ThinkStation.



Lenovo ThinkStation D30



Lenovo ThinkStation D30



Lenovo ThinkStation D30



Lenovo ThinkStation D30



Lenovo ThinkStation D30



Lenovo ThinkStation D30

ThinkStation D30 Platform Specifications - I of IV

Text in red shows that these features only apply to MT type 4223 and 4229 models, text in green shows that the features are supported on other models except MT type 4223 and 4229 models

Chipset	Intel C602 Chipset	
Intel AMT	MT type 4223 and 4229: Others MT types:	Intel Active Management Technology 7 Intel Active Management Technology 8
Dunnan	Tive I C A CO 11 and letter av	and the same to the same and the same lated Very EF 0000 and lated Very EF 0000 and family

Processor

Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 and Intel Xeon E5-2600 v2 family, or up to one processor from Intel Xeon E5-1600 v2 family, integrated 4-channel DDR3 memory controller per processor. Supports the following:

Processor	# of	# of	Clock	Max Turbo		Intel QPI	# of QPI		Memory	
Number	Cores	Threads	Speed	Frequency	Cache	Speed	Links	Max TDP	Speed	Intel vPro technology
Xeon E5-2603	4	4	1.8 GHz		10 MB	6.4 GT/s	2	80 W	1066MHz	vPro
Xeon E5-2609	4	4	2.4 GHz		10 MB	6.4 GT/s	2	80 W	1066MHz	vPro
Xeon E5-2620	6	12	2 GHz	2.5 GHz	15 MB	7.2 GT/s	2	95 W	1333MHz	vPro
Xeon E5-2630	6	12	2.3 GHz	2.8 GHz	15 MB	7.2 GT/s	2	95 W	1333MHz	vPro
Xeon E5-2630L	6	12	2 GHz	2.5 GHz	15 MB	7.2 GT/s	2	60 W	1333MHz	vPro
Xeon E5-2637	2	4	3 GHz	3.5 GHz	5 MB	8 GT/s	2	80 W	1600MHz	vPro
Xeon E5-2640	6	12	2.5 GHz	3 GHz	15 MB	7.2 GT/s	2	95 W	1333MHz	vPro
Xeon E5-2643	4	8	3.3 GHz	3.5 GHz	10 MB	8 GT/s	2	130 W	1600MHz	vPro
Xeon E5-2650	8	16	2 GHz	2.8 GHz	20 MB	8 GT/s	2	95 W	1600MHz	vPro
Xeon E5-2650L	8	16	1.8 GHz	2.3 GHz	20 MB	8 GT/s	2	70 W	1600MHz	vPro
Xeon E5-2660	8	16	2.2 GHz	3 GHz	20 MB	8 GT/s	2	95 W	1600MHz	vPro
Xeon E5-2665	8	16	2.4 GHz	3.1 GHz	20 MB	8 GT/s	2	115 W	1600MHz	vPro
Xeon E5-2667	6	12	2.9 GHz	3.5 GHz	15 MB	8 GT/s	2	130 W	1600MHz	vPro
Xeon E5-2670	8	16	2.6 GHz	3.3 GHz	20 MB	8 GT/s	2	115 W	1600MHz	vPro
Xeon E5-2680	8	16	2.7 GHz	3.5 GHz	20 MB	8 GT/s	2	130 W	1600MHz	vPro
Xeon E5-2690	8	16	2.9 GHz	3.8 GHz	20 MB	8 GT/s	2	135 W	1600MHz	vPro
Xeon E5-1603	4	4	2.8 GHz		10 MB			130 W	1066MHz	vPro
Xeon E5-2603 v2	4	4	1.8 GHz	1.8 GHz	10 MB	6.4 GT/s	2	80 W	1333MHz	vPro
Xeon E5-2609 v2	4	4		2.5 GHz	10 MB	6.4 GT/s	2	80 W	1333MHz	vPro
Xeon E5-2620 v2	6	12	_	2.6 GHz	15 MB	7.2 GT/s	2	80 W	1600MHz	vPro
Xeon E5-2630L v2	6	12	2.4 GHz	2.8 GHz	15 MB	7.2 GT/s	2	60 W	1600MHz	vPro
Xeon E5-2630 v2	6	12	2.6 GHz	3.1 GHz	15 MB	7.2 GT/s	2	80 W	1600MHz	vPro
Xeon E5-2637 v2	4	8	3.5 GHz	3.8 GHz	15 MB	8 GT/s	2	130 W	1866MHz	vPro
Xeon E5-2640 v2	8	16	2 GHz	2.5 GHz	20 MB	7.2 GT/s	2	95 W	1600MHz	vPro
Xeon E5-2643 v2	6	12	3.5 GHz	3.8 GHz	25 MB	8 GT/s	2	130 W	1866MHz	vPro
Xeon E5-2650L v2	10	20	_	2.1 GHz	25 MB	7.2 GT/s	2	70 W	1600MHz	vPro
Xeon E5-2650 v2	8	16	2.6 GHz	3.4 GHz	20 MB	8 GT/s	2	95 W	1866MHz	vPro
Xeon E5-2660 v2	10	20		3 GHz	25 MB	8 GT/s	2	95 W	1866MHz	vPro
Xeon E5-2667 v2	8	16	3.3 GHz	4 GHz	25 MB	8 GT/s	2	130 W	1866MHz	vPro
Xeon E5-2670 v2	10	20	2.5 GHz	3.3 GHz	25 MB	8 GT/s	2	115 W	1866MHz	vPro
Xeon E5-2680 v2	10	20	2.8 GHz	3.6 GHz	25 MB	8 GT/s	2	115 W	1866MHz	vPro
Xeon E5-2687W v2	8	16		4 GHz	25 MB	8 GT/s	2	150 W	1866MHz	Yes
Xeon E5-2690 v2	10	20	3 GHz	3.6 GHz	25 MB	8 GT/s	2	130 W	1866MHz	vPro
Xeon E5-2695 v2	12	24		3.2 GHz	30 MB	8 GT/s	2	115 W	1866MHz	vPro
Xeon E5-2697 v2	12	24	2.7 GHz	3.5 GHz	30 MB	8 GT/s	2	130 W	1866MHz	vPro
Xeon E5-1607 v2	4	4	3 GHz		10 MB			130 W	1600MHz	vPro
Xeon E5-1620 v2	4	8	3.7 GHz	3.9 GHz	10 MB			130 W	1866MHz	vPro
Xeon E5-1650 v2	6	12		3.9 GHz	12 MB			130 W	1866MHz	vPro
Xeon E5-1660 v2	6	12	3.7 GHz	4 GHz	15 MB			130 W	1866MHz	vPro

Notes:
1. ThinkStation D30 support two processors. When ordering two processors, they must be the same
2. When using Intel Xeon E5-1600 and E5-1600 v2 series processors, max CPU configuration is 1
3. Intel Xeon processor numbering system is an alpha numeric representation of product line, product family and version. An 'L' suffix will be used to identify a low power processor.

More details please see http://www.intel.com/products/processor number
4. 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/products/family/59138/Intel-Xeon-Processor-E5-Family/server

ThinkStation D30 Platform Specifications - II of IV

Text in red shows that these features only apply to MT type 4223 and 4229 models, text in green shows that the features are supported on other models except MT type 4223 and 4229 models

UDIMM or RDIMM, ECC, DDR3, sixteen 240-pin DIMM sockets (eight DIMM sockets per processor), 8-channel capable (4-channel per processor), 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16) Memory Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs • Over eight DIMMs requires dual processors Additional Mixing of RDIMM and UDIMM is not supported memory disclaimers Maximum memory capacity is also limited by operating system • When using processor from Xeon E5-1600 and E5-1600 v2 series, only eight DIMM sockets for CPU1 are available and max memory cacpacity is 64GB (UDIMM, 8GBx8)/256GB (RDIMM, 32GBx8)

Graphics adapters and GPU computing Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology, supports the following NVIDIA Quadro, NVS graphics adapters and Tesla GPU computing processors

	Memory Size	CUDA Processor Cores	Display Connectors	Max. Displays	# of slots	Power
NVIDIA Quadro a	nd NVS Graphics	;	1	-		
Quadro K6000	12GB	2880	1 dual-link DVI-I 1 dual-link DVI-D 2 DisplayPort	4	2	225W
Quadro K5000	4GB	1536	1 dual-link DVI-I 1 dual-link DVI-D 2 DisplayPort	4	2	122W
Quadro K4000	3GB	768	1 dual-link DVI-I 2 DisplayPort	4*	1	80W
Quadro K2000	2GB	384	1 dual-link DVI-I 2 DisplayPort	4*	1	51W
Quadro K2000D	2GB	384	1 dual-link DVI-I 1 dual-link DVI-D 1 mini DisplayPort	4*	1	51W
Quadro K600	1GB	192	1 dual-link DVI-I 1 DisplayPort	2	1	41W
Quadro 410	512MB	192	1 dual-link DVI-I 1 DisplayPort	2	1	37W
Quadro 6000	6GB	448	1 dual-link DVI-l 2 DisplayPort 1 Stereo	2	2	204W
Quadro 5000	2.5GB	352	1 dual-link DVI-I 2 DisplayPort, 1 Stereo	2	2	152W
Quadro 4000	2GB	256	1 dual-link DVI-I 2 DisplayPort 1 Stereo	2	1	142W
Quadro 2000	1GB	192	1 dual-link DVI-I 2 DisplayPort	2	1	62W
Quadro 2000D	1GB	192	2 dual-link DVI-I	2	1	62W
Quadro 600	1GB	96	1 dual-link DVI-I 1 DisplayPort	2	1	40W
NVS 510	2048 MB	192	4 mini DisplayPort (with 4 mini DP to DP dongles)	4	1	35W
NVS 315	1024MB	48	DMS59 to dual single-link DVI-I or dual DisplayPort	2	1	19.5W
NVS 310	512 MB	48	2 DisplayPort	2	1	19.5W
NVS 300	512 MB	16	DMS59 to dual single- link DVI-I	2	1	17.5W
NVIDIA Tesla GPL	J Computing Pro	cessors (as part of NVIDIA M	aximus Platform)			
Tesla K20	5GB	2496				225W
Tesla C2075	6GB	448				225W

^{*} Quadro K4000, K2000, and K2000D are equipped with 3 onboard display connectors, 4 Displays require a supported DisplayPort 1.2 Multi-Stream capable hub or displays

- ThinkStation supports NVIDIA SLI Technology with selected NVIDIA Quadro graphics adapters, additional SLI cable is needed. For the latest Quadro SLI certified list on ThinkStation, please see www.nvidia.com/object/quadro_sli_compatible_systems.html
 ThinkStation D30 support NVIDIA Maximus technology. Maximus technology combines the visualization and interactive design capability of NVIDIA Quadro graphics and the high performance computing power of NVIDIA Tesla GPU computing processors in a single workstation. For more information on the latest Maximus certifications for ThinkStation and how to build Maximus system,
- please see www.nvidia.com/object/maximus.html
 CUDA Processor Cores cannot be compared between GPU generations due to several important architectural differences that exist between streaming multiprocessor designs.

