ThinkServer

Personal Systems Reference Lenovo[®] ThinkServer[®] Servers 2008 to 2013 - withdrawn

January 2013 - Version 449



Lenovo ThinkServer 200 Series Family

lenovo.com

ThinkServer.





Lenovo ThinkServer TS100 with 400W non-redundant power supply



Lenovo ThinkServer TS100 with 430W redundant power supply



Lenovo ThinkServer TS100



Lenovo ThinkServer TS100 with simple-swap disks



Lenovo ThinkServer TS100



Lenovo ThinkServer TS100

ThinkServer™ TS100 (6432) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x bay	Processo	GHz	Cores	Memory	Disk(s)	Disk size	Disk connection	Disk type	RAID controller	SATA optical	Power supply	Limited warranty	Workho Globa	
F\$100 6432-17L	J 4x7	E7400	2.80	2	1 x 1GB	None	3.5"	4 x Simple-swap		1064E	DVD	400W	1-year		Sep 08
	HighEasy	to use w	ince se ith Thi	erver v nkSer	vith rock ver Easys	Startup	and E	ogy and proven ha asyManage softwa part of the US Top	are	•	n				
Processor mplementation	one ma	tel [®] Core aximum, 1 sor uses I	066MI	Iz sys	tem bus,	and 3N	1B L2	cache	Towe	r ness blac	k color:	metal ca	50	□© □□ opti	cal
Vemory	1GB st dual-ch	d, 8GB m annel cap	ax, PC bable, t	2-640 four 1	0 800MH 34-pin DI	Iz DDR2 MM soc	2, ECC kets;		• 8.5"\ • 216n • 56 lb	V x 21.25 nm W x 5 (25.2kg)	"D x 17. 40mm D max co	25"H) x 438m nfiguratio	im H	opti media	
Graphics	externa	N50 (ES1 al monitor <i>um resolu</i>	port (\	/GİA D	B-15);		z PCI	2.2, 16MB,	Tooll Tooll	ess side o ess disk a ess adap inated fro	and optio ter reter	cal drive ition	removal	dis dis dis	$\langle \langle \rangle$
Diskette SATA DVD SATA disk(s) SATA controller SATA connectors SATA RAID cont SAS disk SAS connectors SAS controller	None (DVD-R None Serial / Six SA 3.5" dis LSI™ 1 Mini P0 Not su Not su	use USB OM, SATA ATA, SATA TA connec sk backpla 064E, SA CI Express oported oported	port) A 1.5G A 3.0GI ctors o tte TA 3.0	b/s, us b/s, int n plan Gb/s,	ses ICH9 egrated i ar, four s	R in ICH9 imple-s	wap c	used by disks onnectors on	• Rack Bay ①	5.25", 1 5.25", 1 5.25", 1 3.5", 1 3.5", 1 3.5", 1 3.5", 1 3.5", 1	oport .6" high,	extern extern	al, optior al, optior		l disk disk disk
Chipset	Intel 3	oported 210 Chips D 0, 1, 10						0 (ICH9R) er I/O	Slot 2:	full-lengt full-lengt full-lengt	h, full-h	neight, P	Cle x8 Cle x1 (x4 4-bit PCI-	4 mecha X (not er	nical) nabled)
Front ports Rear ports Diagnostics Systems mgmt Audio Speaker	monito Diagno fans, di System IPMI 2. None Interna	SB 2.0, tw r (VGA DE stic LEDs sks, mem n manage 0-complia I speaker	3-15) s (syste lory, pr ment u ant	em-err ocess itility, t	or LED o or, PCI s baseboar	n front o lots, po d mana	cover; wer si geme	error LEDs for upply) nt controller,	Slot 4: Slot 5: • Side - pro • Pow	full-lengt half-leng cover loc bhibits rer er-on pas	h, full-h th, full-h ck (ships noval of sword	swith two front pa	2-bit PCI 2-bit PCI	2.2 2.2	
Ethernet Keyboard Mouse Power supply Cooling	None (None (One 40 non-ho	t ethernet use USB use USB 00 watts, c t-swap, ur fans (proc	port) port) one ma niversa	ıximur Il	n, non-re			PCIe x1 able speed fan,	 Boot Boot Seria 	inistrator sequenc without k al port I/C port disa	e contro ceyboard control	d, mouse	e, diskette		
Accessories 1GB PC2-6400 2GB PC2-6400 160GB 3.5" Sim	DDR2 DDR2		лм лм		,	4	5J618 5J618	39	• Thin	kServer E kServer E	asyStar asyMar	tup lage	ement to	ols	
250GB 3.5" Sim 500GB 3.5" Sim	ple-swa ple-swa	ap SATA 3 ap SATA 3	.0Gb/s .0Gb/s	B Disk B Disk	(7200 rp (7200 rp	m) 4 m) 4	5J619 5J619	96 97		Plus Priori -complian	, ,,	ort, 90-d	lay Trial		
750GB 3.5" Sim Other accessori	•	•			· ·	rn) 4	5J61§	10	 ⇒ 1-y ⇒ Cu: (wi 8 a nex ⇒ Thi len • C (i • F 	ear parts stomer Re th limited m - 5 pm, ct busines nkPlus™ ovo.com/ Dnsite ser in eligible Post warra	Lim and lab eplaceal onsite s Mon - F ss day re services thinkplus vice upg location anty mai	ble Unit (service f ri covera esponse s availab /warrant grade op ns) ⁷ ntenanc	(CRU) par or selecte age exclue time) le; see	ed parts³, ding holi	

See footnotes for important warranty information US model announced September 30, 2008 US model withdrawn effective April 2010 © Lenovo (TS100-1) April 2010

ThinkServer™ TS100 (6434) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x bay	Processo	or GHz (Cores	Memor	y Disk(s	Disk) size	Disk connection	Disk type	RAID controlle	SATA r optical	Power supply(s)	Limited V Warranty ¹				
TS100 6434-13L TS100 6434-15L	J 4x7	E3110	3.00	2	2 x 1G	B None	3.5"	4 x Simple-swap 4 x Hot-swap		1064E	DVD	400W 2 x 430W	3-year	No	Sep 08 Sep 08		
	HigiEas	y to use	nance a with Th	serve hinkS	er with r Server E	ock solid asyStart	up an	nology and prove d EasyManage so dels are part of th	ftware	•	ogram						
Processor	one m One Ir one m	ntel Xeo aximum,	, 1333N n Proc , 1333N	MHz : : essc MHz :	system or X3360 system	bus, and) with qı bus, and	6MB 1ad-co 12MB	L2 cache or	• 8.5"W	iess black / x 21.25	"D x 17.	metal case .25"H) x 438mm		opti opti media	cal		
Memory	2GB c dual-c	or 4GB st hannel c	td, 8GE apable	3 ma: e, fou	x, PC2-(r 240-pi	6400 800 n DIMM	MHz socke	DDR2, ECC,	• 56 lb • Toolle • Toolle	(25.2kg) ess side o ess disk a	max co cover re and optic	nfiguration moval cal drive re		dis dis dis			
Graphics	extern <i>Maxin</i>	al monito num resc	or port plution:	(VG/ 1024	A DB-15);	MHz F	PCI 2.2, 16MB,	 Illumi 	ess adapt nated fro shelf sup	nt icons			dis			
Diskette SATA DVD SATA disk(s) SATA controller SATA connectors SATA RAID cont	DVD-F None Serial Six SA 13U S 15U S	ATA conn ATA: 4 s ATA/SAS	TA 1.5 TA 3.00 lectors imple-s S: 4 hot	Gb/s, Gb/s, on pl swap t-swa	integra lanar, connec p conne	ted in IC tors on 3 ectors on	8.5" di 3.5"	not used by disks sk backplate disk backplane t,		3.5", 1" 3.5", 1" 3.5", 1"			optional optional optional	l optica I disk I disk I disk			
SAS disk(s) SAS connectors SAS RAID cont	Mini P None 15U S 15U: L RAID [®]	CI Expre SATA/SAS SI MR10 0, 1, 5, 0	ess® ad S: 4 hot 0i, SAT 6, 10, 5	lapte t-swa A 3.0 50, 60	r p conne Gb/s, S) suppo	ectors on SAS 3.0 rt, Mini F	3.5" Gb/s, PCI Ex	disk backplane kpress adapter	Slot 2: Slot 3: Slot 4:	Slot 1: full-length, full-height, PCIe x8 Slot 2: full-length, full-height, PCIe x1 (x4 mechan Slot 3: full-length, full-height, 64-bit PCI-X (not en Slot 4: full-length, full-height, 32-bit PCI 2.2 Slot 5: half-length, full-height, 32-bit PCI 2.2							
Chipset								AID (ICH9R) Super I/O			, .	5,0					
Front ports Rear ports Diagnostics Systems mgmt Audio Speaker Ethernet	Four L monito Diagn fans, o Syster IPMI 2 None Interna	or (VGA l ostic LEI disks, me m manag 2.0-comp al speake	DB-15) Ds (sys emory, gement liant er	stem- proce t utilit	error LE essor, P y, baset	D on fro CI slots, board ma	nt cov powe anage	et (RJ-45), ver; error LEDs for r supply) ment controller, 22, PCIe x1	Security Side cover lock (ships with two identical keys) prohibits removal of front panel and disks Power-on password Administrator password Boot sequence control Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) 								
Keyboard Mouse Power supply	None Some Some	Two 43 : variabl	B port) 00 watt e spee 30 watt e spee	ts, on d fan s, two d fan	i, non-ho o maxim i, hot-sw	ot-swap, ium, red vap, univ	unive undar		• Think	Server E Server E	asyStar asyMar			S			
Cooling	Ihree	fans (pro	ocesso	r, rea	ır, disks)						uni, 00-udy	mai				
Accessories 1GB PC2-6400 2GB PC2-6400 160GB 3.5" Sim 500GB 3.5" Sim 750GB 3.5" Sim 250GB 3.5" Hot 500GB 3.5" Hot 750GB 3.5" Hot 750GB 3.5" Hot 1TB 3.5" Hot-sw 146GB 3.5" Hot Other accessori	DDR2 ple-sw ple-sw ple-sw ple-sw -swap -swap -swap yap SA -swap	ECC UE ap SATA ap SATA ap SATA sATA 3.0 SATA 3.0 SATA 3.0 SATA 3.0 SATA 3.0 SATA 3.0 SATA 3.0 SATA 3.0 SAS 3.0	DIMM 3.0Gb 3.0Gb 3.0Gb 3.0Gb/s [0Gb/s [0Gb/s [0Gb/s Disl 0Gb/s D	o/s Di o/s Di o/s Di Oisk (Oisk (Disk (k (72 visk (*	sk (720) sk (720) 7200 rp 7200 rp 7200 rp 7200 rp 00 rpm) 15000 rp	0 rpm) 0 rpm) 0 rpm) 0 rpm) 0 m) 0 m) 0 m)	45J 45J 45J 45J 45J 45J 45J 45J	6188 6189 6195 6196 6197 6198 6201 6202 6202 6203 6204 6211	 ⇒ 3-yee ⇒ Cus (with 8 an nexi ⇒ Thir lenc • O (in • Pe ⇒ 24 h 	h limited n - 5 pm, t busines hkPlus™ s ovo.com/t nsite serv n eligible ost warra iour x 7 d	Lim and labo placeal onsite s Mon - F s day re services hinkplus vice upo location nty mai lay ¹⁴ toll	ble Unit (Cl service for ri coverage esponse tir s available; s/warranty grade optic	RU) parts selected e excludir ne) see ons services ort during	parts³, ng holio	days,		
See footnotes for i	moorto	at worran	ty infor	motio						110) Lenov		

See footnotes for important warranty information US models announced September 30, 2008 US models withdrawn effective April 2010

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ThinkServer.





Lenovo ThinkServer RS110



Lenovo ThinkServer RS110



Lenovo ThinkServer RS110

ThinkServer™ RS110 (6436) - TopSeller - withdrawn

Type- Name model	Slot x bay	Processor	GHz	Cores M	emory	Disk(s)	Disk size	Disk connection	Disk type	RAID controller	EIDE optical	Power supply		Limited s warranty	Workho Globa	
RS110 6436-15	U 2x3	E7400	2.80	2 1	x 1GB	None	3.5"	2 x Simple-swap	SATA	1064E	Combo	350W	5	1-year	No	Sep 08
	• Eas		ith Thi	nkServe	r Easy			EasyManage soft s part of the US 1		ler™ Prog	gram					
Processor		ntel [®] Core							10	Rack top)		_			
Implementation	Proce	ssor uses l	FC-LG	A8 pack	kage, c	ne LGA	1775 s	socket		끈	<u>P</u> .	fan				
Memory	dual-c	std, 8GB m channel cap <i>talics:</i> stan	bable,	four 240	-pin D	IMM so	ckets;		soc	Riser slot	Riser slot	Power supply	Fro	ont		
Graphics	exterr	RN50 (ES10 nal monitor <i>num resolu</i>	port (\	/GˈA DB	-15 rea	ar);	lz PC	I 2.3, 16MB,	sockets		Ť 1	supply		optical	disk	disk
EIDE controller EIDE Combo SATA disk(s) SATA controller SATA connectors	one c DVD-l None Serial Two S	ROM/CD-R I ATA, SATA	n plana W, Ult 3.0Gl ctors o	ar, single rabay E o/s, integ on plana	e 1-dro nhance grated Ir,	p IDE c ed, 12.7 in ICH9	able i 'mm h PR, nc	(for Combo) high ht used by disks		fan fan	fan fan disk	disk	Rea	-	<u>9 x8 2 - PCle</u>	
SATA RAID cont	LSI™	1064E, SA CI Express	TA 3.0	Gb/s, R	AID ⁸ 0	1 supp	ort,	•			franti m	atal aa				
SAS disk SAS connectors SAS RAID cont	Not si	upported upported upported							• 1 • 4	lack color 7.3" W x 2 40mm W	22" D x 1 x 559mr	.75" H n D x 4	3mm			
Chipset		3210 Chips AID 0, 1, 10							 28 lb (12.7kg) max configuration Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons with system error LED Bay ① 5.25", 0.5" high, external, std optical Bay ② 3.5", 1" high, external, optional disk PCI Express riser card: 							
Riser card Front ports Rear ports Diagnostics Systems mgmt	Two L Two L two et Diagn fans, o	JSB 2.0 JSB 2.0, ex thernet (RJ lostic LEDs disk control	ternal -45), s (syste ller, me	monitor ystem n em-error emory, F	(VGA nanage LED c PCI slo	DB-15) ement (on front ts, pow	, seria RJ-45 cover er)									
Audio	None		Int						Slo	t 1: 3/4-le t 2: half-le	ength, fu ength, lo	w-profi	it, P le, P	Cle x8 Cle x4 (x8	3 mecha	nical)
Speaker Ethernet	Dual g	al speaker gigabit on p Icom 5703								ower-on p		d	curit	ty		
Keyboard Mouse Power supply Cooling	None One 3 fans, 1	(use USB) (use USB) 350 watts, c non-hot-swa ans, five ma	port) one ma ap, un	iversal			nt, two	o variable speed	• B • B • S	dministra oot seque oot witho erial port SB port o	ence cor ut keybo I/O cont	ntrol ard, mo rol		, diskette r all)		
ThinkServer E	oov@to			anager					Thi	nkPlus Pr	riority Su	pport, s	90-da	ay Trial		
• THINKSEIVER E	.asy318	uup • m	ik36l/	ei Easy	ward	1c				-IS-compl				-		
Accessories 1GB PC2-6400 2GB PC2-6400 160GB 3.5" Sir 250GB 3.5" Sir 500GB 3.5" Sir 750GB 3.5" Sir Other accessor	DDR2 nple-sw nple-sw nple-sw nple-sw	ECC UDIN vap SATA 3 vap SATA 3 vap SATA 3 vap SATA 3	/IM .0Gb/s .0Gb/s .0Gb/s .0Gb/s	B Disk (7 Disk (7 Disk (7 Disk (7	'200 rp '200 rp	om) om) om)	45J61 45J61 45J61 45J61 45J61 45J61	89 95 96 97	t t t t	1-year pa Custome (with limi 8 am - 5 p next busi ThinkPlus lenovo.cc • Onsite (in eligi • Post wa	L rts and l r Replac ted onsi om, Mon ness day s™ servi om/thinkp service ible loca arranty r c 7 day ¹⁴	eable U te servi - Fri co y respo ces ava olus/war upgrad tions) ⁷ nainten toll-free	Init (ice fo overa inse ailabl ranty e op ance sup	CRU) pari or selecte lge exclud time) le; see / tions e services oport duri	d parts³, ling holi	

See footnotes for important warranty information US model announced September 30, 2008 US model withdrawn effective April 2010

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ThinkServer™ RS110 (6438) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x bay	Processor	GHz	Cores Mei	mory Dis		Disk size	Disk connection	Disk type	RAID controlle		Power supply		Limited warranty		
RS110 6438-131 RS110 6438-151		E3110 X3360	3.00 2.83	2 1 x 4 2 x	2GB No 2GB No	one one	3.5" 2.5 "	2 x Simple-swap 4 x Hot-swap			Combo Combo			3-year 3-year		Sep 08 Sep 08
	HigiEas	y to use wi	nce se th Thir	rver with kServer	rock so EasySta	rtup a	and	ology and proven EasyManage soft Is are part of the	ware			n				
Processor Implementation Memory	one m One lu one m Proce 2GB c dual-c Non-it	ntel [®] Xeon laximum, 13 ntel Xeon I laximum, 13 ssor uses F or 4GB std, channel cap talics: stanc	333MH Proces 333MH C-LG 8GB r able, f dard m	Iz system sor X33 Iz system A8 packa max, PC2 our 240-p emory in	n bus, ar 60 with 6 n bus, ar age, one 2-6400 80 pin DIMM	nd 6M quad nd 12 LGA DOMH	IB L2 -cor MB I 775 s Iz DI kets	2 cache or e, _2 cache socket DR2, ECC,	1U sockets	Rack to	p Riser slot 1	fan Power supply	□○•□ 	ptical	disk disk	disk disk
Graphics	ATI® F extern	or two sock N50 (ES10 al monitor num resolut	000), o port (\	n planar, /GA DB-1	15 rear);	3MH2	z PC	I 2.3, 16MB,			fan fan	Jy [fan		nt on 3.5	" disk n disk	nodels disk
EIDE controller EIDE Combo SATA disk(s) SATA controller SATA connectors SATA RAID cont SAS disk SAS connectors SAS RAID cont	one co DVD-F None Serial Two S 13U: t 13U: L Mini P None 15U: 4 15U: 1	ROM/CD-R ATA, SATA ATA conne wo simple- SI™ 1064E CI Express t hot-swap	n plana W, Ulti 3.0Gk ctors c swap c E, SAT s [®] adap conne SAS 3	ar, single rabay Enl on planar, connector A 3.0Gb/s oter ctors on 2 3.0Gb/s, F	1-drop II hanced, rated in I rs on 3.5 s, RAID ⁸ 2.5" disk	DE ca 12.7r CH9F " disk 0, 1 back	able mm h R, nc k bac supp kplan	(for Combo) nigh ot used by disks okplate port,	• B • 1 ¹ • 4 ⁴ • 26 • To • To	7.3" W x 40mm W 3 lb (12.7 polless to polless d	disk or front; n 22" D x 22" D x 2559m 7kg) max op cover isk and c dapter re	1.75" H m D x 4 c configu remova optical d	se 3mm uration I Irive r	H n	2 x8 2 - PCie a 1	
Chipset	Intel 3	•	et, Int	el I/O Co				D (ICH9R) er I/O			d front ic disk bay		ו syst	em error	LED	
Riser card Front ports Rear ports Diagnostics Systems mgmt Audio Speaker Ethernet	Conta Two U Two U two et Diagn fans, c Syster IPMI 2 None Interna Dual g	ins one PC ISB 2.0 ISB 2.0, ext hernet (RJ- ostic LEDs disk control	I Expr 45), s (syste ler, me nent u nt lanar,	ess® x4 s monitor (' ystem ma m-error L emory, PC tility, base Broadcor	Slot and c VGA DB anageme _ED on f CI slots, j eboard n m® 5722	one P -15), ent (F ront c powe nanag	PCI E seria 3J-45 cover r) gemo e x1	xpress x8 slot al (9-pin), 5) r; error LEDs for ent controller,),	Bay Bay Bay Bay Bay Bay Bay Bay Slo	(2) 2.5" (3) 2.5" (4) 2.5" (5)	, 0.6" h , 0.6" h , 0.6" h , 0.6" h disk bay 5", 0.5" h , 1" hig , 1" hig s riser ca ength, fi	iğh, ext igh, ext igh, ext igh, ext igh, ext igh, ext h, ext a <i>rd:</i> ull-heigh	ernal ernal ernal ernal ernal ernal ernal	 std opti optiona optiona optiona optiona optiona std opti std opti optiona optiona optiona 	al disk al disk al disk al disk ical al disk al disk	
Keyboard Mouse Power supply	None None One 3 fans, r	(use USB p (use USB p 50 watts, o non-hot-swa	port) port) ne ma ap, uni	ximum, n versal	non-redu			o variable speed	- Slo	t 2: half-	length, lo	ow-profi	le, PC	Cle x4 (x8	3 mecha	nical)
Cooling Accessories 1GB PC2-6400 2GB PC2-6400 160GB 3.5" Sin 250GB 3.5" Sin 750GB 3.5" Sin 73GB 2.5" Hot-	DDR2 DDR2 ple-sw ple-sw ple-sw ple-sw swap S	ECC UDIM vap SATA 3 vap SATA 3 vap SATA 3 vap SATA 3 SAS 3.0Gb/	/IM /IM .0Gb/s .0Gb/s .0Gb/s .0Gb/s /s Disk	Disk (72 Disk (72 Disk (72 Disk (72 Disk (72 (15000 r	200 rpm) 200 rpm) 200 rpm) 200 rpm) 200 rpm)	4 4 4 4 4	5J61 5J61 5J61 5J61 5J61 5J61 5J62	89 195 196 197 198 208			passwor	ď	curity	у		
146GB 2.5 " Ho Other accessor	t-swap	SAS 3.0Gt enovo.com	o/s Dis n/acce	k (10000	rpm)	4	5J62	207	• B • B • S	oot sequ oot with erial por	iencė co	ntrol bard, me trol		diskette all)		
	eplacea am - 5 p	ble Unit (C om, Mon - F	ri cov	erage exc	cluding h	nolida	ays, r	e service for se- next business day inty	· • T	hinkServ		are ma Startup	nage	ement too	ols	
Onsite servicePost warra	vice up nty ma	grade optio	ons (in service	i eligible l es	location	s) ⁷			-		Priority S	upport,	90-da	ay Trial		
	ay ¹⁴ to	II-free supp	ort du	ring the v	warranty	perio	od¹ v	ia 800-426-7378	Ro	-IS-comp	oliant					

See footnotes for important warranty information US models announced September 30, 2008 US models withdrawn effective April 2010

ThinkServer



Lenovo ThinkServer TD100



Lenovo ThinkServer TD100x



Lenovo ThinkServer TD100 or TD100x



Lenovo ThinkServer TD100 or TD100x



Lenovo ThinkServer TD100x with Easy LED Diagnostic panel



Lenovo ThinkServer TD100 or TD100x

ThinkServer™ TD100 (6399) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x bay Processor(s) GHz Cores Memory Disk(s)s	isk Disk ize connection	Disk type	RAID controller	EIDE optical	Power supply(s	s) Fans	Limited V		
		3.5" 4 x Simple-swap 3.5" 4 x Simple-swap			DVD DVD	670W 670W	3	1-year 1-year		Sep 08 Jan 09
	 T = Tower, D = Dual processor support High performance server with rock solid t Easy to use with ThinkServer EasyStartup These small and medium business (SMB) 	and EasyManage so	ftware			m				
Processor(s)	One Intel [®] Xeon [®] Processor E5405 with qu two maximum, 1333MHz system bus, and 12	2MB L2 cache		ower					opti	cal 🗖
Implementation Memory	Processor uses FC-LGA6 package, two LGA 2GB std, 32GB max, PC2-5300 667MHz DD fully buffered, eight 240-pin DIMM sockets; <i>Non-italics:</i> standard memory in two sockets	R2, Advanced ECC,	• 8	3usiness b 3.6"W x 29 218mm W 75 lb (34kg).4"D x x 747n g) max	17.3"H nm D x 4 configur	140mm ation		opti tape	
Graphics	ATI® RN50 (ES1000), on planar; 32-bit/33MH external monitor port (VGA DB-15 rear); Maximum resolution: 800x600@85Hz		•	Foolless si Foolless di Foolless ac Iluminatec	sk and dapter i I front i	optical or retention cons	drive re	emoval	disk disk	
EIDE controller	Enhanced IDE/ATA 100 controller in Enterpri one connector on planar, single 2-drop IDE of DVD-ROM, 1.6" high			Rack shelf			I	- 4 - 4 4	disk disk	
SATA disk(s) SATA connectors SAS disk(s) SATA/SAS cont	None Four simple-swap connectors on 3.5" disk ba None 15U SATA: Adaptec® AIC-9580W, SATA 3.00 RAID ⁸ 0, 1, 10 support, 8-port, o	Gb/s, SAS 3.0Gb/s,	Ba Ba Ba Ba	ay (1) 5.25' ay (2) 5.25' ay (3) 5.25' ay (4) 3.5", ay (5) 3.5",	', 1.6" l	niğh, ex nigh, ex gh, ex gh, ex	ternal, ternal, ternal, ternal,	optional optional optional optional	tape or tape or disk disk	
SAS connectors SATA/SAS RAID controller		^{r,} Sle	Bay (© 3.5", 1" high, external, optional disk Bay (?) 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCIe® x4 (x8 mechanic Slot 2: full-length, full-height, PCIe x8							
Chipset	Intel 5000P chipset, Intel 6321ESB-2E I/O ONS PC8374L Super I/O	Controller Hub,	SI	Slot 3: full-length, full-height, PCIe x8 Slot 4: full-length, full-height, 64-bit PCI-X						
Front ports Rear ports Diagnostics	Two USB 2.0 Two USB 2.0, two serial (9-pin), parallel, key mouse (PS/2), external monitor (VGA DB-15 system management (RJ-45) Diagnostic LEDs (system-error LED on front), ethernet (RJ-45), cover; error LEDs for	SI	Slot 5: full-length, full-height, 64-bit PCI-X Slot 6: half-length, full-height, PCI						
Systems mgmt	RAID, memory, processors, PCI slots, voltag power supply) System management utility, baseboard mana IPMI 2.0-compliant		Security							
Audio Speaker Ethernet	None Internal speaker Gigabit ethernet on planar, Broadcom [®] BCM full duplex, Wake on LAN [®]	5721, PCle x1,	•	Side cover - prohibits Power-on Administra	remov passwo itor pas	ships wit al of fror ord ssword	h two i	dentical k		
Keyboard Mouse Power supply	None (use PS/2 or USB port) None (use PS/2 or USB port) One 670 watts, one maximum, non-redunda non-hot-swap, universal		•	Boot sequ Boot witho Serial port USB port o	ut keyt I/O co	ooard, m ntrol		diskette		
Cooling	Three or six fans, six maximum, variable spe protection, hot-swap, six fans required with s power supply			ninkPlus P		Support,	90-da	y Trial		
	Software management tools			oHS-comp	liant	Limited	Warra	antv		
Accessories Intel Xeon Quad 1GB PC2-5300 2GB PC2-5300 4GB PC2-5300 160GB 3.5" Sim 250GB 3.5" Sim 750GB 3.5" Sim	DDR2 ECC FB-DIMM DDR2 ECC FB-DIMM DDR2 ECC FB-DIMM Iple-swap SATA 3.0Gb/s Disk (7200 rpm) Iple-swap SATA 3.0Gb/s Disk (7200 rpm) Iple-swap SATA 3.0Gb/s Disk (7200 rpm)	45J6221 45J6191 45J6192 45J6193 45J6195 45J6196 45J6197 45J6198	4	lenovo.co • Onsite	r Repla ted ons om, Mon ness d s™ service ible loc arranty 7 day ¹	l labor ceable L site serv n - Fri co ay respo vices av (plus/wai e upgrad ations) ⁷ mainter ⁴ toll-free	Unit (C ice for overag onse til ailable rranty le option nance se supp	RU) parts selected e excludin me) ; see ons services ort during	parts³, ng holic	lays,

See footnotes for important warranty information US models announced September 30, 2008 or January 20, 2009 US models withdrawn effective February 2010

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ThinkServer™ TD100 (6429) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x Di bay Processor(s) GHzCores Memory Disk(s) si	isk Disk ize connection	Disk type	RAID controller	EIDE	Power supply(Limited W warranty ¹			
	U 6x11 1 x E5410 2.33 4 2 x 1GB None 3. U 6x11 1 x E5430 2.66 4 2 x 2GB None 3.							3-year 3-year	No No	Sep 08 Sep 08	
	 T = Tower, D = Dual processor support High performance server with rock solid tee Easy to use with ThinkServer EasyStartup a These small and medium business (SMB) n 	and EasyManage	e softwar	re 🗸		m					
Processor(s) Implementation	One Intel® Xeon® Processor E5410 or E5430 two maximum, 1333MHz system bus, and 121 Processor uses FC-LGA6 package, two LGA7	MB L2 cache	· .	Tower Business b 8.6"W x 29			tal case	9		ical ical	
Memory	2GB or 4GB std, 32GB max, PC2-5300 667M Advanced ECC, fully buffered, eight 240-pin Non-italics: standard memory in two sockets;	DIMM sockets;		218mm W 75 lb (34kg Toolless sid	x 747m) max c	m D x 4	ration	Η	tap dis dis	k	
Graphics	ATI® RN50 (ES1000), on planar, 32-bit/33MHz external monitor port (VGA DB-15 rear); Maximum resolution: 800x600@85Hz	z PCI 2.3, 16MB		Toolless dis optical drive Toolless ad	e remov apter re	etentior	n		dis dis dis dis	k k	
SAS disk(s) SATA/SAS cont SAS connectors SATA/SAS RAID	Enhanced IDE/ATA 100 controller in Enterpris one connector on planar, single 2-drop IDE ca DVD-ROM, 1.6" high None Eight hot-swap connectors on 3.5" disk backp None Adaptec® AIC-9580W, SATA 3.0Gb/s, SAS 3.0 RAID ⁸ 0, 1, 10 support, 8-port, on planar, not Eight hot-swap connectors on 3.5" disk backp RAID-8k Adapter, SATA 3.0Gb/s, SAS 3.0Gb/ RAID ⁸ 0, 1, 1e, 5, 6, 10 support, in reserved c single cable to backplane Intel 5000P chipset, Intel 6321ESB-2E I/O C NS PC8374L Super I/O Two USB 2.0, two serial (9-pin), parallel, keyb mouse (PS/2), external monitor (VGA DB-15), system management (RJ-45) Diagnostic LEDs (system-error LED on front c RAID, memory, processors, PCI slots, voltage power supply) System management utility, baseboard manag IPMI 2.0-compliant None Internal speaker	able (for DVD) plane DGb/s, used lane s, connector, controller Hub, controller Hub, cover; error LED: e regulator modu	5), s for e,	 Illuminated front icons Rack shelf support Bay ① 5.25", 1.6" high, external, std optical Bay ② 5.25", 1.6" high, external, optional tape or opti Bay ③ 5.25", 1.6" high, external, optional tape or opti Bay ④ 3.5", 1" high, external, optional disk Bay ③ 3.5", 1" high, external, optional disk Bay ④ 3.5", 1" high, external, optional disk Bay ④ 3.5", 1" high, external, optional disk Bay ⑨ 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCIe x8 Slot 4: full-length, full-height, 64-bit PCI-X Slot 6: half-length, full-height, PCI 							
Ethernet Keyboard Mouse Power supply Cooling	Gigabit ethernet on planar, Broadcom® BCM5 full duplex, Wake on LAN® None (use PS/2 or USB port) None (use PS/2 or USB port) Two 835 watts, two maximum, redundant with variable speed fan, hot-swap, universal, two redundant power supplies require six fans Six fans, six maximum, variable speed, hardw hot-swap, six fans required with second redum	two, s vare failure prote	ction,	 Side cover prohibits Power-on p Administration Boot seque Boot without Serial port USB port do 	remova basswo tor pass ance co ut keyb I/O cor	hips wi al of froi rd sword ontrol oard, m ntrol	nt pane nouse, (el and disk			
ThinkServer E	Software management tools asyStartup • ThinkServer EasyManage		-	ThinkPlus Pr	iority S	upport,	90-day	y Trial			
Accessories				RoHS-compl	iant						
Intel Xeon Quad 1GB PC2-5300 2GB PC2-5300 250GB 3.5" Hot 500GB 3.5" Hot 750GB 3.5" Hot 1TB 3.5" Hot-sv 146GB 3.5" Hot 300GB 3.5" Hot	d-Core Processor E5410 45J6 d-Core Processor E5430 45J6 DDR2 ECC FB-DIMM 45J6 DDR2 ECC FB-DIMM 45J6 DDR2 ECC FB-DIMM 45J6 -swap SATA 3.0Gb/s Disk (7200 rpm) 45J6 -swap SATA 3.0Gb/s Disk (15000 rpm) 45J6 -swap SAS 3.0Gb/s Disk (15000 rpm) 67Y0 ies at lenovo.com/accessories 67Y0	186 191 192 201 202 203 204 211 212	4	 3-year par Customer (with limit 8 am - 5 p next busir ThinkPlus lenovo.co Onsite s (in eligii) Post wa 24 hour x warranty 	ts and Replaced ed ons m, Mon ness da ™ serv m/think service ble loca urranty 7 day ¹⁴	labor ceable ite serv - Fri ca y respo ices av plus/wa upgrad ations) ⁷ mainter toll-fre	vice for overage onse tir vailable urranty de optic nance se se supp	RU) parts selected e excludin ne) ; see ons services ort during	parts ³ , ig holi		

