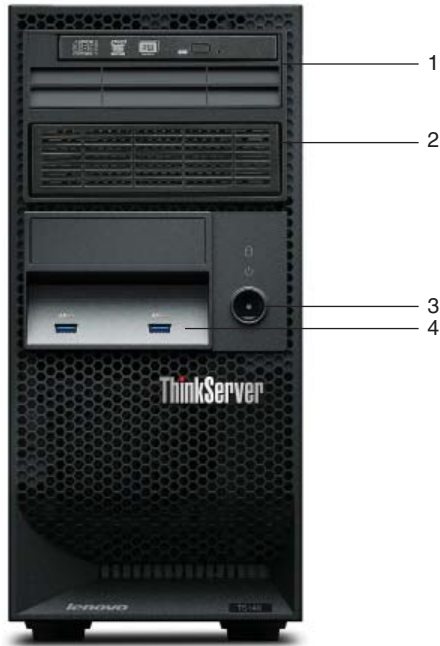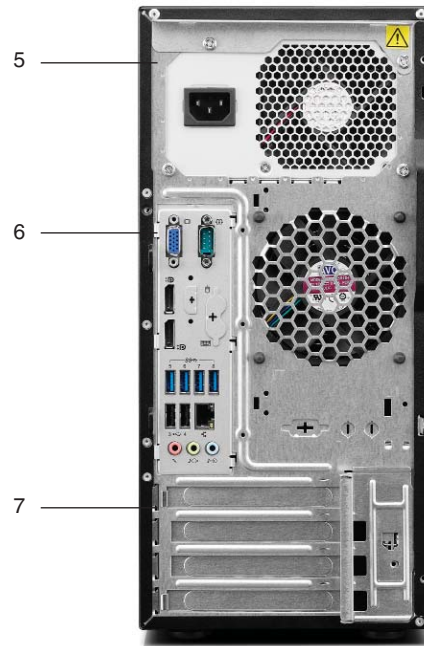# ThinkServer TS140 - Overview

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

5. 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
   1 line-out
   1 microphone-in
   2 DisplayPort (for Intel HD Graphics)
   1 VGA (for Intel HD Graphics)

7. 1 PCIe 3.0 x16
   1 PCIe 2.0 x1
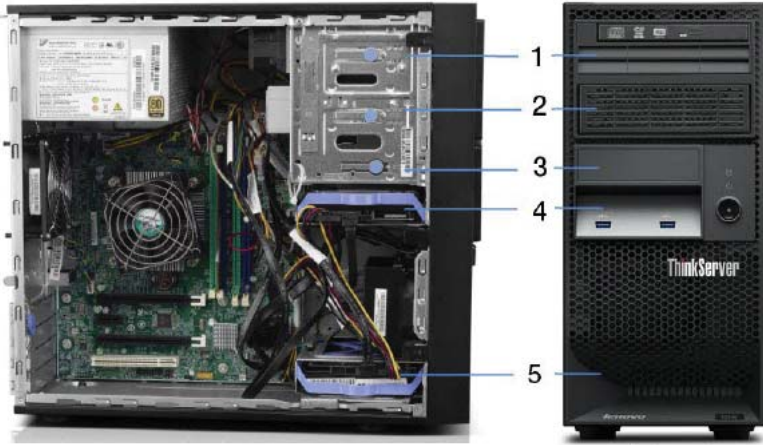   1 PCIe 2.0 x16 (x4 elec)
   1 PCI

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

Components	Specification
Form factor	Tower, rack-mountable to 5U via ThinkServer Tower to Rack Shelf Conversion Kit *(Option PN: 0C19515)*
Chipset	**Intel C226 Chipset**
Systems management	• Intel Active Management Technology 9 on models with Xeon processor (KVM function needs Intel Xeon E3-12x5 v3 processors) • EasyStartup • EasyUpdate
Processor	One LGA1150 socket, supports one processor from Intel Xeon E3-1200 v3, Core-i3 4000, and Pentium G3000 families, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors. The following processors are supported:

