ThinkServer RD450 Platform Specifications

Components	Specification
Dimensions	2U rack. Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)
Processor	Up to two **105W Intel Xeon E5-2600 v4 or E5-2600 v3** family processors.

E5-2660 v4	14C/2GHz/35MB/105W/DDR4-2400
E5-2650 v4	12C/2.2GHz/30MB/105W/DDR4-2400
E5-2640 v4	10C/2.4GHz/25MB/90W/DDR4-2133
E5-2630 v4	10C/2.2GHz/20MB/85W/DDR4-2133
E5-2623 v4	4C/2.6GHz/10MB/85W/DDR4-2133
E5-2620 v4	8C/2.1GHz/20MB/85W/DDR4-2133
E5-2609 v4	8C/1.7GHz/20MB/85W/DDR4-1866
E5-2603 v4	6C/1.7GHz/15MB/85W/DDR4-1866
E5-2650L v4	14C/1.7GHz/35MB/65W/DDR4-2400
E5-2630L v4	10C/1.8GHz/25MB/55W/DDR4-2133
E5-2660 v3	10C/2.6GHz/25MB/105W/DDR4-2133
E5-2650 v3	10C/2.3GHz/25MB/105W/DDR4-2133
E5-2640 v3	8C/2.6GHz/20MB/90W/DDR4-1866
E5-2630 v3	8C/2.4GHz/20MB/85W/DDR4-1866
E5-2623 v3	4C/3GHz/10MB/105W/DDR4-1866
E5-2620 v3	6C/2.4GHz/15MB/85W/DDR4-1866
E5-2609 v3	6C/1.9GHz/15MB/85W/DDR4-1600
E5-2603 v3	6C/1.6GHz/15MB/85W/DDR4-1600
E5-2650L v3	12C/1.8GHz/30MB/65W/DDR4-2133
E5-2630L v3	8C/1.8GHz/20MB/55W/DDR4-1866

Chipset	Intel C610 Series Chipset
Memory DIMMs	16 DIMM sockets with 8 channels. 4 channels per processor, 2 DIMMs per channel. **RDIMM** or **LRDIMM** (cannot be intermixed), DDR4, DDR4-2133 or DDR4-2400
Memory capacity	512GB (RDIMM, 32GB x 16)/1024GB (LRDIMM, 64GB x 16), 2nd CPU is needed
Memory protection	ECC, memory mirroring, lockstep, and memory sparing

RAID controller

RAID controller	Drive type	RAID support	Compatible models
Onboard RAID110i	6Gbs SATA	0/1/10, 5 with optional key	8x3.5" HS/ES, 8x2.5" HS
RAID500 PCIe	6Gbs SAS/SATA	0/1/10, 5/50 with optional key	8x3.5" HS
RAID520i PCIe	12Gbs SAS/SATA	0/1/10, 5/50 with optional key	8x3.5" HS/ES, 8x2.5" HS
RAID710 PCIe (1GB memory)	6Gbs SAS/SATA	0/1/10/5/50/6/60	8x3.5" HS
RAID720i PCIe	12Gbs SAS/SATA	0/1/10/5/50, 6/60 with optional cache	8x3.5" HS/ES, 8x2.5" HS
AnyRAID 110i	6Gbs SATA	0/1/10, 5 with optional key	8x2.5" HS
AnyRAID 510i	6Gbs SAS/SATA	0/1/10, 5/50 with optional key	8x2.5" HS
AnyRAID 720i	12Gbs SAS/SATA	0/1/10/5/50, 6/60 with optional cache	8x2.5" HS
AnyRAID 720ix	12Gbs SAS/SATA	0/1/10/5/50/6/60	16/24x2.5" HS, 8x2.5" HS+optional tape

Optional cache for RAID 710: CacheVault flash cache with super capacitor, Cache-Cade Pro, or FastPath.
Optional cache for RAID 720/AnyRAID 720i and 720ix: 1GB read-only memory or 1GB/2GB/4GB flash with super capacitor. Flash options include CacheVault, CacheCade Pro, and FastPath. 720ix must have cache.