See footnotes for important warranty information US models announced September 30, 2008 US models withdrawn effective February 2010

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ThinkServer™ TD100x (4206) - TopSeller - withdrawn

Type- Name model	Slot x bay Processor(s) GHz Cores Memory	Disk Disk(s) size	Disk connection	Disk type	RAID controller	EIDE optical	Power supply(s)		Limited V		
TD100x 4206-14	U 6x11 1 x X5450 3.00 4 2 x 2GB	None 3.5"	8 x Hot-swap	SATA/SAS	S ⁴ RAID-8k	DVD 2	2 x 835W	6	3-year	No	Sep 08
	 T = Tower, D = Dual processor supp This small and medium business (\$ The TD100x differs from the TD100 LEasy LED Diagnostic panel, suppor two redundant 835 watt power supp 	SMB) model because of t for up to e	the following eight 3.5" hot-	standard	features:	ıram					
Processor(s)	One Intel [®] Xeon [®] Processor X5450 two maximum, 1333MHz system bus,			Тс	ower					opti	
Implementation	Processor uses FC-LGA6 package, tv				Business bl 3.6"W x 29.			case		opti	
Memory	4GB std, 48GB max, PC2-5300 667N Advanced ECC, fully buffered, twelve Non-italics: standard memory in two s	240-pin DI		• 2	218mm W x 75 lb (34kg Foolless sid	k 747m) max c	m D x 44 configurat	tion	Н	tape disk disk	
Graphics	ATI [®] RN50 (ES1000), on planar, 32-bi external monitor port (VGA DB-15 rea <i>Maximum resolution:</i> 800x600@85Hz	ır);	CI 2.3, 16MB,	• 1	Foolless dis optical drive Foolless ad	e remov apter re	etention			disk disk disk disk	
SAS disk(s) SATA/SAS cont SAS connectors SATA/SAS RAID	Enhanced IDE/ATA 100 controller in E one connector on planar, single 2-dro DVD-ROM, 1.6" high None Eight hot-swap connectors on 3.5" dis None Adaptec [®] AIC-9580W, SATA 3.0Gb/s, RAID ⁸ 0, 1, 10 support, 8-port, on pla Eight hot-swap connectors on 3.5" dis RAID-8k Adapter, SATA 3.0Gb/s, SAS RAID ⁸ 0, 1, 1e, 5, 6, 10 support, in res single cable to backplane	p IDE cable sk backpland SAS 3.0Gb nar, not use sk backpland 3.0Gb/s,	(DVD) e v/s, d e	• F Ba Ba Ba Ba Ba Ba Ba Ba Ba Ba Ba	lluminated Rack shelf (2) 5.25", (3) 2) 5.25", (3) 2) 5.25", (3) 3) 5.25", (4) 3) 5.25", (5) 3.5", (5) 3.5	support 1.6" h 1.6" h 1.6" h 1" hig 1" hig 1" hig 1" hig 1" hig 1" hig 1" hig 1" hig	t igh, exte igh, exte igh, exte h, exte h, exte h, exte h, exte h, exte	ernal, o ernal, o ernal, o ernal, o ernal, o ernal, o ernal, o ernal, o	optional optional optional optional optional optional optional optional	al tape or disk disk disk disk disk disk disk disk	optical
Chipset	Intel 5000P chipset, Intel 6321ESB-2 NS PC8374L Super I/O	2E I/O Cont	roller Hub,		ay 10 3.5", ay 10 3.5",	1" higi 1" higi			optional optional		
Front ports Rear ports Diagnostics Systems mgmt	Two USB 2.0 Two USB 2.0, two serial (9-pin), paral mouse (PS/2), external monitor (VGA system management (RJ-45) Easy LED Diagnostics (operator inforr error LEDs for fans, disks, RAID, men regulator module, PCI slots, power su System management utility, baseboar IPMI 2.0-compliant	DB-15), eth mation pane nory, proces pplies)	nernet (RJ-45 el on left side ssors, voltage), Slo Slo with Slo	ot 1: half-le ot 2: full-ler ot 3: full-ler ot 4: full-ler ot 5: full-ler ot 6: half-le	ngth, fr ngth, fr ngth, fr ngth, fr	ull-height ull-height ull-height ull-height	t, PCIe t, PCIe t, 64-b t, 64-b	e x8 e x8 bit PCI-X		inical)
Audio Speaker Ethernet	None Internal speaker Gigabit ethernet on planar, Broadcom full duplex, Wake on LAN®	® BCM5721	, PCle x1,	-	Side cover - prohibits	remova	hips with I of front				
Keyboard Mouse Power supply Cooling	None (use PS/2 or USB port) None (use PS/2 or USB port) Two 835 watts, two maximum, redund hot-swap, universal, two redundant po Six fans, six maximum, variable speed hot-swap, six fans required with secon	wer supplie d, hardware	es require six failure protec	d fan, fans ction,	Power-on p Administrat Boot seque Boot withou Serial port USB port d	tor pass ence co ut keybo I/O con	sword ntrol oard, mo itrol	use, di	iskette		
	Software management to	ols		Th	inkPlus Pr	iority S	upport, 9	0-day	Trial		
ThinkServer E	asyStartup • ThinkServer EasyManag	le		Ro	HS-compl	iant					
Accessories							Limited V	Narrar	ntv ¹		
1GB PC2-5300 2GB PC2-5300 4GB PC2-5300 250GB 3.5" Ho 500GB 3.5" Ho 750GB 3.5" Ho 1TB 3.5" Hot-sv 146GB 3.5" Ho 300GB 3.5" Ho	ad-Core Processor X5450 DDR2 ECC FB-DIMM DDR2 ECC FB-DIMM DDR2 ECC FB-DIMM -swap SATA 3.0Gb/s Disk (7200 rpm) -swap SATA 3.0Gb/s Disk (7200 rpm) -swap SATA 3.0Gb/s Disk (7200 rpm) -swap SATA 3.0Gb/s Disk (15000 rpm) -swap SAS 3.0Gb/s Disk (15000 rpm) -swap SAS 3.0Gb/s Disk (15000 rpm) -swap SAS 3.0Gb/s Disk (15000 rpm)	45K1608 45J6191 45J6192 45J6193 45J6201 45J6202 45J6203 45J6203 45J6204 45J6211 45J6212 67Y0119		*	3-year par Customer (with limit 8 am - 5 p next busir ThinkPlus lenovo.co • Onsite s (in eligil • Post wa 24 hour x warranty p	ts and Replaced ed onsi m, Mon bess da ™ serv m/think service ble loca rranty i 7 day ¹⁴	labor ceable Un ite servic - Fri cov y respon ices avai plus/warra upgrade ations) ⁷ maintena toll-free	nit (CR se for s rerage se tim lable; s anty option option suppo	U) parts selected excludir e) see ns ervices ort during	parts³, ng holic	lays,

See footnotes for important warranty information US model announced September 30, 2008 US model withdrawn effective February 2010

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ThinkServer





Lenovo ThinkServer RD120



Lenovo ThinkServer RD120





Lenovo ThinkServer RD120



Lenovo ThinkServer RD120

ThinkServer™ RD120 (6445) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x Disk Disk Disk Disk bay Processor(s)GHzCores Memory Disk(s)size connection type	RAID EIDE Power Limited Workhorse Avail controller optical supply(s) Fans warranty ¹ Global date
	U 4x7 1 x E5205 1.86 2 2 x 1GB None 3.5" 6 x Hot-swap SATA/SA U 4x7 1 x E5205 1.86 2 2 x 1GB None 3.5" 6 x Hot-swap SATA/SA	
	 R = Rack, D = Dual processor support High performance server with rock solid technology and proven h Easy to use with ThinkServer EasyStartup and EasyManage softw These small and medium business (SMB) models are part of the U 	are
Processor	One Intel [®] Xeon [®] Processor E5205 with dual-core, two maximum, 1066MHz system bus, and 6MB L2 cache	2U Rack top
Implementation	Processor uses FC-LGA6 package, two LGA771 sockets	
Memory	2GB std, 48GB max, PC2-5300 667MHz DDR2 , Advanced ECC , fully buffered, 4-channel capable, twelve 240-pin DIMM sockets; <i>Non-italics:</i> standard memory in two sockets; ten sockets available	Riser slot 1 SV Riser slot 2
Graphics	ATI [®] RN50 (ES1000), on planar, 32-bit/33MHz PCI 2.3, 16MB, external monitor port (two VGA DB-15 front and rear); <i>Maximum resolution:</i> 800x600@85Hz	
EIDE controller EIDE Combo	Enhanced IDE controller in Enterprise South Bridge, one connector on planar, single 1-drop IDE cable (for Combo) DVD-ROM/CD-RW, Ultrabay Enhanced, 12.7mm high	
SATA disk(s)	None	fan fan fan Rear
SAS disk(s)	Six hot-swap connectors on 3.5" disk backplane	fan
	14U SATA/SAS: Adaptec [®] AIC-9580W, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID ⁸ 0, 1, 10 support, 8-port, on planar	
	Six hot-swap connectors on 3.5" disk backplane 12U SATA/SAS: RAID-8k Adapter, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID ⁸ 0, 1, 1e, 5, 6, 10 support, in reserved connector, single cable to backplane	optical disks disks
Chipset	Intel 5000P chipset, Intel 6321ESB-2E I/O Controller Hub, NS PC8742XVUL Super I/O	 Black color front; metal case 17.5"W x 27.8"D x 3.36"H 443.6mm W x 705mm D x 85.4mm H
Riser card Front ports Rear ports	Contains two PCI Express [®] x8 slots Two USB 2.0, external monitor (VGA DB-15) Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45), external SAS	 65 lb (29.5kg) max configuration Toolless top cover removal Toolless disk and optical drive removal
Diagnostics	Easy LED Diagnostics (pull-out operator information panel with information LED and system-error LED; error LEDs for fans, disks, RAID, memory, processors, voltage regulator module, riser card,	Toolless adapter retention Illuminated front icons with pull-out Easy LED Diagnostics panel
Systems mgmt	PCI slots, power supplies) System management utility, baseboard management controller, IPMI 2.0-compliant	Bay ① 5.25", 0.5" high, external, std optical Bay ② 3.5", 1" high, external, optional disk Bay ③ 3.5", 1" high, external, opt disk (opt 1.6" tape)
Audio Speaker	None Internal speaker	Bay @ 3.5", 1" high, external, opt disk (used by tape) Bay © 3.5", 1" high, external, optional disk
Ethernet	Dual gigabit on planar, two Broadcom [®] 5708, PCIe x1, full duplex, Wake on LAN [®] , TCP/IP Offload Engine (TOE), Alert Standard Format 2.0	Baý ⑥ 3.5", 1" hiğh, external, optional disk Bay ⑦ 3.5", 1" high, external, optional disk Slot 1: full-length, full-height, PCIe x8 <i>(on riser card)</i>
Keyboard	None (use USB port)	Slot 2: half-length, full-height, PCIe x8 (on riser card)
Mouse Power supply	None (use USB port) Two 835 watts, two maximum, redundant with 2, variable speed fan,	Slot 3: full-length, low-profile, PCIe x4 (x8 mechanical) Slot 4: full-length, low-profile, PCIe x4 (x8 mechanical)
Cooling	hot-swap, universal, two redundant power supplies require ten fans. Ten fans, ten maximum, variable speed, hardware failure protection, hot-swap, ten fans required with second redundant power supply	
1GB PC2-5300	d-Core Processor E5205 45J6180 DDR2 ECC FB-DIMM 45J6191 DDR2 ECC FB-DIMM 45J6192	
500GB 3.5" Hot 750GB 3.5" Hot 1TB 3.5" Hot-sw 300GB 3.5" Hot	DDR2 ECC FB-DIMM 45J6193 -swap SATA 3.0Gb/s Disk (7200 rpm) 45J6202 -swap SATA 3.0Gb/s Disk (7200 rpm) 45J6203 vap SATA 3.0Gb/s Disk (7200 rpm) 45J6204 -swap SAS 3.0Gb/s Disk (15000 rpm) 45J6212 -swap SAS 3.0Gb/s Disk (15000 rpm) 67Y0119	Security Power-on password Administrator password Boot sequence control Boot without keyboard, mouse, diskette
	ies at lenovo.com /accessories	Serial port I/O control USB port disablement (front or all)
	Limited Warranty ¹	
	placeable Unit (CRU) parts only (with limited onsite service for 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business	Software management tools ThinkServer EasyStartup ThinkServer EasyManage
 ThinkPlus™ s Onsite serv 	services available; see lenovo.com/thinkplus/warranty vice upgrade options (in eligible locations) ⁷	ThinkPlus Priority Support, 90-day Trial
	nty maintenance services ay ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378	RoHS-compliant
	mportant warranty information	© Lenovo

See footnotes for important warranty information US models announced September 30, 2008 or January 20, 2009 US models withdrawn effective February 2010

ThinkServer™ RD120 (6447) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Туре-	Slot x Proc- Disk Disk Disk	RAID EIDE Power Limited Workhorse Avail
Name model	bay essor(s) GHz Cores Memory Disk(s) size connection type	e controller optical supply(s)Fanswarranty ¹ Global date
RD120 6447-210 RD120 6447-230	J 4x7 1 x E5410 2.33 4 2 x 1GB None 3.5" 6 x Hot-swap SATA/5 J 4x7 1 x E5430 2.66 4 2 x 2GB None 3.5" 6 x Hot-swap SATA/5 J 4x10 2 x E5450 3.00 8 2 x 2GB None 2.5" 8 x Hot-swap SAS J 4x7 2 x E5450 3.00 8 2 x 2GB None 3.5" 6 x Hot-swap SATA/5	SAS RAID-8k Combo 2 x 835W 10 3-year No Sep 08 RAID-8k Combo 2 x 835W 10 3-year No Sep 08
	 R = Rack, D = Dual processor support These small and medium business (SMB) models are part of the U 	IS TopSeller™ Program
Processor Implementation	One or two Intel [®] Xeon [®] Processor E5410, E5430, or E5450 with quad-core, two maximum, 1333MHz bus, and 12MB L2 cache Processor uses FC-LGA6 package, two LGA771 sockets	2U Rack top Front on 3.5" disk models
Memory	2GB or 4GB std, 48GB max, PC2-5300 667MHz DDR2, Advanced ECC, fully buffered, 4-channel capable, twelve 240-pin DIMM sockets; <i>Non-italics:</i> standard memory in two sockets; ten sockets available	Riser slot 2 Soft 1 Soft 2 Soft 2
Graphics	ATI [®] RN50 (ES1000), on planar, 32-bit/33MHz PCI 2.3, 16MB, external monitor port (two VGA DB-15 front and rear); <i>Maximum resolution:</i> 800x600@85Hz	CPU CPU
SAS disk(s)	Enhanced IDE controller in Enterprise South Bridge, one connector on planar, single 1-drop IDE cable (for DVD) DVD-ROM/CD-RW, Ultrabay Enhanced, 12.7mm high None 18U/21U/24U: six hot-swap connectors on 3.5" disk backplane None Adaptec [®] AIC-9580W, SATA 3.0Gb/s, SAS 3.0Gb/s,	CPU CPU Image: Second
	RAID ⁸ 0, 1, 10 support, 8-port, on planar, not used <i>18U/21U/24U:</i> six hot-swap connectors on 3.5" disk backplane <i>23U:</i> eight hot-swap connectors on 2.5" disk backplane	optical disks disks
	RAID-8k Adapter, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID ⁸ 0, 1, 1e, 5, 6, 10 support, in reserved connector, single cable to backplane	Black color front; metal case
Chipset	Intel 5000P chipset, Intel 6321ESB-2E I/O Controller Hub, NS PC8742XVUL Super I/O	 17.5"W x 27.8"D x 3.36"H 443.6mm W x 705mm D x 85.4mm H 64 lb (29kg) max configuration
Riser card Front ports Rear ports Diagnostics Systems mgmt Audio Speaker Ethernet	Contains two PCI Express® x8 slots Two USB 2.0, external monitor (VGA DB-15) Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45), external SAS Easy LED Diagnostics (pull-out operator information panel with information LED and system-error LED; error LEDs for fans, disks, RAID, memory, processors, voltage regulator module, riser card, PCI slots, power supplies) System management utility, baseboard management controller, IPMI 2.0-compliant None Internal speaker Dual gigabit on planar, two Broadcom® 5708, PCIe x1, full duplex, Wake on LAN®, TCP/IP Offload Engine (TOE), Alort 5trandard Extended	 Toolless top cover removal Toolless disk and optical drive removal Toolless daapter retention Illuminated front icons with pull-out Easy LED Diagnostics panel Some: 2.5" disk bays: Bay ① 5.25", 0.5" high, external, std optical Bay ② 3.5", 1.6" high, external, optional tape Bay ③ 2.5", 0.6" high, external, optional disk Bay ⑤ 2.5", 0.6" high, external, optional disk Bay ⑥ 2.5", 0.6" high, external, optional disk Bay ⑥ 2.5", 0.6" high, external, optional disk Bay ⑦ 2.5", 0.6" high, external, optional disk Bay ⑦ 2.5", 0.6" high, external, optional disk Bay ⑧ 2.5", 0.6" high, external, optional disk
Keyboard Mouse Power supply Cooling	Alert Standard Format 2.0 None (use USB port) None (use USB port) Two 835 watts, two maximum, redundant with 2, variable speed fan, hot-swap, universal, two redundant power supplies require ten fans Ten fans, ten maximum, variable speed, hardware failure protection, hot-swap, ten fans required with second redundant power supply	Bay (9 2.5", 0.6" high, external, optional disk Some: 3.5" disk bays: Bay (9 5.25", 0.5" high, external, std optical Bay (2 3.5", 1" high, external, optional disk Bay (3 3.5", 1" high, external, opt disk (opt 1.6" tape) Bay (3 3.5", 1" high, external, opt disk (used by tape) Bay (3 3.5", 1" high, external, optional disk
Intel Xeon Qua 1GB PC2-5300 2GB PC2-5300 4GB PC2-5300 750GB 3.5" Hot 1TB 3.5" Hot 300GB 3.5" Hot 300GB 3.5" Hot 450GB 3.5" Hot	d-Core Processor E5410 45J6185 d-Core Processor E5430 45J6186 DDR2 ECC FB-DIMM 45J6191 DDR2 ECC FB-DIMM 45J6192 DDR2 ECC FB-DIMM 45J6193 t-swap SATA 3.0Gb/s Disk (7200 rpm) 45J6203 vap SATA 3.0Gb/s Disk (7200 rpm) 45J6204 t-swap SAS 3.0Gb/s Disk (15000 rpm) 45J6211 t-swap SAS 3.0Gb/s Disk (15000 rpm) 45J6212 t-swap SAS 3.0Gb/s Disk (15000 rpm) 67Y0119 ies at lenovo.com/accessories 67Y0119	Bay © 3.5", 1" high, external, optional disk Bay © 3.5", 1" high, external, optional disk Slot 1: full-length, full-height, PCIe x8 (on riser card) Slot 2: half-length, full-height, PCIe x8 (on riser card) Slot 3: full-length, low-profile, PCIe x4 (x8 mechanical) Slot 4: full-length, low-profile, PCIe x4 (x8 mechanical)
- Think Convor	Software management tools asyStartup • ThinkServer EasyManage	Security
 → 3-year parts → Customer Re lected parts³, 8 response time) 	Limited Warranty ¹	 Power-on password Administrator password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all)
Onsite ser	vice upgrade options (in eligible locations) ⁷ inty maintenance services	ThinkPlus Priority Support, 90-day Trial
	lay ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378	RoHS-compliant

See footnotes for important warranty information US models announced September 30, 2008 or May 19, 2009 US models withdrawn effective February 2010

Partial list of accessories supported on Le	novo® ThinkServer		
RS110, RD120, TS100, TD100, TD100x ThinkServer Ready accessories are available Business Partners. Locate a Business Partne bplocator.lenovo.com	through Lenovo		
Processors ⁵⁵ <i>TD100, RD120:</i> Intel [®] Xeon [®] Processor E5405 Intel Xeon Processor E5410 Intel Xeon Processor E5420 Intel Xeon Processor E5430	45J6221 ann 09/30/08 45J6185 ann 09/30/08 45K1605 ann 09/30/08 45J6186 ann 09/30/08	Storage RS100, RD120: 2.5" SAS Hot-swap (HS): 73GB 2.5" SAS SFF HS (15000 rpm) 146GB ² 2.5" SAS SFF HS (10000 rpm)	45J6208 ann 09/30/08 45J6207 ann 09/30/08
TD100x: Intel Xeon Processor X5450	45K1608 ann 09/30/08	All: 3.5" SATA Hot-swap (HS): 160GB 3.5" SATA HS (7200 rpm) 250GB 3.5" SATA HS (7200 rpm)	45J6200 ann 09/30/08 45J6201 ann 09/30/08
RD120: Intel Xeon Processor E5205 ⁵⁵ Additional Processor must match the existin	45J6180 <i>ann 09/30/08</i> ng processor	500GB 3.5" SATA HS (7200 rpm) 750GB 3.5" SATA HS (7200 rpm) 1TB 3.5" SATA HS (7200 rpm)	45J6201 ann 09/30/08 45J6202 ann 09/30/08 45J6203 ann 09/30/08 45J6204 ann 09/30/08
Memory TS100, RS110: 1GB PC2-6400 DDR2 ECC SDRAM 2GB PC2-6400 DDR2 ECC SDRAM	45J6188 ann 09/30/08 45J6189 ann 09/30/08	3.5" SATA Simple-swap: 160GB 3.5" SATA Simple-swap (7200 rpm) 250GB 3.5" SATA Simple-swap (7200 rpm) 500GB 3.5" SATA Simple-swap (7200 rpm) 750GB 3.5" SATA Simple-swap (7200 rpm)	45J6196 ann 09/30/08 45J6197 ann 09/30/08
<i>TD100, RD120:</i> 1GB PC2-5300 DDR2 ECC FBDIMM 2GB PC2-5300 DDR2 ECC FBDIMM	45J6191 <i>ann 09/30/08</i> 45J6192 <i>ann 09/30/08</i>		
Backup All: IBM® RDX 160GB Cartridge IBM RDX 320GB Cartridge IBM RDX 500GB Cartridge IBM DDS Generation 6 5-Pack Media	67Y0169 ann 11/10/09 67Y0170 ann 11/10/09 67Y0171 ann 11/10/09 67Y1377 ann 11/10/09		
<i>TS100, TD100, RD120:</i> IBM LTO Generation 3 5-Pack Media	67Y1379 ann 11/10/09		
Connectivity IBM 8Gb FC Single-port HBA by QLogic [®] IBM 8Gb FC Dual-port HBA by QLogic IBM 8Gb FC Single-port HBA by Emulex [®] IBM 8Gb FC Dual-port HBA by Emulex IBM 8Gb FC Single-port HBA by Brocade [®] IBM 8Gb FC Dual-port HBA by Brocade	67Y0172 ann 11/10/09 67Y0173 ann 11/10/09 67Y0174 ann 11/10/09 67Y0175 ann 11/10/09 67Y0176 ann 11/10/09 67Y0177 ann 11/10/09	For more information on server accessories www.lenovo.com/support/accessories www.lenovo.com/support/thinkserveracc	-
Keyboard Preferred Pro USB Keyboard	73P5220 ann 06/21/05	www.lenovo.com/support/security Other accessories at www.lenovo.com/acc	
Mouse Lenovo Optical Mouse (USB)	06P4069 ann 05/21/03	Accessories Guide pdf at www.lenovo.com/	accessoriesguide

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Partial list of Lenovo® ThinkPlus Services for ThinkServe	₽r™	ThinkPlus Priority Support	
For more information see:		9x5 Next Business Day response Lenovo Onsite Repa	
http://www.lenovo.com/services_warranty/us/en/index.h	tml	 24x7 4-hour response Lenovo Onsite Repair (for Priori 24x7 support with priority routing and advanced level to 	
		TS100 with 1-year warranty 3-year Priority Support	45K4057
Training classes		3-year Priority 4 Support	45K4058
 The basics on components, diagnostics, troubleshooting, managing Lenovo servers, delivered in interactive online f 		TS100 with 3-year warranty	
Online Training, Understanding Lenovo Servers	45K4080	3-year Priority Support 3-year Priority 4 Support	45K4060 45K4061
Online Training, Understanding Systems Management	45K4081	TD100 with 1-year warranty	451(4001
Installation, ThinkServer Hardware Only	45K4082	3-year Priority Support	45K4064
ThinkPlus service upgrade options ⁷		3-year Priority 4 Support	45K4065
LOR = Lenovo Onsite Repair		<i>TD100 with 3-year warranty</i> 3-year Priority Support	45K4067
TS100 with 1-year warranty		3-year Priority 4 Support	45K4068
3-year LOR 9x5 Next Business Day	45K4055	RS110 with 1-year warranty	
3-year LOR 9x5 4 hour response 4-year LOR 9x5 Next Business Day	45K4056 51J0723	3-year Priority Support 3-year Priority 4 Support	45K4071 45K4072
4-year LOR 9x5 4 hour response	51J0724	RS110 with 3-year warranty	45114072
5-year LOR 9x5 Next Business Day 5-year LOR 9x5 4 hour response	51J0725 51J0726	3-year Priority Support	45K4074
TS100 with 3-year warranty	0.00120	3-year Priority 4 Support	45K4075
3-year LOR 9x5 4 hour response	45K4059	RD120 with 1-year warranty	4585207
4-year LOR 9x5 Next Business Day 4-year LOR 9x5 4 hour response	51J0727 51J0728	3-year Priority Support 3-year Priority 4 Support	45K5307 45K5308
5-year LOR 9x5 Next Business Day	51J0729	RD120 with 3-year warranty	
5-year LOR 9x5 4 hour response	51J0730	3-year Priority Support	45K4077
TD100 with 1-year warranty	45K4062	3-year Priority 4 Support	45K4078
3-year LOR 9x5 Next Business Day 3-year LOR 9x5 4 hour response	45K4062	ThinkPlus Priority Support with Hard Disk Drive Rete	ention
4-year LOR 9x5 Next Business Day	51J0731	9x5 Next Business Day response Lenovo Onsite Repa	
4-year LOR 9x5 4 hour response 5-year LOR 9x5 Next Business Day	51J0732 51J0733	 24x7 4-hour response Lenovo Onsite Repair (for Priori 24x7 support with priority routing and advanced level to 	
5-year LOR 9x5 4 hour response	51J0734	Hard Disk Drive Retention (HDDR) means customer ke	
TD100 with 3-year warranty	45144000	HDDR = Hard Disk Drive Retention	
3-year LOR 9x5 4 hour response 4-year LOR 9x5 Next Business Day	45K4066 51J0735	TS100 with 1-year warranty	
4-year LOR 9x5 4 hour response	51J0736	3-year Priority Support with HDDR 3-year Priority 4 Support with HDDR	45K5441 45K5442
5-year LOR 9x5 Next Business Day	51J0737 51J0738	TS100 with 3-year warranty	431(3442
5-year LOR 9x5 4 hour response RS110 with 1-year warranty	5130730	3-year Priority Support with HDDR	45K5443
3-year LOR, 9x5 Next Business Day	45K4069	3-year Priority 4 Support with HDDR	45K5444
3-year LOR, 4 hour response	45K4070	TD100 with 1-year warranty 3-year Priority Support with HDDR	45K5445
4-year LOR 9x5 Next Business Day 4-year LOR 9x5 4 hour response	51J0739 51J0740	3-year Priority 4 Support with HDDR	45K5446
5-year LOR 9x5 Next Business Day	51J0741	TD100 with 3-year warranty	
5-year LOR 9x5 4 hour response	51J0742	3-year Priority Support with HDDR	45K5447
<i>RS110 with 3-year warranty</i> 3-year LOR, 4 hour response	45K4073	3-year Priority 4 Support with HDDR RS110 with 1-year warranty	45K5448
4-year LOR 9x5 Next Business Day	51J0743	3-year Priority Support with HDDR	45K5449
4-year LOR 9x5 4 hour response 5-year LOR 9x5 Next Business Day	51J0744 51J0745	3-year Priority 4 Support with HDDR	45K5450
5-year LOR 9x5 4 hour response	51J0745	RS110 with 3-year warranty	
RD120 with 1-year warranty		3-year Priority Support with HDDR 3-year Priority 4 Support with HDDR	45K5451 45K5452
3-year LOR 9x5 Next Business Day 3-year LOR 9x5 4 hour response	45K5305 45K5306	RD120 with 1-year warranty	
4-year LOR 9x5 Next Business Day	51J0747	3-year Priority Support with HDDR	45K5453
4-year LOR 9x5 4 hour response	51J0748	3-year Priority 4 Support with HDDR	45K5454
5-year LOR 9x5 Next Business Day 5-year LOR 9x5 4 hour response	51J0749 51J0750	RD120 with 3-year warranty 3-year Priority Support with HDDR	45K5455
RD120 with 3-year warranty		3-year Priority 4 Support with HDDR	45K5456
3-year LOR 9x5 4 hour response	45K4076	ThinkPlus Productivity	
4-year LOR 9x5 Next Business Day 4-year LOR 9x5 4 hour response	51J0751 51J0752	Priority Support	
5-year LOR 9x5 Next Business Day	51J0753	Online Training, Understanding Lenovo Servers	
5-year LOR 9x5 4 hour response	51J0754	One-time hardware installation	
Lenovo Online Data Backup		3-year ThinkPlus Productivity, TS100 (1-year) 3-year ThinkPlus Productivity, TS100 (3-year)	45K4084 45K4086
Secure offsite data storage		3-year ThinkPlus Productivity, TD100 (1-year)	45K4088
• 256-bit Advanced Encryption System		3-year ThinkPlus Productivity, TD100 (3-year)	45K4090
 Data recovery or access in case of an unforeseen event Automatic, remote management 		3-year ThinkPlus Productivity, RS110 (1-year) 3-year ThinkPlus Productivity, RS110 (3-year)	45K4092 45K4094
 Choose which business critical data to back up 		3-year ThinkPlus Productivity, RD120 (1-year)	45K5309
1-year 25GB Server Lenovo Online Data Backup (US)	45K2115	3-year ThinkPlus Productivity, RD120 (3-year)	45K4096
1-year 50GB Server Lenovo Online Data Backup (US) 1-year 100GB Server Lenovo Online Data Backup (US)	45K2116 45K2117		

