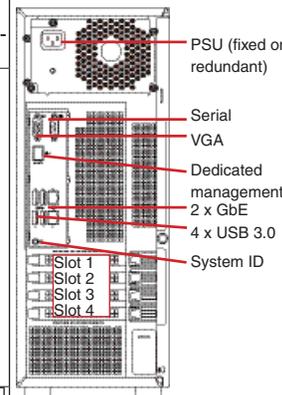


ThinkServer TS460 Platform Specifications

Product Specifications Reference (PSREF)

Components	Specification																																											
Dimensions	42L tower or 4U rack. Height: 443.5 mm (17.46 in) with foot stands. Width: 173 mm (6.81 in). Depth: 593 mm (23.35 in) including front door and handle of hot-swap power supply																																											
Weight	Maximum configuration: 57.32 lb (26.5 kg)																																											
Processor	Supports one of the following Intel "Skylake" processors:																																											
	Xeon E3-1280 v5	4C/3.7GHz/8MB/80W/DDR4-2133																																										
	Xeon E3-1270 v5	4C/3.6GHz/8MB/80W/DDR4-2133																																										
	Xeon E3-1240 v5	4C/3.5GHz/8MB/80W/DDR4-2133																																										
	Xeon E3-1230 v5	4C/3.4GHz/8MB/80W/DDR4-2133																																										
	Xeon E3-1220 v5	4C/3GHz/8MB/80W/DDR4-2133																																										
	Core i3-6320	2C/3.9GHz/4MB/51W/DDR4-2133																																										
	Core i3-6300T	2C/3.3GHz/4MB/35W/DDR4-2133																																										
	Core i3-6300	2C/3.8GHz/4MB/51W/DDR4-2133																																										
	Core i3-6100T	2C/3.2GHz/3MB/35W/DDR4-2133																																										
	Core i3-6100	2C/3.7GHz/3MB/51W/DDR4-2133																																										
	Pentium G4520	2C/3.6GHz/3MB/51W/DDR4-2133																																										
	Pentium G4500T	2C/3GHz/3MB/35W/DDR4-2133																																										
Pentium G4500	2C/3.5GHz/3MB/51W/DDR4-2133																																											
Pentium G4400T	2C/2.9GHz/3MB/35W/DDR4-2133																																											
Pentium G4400	2C/3.3GHz/3MB/54W/DDR4-2133																																											
Chipset	Intel C232 Platform Controller Hub (PCH)																																											
Memory DIMMs	4 DIMM sockets with 2-channels. UDIMM. DDR4-2133.																																											
Memory capacity	Up to 64GB (16GB x 4)																																											
Memory protection	ECC																																											
RAID controller	<table border="1"> <thead> <tr> <th>RAID controller</th> <th>Drive type</th> <th>RAID support</th> </tr> </thead> <tbody> <tr> <td>Onboard RAID121i</td> <td>6Gbps SATA</td> <td>0/1/5/10</td> </tr> <tr> <td>RAID520i PCIe</td> <td>12Gbps SAS/SATA</td> <td>0/1/10, 5 with optional key</td> </tr> <tr> <td>RAID720i PCIe</td> <td>12Gbps SAS/SATA</td> <td>0/1/10/5/50, 6/60 with optional cache</td> </tr> </tbody> </table>	RAID controller	Drive type	RAID support	Onboard RAID121i	6Gbps SATA	0/1/5/10	RAID520i PCIe	12Gbps SAS/SATA	0/1/10, 5 with optional key	RAID720i PCIe	12Gbps SAS/SATA	0/1/10/5/50, 6/60 with optional cache																															
	RAID controller	Drive type	RAID support																																									
	Onboard RAID121i	6Gbps SATA	0/1/5/10																																									
	RAID520i PCIe	12Gbps SAS/SATA	0/1/10, 5 with optional key																																									
RAID720i PCIe	12Gbps SAS/SATA	0/1/10/5/50, 6/60 with optional cache																																										
Optional cache for RAID720i: 1GB memory, or 1GB, 2GB, 4GB flash with super capacitor.																																												
Supports one of the following configurations:																																												