ThinkStation D30 Platform Specifications - III of IV

Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support
Upgrade ROM for onboard drive controllers	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to: • five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module,
(optional)	SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support
Discrete drive controller (optional)	One the following, depending on model: LSI SAS 9240-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support optional upgrade key for RAID 5 support LSI SAS 9260-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support
Hard drive(s)	Supports the following: 3.5" SATA: SATA 6.0Gb/s, 7200 rpm, up to 4TB 3.5" Hybrid: SATA 6.0Gb/s, 7200 rpm, integrated 8GB NAND flash 2.5" SATA: SATA 6.0Gb/s, 10000 rpm, up to 1TB 3.5" SAS: SAS 6.0Gb/s, 15000 rpm, up to 600GB 2.5" SAS: SAS 6.0Gb/s, 15000 rpm, up to 300GB 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s, OPAL-capable on selected models, up to 300GB mSATA: mSATA Solid State Drive (SSD), SATA 6.0Gb/s, up to 128GB
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface
Drive Bays	Three external 5.25" bays for opticals, five internal 3.5" bays for drives
Media reader (opt)	Optional 29-in-1 media card reader on selected models
Front ports	MT type 4223 and 4229: Two USB 2.0, microphone (3.5mm), headphone (3.5mm) Two USB 3.0, microphone (3.5mm), headphone (3.5mm)
Rear ports	Eight USB 2.0, two USB 3.0 (blue ports), one serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)
	Optiomal FireWire PCIe adapter, 1394a-2000, 400Mbps, one 6-pin port on rear, one 6-pin port on front
Audio	High Definition (HD) Audio, Realtek® ALC662 codec
Speaker	Internal speaker for business audio
Onboard Ethernet	Dual onboard gigabit ethernet, Intel 82579 and 82574
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black
Mouse	Optical Wheel Mouse (USB connector), black
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified
Security	 Security chip:
Mechanical	 Raven black color; metal case 8.3"W x 23.7"D x 19.1"H (with handle) 210mm W x 602mm D x 485mm H 60.6 lb (27.5kg) max confi guration 55-liter
Expansion slots	Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16* (for graphics adapter) Slot 3: full-length, full-height, 9Cle 3.0 x16* (for graphics adapter) Slot 4: full-length, full-height, PCle 3.0 x16* (for graphics adapter) Slot 5: full-length, full-height, PCle 2.0 x4 Slot 6: half-length, full-height, 32-bit PCl 2.3 * Adapters >75W use auxiliary power connector(s) from PSU

ThinkStation D30 Platform Specifications - IV of IV

	Demographs handle on ton front
	Removable handle on top front Toolless side cover removal
O a series a series little a	Toolless disk and optical drive removal
Serviceability	Toolless adapter retention
	Illuminated front icons
	Rack shelf support or optional rail kit
ISV certifications	Please visit <u>www.lenovo.com/support/ISV</u>
Environmental	GREENGUARD® certified
certifications	RoHS-compliant EPEAT™ Gold rating
Warranty	1 or 3-year limited warranty, parts and labor
ThinkVantage®	Supports ThinkVantage® technologies
Tillikvalitage	One the following, depending on model:
Preloaded operating	Windows® 7 Professional 64
systems	Windows 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit
1	Windows 8 Pro 64-bit
	For Windows 7 models:
	Rescue and Recovery®
	Norton® Internet Security (30 days of virus defi nitions) Adobe® Reader®
	• Adobe Flash® Plaver
	Microsoft® Office preloaded; purchase product key to activate
	Corel® WinDVD® (DVD±RW model(s))
Preloaded	Ulead® DVD MovieFactory® (DVD±ŘÍW model(s))
applications	Facilities of models
(only some listed)	For Windows 8 models: • Evernote®
	Norton Internet Security (30 days of virus definitions)
	Norton Studio
	- Skype™
	Microsoft Office 2013 preloaded;
	purchase product key to activate • Cyberlink Power2Go (DVD±RW model(s))
	Cyberlink PowerProducer (DVD±RW model(s)) Cyberlink PowerProducer (DVD±RW model(s))
	- 6/25/11/1/ (15/25/11

ThinkStation D30 (4354) - TopSeller (June 2013)

Type- model ¹	Processor(s)	Memory (MHz/type)	Memory DIMMs	unve		Pre-conf RAID	Hard drive(s) ²	Optical	Media reader	Graphics adapter(s) and GPU computing	1394 adptr	Chassis intrusion switch	Preloaded OS
4354-13G	2xE5-2609 (4C/2.4GHz/10MB/1066)	1600MHz UDIMM	4GBx2	No	No	No	1x2TB 3.5" SATA	DVD±RW	29-in-1	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-14G	1xE5-2620 (6C/2GHz/15MB/1333)	1600MHz UDIMM	4GBx2	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-15G	1xE5-2630 (6C/2.3GHz/15MB/1333)	1600MHz UDIMM	4GBx4	No	No	No	1x300GB 3.5" SAS	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL*, 2xDP, 80W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-16G	1xE5-2630 (6C/2.3GHz/15MB/1333)	1600MHz UDIMM	4GBx4	SAS	No	No	1x300GB 3.5" SAS	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL, 2xDP, 80W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-17G	2xE5-2620 (6C/2GHz/15MB/1333)	1600MHz UDIMM	4GBx3	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
1 Model in it	talics shows that this is a Globa	l Model									* DL =	Dual Link, S	SL = Single Link

• For ThinkStation D30 platform specifications, please see ThinkStation D30 Platform Specifications sheet

Chipset	Intel C602 Chipset	Tower
Processor	Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 family, integrated 4-channel DDR3 memory controller per processor	Raven black color; metal case 8.3"w x 23.7"D x 19.1"H (with handle)
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	One of the control of the contr
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system 	Toolless side cover removal Toolless disk and optical drive removal Toolless dapter retention Illuminated front icons Rack shelf support or optional rail kit
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	6 disk 7 disk 8 disk
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 1-3: 5.25", 1.6" high, external, for optical Bay 4: 3.5", 1" high, external, for media reader Bay 5-9: 3.5", 1" high, internal, for hard drive*
Upgrade ROM for onboard	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to:	* Bay 5 is available on models with the SATA or SAS Hard Disk Drive enablement module installed.
drive controllers (optional)	 five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support 	Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, 32-bit PCl 2.3 Slot 4: full-length, full-height, PCle 3.0 x16**
Discrete drive controller (optional)	One the following, depending on model: LSI SAS 9240-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support optional upgrade key for RAID 5 support LSI SAS 9260-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support	Slot 5: full-length, full-height, PCIe 2.0 x4 Slot 6: half-length, full-height, 32-bit PCI 2.3 ** Adapters > 75W use auxiliary power connector(s)
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 2.5" SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s OPAL-capable on some models mSATA: mSATA SSD, SATA 6.0Gb/s	SECURITY Security chip (see information on left) Side cover lock (ships with two identical keys) Padlock loop (in rear for opt padlock;
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	padlock prohibits side cover removal)
Media reader (opt)	Optional 29-in-1 media card reader on selected models	Security slot (in rear for optional Kensington® Microsaver® cable;
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	prohibits side cover removal)
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	Boot sequence control
IEEE 1394 adptr (optional)	Optiomal FireWire PCle adapter on selected models, 1394a-2000, 400Mbps, one 6-pin port on rear, one 6-pin port on front	Serial port I/O enable/disable
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	USB 2.0 ports enable/disable individually USB 3.0 ports enable/disable concurrently
Speaker	Internal speaker for business audio	 USB 3.0 ports enable/disable concurrently Chassis intrusion switch on selected model(s)
Onboard Ethernet	Dual onboard gigabit ethernet, Intel 82579 and 82574	Intel AMT
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	Intel Amil Intel Active Management Technology 8 supported
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black	0, 11
Mouse	Optical Wheel Mouse (USB connector), black	ISV certifications
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified	Please visit <u>www.lenovo.com/support/ISV</u> Environmental certifications
Preloaded operating systems (OS)	One the following, depending on model: Windows 7 Professional 64 Windows 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit	GREENGUARD® certified RoHS-compliant EPEAT™ Gold rating
	Windows 8 Pro 64-bit	Supports ThinkVantage® technologies

¹ Model in italics shows that this is a Global Model 2 The SSD drives in italics must be plugged into red or orange SATA connectors

ThinkStation D30 (4354) - TopSeller (June 2013) - II

Type- model ¹	Processor(s)	Memory (MHz/type)	Memory DIMMs	Upgrade ROM for onboard drive controller	Discrete drive controller	Pre-conf RAID	Hard drive(s) ²	Optical	Media reader	Graphics adapter(s) and GPU computing	1394 adptr	Chassis intrusion switch	Preloaded OS
4354-18G	2xE5-2640 (6C/2.5GHz/15MB/1333)	1600MHz UDIMM	4GBx2	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-19G	1xE5-2620 (6C/2GHz/15MB/1333)	1600MHz UDIMM	4GBx2	No	No	No	1TB 3.5" SATA+ 256GB 2.5" SSD - OPAL	DVD±RW	29-in-1	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-21G	1xE5-2667 (6C/2.9GHz/15MB/1600)	1600MHz RDIMM	4GBx2	No	No	No	1x3TB 3.5" SATA	DVD±RW	29-in-1	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-22G	1xE5-2650 (8C/2GHz/20MB/1600)	1600MHz RDIMM	4GBx3	No	No	No	1x3TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K5000 (4GB, 1xDVI-I DL*, 1xDVI-D DL, 2xDP, 122W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-23G	1xE5-2650 (8C/2GHz/20MB/1600)	1600MHz RDIMM	4GBx3	No	No	No	2x240GB 2.5" SSD	DVD±RW	29-in-1	1xQuadro K2000 (2GB, 1xDVI-I DL, 2xDP, 51W)	No	Switch	Win7 Pro64 (Downgrade from Win8)