ThinkServer







Lenovo® ThinkServer TS200v

ThinkServer™ TS200v (0981) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

							_				_	
Type- Slot x model bay Proc	N Cessor GHz Cores	lemory Memory DIMMs speed	Disk(s)	Disk Pre-o size RA		Disk bays			Graphics adapter(s)	Windows Se preload	rver Power supply(
0981-12U 4x4 Gi 0981-18U 4x4 i5 0981-19U 4x4 i5 0981-19U 4x4 Gi 0981-1AU 4x4 Gi 0981-1BU 4x4 i5 0981-1CU 4x4 XX 0981-1DU 4x4 Gi	36950 2.80 2 1 5-650 3.20 2 1 5-650 3.20 2 1 36950 2.80 2 1 5-650 3.20 2 2 3450 2.66 4 1	x1GB 1333MHz x2GB 1333MHz	1x250GB 2x250GB 1x500GB 2x250GB 2x250GB 1x500GB 1x250GB	3.5" 3.5" 1 3.5" 1 3.5" 1 3.5" 1 3.5" 3.5"	2xD 2xD 2xD 2xD 2xD 2xD 2xD	rect Ca rect Ca rect Ca rect Ca rect Ca rect Ca	able DVI able DVI able DVI able DVI able DVI able DVI able DVI able DVI	D D±RW D D±RW D±RW D±RW	Intel HD Intel HD Intel HD	2008 Foundat 2008 Foundat 2008 SBS Sto	280W 280W 280W 280W 280W 280W 280W 280W	/ Mar 10
	These small and n				part of	the US	S TopSell	ler™ Pro	ogram			
Ir ir a Ir ir a I I I I I I I I I I I I I I I I I I	Intel [®] Celeron [®] Pro Intel 64, Virtualizatio Integrated 1066MHz and 2MB cache or Intel Pentium [®] Proo Intel 64, Virtualizatio Integrated 1066MHz and 3MB cache or Intel 64, Hyper-Thre Virtualization Techn [™] Intel 64, Hyper-Thre DDR3 memory cont Intel 64, Hyper-Thre TXT, Turbo Boost Te DDR3 memory cont Intel Celeron Proc applications requirir	on Technology, z dual-channel DE cessor G6950 or on Technology, z dual-channel DE cessor i5-650 with adding Technology ology, TXT, integra roller, and 4MB ca sor X3450 with q adding Technology chnology, integrat roller, and 8MB ca essor G1101 is no	DR3 memory G6960 w DR3 memory of dual-co the dual-co the dual-co the dual-core the dual-core	ory contro ith dual-c ory contro oost Techi MHz dual ation Tech MHz dual- nended fo	o re , oller, nology I-chan nnolog chann r	nel y,	- Raver	ial :				
Implementation P	Processor in LGA11	56 socket, up to o	one proce		June		• 175mi	m W x 4	07mm D	x 377mm H onfiguration		
P ***	1GB, 2GB, or 4GB PC3-10600 1333MH ** System automatic DDR3 memory cont	Iz DDR3**, ECC, f cally clocks down	our 240-p				 25-lite Toolles Toolles 	er` ess side ess disk	cover rer	noval al drive remov	val	
•	Some: NVIDIA® Qu	ne DisplayPort™ o	connector Cle x16 a	r dapter, 25	6MB,		• Illumir	nated fro	ont icons	Disk Bays		
SATA dísk(s) 2 SATA DVD 5 SATA DVD±RW 5 SATA controller 5 t	Two 3.5" SATA disk 250GB or 500GB, S Some: DVD-ROM D Some: Super Multi- Serial ATA, SATA 3. two SATA connector Intel 3450 Chipset,	SATA 3.0Gb/s, 720 DL SATA 1.5Gb/s 1 Burner DL DVD±F 0Gb/s, integrated 's for disks, two S/	00 rpm, 3. 6X-48X N W SATA in chipset	.5" Max⁴ Drive 1.5Gb/s E t, RAID 0,	Drive 1 sup		Bay 1 Bay 2 Bay 3 Bay 4 Slot 1: I Slot 2: I	5.25", 3.5", 3.5", half-leng	1.6" high 1" high, 1" high, Exp gth, full-h	, external, st , external, op external, st external, st oansion Slots eight, PCI Ex eight, PCI Ex	otional optio d disk d or opt dis press 2.0 x	sk :16
P	Platform Controller		I, etherne	et, and US	BB		Slot 3: I	half-leng	gth, full-h	eight, 32-bit I eight, 32-bit I	PCI	
Rear ports S th	Two USB 2.0 Six USB 2.0, serial three analog audio p Intel HD model(s):	oorts (line-in, line- one analog VGA [out, mic-i DB-15, on	e Display	Port		• ThinkS		asyStart			
Security chip S T Diagnostics T	One gigabit etherne STMicroelectronics TCG 1.2-compliant Two system status L (disk drive activity, p	ST19NP18 Truste _EDs on front pan	ed Platforr	m Module	(TPM),	 Diagno Netwo 	ostic: F2 ork Boot:	1 at star at startu F12 at s	ıp'		
Mouse N Power supply C n Cooling 4	None (use USB por None (use USB por One 280 watts stan no redundancy, 85% 4 fans (power suppl Rack shelf support	t) dard, one maximu 6 PSU, 80 PLUS® y, CPU, rear, front	Bronze q		o hot-s	wap,	 Padlo padlo Secur 	ock loop ock prohi rity slot	(in rear fo bits side (in rear fo	Security rmation on let or opt padlock cover remova or optional er [®] cable;	c,	
2GB PC3-10600 D 500GB 3.5" SATA (More accessories (DDR3 ECC UDIMM DDR3 ECC UDIMM Cabled (7200 rpm) on O-RED sheet at lenovo.com /acc			67	Y1387 Y1388 Y1401	3	prohit Power Boot s Boot v Serial	bits side r-on pas sequend without I port I/C	cover re ssword ce contro keyboard Control	moval)	ette	
selected parts³, ⇔ ThinkPlus™ ser		Fri coverage exc e lenovo.com/thin	luding ho kplus/wa	lidays)	ce for		Some: (Genuine	e Window Window	Operating S s Server [®] 200 s Small Busin	8 R2 Foun	
 Post warranty 	y maintenance serv / ¹⁴ toll-free support	vices		1 via 800-4	126-73	78	ENERG RoHS-c			r 1.0-compliar	nt	

See footnotes for important warranty information US model announced March 8, 2011; previous models on February 23, March 9, July 6, or November 2, 2010 US models withdrawn effective February, April 2011 or April 2012

ThinkServer™ TS200v (0992) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Slot x model bay l	Processor GHz Cores	Memory DIMMs	Memory speed	Disk(s)	Disk size	Pre-conf RAID	Disk bays	SATA optical	Graphics adapter(s	Windows Serve) preload	er Power Ar supply(s) d
	Real server class dep	endability	y at desk		point		Direct Cable			No	280W Nov
• 7	deal entry single-soc This model has a 3-ye This small and mediu	ear limited	d warrant	'y '	-	-	-		s and Mar	aged Service P	roviders
Processor	Intel [®] Xeon [®] Proc Intel 64, Hyper-Thr TXT, Turbo Boost 1 DDR3 memory cor	reading Te Technolog htroller, ar	echnolog y, integra nd 8MB c	y, Virtualiz ated 1333I ache	ation MHz d		él II	ver	7	PSU]]
Memory	Processor in LGA1 4GB std, 16GB ma PC3-10600 1333M	ax, UDIM	И,	•		/ sockets			0		
Graphics	NVIDIA [®] Quadro [®] two dual-link DVI-I,	FX 380, I	PCIe x16	adapter,	256ME	3,					
Disk bays SATA disk(s) SATA DVD±RW SATA controller	Two 3.5" SATA disk 500GB, SATA 3.00 Super Multi-Burner Serial ATA, SATA 3 two SATA connector	6b/s, 7200 r DL DVD: 8.0Gb/s, ir) rpm, 3. ±RW SA ntegrated	5" IA 1.5Gb/ in chipse	s Drive t, RAII	0 0, 1 sup		disk		000 1 - PCle x16 2 - PCle x1 3 - PCl 4 - PCl	
Chipset	Intel 3450 Chipse Platform Controller		H) for P	CI, etherne	et, and	USB		aven black 9"W x 16.0			_
Front ports Rear ports Ethernet Security chip	Two USB 2.0 Six USB 2.0, serial three analog audio Intel HD model(s): One gigabit ethern STMicroelectronics TCG 1.2-complian	o ports (lin one anal et on plar s ST19NF	e-in, line log VGA nar, Intel	-out, mic- DB-15 , o 82578DM	né Dis		• 17 • 24 • 25 • To • To • To	5mm W x 7 lb (11.2 Iter olless side	407mm D kg) max co cover ren and optic pter retent	x 377mm H onfiguration noval al drive removal	
Diagnostics	Two system status (disk drive activity,	LEDs on	front par ep)	nel			_			Disk Bays	
Keyboard Mouse Power supply Cooling Rack mount	None (use USB po None (use USB po One 280 watts star no redundancy, 85 4 fans (power supp Rack shelf support	ort) ndard, on % PSU, 8 oly, CPU, 1	0 PLUS	[®] Bronze q			Вау	2 5.25" 3 3.5", 4 3.5",	,1.6" high, 1" high, 1" high, Exp	external, std o external, optio external, std o external, opt o ansion Slots	onal optical disk disk
1GB PC3-1060 2GB PC3-1060		Accesso // //	ries			67Y1387 67Y1388 67Y1389	Slo Slo Slo	t 2: half-len t 3: half-len t 4: half-len	igth, full-ho igth, full-ho igth, full-ho	eight, PCI Expr eight, PCI Expr eight, 32-bit PC eight, 32-bit PC	ess 2.0 x1 I I
500GB 3.5" SA 1TB 3.5" SATA	TA Cabled (7200 rpm Cabled (7200 rpm) es on O-RED sheet					67Y140 67Y1402		inkServer I	EasyStartu		DOIS
	ies at lenovo.com /ad	ccessories	S				• Dia • Ne	tup Utility: agnostic: Fi twork Boot ID Configu	F1 at start 2 at startu :: F12 at st	pʻ	tup
							 Paper Since Since Binom Binom Since 	adlock loop adlock proh ecurity slot ensington® ohibits side ower-on pa pot sequen pot without erial port l/	(in rear fo libits side (in rear fo Microsave cover ren ssword ce control keyboard O control	er® cable; noval)	e
 selected par ⇒ ThinkPlus™ • Onsite ser 	and labor eplaceable Unit (CRU ts ³ , 8 am - 5 pm, Mon services available; s vice upgrade options	é - Fri cove ee lenovo s (in eligit	nly (with erage exe .com/thi	cluding ho hkplus/wa	olidays)					
 Post warra 	anty maintenance ser day ¹⁴ toll-free suppor	rvices			l¹ via 8	00-426-73		ERGY STA IS-complia		1.0 -compliant	

See footnotes for important warranty information US model announced November 2, 2010 US model withdrawn effective November 2010

Partial list of accessories supported on Le TS200v.	enovo® Thir	nkServer						
ThinkServer Ready accessories are available Business Partners. Locate a Business Partner bplocator.lenovo.com								
Memory 1GB PC3-10600 DDR3 ECC UDIMM 2GB PC3-10600 DDR3 ECC UDIMM 4GB PC3-10600 DDR3 ECC UDIMM	67Y1388	ann 02/23/10 ann 02/23/10 ann 02/23/10						
Backup Lenovo 160GB Internal USB RDX Bundle Lenovo 320GB Internal USB RDX Bundle Lenovo 500GB Internal USB RDX Bundle Lenovo 160GB RDX Data Cartridge Lenovo 320GB RDX Data Cartridge Lenovo 500GB RDX Data Cartridge	67Y1396 67Y1398 67Y1395 67Y1397	ann 02/23/10 ann 02/23/10 ann 02/23/10 ann 02/23/10 ann 02/23/10 ann 02/23/10						
Connectivity Intel PRO/1000 PT Dual Port Ethernet	67Y1393	ann 02/23/10						
Disk Drive 3.5" SATA Cabled: 250GB ² 3.5" SATA (7200 rpm) 500GB 3.5" SATA (7200 rpm) 1TB 3.5" SATA (7200 rpm)	67Y1401	ann 02/23/10 ann 02/23/10 ann 02/23/10						
Keyboard Preferred Pro USB Keyboard	73P5220	ann 06/21/05						
Mouse Lenovo Optical Mouse (USB)	06P4069	ann 05/21/03						
For more information on server accessories, please visit: www.lenovo.com/support/accessories								

www.lenovo.com/support/accessories www.lenovo.com/support/thinkserveraccessories www.lenovo.com/support/security

Other accessories at www.lenovo.com/accessories

Accessories Guide pdf at www.lenovo.com/accessoriesguide

artial list of Lenovo [®] ThinkPlus Services for ThinkSe	rver TS200v
or more information see: ttp://www.lenovo.com/services_warranty/us/en/inde:	x.html
Training classes	
 The basics on components, diagnostics, troubleshootir managing Lenovo servers, delivered in interactive onlir 	
Online Training, Understanding Lenovo Servers Online Training, Understanding Systems Management Installation, ThinkServer Hardware Only	45K4080 45K4081 45K4082
ThinkPlus service upgrade options ⁷	
LOR = Lenovo Onsite Repair	
TS200v with 1-year warranty 3-year LOR 9x5 Next Business Day 4-year LOR 9x5 Next Business Day 5-year LOR 9x5 Next Business Day	45K4055 51J0723 51J0725
TS200v with 3-year warranty 4-year LOR 9x5 Next Business Day 5-year LOR 9x5 Next Business Day	51J0727 51J0729
ThinkPlus Priority Support	
 24x7 support with priority routing and advanced level to 	echnicians
TS200v with 3-year warranty 3-year Priority Support	45K4060
ThinkPlus Priority Support with Hard Disk Drive Rete	ention
 24x7 support with priority routing and advanced level to Hard Disk Drive Retention (HDDR) means customer keeping 	echnicians eeps disk
TS200v with 3-year warranty 3-year Priority Support with HDDR	45K5443
ThinkPlus Productivity Priority Support Online Training, Understanding Lenovo Servers One-time hardware installation	
3-year ThinkPlus Productivity, TS200v (3-year)	45K4086

ThinkServer™ TD230 (1027) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x Proc- Memory Disk Disk bay essor(s) GHz Cores DIMMs Disk(s) size bays	Disk Disk SATA RAID System Ava Controller type optical Int mgmt Ethernet dat
FD230 1027-12U	 5x7 1xE5506 2.13 4 1x2GB 1x250GB² 3.5" 5xDirect Cable This model has a 1-year limited warranty¹ Flexible and green tower computing at value price point 	ə ICH10R SATA DVD±RW 0/1/10 IPMI 2xGb Jul1
Processor(s)	This small and medium business (SMB) model is part of the US To Up to two processors, one processor standard.	ppSeller™ Program Front Rear
mplementation	Intel® Xeon® Processor E5506 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets	° optical PSU
Memory	2GB std, 32GB max (16GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors	Image: state
Graphics	Onboard ServerEngines [™] Pilot II graphics/management controller, one VGA DB-15 on rear, 32MB; <i>Maximum resolution:</i> 1600x1200@52Hz	disk 4 - PCi 5 - PCle x4
SATA disk(s) Disk bays Disk controller	250GB , SATA 3.0Gb/s, 7200 rpm Five 3.5" SATA disk bays, no hot-swap, direct cable (DC) Six SATA connectors for opticals and disks, Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 support	 Tower mechanical Business black color; metal case 8.3"W x 20.1"D x 18.5"H 210mm W x 510mm D x 470mm H 57.6 lb (26.2kg) max configuration
Optical Diskette Ethernet	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive None (use USB port) Two Gigabit Ethernet ports, Intel 82574L and 82567	 Toolless side cover removal Toolless disk and optical drive removal Bay 1 5.25", 1.6" high, external, std optical
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right) and links to 82574L, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, slots 4-5, onboard SATA controller, and links to 82567	Bay 25.25", 1.6" high, external, optional opticalBay 33.5", 1" high, external, std diskBay 43.5", 1" high, external, optional diskBay 53.5", 1" high, external, optional disk
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites	None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector for optional tape drive System status LEDs on front, Diagnostic LEDs on rear Onboard ServerEngines Pilot II graphics/management controller, IPMI 2.0-compliant baseboard management controller (BMC) Monitor, SATA/SAS disk, OS	Bay 6 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express 2.0 x8 Slot 2: half-length, full-height, PCI Express 2.0 x8 Slot 3: half-length, full-height, PCI Express 2.0 x8*** Slot 4: half-length, full-height, 32-bit PCI 2.3 Slot 5: half-length, full-height, PCI Express x4 *** x4 electrical
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One fixed 625 watts standard, universal, 80 PLUS® Bronze qualified Five fans std (power supply, two front, one rear, first processor), one optional processor fan for second processor	
2GB PC3-10600 ThinkServer TD2 250GB 3.5" SAT	Accessories6 Processor Option Kit67Y14490 DDR3 1333 MHz RDIMM67Y1432230 SATA RAID 5 Upgrade67Y1459A (7200 rpm)67Y1400so on O-ART sheet67Y1400	
Other accessorie	es at lenovo.com /accessories	Power-On Hotkey
	Max manager a secolar	Setup Utility: F2 at startup Network Boot: F12 at startup ICH10R RAID: Ctrl+E at startup
32GB with eight	Max memory capacity 4GB PC3-10600 DDR3 RDIMMs (using 67Y1433)	Software Management Tools
10.0TB with five	Max internal capacity 2TB 3.5" SATA disks (using 67Y2642)	ThinkServer EasyStartup Security
selected parts ThinkPlus™ s Onsite serv Post warran 	olaceable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ervices available; see lenovo.com/thinkplus/warranty ice upgrade options (in eligible locations) ⁷ ity maintenance services	 Administrator password User password Front panel lock out Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
→ 24 hour x 7 da	ay ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378	RoHS-compliant

See footnotes for important warranty information US model announced July 27, 2010 US model withdrawn effective April 2011

ThinkServer™ TD230 (1040) - withdrawn

Personal Systems Reference (PSREF)

Type Name mode	- Slot x I bay		GHz Co	Memory res DIMMs	Memory speed	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Etherne	Avai t date
TD230 1040-11 TD230 1040-12 TD230 1040-13	U 5x6	1 x E5503	2.00 2	2 1x2GB	1333MHz 1333MHz 1333MHz	3.5"	5 x Direct Cab 4 x Hot-swap 4 x Hot-swap	ICH10R	SATA SATA SATA/SAS⁴	0/1/10 0/1/10 0/1/5/10	IPMI IPMI IPMI	2xGb 2xGb 2xGb	Jul 1
				year limitec r computin			point						
Processor(s)	Intel® 2 4.8GT/ Intel 64 800MH Intel X 4.8GT/ 800MH	Keon [®] Proc s (giga-trar l, Virtualiza lz DDR3 m eon Proce s QPI, Inte	cessor E nsfers/section Tech emory co ssor E55 I 64, Virtu emory co	processor 5503 with (cond) QPI (nology, portroller, an 506 with qu ualization To portroller, an	dual-core, QuickPath d 4MB cad ad-core, echnology,	che	connect),	Front - (Ho	al	Rear	PSU		
Memory	RDIMN eight 2 * Syste DDR3	I, PC3-106 40-pin DIM m automat memory cc	00 1333 M socket tically clo ontroller	ts**,	*, ECC, Me	emory	y Mirroring , th 800MHz		iisk iisk liisk iisk	2 - P 3 - P 4 - P	Cle x8 Cle x8 Cle x8 Cl Cl Cle x4		
Graphics	one VG	A DB-15 o	n rear, 3			ageme	ent controller,		black color; m				
Disk bays Disk controller	Some: Some: Some: Some:	Four 3.5" Four 3.5" Serial ATA RAID ⁸ 0, 1 ThinkServ SATA 6.00	hot-swap HS SATA 3, SATA 3 1, 10 sup 9 Gb/s, SA	k bays, no l) (HS) SATA //SAS disk l .0Gb/s, inte port 240-8i, PCl S 6.0Gb/s, nnectors fo	disk bays bays grated in l Express® RAID 0, 1,	5 CH10 bus, 5, 10	R, support	• 210mm W • 57.6 lb (20 • Toolless s • Toolless o <i>Hot-swap m</i> Bay 1 5.2 Bay 2 5.2	25",1.6 [°] high, 25",1.6" high,	x 470mm onfiguratio loval emoval external, external,	n std opti optiona	l optical	
Optical Diskette Ethernet	Super I None (Multi-Burne use USB p	er DL DV ort)	D±RW, SAT	A 1.5Gb/s			Bay 4 3.5 Bay 5 3.5	5", 1" high, 5", 1" high, 5", 1" high, 5", 1" high,	external, external, external, external,	optiona optiona	ıl disk ıl disk	
Chipset	(see rig (ESI) to	ght) and lin Intel I/O C	ks to 825 Controller	O Hub (IOI 74L, enterp Hub 10 R/ ontroller, an	orise south AID (ICH10	ı bridg)R) foı	r USB,	Direct cable Bay 1 5.2 Bay 2 5.2 Bay 3 3.5	25", 1.6 [`] high 25", 1.6" high	, external, , external, external,	option	al optical	
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites Keyboard Mouse	two eth One US System Onboa IPMI 2. Monito	SB 2.0, ext ernet (RJ-4 SB 2.0 con status LE rd ServerE	45) nector fo Ds on fro ngines P t basebo S disk, C ort)	pard manag	ape drive stic LEDs o iics/manac	on rea	r t controller,	Bay 4 3.5 Bay 5 3.5 Bay 6 3.5 Bay 7 3.5 Slot 1: half- Slot 2: half- Slot 2: half- Slot 4: half- Slot 4: half-	5", 1" high, 5", 1" high, 5", 1" high, 1" high, 1" high, length, full-he length, full-he length, full-he length, full-he	external, external, external, external, eight, PCI eight, PCI eight, PCI eight, 32-b	optiona optiona optiona optiona Express Express Express Express it PCI 2.	al disk al disk al disk al disk 2.0 x8 2.0 x8 2.0 x8 2.0 x8** 3	*
Power supply(s) Cooling	One fix Five fai	ed 625 wat ns std (pow	tts standa /er suppl	ard, univers y, two front, for second	one rear,	first p	ronze qualified rocessor),						
32GB with eight	4GB PC			y capacity NMMs (usir	ng 67Y143	3)		• Setup Utilit • Network B • ICH10R R • LSI 9420-8	y: F2 a pot: F12	e r-On Hotl at startup at startup +E at start +H at start	up		
3.5" SATA HS: 3.5" SATA DC: 3.5" SAS HS:	10.0TB	vith four 2T with five 2	B 3.5" S/ TB 3.5" S		using 67Y	264Ź)		ThinkServe	Software M er EasyStartu	•	ent Tool	S	
 ⇒ 3-year parts a ⇒ Customer Reselected part ⇒ ThinkPlus™s • Onsite serv • Post warra 	Limited Warranty ¹ 3-year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ThinkPlus™ services available; see lenovo.com/thinkplus/warranty • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services 24 hour x 7 day ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378						rvice for	 User pass Front pan Boot sequ Boot with Serial por USB port 	ator password sword el lock out lence control out keyboard, t I/O control disablement	d mouse, d	iskette		
	ay¹⁴ toll-	free suppo	rt during	the warran	ty period ¹	via 80	0-426-7378	RoHS-comp	oliant				

See footnotes for important warranty information US models announced July 27, 2010 US models withdrawn effective April 2011

ThinkServer™ TD230 (1039) - withdrawn

Personal Systems Reference (PSREF)

Type- Name mode	Slot x bay		GHz Cor	Memory es DIMMs	Memory speed	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Etherne	Ava dat
FD230 1039-111 F D230 1039-121	J 5x6 • <i>This</i>	1 x E5503 model has	2.00 2	1 x 2GB	rranty ¹	3.5"	5 x Direct Cabl 4 x Hot-swap	e ICH10R ICH10R	SATA SATA	0/1/10 0/1/10	IPMI IPMI	2xGb 2xGb	
Processor(s)		ible and gro		-		price	point	Front (He	+ owon)	Boo	~		
Processor(s) mplementation	Intel® 2 4.8GT/ Intel 64 800MF	wo process Xeon® Proc /s (giga-trar 4, Virtualiza Hz DDR3 m GA1366 soc	cessor E nsfers/sec ition Tech emory co	5503 with (cond) QPI (nology,	dual-core, (QuickPath	n Intero	connect),	Front - (Ho	al	Real	PSU		
Memory	RDIMI eight 2 * Syste DDR3	td, 32GB m M, PC3-106 40-pin DIM em automat memory co r four DIMM	00 1333N M sockets fically clocontroller	/Hz DDR3 s**, cks down fo	*, ECC, M	-	/ Mirroring , th 800MHz		disk disk disk disk	2 -			
Graphics	one VC	ard ServerE GA DB-15 o Saum resoluti	n rear, 32	2MB;		ageme	ent controller,			4 -			
Disk bays Disk controller	Some: Serial RAID ⁸	Five 3.5" Four 3.5" ATA, SATA 0, 1, 10 sup odel(s): Six	hot-swap 3.0Gb/s, i pport	(HS) SATA	A disk bays in ICH10R	6 I,	sks	 8.3"W x 2 210mm W 57.6 lb (2) 	black color; 0.1"D x 18.5 / x 510mm [6.2kg) max (5"H D x 470mm configuratio	ιH		
Optical Diskette Ethernet	None (Multi-Burne (use USB p igabit Ether	ort)					Toolless of Hot-swap n	ide cover re optical drive nodel(s):	removal			
Chipset	(see rig (ESI) t	500 Chipse ght) and lin o Intel I/O C -5, onboard	ks to 825 Controller	74L, enter Hub 10 R	orise south	n bridg 0R) foi	e interface r USB,	Bay 1 5.25",1.6" high, external, std optical Bay 2 5.25",1.6" high, external, optional opti Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk					
Extender card Front ports Rear ports nternal ports Diagnostics Systems mgmt Prerequisites	two eth One U System Onboa IPMI 2	ISB 2.0, ext hernet (RJ-4 SB 2.0 con n status LE	45) nector for Ds on fro ngines Pi nt basebo	optional tant nt, Diagnos lot II graph ard manag	ape drive stic LEDs o nics/manag	on rea gemen	9-pin), r t controller, r (BMC)	Bay 5 3.5", 1" high, external, optional dis Bay 6 3.5", 1" high, external, optional dis Direct cable model(s): Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional op Bay 3 3.5", 1" high, external, optional dis Bay 4 3.5", 1" high, external, optional dis Bay 5 3.5", 1" high, external, optional dis Bay 6 3.5", 1" high, external, optional dis Bay 7 3.5", 1" high, external, optional dis Bay 7 3.5", 1" high, external, optional dis Bay 7 3.5", 1" high, external, optional dis				tical al optical al disk al disk al disk al disk	
Keyboard Mouse Power supply(s) Cooling	None (One fix Five fa	use USB p use USB p ked 625 wa ns std (pow ptional proce	ort) tts standa /er supply	, two front,	one rear,	first p	ronze qualified rocessor),					; 2.0 x8 ; 2.0 x8 ; 2.0 x8**	*
Intel Xeon E5500 2GB PC3-10600 ThinkServer TD2 250GB 3.5" SAT More accessorie	DDR3 230 SA1 A (7200 es on O	1333 MHz FA RAID 5 U 0 rpm) -ARTsheet	RDIMM Jpgrade		67 67	7Y1449 7Y1432 7Y1459 7Y1400	9 2 9		length, full-h				
Other accessorie	es at le	novo.com/	accessori	les			-			ver-On Hot	•		
32GB with eight	Max memory capacity B with eight 4GB PC3-10600 DDR3 RDIMMs (using 67Y1433)							 Setup Utili Network B ICH10R R 	oot: F1 AID: Cti	at startup 2 at startu rI+E at star Managem	p rtup	s	
3.5" SATA HS: 3.5" SATA DC:		with four 2T	B 3.5" SA		using 67Y2		-	Software Management Tools ThinkServer EasyStartup					
Limited Warranty ¹ → 1-year parts and labor → Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) → ThinkPlus [™] services available; see lenovo.com/thinkplus/warranty • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services → 24 hour x 7 day ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378						rvice for	Security Administrator password User password Front panel lock out Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) 						
				the warran	nty period ¹	via 80	0-426-7378	RoHS-com	oliant				

See footnotes for important warranty information US models announced July 27, 2010 US models withdrawn effective April 2011

ThinkServer.



Lenovo ThinkServer TS200 with Redundant Power Supply



Lenovo ThinkServer TS200



Lenovo ThinkServer TS200 with Redundant Power Supply



Lenovo ThinkServer TS200

ThinkServer™ TS200 (6525) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

	Proc- Base Max Memory Memory Memory Disk RAID essor(s) GHz GHz Cores DIMMs type speed size battery	Disk Disk RAID IMM Power Avail bays type Int Premium supply(s) date								
6525-11U 5x7 6525-12U 5x7 6525-16U 5x7	X3430 2.40 2.80 4 1x2GB UDIMM 1333MHz 3.5" None 4 X3450 2.66 3.20 4 1x4GB RDIMM 1333MHz 3.5" None 4	4xSimple-swapSATA0/1401WNov 094xHot-swapSATA/SAS40/1IMM401WNov 094xHot-swapSATA/SAS0/1/10IMM401WJan 10								
	• These small and medium business (SMB) models are part of the o									
Processor(s)	Up to one processor, one processor standard, Intel Xeon® Processor X3430 and X3450 with quad-core, 2.5GT/s (giga-transfers/second) DMI (Direct Media Interface), Turbo Boost Technology, Hyper-Threading Technology (X3450 only), Intel 64, 1333MHz DDR3 memory controller, 8MB cache One I GA1156 socket	Front Rear								
Memory	One LGA1156 socket optical 2GB or 4GB std, UDIMM or RDIMM*, Image: Constraint of the sector of the sect									
Graphics	Matrox [®] G200eV, integrated in Integrated Management Module (IMM), one VGA DB-15 in rear; 128MB, shared with IMM; <i>Maximum resolution:</i> 1024x768@85Hz	 Business black color; metal case 8.6"W x 21.3"D x 17.3"H 218mm W x 540mm D x 440mm H 56 lb (25.2kg) max configuration 								
Disk bays	11U: four 3.5" simple-swap (SS) SATA disk bays 12U/16U: four 3.5" hot-swap (HS) SATA/SAS disk bays	Toolless side cover removal								
Disk Controller	 11U/12U: ServeRAID®-BR10il, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID® 0, 1 support 16U: ServeRAID M1015, PCI Express bus, SATA 6Gb/s, SAS 6Gb/s, RAID 0, 1, 10 support 									
Optical Diskette Ethernet	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s None (use USB port) Two gigabit ethernet ports***, Intel 82574L *** One port shared with system management	Disk Bays								
Chipset	Intel 3420 Chipset, Platform Controller Hub (PCH) for PCI, ethernet and USB	Bay 1 5.25",1.6" high, external, std optical Bay 2 5.25",1.6" high, external, optional optical Bay 3 5.5",1.6" high, external, optional diskette								
Extender card Front ports Rear ports	None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), one ethernet (RJ-45), one ethernet/system management (RJ-45), serial (9-pin)	Bay 3 3.5", 1" high, Bay 4 3.5", 1" high, Bay 5 3.5", 1" high, Bay 6 3.5", 1" high, Bay 7 3.5								
Internal ports Diagnostics Systems mgmt Prerequisites	One USB 2.0 for tape drive or embedded hypervisor Diagnostic LEDs (error LEDs for fans and memory) Trusted Platform Module (TPM) 1.2 support, IPMI 2.0-compliant 11U: IMM Standard, upgradeable to IMM Premium 12U/16U: IMM Premium Monitor, SATA/SAS disk, OS	Expansion Slots Slot 1: full-length, full-height, PCI Express x8 Slot 2: full-length, full-height, PCI Express x8 Slot 3: full, PCI Express x4 (x1 electrical) Slot 4: full, 32-bit PCI								
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One 401 watts standard, one maximum, universal, auto switch, no hot-swap, no redundancy Three fans std (power supply, system, hard drive cage), three maximum, no hot-swap, no redundancy	Slot 5: full, 32-bit PCI Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+C at startup								
Mintrolingtion	Virtualization	Security								
Single-rank RDI Dual-rank RDIM	MM: 16GB with four 4GB PC3-8500 DDR3 RDIMMs (using 67Y0125) 32GB with four 8GB RDIMMs (Pending availability)	 Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control 								
12U/16U: 3.5" S	Max internal capacity 3 with four 1TB SS SATA disks (using 67Y1380) SATA HS: 4.0TB with four 1TB HS SATA disks (using 45J6204) SAS HS: 2.4TB with four 600GB HS SAS disks (using 67Y1386)	USB port disablement (all) Software Management Tools ThinkServer EasyStartup								
	, , ,	ThinkPlus Priority Support, 90-day Trial								
	Limited Warranty ¹ and labor	RoHS-compliant								
 Customer Reselected part ⇒ ThinkPlus™ s • Onsite ser • Post warra 	his future pplaceable Unit (CRU) parts only (with limited onsite service for ts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) services available; see lenovo.com/thinkplus/warranty vice upgrade options (in eligible locations) ⁷ nty maintenance services lay ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378	Accessories 450GB 3.5" 6Gb/s SAS Disk HS (15000 rpm) 67Y1385 1TB 3.5" SATA Disk SS 67Y1380 600GB 3.5" 6Gb/s SAS Disk HS 67Y1386 Other accessories at lenovo.com/accessories 67Y1386								
	important warranty information	l © Lenov								

See footnotes for important warranty information US models announced November 24, 2009 or January 8, 2010 US models withdrawn effective February 2011