Processor Number	# of Cores	# of Threads	Clock Speed	Max Turbo Frequency	Cache	Memory speed	ECC Memory Supported	Processor Graphics
Xeon E3-1285 v3	4	8	3.6 GHz	4 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4700
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 4600
Xeon E3-1270 v3	4	8	3.5 GHz	3.9 GHz	8 MB	DDR3-1600	Yes	
Xeon E3-1245 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600
Xeon E3-1240 v3	4	8	3.4 GHz	3.8 GHz	8 MB	DDR3-1600	Yes	
Xeon E3-1230 v3	4	8	3.3 GHz	3.7 GHz	8 MB	DDR3-1600	Yes	
Xeon E3-1225 v3	4	4	3.2 GHz	3.6 GHz	8 MB	DDR3-1600	Yes	Intel HD Graphics 4600
Xeon E3-1220 v3	4	4	3.1 GHz	3.5 GHz	8 MB	DDR3-1600	Yes	
Core i3-4340	2	4	3.6 GHz		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
Pentium G3420	2	2	3.2 GHz		3 MB	DDR3-1600	Yes	Intel HD Graphics
Pentium G3220	2	2	3 GHz		3 MB	DDR3-1333	Yes	Intel HD Graphics

Notes:
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/

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
Memory capacity	Up to 32GB (8GBx4)
Memory protection	ECC
Additional memory disclaimers	● *Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs*
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support
Drive bays	Supports one 5.25" optical and two 3.5" disk drive bays in standard models, direct cable, no hot-swap up to one slim optical and four 3.5"/2.5" disk drive bays (pending 2.5" disk drives availability): 1: Standard 5.25", 1.6" high optical or optional slim optical + 4th 3.5" drive bay 2: Optional 3rd 3.5" drive bay or optional 4th 2.5" drive bay 3: Optional 3rd 2.5" drive bay 4: Standard 3.5"/2.5" primary drive bay 5: Standard 3.5"/2.5" 2nd drive bay *Notes:* ● *Standard optical and hard drive bays are included in models; optional optical and hard drive bays are available on models with the corresponding drives only* ● *Image above is for reference only. Model in this image contains optional slim optical + 3.5" 2nd hard drive bay with supplemental fan (Bay 1) and optional 3.5" 3rd hard drive bay (Bay 2)* ● *Optional slim optical + 3.5" drive bay (Bay 1) and optional 3rd 2.5" drive bay (Bay 3) can not be supported concurrently on one model.*

Components	Specification
Optical	Supports DVD±RW or DVD ROM, 1.6" high or slim, SATA interface

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 **Rear ports** section)
	 • Also supports the following optional discrete graphics adapters:
	   • NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB
	   • NVIDIA Quadro 600, PCIe 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)
Expansion Slots	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) Slot 4: half-length, full-height, PCI 2.3
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% PSU, 80 PLUS Bronze qualified • One fixed 450 watts, autosensing, 92% PSU, 80 PLUS Platinum qualified
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)
Mechanical	• Raven black color; metal case • 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
Serviceability	• Toolless side cover removal • Toolless disk and optical drive removal (standard bays) • Toolless adapter retention • Illuminated front icons
Environmental certifications	• GREENGUARD certified • 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 (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	10%~80%, non-condensing
Humidity - non operating (no package)	10%~90%, non-condensing
Humidity - non operating (with package)	10%~90%, non-condensing

Acoustic noise (idle/working mode)	Category	Min Configuration	Best Configuration
	CPU	1 CPU	1 CPU
	Optical Drive	0 DVD	1 DVD
	Drive Bays	Up to one	Up to three
	HDD	1x 500GB SATA	3x 500GB SATA
	Memory	1x 2GB UDIMM	1x 2GB UDIMM
	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 - System Specifications (III of III)

Components	Specification
Warranty	1 or 3-year limited warranty, parts and labor, more services information see S-TS1 and S-TS3 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*