* DL = Dual Link, SL = Single Link

Chipset	Intel C602 Chipset	Tower
Processor	Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 family, integrated 4-channel DDR3 memory controller per processor	Raven black color; metal case 8.3"W x 23.7"D x 19.1"H (with handle)
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system 	3 optical
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	6 disk 7 disk 8 disk
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 1-3: 5.25", 1.6" high, external, for optical Bay 4: 3.5", 1" high, external, for media reader Bay 5-9: 3.5", 1" high, internal, for hard drive*
Upgrade ROM for onboard drive controllers (optional)	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to: • five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support	* Bay 5 is available on models with the SATA or SAS Hard Disk Drive enablement module installed. Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, 32-bit PCl 2.3 Slot 4: full-length, full-height, PCle 3.0 x16**
Discrete drive controller (optional)	One the following, depending on model: LSI SAS 9240-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support optional upgrade key for RAID 5 support LSI SAS 9260-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support	Slot 5: full-length, full-height, PCIe 2.0 x4 Slot 6: half-length, full-height, 32-bit PCI 2.3 ** Adapters >75W use auxiliary power connector(s) from PSU
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 2.5" SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s OPAL-capable on some models mSATA: mSATA SSD, SATA 6.0Gb/s	SECURITY Security chip (see information on left) Side cover lock (ships with two identical keys) Padlock loop (in rear for opt padlock;
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	padlock prohibits side cover removal)
Media reader (opt)	Optional 29-in-1 media card reader on selected models	Security slot (in rear for optional Kensington® Microsaver® cable;
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	prohibits side cover removal)
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	Boot sequence control
IEEE 1394 adptr (optional)	Optiomal FireWire PCIe adapter on selected models, 1394a-2000, 400Mbps, one 6-pin port on rear, one 6-pin port on front	Boot without keyboard, mouse, diskette Serial port I/O enable/disable USB 2.0 ports enable/disable individually
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	USB 3.0 ports enable/disable concurrently
Speaker	Internal speaker for business audio	Chassis intrusion switch on selected model(s)
	Dual onboard gigabit ethernet, Intel 82579 and 82574	Intel AMT
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	Intel Active Management Technology 8 supported
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black	ISV certifications
Mouse	Optical Wheel Mouse (USB connector), black	Please visit <u>www.lenovo.com/support/ISV</u>
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified	
Preloaded operating systems (OS)	One the following, depending on model: • Windows 7 Professional 64 • Windows 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit	Environmental certifications GREENGUARD® certified ROHS-compliant EPEAT™ Gold rating
	Windows 8 Pro 64-bit	Supports ThinkVantage® technologies

Model in italics shows that this is a Global Model
 The SSD drives in italics must be plugged into red or orange SATA connectors

ThinkStation D30 (4354) - TopSeller (June 2013) - III

	Memory	Memory	Upgrade ROM for onboard drive	Discrete drive	Pre-conf			Media	Graphics adapter(s) and GPU	1394	Chassis intrusion	Preloaded
Processor(s)	(MHz/type)	DIMMs	controller	controller	RAID	Hard drive(s) ²	Optical	reader	computing	adptr	switch	os
1xE5-2650 (8C/2GHz/20MB/1600)	1600MHz RDIMM	4GBx3	No	No	No	1TB 3.5" SATA+ 240GB 2.5" SSD	DVD±RW	29-in-1	1xQuadro K2000D (2GB, 1xDVI-I DL*, 1xDVI-D DL, 1xmini-DP, 51W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
2xE5-2660 (8C/2.2GHz/20MB/1600)	1600MHz RDIMM	4GBx4	No	No	No	1x600GB 3.5" SAS	DVD±RW	29-in-1	122W) ´	No	Switch	Win7 Pro64 (Downgrade from Win8)
2xE5-2660 (8C/2.2GHz/20MB/1600)	1600MHz RDIMM	4GBx4	SAS	No	No	1x600GB 3.5" SAS	DVD±RW	29-in-1	1xQuadro K5000 (4GB, 1xDVI-I DL, 1xDVI-D DL, 2xDP, 122W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
1xE5-2665 (8C/2.4GHz/20MB/1600)	1600MHz RDIMM	4GBx3	No	No	No	180GB 2.5" SSD+ 1TB 2.5" SATA	DVD±RW	29-in-1	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
	1xE5-2650 (8C/2GHz/20MB/1600) 2xE5-2660 (8C/2.2GHz/20MB/1600) 2xE5-2660 (8C/2.2GHz/20MB/1600) 1xE5-2665 (8C/2.4GHz/20MB/1600)	Processor(s) (MHz/type) 1xE5-2650 (8C/2GHz/20MB/1600) 1600MHz RDIMM 2xE5-2660 (8C/2.2GHz/20MB/1600) 1600MHz RDIMM 2xE5-2660 (8C/2.2GHz/20MB/1600) 1600MHz RDIMM 1xE5-2665 1600MHz	Processor(s) (MHz/type) DIMMs 1xE5-2650 (8C/2GHz/20MB/1600) 1600MHz RDIMM 4GBx3 2xE5-2660 (8C/2.2GHz/20MB/1600) 1600MHz RDIMM 4GBx4 2xE5-2660 (8C/2.2GHz/20MB/1600) 1600MHz RDIMM 4GBx4 1xE5-2665 (8C/2.4GHz/20MB/1600) 1600MHz RDIMM 4GBx3	No No Nemory New New	Processor(s) Memory (MHz/type) Memory DIMMs ROM for on onboard drive controller Discrete drive controller 1xE5-2650 (8C/2GHz/20MB/1600) 1600MHz RDIMM 4GBx3 No No 2xE5-2660 (8C/2.2GHz/20MB/1600) 1600MHz RDIMM 4GBx4 No No 2xE5-2660 (8C/2.2GHz/20MB/1600) 1600MHz RDIMM 4GBx4 SAS No 1xE5-2665 (8C/2.4GHz/20MB/1600) 1600MHz RDIMM 4GBx3 No No	Processor(s) Memory (MHz/type) Memory DIMMs ROM for onboard drive controller controller Discrete drive controller controller Pre-conf RAID 1xE5-2650 (8C/2GHz/20MB/1600) 1600MHz RDIMM 4GBx3 No No No 2xE5-2660 (8C/2.2GHz/20MB/1600) 1600MHz RDIMM 4GBx4 No No No 2xE5-2660 (8C/2.2GHz/20MB/1600) 1600MHz RDIMM 4GBx4 SAS No No 1xE5-2665 (8C/2.4GHz/20MB/1600) 1600MHz RDIMM 4GBx3 No No No	No No No No No No No No	No No No No No No No No	No No No No No No No No	No No No No No No No No	No No No No No No No No	Nemory Nemory Nemory Nemory Nemory Nemory Nemory Nemory New New

Chipset	Intel C602 Chipset	Tower				
Processor	Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 family, integrated 4-channel DDR3 memory controller per processor	Raven black color; metal case 8.3"W x 23.7"D x 19.1"H (with handle)				
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	- 210mm W x 602mm D x 485mm H - 60.6 lb (27.5kg) max configuration - 55-liter - Removable handle on top front				
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system 	Toolless side cover removal Toolless disk and optical drive removal Toolless dapter retention Illuminated front icons Rack shelf support or optional rail kit				
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	6 disk 7 disk				
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 1-3: 5.25", 1.6" high, external, for optical Bay 4: 3.5", 1" high, external, for media reader Bay 5-9: 3.5", 1" high, internal, for hard drive*				
Upgrade ROM for onboard	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to:	* Bay 5 is available on models with the SATA or SAS Hard Disk Drive enablement module installed.				
drive controllers (optional)	 five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support 	Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, 32-bit PCl 2.3 Slot 4: full-length, full-height, PCle 3.0 x16**				
Discrete drive controller (optional)	One the following, depending on model: LSI SAS 9240-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support optional upgrade key for RAID 5 support LSI SAS 9260-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support	Slot 5: full-length, full-height, PCIe 2.0 x4 Slot 6: half-length, full-height, 32-bit PCI 2.3 ** Adapters >75W use auxiliary power connector(s)				
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 2.5" SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s OPAL-capable on some models mSATA: mSATA SSD, SATA 6.0Gb/s	from PSU SECURITY • Security chip (see information on left) • Side cover lock (ships with two identical keys) • Padlock loop (in rear for opt padlock;				
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	padlock prohibits side cover removal)				
Media reader (opt)	Optional 29-in-1 media card reader on selected models	Security slot (in rear for optional				
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	Kensington® Microsaver® cable; prohibits side cover removal)				
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	Power-on/Administrator password Boot sequence control				
IEEE 1394 adptr (optional)	Optiomal FireWire PCle adapter on selected models, 1394a-2000, 400Mbps, one 6-pin port on rear, one 6-pin port on front	Boot without keyboard, mouse, diskette Serial port I/O enable/disable				
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	USB 2.0 ports enable/disable individually				
Speaker	Internal speaker for business audio	USB 3.0 ports enable/disable concurrently Chassis intrusion switch an extend model(s)				
	Dual onboard gigabit ethernet, Intel 82579 and 82574	Chassis intrusion switch on selected model(s)				
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	Intel AMT				
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black	Intel Active Management Technology 8 supported				
Mouse	Optical Wheel Mouse (USB connector), black	ISV certifications				
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified	Please visit <u>www.lenovo.com/support/ISV</u>				
Preloaded operating systems (OS)	One the following, depending on model: • Windows 7 Professional 64 • Windows 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit	Environmental certifications GREENGUARD® certified RoHS-compliant EPEAT™ Gold rating				
	Windows 8 Pro 64-bit	Supports ThinkVantage® technologies				

Model in italics snows that this is a Global inducer
 The SSD drives in italics must be plugged into red or orange SATA connectors

ThinkStation D30 (4354) - TopSeller (June 2013) - IV

Type-		Memory	Memory	Upgrade ROM for onboard drive	Discrete drive	Pre-conf			Media	Graphics adapter(s) and GPU		Chassis intrusion	Preloaded
model ¹	Processor(s)	(MHz/type)	DIMMs	controller	controller	RAID	Hard drive(s) ²	Optical	reader	computing	adptr	switch	os
4354-28G	1xE5-2670 (8C/2.6GHz/20MB/1600)	1600MHz RDIMM	4GBx3	No	No	No	180GB 2.5" SSD+ 1TB 2.5" SATA	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL*, 2xDP, 80W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-29G	1xE5-2680 (8C/2.7GHz/20MB/1600)	1600MHz RDIMM	4GBx4	No	No	No	1x3TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL, 2xDP, 80W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-31G	1xE5-2680 (8C/2.7GHz/20MB/1600)	1600MHz RDIMM	4GBx4	No	No	No	1x3TB 3.5" SATA	DVD±RW		2xQuadro K5000 SLI (Quadro K5000: 4GB, 1xDVI-I DL, 1xDVI-D DL, 2xDP, 122W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-32G	1xE5-2690 (8C/2.9GHz/20MB/1600)	1600MHz RDIMM	4GBx4	SAS	No	No	1x600GB 3.5" SAS	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL, 2xDP, 80W)	No	Switch	Win7 Pro64 (Downgrade from Win8)

* DL = Dual Link, SL = Single Link

- 3-year limited warranty
 With new MT type 4353/4354 and beyond, ThinkStation D30 introduces new updates to improve the functionality and usability:
 (These new features are not supported on 4223 and 4229 MT models)
 Intel AMT: upgrades to Intel AMT 8 from Intel AMT 7
 New TPM chip: STMicroelectronics ST33TPM12LPC
 Two front USB 2.0 ports upgrade to USB3.0