ThinkServer™ TS200 (6530) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

	Proc- essor(s)		Max GHz	Cores	Memory DIMMs	Memory type	Memory speed	Disk size	RAID pattery	Disk bays	Disk type	RAID Int I	IMM Premium	Power supply(s	Avai) date
6530-13U 5x7 Multi = RAID-0/			3.20	4	1x4GB	RDIMM	1333MHz	3.5"	None	4xHot-swap	SATA/SAS⁴	Multi*	IMM	2x430W	Nov 0
	• This	s mode	el has a			varranty¹ s (SMB) n		nrt of th	e US T	opSeller™ Pro	ogram				
Processor(s)	2.5GT Hyper	Xeon ® /s DMI -Threa	Proce I, Turbo Iding Te	essor X Boost echnolo	3450 with Technology and International Content of the second seco	ntel 64,	core,			Front •®••• optica	PSU				
Implementation			56 sock		controlle	; 8MB ca	cne			optica					
Memory	Advar Six 24 suppo or up 1	4GB std, RDIMM, PC3-10600 1333MHz DDR3, Advanced ECC**, Memory Mirroring Six 240-pin DIMM sockets, supports up to 6 single- or dual-rank RDIMMs, or up to 4 quad-rank RDIMMs ** Advanced ECC-enable DIMMs required Matrox® G200eV, integrated in Integrated Management Module								diskette disk disk disk disk disk	3 3 4				
Graphics	(IMM)	, one V	GA DE	3-15 in I	rear; 128	MB, shai	anagemen red with IN		lle				5 - PCI		
Disk bays Disk Controller Optical Diskette Ethernet	htroller ServeRAID-MR10i, PCI Express® bus, SATÁ 3Gb/s, SAS 3Gb/s, RAID ⁸ 0, 1, 5, 6, 10 support Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s None (use USB port)							o/s,	 Busines 8.6"W x 218mm 56 lb (25) Toolless 	echanical, ra s black color; 21.3"D x 17.3 W x 540mm I 5.2kg) max co side cover re elf support	metal ca 3"H D x 440m onfigurati	ase nm H	5U rack		
Chipset	Intel 3	-	hipset			-	(PCH) for	PCI,		-					
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites	Four L one et One L Diagn IMM F IPMI 2	hernet ISB 2.0 ostic L Premiur 2.0-con	0, exte t/syster 0 for ta EDs (e m, Trus npliant	n mana pe drive rror LE ted Pla	gement e or emb Ds for fa tform Mo	(RJ-45), edded hy ns and m		in) `	RJ-45),						
Keyboard			SB por									Disk Ba	avs		
Mouse Power supply(s) Cooling	Two 4 hot-sw Four fa	30 wat /ap, re/ ans sto	dundar d (two p	dard, tv nt with t power s	wo powe upply far	num, rear r supplie ns, syster lundancy	s n fan, harc	d drive	cage),	Bay 1 5.25",1.6" high, external, std optical Bay 2 5.25",1.6" high, external, optional optical Bay 3 3.5", 1" high, external, optional disketter Bay 4 3.5", 1" high, external, optional disk					ette
01					ry capac				(0014)	Bay 6 3	.5", 1" high, .5", 1" high, .5", 1" high,	extern	nal, opti	onal disk onal disk onal disk	
Single-rank RD Dual-rank RDIN Quad-rank RDI	<i>1M:</i> 1 <i>MM:</i> 1	2GB w 6GB w	ith six 2 ith four	2GB PC 4GB P	C3-10600 C3-8500) DDR3 F) DDR3 F	RDIMMs (L	ising 6 sing 67	7Y0124	4) 5) Slot 1: full	-	pansion neight, P	Slots PCI Expr	ess x8	
3.5" SATA HS: 3.5" SAS HS:			ur 1TB	HS SA		(using 4				Slot 3: full Slot 4: full	, PCI Express , 32-bit PCI , 32-bit PCI	s x4 (x1	electric	al)	
Virtualization re	adv. hv	oerviso		/irtuali		d				ThinkSer	Software ver EasyStar	•	ement 1	ools	
				Access							,	ver-On H	lotkey		
146GB ² 3.5" SA 450GB 3.5" 6G 1TB 3.5" SATA	GB PC3-8500 DDR3 ECC RDIMM (4Rx8) 46GB 2 3.5" SAS HS (15000 rpm) 45J6211 450GB 3.5" 6Gb/s SAS Disk HS (15000 rpm) 50GB 3.5" 6Gb/s SAS Disk HS (15000 rpm) 67Y1385 TB 3.5" SATA Disk HS 500GB 3.5" 6Gb/s SAS Disk						11 85 04	 Diagnost Network 	lity: F1 at sta ic: F2 at start Boot: F12 at s nfiguration Ut	up startup ility: Ctrl		artup			
								- prohib	ver lock (ships its removal of on password		o identio				
Customer Re selected part							 Power-on password Administrator password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) 								
	vice upo	grade o	options	in elig						ThinkPlus Priority Support, 90-day Trial					
	24 hour x 7 day ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378						RoHS-cor	npliant							

See footnotes for important warranty information US model announced November 24, 2009 US model withdrawn effective February 2011

ThinkServer™ TS200 (6524) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Slot x model bay	Processor	GHz Core		Memory type	Memory speed		RAID battery	Disk bays	Disk type	RAID Int	IMM Premium	Power	Avail
6524-11U 5x7								4xSimple-swap	SATA	0/1	None	401W	
	• This model	has a 1-yea	ar limited	warranty				opSeller™ Progra					
Processor(s) Implementation	Up to one proc Intel [®] Pentiun Intel 64, 1066 One LGA1156	n® Process MHz DDR3	sor G6950) with du a	al-core,	he		Front •®••• optical]]				
Memory	1GB std, UDIM Memory Mirro Four 240-pin D 16GB max (Pe std memory in * System autor DDR3 memory ** Advanced E	DIMM sock OIMM sock anding avai 1 socket, matically c y controller	ets, lability of 3 sockets locks dow	4GB UDI available n for proc	MM),			disk disk disk disk disk disk disk			1 - PCle x8 2 - PCle x8 3 - PCle x4 4 - PCl		
Graphics	Matrox [®] G200 (IMM), one VG Maximum reso	A DB-15 ii	n rear; 128	MB, sha			ule				5 - PCI		
Disk bays Disk Controller Optical Diskette Ethernet	Four 3.5" simp ServeRAID®-B RAID® 0, 1 sup DVD-ROM DL None (use US Two gigabit eth *** One port sl	∃b/s,	Tower mechanical Business black color; metal case 8.6"W x 21.3"D x 17.3"H 218mm W x 540mm D x 440mm H 56 lb (25.2kg) max configuration Toolless side cover removal										
Chipset	Intel 3420 Chi ethernet and U	ipset, Plati				PCI,							
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites	None Two USB 2.0 Four USB 2.0, one ethernet/s One USB 2.0 1 Diagnostic LEI IMM standard, IPMI 2.0-comp Monitor, SATA	system mai for tape dri Ds (error L , Trusted Pi pliant	nagement ve or emb EDs for fa	(RJ-45), edded hy ns and m	serial (9-p pervisor emory)	in)	RJ-45),						
Keyboard Mouse Power supply(s) Cooling	None (use US None (use US One 401 watts no hot-swap, r Three fans std three maximur	B port) s standard, no redunda I (power su	ncy pply, syste	em, hard	drive cage		ch,				nal, std o		
160GB ² 3.5" SA 250GB 3.5" SA 500GB 3.5" SA 750GB 3.5" SA 1TB 3.5" SATA	0 DDR3 1333MI ITA Simple-swap IA Simple-swap IA Simple-swap IA Simple-swap simple-swap ies at lenovo.co	Hz UDIMM		67Y01 45J61 45J61 45J61 45J61 67Y13	95 96 97 98			Bay 3 3.5", Bay 4 3.5", Bay 5 3.5", Bay 6 3.5".	1" high, 1" high, 1" high, 1" high, 1" high, 1" high, 1" high, Ex th, full- i Expres bit PCI bit PCI	exter exter exter exter exter pansio height, height, s x4 (x	PCI Expres	nal disket nal disk nal disk nal disk nal disk ss x8 ss x8	
ThinkServer E	oftware Manag asyStartup	ement Too	ols					Setup Utility: Diagnostic: F: Network Boot	2 at start : F12 at	up startup	d. C at ator	tun	
Virtualization	ady, hypervisor	connector	omboddo	Ч				RAID Configu	nation U			ιuμ	
Max internal ca								 Side cover la - prohibits re Power-on pa 	emoval o		vo identical		
Limited Warranty ¹ → 1-year parts and labor → Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) → ThinkPlus TM services available; see lenovo.com/thinkplus/warranty • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services → 24 hour x 7 day ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378					or	Administrator password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)							
					ThinkPlus Priority Support, 90-day Trial								
					RoHS-compliant								

See footnotes for important warranty information US model announced January 8, 2010 US model withdrawn effective February 2011

ThinkServer







Lenovo® ThinkServer TS130

ThinkServer[®] TS130 (1106) - TopSeller (November 2012)

Personal Systems Reference (PSREF)

	rocessor(s)	Memory speed	DIMMs	Pre-conf RAID	Disk bays	Disk size	Disk(s)	SATA optica		Windows Server preload	Supply	Ann date (mm/dd/y
1106-D3U Xeo 1106-D4U Xeo				No No	2xDirect Cable 2xDirect Cable	3.5" 3.5"	2x2TB 2x2TB	DVD DVD	PRO/1000 PT PRO/1000 PT	No No	280W 280W	11/13/12
1106-D5U Xec	• The	e server-cla se small a	ass relial nd mediu	ım busin	2xDirect Cable performance a ess (SMB) mod ed warranty'			DVD US Tops	PRO/1000 PT Seller™ Program	No	280W	11/13/12
Processor	Turbo Bo		to 3.8GH	Iz), integ	(4C/8T, 3.4GHz rated Intel HD (MHz)				ower	PSU]]	
Implementatio					one processor			_	optical		1	
Memory Additional memory disclaimers	four 240- • Actual depend memor	pin DIMM s memory op dent on pro y speed	sockets perating s cessor n	speed is nemory c	MHz DDR3, EC	illed spe and ins	stalled		optical			
Graphics Disk bays SATA disk(s) Optical SATA controlle	one Displ Two 3.5" 2TB , SAT DVD-ROI r Serial AT/ RAID 0, 1	ayPort™ co SATA disk A 6.0Gb/s, M DL SATA A, SATA 3.0 I support, t	bays, no 7200 rp 1.5Gb/s 0Gb/s an wo SATA	hot-swap m, 3.5" 16X-48X d SATA 6 6.0Gb/s	analog VGA DE , direct cable (Max ⁴ Drive :.0Gb/s, integra connectors,				disk Raven black color 5.9"W x 16.0"D x			
Chipset	Intel C20		, Platforn	n Control	er Hub [PCH] (PCI Ex	press [®] 2.0	• • • • • • • • • • • • • • • • • • •	175mm W x 407m 24.7 lb (11.2kg) m	m D x 377mm H		
Front ports Rear ports	Two USB Six USB three ana one analo	2.0, serial log audio p og VGA DE	(9-pin), e oorts (line 15. one	, thernet (e-in, line- DisplayF	out, mic-in) Port			•	25-liter Toolless side cove Toolless disk and Toolless adapter r Illuminated front ic	optical drive remov etention	al	
Audio Onboard Ethei					LC662 codec					Disk Bays		
	00	0 PT: Inte		000 PT [Jual Port Serve	r Adapt	ter on sele	ected Ba	ay 2 5.25",1.6" ay 3 3.5", 1" hi	high, external, for high, external, op gh, internal, for	en (optio disk	cal/tape)
Security chip Diagnostics Keyboard	TCG 1.2- Two syste (disk drive	electronics compliant em status L e activity, p e USB por	EDs on ower/sle	front pan	d Platform Mod el	dule (TF	PM),	s	lot 2: half-length, f	Expansion Slots full-height, PCI Exp full-height, PCI Exp	oress 2.0 oress 2.0	
Mouse Power supply Cooling	None (us One 280 no redun	e USB por watts stand	t) dard, one 5 PSU, 8) PLUS®	m, autosensing Bronze qualifie)		ot-swap,			full-heiğht, 32-bit P full-height, 32-bit P Intel AMT		
								In	tel AMT is suppor	ted on Xeon-mode	(s)	
								• 7	Softw hinkServer Easys	vare Management Startup	Tools	
								• [Setup Utility: F1 at Diagnostic: F2 at s Network Boot: F12	tartup		
								•	Padlock loop (in r	Security e information on left ear for opt padlock side cover removal	<i>,</i>	
 3-year part Customer selected p Lenovo Se Onsite s 	Replaceable L arts ³ , 8 am - 5 rvices availab ervice upgrad	TA disks Li Jnit (CRU) pm, Mon - le; see lend e options (Fri cover vo.com/se in eligibl	arranty ¹ y (with li age excl ervices_wa	nited onsite se uding holidays ırranty/us/en/lend)		•	Security slot (in re Kensington® Micro prohibits side cow Power-on passwo Boot sequence cc Boot without keyb Serial port I/O cor USB port disabler	ear for optional ssaver® cable; er removal) rd ontrol oard, mouse, diske ntrol nent (front or all)	ette	
	ranty mainten 7 day ¹⁴ toll-free			e warran	y period ¹				NERGY STAR [®] So DHS-compliant	erver 1.1-complian	τ	

See footnotes for important warranty information US models announced November 13, 2012

ThinkServer® TS130 (1106) - TopSeller (February 2013)

Personal Systems Reference (PSREF)

1106-G5U Xeon I 1106-G6U Xeon I	Memory speed E3-1245V2 1333MH: E3-1245V2 1333MH: E3-1245V2 1333MH: E3-1245V2 1333MH:	1x8GB	Pre-conf RAID No No No	Disk bays 2xDirect Cable 2xDirect Cable 2xDirect Cable	Disk size 3.5" 3.5" 3.5"	Disk(s 2x2TE 2x2TE 2x2TE	B DVD B DVD	Discrete Ethernet adapter Intel Gigabit E Intel Gigabit E Intel Gigabit E	T No	7 Ann date (mm/dd/yy) 02/05/13 02/05/13 02/05/13
	 True server-clas These small and These model had 	l medium bus	sinėss (Sl	MB) model are pa			pSeller™ Pl	rogram		
Processor Implementation	Intel [®] Xeon [®] E3-1245 Turbo Boost 2.0 (up to DDR3 memory contro Processor in LGA115	o 3.8GHz), in Iller (up to 16	tegrated I 00MHz)	ntel HD Graphics),	Tower optical		PSU	
Memory Additional memory disclaimers Graphics	 32GB max, UDIMM, I four 240-pin DIMM so Actual memory oper dependent on proce- memory speed Intel HD Graphics in one Diaple/Portice operating opera	ckets rating speed essor memor processor, o	is the low y controlle	est installed spe er speed and ins	talled		optical	°	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Disk bays SATA disk(s) Optical SATA controller	one DisplayPort™ cor Two 3.5" SATA disk ba 2TB, SATA 6.0Gb/s,7 DVD-ROM DL SATA Serial ATA, SATA 3.00 RAID 0, 1 support, tw two SATA 3.0Gb/s cor	ays, no hot-sv 200 rpm, 3.5 .5Gb/s 16X-4 ab/s and SAT o SATA 6.0G	5" 48X Max⁴ A 6.0Gb/s	Drive , integrated in cl	nipset,		 6.9"W x 1 175mm W 	ack color; meta 6.0"D x 14.9"H / x 407mm D x	Η 377mm Η	
Chipset Front ports Rear ports Audio	Intel C206 Chipset, F ethernet MAC, PCI, a Two USB 2.0 Six USB 2.0, serial (9 three analog audio pc one analog VGA DB- High Definition (HD) A	nd USB) -pin), etherne rts (line-in, lin 5, one Displa	et (RJ-45) ne-out, m ayPort	c-in)	oress® 2	,	 25-liter Toolless s Toolless d Toolless a 	dapter retentio d front icons	oval I drive removal on	
	One gigabit ethernet							D	isk Bays	
	Gigabit ET: Intel Giga	bit ET Dual F it ethernet	Port Serve	r Adapter,			Bay 2 5.2 Bay 3 3.5	25",1.6" high, 5", 1" high,	external, for optica external, open (opti internal, for disk internal, for disk	
Diagnostics Keyboard Mouse Power supply	TCG 1.2-compliant Two system status LE (disk drive activity, po None (use USB port) None (use USB port) One 280 watts standa	Ds on front p wer/sleep) ird, one maxi	oanel	osensing, no hot			Slot 1: half- Slot 2: half- Slot 3: half-	Expa -length, full-hei -length, full-hei -length, full-hei	ight, PCI Express 2 ight, PCI Express 2 ight, PCI Express 2 ight, 32-bit PCI ight, 32-bit PCI	
Cooling	no redundancy, 85% 4 fans (power supply,			quaimed			Intel AMT is		n tel AMT I Xeon-model(s)	
							 ThinkServ 	Software N er EasyStartup	lanagement Tools	
							 Diagnostic Network B 	ity: F1 at startu c: F2 at startup Boot: F12 at sta		
	May	nternal capa	acity				 Padlock lo padlock p 	chip (see inforr oop (in rear for prohibits side c	opt padlock; over removal)	
 3-year parts an Customer Repselected parts Lenovo Servic Onsite servi Post warran 	TB 3.5" SATA disks Lim	ited Warrant rts only (with i coverage ex co.com/services eligible loca	ty ¹ n limited o xcluding l _warranty/o tions) ⁷	nolidays) us/en/lenovo-warra			Kensingto prohibits • Power-on • Boot sequ • Boot with • Serial por • USB port	uence control out keyboard, rt I/O control disablement (TAR® Server	e cable; ioval) mouse, diskette front or all)	

See footnotes for important warranty information US models announced February 5, 2013

ThinkServer® TS130 (1105) - TopSeller (August 2012)

Personal Systems Reference (PSREF)

1105-67U Core i3 1105-68U Xeon E 1105-69U Xeon E 1105-70U Xeon E 1105-71U Xeon E 1105-72U Xeon E 1105-73U Xeon E 1105-74U Xeon E	cessor(s) speed DIMMs RAID bays size Disk(s) op 3-2120 1333MHz 1x2GB No 2xDirect Cable 3.5" D 53-1225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" D E3-1225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" 2x500GB D E3-1225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" 2x500GB D E3-1225V2 1333MHz 1x4GB No	ATA ticalGraphics adapter(s)Windows Server preloadPower SupplyAnn date SupplyVDIntel HD280W08/21/12VDIntel HD280W08/21/12VDIntel HD280W08/21/12VDIntel HD280W08/21/12VDIntel HD280W08/21/12VDIntel HD280W08/21/12VDIntel HDSBS 2011 Essentials280W08/21/12VDIntel HDSBS 2011 Standard280W08/21/12VDIntel HD2008 R2 Standard280W08/21/12VDIntel HD2008 R2 Standard280W08/21/12VDIntel HD2008 R2 Standard280W08/21/12						
	 Part of the US TopSeller™ Program 1-year limited warranty¹ 							
Processor	Intel [®] Core [™] i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1333MHz) Intel Xeon [®] E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Intel Xeon E3-1245V2 processor (4C/8T, 3.4GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.8GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Intel Xeon E3-1275V2 processor (4C/8T, 3.5GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.9GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Intel Xeon E3-1275V2 processor (4C/8T, 3.5GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.9GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz)	Tower optical disk ° Image: Second state stat						
Memory Additional memory	 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed 	Aven black color; metal case 6.9"W x 16.0"D x 14.9"H						
disclaimers Graphics	memory speed Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	 175mm W x 407mm D x 377mm H 24.7 lb (11.2kg) max configuration 25-liter Toollass side cover removal 						
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable <i>Some:</i> 500GB , SATA 6.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	 Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Disk Bays Bay 1 5.25", 1.6" high, external, for optical Bay 2 5.25", 1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk						
Chipset Front ports Rear ports	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express [®] 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45),							
Audio Ethernet Security chip Diagnostics	three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)	Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI						
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front)	Intel AMT Intel AMT is supported on Xeon-model(s) Software Management Tools • ThinkServer EasyStartup Power-On Hotkey						
	Preloaded Operating System	Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup						
	ntials: Genuine Windows [®] Small Business Server 2011 Essentials dard: Genuine Windows Small Business Server 2011 Standard ns: Genuine Windows Server [®] 2008 R2 Foundations	RAID Configuration Utility: Ċtrl+I at startup Security Security chip (see information on left) Padlock loop (in rear for opt padlock;						
 1-year parts a Customer Reselected part Lenovo Servi Onsite servi 	Max internal capacity 2TB 3.5" SATA disks Limited Warranty ¹ and labor placeable Unit (CRU) parts only (with limited onsite service for ts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ices available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html vice upgrade options (in eligible locations) ⁷ nty maintenance services	 padlock prohibits side cover removal) Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Power-on password Boot sequence control Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) 						
	ay ¹⁴ toll-free support during the warranty period ¹	ENERGY STAR® Server 1.1-compliant RoHS-compliant						

See footnotes for important warranty information US models announced August 21, 2012 ➤ US models withdrawn effective April 2013

ThinkServer® TS130 (1105) - TopSeller (September 2012)

Personal Systems Reference (PSREF)

1105-B2U Core		Memory Pre-co DIMMs RAID z 1x4GB No z 1x4GB No	nf Disk bays 2xDirect Cable 2xDirect Cable	Disk size 3.5" 3.5"	Disk(s) No No	SATA optical DVD DVD	Graphics adapter(s) Intel HD Intel HD	Windows Server preload No No	Power Supply 280W 280W	(mm/dd/yy) 09/25/12	
		class reliability ar S TopSeller™ Pro d warranty¹		t deskt	top price						
Processor Implementation Memory Additional memory disclaimers	Intel [®] Core™ i3-322 integrated Intel HD DDR3 memory cont Intel Core i3-3240 integrated Intel HD DDR3 memory cont Processor in LGA1 32GB max, UDIMM four 240-pin DIMM • Actual memory of dependent on pro- memory speed	Graphics 2500, troller (up to 1600 processor (2C/4 Graphics 2500, troller (up to 1600 155 socket, up to , PC3-10600 133 sockets perating speed is	MHz) T, 3.4GHz, 3MB MHz) one processor 3MHz DDR3, EC the lowest instal	Cache) C, led spe), eed,		optical optical disk °	PSU			
Graphics Disk bays SATA disk(s) Optical SATA controller	Intel HD Graphics one DisplayPort™ c Two 3.5" SATA disk None DVD-ROM DL SATA Serial ATA, SATA 3. RAID 0, 1 support, i two SATA 3.0Gb/s c	onnector bays, no hot-swa 1.5Gb/s 16X-48 0Gb/s and SATA two SATA 6.0Gb/s	p, direct cable X Max⁴ Drive 6.0Gb/s, integrati	• R • 6 • 1 • 2 • 2	A see black color; metal case A						
Chipset Front ports Rear ports Audio Ethernet Security chip Diagnostics	Intel C206 Chipset ethernet MAC, PCI, Two USB 2.0 Six USB 2.0, serial three analog audio one analog VGA DE High Definition (HD) One gigabit etherne STMicroelectronics TCG 1.2-compliant Two system status I (disk drive activity, p	and USB) (9-pin), ethernet ports (line-in, line 3-15, one Display) Audio, Realtek / t on planar, Intel ST19NP18 Trust _EDs on front par	x1, • Ti • Ti • Ill Bay Bay Bay	Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Disk Bays Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk Expansion Slots							
Keyboard Mouse Power supply Cooling	None (use USB por None (use USB por One 280 watts stan no redundancy, 85% 4 fans (power suppl	t) t) dard, one maxim 6 PSU, 80 PLUS [®]	Slo Slo Slo	Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI Intel AMT							
						• Th • Se • Di • N	So ninkServer Ea etup Utility: F1 iagnostic: F2 a etwork Boot: F	Power-On Hotke at startup at startup F12 at startup	ey		
Max internal capacity 4.0TB with two 2TB 3.5" SATA disks Limited Warranty ¹ ✓ 1-year parts and labor ✓ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ✓ Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html ✓ Onsite service upgrade options (in eligible locations)?						• SF P SS K P F 田 田 S	RAID Configuration Utility: Ćtrl+I at startup Security Security chip (see information on left) Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all)				
 Onsite service upgrade options (in eligible locations)⁷ Post warranty maintenance services ≈ 24 hour x 7 day¹⁴ toll-free support during the warranty period¹ 							ENERGY STAR® Server 1.1-compliant RoHS-compliant				

See footnotes for important warranty information US models announced September 25, 2012

ThinkServer[®] TS130 (1105) - TopSeller (November 2012)

Personal Systems Reference (PSREF)

Type- model Pro	cessor(s) F3-1245V2	Memory speed 1333MHz	DIMMs	Pre-conf RAID No	Disk bays 2xDirect Cable	Disk size 3.5"	Disk(s) No	SATA optical DVD	Discrete Ethernet adapter No	Windows Server preload No		Ann date (mm/dd/yy) 11/13/12		
1105-D2U Xeon	• Tru • Par		ass relia TopSelle	er™ Prog	2xDirect Cable	3.5"	No Cop price	DVD	No	No	280W	11/13/12		
Processor	Turbo Bo DDR3 me Intel Xeo Turbo Bo	ost 2.0 (up emory cont n E3-1275	to 3.8GH roller (up V2 proc to 3.9GH	Hz), integ to 1600 essor (4 Hz), integ	C/8T, 3.5GHz, a rated Intel HD	Graphic BMB Ca	cs P4000, ache),	Tc	optical	PSU				
Implementation					one processor			F	disk °					
Memory Additional memory disclaimers	four 240- • Actual depend	pin DIMM s memory op	sockets perating :	speed is	the lowest insta ontroller speed	alled sp				1111 11 0 000 1 - PCle x16 2 - PCle x1				
Graphics	Intel HD	<i>,</i>			analog VGA D	B-15 co	nnector,	c	disk	3 - PCI 4 - PCI				
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" None DVD-ROI Serial AT/ RAID 0, 1	SATA disk M DL SATA A, SATA 3.0 support, t	bays, no 1.5Gb/s 0Gb/s an wo SATA	hot-swaj 16X-482 d SATA 6 6.0Gb/s	o, direct cable (Max ⁴ Drive 5.0Gb/s, integra connectors,	ated in c	chipset,	Raven black color; metal case 6.9"W x 16.0"D x 14.9"H 175mm W x 40.7mm D x 377mm H						
Chipset Front ports Rear ports Audio	ethernet Two USB Six USB three ana one analo	two SATA 3.0Gb/s connectors Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express [®] 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec							Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Disk Bays Bay 1 5.25", 1.6" high, external, for optical Bay 2 5.25", 1.6" high, external, open (optical/tape)					
Onboard Etherne	Cone gigabit ethernet on planar, Intel 82579LM								Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk					
Discrete Etherne adapter	t <i>PRO/100</i>					cted	iy 4 5.5 , T	Expansion Slot						
Security chip Diagnostics	TCG 1.2-compliant							SI SI	Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI					
Keyboard Mouse Power supply	None (us One 280 no redune	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze gualified							Intel AMT Intel AMT is supported on Xeon-model(s)					
Cooling	4 fans (power supply, CPU, rear, front)						• T	Software Management Tools • ThinkServer EasyStartup						
								• [] • N • F	Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+I at startup Security • Security chip (see information on left)					
) 								•	Padlock loop (in rear for opt padloo	;k;			
Max internal capacity 4.0TB with two 2TB 3.5" SATA disks Limited Warranty1								 padlock prohibits side cover removal) Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) 						
 Post warranty maintenance services 24 hour x 7 day¹⁴ toll-free support during the warranty period¹ 									ENERGY STAR® Server 1.1-compliant RoHS-compliant					

See footnotes for important warranty information US models announced November 13, 2012

ThinkServer[®] TS130 (1105) - TopSeller (February 2013)

Personal Systems Reference (PSREF)

1105-E6U Xeor 1105-E7U Xeor		SATA optical adapter(s)Graphics preloadWindows Server 					
	 True server-class reliability and performance at desktop price Part of the US TopSeller[™] Program 1-year limited warranty¹ 						
Processor Implementation Memory	Intel [®] Xeon [®] E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Processor in LGA1155 socket, up to one processor 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	Optical PSU optical 0 disk ° Image: Second structure 0 I					
Additional memory disclaimers Graphics	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort[™] connector 						
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable 500GB , SATA 6.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	Image: Constraint of the system Image: Constraint of the system					
Chipset Front ports Rear ports Audio Ethernet	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express [®] 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM						
Security chip Diagnostics	STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)						
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS®Bronze qualified 4 fans (power supply, CPU, rear, front)						
		Intel AMT Intel AMT is supported on Xeon-model(s) Software Management Tools					
		ThinkServer EasyStartup Power-On Hotkey					
2012 Foundation 2012 Essentials: 2012 Standard:	Preloaded Operating System Genuine Windows Server® 2012 Foundation Genuine Windows Server 2012 Essentials Genuine Windows Server 2012 Standard	Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup RAID Configuration Utility: Ctrl+I at startup					
 → 1-year parts a ⇒ Customer Re 	placeable Unit (CRU) parts only (with limited onsite service for	Security • Security chip (see information on left) • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) • Security slot (in rear for optional Kensington [®] Microsaver [®] cable; prohibits side cover removal) • Power-on password • Boot sequence control • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (front or all) ENERGY STAR [®] Server 1.1-compliant					
 coverage exc ⇒ Onsite servic ⇒ Lenovo Priori ⇒ A-La-Carte Le • Online Data 	³ , during normal country office hours e.g. 8 am - 5 pm, Mon - Fri uding holidays, next business day response time) e upgrade options available (in eligible locations) ⁷ ty Support Package available novo Services available Backup ware Installation						
Onsite Hard Online Train		RoHS-compliant					

See footnotes for important warranty information US models announced February 5, 2013

ThinkServer[®] TS130 (1105) - TopSeller (May 2013)

Personal Systems Reference (PSREF)

Type- model	Processor(s)	Memory speed	Memory DIMMs	Pre-conf RAID	Disk bays	Disk size	Disk(s)	SATA optical	Graphics adapter(s)	Windows Server preload	Ann date (mm/dd/yy)
1105-H1U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 R2 Foundation	05/14/13
1105-H2U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011 Essentials	05/14/13
1105-H3U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	SBS 2011 Standard	05/14/13
1105-H4U	Xeon E3-1225V2	1333MHz	1x4GB	1	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	2008 R2 Standard	05/14/13

• True server-class reliability and performance at desktop price Part of the US TopSeller™ Program 1-vear limited warrantv Processor Intel[®] Xeon[®] E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache) Tower Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) PSU Implementation Processor in LGA1155 socket, up to one processor optical Memory 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, Π optical four 240-pin DIMM sockets Additional Actual memory operating speed is the lowest installed speed, Π disk ٠ memory dependent on processor memory controller speed and installed С пппп disclaimers memory speed 00 🖬 Graphics Intel HD Graphics in processor, one analog VGA DB-15 connector, 1 - PCle x16 one DisplayPort™ connector 2 - PCle x1 3 - PCI Two 3.5" SATA disk bays, no hot-swap, direct cable **500GB**, SATA 6.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max⁴ Drive Disk bays 4 - PCI disk SATA disk(s) Optical Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, SATA controller • Raven black color; metal case • 6.9"W x 16.0"D x 14.9"H RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors 175mm W x 407mm D x 377mm H Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, 24.7 lb (11.2kg) max configuration Chipset 25-liter ethernet MAC, PCI, and USB) · Toolless side cover removal Front ports Two USB 2.0 Rear ports Toolless disk and optical drive removal Six USB 2.0, serial (9-pin), ethernet (RJ-45), Toolless adapter retention three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort Illuminated front icons Audio High Definition (HD) Audio, Realtek ALC662 codec **Disk Bays** Ethernet One gigabit ethernet on planar, Intel 82579LM Security chip STMicroelectronics ST19NP18 Trusted Platform Module (TPM), 5.25", 1.6" high, external, for optical Bav 1 TCG 1.2-compliant 5.25", 1.6" high, external, open (optical/tape) 3.5", 1" high, internal, for disk 3.5", 1" high, internal, for disk Bay 2 Diagnostics Two system status LEDs on front panel Bay 3 (disk drive activity, power/sleep) Bay 4 None (use USB port) Keyboard **Expansion Slots** None (use USB port) Mouse Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Power supply One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front) Cooling Slot 4: half-length, full-height, 32-bit PCI Intel AMT Intel AMT is supported on Xeon-model(s) Software Management Tools ThinkServer EasyStartup **Power-On Hotkey** Setup Utility: F1 at startup Preloaded Operating System Diagnostic: F2 at startup Genuine Windows Server® 2008 R2 Foundation 2008 R2 Foundations: Network Boot: F12 at startup Genuine Windows Server 2008 R2 Standard 2008 R2 Standard: RAID Configuration Utility: Ctrl+I at startup Genuine Windows[®] Small Business Server 2011 Essentials SBS 2011 Essentials: Genuine Windows Small Business Server 2011 Standard SBS 2011 Standard: Security Security chip (see information on left)
Padlock loop (in rear for opt padlock; Max internal capacity 4.0TB with two 2TB 3.5" SATA disks padlock prohibits side cover removal) Limited Warranty¹ Security slot (in rear for optional Kensington® Microsaver® cable; 1-year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, during normal country office hours e.g. 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time) prohibits side cover removal) Power-on password Boot sequence control Onsite service upgrade options available (in eligible locations)⁷ Lenovo Priority Support Package available A-La-Carte Lenovo Services available · Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) **Online Data Backup** ENERGY STAR® Server 1.1-compliant **Onsite Hardware Installation**

