIMM/N PDM BDM). 1216 BGD v67B v67B max (PDIMM BDM). 240 controller speed, installer amony speed and processor amony one VGA DB-15 on front, or VGA DB-15 on rear; one VGA DB-15 on front, or VGA DB-15 on rear; Maximum resolution: 1920x1200 BCD12 Disk bays Disk controller BAZ 25 To New SAR 27ASAS disk bays (see right) 1924B maximum resolution: 1920x1200 BCD12 Disk bays ABA 150 DB. 1 DB. 150 DB										41							
disclaimers controller speed, installed memory speed, and quantity of memory DIMMs - Over six DIMMs requires call processors one VGA DE-15 on front, one VGA DB-15 on rear; Machinum resolution: 1920 it 200 (#200 #80hs) Disk bays Disk Days Six 2.5 The swap SATA/SAS disk bays (see right) Disk controller Six 2.5 The swap SATA/SAS disk bays (see right) Disk controller Six 2.5 The swap SATA/SAS disk bays (see right) Disk controller AID 5.00. Disk Days AID 5.00. Disk Days AID 5.00. Disk Days BAID 5.00. Disk Days	Memory	240-pin, 12 DIM 192GB max (RD	IM socke	ts (6 so	ckets per p	proces	ssor);		r,				an				
Over six DIMMs requires dual processors Mixing of UDIMM RIDIAM or V RDIMM is not supported)/////		Ero	nt		_				
one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200 6e0th 1 Disk bays Disk controller Six 2.5' hot-swap SATA/SAS disk bays (see right) ARJD 300. Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0 Cib/s, SAS 3.0 Cib/s, SARS 3.0 Cib/s,		Over six DİMMsMixing of UDIMI	requires M, RDIMN	dual prod 1, or LV F	cessors RDIMM is no	ot supp	ported	niviivis			@·	-					
Disk controller ### AID 300. ### SAZ 3 Globs ASA 3 Oldos ARD 0, 1, 10 support		one VGA DB-15	on front	, one V	GA DB-15					Rea	ar	0. 5010	•	•			
Upgrade for 300: Additional upgrade key for RAID 300, and RAID 5 support RAID 500: PCI Express* bus, SATA 6.060ks, SAS 6.060ks, RAID 0.1, 10 support ARID 0.1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, SATA 6.060ks, SAS 6.060ks, RAID 0.1, 10 support RAID 700: PCI Express bus, SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express bus, SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express bus, SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express bus, SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express bus, SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express bus, SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express bus, SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express bus, SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express bus, SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express SAS SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express SAS SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express SAS SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express SAS SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express SAS SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express SAS SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express SAS SATA 6.060ks, SAS 6.060ks, RAID 700: PCI Express SAS PCI			Onbo	ard Thir	ıkServer F	raid 3	300 SATA/SAS			PSU	PSU						
RAID 500. ThinkServer RAID 500 adapter (LSI* SAS 9240-8), PCI Express* bus, SATA 6.005ks, SAS 6.005ks, RAID 0.1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5.50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8)), PCI express bus, SATA 6.005ks, SAS 6.005ks, RAID 0.1, 15, 6, 10, 50 support Battery for 700: Intelligent Battery Backup Unit (IBBU08) for RAID 700 RAID Support Up to RAID 0, 1, 15, 6, 10, 50 support SSD: Solid State Drive, 2.5* Tape drive Optical DVD+RW or DVD ROM, slim None (use USB port) Siskete None (use USB port) None Glgabit Ethernet port by Intel 1250, one State Drive, 2.5* Tape drive One analogy GA De 15 connector (work) USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgml), one analogy VGA DB-15 connector (work) USB 2.0, one Sight-share mgml), one analogy VGA DB-15 connector (PM 2.0-compliant baseboard management processor, IPM 2.0-compliant baseboard management processor. Prerequisites SATA'SAS disk, OS None (use USB port) One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies Rack kit Includes rack kit Optional cable management arm on selected models Six fans, non-hot swap The requisites of the processor of the proce		Upgrade for 300	D: Additi	onal up	grade key	for RA	AID 300,										
Upgrade for 500: Additional upgrade key for RAID 500 adapter (LSI SAS 926-8i), PAID 700: PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 701, 1, 5, 6, 10, 50 support		RAID 500:	Think PCI E	Server I Express®	RÀÍD 500∂ bus, SAT/	adapt A 6.00	er (LSI® SAS 9 Gb/s, SAS 6.00	9240-8i) Gb/s,	,								
RAID Support Up to RAID 0, 1, 5, 6, 10, 50 via ThinkServer RAID 700 adapter		, •	D: Additi add F Think PCI E RAID	onal up RAID 5, Server I xpress 0, 1, 5,	grade key 50 suppor RAID 700 bus, SATA 6, 10, 50	t adapt 6.0G suppo	er (LSI SAS 9: b/s, SAS 6.0G ort	260-8i), b/s,									
Disk(s) 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" Tape drive Optical Diskette None Optical Diskette None (use USB port) Chipset Intel C606 Chipset Ethernet Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet ports by Intel i350, one Analog VGA DB-15 connector, two USB 2.0 Rear ports Rear ports Rear ports Rear ports Rodule (IDM) Systems mgmt Onboard Aspeed AST2300 graphics/management controller (BMC); ////////////////////////////////////	RAID Support	,	•	-	•	•	,		700								
Tape drive Optical DVD=RW or DVD ROM, slim		2.5" SAS: SAS	6.0Gb/s	, 10000	rpm	vei itiz	10 700 adapt	<u> </u>									
Diskette None (use USB port) Chipset Intel C606 Chipset Ethernet Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2 Front ports One analog VGA DB-15 connector, two USB 2.0 Rear ports Pour USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share magnt), one analog VGA DB-15 connector, two USB 2.0 Rear ports One analog VGA DB-15 connector, two USB 2.0 Rear ports Supports IDM on selected models; Module (IDM) Systems mgmt Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); W/W: add-on ThinkServer Management Module Premium for iKVM functions Security chip Prerequisites SATA/SAS disk, OS Reyboard/mouse Power supply One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Rack kit Cable management Cooling Rack kit Optional cable management arm on selected models Six fans, non-hot swap - 10 rack - 10 rack 482.4mm W x 734mm D x 43.6mm H (with rack handles) - 17kg (37.5 lb) when fully configured - 1822. Tys (37.5 lb) when fully configured - 1824. Amm W x 734mm D x 43.6mm H (with rack handles) - 17kg (37.5 lb) when fully configured - 1822. Tys (37.5 lb) when fu		None DVD+RW or DV	D ROM.	slim								N	lechar	nical			
Eithernet Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2 Front ports One analog VGA DB-15 connector, two USB 2.0 Fear ports Pour USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Intelligent Diagnostics Module (IDM) Systems mgmt Onboard Aspeed AST2300 graphics/management controller (BMC); K/W/M: add-on ThinkServer Management Module Premium for iKVM functions Security chip Non cuse USB port) Prerequisites SATA/SAS disk, OS None or two 550 watts standard, two maximum, rear access, hot-swap None (use USB port) Power supply Optional cable management arm on selected models Rack kit Cable management Cooling Rack kit Cooling	Diskette	None (use USB	port))"D v 1 70"L	l (with	rook ho	ndloo)		
Riser card (See Right) Riser card 1 for slot 1, riser card 2 for slot 2 Pront ports One analog VGA DB-15 connector, two USB 2.0 Rear ports Pour USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Intelligent Diagnostics Module (IDM) Systems mgmt Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); i/KVM: add-on ThinkServer Management Module Premium for iKVM functions Security chip Non hoard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant Prerequisites Keyboard/mouse Power supply One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Rack kit Cable management Cooling Six fans, non-hot swap Riser card 1 for slot 1, riser card 2 for slot 2 Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-7 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec) Security chip (selected models, see information on left) Administrator password User passwo				ata las da	1-1:050											ack han	dles)
Front ports Rear ports Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Intelligent Diagnostics Module (IDM) Systems mgmt Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); IKVM: add-on ThinkServer Management Module Premium for iKVM functions Security chip No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant Prerequisites Keyboard/mouse Power supply Sarkit Cable management Cooling Intelligent Diagnostics Supports IDM on selected models; Basic: IDM LED lights indicate failing component category Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec) Security Security - Secur	Ethernet	one Gigabit Eth	ernet po ernet po	rt by Inte	itei 1350, el 82574L,	dedic	cate/share ma	nageme	ent	• 17	kg (37.5 l	b) when full	y confi	gured			
Rear ports Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector										_				•			
Intelligent Diagnostics Module (IDM) Sasic: IDM LED lights indicate failing component category Systems mgmt Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions Security chip Prerequisites Keyboard/mouse Power supply Power supply Rack kit Cable management Cooling Non-hot swap Non-hot swap Rack kit Cable management Cooling Non-hot swap None (use USB port) Optional cable management arm on selected models Six fans, non-hot swap Security chip (selected models, see information on left) Administrator password Solot 2: Low Profile, PCI Express 3.0 x 8 (x 4 elec) Security	Four USB 2.0, o	ne seria	I (9-pin)	, two ether	rnet (F	₹J-45),											
Module (IDM) Sasic: IDM LED lights indicate failing component category Systems mgmt Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions Security chip Prerequisites SATA/SAS disk, OS None (use USB port) One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Rack kit Cable management Cooling Cooli	Intelligent Disconsisting	· · · · · · · · · · · · · · · · · · ·			, .	alog V	/GA DB-15 co	nnector									
IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant Prerequisites Keyboard/mouse Power supply Rack kit Cable management Cooling Includes rack kit Optional cable management arm on selected models Six fans, non-hot swap Includes rack kit Cable management Cooling Includes rack kit Cable management Cooling Includes rack kit Cable management Cooling Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six fans, son-hot swap Includes rack kit Optional cable management arm on selected models Six						compo	onent category	/									
Security chip No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant Prerequisites Keyboard/mouse Power supply None (use USB port) One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Rack kit Cable management Cooling Cooling Cooling Cooling Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage Energy Management Technology Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1-compliant RoHS-compliant For more accessories, see O-RAL sheet	Systems mgmt	IPMI 2.0-complia iKVM: add-on	ant base ThinkSe	board n	nanageme	nt cor	ntroller (BMC);					·	Secur	ity		,	
Keyboard/mouse Power supply None (use USB port) One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Rack kit Cable management Cooling Includes rack kit Optional cable management arm on selected models Six fans, non-hot swap Includes rack kit Optional cable management arm on selected models Six fans, non-hot swap Energy Management Technology Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1-compliant RoHS-compliant For more accessories, see O-RAL sheet		No onboard TPM TPM: additional	of chip; al add-on	card fo	r TPM fund	ction,	TCG 1.2-com	oliant		• A	dministrat ser passw oot seque	or password ord nce control	l				J.1,
Rack kit Cable management Cooling Notional cable management arm on selected models Six fans, non-hot swap Cooling Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage ThinkServer EasyManage Energy Management Technology Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1-compliant RoHS-compliant For more accessories, see O-RAL sheet	Keyboard/mouse	None (use USB One or two 550	port) watts sta					ot-swap	,	• S	erial port l	/O control		e, diske	tte		
Cable management Cooling Optional cable management arm on selected models Six fans, non-hot swap • ThinkServer EasyManage Energy Management Technology • Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1-compliant RoHS-compliant For more accessories, see O-RAL sheet	Destate.		•	i, redun	dant with t	wo po	wer supplies				:1-0			gement	Tools		
Cooling Six fans, non-hot swap Energy Management Technology Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1-compliant RoHS-compliant For more accessories, see O-RAL sheet				nent arn	n on selec	ted m	odels			• Th	inkServer inkServer	⁻ ⊨asyStartu ⁻ EasvMana	p p				
RoHS-compliant For more accessories, see O-RAL sheet							0 40.0				. 1	Energy Mar	nagem	ent Tec	hnolo	gy	
										ENE	ERGY ST	AR® Server		mpliant	:		
See footnotes for important warranty information © Lenovo										For	more acc	essories, se	e O-R	AL shee	et		

ThinkServer® RD330 with 2.5" Disk Bay (3074)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3074-D1U	1xE5-2407	1333MHz RDIMN	/I 1x4GB	No	300	None	6xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
3074-D2U	1xE5-2403	1333MHz RDIMN	/I 1x8GB	No	300	None	6xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
3074-D3U	1xE5-2420	1333MHz RDIMN	√l 1x8GB	No	300	None	6xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	2
3074-D4U	1xE5-2450	1333MHz RDIMN	/I 1x8GB	No	500+Upgrade	None	6xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	1
3074-D5U	1xE5-2450	1333MHz RDIMN	// 1x16GB	No	500+Upgrade	None	6xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet	1U Rack top
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz) Two LGA1356 sockets	Power supply Power supply Riser card 2
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor,	fan fan fan fan fan
Additional memory disclaimers	240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB) • Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs • Over six DIMMs requires dual processors • Mixing of UDIMM, RDIMM, or LV RDIMM is not supported	optical disks Front
Graphics	Onboard Aspeed AST2300 graphics/management processor,	optical disk disk disk
•	one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Rear
Disk bays Disk controller	Six 2.5" hot-swap SATA/SAS disk bays (see right) RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i),	PSU PSU 2.PClex8 [I-PClex16]
RAID Support Disk(s)	PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	
	SSD: Solid State Drive, 2.5"	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	Mechanical • 1U rack
Chipset	Intel C606 Chipset	• 19"W x 28.9"D x 1.72"H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles)
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	17kg (37.5 lb) when fully configured
Riser card Front ports Rear ports	(See Right) Riser card 1 for slot 1, riser card 2 for slot 2 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Bay 1 5.25", 0.5" high, external, for optical for disk Expansion Slots
Intelligent Diagnostics Module (IDM)	Supports IDM on selected models; Basic: IDM LED lights indicate failing component category	Slot 1: half-length, full-height, PCI Express 3.0 x16
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec) Security • Security chip (selected models, see information on left)
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Administrator password User password Boot sequence control
Prerequisites	SATA/SAS disk, OS	Boot without keyboard, mouse, diskette
Keyboard/mouse Power supply	None (use USB port) One or two 550 watts standard, two maximum, rear access, hot-swap,	Serial port I/O control USB port disablement (all)
	80 PLUS® Gold qualified, redundant with two power supplies	Software Management Tools
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Six fans, non-hot swap	ThinkServer EasyStartup ThinkServer EasyManage
Cooming	on idio, nonthou swap	Energy Management Technology
		Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1-compliant DOLUG compliant
		RoHS-compliant
0 () ()	ant warranty information	For more accessories, see O-RAL sheet

ThinkServer® RD330 with 2.5" Disk Bay (3074) - September 2012

Personal Systems Reference (PSREF)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3074-D6U	1xE5-2407	1600MHz RDIMM	1x4GB	No	300		6xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
3074-D7U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x300GB 2.5" SAS	6xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
3074-D8U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 2.5" SAS	6xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet	1U Rack top
Processor Implementation	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Two LGA1356 sockets	Power supply Power supply Riser card 2
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	Memory Sockets CPU1
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported 	fan fan fan fan fan fan optical disks
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Front
Disk bays Disk controller	Six 2.5" hot-swap SATA/SAS disk bays (see right) RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 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	e old ontical disk disk disk disk optical disk disk disk Rear PSU PSU PSU 2-PCle x8 1-PCle x16
RAID Support	ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50 via ThinkServer RAID 700 adapter	
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	
Chipset	Intel C606 Chipset	
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Mechanical • 1U rack • 19"W x 28.9"D x 1.72"H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured
Intelligent Diagnostics Module (IDM)	Basic: IDM LED lights indicate failing component category	Disk Bays
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM	Bay 1 5.25", 0.5" high, external, for optical for disk Expansion Slots
Security chip	functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8 (x4 elec)
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 550 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Security • Security chip (selected models, see information on left) • Administrator password • User password • Boot sequence control
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Six fans, non-hot swap	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		Software Management Tools
		ThinkServer EasyStartup ThinkServer EasyManage
		Energy Management Technology • Lenovo® SmartGrid Manager
		ENERGY STAR® Server 1.1-compliant RoHS-compliant
		Faurence accessing and O DAI about

For more accessories, see O-RAL sheet



















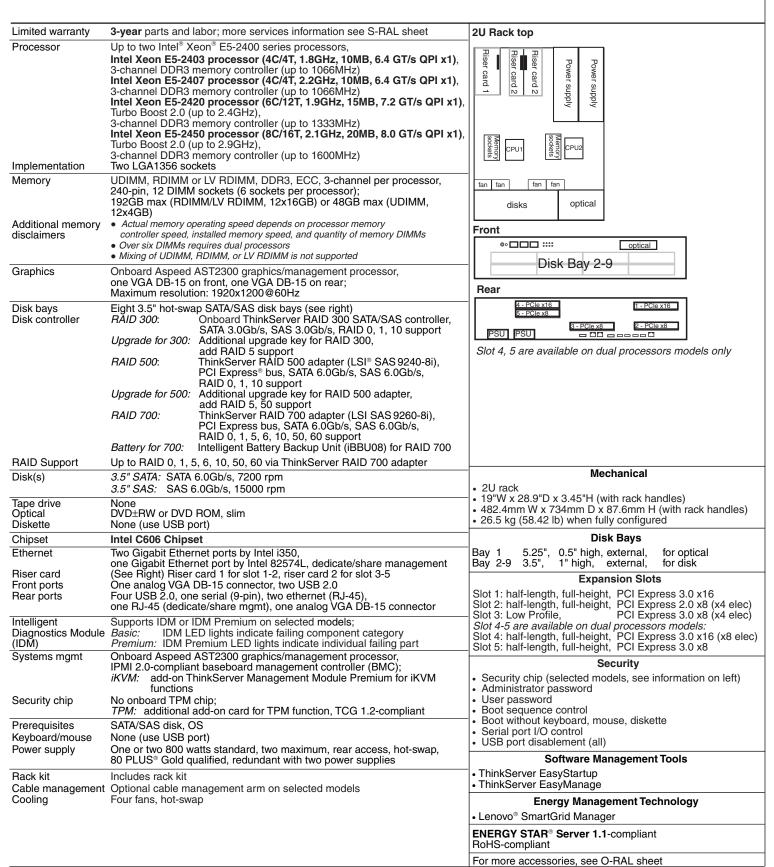






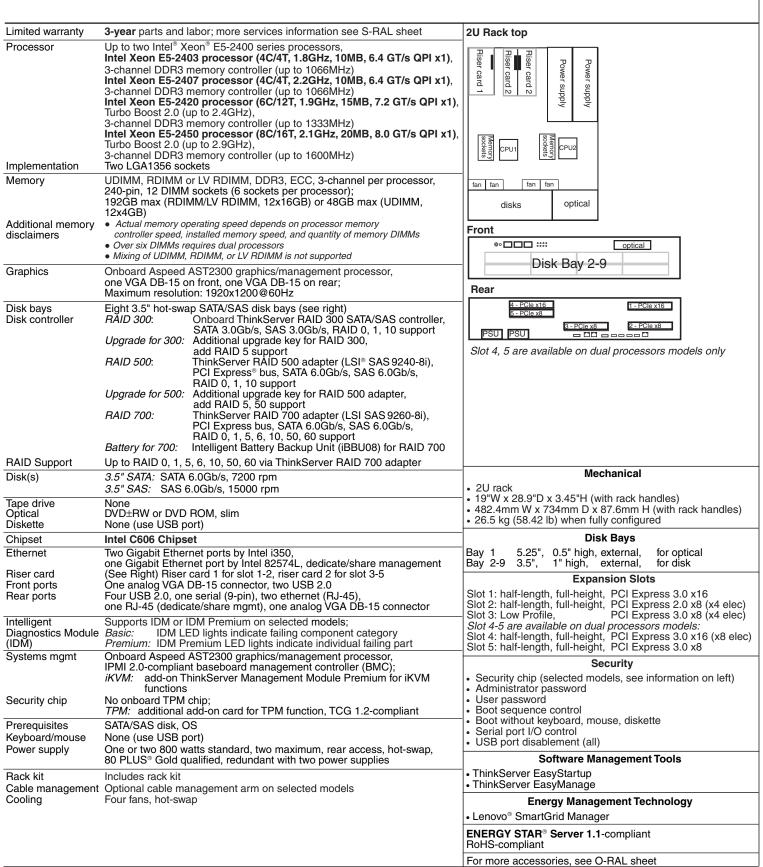
^{*} Some models in pictures below contain optional add-in ethernet adapter or RAID adapter; some RD430 with 2.5" disk bay models may come with 8 disk bays

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3064-G2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3064-G3U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3064-G4U	1xE5-2420	1333MHz RDIMM	1x8GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
3064-G5U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3064-G6U	2xE5-2420	1333MHz RDIMM	2x16GB	No	700+Battery	No	8xHS	SATA/SAS	$DVD {\pm} RW$	Premium	TPM	iKVM	No	No	2



ThinkServer® RD430 with eight 3.5" Disk Bays (3065)

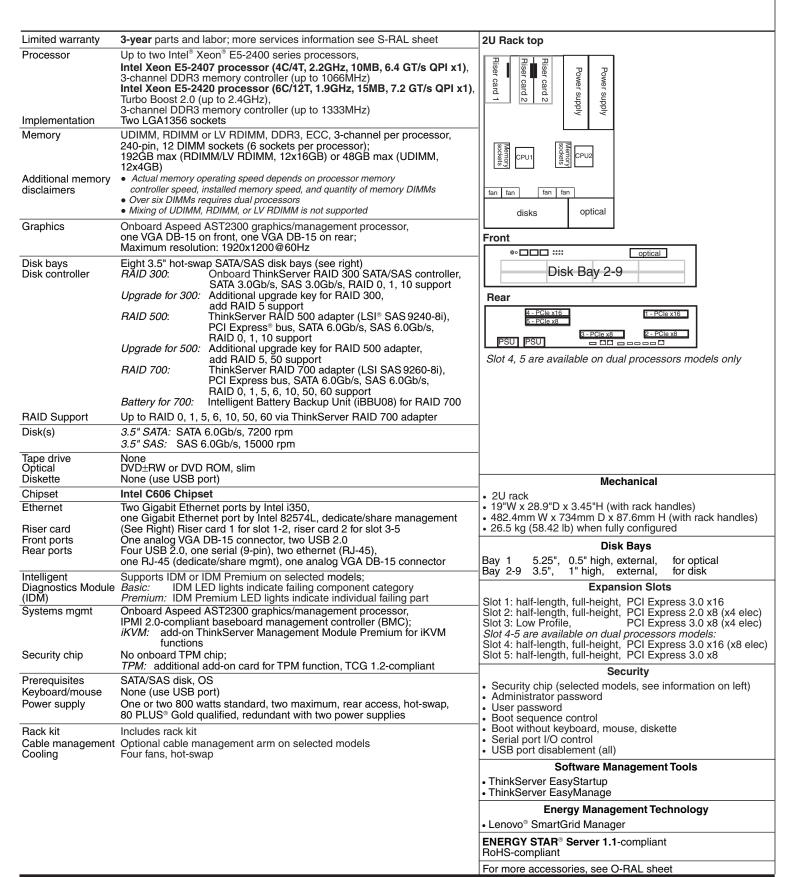
Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3065-B1U	1xE5-2403	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3065-B2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3065-B3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3065-B4U	1xE5-2450	1333MHz RDIMM	1x16GB	No	700+Battery	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3065-B5U	1xE5-2420	1333MHz RDIMM	1x8GB	No	700+Battery	No	8xHS	SATA/SAS	$DVD {\pm} RW$	Premium	TPM	iKVM	No	No	2



ThinkServer® RD430 with eight 3.5" Disk Bays (3065) - September 2012

Personal Systems Reference (PSREF)

Туре-		Memory	Memory	Pre-conf	Disk		Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3065-A3U	1xE5-2420	1600MHz RDIMM	1x8GB	No	300		SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1
3065-A4U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x500GB 3.5" SATA	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3065-A5U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 3.5" SAS	SATA/SAS	$DVD {\pm} RW$	Premium	TPM	iKVM	No	No	2



ThinkServer® RD430 with eight 3.5" Disk Bays (3065) - October 2012

Personal Systems Reference (PSREF)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3065-K1U	J 1xE5-2450	1600MHz RDIMM	1x8GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1

Limited warranty	3-year parts and labor; more services information see S-RD sheet	2U Rack top
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz) Turb I CA1256 per	Power supply Power supply Riser card 2 Riser card 2
Implementation	Two LGA1356 sockets UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor,	
Memory	240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported 	SCHERICAL CPU1 SOMETICAL CPU2 SOMETI
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	disks optical
Disk bays Disk controller	Eight 3.5" hot-swap SATA/SAS disk bays (see right) RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300,	Front Optical Disk Bay 2-9
	add RAID 5 support RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Rear
	RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter,	5 - PCle x8
	add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support	Slot 4, 5 are available on dual processors models only
	Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700	
RAID Support Disk(s)	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	
	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	
Chipset	Intel C606 Chipset	Mechanical
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	 2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models;	Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 3.5", 1" high, external, for disk
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Prerequisites Keyboard/mouse	SATA/SAS disk, OS None (use USB port)	Slot 5: half-length, full-height, PCI Express 3.0 x8 Security
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Security chip (selected models, see information on left) Administrator password
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap	User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
		Energy Management Technology • Lenovo® SmartGrid Manager
		ENERGY STAR® Server 1.1-compliant RoHS-compliant
		For more accessories, see O-RAL sheet

ThinkServer® RD430 with twelve 3.5" Disk Bays (3057) - TopSeller

Personal Systems Reference (PSREF)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3057-E1U	1xE5-2403	1333MHz RDIMM	1x4GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3057-E2U	1xE5-2407	1333MHz RDIMM	1x4GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3057-E3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3057-E4U	1xE5-2450	1333MHz RDIMM	1x8GB	No	500+Upgrade		12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
3057-E5U	2xE5-2420	1333MHz RDIMM	2x16GB	No	700+Battery		12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
3057-E6U	2xE5-2420	1333MHz RDIMM	2x16GB	No	700+Battery	6x1TB 3.5" SATA	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
					•										