 For ThinkStation D30 latterm expeditioning places are ThinkStation D30 Platform Specifications short.
- For ThinkStation D30 platform specifications, please see ThinkStation D30 Platform Specifications sheet

Chipset	Intel C602 Chipset	Tower
Processor	Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 family, integrated 4-channel DDR3 memory controller per processor	Raven black color; metal case 8.3"W x 23.7"D x 19.1"H (with handle)
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	- 210mm W x 602mm D x 485mm H - 60.6 lb (27.5kg) max configuration - 55-liter - Removable handle on top front
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system 	3 optical Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Rack shelf support or optional rail kit
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	3 disk 6 disk 7 disk 8 disk
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 1-3: 5.25", 1.6" high, external, for optical Bay 4: 3.5", 1" high, external, for media reader Bay 5-9: 3.5", 1" high, internal, for hard drive*
Upgrade ROM for onboard drive controllers (optional)	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to: • five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support	* Bay 5 is available on models with the SATA or SAS Hard Disk Drive enablement module installed. Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, 32-bit PCl 2.3 Slot 4: full-length, full-height, PCle 3.0 x16**
Discrete drive controller (optional)	One the following, depending on model: LSI SAS 9240-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support optional upgrade key for RAID 5 support LSI SAS 9260-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support	Slot 5: full-length, full-height, PCIe 2.0 x4 Slot 6: half-length, full-height, 32-bit PCI 2.3 ** Adapters >75W use auxiliary power connector(s)
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 2.5" SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm SOIId State Drive (SSD), SATA 6.0Gb/s OPAL-capable on some models mSATA: mSATA SSD, SATA 6.0Gb/s	SECURITY Security chip (see information on left)
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Side cover lock (ships with two identical keys) Padlock loop (in rear for opt padlock;
Media reader (opt)	Optional 29-in-1 media card reader on selected models	padlock prohibits side cover removal)
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	Security slot (in rear for optional
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	prohibits side cover removal)
IEEE 1394 adptr (optional)	Optiomal FireWire PCIe adapter on selected models, 1394a-2000, 400Mbps, one 6-pin port on rear, one 6-pin port on front	Power-on/Administrator password Boot sequence control
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	Boot without keyboard, mouse, diskette
Speaker	Internal speaker for business audio	Serial port I/O enable/disable ISB 2.0 ports anable/disable individually.
	Dual onboard gigabit ethernet, Intel 82579 and 82574	USB 2.0 ports enable/disable individually USB 3.0 ports enable/disable concurrently
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	Chassis intrusion switch on selected model(s)
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black	Intel AMT
Mouse	Optical Wheel Mouse (USB connector), black	Intel Active Management Technology 8 supported
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified	ISV certifications
Preloaded operating systems (OS)	One the following, depending on model: • Windows 7 Professional 64 • Windows 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit • Windows 8 Pro 64-bit	Please visit www.lenovo.com/support/ISV Environmental certifications GREENGUARD certified ROHS-compliant EPEAT™ Gold rating Supports ThinkVantage technologies

Model in italics shows that this is a Global Model
 The SSD drives in italics must be plugged into red or orange SATA connectors

ThinkStation D30 (4354) - TopSeller (June 2013) - V

Type-		Memory	Memory	Upgrade ROM for onboard	Discrete drive	Pre-conf			Media	Graphics adapter(s) and GPU	130/	Chassis	Preloaded
model ¹	Processor(s)	(MHz/type)		unive	controller		Hard drive(s) ²	Optical	reader	computing	adptr	switch	OS
4354-33G	1xE5-2687W (8C/3.1GHz/20MB/1600)	1600MHz RDIMM	4GBx3	SAS	No	No	1x300GB 3.5" SAS	DVD±RW	29-in-1	1xQuadro K5000 (4GB, 1xDVI-I DL*, 1xDVI-D DL, 2xDP, 122W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-34G	1xE5-2687W (8C/3.1GHz/20MB/1600)	1600MHz RDIMM	4GBx3	No	No	No	2TB 3.5" SATA+ 128GB mSATA	DVD±RW	29-in-1	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-59G	2xE5-2640 (6C/2.5GHz/15MB/1333)	1600MHz UDIMM	2GBx8	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL, 2xDP, 80W)	No	No	Win7 Pro64
4354-61G	2xE5-2640 (6C/2.5GHz/15MB/1333)	1600MHz UDIMM	2GBx8	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL, 2xDP, 80W)	No	Switch	Win7 Pro64

* DL = Dual Link, SL = Single Link

3-year limited warranty
With new MT type 4353/4354 and beyond, ThinkStation D30 introduces new updates to improve the functionality and usability:
(These new features are not supported on 4223 and 4229 MT models)
Intel AMT: upgrades to Intel AMT 8 from Intel AMT 7
New TPM chip: STMicroelectronics ST33TPM12LPC
Two front USB 2.0 ports upgrade to USB3.0

Text Tituls Station D20 letters reposition to the state of the station of the station

- For ThinkStation D30 platform specifications, please see ThinkStation D30 Platform Specifications sheet

Chipset	Intel C602 Chipset	Tower
Processor	Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 family, integrated 4-channel DDR3 memory controller per processor	Raven black color; metal case 8.3"W x 23.7"D x 19.1"H (with handle)
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	- 210mm W x 602mm D x 485mm H - 60.6 lb (27.5kg) max configuration - 55-liter - Removable handle on top front
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system 	3 optical Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Rack shelf support or optional rail kit
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	6 disk 7 disk 8 disk
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 1-3: 5.25", 1.6" high, external, for optical external, for media reader Bay 5-9: 3.5", 1" high, internal, for hard drive*
Upgrade ROM for onboard	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to:	* Bay 5 is available on models with the SATA or SAS Hard Disk Drive enablement module installed.
drive controllers (optional)	 five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support 	Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, 32-bit PCl 2.3 Slot 4: full-length, full-height, PCle 3.0 x16**
Discrete drive controller (optional)	One the following, depending on model: LSI SAS 9240-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support optional upgrade key for RAID 5 support LSI SAS 9260-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support	Slot 5: full-length, full-height, PCIe 2.0 x4 Slot 6: half-length, full-height, 32-bit PCI 2.3 ** Adapters >75W use auxiliary power connector(s)
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 2.5" SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s OPAL-capable on some models mSATA: mSATA SSD, SATA 6.0Gb/s	From PSU SECURITY • Security chip (see information on left)
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Side cover lock (ships with two identical keys)
	Optional 29-in-1 media card reader on selected models	Padlock loop (in rear for opt padlock;
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	padlock prohibits side cover removal)
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)
IEEE 1394 adptr (optional)	Optiomal FireWire PCle adapter on selected models, 1394a-2000, 400Mbps, one 6-pin port on rear, one 6-pin port on front	Power-on/Administrator password Boot sequence control Boot without keyboard, mouse, diskette
Audio	High Definition (HD) Audio, Realtek® ALC662 codec Internal speaker for business audio	Serial port I/O enable/disable
Speaker Onboard Ethernet	Dual onboard gigabit ethernet, Intel 82579 and 82574	USB 2.0 ports enable/disable individually
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	USB 3.0 ports enable/disable concurrently
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black	Chassis intrusion switch on selected model(s)
Mouse	Optical Wheel Mouse (USB connector), black	Intel AMT
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal,	Intel Active Management Technology 8 supported
	Climate Savers® Computing Gold, 80 PLUS® Gold qualified	ISV certifications
Preloaded operating systems (OS)	 One the following, depending on model: Windows 7 Professional 64 Windows 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit Windows 8 Pro 64-bit 	Please visit www.lenovo.com/support/ISV Environmental certifications GREENGUARD® certified RoHS-compliant EPEAT™ Gold rating Supports ThinkVantage® technologies

Model in italics shows that this is a Global Model
 The SSD drives in italics must be plugged into red or orange SATA connectors

ThinkStation D30 (4354) - TopSeller (June 2013) - VI

Тур		_	Memory	drive	Discrete drive		Hard drive(s) ²	Ontical	Media	Graphics adapter(s) and GPU		Chassis	Preloaded OS
mod	el ¹ Processor(s)	(MHz/type)	DIMMs	controller	controller	KAID	mara arive(s)	Optical	reader	computing	adptr	switch	
4354-	2xE5-2640 (6C/2.5GHz/15MB/1333)	1600MHz UDIMM	2GBx8	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL*, 2xDP, 80W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-	33G 2xE5-2660 (8C/2.2GHz/20MB/1600)	1600MHz UDIMM	4GBx8	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL, 2xDP, 80W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-	2xE5-2660 (8C/2.2GHz/20MB/1600)	1600MHz UDIMM	4GBx8	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL, 2xDP, 80W)	No	Switch	Win7 Pro64
4354-	2xE5-2660 (8C/2.2GHz/20MB/1600)	1600MHz UDIMM	4GBx8	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL, 2xDP, 80W)	No	Switch	Win7 Pro64

* DL = Dual Link, SL = Single Link

3-year limited warranty
 With new MT type 4353/4354 and beyond, ThinkStation D30 introduces new updates to improve the functionality and usability:
(These new features are not supported on 4223 and 4229 MT models)
 Intel AMT: upgrades to Intel AMT 8 from Intel AMT 7
 New TPM chip: STMicroelectronics ST33TPM12LPC
 Two front USB 2.0 ports upgrade to USB3.0
 For ThinkStation D30 platform specifications, please see ThinkStation D30 Platform Specifications sheet

Chipset	Intel C602 Chipset	Tower
Processor	Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 family, integrated 4-channel DDR3 memory controller per processor	Raven black color; metal case 8.3"W x 23.7"D x 19.1"H (with handle)
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	210mm W x 602mm D x 485mm H 60.6 lb (27.5kg) max configuration 55-liter Removable handle on top front
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system 	Toolless side cover removal Toolless disk and optical drive removal Toolless dapter retention Illuminated front icons Rack shelf support or optional rail kit
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	6 disk 7 disk 8 disk
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 1-3: 5.25", 1.6" high, external, for optical Bay 4: 3.5", 1" high, external, for media reader Bay 5-9: 3.5", 1" high, internal, for hard drive* * Bay 5 is available on models with the SATA or SAS Hard
Upgrade ROM for onboard drive controllers (optional)	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to: • five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support	Disk Drive enablement module installed. Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, 32-bit PCl 2.3 Slot 4: full-length, full-height, PCle 3.0 x16** Slot 5: full-length, full-height, PCle 2.0 x4
Discrete drive controller (optional)	One the following, depending on model: LSI SAS 9240-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support optional upgrade key for RAID 5 support LSI SAS 9260-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support	Slot 6: half-length, full-height, 32-bit PCI 2.3 ** Adapters >75W use auxiliary power connector(s) from PSU
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 2.5" SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s 0PAL-capable on some models mSATA: mSATA 6.0Gb/s	SECURITY - Security chip (see information on left)
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Side cover lock (ships with two identical keys) Padlock loop (in rear for opt padlock; padlock prohib-
Media reader (opt)	Optional 29-in-1 media card reader on selected models	its side cover removal)
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	Security slot (in rear for optional
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	prohibits side cover removal)
IEEE 1394 adptr	Optiomal FireWire PCIe adapter on selected models, 1394a-2000, 400Mbps,	Power-on/Administrator password Boot sequence control
(optional)	one 6-pin port on rear, one 6-pin port on front	Boot sequence control Boot without keyboard, mouse, diskette
Audio Speaker	High Definition (HD) Audio, Realtek® ALC662 codec Internal speaker for business audio	Serial port I/O enable/disable
	Dual onboard gigabit ethernet, Intel 82579 and 82574	USB 2.0 ports enable/disable individually
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	USB 3.0 ports enable/disable concurrently Chassis intrusion switch on selected model(s)
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black	(-)
Mouse	Optical Wheel Mouse (USB connector), black	Intel AMT Intel Active Management Technology 8 supported
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified	ISV certifications
Preloaded operating systems (OS)	One the following, depending on model: Windows 7 Professional 64 Windows 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit Windows 8 Pro 64-bit	Please visit www.lenovo.com/support/ISV Environmental certifications GREENGUARD® certified ROHS-compliant EPEAT™ Gold rating Supports ThinkVantage® technologies

