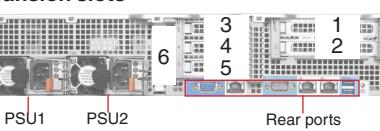


Components	Specification	Components	Specification																																																				
Dimensions	2U rack. Height: 87 mm (3.4 in), width: 482 mm (19 in), depth: 764 mm (30 in)	Network interfaces	One dedicated management port, two Gigabit Ethernet ports. Supports optional discrete network adapters via PCIe slots																																																				
Weight	Minimum configuration: 16 kg (35.3 lb), maximum: 27 kg (59.52 lb)	Security features	Power-on and administrator password. Optional TPM (TCG 1.2-compliant)																																																				
	Up to two 105W Intel Xeon E5-2600 v4 or E5-2600 v3 family processors.	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																																																				
Processor	<table border="1"> <tr><td>E5-2660 v4</td><td>14C/2GHz/35MB/105W/DDR4-2400</td></tr> <tr><td>E5-2650 v4</td><td>12C/2.2GHz/30MB/105W/DDR4-2400</td></tr> <tr><td>E5-2640 v4</td><td>10C/2.4GHz/25MB/90W/DDR4-2133</td></tr> <tr><td>E5-2630 v4</td><td>10C/2.2GHz/20MB/85W/DDR4-2133</td></tr> <tr><td>E5-2623 v4</td><td>4C/2.6GHz/10MB/85W/DDR4-2133</td></tr> <tr><td>E5-2620 v4</td><td>8C/2.1GHz/20MB/85W/DDR4-2133</td></tr> <tr><td>E5-2609 v4</td><td>8C/1.7GHz/20MB/85W/DDR4-1866</td></tr> <tr><td>E5-2603 v4</td><td>6C/1.7GHz/15MB/85W/DDR4-1866</td></tr> <tr><td>E5-2650L v4</td><td>14C/1.7GHz/35MB/65W/DDR4-2400</td></tr> <tr><td>E5-2630L v4</td><td>10C/1.8GHz/25MB/55W/DDR4-2133</td></tr> <tr><td>E5-2660 v3</td><td>10C/2.6GHz/25MB/105W/DDR4-2133</td></tr> <tr><td>E5-2650 v3</td><td>10C/2.3GHz/25MB/105W/DDR4-2133</td></tr> <tr><td>E5-2640 v3</td><td>8C/2.6GHz/20MB/90W/DDR4-1866</td></tr> <tr><td>E5-2630 v3</td><td>8C/2.4GHz/20MB/85W/DDR4-1866</td></tr> <tr><td>E5-2623 v3</td><td>4C/3GHz/10MB/105W/DDR4-1866</td></tr> <tr><td>E5-2620 v3</td><td>6C/2.4GHz/15MB/85W/DDR4-1866</td></tr> <tr><td>E5-2609 v3</td><td>6C/1.9GHz/15MB/85W/DDR4-1600</td></tr> <tr><td>E5-2603 v3</td><td>6C/1.6GHz/15MB/85W/DDR4-1600</td></tr> <tr><td>E5-2650L v3</td><td>12C/1.8GHz/30MB/65W/DDR4-2133</td></tr> <tr><td>E5-2630L v3</td><td>8C/1.8GHz/20MB/55W/DDR4-1866</td></tr> </table>	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	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												
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Chipset	Intel C610 Series Chipset	Base warranty	1 or 3-year limited onsite service with 9x5/NBD																																																				
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	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.																																																				
Memory capacity	512GB (RDIMM, 32GB x 16)/1024GB (LRDIMM, 64GB x 16), 2nd CPU is needed	Disk bay configuration	PSU requirements																																																				
Memory protection	ECC, memory mirroring, lockstep, and memory sparing	8x3.5"	450W																																																				
		8x2.5"	550W																																																				
		8x2.5"+ Tape	750W																																																				
		16x2.5"	1100W																																																				
		24x2.5"																																																					