See footnotes for important warranty information US models announced May 14, 2013

Online Training

RoHS-compliant

ThinkServe	r® TS130 (1105) - TopSeller (June 2013)	Personal Systems Reference (PSRE					
	Memory Memory Pre-conf Disk Disk ocessor(s) speed DIMMs RAID bays size Disk(s) E3-1225V2 1333MHz 1x8GB 1 2xDirect Cable 3.5" 2x1TB	SATA opticalGraphics adapter(s)Windows Server preloadAnn date (mm/dd/yyDVD±RWIntel HD2012 Foundation06/18/13					
	 True server-class reliability and performance at desktop price Part of the US TopSeller[™] Program 1-year limited warranty¹ 						
Processor	Intel [®] Xeon [®] E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz)	Tower PSU					
Implementation	Processor in LGA1155 socket, up to one processor						
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets						
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 						
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	1 - PCle x16 2 - PCle x1					
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable 1TB , SATA 6.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors						
Chipset	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express [®] 2.0 x1,	 175mm W x 407mm D x 377mm H 24.7 lb (11.2kg) max configuration 					
Front ports Rear ports	ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in)	 25-liter Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention 					
Audio	High Definition (HD) Audio, Realtek ALC662 codec	Illuminated front icons					
Ethernet Security chip	One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM),	Disk Bays Bay 1 5.25",1.6" high, external, for optical					
Diagnostics	TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)	Bay 2 5.25",1.6" high, external, open (optical/tap Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk					
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS [®] Bronze qualified 4 fans (power supply, CPU, rear, front)	Expansion Slots Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, 9CI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI					
		Intel AMT Intel AMT is supported on Xeon-model(s)					
		Software Management Tools					
		ThinkServer EasyStartup					
		Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup . Network Boot: F12 at startup					
0010 5	Preloaded Operating System	Network Boot: F12 at startup RAID Configuration Utility: Ctrl+I at startup					
2012 Foundation	s: Genuine Windows Server® 2012 Foundation Max internal capacity	Security Security chip (see information on left) 					
4.0TB with two 2	TB 3.5" SATA disks	Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)					
selected part	blaceable Unit (CRU) parts only (with limited onsite service for ³ , during normal country office hours e.g. 8 am - 5 pm, Mon - Fri	 Security slot (in rear for optional Kensington[®] Microsaver[®] cable; prohibits side cover removal) Power-on password 					
	uding holidays, next business day response time) e upgrade options available (in eligible locations) ⁷ ty Support Package available novo Services available	 Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) 					
 Online Data 	Backup Iware Installation	ENERGY STAR® Server 1.1-compliant RoHS-compliant					

See footnotes for important warranty information US model announced June 18, 2013

Turbo Boost 2.0 (up to 3:4GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Implementation Processor in LGA1155 socket, up to one processor Memory 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets Additional • Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed Graphics Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector Disk bays Two 3.5" SATA disk bays, no hot-swap, direct cable None DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive SATA disk(s) None Optical DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive SATA disk(s) None Dripset Intel C206 Chipset, Platform Controller Hub (PCH) (PCI Express [®] 2.0 x1, three analog audio ports (ine-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort Chipset Intel C206 Chipset, Platform Controller Hub (PCH) (PCI Express [®] 2.0 x1, three analog audio ports (ine-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort Audio High Definition (HD) Audio, Reatex ALC662 codec Chipset, Internet One gigabit ethernet on planar, intel 82579LM Security chip STMicroelectronics ST19MPT8 Trusted Platform Module (TPM), TCG 1.2-compliant Diagnostics None (use USB port) <th>ThinkServo</th> <th>er® TS1</th> <th>30 (11</th> <th>00) - I</th> <th>May 20</th> <th></th> <th></th> <th colspan="5">Personal Systems Reference (PSREF)</th>	ThinkServo	er® TS1	30 (11	00) - I	May 20			Personal Systems Reference (PSREF)								
Processor Intel* Xeon* E3-1225 processor (4C/47, 3.1GHz, 6MB Cache), Turbo Boot 2.0 (up to 3.44/Hz), integrated intel ID Graphics, Implementation Processor in LCAH2, ICAH2, integrated in chipset, RAH2 0.1 support two SAH3 600bb s connectors, the USAB 200 boots of the ID-AH3 600bb s connectors, Boot SAH3 200bb socontectors, Boot SAH3 200bb and SAH3 600bb s connectors, Boot SHA 200bb and SAH4 600bb connectors, Boot SHA 200bb and SAH4 800bb connectors, Boot SHA 200bb and SAH4 800bb and SHAH4 800bb and S	model Proc		speed	DIMMs	RAID	bays	size		optica	al adapter(s)	preload	Supply	(mm/dd/yy			
Turbe Boost 2.0 (up to 5.46Hz), integrated intel HD Graphics, " Implementation Processor in LGA1155 socket, up to one processor Additional Sockets Additional Sockets Additional Processor in LGA1155 socket, up to one processor Additional Main Memory operating speed is the lowest installed speed. Additional Intel HD Graphics in processor, one analog VGA DB-15 connector, one Displaybott" connector Disk bays None Over Sockets and State Socket, up to one processor SATA disk bays, no hot-swap, direct cable None None Sockets and State Sockets, integrated in chipset, most Sockets, integrated in chipset, integrates, in						d performance	e at des	ktop price								
Implementation Processor in LCA 1155 socket, up to one processor Implementation Optical Memory SigR max, UDMM, PC3-16000 1330Mtz DDR3, ECC, four 240-pin DIMM sockets Implementation Implementation Additional memory speed in processor, one analog VGA DB-15 connector, one DisplayPArti-ic connectors Implementation Implementation Disk bays SATA disk(b); Disk Bays Strail ATA, SATA 3 0.05b/s and SATA 6 0.05b/s, integrated in chipset, three analog autop ports (line-h, line-du, intel 2006 chipset, Platform Controller Hub (PCH] (PCI Express ⁻¹ 2.0 xt, three analog autop ports (line-h, line-du, intel 2006 chipset, Platform Controller Hub (PCH] (PCI Express ⁻¹ 2.0 xt, three analog autop ports (line-h, line-du, inter analog autop ports) Implementation ports internal, for disk Audio Bay 1 525/16 ⁺ High, external, for disk Strat internal, for disk Implementa	Processor	Turbo Boo	ost 2.0 (ui	o to 3.4G	Hz). inṫea	rated Intel HD	י ר	Tower	PSU							
Inter 240-cpin DIMM sockets Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed dialatines: Actual memory speed is the lowest installed speed, dependent on processor memory controller speed and installed dialatines: Intel HO Craphics in processor, one analog VGA DB-15 connector, one DisplayPhorite connectors. The SATA disk bays and SATA 60 AGbs, integrated in chipset, Philos memory speed. APALO 1, suppose, Phatrom Controller Hub (PCH) (PCI Express² 2.0 xt). Sk USB 2.0, serial (9-pin), ethermet (RJ-45), there analog audit ports (iner-n), there are analog audit ports (iner-n), the discover moval. Tool USB 2.0, serial (9-pin), ethermet (RJ-45), this standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS* Bronze qualified Tool Case 2.0 xt1 (SL 2.0 continuent to panel the standard to redundancy, 85% PSU, 80 PLUS* Bronze qualified Son (16 a.2 continuent to panel the Standard on the meak interval to redundancy, 85% PSU, 80 PLUS* Bronze qualified Son (16 a.2 continuent to panel the standard on the meak interval to redundancy, 85% PSU, 80 PLUS* Bronze qualified Son (16 a.2 continuent to panel the standard on the meak interval to redundancy, 85% PSU, 80 PLUS* Bronze qualified Son (16 a.2 continuent to panel the standard on the stand	Implementation									optical						
Additional dependent on processor memory controller speed and installed memory speed Actual memory speed Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort* connector Wo 3.5* STATA disk bays, no hot-swap, direct cable None SATA disk bays, no hot-swap, direct cable None SATA choices and the status of the status of the status of the status SATA disk bays, no hot-swap, direct cable None SATA disk bays, no hot-swap, direct cable None SATA 3.05b; and SATA 6.05b; itsev428 Max* Drive SATA disks Reare black color: metal case Reare black c	Memory				0600 1333	MHz DDR3, E	CC,			optical						
Graphics Intel HD Graphics in processor, one analog VGA DB-15 connector, one Disklapsy CPU connector Disk bays SATA disk bays Optical Two 3.5* SATA disk bays, no hot-swap, protein AR, SATA 3.00bs and SATA 0.00bs, integrated in chipset, and CPU content MAC, PCI, and USB) Image Analysis SATA 0.00bs (Dispet, Platform Controller Hub [PCH] (PCI Express* 2.0 x1 there analog audio parts (line), line-out, mic-in) one analog VGA DB-15, one DisplayPort Hub CAS Collegable thermet on planar, Intel 82579LM Security chip - Reaven black color; metal case = 0.9 W x16:0°D x14:9°H Audio Intel AMC, PCI, and USB) - Toolless side cover removal Tool USB 2:0, serial (P-pin), ethernet (R).450, there analog audio parts (line), line-out, mic-in) one analog VGA DB-15, one DisplayPort Hub CBR 2:0° (Display Platform Module (TPM), TGG 1.2 compliant - Toolless datapter removal Audio None (use USB port) Two system status LEDs on front panel (disk drive activity, power/sleep) Bay 1 5.25*; 1.6* high, external, open (optical/tape) Bay 2 S.25*; 1.6* high,	Additional memory disclaimers	 Actual i depend 	memory o lent on pr	perating					l		0000					
SATA disk(s) Optical None: (4-PC) SATA controller Serial ATA, SATA 3.60/b/s and SATA 0.60/b/s integrated in chipset, HAD 0,1 support, two SATA 6.00/b/s connectors, two SATA 3.0/chipset, Platform Controller Hub (PCH) (PCI Express ⁹ 2.0 x1, two SATA 3.0/chipset, Platform Controller Hub (PCH) (PCI Express ⁹ 2.0 x1, three analog audio ports (line), line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realite ALC682 codec One gligabit ethernet on planar, Intel 82579LM Stution (HD) Audio, Realite ALC682 codec One gligabit ethernet on planar, Intel 82579LM Stution (HD) Audio, Realite ALC682 codec One gligabit ethernet on planar, Intel 82579LM Stution (HD) Audio, Beatlex ALC682 codec One gligabit ethernet on planar, Intel 82579LM More (use USB port) None (use U	Graphics	one Displ	ayPort™ o	connecto	r	0)B-15 co	onnector,			1 - PCle x16 2 - PCle x1					
And D, T support, with SATA 0.000 s connectors, we SATA 3.060 s connectors Intel C205 Chipset, Platform Controller Hub (PCH] (PCI Express [®] 2.0 xt), therment MAC, PCI, and USB) Two USB 2.0 straid (-ppin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, con DisplayPort Audio Chipset, Platform Controller Hub (PCH] (PCI Express [®] 2.0 xt), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, con DisplayPort Mudio Chipset, Platform Controller Hub (PCH] (PCI Express [®] 2.0 xt), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, con DisplayPort Mudio Chipset, Platform Controller Hub (PCH] (PCI), Too ayetem termere on plasing Port (disk drive activity, power/sleep) (disk drive activity, power/sleep) (disk drive activity, power/sleep) (disk drive activity, power/sleep) Cooling Analysis, BS, PSU, BO PLUS ^C Bronze qualified 4 tans (power supply, CPU, rear, front) Max internal capacity 4.0TB with two 2TB 3.5" SATA disks Limited Warranty' — Syser parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selectod parts', 8 am - 5 pm, Mon - Fri coverage excluding holidays) - Post service samptade Unit (CRU) parts only (with limited onsite service for selectod parts', 8 am - 5 pm, Mon - Fri coverage excluding holidays) - Post service samptade unity (conternove) - Post service samptade unity (conternove) - Post service samptade unity (conternove) - Post service analog services upgrade options (in eligible locations) ² - Post service analog services upgrade options (in eligible locations) ² - Post service analog services upgrade options (in eligible locations) ² - Post service analog services upgrade options (in eligible locations) ² - Post service analog services upgrade options (in eligible locations) ² - Post s	Disk bays SATA disk(s) Optical SATA controller	None DVD-RON Serial ATA	/I DL SATA A, SATA 3	A 1.5Gb/s .0Gb/s ai	' s 16X-48) nd SATA 6	K Max⁴ Drive 5.0Gb/s, integr	ated in	chipset,			4 - PCI					
ethernet MAC, PCI, and USB) • Toolless side cover removal Front ports Six USB 2.0, serial (9-pin), ethernet (RJ-45), Rear ports Six USB 2.0, serial (9-pin), ethernet (RJ-45), Intree analog ucio ports (Inice-in, line-ou, line-in, line-ou, l	Obiesed	two SATA	3.0Gb/s	connecto	rs			• 6.9"W x 16.0"D x 14.9"H • 175mm W x 407mm D x 377mm H								
Bear ports Six USE 2.0, serial (9-pin), ethernet (R)-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DE-15, one DisplayPort Toolless disk and optical drive removal High Definition (HD) Audio, Realtek ALC662 codec Disk Bays Ethernet One gigabit ethernet on planar, Intel 82579LM Security chip STMicroelectronics ST1NBYP18 Trusted Platform Module (TPM), TCG 1.2-compliant Diagnostics Two system status LEDs on front panel (disk drive activity, power/sleep) Keyboard Mouse None (use USB port) Power supply One 280 watts standard, one maximum, autosensing, no hot-swap, on redundancy, 85% PSU, 80 PLUS* Bronze qualified Cooling 4 fans (power supply, CPU, rear, front) Cooling 4 fans (power supply, CPU, rear, front) Max internal capacity Intel AMT A.0TB with two 2TB 3.5* SATA disks Limited Warranty' Sayear parts and labor Limited Warranty' Syster prices available for the cover removal) Security slot (ne rear for optical tape) 4.0TB with two 2TB 3.5* SATA disks Limited Marranty' Syster parts and labor Limited Warranty' Custome Replaceable Unit (CRU) parts only (with limited onsite service for selected parts', 8 am - 5 pm, Mon - Fri coverage excluding holidays) Services available; see lenvoco.conferencl	Chipset						•	25-liter	., 0							
Audio High Definition (HD) Audio, Realeki ALC662 codec Ethernet Security chip Security chip Diagnostics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant (disk drive activity, power/sleep) More (use USB port) Moves watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS ⁻ Bronze qualified Cooling 4 fans (power supply, CPU, rear, front) Solo 11: half-length, full-height, CCI Express 2.0 x16 Stot 2: half-length, full-height, 22-bit PCI Stot 2: half-length, full-height, 22-bit PCI Stot 3: half-length, full-height, 32-bit PCI Stot 4: half-length, full-height, 22-bit PCI Stot 4: half-length, full-height, 32-bit PCI Stot 4: half-length, full-height, 32-bit PCI Stot 4: half-length, full-height, 22-bit PCI Stot 4: half-length, full-height, 32-bit PCI Stot 4: half-length, full-height, 32-bit PCI Stot 4: half-length, full-height, 22-bit PCI Stot 4: half-length, full-height, 22-bi	Front ports Rear ports	Six USB 2 three ana	2.0, serial log audio	ports (lin	ie-in, line-	out, mic-in)			•	Toolless disk a Toolless adapte	nd optical drive reme	oval				
Diagnostics Two system status LEDs on front panel (disk drive activity, power/sleep) Bay 4 3.5 ⁺ , 1 ⁺ high, internal, for disk Bay 4 Status LEDs on front panel (disk drive activity, power/sleep) Keyboard Mouse None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified Expansion Slots Cooling 4 fans (power supply, CPU, rear, front) Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 3: half-length, full-height, 22-bit PCI Slot 3: half-length, full-height, 32-bit PCI Intel AMT Intel AMT Intel AMT None (use USB port) Nome ware management Tools ThinkServer EasyStartup Autor of the maximum mather and the maximum Security chig (see information on left) Padlock loop (in rear for opt padlock); padlock prohibits side cover removal) Security side cover removal) Security side cover removal) Security side cover removal) Security side cover removal)	Audio Ethernet Security chip	High Defin One gigal STMicroe	nition (HD bit ethern lectronics)) Audio, et on plar s ST19NF	Realtek A nar, Intel 8	LC662 codec 32579LM	odule (T	ΡM),	E	Bay 1 5.25",1	•	for optical				
Keyboard Mouse None (use USB port) None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS*Bronze qualified Slot 1: half-length, full-height, PCI Express 2.0 x16 Cooling 4 fans (power supply, CPU, rear, front) Slot 2: half-length, full-height, 32-bit PCI Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI Slot 5: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI Intel AMT Intel AMT Intel AMT <td>Diagnostics</td> <td>Two syste</td> <td>m status</td> <td>LEDs on</td> <td></td> <td>el</td> <td></td> <td></td> <td>E</td> <td colspan="7">Bay 3 3.5", 1" high, internal, for disk</td>	Diagnostics	Two syste	m status	LEDs on		el			E	Bay 3 3.5", 1" high, internal, for disk						
Intel AMT 7.0 is supported on Xeon-model(s) Software Management Tools • ThinkServer EasyStartup Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup • Security • Security • Security chip (see information on left) • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) • Security stort (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) • Security stort (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) • Power-on password • Boot sequence control • Boot sequence control • Boot without keyboard, mouse, diskette • Security control • Onsite service upgrade options (in eligible locations)" • Power-on password • Boot without keyboard, mouse, diskette • Security control •	Keyboard Mouse Power supply Cooling	None (use One 280 no redund	e USB po watts star dancy, 85º	rt) Idard, on % PSU, 8	80 PLUS®	Bronze qualifi	ng, no h ed	ot-swap,		Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI						
 ThinkServer EasyStartup Power-On Hotkey Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup Network Boot: F12 at startup RAID Configuration Utility: Ctrl+I at startup RAID Configuration Utility: Ctrl+I at startup Security chip (see information on left) 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) Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Power-on password Boot sequence control Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) ENERGY STAR® Server 1.1-compliant 									Ir	ntel AMT 7.0 is		model(s)				
Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup Security Security Starte Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) ENERGY STAR® Server 1.1-compliant											0	nt Tools				
Max internal capacity • Security chip (see information on left) • 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) • Syear parts and labor • Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) • Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services									•	Diagnostic: F2 Network Boot: I	l at startup at startup F12 at startup					
4.0TB with two 2TB 3.5" SATA disks Limited Warranty ¹ ⇒ 3-year parts and labor ⇒ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ⇒ Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services										Padlock loop (see information on l	ck;				
4.01B with two 21B 3.5° SATA disks Kensington® Microsaver® cable; prohibits side cover removal) Limited Warranty1 Power-on password S - Syear parts and labor Boot sequence control Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Power-on password Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html Boot sequence control Onsite service upgrade options (in eligible locations) ⁷ Vert disablement (front or all) ENERGY STAR® Server 1.1-compliant				ax interr	nal capac	ity				Security slot (i	n rear for optional	al)				
 3-year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html Onsite service upgrade options (in eligible locations)⁷ Post warranty maintenance services 	4.01 B with two 2	21B 3.5" SA		11		1			Kensington [®] Microsaver [®] cable;							
Onsite service upgrade options (in eligible locations) ⁷ Post warranty maintenance services ENERGY STAR® Server 1.1-compliant	 3-year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) 								 Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control 							
	 Onsite service Post warra 	 Onsite service upgrade options (in eligible locations)⁷ Post warranty maintenance services 								ENERGY STAR® Server 1.1-compliant						

See footnotes for important warranty information US model announced May 29, 2012

ThinkServer[®] TS130 (1100) - August 2012

Personal Systems Reference (PSREF)

			_									
cessor(s)	speed	DIMMs	RAID	bays	size	Disk(s)	optical	adapter(s)	preload	Supply	Ann date (mm/dd/yy	
							DVD DVD	Intel HD Intel HD	No No	280W 280W	08/21/12 08/21/12	
E3-1225V2	1333MHz	2x4GB	No	2xDirect Cable	3.5"	2x500GB	DVD	Intel HD	No	280W	08/21/12	
				d performance	at des	ktop price						
				/4T, 3.3GHz, 3	MB Ca	iche),	Τον	wer				
DDŘ3 me Intel Xeou Turbo Boo	mory cont n [®] E3-122 ost 2.0 (up	roller (up 5V2 pro to 3.6Gl	o to 1333 cessor (4 Hz), integ		optical	PSU						
Processor	in LGA11	55 sock	et, up to o	one processor								
			600 1333	MHz DDR3, E	CC,							
 Actual r depend 	nemory op ent on pro	perating							1 - PCle x16 2 - PCle x1			
Intel HD (one Displa	Graphics i ayPort™ co	in proces	ssor, one	analog VGA D	B-15 c	onnector,		disk	3 - PCI 4 - PCI			
Some: 50 DVD-RON Serial ATA RAID 0, 1	DGB , SAT I DL SATA A, SATA 3.0 support, t	TA 6.0Gb 1.5Gb/s 0Gb/s ar two SATA	/s, 7200 s 16X-482 nd SATA 6 A 6.0Gb/s	rpm, 3.5" (Max⁴ Drive 5.0Gb/s, integra	ated in	chipset,	• 6. • 17 • 24 • 25	9"W x 16.0"D 75mm W x 40 4.7 lb (11.2kg 5-liter) x 14.9"H 7mm D x 377mm H) max configuration			
Intel C200 ethernet M Two USB	6 Chipset, //AC, PCI, 2.0	, Platforr and USI	n Control 3)		(PCI E	xpress [®] 2.0 :	x1, • To • To	oolless disk a oolless adapte	nd optical drive remo er retention	val		
three anal one analo High Defir One gigat STMicroe	log audio p g VGA DB hition (HD) bit etherne lectronics	oorts (lin 3-15, one) Audio, I t on plar	e-in, line- DisplayF Realtek A ar, Intel 8	out, mic-in) Port LC662 codec 32579LM	dule (T	⁻ PM),	Bay Bay	Disk Bays Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk				
Two syste	m sṫatus L			el			SIG	Expansion Slots				
None (use None (use One 280 v no redund	USB port USB port watts stand lancy, 85%	t) t) dard, on 6 PSU, 8	e maximu 0 PLUS®	Bronze qualifie	g, no h ed	ot-swap,	Slo Slo	t 2: half-lengt t 3: half-lengt	h, full-height, PCI E: h, full-height, 32-bit	kpress 2.0 PCI		
4 fans (po	wer supply	y, CPU, i	ear, front)			Inte		Intel AMT	al(c)		
							inte					
							• Tł		•			
							• Di • Ne	agnostic: F2 a etwork Boot: F	at startup at startup -12 at startup	-		
						Security						
							• P	adlock loop (i	n rear for opt padloc	k;		
2TB 3.5" SA		ax intern	al capac	ity			• S	ecurity slot (in	n rear for optional	al)		
		_imited \	Narranty	1			prohibits side cover removal)					
and labor	Init (CPII)	narte or	alv (with I	imited onsite o	orvico	for	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control					
is³, 8 am - 5 ices availab	pm, Mon - le; see len	Fri cove	erage exc services_w	luding holiday	s)							
nty mainter	nance serv	vices		ENERGY STAR [®] Server 1.1-compliant RoHS-compliant								
	Intel® Con S-1225V2 3-1225V2 3-1225V2 3-1225V2 integrated DDR3 me Intel Xeon Turbo Boc DDR3 me Processon 32GB ma: four 240-p • Actual r depend memory Intel HD C one Displa Two 3.5" S Some: 50 DVD-ROM Serial ATA RAID 0, 1 two SATA Intel C200 ethernet N Two USB 2 three analo ne gigat STMicroe TCG 1.2-C Two syste (disk drive None (use One 280 v no reduncd 4 fans (po 27B 3.5" SA and labor placeable U s ² ,8 awi-5b crice upgrad nty mainter	 2-2120 1333MHz 3-1225V2 1333MHz 3-1225V2 1333MHz 3-1225V2 1333MHz 3-1225V2 1333MHz a-1225V2 1325Max /ul>	speed DIMMs 3-2120 1333MHz 1x4GB 3-1225V2 1333MHz 1x4GB 3-1225V2 1333MHz 2x4GB • <i>True server-class relia</i> • • <i>3-year limited warranti</i> • <i>1161</i> • <i>1161</i> • <i>125</i> • <i>133</i> • <i>32GB max, UDIMM, PC3-10</i> four 240-pin DIMM sockets • • <i>Actual memory operating dependent on proces</i>	zessor(s) speed DIMMs RAID 3-2120 1333MHz 1x4GB No 3-1225V2 1333MHz 1x4GB No 3-1225V2 1333MHz 1x4GB No 3-1225V2 1333MHz 2x4GB No - True server-class reliability and - - 3-year limited warranty' No - True server-class reliability and - - 3-year limited warranty' No - True server-class reliability and - - 3-year limited warranty' No - True server-class reliability and - - 3-year limited warranty' No - True server-class reliability and - - 3-genal Max Numarranty' - - - - - - - - - - - -	pressor(s) speed DIMMs RAID bays 3-2120 1333MHz 1x4GB No 2xDirect Cable 3-1225V2 1333MHz 2x4GB No 2xDirect Cable 3-1225V2 1333MHz 2x4GB No 2xDirect Cable • <i>True server-class reliability and performance</i> • 3/year • <i>3-year limited warranty'</i> • 1////////////////////////////////////	pressor(s) speed DIMMs RAID bays size 53-120 1333MHz 1x4GB No 2xDirect Cable 3.5" 53-1225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" cs 1333MHz 2x4GB No 2xDirect Cable 3.5" e True server-class reliability and performance at des - - - integrated Intel HD Graphics 2000. DDB3 memory controller (up to 1333MHz) - - - Intel Xeon E3-1225V2 processor (2C/AT, 3.3GHz, 3MB Cable 2.0%), integrated Intel HD Graphics 2000. - - - - Intel Xeon E3-1225V2 processor (2C/AT, 3.3GHz, 3MB Cable 2.0%), integrated Intel HD Graphics 1000. - <td>pressor(s) speed DIMMs FAID bays size Disk(s) 32120 1333MHz 1x4GB No 2xDirect Cable 3.5" 331225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" 331225V2 1333MHz 2x4GB No 2xDirect Cable 3.5" 2x500GB • True server-class reliability and performance at desktop price • 3-year limited warranty' • True server-class reliability and performance at desktop price • 3-year limited warranty' Intel "Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1600MHz) Pricessor Processor ICA115S socket, up to one processor 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on processor, one analog VGA DB-15 connector, one DisplayPort™ connector Two 3.5" SATA disk bays, no hot-swap, direct cable Some: 500GB, SATA 6.0Gb/s, 7200 rpm, 3.5" PVD-ROM DL, SATA 1.5Gb/s 16X.43K Max' Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s, connectors, two SATA 3.0Gb/s connectors Two 3.5" SATA disk bays, no hot-swap, direct cable Some: 500GB, SATA 6.0Gb/s, Connectors, two SATA 3.0Gb/s and Cone lont conteller Hub</td> <td>preser(s) speed DIMMS RAID bays size Disk(s) optical 25/120 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 331225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 331225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 331225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 33125V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 33125V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 1 Tor Tor Tor Tor Tor Tor Tor 1 True server-class reliability and performance at desktop price 3.5" Tor Tor 1 Tor Tor Tor Tor Tor Tor 1 Tor Tor Tor Tor Tor Tor Tor 1 Tor Tor Tor Tor Tor Tor</td> <td>sessor(s) speed DIMMs PAUD bays size Disk(s) optical adapter(s) 3:1220 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD Intel HD 3:1225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD Intel HD 3:1225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD Intel HD 3:1225V2 1333MHz 2xAGB No 2xDirect Cable 3.5" DVD Intel HD 3:1225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD Intel HD 1:111 1:111 1:11 1:11<td>eseace(s) speed DIMA FAID bays size Disk(s) optical despire(*) precoded 23:122:012 1333MH/z 1448B No 2xDirect Cable 3.5" DVD Intel HD No 23:122:012 1333MH/z 2x46B No 2xDirect Cable 3.5" DVD Intel HD No 23:122:012 1333MH/z 2x46B No 2xDirect Cable 3.5" 2x5000GB DVD Intel HD No 4: True server-class reliability and performance at desktop price - 3.5" 2x5000GB DVD Intel HD Stappics Stapp</td><td>eseand() space Disk(s) optical dapler(s) preload Supply 3:122:5V2 1333MHz Lx4GB No 2300W Supply DVD Intel HD No 2300W 3:122:5V2 1333MHz Lx4GB No 2300W No 2300W 3:122:5V2 1333MHz Lx4GB No 2300W No 2300W 4:125:5V2 1333MHz Lx4GB No 2300W No 2300W 4:11:5V2 1333MHz Lx4GB No 2300W No 2300W 4:11:5V2 12:22:22 1333MHz Lx4GB No 2300W No 2300W 1:11:5V2 12:22:22 12:22:22 13:33MHz Dx4Hz No 2300W No 2300W 1:11:5V2 12:22:22 12:22<!--</td--></td></td>	pressor(s) speed DIMMs FAID bays size Disk(s) 32120 1333MHz 1x4GB No 2xDirect Cable 3.5" 331225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" 331225V2 1333MHz 2x4GB No 2xDirect Cable 3.5" 2x500GB • True server-class reliability and performance at desktop price • 3-year limited warranty' • True server-class reliability and performance at desktop price • 3-year limited warranty' Intel "Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1600MHz) Pricessor Processor ICA115S socket, up to one processor 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on processor, one analog VGA DB-15 connector, one DisplayPort™ connector Two 3.5" SATA disk bays, no hot-swap, direct cable Some: 500GB, SATA 6.0Gb/s, 7200 rpm, 3.5" PVD-ROM DL, SATA 1.5Gb/s 16X.43K Max' Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s, connectors, two SATA 3.0Gb/s connectors Two 3.5" SATA disk bays, no hot-swap, direct cable Some: 500GB, SATA 6.0Gb/s, Connectors, two SATA 3.0Gb/s and Cone lont conteller Hub	preser(s) speed DIMMS RAID bays size Disk(s) optical 25/120 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 331225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 331225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 331225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 33125V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 33125V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD 1 Tor Tor Tor Tor Tor Tor Tor 1 True server-class reliability and performance at desktop price 3.5" Tor Tor 1 Tor Tor Tor Tor Tor Tor 1 Tor Tor Tor Tor Tor Tor Tor 1 Tor Tor Tor Tor Tor Tor	sessor(s) speed DIMMs PAUD bays size Disk(s) optical adapter(s) 3:1220 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD Intel HD 3:1225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD Intel HD 3:1225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD Intel HD 3:1225V2 1333MHz 2xAGB No 2xDirect Cable 3.5" DVD Intel HD 3:1225V2 1333MHz 1x4GB No 2xDirect Cable 3.5" DVD Intel HD 1:111 1:111 1:11 1:11 <td>eseace(s) speed DIMA FAID bays size Disk(s) optical despire(*) precoded 23:122:012 1333MH/z 1448B No 2xDirect Cable 3.5" DVD Intel HD No 23:122:012 1333MH/z 2x46B No 2xDirect Cable 3.5" DVD Intel HD No 23:122:012 1333MH/z 2x46B No 2xDirect Cable 3.5" 2x5000GB DVD Intel HD No 4: True server-class reliability and performance at desktop price - 3.5" 2x5000GB DVD Intel HD Stappics Stapp</td> <td>eseand() space Disk(s) optical dapler(s) preload Supply 3:122:5V2 1333MHz Lx4GB No 2300W Supply DVD Intel HD No 2300W 3:122:5V2 1333MHz Lx4GB No 2300W No 2300W 3:122:5V2 1333MHz Lx4GB No 2300W No 2300W 4:125:5V2 1333MHz Lx4GB No 2300W No 2300W 4:11:5V2 1333MHz Lx4GB No 2300W No 2300W 4:11:5V2 12:22:22 1333MHz Lx4GB No 2300W No 2300W 1:11:5V2 12:22:22 12:22:22 13:33MHz Dx4Hz No 2300W No 2300W 1:11:5V2 12:22:22 12:22<!--</td--></td>	eseace(s) speed DIMA FAID bays size Disk(s) optical despire(*) precoded 23:122:012 1333MH/z 1448B No 2xDirect Cable 3.5" DVD Intel HD No 23:122:012 1333MH/z 2x46B No 2xDirect Cable 3.5" DVD Intel HD No 23:122:012 1333MH/z 2x46B No 2xDirect Cable 3.5" 2x5000GB DVD Intel HD No 4: True server-class reliability and performance at desktop price - 3.5" 2x5000GB DVD Intel HD Stappics Stapp	eseand() space Disk(s) optical dapler(s) preload Supply 3:122:5V2 1333MHz Lx4GB No 2300W Supply DVD Intel HD No 2300W 3:122:5V2 1333MHz Lx4GB No 2300W No 2300W 3:122:5V2 1333MHz Lx4GB No 2300W No 2300W 4:125:5V2 1333MHz Lx4GB No 2300W No 2300W 4:11:5V2 1333MHz Lx4GB No 2300W No 2300W 4:11:5V2 12:22:22 1333MHz Lx4GB No 2300W No 2300W 1:11:5V2 12:22:22 12:22:22 13:33MHz Dx4Hz No 2300W No 2300W 1:11:5V2 12:22:22 12:22 </td	

