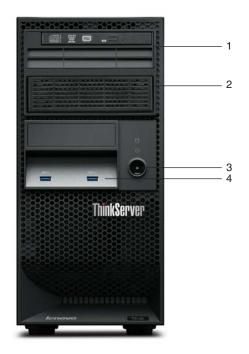
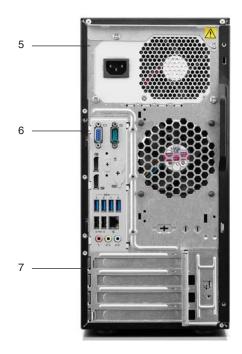
#### ThinkServer® TS140 - Overview





#### 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

Components	Specification								
Form factor	Tower, rack-mountable	to 5U v	ia ThinkS	erver Towe	er to Rack S	helf Cor	nversion Kit (C	Option PN: 0C	19515)
Chipset	Intel C226 Chipset								
Systems management	Intel Active Managem (KVM function needs     EasyStartup     EasyUpdate	ent Ted Intel X	chnology s eon E3-12	9 on mode 2x5 v3 pro	ls with Xeor cessors)	n proces	sor		
Processor	One LGA1150 socket, supports one processor integrated 2-channel DI	r from I DR3 m	ntel Xeon emory co	E3-1200 v	v3, Core-i3 tional integr	4000, ar	nd Pentium G3 cessor graphi	8000 families, cs on selected	d processors.
	The following processor	rs are s	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 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	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 E3-1230 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 P4600
	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 МВ	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
Mamanutuna	Notes: All information is provided Intel may update this inform								
Memory type	1600MHz UDIMM, DDF	-	J, 2-cnan	nei capabi	e; 2GB, 4GI	s, and 8	GB ECC UDIN	viivis are availa	able
Memory DIMM sockets	·	kets							
Memory capacity	Up to 32GB (8GBx4)								
Memory protection	ECC								
Additional memory disclaimers	Actual memory operating	g speed	depends d	n processo	r memory con	troller sp	eed, installed m	emory speed, a	nd quantity of memory DIMMs
Onboard SATA controller	Onboard ThinkServer F RAID 0, 1, 5, 10 suppor	rt			•				
	Supports one 5.25" opt up to one slim optical a	ical and nd four	d two 3.5" 3.5"/2.5"	disk drive disk drive	bays in sta bays (pend	ndard m ing 2.5"	odels, direct o	able, no hot-s ailability):	wap
	The second of th				1-			1: Standard optional s	5.25", 1.6" high optical or lim optical + 4th 3.5" drive bay
	The state of the s	TIX			2-				3rd 3.5" drive bay al 4th 2.5" drive bay
		V			3-			3: Optional	3rd 2.5" drive bay
	n I // · · · · · · · · · · · · · · · · ·	M			<u> </u>			4: Standard	3.5"/2.5" primary drive bay
								5: Standard	3.5"/2.5" 2nd drive bay
Drive bays		eft			— 5 -	Acceptance	ThinkServer		o.o , 2.o 2 a o o.,
	Notes:  Standard optical and hard optional optical and hard Image above is for refere optional 3.5" 3rd hard dri	d drive l drive ba ence onl	ays are ava y. Model in 'Bav 2)	nilable on mo this image o	odels with the contains optic	correspo nal slim o	ending drives on optical + 3.5" 2nd	d hard drive bay	with supplemental fan (Bay 1) and
	Optional slim optical + 3.	5" drive	pay (Bay 1	) and option	nai 3rd 2.5" di	rive bay (l	≾ay ၖ) can not b	e supported co	ncurrently on one model.