<table border="1"> <thead> <tr> <th rowspan="2">Disk bays configuration</th> <th rowspan="2">RAID controller</th> <th rowspan="2">Optical</th> <th colspan="2">Tape drive</th> </tr> <tr> <th>RDX</th> <th>LTO</th> </tr> </thead> <tbody> <tr> <td>4x3.5" SATA non-hot swap</td> <td>121i</td> <td>up to 2</td> <td>up to 1</td> <td>-</td> </tr> <tr> <td>4x3.5" SATA hot-swap</td> <td>121i</td> <td>up to 2</td> <td>up to 1</td> <td>-</td> </tr> <tr> <td>4x3.5" SATA/SAS hot-swap</td> <td>520i or 720i</td> <td>up to 2</td> <td>up to 1</td> <td>up to 1, 520i only</td> </tr> <tr> <td>8x3.5" SATA/SAS hot-swap</td> <td>520i or 720i</td> <td>up to 2</td> <td>up to 1</td> <td>-</td> </tr> <tr> <td>8x2.5" SATA/SAS hot-swap</td> <td>520i or 720i</td> <td>up to 2</td> <td>up to 1</td> <td>-</td> </tr> <tr> <td>16x2.5" SATA/SAS hot-swap</td> <td>520i or 720i</td> <td>up to 2</td> <td>up to 1</td> <td>-</td> </tr> <tr> <td>4x3.5" + 8x2.5" SATA/SAS hot-swap</td> <td>520i or 720i</td> <td>up to 2</td> <td>up to 1</td> <td>-</td> </tr> </tbody> </table>			Disk bays configuration	RAID controller	Optical	Tape drive		RDX	LTO	4x3.5" SATA non-hot swap	121i	up to 2	up to 1	-	4x3.5" SATA hot-swap	121i	up to 2	up to 1	-	4x3.5" SATA/SAS hot-swap	520i or 720i	up to 2	up to 1	up to 1, 520i only	8x3.5" SATA/SAS hot-swap	520i or 720i	up to 2	up to 1	-	8x2.5" SATA/SAS hot-swap	520i or 720i	up to 2	up to 1	-	16x2.5" SATA/SAS hot-swap	520i or 720i	up to 2	up to 1	-	4x3.5" + 8x2.5" SATA/SAS hot-swap	520i or 720i	up to 2	up to 1	-
Disk bays configuration	RAID controller	Optical				Tape drive																																						
			RDX	LTO																																								
4x3.5" SATA non-hot swap	121i	up to 2	up to 1	-																																								
4x3.5" SATA hot-swap	121i	up to 2	up to 1	-																																								
4x3.5" SATA/SAS hot-swap	520i or 720i	up to 2	up to 1	up to 1, 520i only																																								
8x3.5" SATA/SAS hot-swap	520i or 720i	up to 2	up to 1	-																																								
8x2.5" SATA/SAS hot-swap	520i or 720i	up to 2	up to 1	-																																								
16x2.5" SATA/SAS hot-swap	520i or 720i	up to 2	up to 1	-																																								
4x3.5" + 8x2.5" SATA/SAS hot-swap	520i or 720i	up to 2	up to 1	-																																								
4 x 3.5" HS can be upgraded to 8 x 3.5" HS or 4 x 3.5" + 8 x 2.5" HS, 8 x 2.5" HS can be upgraded to 16 x 2.5" HS or 4 x 3.5" + 8 x 2.5" HS, redundant PSU models only, RAID520i/RAID720i and expansion kit is needed, more that 8 disk bays needs expander card. Also supports one M.2 SATA SSD, 32GB or 128GB.																																												
Supporting disk drives	3.5" SATA HDD, 7.2K 6Gbs, HS or NHS	1TB/2TB/3TB/4TB/6TB/8TB																																										
	3.5" SAS HDD, 7.2K 12Gbs, HS	1TB/2TB/3TB/4TB/6TB/8TB																																										
	2.5" SAS HDD, 10K 12Gbs, HS, 2.5" or 3.5" bay	300GB/600GB/900GB/1.2TB/1.8TB																																										
	2.5" SATA SSD, 6Gbs, HS, 2.5" or 3.5" bay	120GB/240GB/480GB/800GB/960GB																																										
	2.5" SATA HDD, 7.2K 6Gbs, HS	1TB/2TB																																										
	M.2 SATA SSD	32GB/128GB																																										
Maximum internal storage	Up to 64TB with 8TB 3.5" SAS or SATA HDDs, 8 x 3.5" HS bay																																											
Optical drive	Two 5.25" bays. Up to 2 optical drives. DVD-ROM or DVD±RW. Half-height. 2nd optical drive will be disable if M.2 SATA SSD is used																																											
Tape drive	Supports one tape drive in 5.25" bay. RDX or LTO. LTO Tape drive needs RAID520i																																											
Network interfaces	Two integrated Gigabit Ethernet 1000BASE-T ports (RJ-45) with Intel i210. One dedicate management port with Realtek RTL8211E																																											
Systems management	UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, disk drives, network, system. On rear system ID. Supports EasyStartup, Power Planner, Lenovo ThinkServer Diagnostics Standalone, ToolsCenter Suite CLI inventory module on ThinkServer, Lenovo xClarity Administrator																																											