¹ Model in italics shows that this is a Global Model 2 The SSD drives in italics must be plugged into red or orange SATA connectors

ThinkStation D30 (4354) - TopSeller (September 2013)

_				Upgrade ROM for onboard				29-in-1	Graphics adapter(s)		Chassis	
Type- model*	Processor(s) - Xeon E5 Family	Memory (MHz/type)	Memory DIMMs	drive controller	Pre-conf RAID	Hard drive(s)**	Optical	Media reader	and GPU computing***	1394 adptr	intrusion switch	Preloaded OS
4354-77G	2xE5-2609 v2 (4C/2.5GHz/10MB/1333)	1600MHz RDIMM	4GBx2	SATA	No	1x2TB 3.5" SATA Hybrid	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-78G	1xE5-2643 v2 (6C/3.5GHz/25MB/1866)	1600MHz RDIMM	4GBx4	SATA	No	1x1TB 3.5" SATA	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-79G	1xE5-2620 v2 (6C/2.1GHz/15MB/1600)	1600MHz RDIMM	4GBx2	SATA	No	1x1TB 3.5" SATA	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-81G	1xE5-2630 v2 (6C/2.6GHz/15MB/1600)	1600MHz RDIMM	4GBx1	SATA	No	1x1TB 3.5" SATA	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-82G	1xE5-2630 v2 (6C/2.6GHz/15MB/1600)	1600MHz RDIMM	4GBx4	SAS	No	1x300GB 3.5" SAS	DVD±RW	Media	1xQuadro K4000 (3GB, 1xDVI-I DL, 2xDP, 80W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-83G	2xE5-2620 v2 (6C/2.1GHz/15MB/1600)	1600MHz RDIMM	4GBx2	SATA	No	1x1TB 3.5" SATA	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4354-84G	2xE5-2640 v2 (8C/2GHz/20MB/1600)	1600MHz RDIMM	4GBx2	SATA	No	1x1TB 3.5" SATA	DVD±RW	Media	1xQuadro K5000 (4GB, 1xDVI-I DL, 1xDVI-D DL, 2xDP, 122W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
	1xE5-1660 v2 (6C/3.7GHz/15MB/1866)	1600MHz RDIMM	4GBx1	SATA	No	1x240GB 2.5" SSD	DVD±RW		1xQuadro K2000 (2GB, 1xDVI-I DL, 2xDP, 51W)	No	Switch	Win7 Pro64 (Downgrade from Win8)

Model in italics shows that this is a Global Model ** The SSD drives in italics must be plugged into red or orange SATA connectors *** DL = Dual Link, SL = Single Link

- 3-year limited warranty
- For ThinkStation D30 platform specifications, please see ThinkStation D30 Platform Specifications sheet

Chipset	Intel C602 Chipset	Tower
Intel AMT	Intel Active Management Technology 8 supported	Raven black color; metal case
Processor	Two LGA2011 sockets, integrated 4-channel DDR3 memory controller per processor, only one E5-1600 or E5-1600 v2 processor are supported	8.3"W x 23.7"D x 19.1"H (with handle) 210mm W x 602mm D x 485mm H 60.6 lb (27.5kg) max configuration
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	optical 2 optical 3 optical 3 optical 3 optical 3 optical 3 optical 3 optical
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system When using processor from Xeon E5-1600 and E5-1600 v2 series, only eight DIMM sockets for CPU1 are available and max memory cacpacity is 64GB (UDIMM, 8GBx8)/256GB (RDIMM, 32GBx8) 	Finedia Doctor Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Rack shelf support or optional rail kit Rack shelf support or optional rail kit
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	Bay 1-3: 5.25", 1.6" high, external, for optical Bay 4: 3.5", 1" high, external, for media reader
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 5-9: 3.5", 1" high, internal, for hard drive* Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, 32-bit PCl 2.3
Upgrade ROM for onboard drive controllers (optional)	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to: • five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support	Slot 4: full-length, full-height, PCIe 3.0 x16** Slot 5: full-length, full-height, PCIe 2.0 x4 Slot 6: half-length, full-height, 32-bit PCI 2.3 ** Adapters >75W use auxiliary power connector(s) from PSU
Discrete drive controller (opt)	None	
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" Hybrid: SATA 6.0Gb/s, 7200 rpm, integrated 8GB NAND flash 2.5" SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s OPAL-capable on some models mSATA: mSATA SSD, SATA 6.0Gb/s	SECURITY • Security chip (see information on left) • Side cover lock (ships with two identical keys) • 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)
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Power-on/Administrator password Post appropriate appropriate password
Media reader (opt)	Optional media card reader on selected models	Boot sequence control Boot without keyboard, mouse, diskette
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	Serial port I/O enable/disable
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	USB 2.0 ports enable/disable individually USB 3.0 ports enable/disable concurrently
IEEE 1394 adptr	Optiomal FireWire PCIe adapter on selected models, 1394a-2000, 400Mbps,	Chassis intrusion switch on selected model(s)
(optional)	one 6-pin port on rear, one 6-pin port on front	ISV certifications
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	Please visit www.lenovo.com/support/ISV
Speaker	Internal speaker for business audio	
	Dual onboard gigabit ethernet, Intel 82579 and 82574	Environmental certifications
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	GREENGUARD® certified
Keyboard/Mouse	104-key keyboard (USB)/Optical Wheel Mouse (USB)	RoHS-compliant EPEAT™ Gold rating
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified	Supports ThinkVantage® technologies

ThinkStation D30 (4354) - TopSeller (September 2013) - II

	Type- model	Processor(s) - Xeon E5 Family	Memory (MHz/type)	Memory DIMMs	Upgrade ROM for onboard drive controller	Pre-conf RAID	Hard drive(s)"	Optical	29-in-1 Media reader	Graphics adapter(s) and GPU computing	1394 adptr	Chassis intrusion switch	Preloaded OS
4	354-86G	2xE5-2620 v2 (6C/2.1GHz/15MB/1600)	1600MHz UDIMM	4GBx2	SATA	No	1x2TB 3.5" SATA	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4	354-87G	1xE5-2630 v2 (6C/2.6GHz/15MB/1600)	1600MHz UDIMM	4GBx2	SAS	No	1x300GB 2.5" SAS	DVD±RW	Media	1xQuadro K4000 (3GB, 1xDVI-I DL, 2xDP, 80W)	1394	Switch	Win7 Pro64 (Downgrade from Win8)
4	354-C3G	1xE5-2630 v2 (6C/2.6GHz/15MB/1600)	1600MHz UDIMM	4GBx1	SATA	No	1x1TB 3.5" SATA	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4	354-C4G	2xE5-2620 v2 (6C/2.1GHz/15MB/1600)	1600MHz UDIMM	4GBx2	SATA	No	1x1TB 3.5" SATA	DVD±RW	Media	No	No		Win7 Pro64 (Downgrade from Win8)
4	354-C5G	2xE5-2640 v2 (8C/2GHz/20MB/1600)	1600MHz UDIMM	4GBx2	SATA	No	1x1TB 3.5" SATA	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)

^{*} Model in italics shows that this is a Global Model ** The SSD drives in italics must be plugged into red or orange SATA connectors *** DL = Dual Link, SL = Single Link

- 3-year limited warranty
 For ThinkStation D30 platform specifications, please see <u>ThinkStation D30 Platform Specifications</u> sheet

Chipset	Intel C602 Chipset	Tower
Intel AMT	Intel Active Management Technology 8 supported	Raven black color; metal case
Processor	Two LGA2011 sockets, integrated 4-channel DDR3 memory controller per	• 8.3"W x 23.7"D x 19.1"H (with handle)
	processor, only one E5-1600 or E5-1600 v2 processor are supported	• 210mm W x 602mm D x 485mm H
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable	1 optical • 60.6 lb (27.5kg) max configuration • 55-liter
,	(4-channel per processor), sixteen 240-pin DIMM sockets,	2 optical • Removable handle on top front
	128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	3 optical • Toolless side cover removal
	Actual memory operating speed depends on processor memory	Toolless disk and optical drive removal
disclaimers	controller speed, installed memory speed, and quantity of memory DIMMs	Toolless adapter retention
	Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported	Illuminated front icons Rack shelf support or optional rail kit
	Maximum memory capacity is also limited by operating system	• Hack shelf support or optional rall kit
	When using processor from Xeon E5-1600 and E5-1600 v2 series.	7 disk
	only eight DIMM sockets for CPU1 are available and max memory cacpacity is	8 disk 9 disk
	64GB (UDIMM, 8GBx8)/256GB (RDIMM, 32GBx8)	3 disk
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing	Bay 1-3: 5.25", 1.6" high, external, for optical
	processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	Bay 4: 3.5", 1" high, external, for media reader
Onboard drive	Four SATA connectors via integrated Advanced Host Controller Interface ATA 2 201/2 (2018)	Bay 5-9: 3.5", 1" high, internal, for hard drive*
controllers	(AHCI) controller in chipset, two SATA 6.0Gb/s (red),	Clat 1, balf langeth full beight DOLa C C v1C (v v
	two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support • Four SATA connectors via integrated Storage Controller Unit (SCU)	Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16**
	controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support	Slot 3: full-length, full-height, 32-bit PCI 2.3
Upgrade ROM	One of the following upgrade ROM is supported.	Slot 4: full-length, full-height, PCIe 3.0 x16**
for onboard	the option upgrades the four SATA connectors on SCU controller to:	Slot 5: full-length, full-height, PCle 2.0 x4
drive controllers	• five SATA connectors with optional SATA HDD Enablement Module,	Slot 6: half-length, full-height, 32-bit PCI 2.3
(optional)	SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module,	** Adapters >75W use auxiliary power connector(s)
	SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support	from PSU
Discrete drive	, , , , , , , , , , , , , , , , , , , ,	
controller (opt)	None	
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm	SECURITY
()	3.5" Hybrid: SATA 6.0Gb/s, 7200 rpm,	Security chip (see information on left)
	integrated 8GB NAND flash	Side cover lock (ships with two identical keys)
	2.5" SATA: SATA 6.0Gb/s, 10000 rpm	Padlock loop (in rear for opt padlock; Padlock loop (in
	3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s	padlock prohibits side cover removal) Security slot (in rear for optional
	OPAL-capable on some models	Kensington® Microsaver® cable;
	mSATA: mSATA SSD, SATA 6.0Gb/s	prohibits side cover removal)
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Power-on/Administrator password
Media reader (opt)	Optional media card reader on selected models	Boot sequence control
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	Boot without keyboard, mouse, diskette Serial port I/O enable/disable
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three	USB 2.0 ports enable/disable individually
	analog audio ports (line-in, line-out, mic-in)	USB 3.0 ports enable/disable concurrently
IEEE 1394 adptr	Optiomal FireWire PCIe adapter on selected models, 1394a-2000, 400Mbps,	Chassis intrusion switch on selected model(s)
(optional)	one 6-pin port on rear, one 6-pin port on front	ISV certifications
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	Please visit www.lenovo.com/support/ISV
Speaker	Internal speaker for business audio	
Onboard Ethernet		Environmental certifications
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	GREENGUARD® certified
Keyboard/Mouse	104-key keyboard (USB)/Optical Wheel Mouse (USB)	RoHS-compliant EPEAT™ Gold rating
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal,	
	Climate Savers® Computing Gold, 80 PLUS® Gold qualified	Supports ThinkVantage® technologies