3057-E5U 2xE5-242		SATA/SAS No No TPM iKVM No No 2 SATA/SAS No No TPM iKVM No No 2
Limited warranty	3-year parts and labor; more services information see S-RAL sheet	2U Rack top
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)	Power supply Power supply Riser card 2 Riser card 2 Riser card 1
Implementation	Two LGA1356 sockets	_
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	fan fan fan fan disks
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported 	Front Disk Bay 1-12
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Rear
Disk bays Disk controller	Twelve 3.5" hot-swap SATA/SAS disk bays (see right) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700	PSU PSU 9 2-PCle x8 PSU PSU 9 2-PCle x8 S-PCle x8 PSU 9 2-PCle x8 S-PCle x8 PSU 9 2-PCle x8 PSU 9 2-PC
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm	
Tape drive Optical Diskette	None None (use USB port) None (use USB port)	Mechanical
Chipset	Intel C606 Chipset	2U rack
Ethernet Riser card Front ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0	19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45),	Disk Bays Bay 1-12 3.5", 1" high, external, for disk
Intelligent	one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector None	Expansion Slots
Diagnostics Module (IDM)		Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec)
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Security - Security chip (selected models, see information on left)
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	 Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette
	Includes rack kit Optional cable management arm on selected models	Serial port I/O control USB port disablement (all)
Cooling	Four fans, hot-swap	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
		Energy Management Technology • Lenovo® SmartGrid Manager
		ENERGY STAR® Server 1.1-compliant RoHS-compliant

For more accessories, see O-RAL sheet

ThinkServer® RD430 with twelve 3.5" Disk Bays (3059)

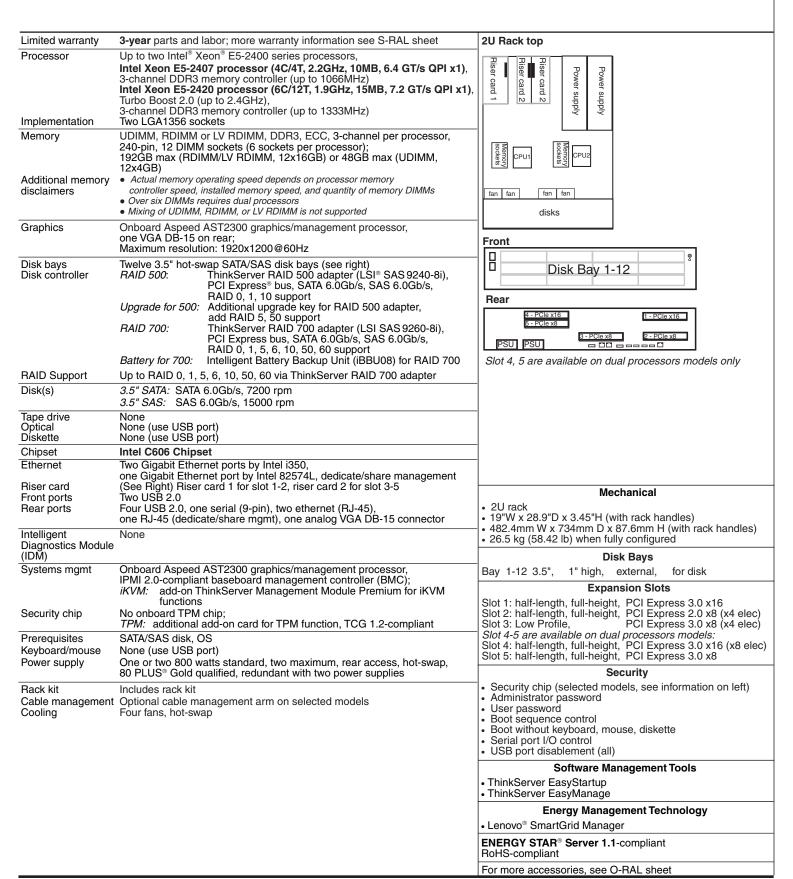
Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3059-F1U	1xE5-2420	1333MHz RDIMM	1x8GB	No	700+Battery	None	12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3059-F2U	1xE5-2403	1333MHz RDIMM	1x4GB	No	500+Upgrade	None	12xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
3059-F3U	1xE5-2420	1333MHz RDIMM	1x8GB	No	500+Upgrade	None	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
3059-F4U	2xE5-2450	1333MHz RDIMM	2x8GB	No	700+Battery	None	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more warranty information see S-RAL sheet	2U Rack top
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)	Power supply Power supply Riser card 2 Riser card 2 Riser card 2
Implementation	Two LGA1356 sockets	SOCIETA CPU1 SOCIETA CPU2
Memory Additional memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB) • Actual memory operating speed depends on processor memory	fan fan fan disks
disclaimers	controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported	Front
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Disk Bay 1-12
Disk bays Disk controller	Twelve 3.5" hot-swap SATA/SAS disk bays (see right) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700	Rear 4-PClex16 5-PClex8 PSU
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm	
Tape drive Optical Diskette	None None (use USB port) None (use USB port)	
Chipset	Intel C606 Chipset	Mechanical
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45),	2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured
	one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Disk Bays
Intelligent Diagnostics Module	None	Bay 1-12 3.5", 1" high, external, for disk
(IDM) Systems mgmt Security chip	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip;	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
	TPM: additional add-on card for TPM function, TCG 1.2-compliant	Slot 5: half-length, full-height, PCI Express 3.0 x8
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Security • Security chip (selected models, see information on left) • Administrator password • User password
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
		Energy Management Technology
		Lenovo® SmartGrid Manager The second of the seco
		ENERGY STAR® Server 1.1-compliant RoHS-compliant
0 () ()	ortant warranty information	For more accessories, see O-RAL sheet

ThinkServer® RD430 with twelve 3.5" Disk Bays (3059) - Sep 2012

Personal Systems Reference (PSREF)

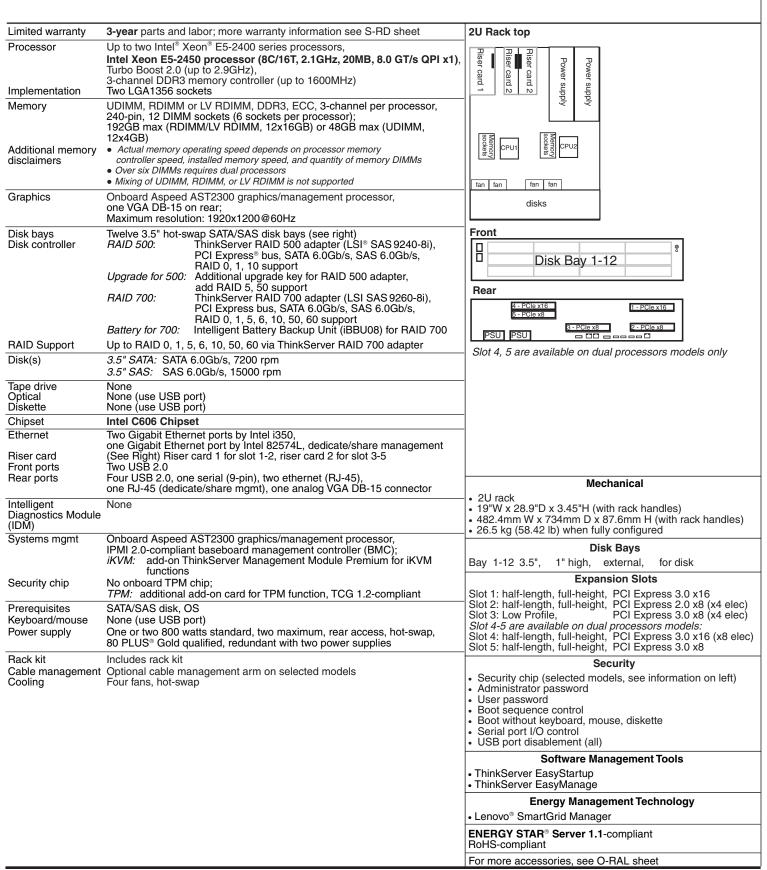
Type-		Memory	Memory	Pre-conf	Disk		Disk	SATA	Intelligent		System	Cable	Preload	PSU
	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3059-F6U	1xE5-2420	1600MHz RDIMM	1x8GB	No	700		SATA/SAS	No	No	TPM	iKVM	No	No	1
3059-F8U	1xE5-2407	1600MHz RDIMM	4x8GB	No	700+Battery	3x500GB 3.5" SATA	SATA/SAS	No	No	TPM	iKVM	No	No	2
3059-F9U	1xE5-2420	1600MHz RDIMM	6x8GB	No	700+Battery	3x300GB 3.5" SAS	SATA/SAS	No	No	TPM	iKVM	No	No	2



ThinkServer® RD430 with twelve 3.5" Disk Bays (3059) - October 2012

Personal Systems Reference (PSREF)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3059-K5L	J 1xE5-2450	1600MHz RDIMM	1x8GB	No	700	No	12xHS	SATA/SAS	No	No	TPM	iKVM	No	No	1



ThinkServer® RD430 with 2.5" Disk Bay (3070) - TopSeller

IninkServer	RD430 with 2.5" Disk Bay (3070) - TopSeller	Personal Systems Helerence (PSHEF)
Type- model Processor(Memory Memory Pre-conf Disk Disk s) (MHz/type) DIMMs RAID controller Disk(s) bays	Disk SATA Intelligent Sys Cable Preload PSU type optical Diagnostics TPM mgmt mgmt OS qty
	3 1333MHz RDIMM 1x4GB No 300 8xHS	SATA/SAS DVD±RW Basic TPM IPMI No No 1
		SATA/SAS DVD±RW Basic TPM IPMI No No 1 SATA/SAS DVD±RW Premium TPM IPMI No No 1
		SATA/SAS DVD±RW Premium TPM iKVM No No 2
3070-C5U 1xE5-242	0 1333MHz RDIMM 1x8GB No 500+Upgrade 16xHS	SATA/SAS DVD±RW Premium TPM iKVM No No 1
		SATA/SAS DVD±RW Premium TPM iKVM No No 2
	0 1333MHz RDIMM 1x16GB No 700+Battery 6x300GB 2.5" SAS 16xHS 0 1333MHz RDIMM 1x8GB No 300 8xHS	SATA/SAS DVD±RW Premium TPM iKVM No No 2 SATA/SAS DVD±RW Premium TPM IPMI No No 1
		SATA/SAS DVD±RW Premium TPM iKVM No No 2
Limited warranty	3-year parts and labor; more services information see S-RAL sheet	2U Rack top
Processor	Up to two Intel® Xeon® E5-2400 series processors,	
	Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz)	Power sup Power sup Riser card 2 Riser card 2
	Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1),	Power supply Power supply Power supply ser card 2 ser card 1
	3-channel DDR3 memory controller (up to 1066MHz)	su p p p p
	Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1) Turbo Boost 2.0 (up to 2.4GHz),	',
	3-channel DDR3 memory controller (up to 1333MHz)	
	Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1)	, ভুৱ ভুৱ
	Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)	, Society Characteristics (Characteristics) (Cha
Implementation	Two LGA1356 sockets	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor,	
,	240-pin, 12 DIMM sockets (6 sockets per processor);	fan fan fan fan
	192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM,	optical disks
Additional memory	12x4GB) • Actual memory operating speed depends on processor memory	
disclaimers	controller speed, installed memory speed, and quantity of memory DIMMs	Front
	Over six DIMMs requires dual processors Minimum of UDIMMA RDIMMA and A RDIMMA is not assessed.	●○ □□□ Disk Bay Disk Bay
	Mixing of UDIMM, RDIMM, or LV RDIMM is not supported	
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear;	optical
	Maximum resolution: 1920x1200@60Hz	Bay 10-17 are available on sixteen disk bays models only
Disk bays	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right)	Rear
Disk controller	RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller,	4 - PCle x16 1 - PCle x16
	SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support	5 - PCle x8
	Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support	3 - PCle x8 2 - PCle x8
	RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i),	PSU PSU - DDD
	PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Slot 4, 5 are available on dual processors models only
	RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter,	
	add RAID 5, 50 support	
	ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Mechanical
	RAID 0, 1, 5, 6, 10, 50, 60 support	• 2U rack
	Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700	• 19"W x 28.9"D x 3.45"H (with rack handles)
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	482.4mm W x 734mm D x 87.6mm H (with rack handles)
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm	26.5 kg (58.42 lb) when fully configured
To a state of	SSD: Solid State Drive, 2.5"	Disk Bays
Tape drive Optical	None DVD±RW or DVD ROM, slim	Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 10-17 are available on sixteen 2.5" disk bays model:
Chipset	Intel C606 Chipset	Bay 10-17 2.5", 0.6" high, external, for disk
Ethernet	Two Gigabit Ethernet ports by Intel i350,	Expansion Slots
Riser card	one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5	Slot 1: half-length, full-height, PCI Express 3.0 x16
Front ports	One analog VGA DB-15 connector, two USB 2.0	Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45),	Slot 4-5 are available on dual processors models:
	one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Intelligent Diagnostics Module	Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category	Slot 5: half-length, full-height, PCI Express 3.0 x8
(IDM)	Premium: IDM Premium LED lights indicate individual failing part	Security
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor,	Security chip (selected models, see information on left) Administrator password
, ,	IPMI 2.0-compliant baseboard management controller (BMC);	Administrator password User password
	iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Boot sequence control
Security chip	No onboard TPM chip;	Boot without keyboard, mouse, diskette
Cooding only	TPM: additional add-on card for TPM function, TCG 1.2-compliant	Serial port I/O control USB port disablement (all)
Prerequisites	SATA/SAS disk, OS	Software Management Tools
Keyboard/mouse	None (use USB port)	ThinkServer EasyStartup
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap,	ThinkServer EasyStartup ThinkServer EasyManage
Deale 12	80 PLUS® Gold qualified, redundant with two power supplies	Energy Management Technology
Rack kit	Includes rack kit	Lenovo® SmartGrid Manager
Cable management Cooling	Optional cable management arm on selected models Four fans, hot-swap	
J	-7	ENERGY STAR® Server 1.1-compliant RoHS-compliant
		For more accessories, see O-RAI sheet

For more accessories, see O-RAL sheet

ThinkServer® RD430 with 2.5" Disk Bay (3071)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		Sys	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3071-D1U	1xE5-2420	1333MHz RDIMM	11x8GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
3071-D2U	1xE5-2403	1333MHz RDIMM	11x4GB	No	300	None	8xHS	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
3071-D3U	1xE5-2420	1333MHz RDIMM	11x8GB	No	500+Upgrade	None	16xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet	2U Rack top
Processor Implementation	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2403 processor (4C/4T, 1.8GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Two LGA1356 sockets	Power supply Power supply Riser card 2 Riser card 2
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	Memory CPU1 CPU2
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported 	tan tan tan tan optical disks
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Front
Disk bays Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right) RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 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	Bay 10-17 are available on sixteen disk bays models only Rear
	Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i),	5 - PCle x8 2 - PCle x8 PSU PSU D D D D D D D D D D D D D D D D D D D
	PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700	Slot 4, 5 are available on dual processors models only
Disk(s)	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	• 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles)
Chipset	Intel C606 Chipset	482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16
Systems mgmt Security chip	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip;	Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8
	TPM: additional add-on card for TPM function, TCG 1.2-compliant	Security
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Security chip (selected models, see information on left) Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap	Serial port I/O control USB port disablement (all) Software Management Tools
-		ThinkServer EasyStartup ThinkServer EasyManage
		Energy Management Technology
		Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1-compliant BOHS compliant
		RoHS-compliant For more accessories, see O-RAL sheet
0 () ()	ortant warranty information	© Lenovo

Type-		Memory	Memory I	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		Sys	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3071-D4U	1xE5-2420	1600MHz RDIMN	l 1x8GB	No	300		8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1
3071-D6U	1xE5-2407	1600MHz RDIMN	l 4x8GB	No	700+Battery	3x300GB 2.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
3071-D7U	1xE5-2420	1600MHz RDIMM	l 6x8GB	No	700+Battery	3x300GB 2.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more services information see S-RAL sheet	2U Rack top
Processor Implementation	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2407 processor (4C/4T, 2.2GHz, 10MB, 6.4 GT/s QPI x1), 3-channel DDR3 memory controller (up to 1066MHz) Intel Xeon E5-2420 processor (6C/12T, 1.9GHz, 15MB, 7.2 GT/s QPI x1), Turbo Boost 2.0 (up to 2.4GHz), 3-channel DDR3 memory controller (up to 1333MHz) Two LGA1356 sockets	Power supply Power supply Riser card 2 Riser card 2
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor,	1
•	240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	Mamory CPU1 CPU2
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported 	fan fan fan optical disks
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Front
Disk bays Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right) RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support	Bay 10-17 are available on sixteen disk bays models only
	RAID 500: ThinkServer RAİD 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support	# - PCle x16
	Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Slot 4, 5 are available on dual processors models only
	Battery for 700: RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (iBBU08) for RAID 700	
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles)
Chipset	Intel C606 Chipset	• 482.4mm W x 734mm D x 87.6mm H (with rack handles)
Ethernet	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	• 26.5 kg (58.42 lb) when fully configured
Riser card	(See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5	Disk Bays
Front ports	One analog VGA DB-15 connector, two USB 2.0	Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk
Intelligent Diagnostics Module (IDM)	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots
Intelligent Diagnostics Module (IDM) Systems mgmt	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4-5 are available on dual processors models:
Intelligent Diagnostics Module (IDM)	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard ASPeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4: balf-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left)
Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port)	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security
Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard ASPeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security Security Security chip (selected models, see information on left) Administrator password User password Boot sequence control
Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse Power supply Rack kit	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap,	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security Security Security chip (selected models, see information on left) Administrator password
Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse Power supply Rack kit	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Includes rack kit	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security Security Security chip (selected models, see information on left) Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control
Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse Power supply Rack kit Cable management	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Includes rack kit Optional cable management arm on selected models	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x8 (x4 elec) Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security Security Security chip (selected models, see information on left) Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) Software Management Tools ThinkServer EasyStartup
Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse Power supply Rack kit Cable management	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Includes rack kit Optional cable management arm on selected models	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security Security Security chip (selected models, see information on left) Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse Power supply Rack kit Cable management	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Includes rack kit Optional cable management arm on selected models	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security Security chip (selected models, see information on left) Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) Software Management Tools ThinkServer EasyStartup
Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse Power supply Rack kit Cable management	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models; Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Includes rack kit Optional cable management arm on selected models	Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec) Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security Security Security chip (selected models, see information on left) Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) Software Management Tools ThinkServer EasyManage Energy Management Technology

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		Sys	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
3071-K4l	J 1xE5-2450	1600MHz RDIMN	И 1x8GB	No	300	No	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1

Limited warranty	3-year parts and labor; more services information see S-RD sheet	2U Rack top
Processor	Up to two Intel® Xeon® E5-2400 series processors, Intel Xeon E5-2450 processor (8C/16T, 2.1GHz, 20MB, 8.0 GT/s QPI x1), Turbo Boost 2.0 (up to 2.9GHz), 3-channel DDR3 memory controller (up to 1600MHz)	Power supply Power supply Power supply Riser card 2 Riser card 2
Implementation	Two LGA1356 sockets	
Memory	UDIMM, RDIMM or LV RDIMM, DDR3, ECC, 3-channel per processor, 240-pin, 12 DIMM sockets (6 sockets per processor); 192GB max (RDIMM/LV RDIMM, 12x16GB) or 48GB max (UDIMM, 12x4GB)	
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over six DIMMs requires dual processors Mixing of UDIMM, RDIMM, or LV RDIMM is not supported 	
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	optical disks
Disk bays Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (see right) RAID 300: Onboard ThinkServer RAID 300 SATA/SAS controller, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 10 support Upgrade for 300: Additional upgrade key for RAID 300, add RAID 5 support ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Front Optical Disk Bay Dis
	RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support	# PCIex16 1 - PCIex16 6 - PCIex8 2 - PCIex8 PSU PS
	Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700	Slot 4, 5 are available on dual processors models only
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	Mechanical
Chipset	Intel C606 Chipset	2U rack 19"W x 28.9"D x 3.45"H (with rack handles)
Ethernet Riser card	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5	19 W X 28.9 D X 3.45 H (With Tack Handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured
Front ports Rear ports	One analog VGA DB-15 connector, two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Disk Bays Bay 1 5.25", 0.5" high, external, for optical
Intelligent Diagnostics Module (IDM)	Supports IDM or IDM Premium on selected models;	Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays model: Bay 10-17 2.5", 0.6" high, external, for disk
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x8 (x4 elec) Slot 3: Low Profile, PCI Express 3.0 x8 (x4 elec)
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8
Prerequisites Keyboard/mouse	SATA/SAS disk, OS None (use USB port)	Security
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Security chip (selected models, see information on left) Administrator password User password
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Four fans, hot-swap	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		Software Management Tools • ThinkServer EasyStartup
		ThinkServer EasyManage
		Energy Management Technology • Lenovo® SmartGrid Manager
		ENERGY STAR® Server 1.1-compliant
		RoHS-compliant

ThinkServer® RD430, RD330 Accessories

Processor ⁵⁰		ThinkPad USB Keyboard with TrackPoint - US English	55Y900
Intel Xeon E5-2470 Processor Option (RD430/RD330)	0A89443	Lenovo Preferred Pro Keyboard USB - US English 103P Lenovo Optical Mouse	73P522 06P406
ntel Xeon E5-2450 Processor Option (RD430/RD330)	0A89444	Leriovo Opticai Mouse	001400
ntel Xeon E5-2440 Processor Option (RD430/RD330)	0A89445		
ntel Xeon E5-2430 Processor Option (RD430/RD330)	0A89446		
ntel Xeon E5-2420 Processor Option (RD430/RD330)	0A89447 0A89448		
ntel Xeon E5-2407 Processor Option (RD430/RD330)	0A89449		
ntel Xeon E5-2403 Processor Option (RD430/RD330)	0A89450		
ntel Xeon E5-2450L Processor Option (RD430/RD330) ntel Xeon E5-2430L Processor Option (RD430/RD330)	0A89451		
Memory (All RD430 and RD330)	07100101		
ThinkServer 4GB DDR3-1333MHz (1Rx4) RDIMM	0A89411		
hinkServer 8GB DDR3-1333MHz (2Rx4) RDIMM	0A89412		
hinkServer 16GB DDR3-1333MHz (2Rx4) RDIMM	0A89413		
ThinkServer 4GB DDR3L 1333MHz (1Rx4) RDIMM	0A89415		
ThinkServer 8GB DDR3L 1333MHz (2Rx4) RDIMM	0A89416		
ThinkServer 16GB DDR3L 1333MHz (2Rx4) RDIMM	0A89417		
ThinkServer 4GB DDR3-1600MHz (1Rx4) RDIMM	0A89481		
ThinkServer 8GB DDR3-1600MHz (2Rx4) RDIMM	0A89482		
ThinkServer 16GB DDR3-1600MHz (2Rx4) RDIMM	0A89483		
ThinkServer 2GB DDR3-1333MHz (1RX8) ECC UDIMM	67Y2606		
FhinkServer 4GB DDR3-1333MHz (2RX8) ECC UDIMM	67Y2607		
SATA Drive 2 5" (BD422 and BD222 with 2 5" disk have			
GATA Drive 3.5" (RD430 and RD330 with 3.5" disk bay) "hinkServer 500GB 7.2K 3.5" Enterprise 6Gbps SATA HS Hard Drive	0A89473		
ThinkServer 1TB 7.2K 3.5" Enterprise 6Gbps SATA HS Hard Drive	0A89473		
ThinkServer 2TB 7.2K 3.5" Enterprise 6Gbps SATA HS Hard Drive	0A89475		
ThinkServer 3TB 7.2K 3.5" Enterprise 6Gbps SATA HS Hard Drive	0A89477		
SATA Drive 2.5" (RD430 and RD330 with 2.5" disk bay)	07.00.77		
500GB 7.2K 2.5" Enterprise 6Gbps SATA Hot Swap Hard Drive	0C19495		
TB 7.2K 2.5" Enterprise 6Gbps SATA Hot Swap Hard Drive	0C19496		
SAS Drive 3.5" (RD430 and RD330 with 3.5" disk bay)			
ThinkServer 3.5" 300GB 15K SAS 6Gbps HS Hard Drive	67Y2616		
ThinkServer 3.5" 450GB 15K SAS 6Gbps HS Hard Drive	67Y2617		
ThinkServer 3.5" 600GB 15K SAS 6Gbps HS Hard Drive	67Y2618		
SAS Drive 2.5" (RD430 and RD330 with 2.5" disk bay)			
ThinkServer 2.5" 300GB 10K SAS 6Gbps HS Hard Drive	67Y2619		
ThinkServer 2.5" 450GB 10K SAS 6Gbps HS Hard Drive	67Y2620		
ThinkServer 2.5" 600GB 10K SAS 6Gbps HS Hard Drive	67Y2621		
ThinkServer 2.5" 900GB 10K SAS 6Gbps HS Hard Drive	0A89409		
ThinkServer 2.5" 146GB 15K SAS 6Gbps Hot Swap Hard Drive	0C19493		
ThinkServer 2.5" 300GB 15K SAS 6Gbps Hot Swap Hard Drive	0C19494		
SATA SSD Drive 2.5" (RD430 and RD330 with 2.5" disk bay) ThinkServer 2.5" 200GB MLC SATA Solid State Drive (HS)	0A89418		
ThinkServer 2.5" 400GB MLC SATA Solid State Drive (HS)	0A89419		
ThinkServer 2.5" 100GB MLC SATA Solid State Drive (HS)	0A89420		
RAID controller and RAID upgrade (All RD430 and RD330)			
ThinkServer RAID 300 Upgrade Key for Advanced RAID	0A89422		
ThinkServer RAID 500 Adapter II	0A89464		
ThinkServer RAID 700 Adapter II	0A89463		
ThinkServer RAID 500 Upgrade Key for Advanced RAID	0A89407		
ThinkServer RAID 700 Battery	67Y2647		
ThinkServer host bus adapters			
ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476		
ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478		
System options			
ThinkServer 800W Hot Swap Redundant Power Supply (RD430)	0A89426		
ThinkServer 550W Hot Swap Redundant Power Supply (RD330)	0A89427		
ThinkServer Trusted Platform Module (All RD430 and RD330)	0A89428		
ThinkServer Management Module Premium (All RD430 and RD330)	67Y2624		
ThinkServer Cable Management Arm Kit (All RD430 and RD330)	0A89476	⁵⁰ Additional processor must match the existing proces	sor
Connectivity (All RD430 and RD330)		For more information on server accessories, please vis	sit:
Lenovo Gigabit ET Dual Port Server Adapter by Intel	0A89423	www.lenovo.com/support/accessories	
Lenovo Ethernet I340 Quad Port Server Adapter by Intel	0A89424	www.lenovo.com/support/thinkserveraccessories	
Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487	www.lenovo.com/support/security	
Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486	Other accessories at www.lenovo.com/accessories	
Lenovo 10Gbps Ethernet Fiber Module for X520 series adapter by Intel	0C19488	Table desired at Intrinsication and additional additional and additional additional additional additional additional and additional additio	
enovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497	Accessories Guide pdf at www.lenovo.com/accessori	