See footnotes for important warranty information US models announced August 21, 2012

ThinkServer[®] TS130 (1100) - September 2012

Туре-		Memory	Memory	Pre-conf	Disk	Disk		SATA	Graphics	Windows Server	Power	Ann date
model	Processor(s)	speed	DIMMs	RAID	bays	size	Disk(s)	optical	adapter(s)	preload	Supply	(mm/dd/yy)
1100-94U	Core i3-3220	1333MHz	1x4GB	No	2xDirect Cable	3.5"	No	DVD	Intel HD	No	280W	09/25/12

True server-class reliability and performance at desktop price
 3-year limited warranty¹

Processor	Intel [®] Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)	Tower
Implementation		optical
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	1 - PCle x16 2 - PCle x1
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable None DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	
Chipset	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express [®] 2.0 x1, ethernet MAC, PCI, and USB)	24.7 lb (11.2kg) max configuration 25-liter
Front ports Rear ports	Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort	 Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons
Audio Ethernet	High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM	Disk Bays
Security chip	STMicroelectronics ST19NP18 Trusted Platform Module (TPM),	Bay 1 5.25", 1.6" high, external, for optical
Diagnostics	TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)	Bay 2 5.25", 1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS®Bronze qualified 4 fans (power supply, CPU, rear, front)	Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI
		Intel AMT
		Intel AMT is supported on Xeon-model(s)
		Software Management Tools
		ThinkServer EasyStartup
		Power-On Hotkey
		 Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup RAID Configuration Utility: Ctrl+I at startup
		Security
		 Security chip (see information on left) Padlock loop (in rear for opt padlock;
	Max internal capacity	padlock prohibits side cover removal)
4.0TB with two 2	2TB 3.5" SATA disks	Security slot (in rear for optional Kensington [®] Microsaver [®] cable;
selected part ⇒ Lenovo Servi	Limited Warranty ¹ and labor placeable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ces available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html vice upgrade options (in eligible locations) ⁷	 prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all)
 Post warrar 	nty maintenance services ay¹⁴ toll-free support during the warranty period¹	ENERGY STAR [®] Server 1.1-compliant RoHS-compliant

See footnotes for important warranty information US model announced September 25, 2012

ThinkServer[®] TS130 (1098) - August 2012

Personal Systems Reference (PSREF)

1098-51U Core i3	:essor(s) speed DIMMs RAID bays size Disk(s) op 3-2120 1333MHz 1x4GB No 2xDirect Cable 3.5" No D	ATAGraphicsWindows Server preloadPowerAnn date Supply (mm/dd/yy)VDIntel HDNo280W08/21/12VDIntel HDNo280W08/21/12
	 True server-class reliability and performance at desktop price These models have a 1-year limited warranty¹ 	
Processor Implementation Memory Additional memory disclaimers Graphics Disk bays SATA disk(s) Optical	Intel [®] Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1333MHz) Intel Xeon® E3-1225V2 processor (4C/4T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics P4000, DDR3 memory controller (up to 1600MHz) Processor in LGA1155 socket, up to one processor 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector Two 3.5" SATA disk bays, no hot-swap, direct cable None DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	optical PSU optical Image: Constraint of the second se
Chipset Front ports Rear ports Audio Ethernet Security chip Diagnostics Keyboard Mouse Power supply	Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express® 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep) None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap,	 175mm W x 407mm D x 377mm H 24.7 lb (11.2kg) max configuration 25-liter Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Disk Bays Bay 1 5.25", 1.6" high, external, for optical Bay 2 5.25", 1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 1: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI
Cooling	no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front)	Intel AMT Intel AMT is supported on Xeon-model(s) Software Management Tools • ThinkServer EasyStartup Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+I at startup
 I-year parts a Customer Re selected part Lenovo Servi Onsite servi Post warral 	Max internal capacity PTB 3.5" SATA disks Limited Warranty1 and labor placeable Unit (CRU) parts only (with limited onsite service for s3, 8 am - 5 pm, Mon - Fri coverage excluding holidays) ces available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html rice upgrade options (in eligible locations)7 nty maintenance services ay14 toll-free support during the warranty period1	Security • Security chip (see information on left) • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) • Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) • Power-on password • Boot sequence control • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (front or all) ENERGY STAR® Server 1.1-compliant RoHS-compliant

See footnotes for important warranty information US models announced August 21, 2012

ThinkServer[®] TS130 (1098) - September 2012

Туре-		Memory	Memory	Pre-conf	Disk	Disk		SATA	Graphics	Windows Server	Power	Ann date
model	Processor(s)	speed	DIMMs	RAID	bays	size	Disk(s)	optical	adapter(s)	preload	Supply	(mm/dd/yy)
1098-92U	Core i3-3220	1333MHz	1x4GB	No	2xDirect Cable	3.5"	No	DVD	Intel HD	No	280W	09/25/12

True server-class reliability and performance at desktop price
 1-year limited warranty¹

Processor Implementation	Intel [®] Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Processor in LGA1155 socket, up to one processor	Tower PSU PSU
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	optical
Additional memory disclaimers	 four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort [™] connector	1 - PCle x16 2 - PCle x1
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable None DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	
Chipset	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express [®] 2.0 x1, othernet MAC, PCI, and LISP)	24.7 lb (11.2kg) max configuration 25-liter
Front ports Rear ports	ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort	 Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons
Audio Ethernet Security chip Diagnostics	High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel	Disk Bays Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk
Blaghootioo	(disk drive activity, power/sleep)	Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS®Bronze qualified 4 fans (power supply, CPU, rear, front)	Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI
		Intel AMT
		Intel AMT is supported on Xeon-model(s)
		Software Management Tools
		ThinkServer EasyStartup
		Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+I at startup
		Security
	Max internal capacity	 Security chip (see information on left) Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security slot (in rear for optional
4.01 B with two 2	TB 3.5" SATA disks	Kensington® Microsaver® cable; prohibits side cover removal)
selected parts ⇒ Lenovo Servi • Onsite servi	Limited Warranty ¹ and labor placeable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ces available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html rice upgrade options (in eligible locations) ⁷ nty maintenance services	 Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all)
	ay ¹⁴ toll-free support during the warranty period ¹	ENERGY STAR® Server 1.1-compliant RoHS-compliant

See footnotes for important warranty information US model announced September 25, 2012

ThinkServer®TS130 Accessories

Partial list of accessories supported on Le TS130.	novo®ThinkServer
ThinkServer Ready accessories are available Business Partners. Locate a Business Partne bplocator.lenovo.com	through Lenovo r near you at:
Memory 2GB PC3-10600 DDR3 ECC UDIMM (1Rx8) 4GB PC3-10600 DDR3 ECC UDIMM (2Rx8) 8GB PC3-10600 DDR3 ECC UDIMM (2Rx8)	67Y2606 67Y2607 0A89461
Connectivity Lenovo Gigabit ET Dual Port Server Adapter Intel Ethernet I340 Quad Port Server Adapter	
Disk Drive ⁶ 3.5" SATA Cabled: 500GB 7.2K Enterprise 6Gbps SATA 1TB 7.2K Enterprise 6Gbps SATA 2TB 7.2K Enterprise 6Gbps SATA 3TB 7.2K Enterprise 6Gbps SATA	0A89470 0A89471 0A89472 0A89478
Keyboard Preferred Pro USB Keyboard	73P5220
Mouse Lenovo Optical Mouse (USB)	06P4069
For more information on server accessories, p www.lenovo.com/support/accessories www.lenovo.com/support/thinkserveracces www.lenovo.com/support/security	

Other accessories at www.lenovo.com/accessories

Accessories Guide pdf at www.lenovo.com/accessoriesguide

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ThinkServer™ TS130 (1106) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Slot x			Cores /	Memory	Memory	D : 1(1)		Pre-conf		SATA	Graphics	Windows Se		ower
model bay 1106-1EU 4x4	Processor Core i3-2120		Threads 2C/4T	DIMMs 1x2GB	speed 1333MHz	Disk(s) 1x500GB	size 3.5"	RAID No 2	bays 2xDirect Cable		adapter(s)	preload None		o ply(s) 30W
	• Thi	s sma	ll and me	dium busi	and perforn ness (SMB ted warran) model is p			TopSeller™ Pro	gram				
Processor Implementation Memory Additional memory disclaimers Graphics Disk bays SATA disk(s) Optical SATA controller	Intel® Core integrated In DDR3 mem Processor in 32GB max, four 240-pir • Actual me depender memory s Intel HD Gr one Display Two 3.5" SA 500GB, SA Super Multi Serial ATA, RAID 0, 1 s	ntel HI ory cc n LGA UDIM n DIMM emory to n p speed raphic Port™ TA dis TA 3.0 -Burne SATA	D Graphic ontroller (I 1155 soc M, PC3-1 M sockets operating proccesso s in proce connecto sk bays, n Gb/s, 720 3.0Gb/s a	cs, up to 1333 ket, up to 0600 133 g speed is or memory essor, one or o hot-swa 00 rpm, 3. D±RW SA and SATA	BMHz) one process 3MHz DDR the lowest controller s analog VG p, direct ca 5" TA 1.5Gb/s 6.0Gb/s, in	ssor 3, ECC, installed sp speed and iA DB-15 cd ble Drive tegrated in	peed, installe	tor,		° ° nck color;	Image: Image of the second s	x1		
Chipset Front ports Rear ports Audio Ethernet Security chip Diagnostics Keyboard Mouse Power supply Cooling	AID 0, 1 S two SATA 3. Intel C206 ethernet MA Two USB 2. Six USB 2.0 three analog one analog High Definit One gigabit STMicroeler TCG 1.2-co Two system (disk drive a None (use I One 280 wa no redunda 4 fans (pow	et, Platfo Cl, and US al (9-pin), o ports (li DB-15, or ID) Audio, net on pla cs ST19N t s LEDs of r, power/s ort) ort) andard, of 5% PSU,	ors rm Contro SB) ethernet (ne-in, line be Display Realtek / anar, Intel P18 Trust n front par leep) ne maxim 80 PLUS	Iler Hub [P((RJ-45), -out, mic-in Port ALC662 coo 82579LM ed Platform nel um, autose Bronze gu	 175mm W 24.7 lb (1' 25-liter Toolless s Toolless a Toolless a Illuminate Bay 1 5.2 Bay 2 5.2 Bay 3 3.5 Bay 4 3.5 Slot 1: half-Slot 2: half-Slot 3:	 25-liter Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Disk Bays Bay 1 5.25", 1.6" high, external, for optical Bay 2 5.25", 1.6" high, external, open (optical/t Bay 3 3.5", 1" high, internal, for disk								
				nal capa	city				ThinkServ Setup Utili Diagnostic Network B RAID Con Security c Padlock k padlock p	Softwa er EasySi Pu ty: F1 at st soot: F12 a figuration chip (see i coop (in rea slot (in rea	are Manag tartup ower-On I startup at startup Utility: Ctrl Securi information ar for opt p ar for option	ement Tools ement Tools Hotkey +I at startup ity non left) padlock; emoval) nal	, 	
 → ThinkPlus™ • Onsite set 	and labor eplaceable Un rts ³ , 8 am - 5 p services avail rvice upgrade anty maintena	Li nit (CR m, Mo lable; optior nce se	imited Wa U) parts o n - Fri co see lenov ns (in elig ervices	 padlock prohibits side cover removal) Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) ENERGY STAR® Server 1.1-compliant RoHS-compliant 										

See footnotes for important warranty information US model withdrawn effective March 2012

ThinkServer[®] TS130 (1106) - TopSeller (May 2012) - withdrawn

Personal Systems Reference (PSREF)

Type- model Proces		Memory speed	Memory DIMMs	RAID	Disk bays	Disk size	Disk(s)	SATA optical	Graphics adapter(s)	Windows Server preload		Ann date (mm/dd/y		
106-A4U Core i3	3-2100 1	I333MHz	1x2GB	1	2xDirect C	able 3.5"	2x500GB	No	Intel HD	None	280W	05/29/12		
Processor	• T • T	his small his mode	and med I has a 3-	lium busi year limi) model is µ ty¹	sktop price part of the US 1							
10000001	integra DDR3	ated Intel memory	HD Grap controlle	hics, r (up to 1	333MHz)	·	euciley,		Tower					
mplementation					to one pro				optical		<u> </u>			
Memory	four 24	40-pin DIN	/M socke	ets	1333MHz D				optical					
Additional memory disclaimers	dep		procces		d is the low lory control		d speed, nd installed		disk° ⊐ □ □ ○	0000				
Graphics	Intel H one D	ID Graph isplayPort	ics in pro ™ conne	ocessor, ctor	one analog	VGA DB-1	5 connector,			1 - PCle x16 2 - PCle x1				
Disk bays SATA disk(s)	Two 3.	.5" SATA o 3 , SATA 3	disk bays 0Gb/s_7	, no hot-: 200 rpm	swap, direc	t cable			disk	3 - PCI 4 - PCI				
Optical SATA controller	DVD-F Serial RAID	RÓM DL S ATA, SATA	ATA 1.50 A 3.0Gb/s ort, two S	Gb/s 16X s and SA SATA 6.00	-48X Max ⁴	, integrated	l in chipset,	• R	aven black cc 9"W x 16.0"D]			
Chipset	Intel C		set, Plat	form Co	ntroller Hub	[PCH] (PC	CI Express [®] 2.0	x1, • 24		7mm D x 377mm H) max configuration				
Front ports Rear ports	Two U Six US three a	SB 2.0 SB 2.0, se	rial (9-pir dio ports	n), etherr (line-in,	net (RJ-45), line-out, mi playPort	• To • To • To	olless side c	nd optical drive remo er retention	oval					
Audio Ethernet Security chip	One g STMic	igabit ethe	ernét on nics ST19	planar, Ir	ek ALC662 Intel 82579L Fusted Platfo	M	ə (TPM),	Bay		Disk Bays 6" high, external, fo				
Diagnostics	Two sy	ystem stat	tus LEDs		panel			Bay Bay Bay	/ 3 3.5", 1		or disk	cal/tape)		
Keyboard Mouse		(use USB (use USB							Expansion Slots					
Power supply Cooling	no red		85% PSI	U, 80 PL	US® Bronze		o hot-swap,	Slo [*] Slo [*]	t 2: half-lengt t 3: half-lengt	h, full-height, PCI E: h, full-height, PCI E: h, full-height, 32-bit h, full-height, 32-bit	kpress 2.0 PCI			
										Intel AMT				
								Inte		supported on Xeon-r	()			
								• Th	Sc hinkServer Ea	oftware Managemen syStartup	t Tools			
								• Di • Ne	etup Utility: F1 agnostic: F2 etwork Boot: F AID Configura					
										Security				
								• P	adlock loop (i	see information on le in rear for opt padloc	;k;			
4.0TB with two 2	2TB 3.5	" SATA dis		ternal ca	pacity			• S	ecurity slot (in	its side cover remove n rear for optional licrosaver® cable;	al)			
			Limit	ed Warr	anty			p		cover removal)				
 3-year parts Customer Reselected part 	eplaceat ts ³ , 8 am	ole Unit (C 1 - 5 pm, N	lon - Fri d	coverage	excluding	holidays)		• B • B	oot sequence	e control eyboard, mouse, disl	kette			
 Lenovo Serv Onsite ser 	vice upo	grade opti	ons (in e	ligible lo		us/en/lenovo	o-warranty.html	• U	SB port disat	plement (front or all)				
 Post warra 					arranty peri			EN	ERGY STAR® -IS-compliant	Server 1.1-complia	int			

See footnotes for important warranty information US model announced May 29, 2012 US model withdrawn effective October 2012

ThinkServer™ TS130 (1100) - withdrawn

Type- model	Slot x bay		GHz	Cores / Threads	Memory DIMMs	Memory speed	Disk(s)	Disk size	Pre-cont RAID	Disk bays	SATA optical	Graphics adapter(s)	Windows Server preload	Power supply(s)
1100-12l	J 4x4	Xeon E3-1225	5 3.1	4C/4T	1x2GB	1333MHz	1x250GB	3.5"	No	2xDirect Cable	DVD	Intel HD	None	280W

True server-class reliability and performance at desktop price
This model has a 3-year limited warrantyⁱ

Processor	Intel [®] Xeon [®] E3-1225 processor (4C/4T, 3.1GHz, 6MB Cache), Turbo Boost 2.0 (up to 3.4GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Processor in LGA1155 socket, up to one processor	Tower optical PSU					
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	optical					
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on proccessor memory controller speed and installed memory speed 						
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	0000 1 - PCle x16 2 - PCle x1					
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable 250GB , SATA 3.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	Gisk General case General c					
Chipset	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express [®] 2.0 x1, ethernet MAC, PCI, and USB)	 24.7 lb (11.2kg) max configuration 25-liter 					
Front ports Rear ports	Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort	 Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons 					
Audio Ethernet Security chip Diagnostics	High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)	Disk Bays Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk					
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front)	Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI					
		Intel AMT Intel AMT 7.0 is supported on Xeon-model(s)					
		Software Management Tools					
		ThinkServer EasyStartup					
		Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+I at startup					
		Security Security chip (see information on left) 					
	Max internal capacity	Padlock loop (in rear for opt padlock; padlock prohibits side cover removal)					
4.0TB with two	2TB 3.5" SATA disks	 Security slot (in rear for optional Kensington[®] Microsaver[®] cable; 					
 selected par ⇒ ThinkPlus™ • Onsite ser 	eplaceable Unit (CRU) parts only (with limited onsite service for ts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) services available; see lenovo.com/thinkplus/warranty vice upgrade options (in eligible locations) ⁷	prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) 					
	nty maintenance services lay ¹⁴ toll-free support during the warranty period¹ via 800-426-7378	ENERGY STAR [®] Server 1.1-compliant RoHS-compliant					

See footnotes for important warranty information US model announced May 31, 2011 US model withdrawn effective March 2012

ThinkServer™ TS130 (1098) - withdrawn

Type- model	Slot x bay	Processor	GHz	Cores / Threads	Memory DIMMs	Memory speed	Disk(s)	Disk size	Pre-conf RAID	Disk bays	SATA optical	Graphics adapter(s)	Windows Server preload	Power supply(s)
1098-121	U 4x4	Core i3-2100	3.1	2C/4T	1x2GB	1333MHz	1x250GB	3.5"	No	2xDirect Cable	DVD	Intel HD	None	280W

True server-class reliability and performance at desktop price
This model has a 1-year limited warrantyⁱ

Processor	Intel [®] Core [™] i3-2100 Processor (2C/4T, 3.1GHz, 3MB Cache), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Processor in LGA1155 socket, up to one processor	Tower Optical					
Memory Additional	 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, 	optical					
memory disclaimers	dependent on proccessor memory controller speed and installed memory speed						
Graphics	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector	1 - PCle x16 2 - PCle x1					
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, direct cable 250GB , SATA 3.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	disk 3 - PCI 4 - PCI 4 - PCI • Raven black color; metal case 6.9"W x 16.0"D x 14.9"H • 175mm W x 407mm D x 377mm H					
Chipset	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express [®] 2.0 x1, ethernet MAC, PCI, and USB)	 24.7 lb (11.2kg) max configuration 25-liter 					
Front ports Rear ports	Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort	 Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons 					
Audio Ethernet Security chip	High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant	Disk Bays Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape)					
Diagnostics	Two system status LEDs on front panel (disk drive activity, power/sleep)	Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk					
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified 4 fans (power supply, CPU, rear, front)	Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI					
		Intel AMT					
		Intel AMT 7.0 is supported on Xeon-model(s) Software Management Tools					
		ThinkServer EasyStartup					
		Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+I at startup					
		Security Security chip (see information on left) 					
	Max internal capacity	 Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) 					
4.0TB with two	2TB 3.5" SATA disks	 Security slot (in rear for optional Kensington[®] Microsaver[®] cable; prohibits side cover removal) 					
selected par	eplaceable Unit (CRU) parts only (with limited onsite service for ts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) services available; see lenovo.com/thinkplus/warranty vice upgrade options (in eligible locations) ⁷	 Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) 					
 Post warra ⇒ 24 hour x 7 c 	nty maintenance services lay ¹⁴ toll-free support during the warranty period¹ via 800-426-7378	ENERGY STAR [®] Server 1.1-compliant RoHS-compliant					

See footnotes for important warranty information US model announced May 31, 2011 US model withdrawn effective May 2012

ThinkServer™ TS130 (1105) - TopSeller (February 2012) - withdrawn

Personal Systems Reference (PSREF)

Type- model Proces 1105-3BU E3-1 1105-42U E3-1 1105-43U E3-1 1105-44U E3-1	sor(s) speed DIMMs RAID bays size Disk(s) op 225 1333MHz 1x4GB 1 2xDirect Cable 3.5" 2x1TB D 225 1333MHz 1x4GB 1 2xDirect Cable 3.5" 2x500GB D 225 1333MHz 1x4GB 1 2xDirect Cable 3.5" 2x500GB D 225 1333MHz 1x4GB 1 2xDirect Cable 3.5" 2x500GB D	ATAGraphicsWindows Server preloadPowerAnn date SupplyVDIntel HD2008 Foundations280W02/21/12VDIntel HD2008 R2 STD280W02/14/12VDIntel HDSBS 2011280W02/28/12VDIntel HDSBS 2011280W02/28/12					
	 True server-class reliability and performance at desktop price Part of the US TopSeller™ Program 1-year limited warranty¹ 						
Processor	Intel [®] Xeon [®] E3-1225 processor (4C/4T, 3.1GHz, 6MB Cache), Turbo Boost 2.0 (up to 3.4GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Processor in LGA1155 socket, up to one processor	Tower optical PSU					
Memory Additional memory disclaimers	 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 						
Graphics Disk bays	Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort™ connector Two 3.5" SATA disk bays, no hot-swap, direct cable	000 1 - PCIe x16 2 - PCIe x1 3 - PCI 4 - PCI					
SATA disk(s) Optical SATA controller	500GB or 1TB , SATA 6.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors, two SATA 3.0Gb/s connectors	Raven black color; metal case 6.9"W x 16.0"D x 14.9"H 175mm W x 407mm D x 377mm H					
Chipset Front ports Rear ports	Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express [®] 2.0 x1, ethernet MAC, PCI, and USB) Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort	 24.7 lb (11.2kg) max configuration 25-liter Toolless side cover removal Toolless disk and optical drive removal Toolless dapter retention Illuminated front icons Disk Bays Bay 1 5.25", 1.6" high, external, for optical Bay 2 5.25", 1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI					
Audio Ethernet Security chip Diagnostics	High Definition (HD) Audio, Realtek ALC662 codec One gigabit ethernet on planar, Intel 82579LM STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Two system status LEDs on front panel (disk drive activity, power/sleep)						
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS [®] Bronze qualified 4 fans (power supply, CPU, rear, front)						
		Intel AMT Intel AMT 7.0 is supported on Xeon-model(s)					
		Software Management Tools ThinkServer EasyStartup Power-On Hotkey					
	Genuine Windows Server 2008 R2 Standard ntials: Genuine Windows® Small Business Server 2011 Essentials	Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup RAID Configuration Utility: Ctrl+I at startup Security Security Security chip (see information on left)					
SBS 2011: 4.0TB with two 2	Genuine Windows Small Business Server 2011 Standard Max internal capacity ITB 3.5" SATA disks	 Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security slot (in rear for optional Kensington[®] Microsaver[®] cable; 					
selected parts → Lenovo Servi	Limited Warranty ¹ and labor placeable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ces available; see <u>lenovo.com/services_warranty/us/en/lenovo-warranty.html</u> rice upgrade options (in eligible locations) ⁷	 prohibits side cover removal) Power-on password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) 					
 Post warrar ⇒ 24 hour x 7 da 	ay ¹⁴ toll-free support during the warranty period ¹	ENERGY STAR® Server 1.1-compliant RoHS-compliant					

See footnotes for important warranty information US models announced February 14, 21, or 28, 2012 US models withdrawn effective October 2012

ThinkServer™ TS130 (1105) - TopSeller (November 2011) - withdrawn

Personal Systems Reference (PSREF)

middle bay Processor CHU Threads DIMMs apped Disk(a) size RAD bays optical #adplet(#) proteod supply 106-35U 44 Acc en 5-212.5 3.3 2C/41 L/326B 1333MHz 22006C 3.5 22.Direct Cable D/D Intel HD 2006 Foundations 2800 106-35U 44 Acc en 5-212.5 3.4 4Cort L/326B 1333MHz 23.5 22.Direct Cable D/D Intel HD 2.Direct Cable D/D Intel HD 2.Direct Cable D/D Intel HD Cable Accel															
106-32 U Ad Core (5.2180, 3.3 2C/AT 1:426B 1:333MHz 1:500GB 3.5 2 2:Direct Cable DVD Intel HD 2000 2000 2:Direct Cable DVD 2000 2000 2000 2:Direct Cable		Processor	GHz	Threads			Disk(s)	size	RAID			adapter(s)	preload	Power supply(s	
 These analls and medium business (SMB) models are just of the US TopSeller¹¹⁰ Program These models have a 1-year limited warranty These models have a 1-year limited warranty These models have a 1-year limited warranty The Cost of Graphics. DDRS memory controller (top 10 333MHz) Initel Xoon (25 125 processor (CAC47, 3.16Hz, 6MB Cache), Turbo Boost 2.0 (up to 3.86Hz), integrated in the D Graphics. DDRS memory controller (top 10 333MHz) DDRS memory concessor (CAC47, 3.16Hz, 6MB Cache), Turbo Boost 2.0 (up to 3.86Hz), integrated in the ID Graphics. DDRS memory concessor memory entroller speed and installed memory speed Actual immory operating speed is the lowesp, direct cable Some: 5000E, SATA 300kb, 7200 rpm, 3.5° Some: 5000E, SATA 300kb, 7200 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.5 bash 0 KKB, 700 rpm, 3.5° MR controller FW AB 0.50 bash 0 KKB, 700 rpm, 3.5° MR controll (Stab	1105-37U 4x4 C	Core i3-2120	3.3	2C/4T	1x2GB	1333MHz		3.5"	1	2xDirect Cable	DVD	Intel HD	2008 Foundations	280W 280W 280W	
Integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeo mES 1225 processor (4C4T, 3. foltz, 6NB Cache), DDR3 memory controller (up to 1333MHz) Intel Xeo ES-1275 processor (4C4T, 3. foltz, 6NB Cache), DDR3 memory controller (up to 1333MHz) Intel Xeo ES-1276 processor (4C4T, 3. foltz, 6NB Cache), DDR3 memory controller (up to 1333MHz) Marking and the particular of the Carbon DDR3 memory controller (up to 1333MHz) Marking and the particular of the Carbon DDR3 memory controller (up to 1333MHz) Marking and the particular of the Carbon DDR3 memory controller (up to 1333MHz) Marking and the particular of the Carbon DDR3 memory controller speed and installed memory speed Same Stars (SATA disk pays, no hot-swap, direct cable Same Stars (SATA 3. Gobbs connectors, memory speed Same Stars (SATA 3. Gobbs connectors, memory speed Same Stars (SATA 3. Gobbs connectors, memory speed Same Stars (SATA 3. Gobbs connectors, Same Stars (SATA 3. Gobbs connectors, None (use USB part) Stars (SBL 2. or stars) Stars Stars (SBL 2. or stars) Stars (SBL 2. or stars) Stars) Stars (SBL 2. or stars) Stars) Stars (SBL 2. or stars) Stars) Stars (SBL 2. or stars) Stars		• The	se sn	nall and m	nedium bu	ısiness (SM	B) models			US TopSeller™ .	Program	n			
Alemony 32/36 max, UDIMM, PC3-1060 1333MHz DDR3, ECC. Inter 240-pin DIMM sockets Mathemany - Actual memory operating speed is the lowest installed speed. Inter DG arghphics Annotation memory - Actual memory controller speed and installed speed. Inter DG arghphics Staphics Intel HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort* connector - Raven black color: metal case Visit bays, Some: 500CB, SATA 30Gb's, 7200 rpm, 3.5* - Some XATA 31, 30Gb's and SATA 6, GGb's, integrated in chipset, tash 20, 5, 137A 33, 30Gb's and SATA 6, GGb's, integrated in chipset, tash 20, 5, 137A 33, 30Gb's and SATA 6, GGb's, integrated in chipset, tash 20, 5, at all (spin), ethernet (R1-45), two USB 2.0, sail (spin), ethernet (R1-45), two USB 2.0, and (spin), ethernet (R1-45), two USB 2.0, and (spin), ethernet (R1-45), two USB 2.0, ADE 15, one DisplayPort Disk Bays Two uses used and spin in the C20C Chipset, Platform Controller Hub [PCH] (PCI Express* 2.0 x1, fight, external, open (optical/tape) Bay 2 525*; 16* high, external, open (optical/t	Processor	integrated Ir DDR3 mem Intel Xeon® Turbo Boost DDR3 mem Intel Xeon I Turbo Boost DDR3 mem	tel H ory co E3-1 2.0 (ory co E3-12 2.0 (ory co	D Graphic ontroller (225 proc up to 3.40 ontroller (75 proce up to 3.80 ontroller (optical PSU optical 0 disk 0										
Additional memory isclaimers • Actual memory operating speed is the lowest installed speed, dependent on processor, one analog VGA DB-15 connector, one DisplayPort* connector • Raven black color; metal case • 6.9W x16:0*D x14.9*H The HD Graphics in processor, one analog VGA DB-15 connector, one DisplayPort* connector • Raven black color; metal case • 6.9W x16:0*D x14.9*H Disk keys Disk keys Disk darks Att 0.5 SOTA (isk bays, no hel-swap, nic str Vo AGM 150, SATA 3.0Gb/s, integrated in chipset, Rath 0.5 SOTA 3.0Gb/s connectors. two SATA 3.0Gb/s connectors. two SATA 3.0Gb/s connectors. two SATA 3.0Gb/s connectors. two USB 2.0, serial (9-pin), ethernet (RU-45), Stx USB 2.0, serial (9-pin), ethernet (RU-45), Stx USB 2.0, serial (9-pin), ethernet (RU-45), Stx USB 2.0, serial (9-pin), ethernet (RU-45), Sta	Memory	32GB max,	UDIM	IM, PC3-1	0600 133					1 - PCle					
one DisplayPort** connector 6.9*W 16.0*D x 14.9*H Disk bays ATA disk (bays ATA disk (bays, on hol-swap, direct cable Some: 500GB SXTA 3.050/s 7200 (pm, 3.5 Some: 500GB SXTA 3.050/s 7200 (pm, 3.5 Some: 500GB SXTA 3.050/s 7200 (pm, 3.5 STA 3.050/s connectors, Wo SATA 3.050/s connectors, Wo S	Additional memory disclaimers	 Actual me dependent 	mory it on p	operating	g speed is			d	disk		3 - PCI	e x1			
Dick barg Two 3.5" SATA disk bays, no hot-swap, direct cable -24.7.b (11.28g) max configuration SATA disk (s) Dirk disk(s) Dirk disk(s) Dirk disk(s) SATA confoller Dirk disk(s) Dirk disk(s) Dirk disk(s) SATA confoller Serial ATA, SATA 3 (SDb's (3K-40%), 35" Dirk disk(s) Dirk disk(s) SATA confoller Serial ATA, SATA 3 (SDb's (3K-40%), 35" Dirk disk(s) Dirk disk(s) SATA confoller Serial ATA, SATA 3 (SDb's (3K-40%), 35" Dirk disk(s) Dirk disk(s) SATA confoller Serial ATA, SATA 3 (SDb's (3K-40%), 35" Dirk disk(s) Dirk disk(s) Two (3STA 3 (SDb's (3K-40%), 35") SATA confoller Intel C206 Chipset, Platform Controller Hub (PCH) (PCI Express* 2.0 x1, three analog vGA DB-15, one DisplayPort Disk Bays Disk Bays Tool USS 20, serial (9-pin), three analog VGA DB-15, one DisplayPort Disk DB 2.0, serial (9-pin), three disk DB 2.0 Disk DB 2.0, serial (9-pin), three analog VGA DB-15, one DisplayPort Disk DB 2.0, serial (9-pin), three disk DB 2.0 Stot 1: half-length, till-height, PCI Express 2.0 x16 Stot 1: half-length, till-height, PCI Express 2.0 x16 Stot 2: half-length, talk-height, talk	Graphics					e analog VG	GA DB-15 c	• 6.9"W x 16	.0"D x ²	I4.9"H					
Chipset Intel C206 Chipset, Platform Controller Hub [PCH] (PCI Express [®] 2.0 x1, etherent MAC, PCI, and USB) Torn ports Two USB 2.0 Rear ports Six USB 2.0 serial (P-pin), ethernet (RL-45), three analog audio ports (line-in), ine-out, mic-in) one analog VGA DB 15, one DisplayPort mo-in) one gligabit ethernet on planar, intel 82579LM Bay 1 5.25°, 1.6° high, external, open (optical/tape) Bay 3 3.5°, 1° high, internal, for disk Bay 1 5.25°, 1.6° high, external, open (optical/tape) mo-inst panel (disk drive activity, power/sleep) Stat USE 2.0 serial (P-pin), internal, for disk Diagnostics Two system status LEDs on front panel (disk drive activity, power/sleep) Stot 1: half-length, full-height, PCI Express 2.0 x16 Stot 4: harf.length, full-height, 90P (Second disk drive activity, power/sleep) None (use USB port) Stot 4: half-length, full-height, 32-bit PCI Yower supply One edu oxers (second disk drive activity, power/sleep) Stot 4: half-length, full-height, 32-bit PCI Stot 4: fans (power supply, CPU, rear, front) Stot 4: half-length, full-height, 22-bit PCI Stot 4: half-length, full-height, 92-bit PCI Some: Genuine Windows Server ² 2008 R2 Foundations Nax internal capacity Security chig (see information on left) Power	Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SA Some: 5000 DVD-ROM E Serial ATA, S RAID 0, 1 su	TA dis B , S DL SA SATA uppor	sk bays, r ATA 3.0G TA 1.5Gb 3.0Gb/s a t, two SA	no hot-swa b/s, 7200 b/s 16X-48 and SATA TA 6.0Gb/	rpm, 3.5" 3X Max⁴ Dri 6.0Gb/s, in	 24.7 lb (11.2kg) max configuration 25-liter Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons 								
Torn ports Two USB 2.0 Rear ports Two USB 2.0 Rear ports Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog UGA DB-15, one DisplayPort Nuclio High Definition (HD) Audio, Realtek ALC662 codec Ethernet One gigabit ethernet to no planar, Intel 82579LM Security chip STMEroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Diagnostics None (use USB port) Ower supply One status LEDs on front panel (disk drive activity, powersleep) Geybaard None (use USB port) Yower supply One egabort Yower supply One gigab port) Yower suply	Chipset					oller Hub [P	CH] (PCI E	xpress	[®] 2.0 x1				ave		
Mone (use USB port) Power supply One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified Cooling 4 fans (power supply, CPU, rear, front) Intel AMT Intel AMT <t< td=""><td>Front ports Rear ports Audio Ethernet Security chip Diagnostics</td><td>Two USB 2.0 Six USB 2.0 three analog one analog High Definiti One gigabit STMicroelec TCG 1.2-con Two system (disk drive a</td><td>0 , seria y audi VGA I on (H ether ctronic mplia statu ctivity</td><td>al (9-pin), o ports (li DB-15, or ID) Audio net on pla cs ST19N nt s LEDs o , power/s</td><td>ethernet ine-in, line ne Display , Realtek anar, Intel IP18 Trust n front pa</td><td>e-out, mic-ir /Port ALC662 co 82579LM ted Platform</td><td>Bay 2 5.2 Bay 3 3.5 Bay 4 3.5 Slot 1: half-li Slot 2: half-li Slot 3: half-li</td><td colspan="5">Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI</td></t<>	Front ports Rear ports Audio Ethernet Security chip Diagnostics	Two USB 2.0 Six USB 2.0 three analog one analog High Definiti One gigabit STMicroelec TCG 1.2-con Two system (disk drive a	0 , seria y audi VGA I on (H ether ctronic mplia statu ctivity	al (9-pin), o ports (li DB-15, or ID) Audio net on pla cs ST19N nt s LEDs o , power/s	ethernet ine-in, line ne Display , Realtek anar, Intel IP18 Trust n front pa	e-out, mic-ir /Port ALC662 co 82579LM ted Platform	Bay 2 5.2 Bay 3 3.5 Bay 4 3.5 Slot 1: half-li Slot 2: half-li Slot 3: half-li	Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI							
No redundancy, 85% PSU, 80 PLUS® Bronze qualified Cooling 4 fans (power supply, CPU, rear, front) Intel AMT 7.0 is supported on Xeon-model(s) Software Management Tools ThinkServer EasyStartup Power-On Hotkey Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup Nax internal capacity 4.0TB with two 2TB 3.5" SATA disks Limited Warranty' Year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts", 6 am - 5 pm, Mon - Fri coverage excluding holidays) Lenovo Services available; see lenovo.com/services, warranty/us/en/lenovo-warranty.html Onsite service upgrade options (in eligible locations)' Power-On disablement (front or all) ENERGY STAR® Ser	Mouse	None (use L	JSB p	ort)	no mavim	um autose	nsina no h	ot-swa	n						
Software Management Tools • ThinkServer EasyStartup Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+1 at startup • Security • Network Boot: F12 at startup • Security • Network Boot: F12 at startup • Security chip (see information on left) • 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) • Outsite Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) • Lenovo Services available; see lenovo.com/services, warranty/us/en/lenovo-warranty.html • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services	,	no redundar	1cy, 8	5% PSU,	80 PLUS	Bronze qu		01-3000	ιp,	Intel AMT 7.0) is sup				
Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup	e coming			,p.), c. c	,	,				ThinkServe			gement Tools		
Preloaded Operating System . Security chip (see information on left) Some: Genuine Windows Server® 2008 R2 Foundations . Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) 4.0TB with two 2TB 3.5" SATA disks . Limited Warranty1 • 1-year parts and labor . Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) • 1-year parts and labor . Dustomer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) • Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html . Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services . ENERGY STAR® Server 1.1-compliant										Diagnostic: Network Bo	/: F1 at F2 at s ot: F12	startup tartup at startup			
Some: Genuine Windows Server® 2008 R2 Foundations • Security clip (see Information of rein) Max internal capacity • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) 4.0TB with two 2TB 3.5" SATA disks • Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) • 1-year parts and labor • Power-on password • Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) • Doot sequence control • Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html • Onsite service upgrade options (in eligible locations)? • Post warranty maintenance services Image: Server 1.1-compliant			Prel	oaded Or	perating !	Svstem					in /		,		
selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html Onsite service upgrade options (in eligible locations) ⁷ Post warranty maintenance services ENERGY STAR [®] Server 1.1-compliant	Some: Genuine Windows Server® 2008 R2 Foundations Max internal capacity 4.0TB with two 2TB 3.5" SATA disks Limited Warranty ¹ Tyear parts and labor									 Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security slot (in rear for optional Kensington[®] Microsaver[®] cable; prohibits side cover removal) Power-on password 					
Post warranty maintenance services ENERGY STAR® Server 1.1-compliant	selected part	ts ³ , 8 am - 5 pr ices available	n, Mo ; see	on - Fri co lenovo.con	verage ex n/services_	cluding hol	idays)		ntml	Serial port I/O control					
	 Post warra 	nty maintena	ice s	ervices	·							erver 1.1-c	ompliant		