ThinkStation D30 (4354) - TopSeller (April 2014)

Product Specifications Reference (PSREF)

Type- model	Processor(s) - Xeon E5 Family	Memory (MHz/type)	Memory DIMMs	Upgrade ROM for onboard drive controller	Pre-conf RAID	Hard drive(s)"		29-in-1 Media reader	Graphics adapter(s) and GPU computing ^{***}	1394 adptr	Chassis intrusion switch	os
4354-G8G	2xXeon E5-2609 v2 4C/2.5GHz/10MB/1333MHz	1600MHz RDIMM	4GBx2	SATA	No	1x2TB 3.5" SATA	DVD±RW	Media	Open	No		Win7 Pro64 (Downgrade from Win8.1)
4354-G9G	1xXeon E5-2620 v2 6C/2.1GHz/15MB/1600MHz	1600MHz RDIMM	4GBx2	SATA	No	1x1TB 3.5" SATA	DVD±RW	Media	Open	No	Switch	Win7 Pro64 (Downgrade from Win8.1)

^{*} Model in italics shows that this is a Global Model ** The SSD drives in italics must be plugged into red or orange SATA connectors *** DL = Dual Link, SL = Single Link

- 3-year limited warranty
 For ThinkStation D30 platform specifications, please see <u>ThinkStation D30 Platform Specifications</u> sheet

Chipset	Intel C602 Chipset	Tower
Intel AMT	Intel Active Management Technology 8 supported	Raven black color; metal case
Processor	Two LGA2011 sockets, integrated 4-channel DDR3 memory controller per processor, only one E5-1600 or E5-1600 v2 processor are supported	8.3"W x 23.7"D x 19.1"H (with handle) 210mm W x 602mm D x 485mm H 60.6 lb (27.5 kg) may configuration
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	1 optical 2 optical 3 optical 3 optical 3 optical
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system When using processor from Xeon E5-1600 and E5-1600 v2 series, only eight DIMM sockets for CPU1 are available and max memory cacpacity is 64GB (UDIMM, 8GBx8)/256GB (RDIMM, 32GBx8) 	Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Rack shelf support or optional rail kit Adisk Adisk Bdisk Bdisk Bdisk Adisk Bdisk Adisk Bdisk Bdisk Bdisk Bdisk Bdisk Adisk Bdisk Bdisk
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	Bay 1-3: 5.25", 1.6" high, external, for optical Bay 4: 3.5", 1" high, external, for media reader
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 5-9: 3.5", 1" high, internal, for hard drive* Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, 32-bit PCl 2.3
Upgrade ROM for onboard drive controllers (optional)	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to: • five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support	Slot 4: full-length, full-height, PCIe 3.0 x16** Slot 5: full-length, full-height, PCIe 2.0 x4 Slot 6: half-length, full-height, 32-bit PCI 2.3 ** Adapters >75W use auxiliary power connector(s) from PSU
Discrete drive controller (opt)	None	
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" Hybrid: SATA 6.0Gb/s, 7200 rpm, integrated 8GB NAND flash 2.5" SATA: SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s OPAL-capable on some models mSATA: mSATA SSD, SATA 6.0Gb/s	SECURITY • Security chip (see information on left) • Side cover lock (ships with two identical keys) • 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)
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Power-on/Administrator password Poet acquired control
Media reader (opt)	Optional media card reader on selected models	Boot sequence control Boot without keyboard, mouse, diskette
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	Serial port I/O enable/disable
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	USB 2.0 ports enable/disable individually USB 3.0 ports enable/disable concurrently
IEEE 1394 adptr	Optiomal FireWire PCIe adapter on selected models, 1394a-2000, 400Mbps,	Chassis intrusion switch on selected model(s)
(optional)	one 6-pin port on rear, one 6-pin port on front	ISV certifications
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	Please visit www.lenovo.com/support/ISV
Speaker	Internal speaker for business audio	
		Environmental certifications
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	GREENGUARD® certified
Keyboard/Mouse	104-key keyboard (USB)/Optical Wheel Mouse (USB)	RoHS-compliant EPEAT™ Gold rating
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified	Supports ThinkVantage® technologies

ThinkStation D30 (4353) - June 2013

Type- model ¹	Processor(s)	Memory (MHz/type)	Memory DIMMs	unve	Discrete drive controller	Pre-conf RAID	Hard drive(s) ²	Optical	Media reader	Graphics adapter(s) and GPU computing	1394 adptr	Chassis intrusion switch	Preloaded OS
4353-16G	2xE5-2650 (8C/2GHz/20MB/1600)	1600MHz RDIMM	4GBx3	No	No	No	1x3TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K4000 (3GB, 1xDVI-I DL*, 2xDP, 80W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4353-17G	1xE5-2665 (8C/2.4GHz/20MB/1600)	1600MHz RDIMM	4GBx3	SAS	No	No	2x300GB 3.5" SAS	DVD±RW	29-in-1	1xQuadro K5000 (4GB, 1xDVI-I DL, 1xDVI-D DL, 2xDP, 122W)	No		Win7 Pro64 (Downgrade from Win8)
4353-24G	1xE5-2620 (6C/2GHz/15MB/1333)	1600MHz UDIMM	4GBx1	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K2000 (2GB, 1xDVI-I DL, 2xDP, 51W)	No	Switch	Win7 Pro64 (Downgrade from Win8)

* DL = Dual Link, SL = Single Link

Chipset	Intel C602 Chipset	Tower				
Processor	Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 family, integrated 4-channel DDR3 memory controller per processor	 Raven black color; metal case 8.3"W x 23.7"D x 19.1"H (with handle) 				
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2				
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system 	Toolless side cover removal Toolless disk and optical drive removal Toolless dapter retention Illuminated front icons Rack shelf support or optional rail kit				
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	6 disk 7 disk 8 disk				
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 1-3: 5.25", 1.6" high, external, for optical Bay 4: 3.5", 1" high, external, for media reader Bay 5-9: 3.5", 1" high, internal, for hard drive*				
Upgrade ROM for onboard drive controllers (optional)	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to: • five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support	* Bay 5 is available on models with the SATA or SAS Hard Disk Drive enablement module installed. Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, 32-bit PCl 2.3				
Discrete drive controller (optional)	One the following, depending on model: LSI SAS 9240-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support optional upgrade key for RAID 5 support LSI SAS 9260-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support	Slot 4: full-length, full-height, PCle 3.0 x16** Slot 5: full-length, full-height, PCle 2.0 x4 Slot 6: half-length, full-height, 32-bit PCl 2.3 ** Adapters >75W use auxiliary power connector(s)				
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 2.5" SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s OPAL-capable on some models mSATA: mSATA SSD. SATA 6.0Gb/s	security chip (see information on left)				
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Side cover lock (ships with two identical keys)				
- p	Optional 29-in-1 media card reader on selected models	Padlock loop (in rear for opt padlock;				
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	padlock prohibits side cover removal)				
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal)				
IEEE 1394 adptr (optional)	Optiomal FireWire PCIe adapter on selected models, 1394a-2000, 400Mbps, one 6-pin port on rear, one 6-pin port on front	Power-on/Administrator password Boot sequence control				
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	Boot without keyboard, mouse, diskette Social part I/O applied disable				
Speaker	Internal speaker for business audio	Serial port I/O enable/disable USB 2.0 ports enable/disable individually				
	Dual onboard gigabit ethernet, Intel 82579 and 82574	USB 3.0 ports enable/disable concurrently				
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	Chassis intrusion switch on selected model(s)				
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black	Intel AMT				
Mouse	Optical Wheel Mouse (USB connector), black	Intel Active Management Technology 8 supported				
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified	ISV certifications				
Preloaded operating systems (OS)	One the following, depending on model: Windows 7 Professional 64 Windows 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit Windows 8 Pro 64-bit	Please visit <u>www.lenovo.com/support/ISV</u> Environmental certifications GREENGUARD® certified RoHS-compliant EPEAT™ Gold rating Supports ThinkVantage® technologies				

¹ Model in italics shows that this is a Global Model 2 The SSD drives in italics must be plugged into red or orange SATA connectors

ThinkStation D30 (4353) - June 2013 - II

Type- model ¹	Processor(s)	Memory (MHz/type)	Memory DIMMs	ulive	Discrete drive controller	Pre-conf RAID	Hard drive(s) ²	Optical	Media reader	Graphics adapter(s) and GPU computing	1394 adptr	Chassis intrusion switch	Preloaded OS
4353-26G	1xE5-2620 (6C/2GHz/15MB/1333)	1600MHz UDIMM	4GBx1	SAS	No	No	1x300GB 3.5" SAS	DVD±RW	29-in-1	1xQuadro K2000 (2GB, 1xDVI-I DL*, 2xDP, 51W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
4353-28G	1xE5-2620 (6C/2GHz/15MB/1333)	1600MHz UDIMM	4GBx1	No	No	No	1x1TB 3.5" SATA	DVD±RW	29-in-1	1xQuadro K2000 (2GB, 1xDVI-I DL, 2xDP, 51W)	No	Switch	Win8 Pro64
4353-31G	1xE5-2620 (6C/2GHz/15MB/1333)	1600MHz UDIMM	4GBx1	SAS	No	No	1x300GB 3.5" SAS	DVD±RW	29-in-1	1xQuadro K2000 (2GB, 1xDVI-I DL, 2xDP, 51W)	No	Switch	Win8 Pro64