Lenovo® ThinkServer® RD530 with 3.5" disk bay*



* Some models in pictures below contain optional add-in ethernet adapter, please see O-RDS for more RD530 accessories









- Up to two Intel® Xeon® E5-2600 series processors, up to 8 cores/16 threads per processor
- Up to 320GB ECC RDIMM memory (20x16GB) or 256GB ECC LV RDIMM memory (16x16GB)
- Up to four 3.5" hot-swap disk bays
- Up to RAID 0, 1, 5, 6, 10 via ThinkServer® RAID 700 adapter
- Up to two power supplies with redundant, hot-swap, 80 PLUS® Gold qualified
- Up to eight fans (7+1 redundant), non hot-swap





* Some models in pictures below contain optional add-in ethernet adapter, please see O-RDS for more RD530 accessories



- Up to two Intel® Xeon® E5-2600 series processors, up to 8 cores/16 threads per processor
- Up to 320GB ECC RDIMM memory (20x16GB) or 256GB ECC LV RDIMM memory (16x16GB)
- Up to eight 2.5" hot-swap disk bays
- Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer® RAID 700 adapter
- Up to two power supplies with redundant, hot-swap, 80 PLUS® Gold qualified
- Up to eight fans (7+1 redundant), non hot-swap

Lenovo® ThinkServer® RD530 - Detail





Dual processors

Single processor





ThinkServer 800W Hot-Swap power supply for ThinkServer RD530/RD630 (80 PLUS® Gold qualified, redundant with two power supplies)

2.5" Hot-swap disk bay



ThinkServer RD530 rear I/O ports

ThinkServer® RD530 with 3.5" Disk Bay (2570) - TopSeller

Type- model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics	ТРМ	System mgmt	Cable mgmt	Preload OS	PSU qty
2570-A2U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700	None	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
2570-A3U	1xE5-2640	1333MHz RDIMM	1x8GB	No	700	None	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	1
2570-A4U	2xE5-2640	1333MHz RDIMM	2x8GB	No	700+Battery	None	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
2570-A5U	1xE5-2650	1333MHz RDIMM	1x8GB	No	700	None	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
2570-A6U	1xE5-2670	1333MHz RDIMM	2x8GB	No	700	None	4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2
2570-A7U	1xE5-2640	1333MHz RDIMM	1x16GB	No	700	None	4xHS	SATA/SAS	DVD±RW	No	TPM	IPMI	No	No	2

Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet	1U Rack top
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz)	Power supply Power supply Power supply Power supply Power supply Power supply Power supply Power supply Power supply Sockets Memory Sockets Memory Sockets Memory Sockets Itan fan fan fan fan fan fan fan fan fan f
Implementation	Two LGA2011 sockets	ation! option!
Memory Additional memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB) • Actual memory operating speed depends on processor memory	disk optical
disclaimers	controller speed, installed memory speed, and quantity of memory DIMMs Over twelve RDIMMs requires dual processors Over eight LV RDIMMs requires dual processors Mixing of RDIMM and LV RDIMM is not supported	Rear PSU PSU PSU PSU PSU PSU PSU PSU PSU PSU
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	
Disk bays Disk controller	Four 3.5" hot-swap SATA/SAS disk bays 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 support	
RAID Support Disk(s)	ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter 3.5" SATA: SATA 6.0Gb/s, 7200 rpm	Mechanical • 1U rack • 19"W x 28.9"D x 1.72"H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles) • 17kg (37.5 lb) when fully configured
-	3.5" SAS: SAS 6.0Gb/s, 15000 rpm	Disk Bays
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	Bay 1 5.25", 0.5" high, external, for optical Bay 2-5 3.5", 1" high, external, for disk
Chipset	Intel C602J Chipset	Expansion Slots
Ethernet Riser card	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2	Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8
Front ports	Two USB 2.0	Security
Rear ports Intelligent Diagnostics Module (IDM)	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM on selected models Basic: IDM LED lights indicate failing component category	Security chip (selected models, see information on left) Administrator password User password Boot sequence control
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM	Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
Security chip	functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Energy Management Technology • Intel Power Node Manager • Lenovo® SmartGrid Manager
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Up to eight fans (7+1 redundant), non-hot swap	ENERGY STAR® Server 1.1-compliant RoHS-compliant For more accessories, see O-RDS sheet

ThinkServer® RD530 with 3.5" Disk Bay (2569) - TopSeller

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
2569-A1U	2xE5-2640	1333MHz RDIMM	2x8GB	5	700+Battery	3x500GB 3.5"	SATA 4xHS	SATA/SAS	DVD±RW	No	TPM	iKVM	No	No	2

Limited warranty	1-year parts and labor; more Lenovo Services see S-RDS sheet	1U Rack top
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz)	Power supply Power supply Power supply
Implementation	Two LGA2011 sockets	D D D D D D D D D D D D D D D D D D D
Memory Additional memory disclaimers	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB) • Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs • Over twelve RDIMMs requires dual processors	SOckets St. Socket
	Over eight LV RDIMMs requires dual processors Mixing of RDIMM and LV RDIMM is not supported	disk optical
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Front optical
Disk bays Disk controller	Four 3.5" hot-swap SATA/SAS disk bays 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,	Rear 2 - PCle x8 1 - PCle x16
	add RAID 5 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700	PSU PSU DODO 0
RAID Support	Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter	
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	Mechanical
Chipset	Intel C602J Chipset	• 1U rack
Ethernet Riser card Front ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2 Two USB 2.0	10 Tack 19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM on selected models	Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-5 3.5", 1" high, external, for disk
Module (IDM) Systems mgmt	Basic: IDM LED lights indicate failing component category Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8
Security chip	functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Security • Security chip (selected models, see information on left)
Prerequisites Keyboard/mouse Power supply Rack kit	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Includes rack kit	Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
Cable management	Optional cable management arm on selected models	Software Management Tools
Cooling	Up to eight fans (7+1 redundant), non-hot swap	ThinkServer EasyStartup ThinkServer EasyManage
		Energy Management Technology
		Intel Power Node Manager Lenovo® SmartGrid Manager
		ENERGY STAR® Server 1.1-compliant RoHS-compliant

ThinkServer® RD530 with 3.5" Disk Bay (2573)

Type- model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics				Preload	PSU qty
2573-A1U	J 1xE5-2620	1333MHz RDIMM	11x8GB	No	700	()	4xHS	SATA/SAS	DVD±RW		TPM	IPMI	No	No	1
2573-A2U	J 1xE5-2670	1333MHz RDIMM	12x8GB	No	700+Battery		4xHS	SATA/SAS	B DVD±RW	No	TPM	iKVM	No	No	2
2573-A3U	J 1xE5-2640	1333MHz RDIMM	11x16GB	No	700		4xHS	SATA/SAS	B DVD±RW	No	TPM	IPMI	No	No	1
2573-A4U	J 1xE5-2650	1333MHz RDIMM	12x8GB	No	700+Battery		4xHS	SATA/SAS	S DVD±RW	No	TPM	iKVM	No	No	2
2573-A5U	J 1xE5-2620	1333MHz RDIMM	12x8GB	No	700+Battery 4x5	500GB 3.5" SATA	4xHS	SATA/SAS	S DVD±RW	No	TPM	iKVM	No	No	2
2573-A6U	J 1xE5-2650	1333MHz RDIMM	14x8GB	No	700+Battery 4x3	300GB 3.5" SAS	4xHS	SATA/SAS	S DVD±RW	No	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet	1U Rack top
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz)	Power supply Power supply Power supply Power supply Power supply Power supply Remony Sockets Piser card 2 Remony Sockets Memory Sockets Itan Itan Itan Itan Itan Itan Itan Itan Itan Itan
Implementation	Two LGA2011 sockets	dials ontical
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB) • Actual memory operating speed depends on processor memory	fisk optical Front Optical Opt
Additional memory disclaimers	controller speed, installed memory speed, and quantity of memory DIMMs Over twelve RDIMMs requires dual processors Over eight LV RDIMMs requires dual processors Mixing of RDIMM and LV RDIMM is not supported	Rear PSU PSU PSU PSU PSU PSU PSU PSU PSU PSU
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	
Disk bays Disk controller	Four 3.5" hot-swap SATA/SAS disk bays 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 support RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i),	
RAID Support Disk(s)	PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10 support Intelligent Battery for 700: Up to RAID 0, 1, 5, 6, 10 via ThinkServer RAID 700 adapter 3.5" SATA: SATA 6.0Gb/s, 7200 rpm	Mechanical 1 U rack 19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured
Tape drive	3.5" SAS: SAS 6.0Gb/s, 15000 rpm None	- Disk Bays
Oṗtical Diskette	DVD±RW or DVD ROM, slim None (use USB port)	Bay 1 5.25", 0.5" high, external, for optical Bay 2-5 3.5", 1" high, external, for disk
Chipset	Intel C602J Chipset	Expansion Slots
Ethernet Riser card	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2	Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8
Front ports Rear ports	Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Security • Security chip (selected models, see information on left) • Administrator password
Intelligent Diagnostics Module (IDM)	Supports IDM on selected models Basic: IDM LED lights indicate failing component category	User password Boot sequence control
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM	Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
Security chip	functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
Prerequisites	SATA/SAS disk, OS	Energy Management Technology
Keyboard/mouse Power supply	None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Intel Power Node Manager Lenovo® SmartGrid Manager
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Up to eight fans (7+1 redundant), non-hot swap	ENERGY STAR® Server 1.1-compliant RoHS-compliant
- 3	, , , , , , , , , , , , , , , , , , ,	For more accessories, see O-RDS sheet

ThinkServer® RD530 with 2.5" Disk Bay (2575) - TopSeller

Type- model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type	SATA optical	Intelligent Diagnostics		System mgmt	Cable mgmt	Preload OS	PSU qty
2575-A1U	1xE5-2620	1333MHz RDIMM	1x4GB	No	500	None	8xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
2575-A2U	1xE5-2640	1333MHz RDIMM	2x4GB	No	700+Battery	None	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2575-A4U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700	None	8xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
2575-A6U	1xE5-2640	1333MHz RDIMM	2x8GB	No	700	None	8xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
2575-A7U	1xE5-2650	1333MHz RDIMM	3x8GB	No	700+Battery	None	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2575-A8U	1xE5-2670	1333MHz RDIMM	3x8GB	No	700+Battery	None	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2575-A9U	2xE5-2650	1333MHz RDIMM	4x8GB	No	700+Battery	None	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet	1U Rack top
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz)	Power supply Power supply Power supply Riser slot Riser
Implementation	Two LGA2011 sockets	ian ian ian ian ian ian ian ian
Memory Additional memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB) • Actual memory operating speed depends on processor memory	Front Output
disclaimers	controller speed, installed memory speed, and quantity of memory DIMMs Over twelve RDIMMs requires dual processors Over eight LV RDIMMs requires dual processors Mixing of RDIMM and LV RDIMM is not supported	Rear 2 - PCle x8 1 - PCle x16
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	PSU PSU GG GG GG GG
Disk bays Disk controller	Eight 2.5" hot-swap SATA/SAS disk bays 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	
RAID Support	Battery for 700: Up to RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	Mechanical
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"	 1U rack 19"W x 28.4"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles)
Tape drive Optical Diskette	None None (use USB port) None (use USB port)	17kg (37.5 lb) when fully configured Disk Bays
Chipset	Intel C602J Chipset	Bay 1-8 2.5", 0.6" high, external, for disk
Ethernet Riser card	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8
Front ports Rear ports	Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share sys mgmt), one analog VGA DB-15 connector	Security - Security chip (selected models, see information on left) - Administrator password
Intelligent Diagnostics Module (IDM)	Basic: IDM LED lights indicate failing component category	User password Boot sequence control
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Energy Management Technology Intel Power Node Manager Lenovo® SmartGrid Manager
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Up to eight fans (7+1 redundant), non-hot swap	ENERGY STAR® Server 1.1-compliant RoHS-compliant
•		For more accessories, see O-RDS sheet

ThinkServer® RD530 with 2.5" Disk Bay (2574) - TopSeller

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
2574-A1U	2xE5-2640	1333MHz RDIMM	2x8GB		700+Battery	2x300GB 2.5" S	SAS 8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2574-A2U	2xE5-2640	1333MHz RDIMM	2x8GB	5	700+Battery	3x300GB 2.5" S	SAS 8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty	1-year parts and labor; more Lenovo Services see S-RDS sheet	1U Rack top
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz),	
Implementation	4-channel DDR3 memory controller (up to 1333MHz) Two LGA2011 sockets	Power supply Power supply Riser slot
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)	ply Memory sockers: Memory sockers: Memory sockers: Memory sockers: Memory sockers: Memory sockers: Sockers: Memory sockers: Sockers: Memory sockers: Sockers: Memory sockers: Sockers: Memory socker
Additional memory disclaimers	Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over twelve RDIMMs requires dual processors Over eight LV RDIMMs requires dual processors Mixing of RDIMM and LV RDIMM is not supported	「
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Front
Disk bays Disk controller	Eight 2.5" hot-swap SATA/SAS disk bays 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	O
RAID Support	Battery for 700: Up to RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"	
Tape drive Optical Diskette	None None (use USB port) None (use USB port)	
Chipset	Intel C602J Chipset	Mechanical
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45),	 1U rack 19"W x 28.4"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured
	one RJ-45 (dedicate/share sys mgmt), one analog VGA DB-15 connector Supports IDM on selected models	Disk Bays Bay 1-8 2.5", 0.6" high, external, for disk
Module (IDM) Systems mgmt	Basic: IDM LED lights indicate failing component category Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Security - Security chip (selected models, see information on left)
Prerequisites Keyboard/mouse Power supply Rack kit	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Includes rack kit	Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control
Cable management Cooling	Optional cable management arm on selected models Up to eight fans (7+1 redundant), non-hot swap	USB port disablement (all) Software Management Tools
Cooming	op to digitalis (7 + 1 fedulidant), non-not swap	ThinkServer EasyStartup ThinkServer EasyManage
		Energy Management Technology
		Intel Power Node Manager Lenovo® SmartGrid Manager
		ENERGY STAR® Server 1.1-compliant
		RoHS-compliant

ThinkServer® RD530 with 2.5" Disk Bay (2576)

Type- model	Processor(s)	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk(s)	Disk bays	Disk type		Intelligent Diagnostics				Preload OS	PSU qty
2576-A1U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700		8xHS	SATA/SAS	No	No	TPM	IPMI	No	No	1
2576-A2U	1xE5-2640	1333MHz RDIMM	1x8GB	No	700+Battery		8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2576-A3U	1xE5-2650	1333MHz RDIMM	2x8GB	No	700+Battery		8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2576-A4U	1xE5-2650	1333MHz RDIMM	6x8GB	No	700+Battery	4x300GB 2.5" SAS	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2576-A5U	1xE5-2620	1333MHz RDIMM	3x8GB	No	700+Battery	4x300GB 2.5" SAS	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2
2576-A6U	2xE5-2670	1333MHz RDIMM	6x16GB	No	700+Battery	4x300GB 2.5" SAS	8xHS	SATA/SAS	No	No	TPM	iKVM	No	No	2

Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet	111 Pack ton
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz),	1U Rack top
	4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz)	Power supply Power supply Riser slot
	Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB,	Memory sockets Sockets Sockets Sockets Sockets Sockets Sockets Sockets Sockets Sockets Sockets
Implementation	8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz) Two LGA2011 sockets	fan fan fan fan fan fan fan fan
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB)	disk
	LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB)	Front
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over twelve RDIMMs requires dual processors 	e disk disk disk disk disk disk disk disk
	 Over eight LV RDIMMs requires dual processors Mixing of RDIMM and LV RDIMM is not supported 	2 - PCle x8 11 - PCle x16
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	PSU PSU DDDDDDDD
Disk bays Disk controller	Eight 2.5" hot-swap SATA/SAS disk bays 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 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support	
RAID Support	Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	Mechanical • 1U rack
Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5"	• 19"W x 28.4"D x 1.72"H (with rack handles) • 482.4mm W x 734mm D x 43.6mm H (with rack handles)
Tape drive Optical	None None (use USB port)	17kg (37.5 lb) when fully configured Disk Bays
Diskette	None (use USB port)	Bay 1-8 2.5", 0.6" high, external, for disk
Chipset Ethernet	Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350,	Expansion Slots
Riser card	one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1, riser card 2 for slot 2	Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8
Front ports	Two USB 2.0, one analog VGA DB-15 connector	Security
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share sys mgmt), one analog VGA DB-15 connector	Security chip (selected models, see information on left)
Intelligent Diagnostics Module (IDM)	Supports IDM on selected models Basic: IDM LED lights indicate failing component category	Administrator password User password
Systems mgmt	Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM	 Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
Security chip	functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Software Management Tools ThinkServer EasyStartup
Prerequisites Keyboard/mouse	SATA/SAS disk, OS None (use USB port)	ThinkServer EasyManage Fraggy Management Took not any
Power supply	One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Energy Management Technology Intel Power Node Manager Lenovo® SmartGrid Manager
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Up to eight fans (7+1 redundant), non-hot swap	ENERGY STAR® Server 1.1-compliant RoHS-compliant
=	•	For more accessories, see O-RDS sheet

Lenovo® ThinkServer® RD630 with 3.5" disk bay*



* Some models in pictures below contain optional add-in ethernet adapter, please see O-RDS for more RD630 accessories







- Up to two Intel® Xeon® E5-2600 series processors, up to 8 cores/16 threads per processor
- Up to 320GB ECC RDIMM memory (20x16GB) or 256GB ECC LV RDIMM memory (16x16GB)
- Up to eight 3.5" hot-swap disk bays
- Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer® RAID 700 adapter
- Up to two power supplies with redundant, hot-swap, 80 PLUS® Gold qualified
- Up to six fans (5+1 redundant), hot-swap

Lenovo® ThinkServer® RD630 with 2.5" disk bay*



* Some models in pictures below contain optional add-in ethernet adapter, please see O-RDS for more RD630 accessories





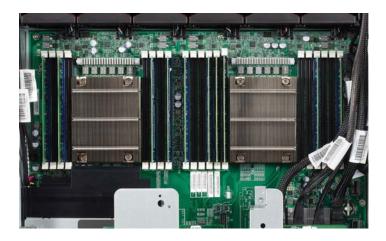




- Up to two Intel® Xeon® E5-2600 series processors, up to 8 cores/16 threads per processor
- Up to 320GB ECC RDIMM memory (20x16GB) or 256GB ECC LV RDIMM memory (16x16GB)
- Up to sixteen 2.5" hot-swap disk bays
- Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer® RAID 700 adapter
- Up to two power supplies with redundant, hot-swap, 80 PLUS® Gold qualified
- Up to six fans (5+1 redundant), hot-swap

Lenovo® ThinkServer® RD630 - Detail (I)

ThinkServer



Dual processors



Single processor



2.5" Hot-swap disk bay



2.5" Hot-swap disk bay



2.5" Hot-swap SAS 6.0Gb/s hard drive



3.5" Hot-swap SAS 6.0Gb/s hard drive

Lenovo® ThinkServer® RD630 - Detail (II)





ThinkServer RAID 700 Adapter with battery (LSI® SAS 9260-8i with iBBU08)



ThinkServer RAID 700 Adapter with battery (LSI SAS 9260-8i with iBBU08)



ThinkServer 800W Hot-Swap power supply for ThinkServer RD530/RD630 (80 PLUS® Gold qualified, redundant with two power supplies)



Intelligent Diagnostics Module Premium



ThinkServer RD630 rear I/O ports

ThinkServer® RD630 with 3.5" Disk Bay (2579) - TopSeller

Type-		Memory	Memory				Disk	Disk	SATA	Intelligent			Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
2579-A2U	1xE5-2640	1333MHz RDIMM	1x4GB	No	700	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
2579-A3U	1xE5-2640	1333MHz RDIMM	1x4GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	1
2579-A4U	1xE5-2650	1333MHz RDIMM	1x8GB	No	700	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
2579-A5U	1xE5-2650	1333MHz RDIMM	2x8GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2579-A6U	1xE5-2620	1333MHz RDIMM	1x4GB	No	700	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
2579-A7U	1xE5-2670	1333MHz RDIMM	1x16GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2579-A8U	1xE5-2670	1333MHz RDIMM	1x8GB	No	700+Battery	None	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

2579-A60 TXE5-2070	1333MHz RDIMM 1x8GB No 700+Battery None 8xHS SAT/	A/SAS DVD±RW Premium TPM iKVM No No 2
Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet	2U Rack top
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 3.0GHz), 4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2650 processor (8C/16T, 2.0GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 2.8GHz), 4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.3GHz), 4-channel DDR3 memory controller (up to 1600MHz) 4-channel DDR3 memory controller (up to 1600MHz)	Power supply Power supply Power supply Power supply Power supply Power supply Memory sockets Riser card 2 Piser card 2 Riser card 1 Memory sockets
Implementation	Two LGA2011 sockets	fan fan fan fan fan
Memory Additional memory disclaimers	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB) • Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs	Front Optical Disk Bay 2-9
uisciaimeis	Over twelve RDIMMs requires dual processors Over eight LV RDIMMs requires dual processors Mixing of RDIMM and LV RDIMM is not supported	Rear
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	4 - PCle x16
Disk bays Disk controller	Eight 3.5" hot-swap SATA/SAS disk bays 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Slot 4, 5 are available on dual processors models only
RAID Support	Battery for 700: RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles)
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm	482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 3.5", 1" high, external, for disk
Chipset	Intel C602J Chipset	Expansion Slots
Ethernet Riser card Front ports Rear ports Intelligent Diagnostics	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models	Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8
Module (IDM) Systems mgmt	Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Security Security chip (selected models, see information on left) Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Serial port I/O control USB port disablement (all)
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Up to six fans (5+1 redundant), hot-swap	Energy Management Technology Intel Power Node Manager Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1 compliant
		ENERGY STAR® Server 1.1-compliant RoHS-compliant
	ant warranty information	For more accessories, see O-RDS sheet

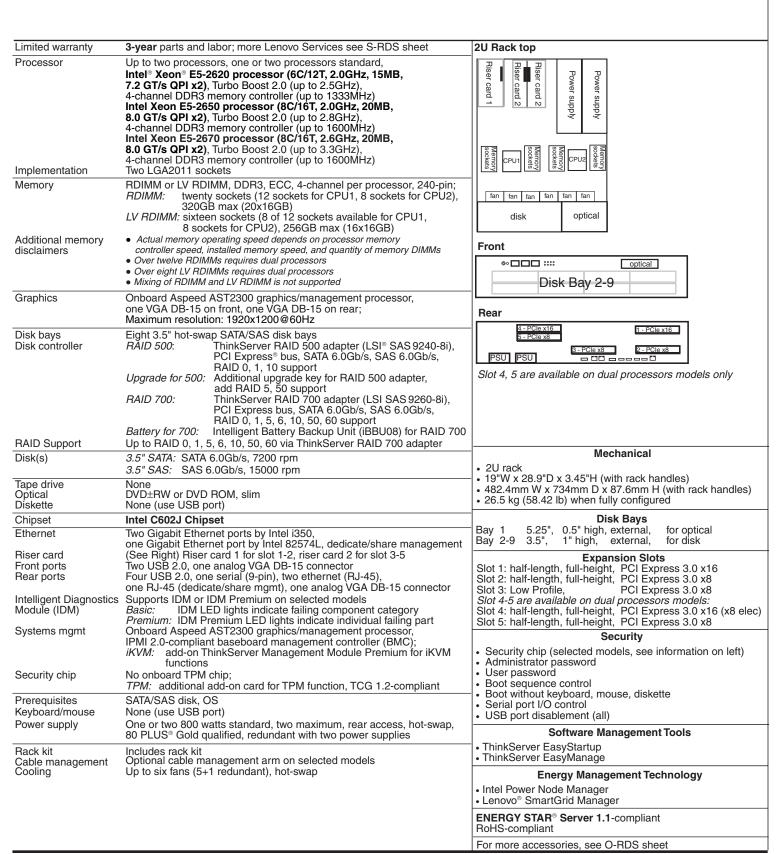
ThinkServer® RD630 with 3.5" Disk Bay (2577) - TopSeller

_	Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
	model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
- 7	2577-A1U	2xE5-2620	1333MHz RDIMM	2x8GB	5	700+Battery	/ 6x500GB 3.5" \$	SATA 8xHS	SATA/SAS	DVD	Premium	TPM	iKVM	No	No	2

Limited warranty	1-year parts and labor; more Lenovo Services see S-RDS sheet	2U Rack top
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz), 4-channel DDR3 memory controller (up to 1333MHz)	Power supply Power supply Power supply Riser card 2 Riser card 2
Implementation	Two LGA2011 sockets	pp üpp
Memory Additional memory disclaimers	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB) • Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs	Memory sockets Memory sockets Memory sockets Memory sockets Memory sockets
	 Over twelve RDIMMs requires dual processors Over eight LV RDIMMs requires dual processors Mixing of RDIMM and LV RDIMM is not supported 	fan fan fan fan fan fan optical
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Front optical
Disk bays Disk controller	Eight 3.5" hot-swap SATA/SAS disk bays RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 1. 10 support	Disk Bay 2-9
DAID 0	RAID 0, 1, 10 support Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700	Rear 4 - PCle x16 5 - PCle x8 PSU PSU
RAID Support	Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	- Clot 4, 6 are available on addit processors models only
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm	
Tape drive Optical Diskette	None DVD±RW or DVD ROM, slim None (use USB port)	
Chipset	Intel C602J Chipset	Mechanical
Ethernet Riser card Front ports Rear ports	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45),	 2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured
•	one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category	Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 3.5", 1" high, external, for disk
Systems mgmt	Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models:
Security chip	No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8
Prerequisites Keyboard/mouse Power supply	SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Security Security chip (selected models, see information on left) Administrator password User password
Rack kit Cable management Cooling	Includes rack kit Optional cable management arm on selected models Up to six fans (5+1 redundant), hot-swap	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
		Energy Management Technology Intel Power Node Manager
		Lenovo® SmartGrid Manager
		ENERGY STAR® Server 1.1-compliant RoHS-compliant