See footnotes for important warranty information US models announced November 29, 2011 US models withdrawn effective March or October 2012

ThinkServer™ TS130 (1105) - TopSeller (July 2011) - withdrawn

Personal Systems Reference (PSREF)

Type- Slot x model bay	Cores / Memory Mem Processor GHz Threads DIMMs spec		k Pre-con RAID	f Disk bays	SATA optical		Windows Server preload	r Power supply(s)	
1105-17U 4x4 1105-20U 4x4	Core i3-2100 3.1 2C/4T 1x2GB 1333N Keon E3-1235 3.2 4C/8T 1x4GB 1333N			2xDirect Cable 2xDirect Cable	DVD DVD	Intel HD Intel HD	None None	280W 280W	
	 True server-class reliability and per These small and medium business These models have a 1-year limited 	(SMB) models are p		e US TopSeller™	Progran	n			
Processor	Intel [®] Core [™] i3-2100 Processor (2C/4T, 3. integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon [®] E3-1235 processor (4C/8T, 3. Turbo Boost 2.0 (up to 3.6GHz), integrated DDR3 memory controller (up to 1333MHz) Processor in LGA1155 socket, up to one pr	2GHz, 8MB Cache), Intel HD Graphics,	,	Tower optical optical	•	F	PSU		
Memory Additional	32GB max, UDIMM, PC3-10600 1333MHz I four 240-pin DIMM sockets • Actual memory operating speed is the low dependent on proccessor memory control	vest installed speed,			Ô				
memory disclaimers	memory speed	nier speed and instal			1 - PCle 2 2 - PCle 2 3 - PCl				
Graphics	Intel HD Graphics in processor, one analog one DisplayPort™ connector		ctor,	disk		4 - PCI			
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA disk bays, no hot-swap, dired None DVD-ROM DL SATA 1.5Gb/s 16X-48X Max Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/ RAID 0, 1 support, two SATA 6.0Gb/s conne two SATA 3.0Gb/s connectors	⁴ Drive s, integrated in chips	 Raven black color; metal case 6.9"W x 16.0"D x 14.9"H 175mm W x 407mm D x 377mm H 24.7 lb (11.2kg) max configuration 25-liter 						
Chipset	Intel C206 Chipset, Platform Controller Hu ethernet MAC, PCI, and USB)	b [PCH] (PCI Expres	ss [®] 2.0 x ⁻	 Toolless a 	isk and o dapter re	ptical drive tention	removal		
Front ports Rear ports	Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45 three analog audio ports (line-in, line-out, m one analog VGA DB-15, one DisplayPort			Illuminated		Disk Ba			
Audio Ethernet Security chip	High Definition (HD) Audio, Realtek ALC662 One gigabit ethernet on planar, Intel 82579 STMicroelectronics ST19NP18 Trusted Plat TCG 1.2-compliant	M		Bay 2 5.2 Bay 3 3.5	Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk				
Diagnostics	Two system status LEDs on front panel (disk drive activity, power/sleep)			Slot 1: half-	Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16				
Keyboard Mouse Power supply Cooling	None (use USB port) None (use USB port) One 280 watts standard, one maximum, au no redundancy, 85% PSU, 80 PLUS® Bronz 4 fans (power supply, CPU, rear, front)	tosensing, no hot-sw e qualified	/ap,	Slot 2: half-lenğth, full-heiğht, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI					
				Intel AMT 7.	0 is supr	Intel All	MT eon-model(s)		
				ThinkServe		0	ement Tools		
		 Setup Utilit Diagnostic Network Be RAID Conf 	y: F1 at : F2 at st oot: F12	artup at startup					
				 Security c Padlock lo 	op (in re	ar for opt p	on left) adlock;		
4.0TB with two	Max internal capacity 2TB 3.5" SATA disks	 Security's 	lot (in rea	ide cover re ar for option saver® cable	ial [´]				
selected par ⇒ Lenovo Serv • Onsite serv	placeable Unit (CRU) parts only (with limited s ³ , 8 am - 5 pm, Mon - Fri coverage excluding ices available; see lenovo.com/services_warranty vice upgrade options (in eligible locations) ⁷	prohibits s Power-on Boot sequ Boot witho Serial por USB port	side cove passwor ence cor out keybo t I/O con disablem	er removal) d ntrol pard, mouse trol nent (front o	e, diskette r all)				
	nty maintenance services ay ¹⁴ toll-free support during the warranty per	iod ¹		ENERGY S RoHS-comp		rver 1.1-co	mpliant		

See footnotes for important warranty information US models announced July 12, 2011 US models withdrawn effective October 2012

ThinkServer™ TS130 (1098) - November 2011 - withdrawn

Personal Systems Reference (PSREF)

Type- Slot x model bay	Processor GH	Cores / z Threads	Memory DIMMs	Memory speed	Disk(s)	Disk size	Pre-conf RAID	Disk bays	SATA optical		Windows Serve preload	r Power supply(s)		
1098-30U 4x4	Xeon E3-1225 3.1 Core i3-2120 3.3	4C/4T	1x2GB 1x2GB	1333MHz 1333MHz	No No	3.5" 3.5"	No No	2xDirect Cable 2xDirect Cable	DVD	Intel HD Intel HD	None None	280W 280W		
				and perform limited war		esktop	price							
Processor	Intel [®] Core™ i3 integrated Intel I DDR3 memory 0 Intel Xeon [®] E3- Turbo Boost 2.0 DDR3 memory 0 Processor in LG	HD Graphic controller (1225 proc (up to 3.40 controller (cs, up to 1333 essor (40 GHz), inte up to 1333	3MHz) 2/4T, 3.1GH z grated Intel 3MHz)	z, 6MB Ca HD Graph	che),		Tower optical optical			PSU			
Memory	32GB max, UDI					$\hat{\circ}$	0 0000							
Additional memory disclaimers	 four 240-pin DIN Actual memori dependent on memory spee 	y operating proccesso	g speed is			əd			1 - PCle 2 - PCle 3 - PCl					
Graphics	Intel HD Graph one DisplayPort			e analog VG	A DB-15 c	tor,	disk		4 - PCI					
Disk bays SATA disk(s) Optical SATA controller	Two 3.5" SATA o None DVD-ROM DL S Serial ATA, SAT/ RAID 0, 1 suppo two SATA 3.0Gb	ATA 1.5Gb A 3.0Gb/s a ort, two SA	o/s 16X-48 and SATA TA 6.0Gb/	3X Max⁴ Driv 6.0Gb/s, int	/e egrated in	 Raven black color; metal case 6.9"W x 16.0"D x 14.9"H 175mm W x 407mm D x 377mm H 24.7 lb (11.2kg) max configuration 25-liter Toolless side cover removal 								
Chipset Front ports Rear ports	Intel C206 Chip ethernet MAC, F Two USB 2.0 Six USB 2.0, se	PCI, and Us	SB) , ethernet	(RJ-45),		xpress	s [®] 2.0 x1		sk and o lapter re	optical drive etention ons				
Audio Ethernet Security chip	three analog au one analog VGA High Definition (One gigabit ethe STMicroelectror TCG 1.2-compli	ADB-15, or HD) Audio ernet on pla hics ST19N ant	ne Display , Realtek anar, Intel IP18 Trust	Port ALC662 coc 82579LM ed Platform	lec	ſPM),		Bay 2 5.2 Bay 3 3.5	Baý 2 5.25",1.6" hiğh, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk Bay 4 3.5", 1" high, internal, for disk					
Diagnostics	Two system stat (disk drive activi	ty, power/s		nel				Expansion Slots Slot 1: half-length, full-height, PCI Express 2.0 x16						
Keyboard Mouse Power supply Cooling	None (use USB None (use USB One 280 watts s no redundancy, 4 fans (power su	port) tandard, o 85% PSU,	80 PLUS	Bronze qua		iot-swa	ıp,	Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI Slot 4: half-length, full-height, 32-bit PCI						
										Intel A				
								Intel AMT 7.			(eon-model(s)			
								ThinkServe		•	ement Tools			
									ThinkServer EasyStartup Power-On Hotkey Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup RAID Configuration Utility: Ctrl+I at startup					
										Securi	•			
Max internal capacity									 Security chip (see information on left) Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Security slot (in rear for optional 					
4.01 B with two	2TB 3.5" SATA dis							Kensingtor	ומ® Micro	saver® cabl				
 Customer Reselected par Lenovo Serv Onsite serv 	Limited Warranty ¹ ⇒ 1-year parts and labor ⇒ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ⇒ Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html • Onsite service upgrade options (in eligible locations) ⁷									er removal) d ntrol pard, mouse trol nent (front c				
 Post warra 	anty maintenance day ¹⁴ toll-free supp	services						ENERGY ST RoHS-comp		erver 1.1-co	mpliant			

See footnotes for important warranty information US models announced November 29, 2011 US models withdrawn effective March or October 2012

ThinkServer™ TS130 (1105) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

1105-151 444 Core (3-2100) 31 2/11 1/2/26B 3/33MHz 1/2/260B 3/3 2/201red Cable DVD Intel HD 280W 1105-161 444 Xeon E3-1225 31 4/2/41 1/2/26B 3/33MHz 1/2/2/26GB 3/3 2/201red Cable DVD Intel HD 280W 1105-161 444 Xeon E3-1225 32 4/2/81 1/2/3/81 2/2/0/26 Cable DVD Intel HD 2/80W 105-161 444 Xeon E3-1225 32 4/2/81 1/2/8/81 2/8/84 <								
1105-150 Adv Aven E3-122 3.1 4 (CAT 1 226B 1333MHz 1225006 3.5 1 20/med Cable DVD Intel HD 2008 Foundations 2000 2009 1105-150 Adv Aven E3-122 3.1 4 (CAT 1 426B 1333MHz 1225006 3.5 1 20/med Cable DVD Intel HD 2008 Foundations 2000 2009 1105-150 Adv Aven E3-123 3.1 4 (CAT 1 446B 1333MHz 1225006 3.5 1 20/med Cable DVD Intel HD 2008 Foundations 2000 2009 1105-150 Adv Aven E3-123 3.1 4 (CAT 1 446B 1333MHz 1225006 3.5 1 20/med Cable DVD Intel HD 2008 Foundations 2000 2000 1105-150 Adv Aven E3-123 3.1 4 (CAT 1 446B 1333MHz 1225006 3.5 1 20/med Cable DVD Intel HD 2008 Foundations 2000 2000 1105-150 Adv Aven E3-123 2.1 4 (CAT 1 446B 1333MHz 1225006 3.5 1 20/med Cable DVD Intel HD 2008 Foundations 2000 2000 1105-150 Adv Aven F3-123 2.0 # Core 1 43.0 Hz 2.0 HZ Cable J 2000 2000 2000 1105-150 Adv Aven F3-123 2.0 # Core 1 43.0 Hz 2.0 HZ Cable J 1005 Hz 2.0								
Processor Intel Core ** 13-2100 Processor (2C/4T, 3.1GHz, 3MB Cache), mograted Intel HD Graphics, Direct Core ** 13-2100 Processor (2C/4T, 3.1GHz, 3MB Cache), model Anne a 1-yeak integrated Intel HD Graphics, Direct Xee To Service Core (2C/4T, 3.1GHz, 3MB Cache), Turbo Boost 2.0 (up to 3.4GHz), integrated Intel HD Graphics, Direct Xee To Service Core (2C/4T, 3.1GHz, 3MB Cache), Turbo Boost 2.0 (up to 3.4GHz), integrated Intel HD Graphics, Direct Xee To Service Core (2C/4T, 3.1GHz, 3MB Cache), Turbo Boost 2.0 (up to 3.4GHz), integrated Intel HD Graphics, Direct Xee To Service Core (2C/4T, 3.1GHz, 3MB Cache), Turbo Boost 2.0 (up to 3.3GHz), MB Ca	1105-18U 4x4 X 1105-19U 4x4 X 1105-1AU 4x4 X 1105-1BU 4x4 X 1105-1CU 4x4 X 1105-1CU 4x4 X	Beon E3-1225 3.1 4C/4T 1x2GB 1333MHz 1x250GB 3.5" 22 Beon E3-1225 3.1 4C/4T 1x2GB 1333MHz 2x250GB 3.5" 1 22 Beon E3-1225 3.1 4C/4T 1x2GB 1333MHz 2x250GB 3.5" 1 22 Beon E3-1235 3.2 4C/8T 1x4GB 1333MHz 1x500GB 3.5" 1 22 Beon E3-1275 3.4 4C/8T 1x4GB 1333MHz 2x250GB 3.5" 1 22 Beon E3-1225 3.1 4C/4T 1x4GB 1333MHz 1x500GB 3.5" 1 22 Beon E3-1235 3.2 4C/8T 1x4GB 1333MHz 2x250GB 3.5" 1 22 Beon E3-1245 3.3 4C/8T 1x4GB 1333MHz 2x250GB 3.5" 1 22 Beon E3-1245 3.3 4C/8T 1x4GB 1333MHz 1x500GB 3.5" 2	AxDirect CableDVDIntel HD280WAxDirect CableDVDIntel HD2008 Foundations280WDVDDVDIntel HD280WAxDirect CableDVDIntel HD280WAxDirect CableDVDIntel HD280WAxDirect CableDVDIntel HD280WDYDDVDIntel HD280WAxDirect CableDVDIntel HD280WDYDIntel HD280WAxDirect CableDVDIntel HD280W					
integrated intel HD Graphics, DDRS memory controller (up to 1333MHz) Intel Xeon E3-1225 processor (4C/87, 3 C4Fz, 6MB Cache), Truto Boost 2,0 (up 5 03-66Hz), Intel Xeon E3-1225 processor (4C/87, 3 C4Fz, 6MB Cache), Truto Boost 2,0 (up 5 03-66Hz), Intel Xeon E3-1225 processor (4C/87, 3 C4Fz, 6MB Cache), Truto Boost 2,0 (up 5 03-66Hz), Intel Xeon E3-1225 processor (4C/87, 3 C4Fz, 6MB Cache), Truto Boost 2,0 (up 5 03-66Hz), Intel Xeon E3-1225 processor (4C/87, 3 C4Fz, 6MB Cache), Truto Boost 2,0 (up 5 03-66Hz), Intel Xeon E3-1275 processor (4C/87, 3 C4Fz, 6MB Cache), Truto Boost 2,0 (up 5 03-66Hz), Intel Xeon E3-1275 processor (4C/87, 3 C4Fz, 6MB Cache), Truto Boost 2,0 (up 5 03-66Hz), Intel Xeon E3-1275 processor (120 hold) asolates to r240-(p) DMM sockets - Reven black color; metal case - 6, 20 wr 16, 00 x 14, 9TH - 120 mm V 4, 20 wr 16, 00 km - 120 mm V 4, 20 wr 16, 00 km - 120 mm V 4, 20 wr 16, 00 km - 120 mm V 4, 20 wr 16, 00 km - 120 mm V 4, 20 wr 16, 00 km - 120 mm V 4, 20 wr 16, 00 km - 120 mm V 4, 20 wr 16, 00 km - 120 mm V 4, 20 wr 16, 00 km - 120 mm V 4, 20 wr 16, 00 km - 120 mm V 4, 20 wr 16, 00 km - 20 wr 100 km V 4, 20 wr 10, 00 km - 20 wr 100 km V 4, 20 wr 10, 00 km - 20 wr 100 km V 4, 20 wr		 These small and medium business (SMB) models are part of the U 	IS TopSeller™ Program					
Memory declarational memory ended for the second status of the	Processor	integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon® E3-1225 processor (4C/4T, 3.1GHz, 6MB Cache), Turbo Boost 2.0 (up to 3.4GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon E3-1235 processor (4C/8T, 3.2GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.6GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon E3-1245 processor (4C/8T, 3.3GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.7GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon E3-1275 processor (4C/8T, 3.4GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.8GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon E3-1275 processor (4C/8T, 3.4GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.8GHz), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz)	optical Image: Constraint of the second se					
Method Solid Hab, Colimin, PC-3 10000 ISSSMP2 DDRs, ECC.	Implementation							
Additional memory dependent on processor memory controller speed and installed memory speed	Memory							
One DisplayFortific connector Toolless adapter releation Disk bays Two 3.5" SATA disk bays, no hot-swap, direct cable SATA disk(1) 250GB or SUGB, SATA 3.0Gb/s, 7200 rpm, 3.5" Disk bays 250GB or SUGB, SATA 3.0Gb/s, 7200 rpm, 3.5" Disk bays Disk Bays SATA controller None (Job Send SATA O.Gb/s, rutegrated in chipset, FAD Disk Bays All controller Hule C206 Chipset, Platform Controller Hub [PCH] (PCI Express* 2.0.x1, ethernet McK, PCI, and USB) Front ports Two USB 2.0 Rear ports Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog (SG AD E1, one DisplayPort Audio High Definition (HD) Audio, Realtek ALC662 codec One giasub ethernet on planar, Intel S2579LM Security chip Stot US borth Stot US - compliant Two system status LEDs on front panel Keyboard None (use USB port) None (use USB port) None (use USB port) Power Supply One 280 watts standard, one maximum, autosensing, no hot-swap, no redundarcy, 85% PSU, 80 PULS* Max Internal capacity Security chip (see information on left) None (use USB port) Security chip (see information on left) Preloaded Operating System Sec	Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed 	 24.7 lb (11.2kg) max configuration 25-liter Toolless side cover removal 					
Disk bays Two 3.5" SAIA disk bays, no hot-swap, direct cable SATA disk! 250GB or 500GB, SAIA 3.0Gb/s, 7200 rpm, 3.5" Dytical DVD-ROM DL SATA 1.5Gb/s 16X-48X Max* Drive SATA orisk! DVD-ROM DL SATA 1.5Gb/s 16X-48X Max* Drive SATA controller Serial ATA, SATA 3.0Gb/s, 7200 rpm, 3.5" Dytical DVD-ROM DL SATA 1.5Gb/s 16X-48X Max* Drive SATA controller Serial ATA, SATA 3.0Gb/s, 7200 rpm, 3.5" Dytical Serial ATA, SATA 3.0Gb/s, 7200 rpm, 3.5" Dytical Solve Sata Sata Sata Sata Sata Sata Sata Sat	Graphics		Toolless disk and optical drive removal Toolless adapter retention					
Chipset Inter Code Chipset, Platform Control Prof. (PCI Explass 2.0 x1, ethernet MAC, PCI, and USB) Front ports Two USB 2.0 Rear ports Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DE 15, one DisplayPort Audio High Definition (HD) Audio, Realtek ALC662 codec Ethernet One gigabit ethernet on planar, Intel 82579LM Security chip STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Diagnostics Two system status LEDs on front panel (disk drive activity, power/sleep) Keyboard None (use USB port) None (use USB port) Nouse None (use USB port) Mouse None (use USB port) Power Supply One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS* Bronze qualified Cooling 4 fans (power supply, CPU, rear, front) Max internal capacity Security chip (see information on left) Sceurity chip (see information on plast) Security chip (see information on all) Max internal capacity Security chip (see information on optional Kensington* Microseaver* cable, prohibits side cover removal) • Limited Warranty* - Aldock loop (in rear for opt padlock; padlock prohibits (in cer or optional Kensington	Disk bays SATA disk(s) Optical SATA controller	250GB or 500GB, SATA 3.0Gb/s, 7200 rpm, 3.5" DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Serial ATA, SATA 3.0Gb/s and SATA 6.0Gb/s, integrated in chipset, RAID 0, 1 support, two SATA 6.0Gb/s connectors,	Bay 1 5.25",1.6" high, external, for optical Bay 2 5.25",1.6" high, external, open (optical/tape) Bay 3 3.5", 1" high, internal, for disk					
Front ports Two USB 2.0 Rear ports Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort Slot 1: half-length, full-height, PCI Express 2.0 x1 Audio High Definition (HD) Audio, Reatlek ALC662 codec Slot 2: half-length, full-height, s2-bit PCI Security chip STMicroelectronics ST19NP18 Trusted Platform Module (TPM), TCG 1.2-compliant Intel AMT Diagnostics Two system status LEDs on front panel Intel AMT 7.0 is supported on Xeon-model(s) Keyboard None (use USB port) None (use USB port) Power supply One equadancy, 85% PSU, 80 PLUS® Bronze qualified Software Management Tools Cooling 4 fans (power supply, CPU, rear, front) ThinkServer EasyStartup Power-On Hotkey Security chip :F1 at startup Network Boct: F12 at startup Nome (use USB port) Max internal capacity Security chip (see information on left) Padlock loop (in rear for optional Keyboard Max internal capacity Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) * 1-year parts and labor Limited Warranty Power-on password Security chip (see information on all) * 1-year parts and labor Limited warranty Power-on password	Chipset							
TCG 1.2-compliant Intel AWI Diagnostics Two system status LEDs on front panel (disk drive activity, power/sleep) Intel AMT 7.0 is supported on Xeon-model(s) Keyboard None (use USB port) Nouse Software Management Tools Power supply One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified • ThinkServer EasyStartup Cooling 4 fans (power supply, CPU, rear, front) • Setup Utility: F1 at startup Network Boot: F12 at startup • Network Boot: F12 at startup Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+1 at startup Some: Genuine Windows Server® 2008 R2 Foundations • Security chip (see information on left) • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) • Security slot (in rear for opt padlock; padlock loop (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) # 1-year parts and labor • Limited Warranty1 • Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) # 1-year parts and labor • Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html • Power-on password • Dost without keyboard, mouse, diskette • Server 1.1-compliant • Onsite service upgrade options (in eligible locations)? • Warranty maintenance serv		Two USB 2.0 Six USB 2.0, serial (9-pin), ethernet (RJ-45), three analog audio ports (line-in, line-out, mic-in) one analog VGA DB-15, one DisplayPort High Definition (HD) Audio, Realtek ALC662 codec	Slot 1: half-length, full-height, PCI Express 2.0 x16 Slot 2: half-length, full-height, PCI Express 2.0 x1 Slot 3: half-length, full-height, 32-bit PCI					
(disk drive activity, power/sleep) Software Management Tools Keyboard Mouse None (use USB port) Power supply Cooling None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified • ThinkServer EasyStartup Cooling 4 fans (power supply, CPU, rear, front) • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot. F12 at startup Preloaded Operating System Some: Genuine Windows Server® 2008 R2 Foundations • Security chip (see information on left) • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) Max internal capacity • Security chip (see information on left) • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) * 1-year parts and labor * Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ⁸ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) * Lenovo Services available; see lenovo.com/services warranty/us/en/lenovo-warranty.html • Onsite service upgrade options (in eligible locations) ⁷ • Dest warranty maintenance services • Dost warranty maintenance services • ENERGY STAR® Server 1.1-compliant		TCG 1.2-compliant						
Keyboard Mouse None (use USB port) None (use USB port) • ThinkServer EasyStartup Power supply One 280 watts standard, one maximum, autosensing, no hot-swap, no redundancy, 85% PSU, 80 PLUS® Bronze qualified • ThinkServer EasyStartup Cooling 4 fans (power supply, CPU, rear, front) • Setup Utility: F1 at startup Network Boot: F12 at startup • Network Boot: F12 at startup • Network Boot: F12 at startup • Network Boot: F12 at startup • None (use USB port) • RalD Configuration Utility: Ctrl+1 at startup • None (use USB port) • Security • Network Boot: F12 at startup • Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+1 at startup • Security chip (see information on left) • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) • Security slot (in rear for opt padlock; padlock prohibits side cover removal) • Limited Warranty1 • Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) • Power-on password • Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts® at an l		(disk drive activity, power/sleep)						
no redundancy, 85% PSU, 80 PLUS® Bronze qualified • Setup Utility: F1 at startup Cooling 4 fans (power supply, CPU, rear, front) • Network Boot: F12 at startup • Network Boot: F12 at startup • Network Boot: F12 at startup • Network Boot: F12 at startup • Network Boot: F12 at startup • Network Boot: F12 at startup • Network Boot: F12 at startup • Network Boot: F12 at startup • Network Boot: F12 at startup • RAID Configuration Utility: Ctrl+1 at startup • Recurity • Security chip (see information on left) • 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) • Security slot (in rear for optional Kensington® Microsaver® cable; prohibits side cover removal) • 1-year parts and labor • Power-on password • Boot sequence control • Lenovo Services available; see lenovo.com/services_warranty/lus/en/lenovo-warranty.html • Serial port I/O control • USB port disablement (front or all) • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services • ENERGY STAR® Server 1.1-compliant	Keyboard Mouse Power supply	None (use USB port) One 280 watts standard, one maximum, autosensing, no hot-swap,	ThinkServer EasyStartup					
Preloaded Operating System Security chip (see information on left) Some: Genuine Windows Server® 2008 R2 Foundations Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) 4.0TB with two 2TB 3.5" SATA disks Security slot (in rear for optional kensington® Microsaver® cable; prohibits side cover removal) ✓ 1-year parts and labor Power-on password ✓ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Boot sequence control ✓ Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html USB port disablement (front or all) • Post warranty maintenance services ENERGY STAR® Server 1.1-compliant	Cooling	no redundancy, 85% PSU, 80 PLUS® Bronze qualified	Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup					
Some: Genuine Windows Server® 2008 R2 Foundations • Security Chip (see Information of the ft) • Padlock loop (in rear for opt padlock; padlock prohibits side cover removal) • Padlock loop (in rear for optional kensington® Microsaver® cable; prohibits side cover removal) • Security slot (in rear for optional kensington® Microsaver® cable; prohibits side cover removal) • 1-year parts and labor • Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) • Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services			Security					
Max internal capacity padlock prohibits side cover removal) 4.0TB with two 2TB 3.5" SATA disks Security slot (in rear for optional kensington® Microsaver® cable; prohibits side cover removal) • 1-year parts and labor Power-on password • Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Power-on password • Lenovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html • Serial port I/O control • Onsite service upgrade options (in eligible locations) ⁷ • USB port disablement (front or all) • Post warranty maintenance services ENERGY STAR® Server 1.1-compliant	Some: Genuine	1 0)						
4.01B with two 21B 3.5° SATA disks Kensington® Microsaver® cable; prohibits side cover removal)			padlock prohibits side cover removal)					
	 → 1-year parts a → Customer Reselected part → Lenovo Servi • Onsite servi 	Limited Warranty ¹ nd labor blaceable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ses available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html ice upgrade options (in eligible locations) ⁷	Kensington® Microsaver® cable; prohibits side cover removal) • Power-on password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (front or all)					
			RoHS-compliant					