Components	Specification																								
Security features	Power-on and administrator password. Optional TPM, TCG 1.2 or 2.0 compliant.																								
Operating systems	Microsoft Windows Server 2016/2012 R2. Red Hat Enterprise Linux 6.8. VMware vSphere (ESXi) 6.0U2/6.5																								
Base warranty	1 or 3-year limited onsite service with 9x5/NBD.																								
Power supply	Supports one of the following, depending on models: • One fixed 300 watts, universal, 80 PLUS Bronze qualified. • Up to two redundant 450 watts, two maximum, rear access, hot-swap, 80 PLUS Gold qualified, universal, redundant with two power supplies																								
Graphics	Integrated in onboard Aspeed AST2400 graphics/management processor																								
Front ports	Two USB 3.0 (blue)																								
Rear ports	One VGA, four USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin). Add-on parallel or serial ports via optional PCIe adapters																								
Noise emissions	Operating: < 43.6 dB(A). Idle: < 33 dB(A) (Maximum configuration)																								
Environmental specification	All models supports ASHARE B. Models with the following configuration supports ASHARE A3: Xeon E3-1230 v5/8GBx2/DVD±RW/1TB SATAx4/RAID520i/450Wx2/TPM																								
	<table border="1"> <thead> <tr> <th></th> <th>ASHRAE A2</th> <th>ASHRAE A3</th> <th>ASHRAE B</th> </tr> </thead> <tbody> <tr> <td>Temperature - operating</td> <td>10°C to 35°C (50°F to 95°F)</td> <td>5°C to 40°C (41°F to 104°F)</td> <td>5°C to 35°C (41°F to 95°F)</td> </tr> <tr> <td>Temperature - storage (with package)</td> <td>-40°C to 60°C (-40°F to 140°F)</td> <td>-40°C to 60°C (-40°F to 140°F)</td> <td>-40°C to 60°C (-40°F to 140°F)</td> </tr> <tr> <td>Altitude - operating</td> <td>20% to 80% (non-condensing)</td> <td>8% to 85% (non-condensing)</td> <td>8% to 80% (non-condensing)</td> </tr> <tr> <td>Humidity - storage (with package)</td> <td>10% to 90% (non-condensing)</td> <td>10% to 90% (non-condensing)</td> <td>10% to 90% (non-condensing)</td> </tr> <tr> <td>Altitude - operating</td> <td colspan="3">0 m to 3048 m (0 ft to 10 000 ft) in an unpressurized environment</td> </tr> </tbody> </table>		ASHRAE A2	ASHRAE A3	ASHRAE B	Temperature - operating	10°C to 35°C (50°F to 95°F)	5°C to 40°C (41°F to 104°F)	5°C to 35°C (41°F to 95°F)	Temperature - storage (with package)	-40°C to 60°C (-40°F to 140°F)	-40°C to 60°C (-40°F to 140°F)	-40°C to 60°C (-40°F to 140°F)	Altitude - operating	20% to 80% (non-condensing)	8% to 85% (non-condensing)	8% to 80% (non-condensing)	Humidity - storage (with package)	10% to 90% (non-condensing)	10% to 90% (non-condensing)	10% to 90% (non-condensing)	Altitude - operating	0 m to 3048 m (0 ft to 10 000 ft) in an unpressurized environment		
		ASHRAE A2	ASHRAE A3	ASHRAE B																					
	Temperature - operating	10°C to 35°C (50°F to 95°F)	5°C to 40°C (41°F to 104°F)	5°C to 35°C (41°F to 95°F)																					
	Temperature - storage (with package)	-40°C to 60°C (-40°F to 140°F)	-40°C to 60°C (-40°F to 140°F)	-40°C to 60°C (-40°F to 140°F)																					
	Altitude - operating	20% to 80% (non-condensing)	8% to 85% (non-condensing)	8% to 80% (non-condensing)																					
	Humidity - storage (with package)	10% to 90% (non-condensing)	10% to 90% (non-condensing)	10% to 90% (non-condensing)																					
	Altitude - operating	0 m to 3048 m (0 ft to 10 000 ft) in an unpressurized environment																							
	GREENGUARD certified, RoHS-compliant, Energy Star Server 2.1 qualified on redundant PSU models																								