ThinkServer® RD630 with 3.5" Disk Bay (2592)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
2592-A1U	1xE5-2650	1333MHz RDIMN	11x8GB	No	700+Battery		8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2592-A2U	1xE5-2620	1333MHz RDIMN	11x4GB	No	700		8xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	1
2592-A3U	1xE5-2670	1333MHz RDIMN	11x16GB	No	700+Battery		8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2592-A4U	1xE5-2650	1333MHz RDIMN	16x8GB	No	700+Battery 4x3	300GB 3.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2592-A5U	1xE5-2620	1333MHz RDIMN	13x8GB	No	700+Battery 3x5	00GB 3.5" SATA	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2592-A6U	2xE5-2670	1333MHz RDIMN	16x16GB	No	700+Battery 4x3	300GB 3.5" SAS	8xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2



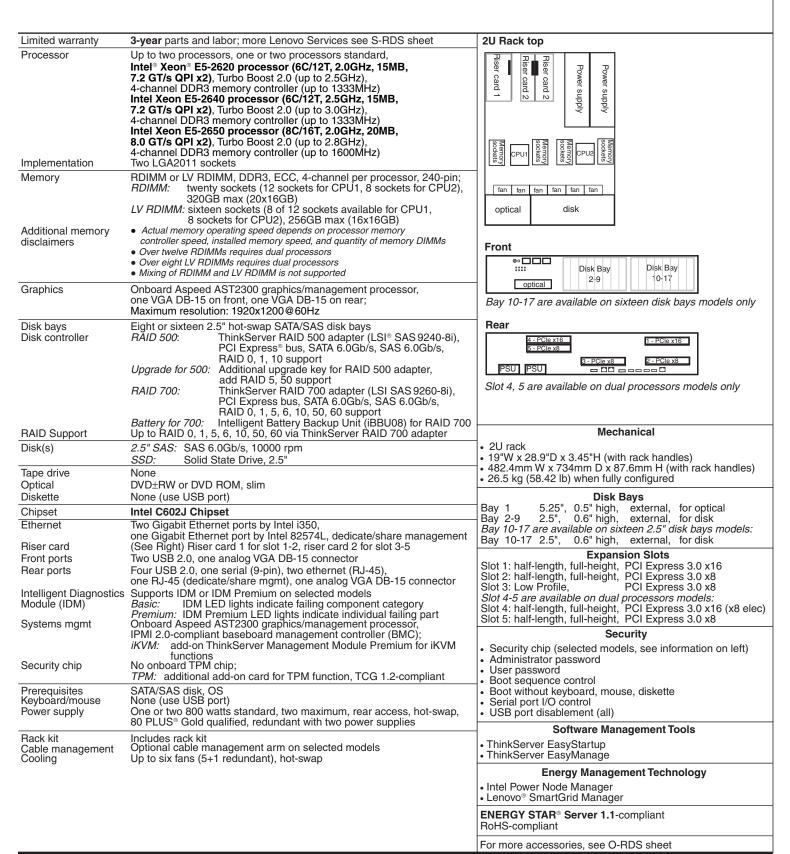
ThinkServer® RD630 with 2.5" Disk Bay (2594) - TopSeller

Type-	Memory Memory Pre-conf Disk Disk	Disk SATA Intelligent System Cable Preload PSU
model Processor(s) 2594-A1U 1xE5-2620		type optical Diagnostics TPM mgmt mgmt OS qty ATA/SAS DVD±RW Premium TPM IPMI No No 1
		ATA/SAS DVD±RW Premium TPM iKVM No No 2
		ATA/SAS DVD±RW Premium TPM iKVM No No 2 ATA/SAS DVD±RW Premium TPM iKVM No No 1
2594-A5U 1xE5-2640	1333MHz RDIMM 1x4GB No 700 None 8xHS SA	ATA/SAS DVD±RW Premium TPM iKVM No No 2
		NTA/SAS DVD±RW Premium TPM iKVM No No 2 NTA/SAS DVD±RW Premium TPM iKVM No No 2
2594-A9U 1xE5-2620	1333MHz RDIMM 1x4GB No 700 None 8xHS SA	ATA/SAS DVD±RW Premium TPM IPMI No No 1
2594-AEU 1xE5-2690	1333MHz RDIMM 1x8GB No 700 None 8xHS SA 1333MHz RDIMM 1x16GB No 700+Battery None 8xHS SA	NTA/SAS DVD±RW Premium TPM IPMI No No 1 NTA/SAS DVD±RW Premium TPM iKVM No No 2
Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet	2U Rack top
Processor	Up to two processors, one or two processors standard,	
	Intel® Xeon® E5-2620 processor (6C/12T, 2.0GHz, 15MB, 7.2 GT/s QPI x2), Turbo Boost 2.0 (up to 2.5GHz),	Power supply Power supply Power supply Riser card 2 Riser card 2
	4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2640 processor (6C/12T, 2.5GHz, 15MB,	rr suj
	7.2 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.0GHz),	l doc l doc l
	4-channel DDR3 memory controller (up to 1333MHz) Intel Xeon E5-2660 processor (8C/16T, 2.2GHz, 20MB,	
	8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.0GHz),	
	4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2670 processor (8C/16T, 2.6GHz, 20MB,	Sockets: CPU1 Sockets: CPU2 Sockets: So
	8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.3GHz),	
	4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2690 processor (8C/16T, 2.9GHz, 20MB,	fan fan fan fan fan
	8.0 GT/s QPI x2) , Turbo Boost 2.0 (up to 3.8GHz),	optical disk
Implementation	4-channel DDR3 memory controller (up to 1600MHz) Two LGA2011 sockets	
Memory	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin;	Front
	RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB)	◎○□□□
	LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1,	Disk Bay Disk Bay 2-9 10-17
Additional memory	8 sockets for CPU2), 256GB max (16x16GB) • Actual memory operating speed depends on processor memory	optical
disclaimers	controller speed, installed memory speed, and quantity of memory DIMMs • Over twelve RDIMMs requires dual processors	Bay 10-17 are available on sixteen disk bays models only
	Over eight LV RDIMMs requires dual processors	Rear
	Mixing of RDIMM and LV RDIMM is not supported	4 - PCle x16 5 - PCle x8
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear;	3 - PCle x8 2 - PCle x8
	Maximum resolution: 1920x1200@60Hz	PSU PSU = 00 = ===0
		21.1.5
Disk bays	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays	Slot 4, 5 are available on dual processors models only
Disk bays Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i),	Slot 4, 5 are available on dual processors models only
•	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	, ,
•	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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,	Slot 4, 5 are available on dual processors models only Mechanical • 2U rack
•	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles)
•	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Mechanical • 2U rack
•	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays
Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical
Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models:
Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk
Disk controller RAID Support Disk(s) Tape drive Optical	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models:
Disk controller RAID Support Disk(s) Tape drive Optical Diskette	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port)	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8
Disk controller RAID Support Disk(s) Tape drive Optical	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350,	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical and the second seco
RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Up to RAID 701: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec)
Disk controller RAID Support Disk(s) Tape drive Optical Diskette Chipset	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350,	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical and the second seco
RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet ports by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45),	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left)
BAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password
BAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • User password • Boot sequence control
RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports Intelligent Diagnostics	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor.	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x8 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • User password • User password • Boot sequence control • Boot without keyboard, mouse, diskette
Disk controller RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports Intelligent Diagnostics Module (IDM)	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC);	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x8 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • User password • User password • Boot sequence control • Boot without keyboard, mouse, diskette
Disk controller RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports Intelligent Diagnostics Module (IDM) Systems mgmt	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet ports by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management Module Premium for iKVM functions	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • User password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control
Disk controller RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports Intelligent Diagnostics Module (IDM)	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management Module Premium for iKVM functions No onboard TPM chip;	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • User password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all) Software Management Tools • ThinkServer EasyStartup
Disk controller RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet ports by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x8 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • User password • User password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all) Software Management Tools • ThinkServer EasyStartup • ThinkServer EasyManage
Disk controller RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port)	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x8 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • User password • User password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all) Software Management Tools • ThinkServer EasyStartup • ThinkServer EasyManage Energy Management Technology
Disk controller RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet ports by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x8 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • User password • User password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all) Software Management Tools • ThinkServer EasyStartup • ThinkServer EasyManage
Disk controller RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse Power supply Rack kit	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualiffied, redundant with two power supplies	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all) Software Management Tools • ThinkServer EasyStartup • ThinkServer EasyStartup • Intel Power Node Manager
Disk controller RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse Power supply	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) **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 700:** ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support **Battery for 700:** Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter **2.5" SAS:** SAS 6.0Gb/s, 10000 rpm **SD:** Solid State Drive, 2.5"* **None** **DVD±RW or DVD ROM, slim** **None (use USB port) **Intel C602J Chipset** Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 **Two USB 2.0, one analog VGA DB-15 connector** **Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models **Basic:** IDM LED lights indicate failing component category** **Premium:** IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management Module Premium for iKVM functions **No onboard TPM chip;** **TPM:** additional add-on card for TPM function, TCG 1.2-compliant **SATA/SAS disk, OS** None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x8 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x8 Slot 4: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • User password • User password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all) Software Management Tools • ThinkServer EasyStartup • ThinkServer EasyManage Energy Management Technology • Intel Power Node Manager • Lenovo® SmartGrid Manager
RAID Support Disk(s) Tape drive Optical Diskette Chipset Ethernet Riser card Front ports Rear ports Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse Power supply Rack kit Cable management	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays (Sixteen 2.5" disk bays availability on August 2012) 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter 2.5" SAS: SAS 6.0Gb/s, 10000 rpm SSD: Solid State Drive, 2.5" None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Mechanical • 2U rack • 19"W x 28.9"D x 3.45"H (with rack handles) • 482.4mm W x 734mm D x 87.6mm H (with rack handles) • 26.5 kg (58.42 lb) when fully configured Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security • Security chip (selected models, see information on left) • Administrator password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all) Software Management Tools • ThinkServer EasyStartup • ThinkServer EasyStartup • ThinkServer EasyManage Energy Management Technology • Intel Power Node Manager • Lenovo® SmartGrid Manager ENERGY STAR® Server 1.1-compliant

ThinkServer® RD630 with 2.5" Disk Bay (2594) - TopSeller (August 2012)

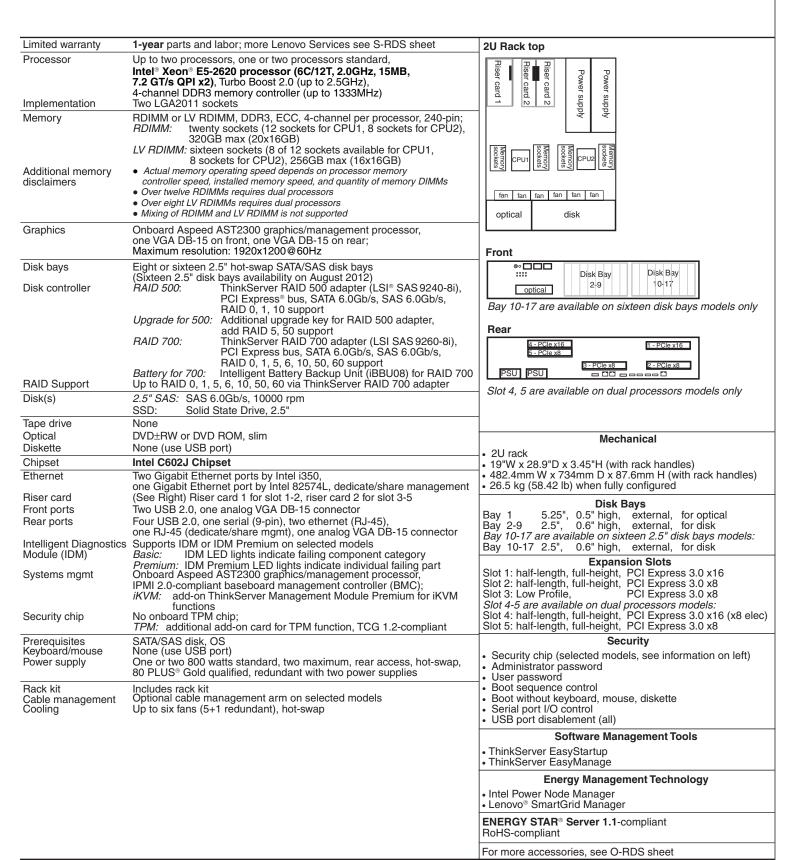
Personal Systems Reference (PSREF)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
2594-A8U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM I	IPMI	No	No	1
2594-AAU	1xE5-2640	1333MHz RDIMM	1x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM i	KVM	No	No	1
2594-ABU	2xE5-2650	1333MHz RDIMM	2x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM i	KVM	No	No	2
2594-ACU	1xE5-2650	1333MHz RDIMM	1x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM i	KVM	No	No	2



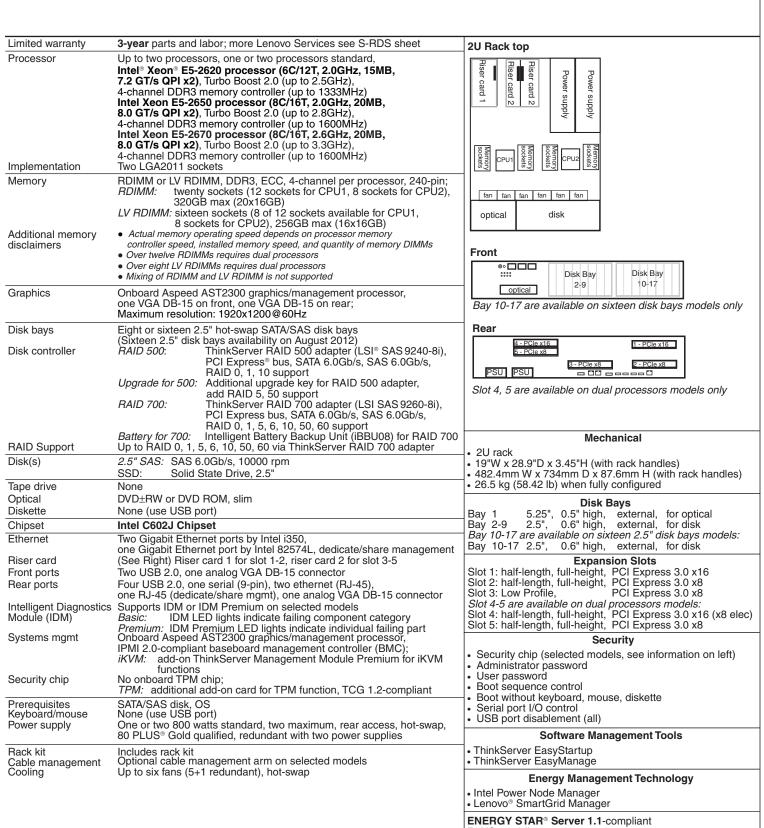
Personal Systems Reference (PSREF)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
2593-A1U	2xE5-2620	1333MHz RDIMN	√12x8GB		700+Battery	5x600GB 2.5"	SAS 8xHS	SATA/SAS	DVD	Premium	TPM	iKVM	No	No	2
2593-A2U	2xE5-2620	1333MHz RDIMN	√12x8GB	5	700+Battery	6x600GB 2.5"	SAS 8xHS	SATA/SAS	DVD	Premium	TPM	iKVM	No	No	2



ThinkServer® RD630 with 2.5" Disk Bay (2595)

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
2595-A1U	1xE5-2620	1333MHz RDIMM	l 1x8GB	No	700		8xH	SATA/SAS	DVD±RW	Basic	TPM	IPMI	No	No	1
2595-A2U	1xE5-2650	1333MHz RDIMM	l 1x16GB	No	700+Battery		8xH	S SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2595-A5U	1xE5-2650	1333MHz RDIMM	l 6x8GB	No	700+Battery	4x300GB 2.5"	SAS 8xH	S SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2595-A6U	1xE5-2620	1333MHz RDIMM	l 3x8GB			4x300GB 2.5"								No	2
2595-A7U	2xE5-2670	1333MHz RDIMM	l 6x16GB	No	700+Battery	4x300GB 2.5"	SAS 8xH	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2

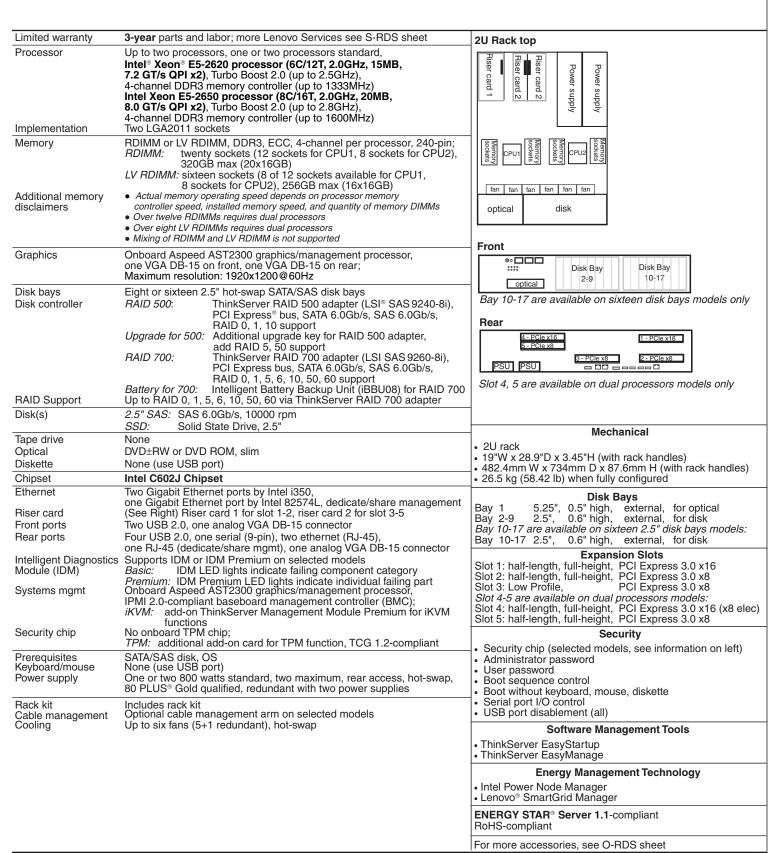


RoHS-compliant

For more accessories, see O-RDS sheet

ThinkServer® RD630 with 2.5" Disk Bay (2595) - August 2012

Type-		Memory	Memory	Pre-conf	Disk		Disk	Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	type	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
2595-A3U	1xE5-2650	1333MHz RDIMM	1x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM	iKVM	No	No	2
2595-A4U	1xE5-2620	1333MHz RDIMM	1x8GB	No	700+Battery	No	16xHS	SATA/SAS	DVD±RW	Premium	TPM	IPMI	No	No	2



ThinkServer® RD630 with 2.5" Disk Bay (2595) - Vectorwise Appliance

Personal Systems Reference (PSREF)

Type-		Memory	Memory	Pre-conf	Disk		Disk	SATA	Intelligent		System	Cable	Preload	PSU
model	Processor(s)	(MHz/type)	DIMMs	RAID	controller	Disk(s)	bays	optical	Diagnostics	TPM	mgmt	mgmt	os	qty
2595-A8U	1xE5-2643	1333MHz RDIMN	18x8GB	10	700+Battery	4x300GB 2.5" SAS	8xHS	DVD±RW	Premium	TPM	iKVM	No	Win2008E R2	2
2595-A9U	2xE5-2667	1333MHz RDIMN	/I 16x8GB	6	700+Battery	8x300GB 2.5" SAS	8xHS	DVD±RW	Premium	TPM	iKVM	No	Win2008E R2	2
2595-AAU	2xE5-2667	1333MHz RDIMN	/I 16x8GB	6	700+Battery	8x300GB 2.5" SAS	8xHS	DVD±RW	Premium	TPM	iKVM	No	RHEL 6.0	2

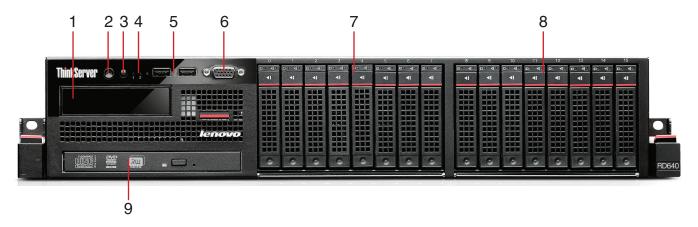
 These models are ThinkServer solutions for Vectorwise Data Mart Appliance for more information please see www.actian.com/products/vectorwise/vectorwise-datamart-appliance

	for more information please see www.actian.com/products/vectorwise/v	vectorwise-datamart-appliance
Limited warranty	3-year parts and labor; more Lenovo Services see S-RDS sheet	2U Rack top
Processor	Up to two processors, one or two processors standard, Intel® Xeon® E5-2643 processor (4C/8T, 3.3GHz, 10MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.5GHz), 4-channel DDR3 memory controller (up to 1600MHz) Intel Xeon E5-2667 processor (6C/12T, 2.9GHz, 15MB, 8.0 GT/s QPI x2), Turbo Boost 2.0 (up to 3.5GHz), 4-channel DDR3 memory controller (up to 1600MHz)	Power supply Power supply Riser card 2 Riser card 2 Riser card 1
Implementation	Two LGA2011 sockets	
Memory Additional memory disclaimers	RDIMM or LV RDIMM, DDR3, ECC, 4-channel per processor, 240-pin; RDIMM: twenty sockets (12 sockets for CPU1, 8 sockets for CPU2), 320GB max (20x16GB) LV RDIMM: sixteen sockets (8 of 12 sockets available for CPU1, 8 sockets for CPU2), 256GB max (16x16GB) • Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs • Over twelve RDIMMs requires dual processors • Over eight LV RDIMMs requires dual processors • Mixing of RDIMM and LV RDIMM is not supported	Solder CPU1 Solder CPU2 Solder
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz	Front Oisk Bay Optical Optical Disk Bay 10-17
Disk bays Disk controller	Eight or sixteen 2.5" hot-swap SATA/SAS disk bays 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 ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support Intelligent Battery Backup Unit (iBBU08) for RAID 700 Up to RAID 0, 1, 5, 6, 10, 50, 60 via ThinkServer RAID 700 adapter	Bay 10-17 are available on sixteen disk bays models only Rear 4-PCle x16 5-PCle x8 PSU PSU 2-PCle x8 PSU PSU 2-PCle x8 S-PCle x8 PSU PSU 2-PCle x8 S-PCle x8 PSU PSU 2-PCle x8 S-PCle x8 PSU PSU 2-PCle x8 PSU P
RAID Support Disk(s)	2.5" SAS: SAS 6.0Gb/s, 10000 rpm	-
Disk(s)	SSD: Solid State Drive, 2.5"	Machanian
Tape drive Optical Diskette Chipset	None DVD±RW or DVD ROM, slim None (use USB port) Intel C602J Chipset	 Mechanical 2U rack 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured
Ethernet Riser card Front ports Rear ports Intelligent Diagnostics Module (IDM) Systems mgmt Security chip Prerequisites Keyboard/mouse Power supply Rack kit Cable management Cooling	Two Gigabit Ethernet ports by Intel i350, one Gigabit Ethernet port by Intel 82574L, dedicate/share management (See Right) Riser card 1 for slot 1-2, riser card 2 for slot 3-5 Two USB 2.0, one analog VGA DB-15 connector Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector Supports IDM or IDM Premium on selected models Basic: IDM LED lights indicate failing component category Premium: IDM Premium LED lights indicate individual failing part Onboard Aspeed AST2300 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); iKVM: add-on ThinkServer Management Module Premium for iKVM functions No onboard TPM chip; TPM: additional add-on card for TPM function, TCG 1.2-compliant SATA/SAS disk, OS None (use USB port) One or two 800 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Includes rack kit Optional cable management arm on selected models Up to six fans (5+1 redundant), hot-swap	Disk Bays Bay 1 5.25", 0.5" high, external, for optical Bay 2-9 2.5", 0.6" high, external, for disk Bay 10-17 are available on sixteen 2.5" disk bays models: Bay 10-17 2.5", 0.6" high, external, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: Low Profile, PCI Express 3.0 x8 Slot 4-5 are available on dual processors models: Slot 4: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 5: half-length, full-height, PCI Express 3.0 x8 Security Security Security chip (selected models, see information on left) Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		ThinkServer EasyStartup ThinkServer EasyManage Energy Management Technology Intel Power Node Manager Intel Power Node Manager
	Preloaded Operating System	Lenovo® SmartGrid Manager The Power of the same lives to
A8U: Genuine Wind	dows Server® 2008 R2 Enterprise, Vectorwise 100GB limitation per unit	ENERGY STAR® Server 1.1-compliant RoHS-compliant
AAU: Red Hat® Ente	erprise Linux® 6.0, Vectorwise 1TB limitation per unit	For more accessories, see O-RDS sheet