## ThinkServer® TS140 Platform Specifications - II of III

Components	Specification		
Optical	Supports DVD±RW or DVD ROM, 1.		
	<ul> <li>Integrated Intel HD Graphics on X works along with discrete graphics</li> </ul>	eon E3-12x5 v3, Core i3, and Pentium proce	essors, uses main memory,
	enables three display connectors	(2 DisplayPort, 1 VGA) on rear ports	
Graphics	(detailed information please see F	Rear ports section)	
	<ul> <li>Also supports the following option</li> <li>NVIDIA Quadro NVS 300, PCIe</li> </ul>		
	NVIDIA Quadro NV3 300, PCIe     NVIDIA Quadro 600, PCIe x16 a		
Front ports	Two USB 3.0 (blue)	•	
Rear ports	One VGA and two DisplayPort for mo	odels with Intel HD Graphics,	
	Slot 1: half-length, full-height, PCle 3	e serial (9-pin), one ethernet (RJ-45), three	analog audio ports (line-in, line-out, mic-in)
	Slot 2: half-length, full-height, PCIe 2	.0 x10 (near OFO)	
Expansion Slots	Slot 3: half-length, full-height, PCIe 2	.0 x16 (x4 elec)	
	Slot 4: half-length, full-height, PCI 2.		
Onboard Ethernet	One onboard gigabit ethernet, Intel I Supports the following:	217	
Discrete Ethernet	<ul> <li>Intel Gigabit CT Desktop Adapter</li> </ul>	(1xGbE, RJ-45)	
(optional)	<ul> <li>Intel Ethernet Server Adapter 1350</li> </ul>	D-T2 (2xGbE, RJ-45)	
	Intel Ethernet Server Adapter I350	0-T4 (4xGbE, RJ-45)	
Keyboard/mouse	None (use USB port)	ling on modelo:	
Power supply	Supports one of the follwing, dependence One fixed 280 watts, autosensing	ling on models: 85% PSU, 80 PLUS Bronze qualified	
. onc. Juppiy		92% PSU, 80 PLUS Platinum qualified	
	Security chip: ST33ZP24AR28PV\$	SP for TPM function, TCG 1.2-compliant	
		ck; padlock prohibits side cover removal)	
0	<ul> <li>Security slot (in rear for optional Keel)</li> <li>Power-on password</li> </ul>	ensington Microsaver cable; prohibits side co	over removal)
Security	Boot sequence control		
	Boot without keyboard, mouse, dis	kette	
	<ul><li>Serial port I/O control</li><li>USB port disablement (front or all)</li></ul>		
	Raven black color; metal case		
	• 6.89"W x 16.97"D x 14.76"H		
Mechanical	<ul> <li>175mm W x 431mm D x 375mm H</li> <li>28.66 lb (13kg) max configuration</li> </ul>		
	• 25-liter		
	Toolless side cover removal		
Serviceability	<ul> <li>Toolless disk and optical drive reme</li> <li>Toolless adapter retention</li> </ul>	oval (standard bays)	
	Illuminated front icons		
Environmental	GREENGUARD® certified		
certifications	<ul><li>Energy Star Server 1.1 qualified</li><li>RoHS-compliant</li></ul>		
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	-40 °C to 70 °C		
(with package)	0	. 1000001 (0.0040)	
Altitude - operating	Supported Altitude (unpressurized):	U-10000ft (0-3048m)	
Humidity - operating	10%~80%, non-condensing		
Humidity - non operating	10%~90%, non-condensing		
(no package)	1070 -0070, Horr condensing		
Humidity -			
non operating (with package)	10%~90%, non-condensing		
(willi package)	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
Acoustic noise (idle/working mode)	Memory	1x 2GB UDIMM	1x 2GB UDIMM
(iuie/working mode)	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 4600	No	Open (3x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001MUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD 4600	No	1x500GB 3.5" SATA (3x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001NUX	Xeon E3-1275 v3 (4C/3.5GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD 4600	No	Open (3x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001PUX	Xeon E3-1245 v3 (4C/3.4GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD 4600	No	Open (3x3.5" Bay)	Slim DVD	No	No	280W	No	No	1
70A4001QUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD 4600	RAID 1	2x500GB 3.5" SATA	Slim DVD	No	No	280W	No	Foundation	1
70A4001RUS	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD 4600	RAID 1	2x500GB 3.5" SATA (3x3.5" Bay)	Slim DVD	No	No	280W	No	Essentials	1
70A4001SUX	Xeon E3-1225 v3 (4C/3.2GHz/8MB/1600MHz)	1600MHz ECC	4GBx1	Intel HD 4600	No	1x1TB 3.5" SATA (3x3.5" Bay)	Slim DVD	No	No	280W	No	No	1

<sup>\*</sup> 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	<ul> <li>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)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCIe x16 adapter, 1GB</li> </ul> </li> </ul>
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, two 3.5" hard drive bays standard
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	<ul> <li>25-liter, raven black color; metal case</li> <li>(WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm</li> <li>28.66 lb (13kg) max configuration</li> </ul>
Serviceability	<ul> <li>Toolless side cover removal</li> <li>Toolless disk and optical drive removal (standard bays)</li> <li>Toolless adapter retention</li> <li>Illuminated front icons</li> </ul>
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>
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 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

Standard optical and hard drive bays are included in models; optional optical and hard drive bays are available on models with the

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 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 in same model.