* DL = Dual Link, SL = Single Link

3-year limited warranty
 With new MT type 4353/4354 and beyond, ThinkStation D30 introduces new updates to improve the functionality and usability:
 (These new features are not supported on 4223 and 4229 MT models)
 Intel AMT: upgrades to Intel AMT 8 from Intel AMT 7
 New TPM chip: STMicroelectronics ST33TPM12LPC
 Two front USB 2.0 ports upgrade to USB3.0

- For ThinkStation D30 platform specifications, please see ThinkStation D30 Platform Specifications sheet

Chipset	Intel C602 Chipset	Tower
Processor	Two LGA2011 sockets, supports up to two processors from Intel Xeon E5-2600 family, integrated 4-channel DDR3 memory controller per processor	 Raven black color; metal case 8.3"W x 23.7"D x 19.1"H (with handle)
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	One of the control of the contr
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system 	3 optical 4 media 7 Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Rack shelf support or optional rail kit
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	6 disk 7 disk
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 1-3: 5.25", 1.6" high, external, for optical Bay 4: 3.5", 1" high, external, for media reader Bay 5-9: 3.5", 1" high, internal, for hard drive*
Upgrade ROM for onboard	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to:	* Bay 5 is available on models with the SATA or SAS Hard Disk Drive enablement module installed.
drive controllers (optional)	 five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support 	Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, 32-bit PCl 2.3 Slot 4: full-length, full-height, PCle 3.0 x16**
Discrete drive controller (optional)	One the following, depending on model: LSI SAS 9240-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support optional upgrade key for RAID 5 support LSI SAS 9260-8i: SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 10 support	Slot 5: full-length, full-height, PCIe 2.0 x4 Slot 6: half-length, full-height, 32-bit PCI 2.3 ** Adapters >75W use auxiliary power connector(s)
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 2.5" SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s OPAL-capable on some models	from PSU SECURITY
	mSATA SSD, SATA 6.0Gb/s	Security chip (see information on left)
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Side cover lock (ships with two identical keys) Padlock loop (in rear for opt padlock;
	'	padlock prohibits side cover removal)
Front ports Rear ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm) Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	Security slot (in rear for optional
IEEE 1394 adptr (optional)	Optiomal FireWire PCle adapter on selected models, 1394a-2000, 400Mbps, one 6-pin port on rear, one 6-pin port on front	Power-on/Administrator password Boot sequence control
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	Boot without keyboard, mouse, diskette
Speaker	Internal speaker for business audio	Serial port I/O enable/disable USB 2.0 ports enable/disable individually
Onboard Ethernet	Dual onboard gigabit ethernet, Intel 82579 and 82574	USB 2.0 ports enable/disable individually USB 3.0 ports enable/disable concurrently
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	Chassis intrusion switch on selected model(s)
Keyboard	Preferred Pro USB Keyboard (USB connector), 104-key, black	Intel AMT
Mouse	Optical Wheel Mouse (USB connector), black	Intel Active Management Technology 8 supported
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified	ISV certifications
Preloaded operating systems (OS)	One the following, depending on model: Windows 7 Professional 64 Windows 7 Professional 64 preinstalled through downgrade rights in Windows 8 Pro 64-bit Windows 8 Pro 64-bit	Please visit <u>www.lenovo.com/support/ISV</u> Environmental certifications GREENGUARD® certified RoHS-compliant EPEAT™ Gold rating Supports ThinkVantage® technologies

¹ Model in italics shows that this is a Global Model 2 The SSD drives in italics must be plugged into red or orange SATA connectors

ThinkStation D30 (4353) - September 2013

	Type- model*	Processor(s) - Xeon E5 Family	Memory (MHz/type)	Memory DIMMs	Upgrade ROM for onboard drive controller	Pre-conf RAID	Hard drive(s)"	Optical	29-in-1 Media reader	Graphics adapter(s) and GPU computing ^{***}	1394 adptr	Chassis intrusion switch	Preloaded OS
	4353-75G	1xE5-2695 v2 (12C/2.4GHz/30MB/1866)	1600MHz RDIMM	8GBx4	SAS	No	1x600GB 3.5" SAS	DVD±RW	Media	2xQuadro K5000 (4GB, 1xDVI-I DL, 1xDVI-D DL, 2xDP, 122W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
Į		1xE5-2670 v2 (10C/2.5GHz/25MB/1866)	1600MHz RDIMM	4GBx4	SATA	No		DVD±RW	Media	1xQuadro K5000 (4GB, 1xDVI-I DL, 1xDVI-D DL, 2xDP, 122W)	No		Win7 Pro64 (Downgrade from Win8)

^{*} Model in italics shows that this is a Global Model ** The SSD drives in italics must be plugged into red or orange SATA connectors *** DL = Dual Link, SL = Single Link

- · 3-year limited warranty
- For ThinkStation D30 platform specifications, please see <u>ThinkStation D30 Platform Specifications</u> sheet

Chipset	Intel C602 Chipset	Tower
Intel AMT	Intel Active Management Technology 8 supported	Raven black color; metal case
Processor	Two LGA2011 sockets, integrated 4-channel DDR3 memory controller per	• 8.3"W x 23.7"D x 19.1"H (with handle)
	processor, only one E5-1600 or E5-1600 v2 processor are supported	• 210mm W x 602mm D x 485mm H
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable	1 optical • 60.6 lb (27.5kg) max configuration • 55-liter
,	(4-channel per processor), sixteen 240-pin DIMM sockets,	2 optical • Removable handle on top front
	128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	3 optical • Toolless side cover removal
	Actual memory operating speed depends on processor memory	Toolless disk and optical drive removal
disclaimers	controller speed, installed memory speed, and quantity of memory DIMMs	Toolless adapter retention
	Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported	Illuminated front icons Rack shelf support or optional rail kit
	Maximum memory capacity is also limited by operating system	• Hack shelf support or optional rall kit
	When using processor from Xeon E5-1600 and E5-1600 v2 series.	7 disk
	only eight DIMM sockets for CPU1 are available and max memory cacpacity is	8 disk 9 disk
	64GB (UDIMM, 8GBx8)/256GB (RDIMM, 32GBx8)	3 disk
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing	Bay 1-3: 5.25", 1.6" high, external, for optical
	processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	Bay 4: 3.5", 1" high, external, for media reader
Onboard drive	Four SATA connectors via integrated Advanced Host Controller Interface ATA 2 201/2 (2018)	Bay 5-9: 3.5", 1" high, internal, for hard drive*
controllers	(AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support	Clot 1, half langth full height DClo 2 0 v16 / 4 + COUNTY
	Four SATA connectors via integrated Storage Controller Unit (SCU)	Slot 1: half-length, full-height, PCIe 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCIe 3.0 x16**
	controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support	Slot 3: full-length, full-height, 32-bit PCI 2.3
Upgrade ROM	One of the following upgrade ROM is supported.	Slot 4: full-length, full-height, PCle 3.0 x16**
for onboard	the option upgrades the four SATA connectors on SCU controller to:	Slot 5: full-length, full-height, PCle 2.0 x4
drive controllers	• five SATA connectors with optional SATA HDD Enablement Module,	Slot 6: half-length, full-height, 32-bit PCI 2.3
(optional)	SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module,	** Adapters >75W use auxiliary power connector(s)
	SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support	from PSU
Discrete drive	, , , , , , , , , , , , , , , , , , , ,	
controller (opt)	None	
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm	SECURITY
()	3.5" Hybrid: SATA 6.0Gb/s, 7200 rpm,	Security chip (see information on left)
	integrated 8GB NAND flash	Side cover lock (ships with two identical keys)
	2.5" SATA: SATA 6.0Gb/s, 10000 rpm	Padlock loop (in rear for opt padlock; Padlock loop (in
	3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s	padlock prohibits side cover removal) • Security slot (in rear for optional
	OPAL-capable on some models	Kensington® Microsaver® cable;
	mSATA: mSATA SSD, SATA 6.0Gb/s	prohibits side cover removal)
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Power-on/Administrator password
Media reader (opt)	Optional media card reader on selected models	Boot sequence control
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	Boot without keyboard, mouse, diskette Serial port I/O enable/disable
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three	USB 2.0 ports enable/disable individually
	analog audio ports (line-in, line-out, mic-in)	USB 3.0 ports enable/disable concurrently
IEEE 1394 adptr	Optiomal FireWire PCIe adapter on selected models, 1394a-2000, 400Mbps,	Chassis intrusion switch on selected model(s)
(optional)	one 6-pin port on rear, one 6-pin port on front	ISV certifications
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	Please visit www.lenovo.com/support/ISV
Speaker	Internal speaker for business audio	
Onboard Ethernet		Environmental certifications
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	GREENGUARD® certified
Keyboard/Mouse	104-key keyboard (USB)/Optical Wheel Mouse (USB)	RoHS-compliant EPEAT™ Gold rating
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal,	
	Climate Savers® Computing Gold, 80 PLUS® Gold qualified	Supports ThinkVantage® technologies

ThinkStation D30 (4353) - October 2013

					Upgrade ROM for onboard				29-in-1	Graphics adapter(s)		Chassis	
	Type- model*	Processor(s) - Xeon E5 Family	Memory (MHz/type)	Memory DIMMs	drive controller	Pre-conf RAID	Hard drive(s)**	Optical	Media reader	and GPU computing***	1394 adptr	intrusion switch	Preloaded OS
_	4353-C2G	1xE5-2620 v2 6C/2.1GHz/15MB/1600MHz	1600MHz UDIMM	4GBx1	No	No	1x1TB 3.5" SATA Hybrid	DVD±RW	Media	1xQuadro K2000 (2GB, 1xDVI-I DL, 2xDP, 51W)	No	Switch	Win7 Pro64 (Downgrade from Win8)
2	4353-C5G	1xE5-2650 v2 8C/2.6GHz/20MB/1866MHz	1600MHz UDIMM	8GBx1	No	No	1x2TB 3.5" SATA Hybrid	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
4	4353-C7G	1xE5-2680 v2 10C/2.8GHz/25MB/1866MHz	1600MHz UDIMM	8GBx1	No	No	1x256GB 2.5" SSD - OPAL	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)
2	4353-E3G	1xE5-2640 v2 8C/2GHz/20MB/1600MHz	1600MHz RDIMM	4GBx2	No	No	1x2TB 3.5" SATA	DVD±RW	Media	No	No	Switch	Win7 Pro64 (Downgrade from Win8)