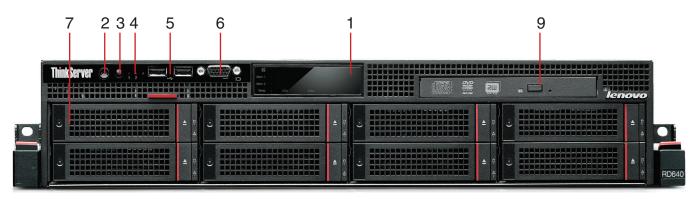
ThinkServer® RD630, RD530 Accessories

		ThinkServer Cable Management Arm	
		•	0A89476
Intel Xeon E5-2609 Processor Option for RD630/RD530	0A89442		
	0A89441		
Intel Xeon E5-2643 Processor Option for RD630/RD530	0A89440		
Intel Xeon E5-2630L Processor Option for RD630/RD530	0A89439		
	0A89438		
Intel Xeon E5-2630 Processor Option for RD630/RD530	0A89437		
Intel Xeon E5-2640 Processor Option for RD630/RD530	0A89436		
Intel Xeon E5-2667 Processor Option for RD630/RD530	0A89435		
Intel Xeon E5-2650L Processor Option for RD630/RD530	0A89434		
Intel Xeon E5-2650 Processor Option for RD630/RD530	0A89433		
Intel Xeon E5-2660 Processor Option for RD630/RD530	0A89462		
Intel Xeon E5-2665 Processor Option for RD630/RD530	0A89432		
Intel Xeon E5-2670 Processor Option for RD630/RD530	0A89431		
Intel Xeon E5-2680 Processor Option for RD630/RD530	0A89430		
Intel Xeon E5-2690 Processor Option for RD630	0A89429		
Memory ⁵¹ (All RD630 and RD530)			
	0A89411		
	0A89412		
· · · · · · · · · · · · · · · · · · ·	0A89413		
	0A89415		
. , , , , , , , , , , , , , , , , , , ,	0A89416		
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	0A89481		
	0A89482		
ThinkServer 16GB DDR3-1600MHz (2Rx4) RDIMM (RD630/RD530)	0A89483	•	
Hot-swap Disk Drive - 3.5" SATA (for 3.5" disk bay RD630 and RD530)			
500GB 7.2K 3.5" 6Gbps SATA Hot Swap Hard Drive	0A89473		
·	0A89474		
·	0A89475		
·	0A89477		
·	0/100-1/1		
Hot-swap Disk Drive - 2.5" SATA (for 2.5" disk bay RD630 and RD530)			
500GB 7.2K 2.5" Enterprise 6Gbps SATA Hot Swap Hard Drive	0C19495		
1TB 7.2K 2.5" Enterprise 6Gbps SATA Hot Swap Hard Drive	0C19496		
Hot-swap Disk Drive - 3.5" SAS (for 3.5" disk bay RD630 and RD530)			
300GB 15K SAS 6Gbps Hot Swap Hard Drive	67Y2616		
·	67Y2617		
·	67Y2618		
Hot-swap Disk Drive - 2.5" SAS (for 2.5" disk bay RD630 and RD530)	071/0010		
·	67Y2619		
·	67Y2620		
	67Y2621		
·	0A89409		
and the second s	0C19493		
300GB 15K SAS 6Gbps Hot Swap Hard Drive	0C19494		
Hot-swap Disk Drive - 2.5" SSD (for 2.5" disk bay RD630 and RD530)			
2.5" 100GB MLC SATA Solid State Drive (SATA 3.0 Gb/s)	0A89420		
2.5" 200GB MLC SATA Solid State Drive (SATA 3.0 Gb/s)	0A89418		
2.5" 400GB MLC SATA Solid State Drive (SATA 3.0 Gb/s)	0A89419		
Connectivity (All RD630 and RD530)			
	0A89423		
, ,			
	0A89424 0C19487		
' ' '	0C19486		
' ' '	0C19488		
	0C19497		
RAID controller and RAID upgrade (All RD630 and RD530)			
10 ,	0A89407		
ThinkServer RAID 700 Battery	67Y2647		
ThinkServer host bus adapters			
•	0010476		
, ,	0C19476	50 Additional processor must match the existing process	sor
ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478	51 Mixing of RDIMM and LV RDIMM is not supported	
ThinkServer System Management (All RD630 and RD530)			
Management Controller Premium	67Y2624	For more information on server accessories, please vis www.lenovo.com/support/accessories	it.
ThinkServer TPM (All RD630 and RD530)	<u></u>	www.lenovo.com/support/thinkserveraccessories	
,	0400400	www.lenovo.com/support/security	
	0A89428		
Redundant Power Supply (All RD630 and RD530)		Other accessories at www.lenovo.com/accessories	
ThinkServer 800W Hot Swap Redundant Power Supply	0A89426		
		Accessories Guide pdf at www.lenovo.com/accessorie	esguide

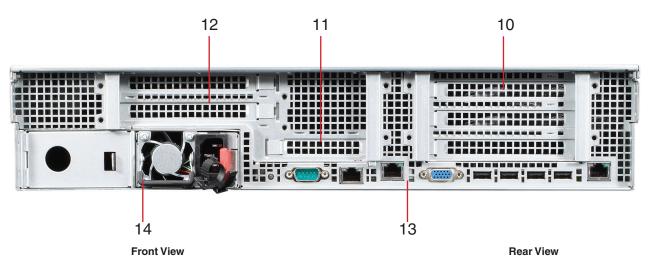
ThinkServer® RD640 Overview - Front and Rear



ThinkServer RD640 with 8x2.5"/16x2.5" Disk Drive Bays



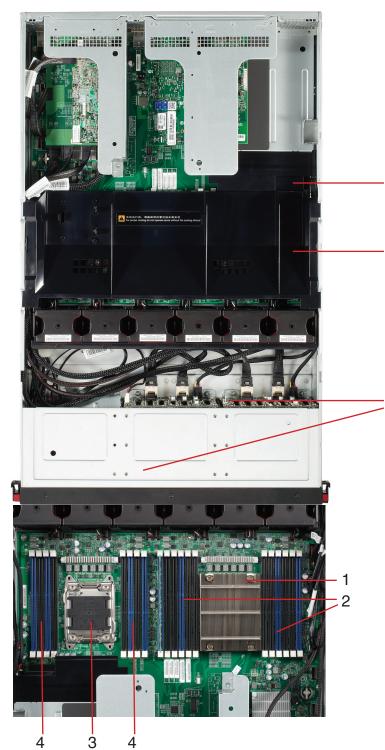
ThinkServer RD640 with 8x3.5" Disk Drive Bays



- Intelligent Diagnostics Premium Module (optional) Power Button with LED
- 2. 3.
- ID button with LED
- 2 Network interface status LEDs 2 USB 2.0
- 4. 5.
- 1 VGA
- Hot-swap disk drive bays Hot-swap disk drive bays for 16x2.5" hard drive bays model
- 6. 7. 8. 9. Optical (optional)

- 11.
- PCI Express slots 1-3 PCI Express slots 4 PCI Express slots 5-6 (for dual processors model) 12.
- Rear ports: 4 USB 2.0 13.
 - 1 serial
 - 2 ethernet
 - 1 RJ-45 (dedicate/share mgmt)
 - 1 VGA
- 14. Hot-swap power supplies

ThinkServer® RD640 Overview - Internal



Internal View

- Hot-swap cooling fans
 Processors and memory DIMM sockets (under cooling shroud, see below)
 PCI Express slots

Processors and Memory DIMM Sockets (under cooling shroud)

2

3

- CPU 1
 12 Memory DIMM sockets for CPU 1
 CPU 2 (optional)
 8 Memory DIMM sockets for CPU 2 (for dual processors model)

ThinkServer® RD640 Platform Specifications

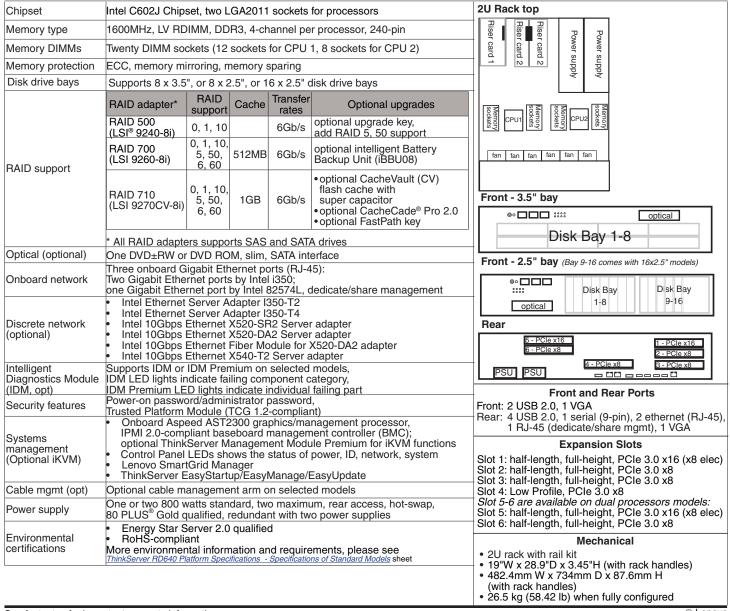
Components	Specifications										
Chipset	Intel C602J Chipset										
Mechanical	 482.4mm W x 734mn 26.5 kg (58.42 lb) wh 	 19"W x 28.9"D x 3.45"H (with rack handles) 482.4mm W x 734mm D x 87.6mm H (with rack handles) 26.5 kg (58.42 lb) when fully configured 									
Front ports	Two USB 2.0, one analog VGA DB-15 connector										
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45), one RJ-45 (dedicate/share mgmt), one analog VGA DB-15 connector										
Expansion Slots	6	- PCle x16 - PCle x8 4 - PCle :	1 - PCle x16 2 - PCle x8 x8 3 - PCle x8								
	Up to six PCI-Express slots via two riser cards, riser card 1 for slot 1-3, riser card 2 for slot 4-6 Slot 1: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 2: half-length, full-height, PCI Express 3.0 x8 Slot 3: half-length, full-height, PCI Express 3.0 x8 Slot 4: Low Profile, PCI Express 3.0 x8 Slot 5-6 are available on dual processors models: Slot 5: half-length, full-height, PCI Express 3.0 x16 (x8 elec) Slot 6: half-length, full-height, PCI Express 3.0 x8										
Graphics	Onboard Aspeed AST2300 graphics/management processor, one VGA DB-15 on front, one VGA DB-15 on rear; Maximum resolution: 1920x1200@60Hz										
Hot-swap parts	Disk drives, power supplies, and cooling fans										
	Environmental certifications • Energy Star Server 1.1 qualified • RoHS-compliant EMC FCC Class A, CSA CE 240VA Supports Temperature - 50 °F to 95 °F (10 °C to 35 °C)										
	operating 50 1 to 33 1 (10 0 to 33 0) Temperature - non operating (no package) -10 °C to 60 °C										
	Temperature - non operating (with package)	-40 °C to 70 °C									
	Altitude - operating	Supported Altitude (unpressurized): 0-10000ft (0-3048m)									
	Humidity - operating	8%~80%, non-condensing									
Safety, environment, and certifications	Humidity - non operating (no package)	8%~80%, non-condensing									
	Humidity - non operating (with package)	8%~90%, non-condensing									
		Category	Normal Configuration	Best Configuration							
		CPU	1	2							
		HDD	2x 900GB 2.5" SAS 6Gb/s	16x 900GB 2.5" SAS 6Gb/s							
		Memory	1x 8GB 1600MHz LVRDIMM	20x 8GB 1600MHz LVRDIMM							
	Acoustic noise (idle/working mode)	PCIe adapters	I350 X520-DA2 Emulex LPe16002	I350 X520-DA2 Emulex LPe16002							
		PSU	1x 800W	2x 800W							
		RAID	RAID 700 adapter	RAID 700 adapter							
		Sound Pressure (operating)	44.1 dB(A)	42.91 dB(A)							
		Sound Pressure (idle)	44.4 dB(A)	43.8 dB(A)							

ThinkServer® RD640 (70AY) - TopSeller

Type- model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim	Intelligent Diagnostics		Discrete ethernet	Cable mgmt		Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AY0001US	2xF5-2609 v2	4GBx20	8x3.5"	RAID710 +CacheVault +CacheCade	2x400GB SSD(cache,RAID1) +6x1TB 3.5" SAS(RAID50)	DVD±RW		iKVM	X520SR2 +350T2 +350T2		800Wx2	Standard	1
70AY0002UX	2xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	16GBx4	8x3.5"	RAID500 +Upgrade	6x3TB 3.5" SATA(RAID50) +2x3TB 3.5" SAS(RAID1)	DVD±RW	IDM	IPMI	350T4	No	800Wx2	No	1
70AY0003UX	1xE5-2630L v2 6C/2.4GHz/ 15MB/1600MHz	8GBx2	8x3.5"	RAID700	2x500GB 3.5" SATA(RAID1)	No	IDM	IPMI	350T2	No	800Wx2	No	1
70AY0005UX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x3.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0006UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0007UX	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AY0008UX	1xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3

^{1.} Model in italics is Global model

- For detailed platform specifications, please see ThinkServer RD640 Platform Specifications sheets
- For optional configurations of ThinkServer RD640, please see ThinkServer RD640 Optional Configurations sheets

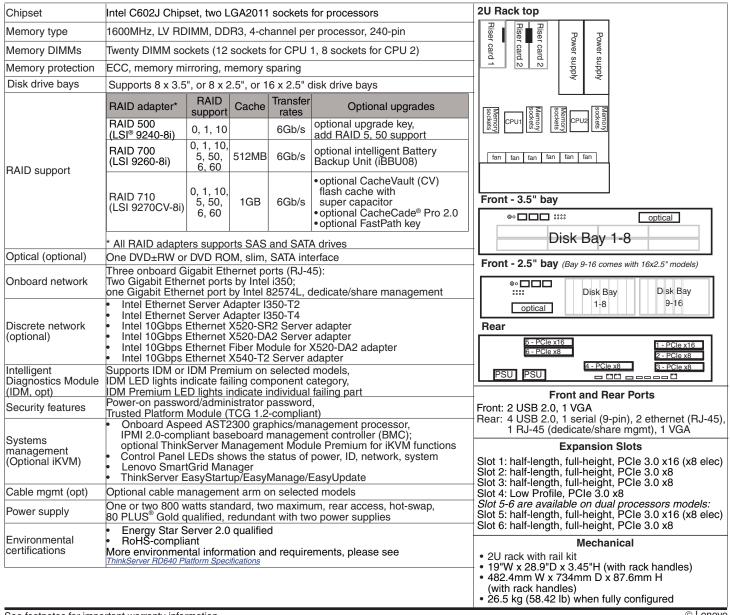


ThinkServer® RD640 (70B1) - TopSeller

Type- model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet		PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70B10000US	2xE5-2630 v2 6C/2.6GHz/ 15MB/1600MHz	16GBx4	8x2.5"	RAID700 +Battery	3x300GB 2.5" SAS(RAID5)	DVD±RW	IDM	iKVM	350T2	Cable	800Wx2	Standard	1
70B10004UX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	8x2.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10005UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10006UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10007UX	1xE5-2640 v2 8C/2GHz/ 20MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10008UX	1xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70B10009UX	1xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

^{1.} Model in italics is Global model

- For detailed platform specifications, please see ThinkServer RD640 Platform Specifications sheets
- For optional configurations of ThinkServer RD640, please see ThinkServer RD640 Optional Configurations sheets

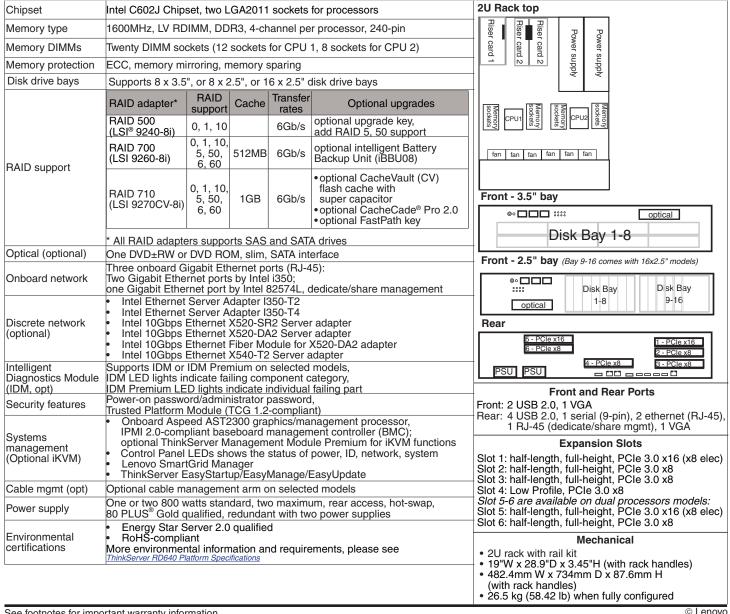


ThinkServer® RD640 (70B0) - TopSeller

Type- model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	on-site warranty
70B00003US	2xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	8GBx19+ 4GBx1	16x2.5"	RAID710 +CacheCade	2x100GB SSD(cache,RAID1) +14x1TB 2.5" SATA(RAID50)	DVD	IDM Premium	iKVM	X520SR2 +350T4+350T4	Cable	800Wx2	Standard	1
70B00004US	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz		16x2.5"	RAID500	2x900GB 2.5" SAS(RAID1)	No	IDM	IPMI	350T4	No	800Wx2	Standard	1
70B0000FUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz		16x2.5"	RAID700 +Battery	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3
70B0000GUX	1xE5-2650 v2 8C/2.6GHz/ 20MB/1866MHz		16x2.5"	RAID710	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

^{1.} Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
 For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

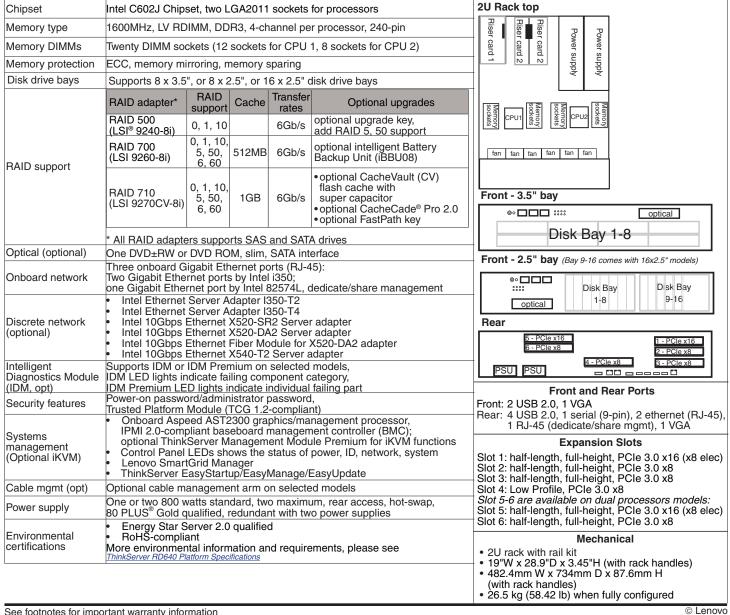


Personal Systems Reference (PSREF) ThinkServer® RD640 (70AV)

Type- model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AV0000UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x3.5"	RAID500	Open	DVD±RW	IDM Premium	IPMI	No	No	800Wx1	No	3
70AV0001UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x3.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

¹ Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
 For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

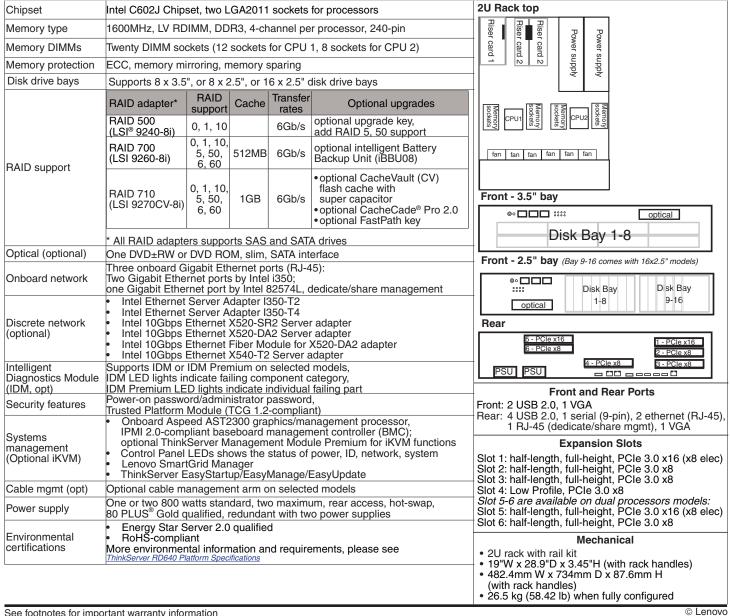


Personal Systems Reference (PSREF) ThinkServer® RD640 (70AX)

Type- model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory		RAID controller	Storage	Slim optical	Intelligent Diagnostics			Cable mgmt	PSU	Windows Server 2012 Preloaded	Base on-site warranty (-year)	
70AX0000UX	1xE5-2620 6C/2GHz/ 15MB/1333MHz	8GBx1	8x2.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3	

^{1.} Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
 For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>

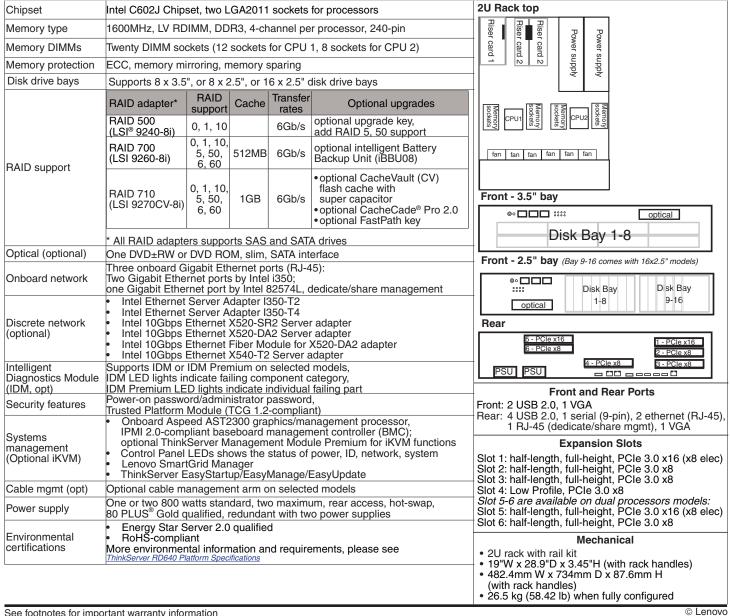


Personal Systems Reference (PSREF) ThinkServer® RD640 (70AW)

												Windows	Base
		1600MHz										Server	on-site
Type-	Intel Xeon	LV RDIMM	Disk	RAID		Slim	Intelligent	Remote	Discrete	Cable		2012	warranty
model ¹	Processor(s)	memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	PSU	Preloaded	(-year)
70AW0005UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	16x2.5"	RAID700	Open	DVD±RW	IDM Premium	iKVM	No	No	800Wx1	No	3

^{1.} Model in italics is Global model

- For detailed platform specifications, please see <u>ThinkServer RD640 Platform Specifications</u> sheets
 For optional configurations of <u>ThinkServer RD640</u>, please see <u>ThinkServer RD640 Optional Configurations sheets</u>



ThinkServer® RD640 Optional Configurations - Processor and Memory

Rack kit	Included in models										
Processor	Two LGA2011 socke	ets, su	pports up	to two pro	cessors fro	m Intel 2	Keon E5-2	600 or Xec	n E5-2600 v	2 families,	
	up to 8 cores (E5-26			ores (E5-2	600 v2 seri	es),					
	two QPI links up to a	8.0G I. M seri	's eacn, es)/30MR	(F5-2600	v2 series) (rache					
	up to 20MB (E5-260 integrated 4-channe	DDR	3 memor	v controller	up to 1600	MHz (E	5-2600 se	ries)/1866N	ИHz (E5-2600	v2 series).	
						`			,	,	
	The following proces	ssor o	otions are	available:							
					Processors	s Specif	ications*			Dovt	
	Processor Number	# of	# of	Clock	Max Turbo Frequency	Cacho	QPI	Max TDP	Memory	Part Number	
			Threads	Speed	Frequency	Cache	Speed	IVIAX I DI	Speed	Ivamber	
	Intel Xeon E5-2600) Serie	es								
	Xeon E5-2690	8	16	2.9 GHz	3.8 GHz	20MB	8 GT/s	135 W	DDR3-1600		
	Xeon E5-2680	8	16	2.7 GHz		20MB	8 GT/s	130 W	DDR3-1600		
	Xeon E5-2670	8	16	2.6 GHz	3.3 GHz	20MB	8 GT/s	115 W	DDR3-1600		
	Xeon E5-2667	6	12	2.9 GHz	3.5 GHz			130 W	DDR3-1600		
	Xeon E5-2665	8	16	2.4 GHz	3.1 GHz	20MB		115 W	DDR3-1600		
	Xeon E5-2660	8	16	2.2 GHz	3 GHz	20MB		95 W	DDR3-1600		
	Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600		
	Xeon E5-2650	8	16	2 GHz	2.8 GHz	20MB		95 W	DDR3-1600		
	Xeon E5-2643	4	8	3.3 GHz	3.5 GHz	10MB		130 W	DDR3-1600		
	Xeon E5-2640	6	12	2.5 GHz	3 GHz		7.2 GT/s	95 W	DDR3-1333		
	Xeon E5-2630L	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	60 W	DDR3-1333		
	Xeon E5-2630	6	12	2.3 GHz	2.8 GHz		7.2 GT/s	95 W	DDR3-1333		
	Xeon E5-2620	6	12	2 GHz	2.5 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89438	
	Xeon E5-2609	4	4	2.4 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89441	
	Xeon E5-2603	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89442	
	Intel Xeon E5-2600) v2 S	eries								
	Xeon E5-2697 v2	12	24	2.7 GHz	3.5 GHz	30MB	8 GT/s	130 W	DDR3-1866	0C19546	
	Xeon E5-2695 v2	12	24	2.4 GHz	3.2 GHz	30MB	8 GT/s	115 W	DDR3-1866	0C19547	
	Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz	25MB	8 GT/s	130 W	DDR3-1866	0C19548	
	Xeon E5-2680 v2	10	20	2.8 GHz	3.6 GHz	25MB	8 GT/s	115 W	DDR3-1866	0C19549	
	Xeon E5-2670 v2	10	20	2.5 GHz	3.3 GHz	25MB	8 GT/s	115 W	DDR3-1866	0C19550	
	Xeon E5-2667 v2	8	16	3.3 GHz	4 GHz	25MB	8 GT/s	130 W	DDR3-1866	0C19553	
	Xeon E5-2660 v2	10	20	2.2 GHz	3 GHz	25MB	8 GT/s	95 W	DDR3-1866	0C19551	
	Xeon E5-2650 v2	8	16	2.6 GHz	3.4 GHz	20MB	8 GT/s	95 W	DDR3-1866	0C19552	
	Xeon E5-2650L v2	10	20	1.7 GHz	2.1 GHz	25MB	7.2 GT/s	70 W	DDR3-1600	0C19554	
	Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz	20MB	7.2 GT/s	95 W	DDR3-1600	0C19555	
	Xeon E5-2630 v2	6	12	2.6 GHz	3.1 GHz	15MB	7.2 GT/s	80 W	DDR3-1600	0C19558	
	Xeon E5-2630L v2	6	12	2.4 GHz	2.8 GHz	15MB	7.2 GT/s	60 W	DDR3-1600	0C19556	
	Xeon E5-2620 v2	6	12	2.1 GHz	2.6 GHz	15MB	7.2 GT/s	80 W	DDR3-1600	0C19557	
	Xeon E5-2609 v2	4	4	2.5 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19559	
	Xeon E5-2603 v2	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1333	0C19560	
	Notes:										
	All processors specific Intel may update this in									herein is provid	led "as
Memory type	1600MHz, RDIMM a			-	· · ·	<u> </u>		n			
Memory DIMM sockets	twenty DIMM socke	ts (12	sockets fo	or CPU 1, 8	sockets fo	r CPU 2	(1)				
Memory capacity	Up to 320GB (16GE	3x20)									
Memory protection	ECC, memory mirro		nemorv si	paring							
· · · · · · · · · · · · · · · · · · ·	, , , , , , , , , , , , , , , , , , , ,	3,		nory optior	ns			Part Numb			
	ThinkServer 4GB D	וספות	-1600MU	7 (1DV0) E	DIMM			0C195			
	I 			,							
	ThinkServer 8GB D	DR3L	-1600MH	z (2RX8) F	KDIMM			0C195			
Memory options	ThinkServer 16GB	DDR3	L-1600MI	Hz (2RX4)	RDIMM			0C195	35		
	Notes: • Actual memory oper • By default, the voltag • When using Intel Xe If LV RIMM runs at 1	ge of L\ on E5-2	/ RDIMM is 2600 series	s 1.5V and ca s processors	an be change , LV RIMM is	ed to1.35 needed	V in BIOS s to run at 1.5	etting V to support	all 20 memory		