#### **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, PCI 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 <sup>*</sup>	Processor	Memory type	Memory DIMMs	Graphics	Pre- conf RAID	Storage	Optical		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 4600	No	Open (3x3.5" Bay)	Slim DVD±RW	No	No	450W	No	No	1	

<sup>\*</sup> 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

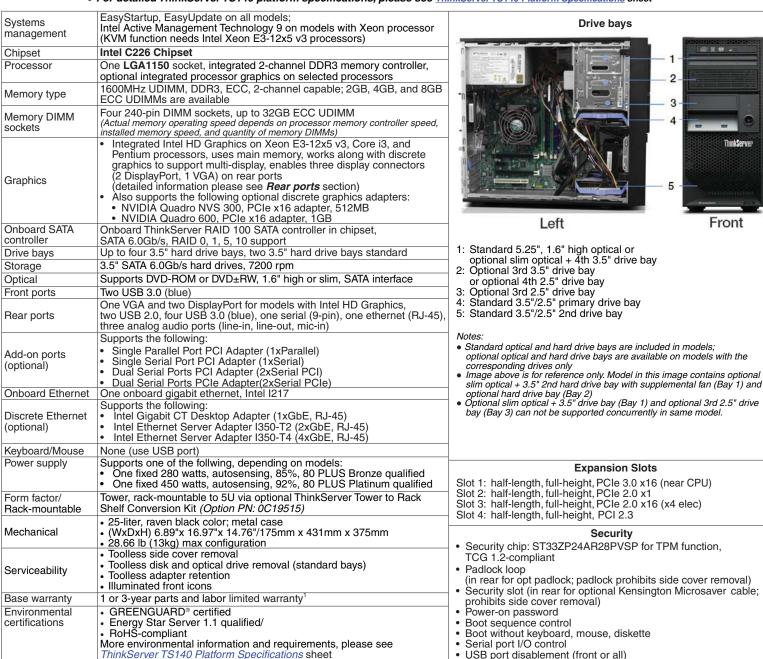
Systems	EasyStartup, EasyUpdate on all models; Intel Active Management Technology 9 on models with Xeon processor	Drive bays
management	(KVM function needs Intel Xeon E3-12x5 v3 processors)	
Chipset	Intel C226 Chipset	Name of the Republic of the Re
Processor	One <b>LGA1150</b> socket, integrated 2-channel DDR3 memory controller, optional integrated processor graphics on selected processors	2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 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	<ul> <li>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)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCIe x16 adapter, 1GB</li> </ul> </li> </ul>	1 Indiserver
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, two 3.5" hard drive bays standard	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)	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
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	optional hard drive bay (Bay 2)
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)	Optional slim optical + 3.5" drive bay (Bay 1) and optional 3rd 2.5" drive bay (Bay 3) can not be supported concurrently in same model.
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)
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 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
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 <sup>1</sup>	(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)

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 4600	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 4600	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 4600	No	Open (3x3.5" 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 4600	No	Open (3x3.5" 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 4600	No	Open (3x3.5" 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 4600	No	1x500GB 3.5" SATA (3x3.5" 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 4600	RAID 1	2x500GB 3.5" SATA (3x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Foundation	1

<sup>\*</sup> 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



USB port disablement (front or all)

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 4600	RAID 1	2x500GB 3.5" SATA (3x3.5" 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 4600	RAID 1	2x500GB 3.5" SATA (3x3.5" 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 4600	No	Open (3x3.5" 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 4600	No	Open (3x3.5" 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 4600	No	Open (3x3.5" 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 4600	RAID 1	2x1TB 3.5" SATA (3x3.5" 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 4600	RAID 1	2x1TB 3.5" SATA (3x3.5" Bay)	Slim DVD±RW	No	No	280W	No	Essentials	1

<sup>\*</sup> 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

	For detailed I ninkServer 15140 platform specifications, please see <u>In</u>	
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	Promition in the second
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
Graphics	<ul> <li>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)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCIe x16 adapter, 1GB</li> </ul> </li> </ul>	ThinkServer 5
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, two 3.5" hard drive bays standard	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 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)	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
Onboard Ethernet	One onboard gigabit ethernet, Intel I217 Supports the following:	optional hard drive bay (Bay 2) Optional slim optical + 3.5" drive bay (Bay 1) and optional 3rd 2.5" drive
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)	bay (Bay 3) can not be supported concurrently in same model.
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	<ul> <li>25-liter, raven black color; metal case</li> <li>(WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm</li> <li>28.66 lb (13kg) max configuration</li> </ul>	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 USB port disablement (front or all)

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 4600	RAID 1	2x1TB 3.5" SATA (3x3.5" 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 4600	No	2x2TB 3.5" SATA (3x3.5" 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 4600	No	2x2TB 3.5" SATA (3x3.5" 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 4600	No	2x2TB 3.5" SATA (3x3.5" Bay)	Slim DVD±RW	No	1x350-T2	280W	No	No	3