Expansion slots
4 PCIe 3.0 slots (top-down):
Slot 1: PCIe 3.0 x4, full height, full length, open-end, from PCH
Slot 2: PCIe 3.0 x16, full height, full length, from CPU
Slot 3: PCIe 3.0 x1, full height, half length, from PCH
Slot 4: PCIe 3.0 x8, full height, half length, open-end, from CPU
Note:
1. If a PCIe card is connected to slot 4, both slot 2 and slot 4 will work at PCIe x8.
2. If a discrete graphics card is used, slot 2 will work at PCIe x16 and slot 4 will be disable.

Core options for ThinkServer TS460 (partial)

ThinkServer 8GB 2RX8 PC4-2133-E CL15 DDR4-2133 ECC-UDIMM	4X70G88316
ThinkServer 16GB 2RX8 PC4-2133-E CL15 DDR4-2133 ECC-UDIMM	4X70G88317
ThinkServer 8TB 7.2K 3.5" Enterprise 6Gb SATA Hard Drive - NHS	4XB0K12347
ThinkServer 8TB 7.2K 3.5" Enterprise 12Gb SAS Hot Swap Hard Drive	4XB0K12254
ThinkServer 2TB 7.2K 2.5" Enterprise 6Gb SATA Hot Swap Hard Drive	4XB0G88774
ThinkServer 2.5" 1.8TB 10K SAS 12Gbps Hot Swap Hard Drive	4XB0G88737
HS Intel S3520 960G 6Gbps SATA 2.5" SSD with 3.5" Tray	4XB0K12333
HS Intel S3520 960G 6Gbps SATA 2.5" SSD	4XB0K12332
128GB SATA M.2 SSD	4XB0K12311
450W 1+1 Redundant PSU - Gold -Single module 110V to 240V AC input	4X20G87846
ThinkServer 3.5" Hot-Swap HDD Expansion Kit for Tower	4XF0G88945
ThinkServer 2.5" Hot-Swap HDD Expansion Kit for Tower	4XF0G88946
Lenovo ThinkServer SAS 12G Expander PCIe Card	4XC0G88843
Tower to Rack Conversion Kit	4XF0G88937

Model	70TT000GEA
Product	ThinkServer TS460
Region	EMEA
Machine Type	70TT
TopSeller	TopSeller
Processor	Xeon E3-1270 v5 4C/3.6GHz/8MB/80W/DDR4-2133
Memory	1x8GB UDIMM DDR4-2133 ECC
RAID Controller	RAID520i
Disk Bays	8x2.5" HS
Storage	Open
Optical	HH DVD±RW
Add-on NIC	None
Add-on Ports	None
System Management	TPM2.0
Operating System	None
Warranty	3-year
Power Supply	2x450W Gold
Ann Date (mm/yy)	02/17