ThinkServer® RD640 Optional Configurations - Storage and RAID

Disk drive bays	Supports one of the follo • 8 x 3.5" SAS/SATA di • 8 x 2.5" SAS/SATA di • 16 x 2.5" SAS/SATA di	sk drive bays sk drive bays	ations:				
		Disk dri	ve options			Part Number	
	Hot-swap Disk drive for	3.5" bay				Trainion	
	3.5" SATA Hard Drive	,					
	ThinkServer 3.5" 500G	B 7.2K Enterpr	ise SATA 60	abps Hot S	wap Hard Drive	0A89473	
	ThinkServer 3.5" 1TB 7				•	0A89474	
	ThinkServer 3.5" 2TB 7				•	0A89475	
	ThinkServer 3.5" 3TB 7				•	0A89477	
	ThinkServer 3.5" 4TB 7				•	0C19520	
	3.5" SAS Hard Drive						
	ThinkServer 3.5" 1TB 7	.2K SAS 6Gbr	s Hot Swap	Hard Driv	e	0C19530	
	ThinkServer 3.5" 2TB 7		•			0C19531	
	ThinkServer 3.5" 3TB 7					0C19532	
	ThinkServer 3.5" 300G					67Y2616	
	ThinkServer 3.5" 600G		<u> </u>			67Y2618	
	2.5" SSD for 3.5" disk b			.,a. a D	-	151.2510	
isk drive options	ThinkServer 2.5" 100G		olid State D	rive to 3.5'	' Kit	0C19571	
	ThinkServer 2.5" 200G					0C19572	
	ThinkServer 2.5" 400G					0C19573	
	Hot-swap Disk drive for		ona Otato B	1100 10 0.0	TAL	0010070	
	2.5" SATA Hard Drive	2.5 Day					
	ThinkServer 2.5" 500G	R 7 2K Entern	isa SATA 60	Shne Hot S	wan Hard Drive	0C19495	
	ThinkServer 2.5" 1TB 7	•		•	•	0C19495	
	2.5" SAS Hard Drive	.zr Litterprise	OAIA GODP	S I IOI OWA	p riaid brive	0019490	
	ThinkServer 2.5" 300G	B 10K SAS 6G	hac Hot Sw	on Hard D	rivo	67Y2619	
	ThinkServer 2.5" 600G		•	•		67Y2621	
	ThinkServer 2.5" 900G		•	•		0A89409	
	ThinkServer 2.5" 300G		•	•		0C19494	
	2.5" SSD	D 1310 3A3 00	DPS 1101 OW	ар паги Б	ive	0019494	
	ThinkServer 2.5" 100G	R MI C SATA S	olid State D	rivo		0A89420	
	ThinkServer 2.5" 200G					0A89418	
	ThinkServer 2.5" 400G					0A89419	
	THIRINGEIVEL 2.3 4000	D WILO SAIA C	olid State D	1100			
	RAID adapter	RAID support	Device Support	Cache	Host bus type	Data transfer rates (per port)	Optional upgrades
	ThinkServer RAID 500 (LSI® SAS 9240-8i)	0, 1, 10	SAS/SATA		PCI Express	6Gb/s	optional upgrade key, add RAID 5, 50 support
RAID support	ThinkServer RAID 700 (LSI SAS 9260-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	512MB	PCI Express	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)
	ThinkServer RAID 710 (LSI SAS 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	1GB	PCI Express	6Gb/s	optional CacheVault flash cache with super capacitor optional CacheCade® Pro 2.0 optional FastPath
	RAID	controller and	RAID upgra	de options		Part Number	
	ThinkServer RAID 500	Adapter II				0A89464	
	ThinkServer RAID 500	Upgrade Key f	or Advanced	RAID		0A89407	
	ThinkServer RAID 700	Adapter II				0A89463	
AID options	ThinkServer RAID 700	Battery			·	67Y2647	
	ThinkServer RAID 710	Adapter				0C19489	
	ThinkServer RAID 710	Super Capacit	or Module (0	CacheVaul	t)	0C19490	
	ThinkServer RAID 710	FastPath Softv	vare Key			0C19491	
	ThinkServer RAID 710	CacheCade P	ro 2 0 Softwa	are Kev		0C19492	

ThinkServer® RD640 Optional Configurations - Network, System Management, Power Supply

	Network and HBA options	Part Number
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497
	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486
Network options	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483
	НВА	
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478
Coought entions	Trusted Platform Module options	Part Number
Security options	ThinkServer Trusted Platform Module	0A89428
Systems management	System Management options	Part Number
options	ThinkServer Management Module Premium	67Y2624
Davis a complex antique	Power supply options	Part Number
Power supply options	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack	4X20E54690

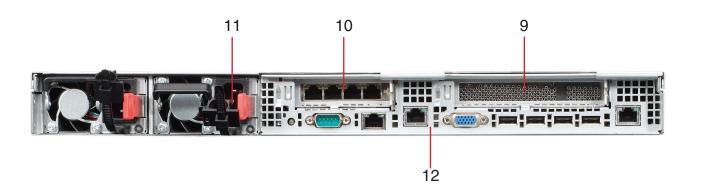
ThinkServer® RD540 Overview - Front and Rear



ThinkServer RD540 with 4x3.5" Disk Drive Bays



ThinkServer RD540 with 8x2.5" Disk Drive Bays



Front View

- 2. 3. 4. 5.

- Hot-swap disk drive bays
 Power Button with LED
 ID button with LED
 2 Network interface status LEDs
 2 USB 2.0
 Intelligent Diagnostics Module (optional)
 Optical (optional, for 3.5" disk drive bay model)
 VGA (for 2.5" disk drive bay model)

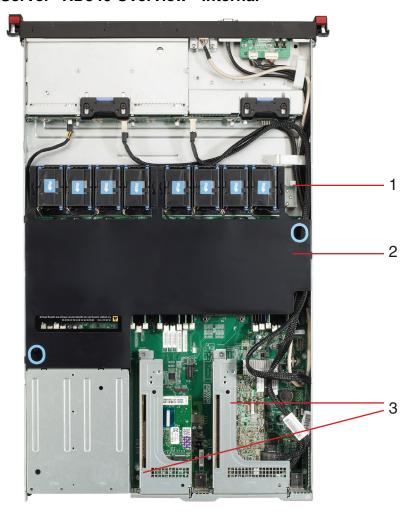
Rear View

- 9. 10.
- PCI Express slots 1* PCI Express slots 2* Hot-swap power supplies 11.
- Rear ports: 4 USB 2.0 12.

 - 1 serial 2 ethernet 1 RJ-45 (dedicate/share mgmt) 1 VGA

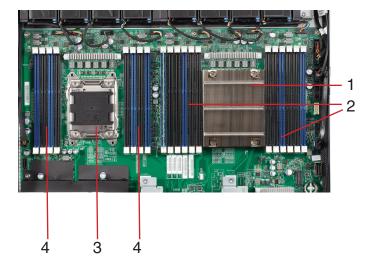
^{*}Adapters are optional

ThinkServer® RD540 Overview - Internal



Internal View

- Non-hot swap cooling fans
 Processors and memory DIMM sockets (under cooling shroud, see below)
 PCI Express slots (*Adapters are optional)



Processors and Memory DIMM Sockets (under cooling shroud)

- CPU 1
 12 Memory DIMM sockets for CPU 1
 CPU 2 (optional)
 8 Memory DIMM sockets for CPU 2 (for dual processors model)

ThinkServer® RD540 Platform Specifications

Components	Specifications			
Chipset	Intel C602J Chipset			
Mechanical	 1U rack 19"W x 28.9"D x 1.72 482.4mm W x 734mm 17kg (37.5 lb) when for 	n D x 43.6mm H (with rack hand)	es)	
Front ports	Two USB 2.0, one anal	og VGA DB-15 connector (for 8x	2.5" disk bays models)	
Rear ports		al (9-pin), two ethernet (RJ-45), pare mgmt), one analog VGA DB	-15 connector	
Expansion Slots		via two riser cards, riser card 1 fneight, PCI Express 3.0 x16 PCI Express 3.0 x8	0 00000 0	
Graphics	Onboard Aspeed AST2		essor, one VGA DB-15 on front (for	8x2.5" disk bays models),
Hot-swap parts	Disk drives, power supp		00 @ 001 12	
riot onap parto	Environmental	Energy Star Server 2.0 qual	lified	
	certifications	RoHS-compliant		
	EMC	FCC Class A, CSA CE		
	240VA	Supports		
	Temperature - operating	50 °F to 95 °F (10 °C to 35 °C)	
	Temperature - non operating (no package)	-10 °C to 60 °C		
	Temperature - non operating (with package)	-40 °C to 70 °C		
	Altitude - operating	Supported Altitude (unpressuri	zed): 0-10000ft (0-3048m)	
	Humidity - operating	8%~80%, non-condensing	,	
Safety, environment, and certifications	Humidity - non operating (no package)	8%~80%, non-condensing		
	Humidity - non operating (with package)	8%~90%, non-condensing		
			N 10 6 1	
		Category	Normal Configuration	High Performance Configuration
		CPU HDD	1 2× 000CB 2 F" CAC CCh/o	2
		Memory	2x 900GB 2.5" SAS 6Gb/s 1x 8GB 1600MHz LVRDIMM	8x 900GB 2.5" SAS 6Gb/s 20x 8GB 1600MHz LVRDIMM
	Acoustic noise	PCIe adapters		
	(idle/working mode)	PCIe adapters PSU	1350 1x 800W	1350 2x 800W
		RAID	RAID 700 adapter	RAID 700 adapter
		Sound Pressure (operating)	38.6 dB(A)	38.7 dB(A)
		Sound Pressure (idle)	39.0 dB(A)	40.0 dB(A)
			00.0 ab(/ i)	10.0 45(71)

ThinkServer® RD540 (70AT) - TopSeller

Type- model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt		Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AT0004UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID710	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0008UX	1xE5-2603 v2 4C/1.8GHz/ 10MB/1333MHz	4GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0009UX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000BUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000CUX	1xE5-2650L v2 10C/1.7GHz/ 25MB/1600MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT000AUX	1xE5-2609 v2 4C/2.5GHz/ 10MB/1333MHz	8GBx1	4x3.5"	RAID700	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3
70AT0006UX	2xE5-2630 v2 6C/2.6GHz/ 15MB/1600MHz	16Gx4	4x3.5"	RAID700 +Battery	3x500GB 3.5" SATA(RAID5)	DVD	No	iKVM	350T4	Cable	800Wx2	No	1
70AT0005US	20MB/1866MHz		4x3.5"	+CacheCade	2x400GB SSD(cache,RAID1) +2x3TB 3.5" SAS (RAID1)		No	iKVM	X520SR2	Cable	800Wx2	Standard	1

^{2. 8} x 2.5" disk bays models do not support optical bay, external USB optical is needed Model in italics is Global

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
 For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chips	set, two L	GA2011	sockets	for processors	2U Rack top
Memory type	1600MHz, RDIMI	M and LV	RDIMM	, DDR3,	4-channel per processor, 240-pin	B B B
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2
Memory protection	ECC, memory mi	irroring, n	nemory s	paring		r sup
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk d	rive bays	3	
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Memory sockets Society Sockets Sockets Society Society Society Society Society Society Society Society Society
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	lemory ockets CPU1 Alemory ockets CPU2 CREATER OF THE OCKETS COLOR
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan fan
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor optional CacheCade® Pro 2.0 optional FastPath key	Front - 3.5" bay
	* All RAID adapt ** RAID 50 and 6				TA drives ' disk bays models	Front - 2.5" bay
Optical (optional)					ROM, slim, SATA interface onal external USB optical	
Onboard network	Three onboard G Two Gigabit Ethe	igabit Eth	ernet po by Intel	orts (RJ-4 i350;	dedicate/share management	Rear
Discrete network (optional)	Intel EthernetIntel EthernetIntel 10GbpsIntel 10Gbps	Server A Server A Ethernet Ethernet Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 32 Serve 32 Serve adule for	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PClex8 1-PClex16 2
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in				category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)
Security features	Power-on passwo Trusted Platform					Rear: 4 USB 2.0 1 serial (9-pin)
Systems management	 Onboard Aspetite IPMI 2.0-compoptional Think 	eed AST2 pliant bas Server M	2300 gra eboard r anagem	phics/ma nanagen ent Modu	inagement processor, nent controller (BMC); ule Premium for iKVM functions	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA
(Optional iKVM)	 Lenovo Smart 	tGrid Mar	nager		power, ID, network, system	Expansion Slots
Cable mgmt (opt)	 ThinkServer E Optional cable m 					Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8
	<u>'</u>				um, rear access, hot-swap,	Mechanical
Power supply	80 PLUS® Gold o	jualified, i	edundar	nt with tw		• 1U rack
Environmental certifications	 Energy Star S RoHS-complia More environmer ThinkServer RD540 Pl 	ant ntal inform	nation an		ements, see	19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured

ThinkServer® RD540 (70AU) - TopSeller

		1600MHz										Windows Server	Base on-site
Type- model ¹	Intel Xeon	LV RDIMM		RAID controller	Stavana	Slim	Intelligent		Discrete	Cable		2012 Preloaded	warranty
moder	Processor(s)	memory	Bays	controller	Storage	optical	Diagnostics	mgmt	ethernet	mgmt	P50	Preioaded	(-year)
70AU000CUX	1xE5-2620 v2 6C/2.1GHz/	8GBx1	8x2.5"	RAID500	Open	No	No	IPMI	No	No	800Wx1	No	3
704000000	15MB/1600MHz	OGBAT	0,2.5	TIAIDSOO	Open	INO	INO	" '''	140	140	OOOVVXI	110	"
	1xE5-2609 v2												
70AU000SUX	4C/2.5GHz/	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
	10MB/1333MHz												
	1xE5-2620 v2												
70AU000TUX	6C/2.1GHz/	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
	15MB/1600MHz												
	1xE5-2640 v2									١			_
	8C/2GHz/	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
	20MB/1600MHz												
70AU000VUX	1xE5-2650 v2 8C/2.6GHz/	8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
	20MB/1866MHz	OGDX1	0,2.5	HAID/00	Open	INO	INO	IF IVII	INO	INO	OUUVVXI	INO	"
	1xE5-2690 v2												
70AU000WUX		8GBx1	8x2.5"	RAID700	Open	No	No	IPMI	No	No	800Wx1	No	3
	25MB/1866MHz				5,50						22244		_
# ## -	. 01 1 1 0 0	0.5" " 1.1					,						

^{1.} Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
 For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top				
Memory type	1600MHz, RDIM	M and LV	RDIMM	, DDR3,	4-channel per processor, 240-pin					
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2				
Memory protection	ECC, memory m	irroring, n	nemory	sparing		r sup				
Disk drive bays	Supports 4 x 3.5	" or 8 x 2.	5" disk c	Irive bays	8					
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades					
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Memory Societs Society				
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan				
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor optional CacheCade® Pro 2.0 optional FastPath key	Front - 3.5" bay output filisk disk disk disk disk				
	* All RAID adap	ters supp 30 are sup	orts SAS	and SA on 8x2.5"	TA drives disk bays models	Front - 2.5" bay				
Optical (optional)	4x3.5" bay mode 8x2.5" bay mode				disk disk					
Onboard network	Three onboard G Two Gigabit Ethe one Gigabit Ethe	igabit Eth	nernet po s by Intel	orts (RJ-4 ⊢i350;	Rear					
Discrete network (optional)	Intel EthernetIntel EthernetIntel 10GbpsIntel 10Gbps	Server A Server A Ethernet Ethernet Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 32 Serve 32 Serve 3 dule for	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PClex8 [1-PClex16]				
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in	selected	models, iling com	ponent o	category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)				
Security features	Power-on passwo Trusted Platform					Rear: 4 USB 2.0 1 serial (9-pin)				
Systems management	Onboard Aspelled IPMI 2.0-compoptional Think	eed AST2 pliant bas Server M	2300 gra eboard i anagem	phics/ma managen ent Modu	nagement processor, nent controller (BMC); ale Premium for iKVM functions power, ID, network, system	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA				
(Optional iKVM)	Lenovo SmarThinkServer E	tGrid Mar	nager		•	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16				
Cable mgmt (opt)	Optional cable m					Slot 2: Low Profile, PCI Express 3.0 x8				
Power supply	One or two 800 v	vatts stan	dard, tw	o maximu	um, rear access, hot-swap, o power supplies	Mechanical				
Environmental certifications	Energy Star S RoHS-complis More environmer ThinkServer RD540 Pt	Server 2.0 ant	qualifie	d		1U rack 19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured				

ThinkServer® RD540 (70AU) - TopSeller - II

Type-	Intel Xeon	1600MHz LV RDIMM	Disk	RAID		Slim	Intelligent	Pomoto	Discrete	Cable		Windows Server 2012	Base on-site warranty
model ¹	Processor(s)	memory	Bays	controller	Storage		Diagnostics		ethernet	mgmt	PSU	Preloaded	
70AU000XUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID710 +CacheVault	Open	No	No	iKVM	No	No	800Wx2	No	3
70AU000YUX	1xE5-2670 v2 10C/2.5GHz/ 25MB/1866MHz	8GBx1	8x2.5"	RAID710 +FastPath	Open	No	No	iKVM	No	No	800Wx2	No	3
70AU000FUX	2xE5-2690 v2 10C/3GHz/ 25MB/1866MHz	4GBx2	8x2.5"	RAID700	2x500GB 2.5" SATA(RAID1)	No	No	IPMI	350T2	No	800Wx2	No	1
70AU000DUS	2xE5-2660 v2 10C/2.2GHz/ 25MB/1866MHz	8GBx20	8x2.5"	RAID500 +upgrade	2x300GB 2.5" SAS(RAID1) +6x300GB 2.5" SAS(RAID50)	No	No	iKVM	X520SR2	Cable	800Wx2	Standard	1
70AU000EUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	16Gx4	8x2.5"	RAID710 +FastPath	6x100GB SSD(RAID50)	No	No	IPMI	350T4	No	800Wx2	No	1

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
 For optional configurations of ThinkServer RD540, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chips	set, two L	GA2011	sockets	for processors	2U Rack top				
Memory type	1600MHz, RDIMI	M and LV	RDIMM	, DDR3,	4-channel per processor, 240-pin					
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2				
Memory protection	ECC, memory mi	irroring, n	nemory s	paring		r sup				
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk d	rive bays	3					
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Maria Social Soc				
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Memory sockets CPU1 Sockets So				
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan fan				
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor optional CacheCade® Pro 2.0 optional FastPath key	Front - 3.5" bay output flisk disk disk disk				
		60 are sup	ported o	on 8x2.5'	disk bays models	Front - 2.5" bay				
Optical (optional)					ROM, slim, SATA interface onal external USB optical	Gisk disk disk disk disk disk disk disk disk disk disk disk				
Onboard network	Three onboard G Two Gigabit Ethe one Gigabit Ethe	ligabit Éth rnet ports	ernet po by Intel	orts (RJ-4 i350;	Rear					
Discrete network (optional)	 Intel Ethernet Intel Ethernet Intel 10Gbps Intel 10Gbps Intel 10Gbps Intel 10Gbps Intel 10Gbps 	Server A Ethernet 2 Ethernet 2 Ethernet	dapter I3 X520-SF X520-DA Fiber Mo	350-T4 32 Serve 32 Serve dule for	r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16 1-PC				
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in	ndicate fai	ling com	ponent o	<u> </u>	Front: 2 USB 2.0				
Security features		Module (* es not inc	TCG 1.2 cluded Ti	-complia P <i>M, addi</i>		1 VGA (for 8x2.5" disk bays models) Rear: 4 USB 2.0 1 serial (9-pin) 2 ethernet (RJ-45)				
Systems management	IPMI 2.0-compoptional Think	pliant bas Server M	eboard r anagem	nanagen ent Modu	nlagement processor, nent controller (BMC); ule Premium for iKVM functions power, ID, network, system	1 RJ-45 (dèdicate/share mgmt) 1 VGA Expansion Slots				
(Optional iKVM)	 Lenovo Smart 	tGrid Mar	nager		•	Slot 1: half-length, full-height, PCI Express 3.0 x16				
Cable mgmt (opt)	 ThinkServer E Optional cable m 					Slot 2: Low Profile, PCI Express 3.0 x8				
Power supply	One or two 800 v	vatts stan	dard, two	o maximi	um, rear access, hot-swap,	• 1U rack				
Environmental certifications	Energy Star S RoHS-complia More environmer ThinkServer RD540 Pl	Server 2.0 ant	qualified	t	19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured					

^{1.} Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

ThinkServer® RD540 (70AR)

Type- model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bavs	RAID controller	Storage	Slim	Intelligent Diagnostics		Discrete ethernet	Cable		Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AR0000UX	1xE5-2620 v2 6C/2.1GHz/	8GBx1	4x3.5"	RAID500		DVD±RW		IPMI	No		800Wx1	No	3
70AR0001UX	15MB/1600MHz 1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	4x3.5"	RAID500	Open	DVD±RW	No	IPMI	No	No	800Wx1	No	3

Model in italics is Global 2. 8 x 2.5" disk bays models do not support optical bay, external USB optical is needed

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
 For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	GA2011	sockets	for processors	2U Rack top				
Memory type	1600MHz, RDIM	M and LV	RDIMM	, DDR3,	4-channel per processor, 240-pin					
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2 Riser card 1				
Memory protection	ECC, memory m	irroring, n	nemory s	sparing		r sup				
Disk drive bays	Supports 4 x 3.5	or 8 x 2.	5" disk c	rive bays	3					
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades	Mar Society So				
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	ookets CPU1 Sockets CPU1 CPU1 Sockets CPU1 Sockets CPU1 Sockets Sockets CPU1 Sockets Sock				
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan fan				
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor optional CacheCade® Pro 2.0 optional FastPath key	Front - 3.5" bay © □ :::: optical disk disk disk				
		30 are sup	ported o	on 8x2.5'	disk bays models	Front - 2.5" bay				
Optical (optional)	4x3.5" bay mode 8x2.5" bay mode				Glisk disk disk Glisk disk disk					
Onboard network	Three onboard G Two Gigabit Ethe one Gigabit Ethe	igabit Éth	ernet po	orts (RJ-4 I i350;	Rear					
Discrete network (optional)	Intel EthernetIntel EthernetIntel 10GbpsIntel 10Gbps	Server A Server A Ethernet Ethernet Ethernet	dapter lå dapter lå X520-SF X520-D <i>F</i> Fiber Mo	350-T2 350-T4 R2 Serve A2 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCie x8 11-PCie x16				
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in				category,	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)				
Security features	Power-on passwo Trusted Platform					Rear: 4 USB 2.0 1 serial (9-pin)				
Systems management	Onboard Aspelled IPMI 2.0-compoptional Think	eed AST2 pliant bas Server M	2300 gra eboard i anagem	phics/ma managen ent Modi	nagement processor, nent controller (BMC); ale Premium for iKVM functions power, ID, network, system	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA				
(Optional iKVM)	 Lenovo Smar 	tGrid Mar	nager		•	Expansion Slots				
Cable mgmt (opt)	 ThinkServer E Optional cable m 					Slot 1: half-length, full-height, PCI Express 3.0 x16 Slot 2: Low Profile, PCI Express 3.0 x8				
Power supply	One or two 800 v	vatts stan	dard. tw	o maximi	um, rear access, hot-swap, o power supplies	Mechanical				
Environmental certifications	Energy Star S RoHS-complia More environmer ThinkServer RD540 Pt	Server 2.0 ant	qualifie	d		1U rack 19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured				

Personal Systems Reference (PSREF)

ThinkServer® RD540 (70AS)

Type- model ¹	Intel Xeon Processor(s)	1600MHz LV RDIMM memory	Disk Bays	RAID controller	Storage	Slim optical	Intelligent Diagnostics		Discrete ethernet	Cable mgmt	l	Windows Server 2012 Preloaded	Base on-site warranty (-year)
70AS0008UX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID500	Open	No	No	IPMI	No	No	800Wx1	No	3
70AS000GUX	1xE5-2620 v2 6C/2.1GHz/ 15MB/1600MHz	8GBx1	8x2.5"	RAID700	Open	No	No	iKVM	No	No	800Wx1	No	3

^{2. 8} x 2.5" disk bays models do not support optical bay, external USB optical is needed 1. Model in italics is Global

- For detailed platform specifications, please see <u>ThinkServer RD540 Platform Specifications</u> sheets
 For optional configurations of <u>ThinkServer RD540</u>, please see <u>ThinkServer RD540 Optional Configurations sheets</u>