<sup>\*</sup> 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	
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	<ul> <li>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)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCle x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCle x16 adapter, 1GB</li> </ul> </li> </ul>	Loft
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	Left
Drive bays	Up to four 3.5" hard drive bays, two 3.5" hard drive bays standard	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
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)	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
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)	Notes:  Standard optical and hard drive bays are included optional optical and hard drive bays are available corresponding drives only.  Image above is for reference only. Model in this
Onboard Ethernet	One onboard gigabit ethernet, Intel I217	slim optical + 3.5" 2nd hard drive bay with supp
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)	optional hard drive bay (Bay 2) • Optional slim optical + 3.5" drive bay (Bay 1) an bay (Bay 3) can not be supported concurrently i
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, PCle 3.0 x16 Slot 2: half-length, full-height, PCle 2.0 x1
Mechanical	<ul> <li>25-liter, raven black color; metal case</li> <li>(WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm</li> <li>28.66 lb (13kg) max configuration</li> </ul>	Slot 3: half-length, full-height, PCle 2.0 x16 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 chip: ST33ZP24AR28PVSP for T TCG 1.2-compliant     Padlock loop
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	<ul><li>(in rear for opt padlock; padlock prohibits</li><li>Security slot (in rear for optional Kensington)</li></ul>
Environmental certifications	GREENGUARD® certified     Energy Star Server 1.1 qualified/     RoHS-compliant     More environmental information and requirements, please see     ThinkServer TS140 Platform Specifications sheet	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)

- ded in models; ble on models with the
- is image contains optional oplemental fan (Bay 1) and
- and optional 3rd 2.5" drive in same model.

6 (near CPU)

6 (x4 elec)

- TPM function,
- side cover removal)
- gton Microsaver cable;
- USB port disablement (front or all)

#### ThinkServer® TS140 (70A1) - 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 E3-1280 v3 (4C/3.6GHz/8MB/1600MHz)	1600MHz ECC	8GBx4	NVS 300	RAID 10	4x4TB 3.5 SATA (4x3.5" Bay)	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

<sup>\*</sup> 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					
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	<ul> <li>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)</li> <li>Also supports the following optional discrete graphics adapters:         <ul> <li>NVIDIA Quadro NVS 300, PCIe x16 adapter, 512MB</li> <li>NVIDIA Quadro 600, PCIe x16 adapter, 1GB</li> </ul> </li> </ul>					
Onboard SATA controller	Onboard ThinkServer RAID 100 SATA controller in chipset, SATA 6.0Gb/s, RAID 0, 1, 5, 10 support	Left  1: Standard 5.25", 1.6" high optical or				
Drive bays	Up to four 3.5" hard drive bays, two 3.5" hard drive bays standard	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				
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  Notes:  Standard optical and hard drive bays are include optional optical and hard drive bays are available corresponding drives only  Image above is for reference only. Model in this slim optical + 3.5" 2nd hard drive bay with supping the				
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	optional hard drive bay (Bay 2)				
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)	Optional slim optical + 3.5" drive bay (Bay 1) and bay (Bay 3) can not be supported concurrently in				
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 (				
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 ( Slot 4: half-length, full-height, PCl 2.3				
Mechanical	<ul> <li>25-liter, raven black color; metal case</li> <li>(WxDxH) 6.89"x 16.97"x 14.76"/175mm x 431mm x 375mm</li> <li>28.66 lb (13kg) max configuration</li> </ul>	Security  • Security chip: ST33ZP24AR28PVSP for TI				
Serviceability	<ul> <li>Toolless side cover removal</li> <li>Toolless disk and optical drive removal (standard bays)</li> <li>Toolless adapter retention</li> <li>Illuminated front icons</li> </ul>	TCG 1.2-compliant     Padlock loop     (in rear for opt padlock; padlock prohibits s     Security slot (in rear for optional Kensingto				
Base warranty	1 or 3-year parts and labor limited warranty <sup>1</sup>	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     USB port disablement (front or all)				

# **Drive bays** Left Front

- al and hard drive bays are included in models; Il and hard drive bays are available on models with the drives only
- s for reference only. Model in this image contains optional 3.5" 2nd hard drive bay with supplemental fan (Bay 1) and lrive bay (Bay 2)
- optical + 3.5" dríve bay (Bay 1) and optional 3rd 2.5" drive in not be supported concurrently in same model.

#### **Expansion Slots**

gth, full-height, PCle 3.0 x16 (near CPU)

gth, full-height, PCle 2.0 x16 (x4 elec)

#### Security

- : ST33ZP24AR28PVSP for TPM function, npliant
  - t padlock; padlock prohibits side cover removal)
- (in rear for optional Kensington Microsaver cable; cover removal)
- ssword
- ce control
- keyboard, mouse, diskette
- O control
- USB port disablement (front or all)