RAID controller	<table border="1"> <thead> <tr> <th>RAID controller</th> <th>Drive type</th> <th>RAID support</th> <th>Compatible models</th> </tr> </thead> <tbody> <tr><td>Onboard RAID110i</td><td>6Gbs SATA</td><td>0/1/10, 5 with optional key</td><td>8x3.5" HS/ES, 8x2.5" HS</td></tr> <tr><td>RAID500 PCIe</td><td>6Gbs SAS/SATA</td><td>0/1/10, 5/50 with optional key</td><td>8x3.5" HS</td></tr> <tr><td>RAID520i PCIe</td><td>12Gbs SAS/SATA</td><td>0/1/10, 5/50 with optional key</td><td>8x3.5" HS/ES, 8x2.5" HS</td></tr> <tr><td>RAID710 PCIe (1GB memory)</td><td>6Gbs SAS/SATA</td><td>0/1/10/5/50/6/60</td><td>8x3.5" HS</td></tr> <tr><td>RAID720i PCIe</td><td>12Gbs SAS/SATA</td><td>0/1/10/5/50, 6/60 with optional cache</td><td>8x3.5" HS/ES, 8x2.5" HS</td></tr> <tr><td>AnyRAID 110i</td><td>6Gbs SATA</td><td>0/1/10, 5 with optional key</td><td>8x2.5" HS</td></tr> <tr><td>AnyRAID 510i</td><td>6Gbs SAS/SATA</td><td>0/1/10, 5/50 with optional key</td><td>8x2.5" HS</td></tr> <tr><td>AnyRAID 720i</td><td>12Gbs SAS/SATA</td><td>0/1/10/5/50, 6/60 with optional cache</td><td>8x2.5" HS</td></tr> <tr><td>AnyRAID 720ix</td><td>12Gbs SAS/SATA</td><td>0/1/10/5/50/6/60</td><td>16/24x2.5" HS, 8x2.5" HS+optional tape</td></tr> </tbody> </table> <p>Optional cache for RAID 710: CacheVault flash cache with super capacitor, CacheCade 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.</p>	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	Environmental specification	<table border="1"> <tr><td>Temperature - operating</td><td>50 °F to 95 °F (10 °C to 35 °C)</td></tr> <tr><td>Temperature - non operating (no package)</td><td>-10 °C to 60 °C</td></tr> <tr><td>Temperature - non operating (with package)</td><td>-40 °C to 70 °C</td></tr> <tr><td>Altitude - operating</td><td>(Unpressurized): 0-10000ft (0-3048m)</td></tr> <tr><td>Humidity - operating</td><td>8%~90%, non-condensing</td></tr> <tr><td>Humidity - storage (with package)</td><td>8%~90%, non-condensing</td></tr> </table>	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
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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.	Expansion slots																																																					
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	Slot 1 (riser card 1)	PCIe 3.0 x8, half length, CPU1																																																				
SD module	Up to 2 SDHC flash cards via optional SD module, 8GB or 32GB each	Slot 2 (riser card 1)	PCIe 3.0 x8, half length, full height, CPU1																																																				
PCIe SSD adapter	Supports 1.6TB or 3.2TB SSD via PCIe adapter	Slot 3 (riser card 2)	PCIe 3.0 x8, low-profile, half length, CPU2, requires 2nd riser card and 2nd CPU																																																				
Optical drive	Optional one 9.5mm optical on 3.5" or 8/16 x 2.5" models, DVD-ROM or DVD±RW.	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_isocm_september_2016_thinkserver.xlsx sheet

Model		70Q9000REA
Product		ThinkServer RD450
Region		EMEA
Machine Type		70Q9
TopSeller		TopSeller
Processor		1xE5-2603 v4 6C/1.7GHz/15MB/85W/DDR4-1866
2nd CPU		4XG0G89090
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