^{*} Model in italics shows that this is a Global Model ** The SSD drives in italics must be plugged into red or orange SATA connectors *** DL = Dual Link, SL = Single Link

- 3-year limited warranty
- $\bullet \ \ \textit{For ThinkStation D30 platform specifications, please see} \ \underline{\textit{ThinkStation D30 Platform Specifications}} \ \textit{sheet}$

Chipset	Intel C602 Chipset	Tower				
Intel AMT	Intel Active Management Technology 8 supported	Raven black color; metal case				
Processor	Two LGA2011 sockets, integrated 4-channel DDR3 memory controller per processor, only one E5-1600 or E5-1600 v2 processor are supported	8.3"W x 23.7"D x 19.1"H (with handle) 210mm W x 602mm D x 485mm H 60.6 lb (27.5kg) max configuration				
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable (4-channel per processor), sixteen 240-pin DIMM sockets, 128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	1 optical 2 optical 55-liter 55-liter Removable handle on top front Toolless side cover removal				
Additional memory disclaimers	 Actual memory operating speed depends on processor memory controller speed, installed memory speed, and quantity of memory DIMMs Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported Maximum memory capacity is also limited by operating system When using processor from Xeon E5-1600 and E5-1600 v2 series, only eight DIMM sockets for CPU1 are available and max memory cacpacity is 64GB (UDIMM, 8GBx8)/256GB (RDIMM, 32GBx8) 	Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Rack shelf support or optional rail kit Toolless disk and optical drive removal				
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	Bay 1-3: 5.25", 1.6" high, external, for optical Bay 4: 3.5", 1" high, external, for media reader				
Onboard drive controllers	 Four SATA connectors via integrated Advanced Host Controller Interface (AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support Four SATA connectors via integrated Storage Controller Unit (SCU) controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support 	Bay 5-9: 3.5", 1" high, external, for hedia reader Bay 5-9: 3.5", 1" high, internal, for hard drive* Slot 1: half-length, full-height, PCle 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCle 3.0 x16** Slot 3: full-length, full-height, PCle 3.0 x16** Slot 4: full-length, full-height, PCle 3.0 x16** Slot 5: full-length, full-height, PCle 2.0 x4 Slot 6: half-length, full-height, 32-bit PCl 2.3 ** Adapters >75W use auxiliary power connector(s) from PSU				
Upgrade ROM for onboard drive controllers (optional)	One of the following upgrade ROM is supported, the option upgrades the four SATA connectors on SCU controller to: • five SATA connectors with optional SATA HDD Enablement Module, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module, SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support					
Discrete drive controller (opt)	None					
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" Hybrid: SATA 6.0Gb/s, 7200 rpm, integrated 8GB NAND flash 2.5" SATA: SATA: SATA 6.0Gb/s, 10000 rpm 3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s OPAL-capable on some models mSATA: mSATA SSD, SATA 6.0Gb/s	SECURITY • Security chip (see information on left) • Side cover lock (ships with two identical keys) • 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)				
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Power-on/Administrator password Post assurance central				
Media reader (opt)	Optional media card reader on selected models	Boot sequence control Boot without keyboard, mouse, diskette				
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	Serial port I/O enable/disable				
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	USB 2.0 ports enable/disable individually USB 3.0 ports enable/disable concurrently				
IEEE 1394 adptr	Optiomal FireWire PCIe adapter on selected models, 1394a-2000, 400Mbps,	Chassis intrusion switch on selected model(s)				
(optional)	one 6-pin port on rear, one 6-pin port on front	ISV certifications				
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	Please visit www.lenovo.com/support/ISV				
Speaker	Internal speaker for business audio					
	Dual onboard gigabit ethernet, Intel 82579 and 82574	Environmental certifications				
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	GREENGUARD® certified RoHS-compliant				
Keyboard/Mouse	104-key keyboard (USB)/Optical Wheel Mouse (USB)	ROHS-compilant EPEAT™ Gold rating				
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal, Climate Savers® Computing Gold, 80 PLUS® Gold qualified	Supports ThinkVantage® technologies				

Type- model*	Processor(s) - Xeon E5 Family	Memory (MHz/type)	Memory DIMMs	Upgrade ROM for onboard drive controller	Pre-conf RAID	Hard drive(s)"	Optical	29-in-1 Media reader	Graphics adapter(s) and GPU computing***	1394 adptr	Chassis intrusion switch	Preloaded OS
4353-G4G	2xXeon E5-2670 v2 10C/2.5GHz/25MB/1866MHz	1866MHz UDIMM	4GBx4	SAS	No	1TB 3.5" SATA +300GB 2.5" SAS	DVD±RW	Media	1xQuadro K2000 2GB/1xDVI-I DL/ 2xDP/51W	No	Switch	Win7 Pro64
4353-G5G	2xXeon E5-2643 v2 6C/3.5GHz/25MB/1866MHz	1866MHz UDIMM	4GBx4	No	No	1x500GB 3.5" SATA	DVD±RW	Media	1xQuadro K4000 3GB/1xDVI-I DL/ 2xDP/80W	No	Switch	Win7 Pro64

^{*} Model in italics shows that this is a Global Model ** The SSD drives in italics must be plugged into red or orange SATA connectors *** DL = Dual Link, SL = Single Link

- 3-year limited warranty
- For ThinkStation D30 platform specifications, please see ThinkStation D30 Platform Specifications sheet

Chipset	Intel C602 Chipset	Tower
Intel AMT	Intel Active Management Technology 8 supported	Raven black color; metal case
Processor	Two LGA2011 sockets, integrated 4-channel DDR3 memory controller per	• 8.3"W x 23.7"D x 19.1"H (with handle)
	processor, only one E5-1600 or E5-1600 v2 processor are supported	• 210mm W x 602mm D x 485mm H
Memory	UDIMM or RDIMM, ECC, DDR3, 8-channel capable	1 optical • 60.6 lb (27.5kg) max configuration • 55-liter
,	(4-channel per processor), sixteen 240-pin DIMM sockets,	2 optical • Removable handle on top front
	128GB max (UDIMM, 8GBx16)/512GB max (RDIMM, 32GBx16)	3 optical • Toolless side cover removal
	Actual memory operating speed depends on processor memory	Toolless disk and optical drive removal
disclaimers	controller speed, installed memory speed, and quantity of memory DIMMs	Toolless adapter retention
	Over eight DIMMs requires dual processors Mixing of RDIMM and UDIMM is not supported	Illuminated front icons Rack shelf support or optional rail kit
	Maximum memory capacity is also limited by operating system	• Hack shell support of optional rall kit
	When using processor from Xeon E5-1600 and E5-1600 v2 series.	7 disk
	only eight DIMM sockets for CPU1 are available and max memory cacpacity is	8 disk 9 disk
	64GB (UDIMM, 8GBx8)/256GB (RDIMM, 32GBx8)	3 disk
Graphics	Two PCI Express 3.0 x16 slots for graphics adapters and GPU computing	Bay 1-3: 5.25", 1.6" high, external, for optical
	processors, supports NVIDIA SLI technology, NVIDIA Maximus technology	Bay 4: 3.5", 1" high, external, for media reader
Onboard drive	• Four SATA connectors via integrated Advanced Host Controller Interface	Bay 5-9: 3.5", 1" high, internal, for hard drive*
controllers	(AHCI) controller in chipset, two SATA 6.0Gb/s (red), two SATA 3.0Gb/s (orange), RAID 0, 1, 5, 10 support	Clot 1, helf length full height DClo 2 0 v16 / 4 + COUNTY
	Four SATA connectors via integrated Storage Controller Unit (SCU)	Slot 1: half-length, full-height, PCIe 3.0 x16 (x4 elec, near CPU) Slot 2: full-length, full-height, PCIe 3.0 x16**
	controller in chipset, SATA 3.0Gb/s, RAID 0, 1, 5, 10 support	Slot 3: full-length, full-height, 32-bit PCI 2.3
Upgrade ROM	One of the following upgrade ROM is supported.	Slot 4: full-length, full-height, PCle 3.0 x16**
for onboard	the option upgrades the four SATA connectors on SCU controller to:	Slot 5: full-length, full-height, PCle 2.0 x4
drive controllers	• five SATA connectors with optional SATA HDD Enablement Module,	Slot 6: half-length, full-height, 32-bit PCI 2.3
(optional)	SATA 3.0Gb/s, RAID 0, 1, 5, 10 support • five SATA/SAS connectors with optional SAS HDD Enablement Module,	** Adapters >75W use auxiliary power connector(s)
	SATA 3.0Gb/s, SAS 3.0 Gb/s, RAID 0, 1, 10 support	from PSU
Discrete drive	, , , , , , , , , , , , , , , , , , , ,	
controller (opt)	None	
Hard drive(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm	SECURITY
()	3.5" Hybrid: SATA 6.0Gb/s, 7200 rpm,	Security chip (see information on left)
	integrated 8GB NAND flash	Side cover lock (ships with two identical keys)
	2.5" SATA: SATA 6.0Gb/s, 10000 rpm	Padlock loop (in rear for opt padlock; Padlock loop (in
	3.5" SAS/2.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SSD: Solid State Drive (SSD), SATA 6.0Gb/s	padlock prohibits side cover removal) • Security slot (in rear for optional
	OPAL-capable on some models	Kensington® Microsaver® cable;
	mSATA: mSATA SSD, SATA 6.0Gb/s	prohibits side cover removal)
Optical	Supports DVD-ROM, DVD±RW, or Blu-ray Burner, SATA interface	Power-on/Administrator password
Media reader (opt)	Optional media card reader on selected models	Boot sequence control
Front ports	Two USB 3.0, microphone (3.5mm), headphone (3.5mm)	Boot without keyboard, mouse, diskette Serial port I/O enable/disable
Rear ports	Eight USB 2.0, two USB 3.0 (blue), serial (9-pin), two ethernet (RJ-45), three	USB 2.0 ports enable/disable individually
	analog audio ports (line-in, line-out, mic-in)	USB 3.0 ports enable/disable concurrently
IEEE 1394 adptr	Optiomal FireWire PCIe adapter on selected models, 1394a-2000, 400Mbps,	Chassis intrusion switch on selected model(s)
(optional)	one 6-pin port on rear, one 6-pin port on front	ISV certifications
Audio	High Definition (HD) Audio, Realtek® ALC662 codec	Please visit www.lenovo.com/support/ISV
Speaker	Internal speaker for business audio	
Onboard Ethernet		Environmental certifications
Security chip	STMicroelectronics ST33TPM12LPC for TPM function, TCG 1.2-compliant	GREENGUARD® certified
Keyboard/Mouse	104-key keyboard (USB)/Optical Wheel Mouse (USB)	RoHS-compliant EPEAT™ Gold rating
Power supply	1120 watts with 120mm bottom-mounted variable speed fan, universal,	
	Climate Savers® Computing Gold, 80 PLUS® Gold qualified	Supports ThinkVantage® technologies