Disk drive bays	Up to 8x3.5" hot-swap, 8x3.5" easy-swap, or 24x2.5" hot-swap disk bays on front. Up to one internal LTO-6 SAS tape drive on 8x2.5" and 720ix model, or external RDX tape drive via USB.
Maximum internal storage	3.5" HS model: up to 64TB with 7.2K SATA or SAS HDD, up to 14.4TB with 10K SAS HDD, up to 4.8TB with 15K SAS HDD, or up to 12.8TB with SATA SSD. 3.5" ES model: up to 24TB with 7.2K SATA, up to 48TB with 7.2K SAS. 2.5" HS model: up to 48TB with 7.2K SATA HDD, up to 43.2TB with 10K SAS HDD, up to 14.4TB with 15K SAS HDD, or up to 38.4TB with SATA or SAS SSD
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each
PCIe SSD adapter	Supports 1.6TB or 3.2TB SSD via PCIe adapter
Optical drive	Optional one 9.5mm optical on 3.5" or 8/16 x 2.5" models, DVD-ROM or DVD±RW.

Components	Specification
Network interfaces	One dedicated management port, two Gigabit Ethernet ports. Supports optional discrete network adapters via PCIe slots
Security features	Power-on and administrator password. Optional TPM (TCG 1.2-compliant)
Systems management	Supports ThinkServer System Manager (TSM), optional TSM Premium. UEFI. Onboard Aspeed AST2400 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC). Control Panel LEDs shows the status of power, ID, network, system. Supports ThinkServer management software: Diagnostics, Deployment Manager, Energy Manager, System Manager, Partner Pack for VMware vCenter and Microsoft System Center Operations Manager, Power Planner
Operating systems supported	Microsoft Windows Server 2016/2012 R2/2012/2008 R2. Windows Small Business Server 2011. Red Hat Enterprise Linux 6.5/6.6/7. SUSE Linux Enterprise Server 11. VMware vSphere (ESXi) 5.1 P5/5.5 U2/6.0
Base warranty	1 or 3-year limited onsite service with 9x5/NBD
Power supply	Up to two redundant hot-swap 450W/550W/750W/1100W power supplies. 450 W is 80 PLUS Gold qualified. 550W and 1100W are 80 PLUS Platinum qualified. 750W is 80 PLUS Platinum or Titanium qualified. 750W Titanium is 200V - 240V, others are 110V - 240V.

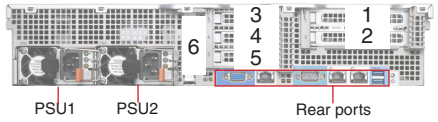
Disk bay configuration	PSU requirements			
	450W	550W	750W	1100W
8x3.5"	•	•	•	•
8x2.5"	•	•	•	•
8x2.5"+ Tape	•	•	•	•
16x2.5"		•	•	•
24x2.5"		•	•	•

Graphics	Onboard Aspeed AST2400 with 16MB memory
Front ports	Two USB 2.0. One DisplayPort (one VGA on E5-2600 v4 models instead)
Rear ports	One VGA, two USB 3.0, one RJ-45 (dedicated mgmt), two ethernet, one serial (9-pin)
Cooling	4 (3+1, dual processors) or 3 (2+1, single processor) fans, non-hot swap
Noise emissions	Operating: < 6.5 Bels. Idle: < 5.6 Bels (Maximum configuration)

Environmental specification

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	(Unpressurized): 0-10000ft (0-3048m)
Humidity - operating	8%~90%, non-condensing
Humidity - storage (with package)	8%~90%, non-condensing

Expansion slots



Slot 1 (riser card 1)	PCIe 3.0 x8, half length, full height, CPU1
Slot 2 (riser card 1)	PCIe 3.0 x8, half length, full height, CPU1
Slot 3 (riser card 2)	PCIe 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU
Slot 4 (riser card 2)	PCIe 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU
Slot 5 (riser card 2)	PCIe 3.0 x8, low-profile, half length, CPU1, requires 2nd riser card
Slot 6 (onboard)	PCIe 3.0 x16 (x8 elec), low-profile, half length, requires 2nd CPU

For a list of all supported options, please see *https://download.lenovo.com/pccbbs/options_iso/ocm_september_2016_thinkserver.xlsx sheet*

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Model	70Q9000SEA
Product	ThinkServer RD450
Region	EMEA
Machine Type	70Q9
TopSeller	TopSeller
Processor	1xE5-2609 v4 8C/1.7GHz/20MB/85W/DDR4-1866
2nd CPU	4XG0G89085
Memory	1x8GB RDIMM DDR4-2400 ECC
RAID Controller	110i (PCIe)
Disk Bays	8x2.5" HS
Storage	Open
Slots	2xFH HL
Optical	9.5mm DVD±RW
Add-on NIC	None
TPM	None
System Management	TSM
Operating System	None
Warranty	3-year
Power Supply	450Wx1 Gold
Ann Date (mm/yy)	03/16

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