Chipset	Intel C602J Chip	set, two L	.GA2011	sockets	for processors	2U Rack top				
Memory type	1600MHz, RDIM	M and LV	RDIMM	, DDR3,	4-channel per processor, 240-pin	□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □				
Memory DIMMs	Twenty DIMM so	ckets (12	sockets	for CPU	1, 8 sockets for CPU 2)	Power supply Power supply Power supply Riser card 2 Riser card 2				
Memory protection	ECC, memory m	irroring, n	nemory s	paring		r sup				
Disk drive bays	Supports 4 x 3.5	" or 8 x 2.	5" disk d	rive bays	6					
	RAID adapter*	RAID support	Cache	Transfer rates	Optional upgrades					
	RAID 500 (LSI® 9240-8i)	0, 1, 10		6Gb/s	optional upgrade key, add RAID 5, 50 support	Memory Societs Societ Societs Societ Socie				
DAID	RAID 700 (LSI 9260-8i)	0, 1, 10, 5, 50, 6, 60	512MB	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)	fan fan fan fan fan fan				
RAID support	RAID 710 (LSI 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	1GB	6Gb/s	optional CacheVault (CV) flash cache with super capacitor optional CacheCade® Pro 2.0 optional FastPath key	Front - 3.5" bay				
		30 are sup	oported o	on 8x2.5'	' disk bays models	Front - 2.5" bay				
Optical (optional)	4x3.5" bay mode 8x2.5" bay mode	ls: one D\	/D±RW (ical bay	or DVD F use optic	ROM, slim, SATA interface onal external USB optical	disk disk				
Onboard network	Three onboard G Two Gigabit Ethe one Gigabit Ethe	ligabit Éth rnet ports	nernet po s by Intel	orts (RJ-4 i350;	Rear					
Discrete network (optional)	Intel EthernetIntel EthernetIntel 10GbpsIntel 10Gbps	Server A Server A Ethernet Ethernet Ethernet	dapter 13 dapter 13 X520-SF X520-DA Fiber Mo	350-T2 350-T4 32 Serve 32 Serve	r adapter r adapter X520-DA2 adapter	PSU PSU 2-PCle x8 1-PCle x16 1				
Intelligent Diagnostics Module (IDM, opt)	Supports IDM on IDM LED lights in	selected	models,		•	Front and Rear Ports Front: 2 USB 2.0 1 VGA (for 8x2.5" disk bays models)				
Security features	Power-on passwo Trusted Platform					Rear: 4 USB 2.0 1 serial (9-pin)				
Systems management	Onboard Aspetite IPMI 2.0-compoptional Think	eed AST2 pliant bas Server M	2300 gra eboard r anagem	phics/ma nanagen ent Modu	nnagement processor, nent controller (BMC); ule Premium for iKVM functions power, ID, network, system	2 ethernet (RJ-45) 1 RJ-45 (dedicate/share mgmt) 1 VGA				
(Optional iKVM)	Lenovo SmarThinkServer E	tGrid Mar	nager		•	Expansion Slots Slot 1: half-length, full-height, PCI Express 3.0 x16				
Cable mgmt (opt)	Optional cable m					Slot 2: Low Profile, PCI Express 3.0 x8				
Power supply	One or two 800 v	vatts stan	dard, two	maximi	um, rear access, hot-swap, o power supplies	Mechanical • 1U rack				
Environmental certifications	Energy Star S RoHS-complia More environmer ThinkServer RD540 Pt	Server 2.0 ant	qualified	t		TO rack 19"W x 28.9"D x 1.72"H (with rack handles) 482.4mm W x 734mm D x 43.6mm H (with rack handles) 17kg (37.5 lb) when fully configured				

ThinkServer® RD540 Optional Configurations - Processor and Memory

Rack kit	Included in models													
Processor	Two LGA2011 socked up to 8 cores (E5-26 two QPI links up to 8	800 se 8.0GT	ries)/12 c /s each,	ores (E5-2	600 v2 seri	es),	Keon E5-2	2600 or Xec	on E5-2600 v	2 families,				
	up to 20MB (E5-260 integrated 4-channe	IO seri	es)/30MB 3 memor	(E5-2600 / controlle:	v2 series) (rup to 1600	cache, MHz (F	5-2600 se	ries)/1866N	/Hz (E5-2600	v2 series				
	The following proces				•	/WIL 12 (L	0 2000 00	1100)/ 10001		v2 001100,				
	The lene wing proces			avanabio.	Processors	s Specif	icatione*							
	Processor Number		# of Threads	Clock Speed	Max Turbo Frequency	Cacho	QPI Speed	Max TDP	Memory Speed	Part Number				
	Intel Xeon E5-2600			- Opoou	,quooy	1	_ opoou	1		1				
	Xeon E5-2680	8	16	2.7 GHz	3.5 GHz	20MB	8 GT/s	130 W	DDR3-1600	0A89430				
	Xeon E5-2670	8	16	2.6 GHz	3.3 GHz	20MB	8 GT/s	115 W	DDR3-1600					
	Xeon E5-2667	6	12	2.9 GHz		15MB		130 W	DDR3-1600					
	Xeon E5-2665	8	16	2.4 GHz	3.1 GHz	20MB	8 GT/s	115 W	DDR3-1600	0A89432				
	Xeon E5-2660	8	16	2.2 GHz	3 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89462				
	Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20MB	8 GT/s	70 W	DDR3-1600	0A89434				
	Xeon E5-2650	8	16	2 GHz	2.8 GHz	20MB	8 GT/s	95 W	DDR3-1600	0A89433				
	Xeon E5-2643	4	8	3.3 GHz	3.5 GHz	10MB	8 GT/s	130 W	DDR3-1600					
	Xeon E5-2640	6	12	2.5 GHz	3 GHz	15MB	7.2 GT/s	95 W	DDR3-1333	0A89436				
	Xeon E5-2630L	6	12	2 GHz	2.5 GHz		7.2 GT/s	60 W	DDR3-1333					
	Xeon E5-2630	6	12	2.3 GHz	2.8 GHz		7.2 GT/s	95 W	DDR3-1333					
	Xeon E5-2620	6	12	2 GHz	2.5 GHz		7.2 GT/s	95 W	DDR3-1333					
	Xeon E5-2609	4	4	2.4 GHz			6.4 GT/s	80 W	DDR3-1066					
	Xeon E5-2603	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1066	0A89442				
	Intel Xeon E5-2600						0.07/	400144	5555					
	Xeon E5-2697 v2	12	24	2.7 GHz	1	30MB		130 W	DDR3-1866					
	Xeon E5-2695 v2	12	24	2.4 GHz	3.2 GHz	30MB	8 GT/s	115 W	DDR3-1866					
	Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz 3.6 GHz	25MB		130 W	DDR3-1866 DDR3-1866					
	Xeon E5-2680 v2 Xeon E5-2670 v2	10	20	2.8 GHz 2.5 GHz	3.6 GHz	25MB 25MB		115 W	DDR3-1866					
	Xeon E5-2667 v2	8	16	3.3 GHz		25MB		115 W 130 W	DDR3-1866					
	Xeon E5-2660 v2	10	20	2.2 GHz	3 GHz	25MB	1	95 W	DDR3-1866					
	Xeon E5-2650 v2	8	16	2.6 GHz		20MB		95 W	DDR3-1866					
	Xeon E5-2650L v2	10	20	1.7 GHz	2.1 GHz		7.2 GT/s	70 W	DDR3-1600					
	Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz		7.2 GT/s	95 W	DDR3-1600					
	Xeon E5-2630 v2	6	12	2.6 GHz	3.1 GHz		7.2 GT/s	80 W	DDR3-1600					
	Xeon E5-2630L v2	6	12	2.4 GHz			7.2 GT/s	60 W	DDR3-1600					
	Xeon E5-2620 v2	6	12	2.1 GHz			7.2 GT/s	80 W	DDR3-1600					
	Xeon E5-2609 v2	4	4	2.5 GHz			6.4 GT/s	80 W	DDR3-1333	1				
	Xeon E5-2603 v2	4	4	1.8 GHz		10MB	6.4 GT/s	80 W	DDR3-1333					
	Notes: All processors specifica Intel may update this ir									nerein is pro				
Memory type	1600MHz, RDIMM a	and LV	RDIMM,	DDR3, 4-0	channel per	process	or, 240-pii	n						
Memory DIMM sockets	twenty DIMM socket	ts (12	sockets fo	or CPU 1, 8	3 sockets fo	r CPU 2)							
lemory capacity	Up to 320GB (16GB	3x20)												
lemory protection	ECC, memory mirro		memory s	paring										
			Mer	nory optior	าร			Part Numb						
	ThinkServer 4GB D	DR3L	-1600MH	z (1RX8) F	RDIMM			0C195						
								0C195						
Memory options	ThinkServer 8GB DDR3L-1600MHz (2RX8) RDIMM													
	By default, the voltageWhen using Intel Xe	ge of Li on E5	/ RDIMM is 2600 series	, ,										

ThinkServer® RD540 Optional Configurations - Storage and RAID

Disk drive bays	Supports one of the folic 8 x 3.5" SAS/SATA dis 8 x 2.5" SAS/SATA dis 16 x 2.5" SAS/SATA o	sk drive bays sk drive bays										
		Disk dri	ive options			Part Number						
	Hot-swap Disk drive for	3.5" hay				Number						
	3.5" SATA Hard Drive	0.5 bay										
	ThinkServer 3.5" 500GE	2 7 9K Entern	rico SATA 60	Shac Hot S	wan Hard Drive	0A89473						
	ThinkServer 3.5" 1TB 7					0A89473						
	ThinkServer 3.5" 2TB 7	· '			•	0A89474 0A89475						
	ThinkServer 3.5" 3TB 7	•			•	0A89475						
	ThinkServer 3.5" 4TB 7				•	0A09477 0C19520						
	3.5" SAS Hard Drive	.ZK Enterprise	SAIA GGUP	is not swa	p natu brive	00 19520						
		OK SAS SChr	an Hat Cwan	Hard Driv	2	0010530						
	ThinkServer 3.5" 1TB 7					0C19530						
	ThinkServer 3.5" 2TB 7					0C19531						
	ThinkServer 3.5" 3TB 7					0C19532						
	ThinkServer 3.5" 300GE		•	<u> </u>		67Y2616						
		ThinkServer 3.5" 600GB 15K SAS 6Gbps Hot Swap Hard Drive 67Y2618 2.5" SSD for 3.5" disk bay										
isk drive options			2-11-1-01-1-2		112.1	0046574						
ao optiono	ThinkServer 2.5" 100GE					0C19571						
	ThinkServer 2.5" 200GE	0C19572										
	ThinkServer 2.5" 400GE	0C19573										
	Hot-swap Disk drive for											
	2.5" SATA Hard Drive											
	ThinkServer 2.5" 500GE											
	ThinkServer 2.5" 1TB 7	.2K Enterprise	0C19496									
	2.5" SAS Hard Drive											
	ThinkServer 2.5" 300GE	3 10K SAS 6G	67Y2619									
	ThinkServer 2.5" 600GE	3 10K SAS 6G	67Y2621									
	ThinkServer 2.5" 900GE	3 10K SAS 6G	0A89409									
	ThinkServer 2.5" 300GE	3 15K SAS 6G	0C19494									
	2.5" SSD											
	ThinkServer 2.5" 100GE	B MLC SATA S	0A89420									
	ThinkServer 2.5" 200GE	B MLC SATA S	0A89418									
	ThinkServer 2.5" 400GE	B MLC SATA S	Solid State D	rive		0A89419						
	RAID adapter	RAID support	Device Support	Cache	Host bus type	Data transfer rates (per port)	Optional upgrades					
	ThinkServer RAID 500 (LSI® SAS 9240-8i)	0, 1, 10	SAS/SATA		PCI Express	6Gb/s	optional upgrade key, add RAID 5, 50 support					
RAID support	ThinkServer RAID 700 (LSI SAS 9260-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	512MB	PCI Express	6Gb/s	optional intelligent Battery Backup Unit (iBBU08)					
	ThinkServer RAID 710 (LSI SAS 9270CV-8i)	0, 1, 10, 5, 50, 6, 60	SAS/SATA	1GB	PCI Express	6Gb/s	optional CacheVault flash cache with super capacitor optional CacheCade® Pro 2.0 optional FastPath					
	RAID	controller and	RAID upgra	de options		Part Number						
	ThinkServer RAID 500	Adapter II				0A89464						
	ThinkServer RAID 500	Upgrade Key f	or Advanced	I RAID		0A89407						
	ThinkServer RAID 700	Adapter II				0A89463						
RAID options	ThinkServer RAID 700	Battery				67Y2647						
	ThinkServer RAID 710		0C19489									
	ThinkServer RAID 710	•	0C19490									
	ThinkServer RAID 710	· ·	0C19491									
		CacheCade P	0C19492									

ThinkServer® RD540 Optional Configurations - Network, System Management, Power Supply

	· · · · · · · · · · · · · · · · · · ·	-
	Network and HBA options	Part Number
	ThinkServer 1Gbps Ethernet I350-T2 Server Adapter by Intel	0C19506
	ThinkServer 1Gbps Ethernet I350-T4 Server Adapter by Intel	0C19507
	Lenovo 10Gbps Ethernet X540-T2 Server Adapter by Intel	0C19497
	Lenovo 10Gbps Ethernet X520-DA2 Server Adapter by Intel	0C19486
Network options	Lenovo 10Gbps Ethernet Fiber Module by Intel	0C19488
	Lenovo 10Gbps Ethernet X520-SR2 Server Adapter by Intel	0C19487
	ThinkServer QLE8242-CU-CK Dual Port CNA by QLogic	0C19483
	НВА	
	ThinkServer LPe1250 Single Port 8Gb Fibre Channel HBA by Emulex	0C19476
	ThinkServer LPe12002 Dual Port 8Gb Fibre Channel HBA by Emulex	0C19478
Coought ontions	Trusted Platform Module options	Part Number
Security options	ThinkServer Trusted Platform Module	0A89428
Systems management	System Management options	Part Number
options	ThinkServer Management Module Premium	67Y2624
Danier amalic antique	Power supply options	Part Number
Power cumply ontions	ThinkServer 800W Gold Hot Swap Redundant Power Supply for Rack	4X20E54690

ThinkServer® - TopSeller Services

The TopSeller™ services are designed to make selling the popular services with TopSeller systems faster and easier. Channel partners should always use TopSeller services with TopSeller systems. TopSeller services part numbers typically provide enhanced discounts and incentives for channel partners. The TopSeller service delivered to the customer is identical to the service delivered using a standard service part number. In situations where a desired service is not offered under a TopSeller service part number or the sale requires a special bid process, use available standard service part numbers.

TopSeller services should always be offered by channel business partners with TopSeller hardware, unless the sale requires special bid pricing or the desired service is not offered as a TopSeller service part.

For more information see:

http://www2.partnerinfo.lenovo.com/partners/us/resources/salestoolkit.shtml

TopSeller service upgrade options for ThinkServer

ThinkServer with 1-year Onsite warranty

04W8714 3-year Onsite 9x5 Next Business Day 4-year Onsite 9x5 Next Business Day 04W8715

ThinkServer with 3-year Onsite warranty

4-year Onsite 9x5 Next Business Day 04W8716

ThinkServer TS series with 1-year Onsite warranty

3-year Onsite 9x5x4 5WS0D73794 3-year Onsite 24x7x4 5WS0D73788

ThinkServer TS series with 3-year Onsite warranty

3-year Onsite 9x5x4 5WS0D73790 3-year Onsite 24x7x4 5WS0D73793

ThinkServer RD series with 3-year Onsite warranty

3-year Onsite 9x5x4 3-year Onsite 24x7x4 5WS0D73787 5WS0D73789 4-year Onsite 9x5x4 5WS0D73791 5WS0D73792 4-year Onsite 24x7x4

TopSeller Priority Support

24x7 support with priority routing and advanced level technicians

ThinkServer with 1-year Onsite warranty

Add to 3-year warranty coverage - 3-year Priority Support* 04W8723 Add to 4-year warranty coverage - 4-year Priority Support* 04W8724

ThinkServer with 3-year Onsite warranty

Add to 4-year warranty coverage - 4-year Priority Support* 04W8724

* Covered machine must have concurrent warranty coverage.

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool:

http://www.lenovo.com/services_warranty/us/en/locator.html Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

Lenovo® Services for ThinkServer® - TS Series with 1-year Base Warranty

Partial list of Lenovo Services for ThinkServer TS Series

For more information see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html

For more information see: http://www.lenovo.com/services_warra	anty/us/en/lenovo-warranty.h
Upgrade options for 1-year base warranty models	
Next Business Day (NBD) 9x5	
3-year Onsite Next Business Day 9x5	45K4055
4-year Onsite Next Business Day 9x5	51J0723
5-year Onsite Next Business Day 9x5	51J0725
Next Business Day 9x5 + KYD (KYD: Keep Your Drive)	
3-year Onsite NBD + 3-year KYD	0C08043
4-year Onsite NBD + 4-year KYD	0C08055
5-year Onsite NBD + 5-year KYD	0C08061
9x5x4 (x4: 4-hour Onsite Response Time)	
1-year Onsite 9x5x4	0C08028
3-year Onsite 9x5x4	0C08039
4-year Onsite 9x5x4	0C08051
5-year Onsite 9x5x4	0C08059
9x5x4 + KYD	
1-year Onsite 9x5x4 + 1-year KYD	0C08029
3-year Onsite 9x5x4 + 3-year KYD	0C08040
4-year Onsite 9x5x4 + 4-year KYD	0C08052
5-year Onsite 9x5x4 + 5-year KYD	0C08060
24x7x8 (x8: 8-hour Onsite Response Time)	
1-year Onsite 24x7x8	0C08024
3-year Onsite 24x7x8	0C08035
4-year Onsite 24x7x8	0C08047
5-year Onsite 24x7x8	0C08057
24x7x8 + KYD	
1-year Onsite 24x7x8 + 1-year KYD	0C08025
3-year Onsite 24x7x8 + 3-year KYD	0C08036
4-year Onsite 24x7x8 + 4-year KYD	0C08048
5-year Onsite 24x7x8 + 5-year KYD	0C08058
24x7x4	
3-year Onsite 24x7x4	5WS0E37825
4-year Onsite 24x7x4	5WS0E37824
5-year Onsite 24x7x4	5WS0E37826
	3VV30L37020
Next Business Day 9x5 + Priority Technical Support	0C08032
1-year Onsite NBD + 1-year Priority	0000032
Next Business Day 9x5 + Priority Technical Support + KYD	
4-year Onsite NBD + 4-year Priority + 4-year KYD	0C08056
9x5x4 + Priority Technical Support	
1-year Onsite 9x5x4 + 1-year Priority	0C08030
3-year Onsite 9x5x4 + 3-year Priority	0C08041
4-year Onsite 9x5x4 + 4-year Priority	0C08053
9x5x4 + Priority Technical Support + KYD	
1-year Onsite 9x5x4 + 1-year Priority + 1-year KYD	0C08031
3-year Onsite 9x5x4 + 3-year Priority + 3-year KYD	0C08042
4-year Onsite 9x5x4 + 4-year Priority + 4-year KYD	0C08054
24x7x8 + Priority Technical Support	
1-year Onsite 24x7x8 + 1-year Priority	0C08026
3-year Onsite 24x7x8 + 3-year Priority	0C08037
4-year Onsite 24x7x8 + 4-year Priority	0C08049
	0000043
24x7x8 + Priority Technical Support + KYD 1-year Onsite 24x7x8 + 1-year Priority + 1-year KYD	0C08027
3-year Onsite 24x7x8 + 3-year Priority + 3-year KYD	0C08038
4-year Onsite 24x7x8 + 4-year Priority + 4-year KYD	000000
	0C08050
	0C08050
24x7x4 + Priority Technical Support	
24x7x4 + Priority Technical Support 1-year Onsite 24x7x4 + 1-year Priority	0C08022
24x7x4 + Priority Technical Support 1-year Onsite 24x7x4 + 1-year Priority 3-year Onsite 24x7x4 + 3-year Priority	0C08022 0C08033
24x7x4 + Priority Technical Support 1-year Onsite 24x7x4 + 1-year Priority 3-year Onsite 24x7x4 + 3-year Priority 4-year Onsite 24x7x4 + 4-year Priority	0C08022
24x7x4 + Priority Technical Support 1-year Onsite 24x7x4 + 1-year Priority 3-year Onsite 24x7x4 + 3-year Priority 4-year Onsite 24x7x4 + 4-year Priority 24x7x4 + Priority Technical Support + KYD	0C08022 0C08033 0C08045
24x7x4 + Priority Technical Support 1-year Onsite 24x7x4 + 1-year Priority 3-year Onsite 24x7x4 + 3-year Priority 4-year Onsite 24x7x4 + 4-year Priority 24x7x4 + Priority Technical Support + KYD 1-year Onsite 24x7x4 + 1-year Priority + 1-year KYD	0C08022 0C08033 0C08045
24x7x4 + Priority Technical Support 1-year Onsite 24x7x4 + 1-year Priority 3-year Onsite 24x7x4 + 3-year Priority 4-year Onsite 24x7x4 + 4-year Priority 24x7x4 + Priority Technical Support + KYD 1-year Onsite 24x7x4 + 1-year Priority + 1-year KYD 3-year Onsite 24x7x4 + 3-year Priority + 3-year KYD	0C08022 0C08033 0C08045 0C08023 0C08034
24x7x4 + Priority Technical Support 1-year Onsite 24x7x4 + 1-year Priority 3-year Onsite 24x7x4 + 3-year Priority 4-year Onsite 24x7x4 + 4-year Priority 24x7x4 + Priority Technical Support + KYD 1-year Onsite 24x7x4 + 1-year Priority + 1-year KYD	0C08022 0C08033 0C08045
24x7x4 + Priority Technical Support 1-year Onsite 24x7x4 + 1-year Priority 3-year Onsite 24x7x4 + 3-year Priority 4-year Onsite 24x7x4 + 4-year Priority 24x7x4 + Priority Technical Support + KYD 1-year Onsite 24x7x4 + 1-year Priority + 1-year KYD 3-year Onsite 24x7x4 + 3-year Priority + 3-year KYD	0C08022 0C08033 0C08045 0C08023 0C08034
24x7x4 + Priority Technical Support 1-year Onsite 24x7x4 + 1-year Priority 3-year Onsite 24x7x4 + 3-year Priority 4-year Onsite 24x7x4 + 4-year Priority 24x7x4 + Priority Technical Support + KYD 1-year Onsite 24x7x4 + 1-year Priority + 1-year KYD 3-year Onsite 24x7x4 + 3-year Priority + 3-year KYD	0C08022 0C08033 0C08045 0C08023 0C08034

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
 Best coverage for business critical work loads

9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

• Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

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Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool:

http://www.lenovo.com/services_warranty/us/en/locator.html Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

Lenovo® Services for ThinkServer® - TS Series with 3-year Base Warranty

Partial list of Lenovo Services for ThinkServer TS Series

For more information see: http://www.lenovo.com/services_warranty/us	/en/lenovo-warranty.htm
Upgrade options for 3-year base warranty models	
Next Business Day (NBD) 9x5	
4-year Onsite Next Business Day 9x5	51J0727
5-year Onsite Next Business Day 9x5	51J0729
9x5x4 (x4: 4-hour Onsite Response Time)	
3-year Onsite 9x5x4	0C08068
4-year Onsite 9x5x4	0C08078
5-year Onsite 9x5x4	0C08089
9x5x4 + KYD (KYD: Keep Your Drive)	
3-year Onsite 9x5x4 + 3-year KYD	0C08069
4-year Onsite 9x5x4 + 4-year KYD	0C08079
5-year Onsite 9x5x4 + 5-year KYD	0C08090
24x7x8 (x8: 8-hour Onsite Response Time)	
3-year Onsite 24x7x8	0C08064
4-year Onsite 24x7x8	0C08074
5-year Onsite 24x7x8	0C08085
24x7x8 + KYD	0000005
3-year Onsite 24x7x8 + 3-year KYD	0C08065
4-year Onsite 24x7x8 + 4-year KYD	0C08075 0C08086
5-year Onsite 24x7x8 + 5-year KYD	000000
24x7x4	
3-year Onsite 24x7x4	5WS0E37827
4-year Onsite 24x7x4	5WS0E37828
5-year Onsite 24x7x4	5WS0E37823
Next Business Day 9x5 + Priority Technical Support + KYD	
4-year Onsite NBD + 4-year Priority + 4-year KYD	0C08082
5-year Onsite NBD + 5-year Priority + 5-year KYD	0C08093
9x5x4 + Priority Technical Support	
3-year Onsite 9x5x4 + 3-year Priority	0C08070
4-year Onsite 9x5x4 + 4-year Priority	0C08080
5-year Onsite 9x5x4 + 5-year Priority	0C08091
9x5x4 + Priority Technical Support + KYD	
3-year Onsite 9x5x4 + 3-year Priority + 3-year KYD	0C08071
4-year Onsite 9x5x4 + 4-year Priority + 4-year KYD	0C08081
5-year Onsite 9x5x4 + 5-year Priority + 5-year KYD	0C08092
24x7x8 + Priority Technical Support	
3-year Onsite 24x7x8 + 3-year Priority	0C08066
4-year Onsite 24x7x8 + 4-year Priority	0C08076
5-year Onsite 24x7x8 + 5-year Priority	0C08087
24x7x8 + Priority Technical Support + KYD	
3-year Onsite 24x7x8 + 3-year Priority + 3-year KYD	0C08067
4-year Onsite 24x7x8 + 4-year Priority + 4-year KYD	0C08077
5-year Onsite 24x7x8 + 5-year Priority + 5-year KYD	0C08088
24x7x4 + Priority Technical Support	
3-year Onsite 24x7x4 + 3-year Priority	0C08062
4-year Onsite 24x7x4 + 4-year Priority	0C08072
5-year Onsite 24x7x4 + 5-year Priority	0C08083
24x7x4 + Priority Technical Support + KYD	
3-year Onsite 24x7x4 + 3-year Priority + 3-year KYD	0C08063
4-year Onsite 24x7x4 + 4-year Priority + 4-year KYD	0C08073
5-year Onsite 24x7x4 + 5-year Priority + 5-year KYD	0C08084

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window

- 24 hours a day, 7 days a week, including nights and weekends
 Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
 Best coverage for business critical work loads

9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window

Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

24 hours a day, 7 days a week, including nights and weekends
Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool:

http://www.lenovo.com/services_warranty/us/en/locator.html

Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

Lenovo® Services for ThinkServer® - TD Series

Upgrade options for 1-year base warranty models		Upgrade options for 3-year base warranty models	
Next Business Day (NBD) 9x5		Next Business Day (NBD) 9x5	
3-year Next Business Day 9x5	45K4062	4-year Onsite Next Business Day 9x5	51J0735
4-year Next Business Day 9x5	51J0731	5-year Onsite Next Business Day 9x5	51J0737
5-year Next Business Day 9x5	51J0733	9x5x4 (x4: 4-hour Onsite Response Time)	
Next Business Day 9x5 + KYD (KYD: Keep Your Drive)		3-year Onsite 9x5x4	0C08140
3-year Onsite NBD + 3-year KYD	0C08115	4-year Onsite 9x5x4	0C08150
4-year Onsite NBD + 4-year KYD	0C08127	5-year Onsite 9x5x4	0C08161
5-year Onsite NBD + 5-year KYD	0C08133	9x5x4 + KYD (KYD: Keep Your Drive)	
9x5x4 (x4: 4-hour Onsite Response Time)		3-year Onsite 9x5x4 + 3-year KYD	0C08141
1-year Onsite 9x5x4	0C08100	4-year Onsite 9x5x4 + 4-year KYD	0C08151
3-year Onsite 9x5x4	0C08111	5-year Onsite 9x5x4 + 5-year KYD	0C08162
4-year Onsite 9x5x4	0C08123	24x7x8 (x8: 8-hour Onsite Response Time)	
5-year Onsite 9x5x4	0C08131	_ 3-year Onsite 24x7x8	0C08136
9x5x4 + KYD		4-year Onsite 24x7x8	0C08146
1-year Onsite 9x5x4 + 1-year KYD	0C08101	5-year Onsite 24x7x8	0C08157
3-year Onsite 9x5x4 + 3-year KYD	0C08112	24x7x8 + KYD	
4-year Onsite 9x5x4 + 4-year KYD	0C08124	3-year Onsite 24x7x8 + 3-year KYD	0C08137
5-year Onsite 9x5x4 + 5-year KYD	0C08132	4-year Onsite 24x7x8 + 4-year KYD	0C08147
24x7x8 (x8: 8-hour Onsite Response Time)		5-year Onsite 24x7x8 + 5-year KYD	0C08158
1-year Onsite 24x7x8	0C08096	Next Business Day 9x5 + Priority Technical Support + KYD	
3-year Onsite 24x7x8	0C08107	4-year Onsite NBD + 4-year Priority + 4-year KYD	0C08154
4-year Onsite 24x7x8	0C08119	5-year Onsite NBD + 5-year Priority + 5-year KYD	0C08154 0C08165
5-year Onsite 24x7x8	0C08129		0000103
24x7x8 + KYD		9x5x4 + Priority Technical Support	
1-year Onsite 24x7x8 + 1-year KYD	0C08097	3-year Onsite 9x5x4 + 3-year Priority	0C08142
3-year Onsite 24x7x8 + 3-year KYD	0C08108	4-year Onsite 9x5x4 + 4-year Priority	0C08152
4-year Onsite 24x7x8 + 4-year KYD	0C08120	5-year Onsite 9x5x4 + 5-year Priority	0C08163
5-year Onsite 24x7x8 + 5-year KYD	0C08130	9x5x4 + Priority Technical Support + KYD	
5-year Orisite 24x7x6 + 5-year K1D	0000100	3-year Onsite 9x5x4 + 3-year Priority + 3-year KYD	0C08143
Next Business Day 9x5 + Priority Technical Support		4-year Onsite 9x5x4 + 4-year Priority + 4-year KYD	0C08153
1-year Onsite NBD + 1-year Priority	0C08104	5-year Onsite 9x5x4 + 5-year Priority + 5-year KYD	0C08164
Next Business Day 9x5 + Priority Technical Support + KYD		24x7x8 + Priority Technical Support	
3-year Onsite NBD + 3-year Priority + 3-year KYD	0C08116	3-year Onsite 24x7x8 + 3-year Priority	0C08138
4-year Onsite NBD + 4-year Priority + 4-year KYD	0C08128	4-year Onsite 24x7x8 + 4-year Priority	0C08148
9x5x4 + Priority Technical Support	0000120	5-year Onsite 24x7x8 + 5-year Priority	0C08159
	0000100		0000139
1-year Onsite 9x5x4 + 1-year Priority	0C08102	24x7x8 + Priority Technical Support + KYD	0C08139
3-year Onsite 9x5x4 + 3-year Priority	0C08113	3-year Onsite 24x7x8 + 3-year Priority + 3-year KYD	
4-year Onsite 9x5x4 + 4-year Priority	0C08125	4-year Onsite 24x7x8 + 4-year Priority + 4-year KYD	0C08149
9x5x4 + Priority Technical Support + KYD	_	5-year Onsite 24x7x8 + 5-year Priority + 5-year KYD	0C08160
1-year Onsite 9x5x4 + 1-year Priority + 1-year KYD	0C08103	24x7x4 + Priority Technical Support	_
3-year Onsite 9x5x4 + 3-year Priority + 3-year KYD	0C08114	3-year Onsite 24x7x4 + 3-year Priority	0C08134
4-year Onsite 9x5x4 + 4-year Priority + 4-year KYD	0C08126	4-year Onsite 24x7x4 + 4-year Priority	0C08144
24x7x8 + Priority Technical Support		5-year Onsite 24x7x4 + 5-year Priority	0C08155
1-year Onsite 24x7x8 + 1-year Priority	0C08098	24x7x4 + Priority Technical Support + KYD	
3-year Onsite 24x7x8 + 3-year Priority	0C08109	3-year Onsite 24x7x4 + 3-year Priority + 3-year KYD	0C08135
4-year Onsite 24x7x8 + 4-year Priority	0C08121	4-year Onsite 24x7x4 + 4-year Priority + 4-year KYD	0C08145
24x7x8 + Priority Technical Support + KYD		5-year Onsite 24x7x4 + 5-year Priority + 5-year KYD	0C08156
1-year Onsite 24x7x8 + 1-year Priority + 1-year KYD	0C08099	24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window	
3-year Onsite 24x7x8 + 3-year Priority + 3-year KYD	0C08110	(requires Location Activation)	
4-year Onsite 24x7x8 + 4-year Priority + 4-year KYD	0C08122	• 24 hours a day, 7 days a week, including nights and weekends	
· · · · · · · · · · · · · · · · · · ·	0000122	\dashv \bullet Once the need for on-site presence is confirmed, an on-site technicia	n is dispatched
24x7x4 + Priority Technical Support 1-year Onsite 24x7x4 + 1-year Priority	0C08094	to arrive within 4 hours. • Best coverage for business critical work loads	
3-year Onsite 24x7x4 + 3-year Priority	0C08105	9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)	
4-year Onsite 24x7x4 + 4-year Priority	0C08117	Once the need for on-site presence is confirmed, an on-site technicia	n is dispatched
24x7x4 + Priority Technical Support + KYD		to arrive within 4 hours.	
1-year Onsite 24x7x4 + 1-year Priority + 1-year KYD	0C08095	24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window	
3-year Onsite 24x7x4 + 3-year Priority + 3-year KYD	0C08106	(requires Location Activation)	
4-year Onsite 24x7x4 + 4-year Priority + 4-year KYD	0C08118	• 24 hours a day, 7 days a week, including nights and weekends • Once the need for on-site presence is confirmed, an on-site technicia	n is disnatched
		to arrive within 8 hours.	ii is uispattiieu
		Priority Technical Support	
		Lenovo's Priority Technical Support provides direct access to an advar	iced level
		technician supporting all of hardware, operating system and software r to server issues, available 24 hours a day, 7 days a week.	
		Keep Your Drive (KYD) Service	
		Retain drive (hard drive or SSD) and confidential data if the drive must	he replaced
		To confirm if 4hr services are available in a specified location, please u	
		Service Availability Tool: http://www.lenovo.com/services_warranty/us/e Once purchased, to activate the location of your 4hr/8hr ThinkServer S	en/locator.html

Lenovo® Services for ThinkServer® - RD Series

Partial list of Lenovo Services for ThinkServer RD Serie	es	<u>-</u>	
For more information see: http://www.lenovo.com/services	_warranty/us/e	en/lenovo-warranty.html	
Upgrade options for 1-year base warranty models		Upgrade options for 3-year base warranty models	
Next Business Day (NBD) 9x5		Next Business Day (NBD) 9x5	54 10754
3-year Onsite Next Business Day 9x5	45K5305	4-year Onsite Next Business Day 9x5	51J0751
4-year Onsite Next Business Day 9x5	51J0747	5-year Onsite Next Business Day 9x5	51J0753
5-year Onsite Next Business Day 9x5	51J0749	9x5x4 (x4: 4-hour Onsite Response Time)	0C08355
9x5x4 (x4: 4-hour Onsite Response Time)	0C08331	3-year Onsite 9x5x4 4-year Onsite 9x5x4	0C08361
1-year Onsite 9x5x4 3-year Onsite 9x5x4	0C08337	5-year Onsite 9x5x4	0C08367
4-year Onsite 9x5x4	0C08343	9x5x4 + KYD (KYD: Keep Your Drive)	
5-year Onsite 9x5x4	0C08349	3-year Onsite 9x5x4 + 3-year KYD	0C08356
9x5x4 + KYD (KYD: Keep Your Drive)		4-year Onsite 9x5x4 + 4-year KYD	0C08362
1-year Onsite 9x5x4 + 1-year KYD	0C08332	5-year Onsite 9x5x4 + 5-year KYD	0C08368
3-year Onsite 9x5x4 + 3-year KYD	0C08338	24x7x8 (x8: 8-hour Onsite Response Time)	
4-year Onsite 9x5x4 + 4-year KYD	0C08344	3-year Onsite 24x7x8	0C08353
5-year Onsite 9x5x4 + 5-year KYD	0C08350	4-year Onsite 24x7x8	0C08359
24x7x8 (x8: 8-hour Onsite Response Time)		5-year Onsite 24x7x8	0C08365
1-year Onsite 24x7x8	0C08329	24x7x8 + KYD	
3-year Onsite 24x7x8	0C08335	3-year Onsite 24x7x8 + 3-year KYD	0C08354
4-year Onsite 24x7x8	0C08341	4-year Onsite 24x7x8 + 4-year KYD	0C08360
5-year Onsite 24x7x8	0C08347	5-year Onsite 24x7x8 + 5-year KYD	0C08366
24x7x8 + KYD		24x7x4	
1-year Onsite 24x7x8 + 1-year KYD	0C08330	3-year Onsite 24x7x4	0C08357
3-year Onsite 24x7x8 + 3-year KYD	0C08336	4-year Onsite 24x7x4	0C08363
4-year Onsite 24x7x8 + 4-year KYD	0C08342	5-year Onsite 24x7x4	0C08369
5-year Onsite 24x7x8 + 5-year KYD	0C08348	24x7x4 + KYD	
<u> </u>		3-year Onsite 24x7x4 + 3-year KYD	0C08358
24x7x4		4-year Onsite 24x7x4 + 4-year KYD	0C08364
1-year Onsite 24x7x4	0C08333	5-year Onsite 24x7x4 + 5-year KYD	0C08370
3-year Onsite 24x7x4	0C08339	9x5x4 + Priority Technical Support	
4-year Onsite 24x7x4	0C08345 0C08351	3-year Onsite 9x5x4 + 3-year Priority	04W9754
5-year Onsite 24x7x4	0000001	4-year Onsite 9x5x4 + 4-year Priority	04W9760
24x7x4 + KYD		5-year Onsite 9x5x4 + 5-year Priority	04W9766
1-year Onsite 24x7x4 + 1-year KYD	0C08334	· · · · · · · · · · · · · · · · · · ·	
3-year Onsite 24x7x4 + 3-year KYD	0C08340	9x5x4 + Priority Technical Support + KYD 3-year Onsite 9x5x4 + 3-year Priority + 3-year KYD	04W9755
4-year Onsite 24x7x4 + 4-year KYD	0C08346	4-year Onsite 9x5x4 + 4-year Priority + 4-year KYD	04W9761
5-year Onsite 24x7x4 + 5-year KYD	0C08352	5-year Onsite 9x5x4 + 4-year Priority + 5-year KYD	04W9767
9x5x4 + Priority Technical Support			04779767
1-year Onsite 9x5x4 + 1-year Priority	04W9730	24x7x8 + Priority Technical Support	
3-year Onsite 9x5x4 + 3-year Priority	04W9736	3-year Onsite 24x7x8 + 3-year Priority	04W9752
4-year Onsite 9x5x4 + 4-year Priority	04W9742	4-year Onsite 24x7x8 + 4-year Priority	04W9758
5-year Onsite 9x5x4 + 5-year Priority	04W9748	5-year Onsite 24x7x8 + 5-year Priority	04W9764
9x5x4 + Priority Technical Support + KYD		24x7x8 + Priority Technical Support + KYD	
1-year Onsite 9x5x4 + 1-year Priority + 1-year KYD	04W9731	3-year Onsite 24x7x8 + 3-year Priority + 3-year KYD	04W9753
3-year Onsite 9x5x4 + 3-year Priority + 3-year KYD	04W9737	4-year Onsite 24x7x8 + 4-year Priority + 4-year KYD	04W9759
4-year Onsite 9x5x4 + 4-year Priority + 4-year KYD	04W9743	5-year Onsite 24x7x8 + 5-year Priority + 5-year KYD	04W9765
5-year Onsite 9x5x4 + 5-year Priority + 5-year KYD	04W9749	24x7x4 + Priority Technical Support	
24x7x8 + Priority Technical Support		3-year Onsite 24x7x4 + 3-year Priority	04W9750
1-year Onsite 24x7x8 + 1-year Priority	04W9728	4-year Onsite 24x7x4 + 4-year Priority	04W9756
3-year Onsite 24x7x8 + 3-year Priority	04W9734	5-year Onsite 24x7x4 + 5-year Priority	04W9762
4-year Onsite 24x7x8 + 4-year Priority	04W9740	24x7x4 + Priority Technical Support + KYD	
5-year Onsite 24x7x8 + 5-year Priority	04W9746	3-year Onsite 24x7x4 + 3-year Priority + 3-year KYD	04W9751
24x7x8 + Priority Technical Support + KYD	-	4-year Onsite 24x7x4 + 4-year Priority + 4-year KYD	04W9757
1-year Onsite 24x7x8 + 1-year Priority + 1-year KYD	04W9729	5-year Onsite 24x7x4 + 5-year Priority + 5-year KYD	04W9763
3-year Onsite 24x7x8 + 3-year Priority + 3-year KYD	04W9735	24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires	Location Activation)
4-year Onsite 24x7x8 + 4-year Priority + 4-year KYD	04W9741	• 24 hours a day, 7 days a week, including nights and weekends	
5-year Onsite 24x7x8 + 5-year Priority + 5-year KYD	04W9747	• Once the need for on-site presence is confirmed, an on-site technician is d	ispatched to
24x7x4 + Priority Technical Support		arrive within 4 hours.	
1-year Onsite 24x7x4 + 1-year Priority	04W9726	Best coverage for business critical work loads The first of the Best coverage for business critical work loads	
3-year Onsite 24x7x4 + 3-year Priority	04W9732	9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Loc	,
4-year Onsite 24x7x4 + 4-year Priority	04W9732	• Once the need for on-site presence is confirmed, an on-site technician is d	ispatched to
5-year Onsite 24x7x4 + 5-year Priority	04W9738	arrive within 4 hours.	Location Astivistics
	5111017T	24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires a 24 hours a day, 7 days a week, including nights and weekends	Location Activation)
24x7x4 + Priority Technical Support + KYD	04W9727	Once the need for on-site presence is confirmed, an on-site technician is d	isnatched to
1-year Onsite 24x7x4 + 1-year Priority + 1-year KYD 3-year Onsite 24x7x4 + 3-year Priority + 3-year KYD	04W9727 04W9733	arrive within 8 hours.	
4-year Onsite 24x7x4 + 3-year Priority + 3-year KYD	04W9733	Priority Technical Support	
		Lenovo's Priority Technical Support provides direct access to an advanced le	evel technician
5-year Onsite 24x7x4 + 5-year Priority + 5-year KYD	04W9745	supporting all of hardware, operating system and software needs related to	
		available 24 hours a day, 7 days a week.	
		Keep Your Drive (KYD) Service	
		, , ,	nlacod
		Retain drive (hard drive or SSD) and confidential data if the drive must be real To confirm if 4hr services are available in a specified location, please use The	
		Service Availability Tool: http://www.lenovo.com/services_warranty/us/en/loc	
		Once purchased, to activate the location of your 4hr/8hr ThinkServer Service	
		ThinkServer Service Activation page: http://www.lenovo.com/activation	e, piease use
		Thinke of voi oor vioo Activation page. http://www.ienovo.com/activation	

Lenovo® TopSeller Services (New 10-digit) for ThinkServer® - RD640, RD540

Product Specifications Reference (PSREF)

Partial list of Lenovo TopSeller Services for ThinkServer RD640 and RD540 with 3 year base warranty models

The TopSeller™ services are designed to make selling the popular services with TopSeller systems faster and easier. Channel partners should always use TopSeller services with TopSeller systems. TopSeller services part numbers typically provide enhanced discounts and incentives for channel partners. The TopSeller service delivered to the customer is identical to the service delivered using a standard service part number. In situations where a desired service is not offered under a TopSeller service part number or the sale requires a special bid process, use available standard service part numbers.

TopSeller services should always be offered by channel business partners with TopSeller hardware, unless the sale requires special bid pricing or the desired service is not offered as a TopSeller service part.

For more information see:

http://www2.partnerinfo.lenovo.com/partners/us/resources/salestoolkit.shtml

Upgrade options for 3-year base warranty models	
Next Business Day (NBD) 9x5	
4-year Onsite Next Business Day	5WS0F15470
9x5x4 (x4: 4-hour Onsite Response Time)	
3-year Onsite 9x5x4 Hour Response	5WS0D73787
4-year Onsite 9x5x4 Hour Response Hour Response	5WS0D73791
24x7x4	
3-year Onsite 24x7x4 Hour Response Hour Response	5WS0D73789
4-year Onsite 24x7x4 Hour Response Hour Response	5WS0D73792
9x5x4 + Priority Technical Support	
3-year Onsite 9x5x4 Hour Response + Priority Technical Support	5WS0F15423
24x7x4 + Priority Technical Support	
3-year Onsite 24x7x4 Hour Response + Priority Technical Support	5WS0F15414
Priority Technical Support	
3-year Priority Technical Support	5WS0E76457
4-year Priority Technical Support	5WS0E76482

Note:

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

• Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week

Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services_warranty/us/en/locator.html

Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

Lenovo® Services (New 10-digit) for ThinkServer® - RD640, RD540

Partial list of Lenovo Services for ThinkServer RD640 and RD540 with 3 year base warranty models For more information see: http://www.lenovo.com/services_warranty/us/en/lenovo-warranty.html

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Onsite warranty upgrade options	
3YR Onsite 24x7x4 Hour Response	5WS0F15458
3YR Onsite 24x7x8 Hour Response	5WS0F15392
3YR Onsite 9x5x4 Hour Response	5WS0F15355
4YR Onsite 24x7x4 Hour Response	5WS0F15443
4YR Onsite 24x7x8 Hour Response	5WS0F15395
4YR Onsite 9x5x4 Hour Response	5WS0F15394
4YR Onsite NBD	5WS0F15415
5YR Onsite 24x7x4 Hour Response	5WS0F15377
5YR Onsite 24x7x8 Hour Response	5WS0F15440
5YR Onsite 9x5x4 Hour Response	5WS0F15430
5YR Onsite NBD	5WS0F15419
Onsite warranty with Keep Your Drive (KYD) Service	
3YR Keep Your Drive	5PS0F15436
3YR Onsite 24x7x4 Hour Response + Keep Your Drive	5PS0F15376
3YR Onsite 24x7x8 Hour Response + Keep Your Drive	5PS0F15349
3YR Onsite 9x5x4 Hour Response + Keep Your Drive	5PS0F15448
4YR Onsite 24x7x4 Hour Response + Keep Your Drive	5PS0F15389
4YR Onsite 24x7x8 Hour Response + Keep Your Drive	5PS0F15359
4YR Onsite 9x5x4 Hour Response + Keep Your Drive	5PS0F15456
4YR Onsite NBD + Keep Your Drive	5PS0F15459
5YR Onsite 24x7x4 Hour Response + Keep Your Drive	5PS0F15402
5YR Onsite 24x7x4 Hour Response + Keep Your Drive	5PS0F15381
5YR Onsite 9x5x4 Hour Response + Keep Your Drive	5PS0F15366
5YR Onsite NBD + Keep Your Drive	5PS0F15391
	0. 00. 10001
Priority Technical Support	ED00E1E417
3YR Keep Your Drive + Priority Support	5PS0F15417
3YR Onsite 24x7x4 Hour Response + Keep Your Drive + Priority Support	5PS0F15352
3YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15399
3YR Onsite 24x7x8 Hour Response + Keep Your Drive + Priority Support	5PS0F15444
3YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15418
3YR Onsite 9x5x4 Hour Response + Keep Your Drive + Priority Support	5PS0F15398
3YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15468
3YR Priority Support	5WS0E76471
4YR Onsite 24x7x4 Hour Response + Keep Your Drive + Priority Support	5PS0F15462
4YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15410
4YR Onsite 24x7x8 Hour Response + Keep Your Drive + Priority Support	5PS0F15433
4YR Onsite 24x7x8 Hour Response + Priority Support	5WS0F15425
4YR Onsite 9x5x4 Hour Response + Keep Your Drive + Priority Support	5PS0F15400
4YR Onsite 9x5x4 Hour Response + Priority Support	5WS0F15351
4YR Onsite NBD + Keep Your Drive + Priority Support	5PS0F15373
4YR Onsite NBD + Priority Support	5PS0F15373 5WS0F15401
4YR Priority Support	5WS0E77170
5YR Onsite 24x7x4 Hour Response + Keep Your Drive + Priority Support	5PS0F15350
5YR Onsite 24x7x4 Hour Response + Priority Support	5WS0F15412
5YR Onsite 24x7x8 Hour Response + Keep Your Drive + Priority Support	5PS0F15471
	5WS0F15447
5YR Onsite 9x5x4 Hour Response + Keep Your Drive + Priority Support	5PS0F15437
	5WS0F15463
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* ''	
5YR Onsite 24x7x8 Hour Response + Priority Support 5YR Onsite 9x5x4 Hour Response + Keep Your Drive + Priority Support 5YR Onsite 9x5x4 Hour Response + Priority Support 5YR Onsite NBD + Keep Your Drive + Priority Support 5YR Onsite NBD + Priority Support 5YR Priority Support 5YR Priority Support Note:	5PS0F1543 5WS0F1538 5PS0F1538

Note:

24x7x4: 4 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.
- Best coverage for business critical work loads

9x5x4: 4 Hour Onsite Response Time in 9x5 Service Window (requires Location Activation)

• Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 4 hours.

24x7x8: 8 Hour Onsite Response Time in 24x7 Service Window (requires Location Activation)

- 24 hours a day, 7 days a week, including nights and weekends
- Once the need for on-site presence is confirmed, an on-site technician is dispatched to arrive within 8 hours.

Priority Technical Support

Lenovo's Priority Technical Support provides direct access to an advanced level technician supporting all of hardware, operating system and software needs related to server issues, available 24 hours a day, 7 days a week.

Keep Your Drive (KYD) Service

Retain drive (hard drive or SSD) and confidential data if the drive must be replaced.

To confirm if 4hr services are available in a specified location, please use ThinkServer Service Availability Tool: http://www.lenovo.com/services_warranty/us/en/locator.html

Once purchased, to activate the location of your 4hr/8hr ThinkServer Service, please use ThinkServer Service Activation page: http://www.lenovo.com/activation

ThinkServer™ Operating System Offerings

Microsoft® Windows Server® for Lenovo ThinkServer

- Note:
 1. Must run on Lenovo® ThinkServer platform only
 2. Minimum hardware requirements are determined by Microsoft

(ROK = Reseller Option Kits)

All Lenovo ThinkServer:

English language

Small Business Server 2011 Essentials ROK (64) 61	84971EE
Small Business Server 2011 Standard ROK (64)	84971SE
Small Business Server 2011 Premium Add-On ŔOK (64)	84971PE

French language

Small Business Server 2011 Essentials ROK (64)	84971EF
Small Business Server 2011 Standard ROK (64)	84971SF
Small Business Server 2011 Premium Add-On ROK (64)	84971PE

German language

Server 2008 Standard ROK (32, 64) 60	84978BG
Server 2008 Enterprise ROK (32, 64)	84978DG
Server 2008 R2 Standard ROK (64)	84978KG
Server 2008 R2 Enterprise ROK (64)	84978LG

Multi-Language (English/Japanese)

Server 2008 R2 Standard ROK (64)	84978OA
Server 2008 R2 SP1 Standard ROK (64)	84978OJ
Server 2008 R2 SP1 Enterprise ROK (64)	84978PJ

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

Server 2008 R2 Standard ROK (64) 84978OE

TS130, TS430:

Multi-Language (English/Japanese)

Server 2008 R2 SP1 Foundations ROK (64) 84978HD

Microsoft Windows Client Access License(s)

Multi-Language

Server 2008 1 user	849781A
Server 2008 5 user	849785A
Small Business Server 2011 Standard 5 user	849711G
Small Business Server 2011 Premium Add-On 5 user	849711K

 $^{^{60}}$ 32, 64 = available in both 32-bit and 64-bit 61 64 = available in 64-bit only

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, go to http://support. lenovo.com/en_US/product-service/warranty-status/WarrantyPolicies.page. 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. 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.
- Lenovo 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 Lenovo Warranty Services 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.
- ¹⁴ Response times may vary. May exclude some holidays. Telephone support may be subject to additional charges.



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Visit www.lenovo.com/psref for the latest version of Personal Systems Reference.

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