See footnotes for important warranty information US models announced May 31, 2011 US models withdrawn effective March or October 2012

ThinkServer



Lenovo ThinkServer TS430 (Four 3.5"Hot-swap and Fixed PSU)



Lenovo ThinkServer TS430 (Redundant PSU)



Lenovo ThinkServer TS430

ThinkServer® TS430 Fixed PSU (0390) - TopSeller (June 12, 2012)

Type- model Processor	Memory Memory Pre-conf Disk Disk Disk Disk (MHz/type) DIMMs RAID controller type size bays	SATA Intelligent System Preload Disk(s) optical Diagnostics TPM mgmt OS
	(MHz/type) DIMMs RAID controller type size bays V2 1333MHz UDIMM 1x4GB No Intel PCH SATA 3.5" 4xHot-swa	
	V2 1333MHz UDIMM 1x4GB No 500 SATA/SAS 3.5" 4xHot-swa	The second
0390-18U Core i3-2120	1333MHz UDIMM 1x4GB No Intel PCH SATA 3.5" 4xHot-swa	
		ap 2x500GB SATA DVD±RW No TPM KVM SBS 2011
<0390-1AU Xeon E3-1220	V2 1333MHz UDIMM 1x4GB No Intel PCH SATA 3.5" 4xHot-swa	ap 2x500GB SATA DVD±RW No TPM KVM 2008 R2 STD
Processor	Up to one processor, one processor standard, Intel [®] Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache),	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	integrated Intel HD Graphics 2000, DDR3 memory controller (up to	◎····· ==
	1333MHz) Intel Xeon [®] E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache),	optical/tape
	Turbo Boost 2.0 (up to 3.5GHz), DDR3 memory controller (up to	std optical
	1600MHz)	
	Intel [®] Xeon E3-1240V2 processor (4C/8T, 3.4GHz, 8MB Cache),	Disk Bay
	Turbo Boost 2.0 (up to 3.8GHz), DDR3 memory controller (up to 1600MHz)	7-10
Implementation	One LGA1155 socket	4 - PCle x16
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	Disk Bay Disk Bay 3 - PCIe x8
	four 240-pin DIMM sockets	3-6 3-10 2 - PCle x8 1 - PCl
Additional memory	 Actual memory operating speed is the lowest installed speed, 	
disclaimers	dependent on processor memory controller speed and installed memory speed	3.5" disk bay models:
Graphics	Onboard Aspeed AST2150 graphics/management processor,	Bay 1 5.25", 1.6" high, external, open (optical/tape)
Graphics	one VGA DB-15 on rear:	Bay 2 5.25", 1.6" high, external, std optical
	Maximum resolution: 1600x1200@60Hz	Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable	Bay 5 3.5", 1" high, external, for disk
,	Some: Four 3.5" hot-swap (HS) SATA disk bays	Bay 6 3.5", 1" high, external, for disk
	Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays	Bay 7-10 are available on Eight 3.5" disk bay models:
	Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset,	Bay 9 3.5", 1" high, external, for disk
Disk controller	RAID ⁸ 0, 1, 10 support;	Bay 10 3.5", 1" high, external, for disk
	RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i),	2.5" disk bay models:
	PCI Express [®] bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support	Bay 1 5.25", 1.6" high, external, open (optical/tape)
	<i>Upgrade for 500:</i> Additional upgrade key for RAID 500 adapter,	Bay 2 5.25", 1.6" high, external, std optical
	add RAID 5, 50 support	Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk
	(RAID 50 is available on eight disk bays model only)	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Disk(s)	<i>3.5" SATA:</i> SATA 6.0Gb/s, 7200 rpm	Bay 6 2.5", 0.6" high, external, for disk
	3.5" SAS: SAS 6.0Gb/s, 15000 rpm	Bay 7 2.5", 0.6" high, external, for disk
Terra a shift or	2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 10 2.5", 0.6" high, external, for disk
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	
Diskette	None (use USB port)	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Slot 3 half-length, full-height, PCI Express 2.0 x8 - Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	* x4 electrical
Extender card		** x8 electrical
Front ports Rear ports	Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is	
riour porto	shared with system management), one analog VGA DB-15 connector	
Intelligent Diagnostics	IDM model(s): add-on Intelligent Diagnostics Module for	-
Module (IDM)	advanced diagnostics,	
Suctomo mamt	IDM LED lights indicate failing component category	
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC);	
	KVM model(s): add-on KVM card for KVM functions	
Security chip	No onboard TPM chip;	
	TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prereguisites	Monitor, SATA/SAS disk, OS	-
Keyboard	None (use USB port)	
Mouse	None (use USB port)	
Power supply	One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	Software Management Tools
Mechanical	Tower, business black color, metal case	ThinkServer EasyStartup ThinkServer EasyManage
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	ThinkServer EasyManage
System weight	61.7 lb (28kg) max configuration	Security
Tool-less	Side cover removal, disk and optical drive removal,	Security chip (selected models, see information on left)
Rack mount	system fan removal Rack-mountable to 5U	Administrator password
Limited warranty	3-year parts and labor; more Lenovo Services information see S-TOR	User password Front panel key lock
Accessories	For more accessories, see O-TOR sheet	Boot sequence control
		 Boot without keyboard, mouse, diskette
	Preloaded Operating System	Serial port I/O control USB port disablement (all)
2008 R2 STD:	Genuine Windows Server 2008 R2 Standard	
SBS 2011:	Genuine Windows Small Business Server 2011 Standard	RoHS-compliant

ThinkServer® TS430 Fixed PSU (0390) - TopSeller (September 2012)

Type- model Processor	Memory Pre-conf Disk Disk Disk Disk DIMMs RAID controller type size bays I	SATA Intelligent System Preload Disk(s) optical Diagnostics TPM mgmt OS PSU							
0390-1BU Core i3-3220		No DVD±RW No TPM IPMI No 1 x Fixed							
Processor	Up to one processor, one processor standard, Intel [®] Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear ••••• ••••• ••••• ••••• ••••• •••••							
Implementation	One LGA1155 socket	optical/tape optical/tape							
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	std optical							
Additional memory disclaimers	 four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10							
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 Image: A - PCIe x16 3 - PCIe x8 2 - PCIe x8 1 - PCI							
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays	<i>3.5" disk bay models:</i> Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk							
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁶ 0, 1, 10 support; RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk							
Disk(s)	<i>3.5" SATA:</i> SATA 6.0Gb/s, 7200 rpm <i>3.5" SAS:</i> SAS 6.0Gb/s, 15000 rpm <i>2.5" SAS:</i> SAS 6.0Gb/s, 10000 rpm	<i>2.5" disk bay models:</i> Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical							
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 3 2.5", 0.6" high, external, for disk							
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 4 2.5", 0.6" high, external, for disk							
Diskette	None (use USB port)	Bay 5 2.5", 0.6" high, external, for disk Bay 6 2.5", 0.6" high, external, for disk							
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk							
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk							
Extender card	None The HOR O C								
Front ports Rear ports	Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*							
rical polits	shared with system management), one analog VGA DB-15 connector	Slot 3 half-length, full-height, PCI Express 2.0 x8							
Intelligent Diagnostics Module (IDM)		Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPI * x4 electrical ** x8 electrical							
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions								
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant								
Prerequisites	Monitor, SATA/SAS disk, OS								
Keyboard	None (use USB port)								
Mouse Power supply	None (use USB port) One Fixed 400 watts standard, universal, 80 PLUS [®] Bronze qualified								
Mechanical	Tower, business black color, metal case	-							
Dimension	$W \ge H \ge D = 7.68''/195 \text{ mm} \ge 16.9''/430 \text{ mm} \ge 23.4''/595 \text{ mm}$								
System weight	61.7 lb (28kg) max configuration								
Tool-less	Side cover removal, disk and optical drive removal,	Coffigure Management Toolo							
Deals mount	system fan removal	Software Management Tools ThinkServer EasyStartup 							
Rack mount Limited warranty	Rack-mountable to 5U 3-year parts and labor; more Lenovo Services information see S-TS	• ThinkServer EasyStartup • ThinkServer EasyManage							
Accessories	For more accessories, see O-TOR sheet	Security							
		 Security chip (selected models, see information on left) Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) 							
		RoHS-compliant							

ThinkServer® TS430 Fixed PSU (0390) - TopSeller (February 2013)

Personal Systems Reference (PSREF)

	MemoryMemory Pre-confDiskDiskDiskDisk(MHz/type)DIMMsRAIDcontrollertypesizebays/2 1333MHzUDIMM1x4GB1Intel PCHSATA3.5"4xHot-swap2x/2 1333MHzUDIMM1x4GB1Intel PCHSATA3.5"4xHot-swap2x	SATA Intelligent System Preload Disk(s) optical Diagnostics TPM mgmt OS 500GB SATA DVD±RW No TPM KVM SBS 2011 Standard 500GB SATA DVD±RW No TPM KVM 2008 R2 Standard				
Processor	Up to one processor, one processor standard, Intel [®] Xeon [®] E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.5GHz), DDR3 memory controller (up to 1600MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear				
Implementation	One LGA1155 socket	optical/tape optical/tape std optical				
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	std optical U				
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10				
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 4 - PCle x16 3 - PCle x8 2 - PCle x8 1 - PCl				
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk				
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Baý 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk				
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	- 2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical				
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 3 2.5", 0.6" high, external, for disk				
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk				
Diskette	None (use USB port)	Bay 6 2.5", 0.6" high, external, for disk				
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Baý 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk				
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	Bay 10 2.5", 0.6" high, external, for disk				
Front ports	Two USB 2.0	Slot 1 half-length, full-height, 32-bit PCI 2.3				
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8				
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical				
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions					
Security chip	No onboard TPM chip; <i>TPM model(s):</i> additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	_				
Prerequisites	Monitor, SATA/SAS disk, OS					
Keyboard Mouse	None (use USB port) None (use USB port)					
Power supply	One fixed 400 watts standard, universal, 80 PLUS [®] Bronze qualified					
Mechanical	Tower, business black color, metal case	1				
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm					
System weight	61.7 lb (28kg) max configuration	Software Management Tools				
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	ThinkServer EasyStartup				
Rack mount	Rack-mountable to 5U	ThinkServer EasyManage				
Limited warranty	3-year parts and labor, more Lenovo Services information see S-TS	Security Security chip (selected models, see information on left) Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)				
	Preloaded Operating System	RoHS-compliant				
2008 R2 Standard:	Genuine Windows Server® 2008 R2 Standard	,				
SBS 2011 Standard:	Genuine Windows [®] Small Business Server 2011 Standard	For more accessories, see O-TOR sheet				

ThinkServer® TS430 Fixed PSU (0389) - TopSeller (June 12, 2012)

Type-		Memory	Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	(MHz/type)	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	ТРМ	mgmt	OS	PSU
0389-12U	Core i3-2120	1333MHz UDIMM	1x2GB	No	Intel PCH	SATA	3.5"	4xDirect Cable	No	DVD	No	TPM	IPMI	No	1xFixed

Processor	Up to one processor, one processor standard, Intel [®] Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache),	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	integrated Intel HD Graphics 2000, DDR3 memory controller (up to	
	1333MHz)	
Implementation	One LGA1155 socket	optical/tape optical/tape
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	std optical
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 3-6 3-10 1 - PCle x8 1 - PCle 1 - PCle 1 - PCle
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 support; RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 43.5", 1" high, external, for diskBay 53.5", 1" high, external, for diskBay 63.5", 1" high, external, for diskBay 7-10 are available on Eight 3.5" disk bay models:Bay 73.5", 1" high, external, for diskBay 83.5", 1" high, external, for diskBay 93.5", 1" high, external, for diskBay 93.5", 1" high, external, for diskBay 103.5", 1" high, external, for disk
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	<i>2.5" disk bay models:</i> Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 3 2.5", 0.6" high, external, for disk
Optical	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 6 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk
Front ports Rear ports	Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8
Intelligent Diagnostics Module (IDM)	<i>IDM model(s):</i> add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU * x4 electrical ** x8 electrical
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; <i>TPM model(s):</i> additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	
Keyboard Mouso	None (use USB port)	
Mouse Power supply	None (use USB port) One fixed 400 watts standard, universal, 80 PLUS [®] Bronze gualified	
Mechanical	Tower, business black color, metal case	Coffwara Management Tabla
Dimension	$W \times H \times D = 7.68"/195mm \times 16.9"/430mm \times 23.4"/595mm$	Software Management Tools ThinkServer EasvStartup
System weight	61.7 lb (28kg) max configuration	ThinkServer EasyStartup ThinkServer EasyManage
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	Security
Rack mount	Rack-mountable to 5U	Security chip (selected models, see information on left)
Limited warranty Accessories	1-year parts and labor; more Lenovo Services information see S-TOR For more accessories, see O-TOR sheet	 Security (selected models, see mormation of fet) Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)

ThinkServer® TS430 Fixed PSU (0389) - TopSeller (September 2012)

Туре-		Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	OS	PSU
0389-13U	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xDirect Cable	No	DVD	No	TPM	IPMI	No	1 x Fixed
0389-14U	Core i3-3240	1x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD	No	TPM	IPMI	No	1 x Fixed

Deserves		
Processor	Up to one processor, one processor standard, Intel [®] Core TM i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Intel Core i3-3240 processor (2C/4T, 3.4GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Oracle C01155 controller (up to 1600MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear ••••• optical/tape std optical ••••• optical/tape std optical
Implementation	One LGA1155 socket	Disk Bay 7-10
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	7-10
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 3-6 4 - PCle x16 3-6 3 - PCle x8 2 - PCle x8 1 - PCl 1 - PCl
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	<i>3.5" disk bay models:</i> Bay 1 5.25", 1.6" high, external, open (optical/tape)
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter,	Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
	add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 6 2.5", 0.6" high, external, for disk
Optical	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 7 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 10 2.5", 0.6" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*
Extender card	None	Slot 3 half-length, full-height, PCI Express 2.0 x8
Front ports	Two USB 2.0	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	* x4 electrical ** x8 electrical
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	
Keyboard	None (use USB port)	
Mouse	None (use USB port)	Software Management Tools
Power supply	One Fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	ThinkServer EasyStartup ThinkServer EasyManage
Mechanical Dimension	Tower, business black color, metal case W x H x D = $7.68^{"}/195$ mm x $16.9^{"}/430$ mm x $23.4^{"}/595$ mm	
System weight Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal	Security Security chip (selected models, see information on left) Administrator password User password
	Rack-mountable to 5U	 Front panel key lock
Rack mount		
Rack mount Limited warranty Accessories	1-year parts and labor; more Lenovo Services information see S-TS For more accessories, see O-TOR sheet	 Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)

ThinkServer® TS430 Fixed PSU (0388) - June 12, 2012

Two Gigabit Ethernet ports, Intel 82574L and 82579LM

advanced diagnostics,

Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); *KVM model(s):* add-on KVM card for KVM functions

Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is

shared with system management), one analog VGA DB-15 connector IDM model(s): add-on Intelligent Diagnostics Module for

One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified

3-year parts and labor; more Lenovo Services information see S-TOR

W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm

Side cover removal, disk and optical drive removal,

IDM LED lights indicate failing component category

additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant

Personal Systems Reference (PSREF)

Type- model	Processor	Memory (MHz/type)	Memory DIMMs	Pre-conf RAID	Disk controller	Disk type	Disk size	Disk bays		Disk	(a)	SATA	Intelligent Diagnostics	том		Preload OS
	Core i3-2120	1333MHz UDIMM		No	Intel PCH		3.5"	4xDirect C		DISK	5)	DVD	Diagnostics	TPM	IPMI	No
		1333MHz UDIMM		No	500	SATA/SAS		4xHot-swa		3x500GE	SATA	DVD	IDM	TPM	KVM	No
		1333MHz UDIMM		No	500	SATA/SAS		8xHot-swa				DVD	IDM	TPM	IPMI	No
		1333MHz UDIMM 1333MHz UDIMM		No No	500 500	SATA/SAS SATA/SAS		8xHot-swa 4xHot-swa				DVD DVD	IDM IDM	TPM TPM	IPMI KVM	No No
			1X4GD	No	500	UNINUNU	0.0	AN IOU SWE	др			DVD				NO
Processo	li li	Jp to one process ntel [®] Core™ i3-2	120 pro	cessor (2	C/4T, 3.30	GHz, 3MB			Fro	nt - <i>3.5" d</i>	lisk ba	y Fron	t - 2.5" disk	bay I	Rear	
	1 	ntegrated Intel HE 333MHz) ntel Xeon [®] E3-12 urbo Boost 2.0 (u 600MHz)	220V2 p ip to 3.5	rocessor	(4C/4T, 3	.1GHz, 8M	B Ca	che),		optical/tap std optica	be		optical/tape std optical	-	PSU	J
Implemer		Dne LGA1155 soc							4	Disk Bay						
Memory		82GB max, UDIM our 240-pin DIMN			33MHz DI	DR3, ECC,				7-10]					
Additiona disclaime	I memory •	 Actual memory dependent on p memory speed 	operatin	g speed i						Disk Bay 3-6]		Disk Bay 3-10		4 - PCle > 3 - PCle > 2 - PCle > 1 - PCl	:8
Graphics	0	Dnboard Aspeed A one VGA DB-15 o Maximum resolution	n rear;			ment proce	essor,		<i>3.5"</i> Bav	disk bay				L n (on	tical/tan	e)
Disk bays		Some: Four 3.5" Some: Four 3.5" Some: Four 3.5" Some: Four 3.5" Some: Eight 3.5" Some: Eight 2.5"	hot-swap hot-swap hot-swa	o (HS) SA o (HS) SA p (HS) SA	TA disk ba TA/SAS di ATA/SAS d	ays isk bays lisk bays	ıble		Bay Bay Bay Bay Bay	2 5.25 3 3.5" 4 3.5" 5 3.5"	;", 1.6" , 1" h , 1" h	hiğh, e igh, e igh, e igh, e	xternal, std xternal, for xternal, for xternal, for xternal, for xternal, for	optica disk disk disk		0)
Disk cont	roller li F	ntel PCH: RAID 500:	Serial A RAID ⁸ C ThinkSe PCI Exp RAID 0	TA, SATA , 1, 10 su erver RAII press [®] bus 1, 10 su	3.0Gb/s, i pport; 5500 ada s, SATA 6. pport	integrated pter (LSI® 0Gb/s, SA	SAS 9 S 6.00	9240-8i), Gb/s,	Bay Bay Bay Bay	7-10 are 7 3.5" 8 3.5" 9 3.5" 10 3.5"	<i>availa</i> , 1" h , 1" h , 1" h , 1" h	b <i>le on E</i> igh, e igh, e igh, e igh, e	<i>Tight 3.5" disl</i> xternal, for xternal, for xternal, for xternal, for	disk disk disk	models:	
				ID 5, 50 s 0 is avail		ght disk ba	vs mo	del only)	Bay		5", 1.6"	high, e	xternal, ope			e)
Disk(s)	3	3.5" SATA: SATA 3.5" SAS: SAS 6 2.5" SAS: SAS 6	6.0Gb/s 6.0Gb/s,	, 7200 rpı 15000 rp	m m	<u></u>	<u>, e inc</u>	20. 01113)	Bay Bay Bay Bay	3 2.5" 4 2.5"	,0.6" ,0.6"	high, e high, e	xternal, std xternal, for xternal, for xternal, for	disk disk	al	
Tape driv		Supports optional				2.0 conne	ctor		Bay	6 2.5"	, 0.6"	high, e	xternal, for	disk		
Optical	C	DVD-ROM DL SA	TA 1.5GI	o/s 16X-4	8X Max⁴ D	Drive			Bay Bay				xternal, for			
Diskette		None (use USB po							Bay		, 0.6 , 0.6"	high, e	xternal, for xternal, for	disk		
Chipset	h	ntel C202 Chipse //AC, and USB)	,	orm Contr	oller Hub	[PCH] (Slo	t 1-2,	ethernet	Bay	10 2.5"	, 0.6"	high, e	xternal, for	disk		
Ethernet		wo Gigabit Ether	net ports	s. Intel 82	5741 and	82579I M							nt, 32-bit PCI		1.0*	

None

Intelligent Diagnostics IDM model(s):

Two USB 2.0

No onboard TPM chip;

None (use USB port)

None (use USB port)

system fan removal

Rack-mountable to 5U

Monitor, SATA/SAS disk, OS

Tower, business black color, metal case

For more accessories, see O-TOR sheet

61.7 lb (28kg) max configuration

TPM model(s):

Ethernet

Extender card

Module (IDM)

Systems mgmt

Security chip

Prerequisites

Power supply

System weight

Rack mount

Accessories

Limited warranty

Mechanical

Dimension

Tool-less

. Keyboard

Mouse

Front ports

Rear ports

Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)

Software Management Tools

Security

Security chip (selected models, see information on left)

 * x4 electrical ** x8 electrical

ThinkServer EasyStartup
ThinkServer EasyManage

Administrator password

Front panel key lock

Boot sequence control

Serial port I/O controlUSB port disablement (all)

Boot without keyboard, mouse, diskette

User password

RoHS-compliant

ThinkServer® TS430 Fixed PSU (0388) - September 2012

Туре-		Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	ТРМ	mgmt	OS	PSU
0388-1KU	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD	No	TPM	IPMI	No	1 x Fixed
0388-1LU	Core i3-3220	1x4GB	No	500	SATA/SAS	3.5	8xHot-swap	No	DVD	No	TPM	IPMI	No	1 x Fixed
0388-1MU	Core i3-3220	1x4GB	No	500	SATA/SAS	2.5	8xHot-swap	No	DVD	No	TPM	IPMI	No	1 x Fixed
0388-1NU	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xDirect Cable	No	DVD	No	TPM	IPMI	No	1 x Fixed

Processor	Up to one processor, one processor standard,	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	Intel [®] Core [™] i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500,	
	DDR3 memory controller (up to 1600MHz)	● • • • • • • • • • • • • • • • • • • •
Implementation	One LGA1155 socket	optical/tape optical/tape
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	std optical
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 4 - PCle x16 2 - PCle x8 1 - PCl
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	<i>3.5" disk bay models:</i> Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁶ 0, 1, 10 support; RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 43.5", 1" high, external, for diskBay 53.5", 1" high, external, for diskBay 63.5", 1" high, external, for diskBay 7-10 are available on Eight 3.5" disk bay models:Bay 73.5", 1" high, external, for diskBay 83.5", 1" high, external, for diskBay 93.5", 1" high, external, for diskBay 93.5", 1" high, external, for diskBay 103.5", 1" high, external, for disk
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 3 2.5", 0.6" high, external, for disk
Optical	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 6 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk
Front ports	Two USB 2.0	Slot 1 half-length, full-height, 32-bit PCI 2.3
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; <i>TPM model(s):</i> additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites Keyboard Mouse Power supply	Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) One Fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	
Mechanical	Tower, business black color, metal case	Software Management Tools
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	ThinkServer EasyStartup
System weight	61.7 lb (28kg) max configuration	ThinkServer EasyManage
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	Security
Rack mount	Rack-mountable to 5U	-
Limited warranty Accessories	3-year parts and labor; more Lenovo Services information see S-TS For more accessories, see O-TOR sheet	 Security chip (selected models, see information on left) Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette
		Serial port I/O control USB port disablement (all)

ThinkServer® TS430 Fixed PSU (0387) - June 12, 2012

Туре-		Memory	Memorv	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	(MHz/type)	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	трм	mgmt	OS	PSU
0387-13U	Core i3-2120	1333MHz UDIMM	1x2GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD	No	TPM	IPMI	No	1xFixed
0387-14U	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	Intel PCH	SATA	3.5"	4xDirect Cable	No	DVD	No	TPM	IPMI	No	1xFixed
0387-15U	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD	No	TPM	IPMI	No	1xFixed

Processor	Up to one processor, one processor standard, Intel [®] Core [™] i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2000, DDR3 memory controller (up to 1333MHz) Intel Xeon [®] E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.5GHz), DDR3 memory controller (up to 1600MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear Image: std optical/tape std optical Image: std optical Image: std optical
Implementation	One LGA1155 socket	Disk Bay
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	7-10
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 3-6 3-10 3-10 3-10 3-10 3-10
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	<i>3.5" disk bay models:</i> Bay 1 5.25", 1.6" high, external, open (optical/tape)
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Bay 2 5.25", 1.6" high, external, open (optical labe) Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 500: RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support	Bay 7-10 are available on Eight 3.5" disk bay models:Bay 73.5", 1" high, external, for diskBay 83.5", 1" high, external, for diskBay 93.5", 1" high, external, for diskBay 103.5", 1" high, external, for diskBay 105.5", 1" high, external, for disk2.5" disk bay models:Bay 15.25", 1.6" high, external, open (optical/tape)
Disk(s)	(RAID 50 is available on eight disk bays model only) 3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 6 2.5", 0.6" high, external, for disk
Optical	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 7 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 10 2.5", 0.6" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*
Extender card		Slot 3 half-length, full-height, PCI Express 2.0 x8
Front ports	Two USB 2.0	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	* x4 electrical ** x8 electrical
Intelligent Diagnostics Module (IDM)		
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; <i>TPM model(s):</i> additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	
Keyboard	None (use USB port)	Coffigure Management Tools
Mouse	None (use USB port)	Software Management Tools
Power supply	One fixed 400 watts standard, universal, 80 PLUS® Bronze qualified	ThinkServer EasyStartup ThinkServer EasyManage
Mechanical	Tower, business black color, metal case $W \times H \times D = 7.69"/(105mm \times 16.0"/(400mm \times 22.4"/505mm))$	
Dimension System weight	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration	Security
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	Security chip (selected models, see information on left) Administrator password
Rack mount	Rack-mountable to 5U	User password Front panel key lock
Limited warranty Accessories	1-year parts and labor; more Lenovo Services information see S-TOR For more accessories, see O-TOR sheet	 Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant

ThinkServer® TS430 Redundant PSU (0441) - TopSeller (June 12, 2012)

Personal Systems Reference (PSREF)

Type- model Pro	ocessor	Memory DIMMs	Pre-cor RAID		Disk type	Disk size	Disk bays	Disk(s)	<u> </u>	SATA	Intelligen Diagnostic		System mgmt		load DS	PSU
0441-1DU Xeon			No	500	SATA/SAS		8xHot-swap			DVD±RW	IDM	TPM	IPMI			1x450
0441-1EU Xeon	E3-1240V2	1x4GB	No	Intel PCH	SATA	3.5"	4xHot-swap		[DVD±RW	IDM	TPM	IPMI			1x450
0441-1FU Xeon			No	500	SATA/SAS		8xHot-swap			DVD±RW	IDM	TPM				1x450
0441-1GU Xeon			No	500	SATA/SAS		8xHot-swap			DVD±RW	IDM	TPM	IPMI			1x450
0441-1HU Xeon			No	Intel PCH	SATA	3.5"	4xHot-swap				IDM	TPM				1x450
0441-1JU Xeon 0441-1KU Xeon			No No	500 Intel PCH	SATA/SAS SATA	3.5" <mark>3.5</mark> "	8xHot-swap 4xHot-swap				IDM IDM	TPM TPM		SBS 20 ⁻	11	1x450 1x450
0441-1LU Xeon			No	Intel PCH	SATA	3.5 3.5"	4xHot-swap 4xHot-swap				IDM	TPM				1x450
0441-1MU Xeon			No	Intel PCH		3.5"	4xHot-swap			DVD±RW	IDM	TPM		2000112		1x450
Processor	Int	el [®] Xeor	[®] E3-1	sor, one proc 220V2 proc	cessor (40	C/4T, 3.	1GHz, 8MB	Cache),	Fron	t - 3.5" d	lisk bay I	-ront	2.5" dis	skbay F	Rear	
	16 Int Tu 16 Int Tu	00MHz) rel Xeon rbo Boos 00MHz) rel Xeon rbo Boos	E3-12 4 st 2.0 (u E3-12 7	4 0V2 proce up to 3.8GH 7 0V2 proce	ssor (4C/8 z), DDR3 r ssor (4C/8	3 T, 3.4(memor 3 T, 3.5(y controller (¹ GHz, 8MB Ca y controller (1 GHz, 8MB Ca y controller (1	a che) , up to ache),	[optical/tap std optica Disk Bay 7-10	e	opti	optical	=		PSU
Implementation		00MHz) ne LGA11	155 500	rket								_				
Memory				M, PC3-106	00 1222M					Disk Bay			sk Bay		1 - PCle > 2 - PCle >	
wentory				I sockets	00 133310		N3, ECC,			3-6			3-10		3 - PCle >	x8
Additional mem disclaimers	nory •	Actual m	emory nt on p	operating s			t installed sp speed and in		3.5" (disk bay	models:			J	4 - PCI	
Graphics			•	4ST2150 ar	anhice/ma	nanom	ent processo	or	Bay	1 5.25	", 1.6" hig					e)
Graphics	on	e VGA D	В-15 о		•	Ū	ient processo	JI,	Bay Bay Bay	3 3.5" 4 3.5"		exte	rnal, s rnal, fo rnal, fo	or disk	al	
Disk bays	Sc Sc Sc	<i>me:</i> Fou me: Fou me: Eig	ır 3.5" ır 3.5" ht 3.5"	SATA disk b hot-swap (H hot-swap (H hot-swap (H hot-swap (H	IŚ) ŚATA d IS) SATA/S IS) SATA/S	isk bay SAS dis SAS dis	sk bays sk bays		Bay Bay Bay Bay Bay	6 3.5" <i>7-10 are</i> 7 3.5"	, 1" high, <i>available</i> , 1" high,	exte on Eigh exte	rnal, fo rnal, fo <i>it 3.5" a</i> rnal, fo rnal, fo	or disk <i>lisk bay i</i> or disk	models:	
Disk controller		el PCH:					itegrated in c	hinset.	Bay	9 3.5"	, 1" high,	exte	rnal, fo			
		AID 500:		RAID ⁸ 0, 1, ThinkServe	10 suppor er RAID 50	rt; 0 adap	ter (LSI® SA Gb/s, SAS 6	S 9240-8i),			, 1" hiĝh, <i>models:</i>	exte	rnal, fo	or disk		
	Up	ograde fo	r 500:	RAID 0, 1, Additional u add RAID 5	10 support upgrade ke 5, 50 suppo	t ey for R ort	AID 500 ada	ipter,	Bay Bay Bay Bay Bay	1 5.25 2 5.25 3 2.5" 4 2.5"	i", 1.6" hig i", 1.6" hig , 0.6" hig , 0.6" hig	h, exte h, exte h, exte	rnal, s rnal, fo rnal, fo	td optica or disk or disk		e)
Disk(s)	3.5	5" SAS:	SAS 6	6.0Gb/s, 72 6.0Gb/s, 150 6.0Gb/s, 100	000 rpm				Bay Bay Bay Bay	6 2.5" 7 2.5"	, 0.6" hig , 0.6" hig	h, exte h, exte	rnal, fo rnal, fo	or disk or disk		
Tape drive						USB 2	2.0 connector	r		9 2.5"	, 0.6" hig	h, exte	rnal, fo	or disk		
Optical		•••••••••••••••••••••••••••••••••••••••	•	r DL DVD±l					Bay	10 2.5"	, 0.6" hig	h, exte	rnal, fo	or disk		
•		•				1.500/	3 DIIVE		Slot -	1 half-lo	ngth, full-l	oiaht ?	22_hit P	CI 2 3		
Diskette		ne (use		,	0 1 1						ngth, full-l) x8*	
Chipset		el C202 AC, and l		et, Platform	Controller	Hub [F	PCH] (Slot 1-	2, ethernet	Slot 3	3 half-le	ngth, full-l	neight, F	PCI Exp	press 2.0) x8	
Ethernet				net ports, In	tol 825741	and 8	2579I M				ngth, full-l	height, F	CIExp	press 2.0) x16** (near CF
Extender card		ne		not porto, in						electrica electrica						
Front ports		o USB 2	.0							electrica	ai					
Rear ports	Fo	ur USB 2	2.0, one				(RJ-45, one j VGA DB-15									
Intelligent Diagi Module (IDM)	nostics ID	M model) a	dd-on Intell	agnostics.		Module for	aatagany								
Systems mgmt	IPI	VII 2.0-co	speed <i>i</i> mplian	AST2150 gr	aphics/ma d managen	nagem nent co	nent processontroller (BM	or,								
Security chip		onboard				vivi iul	10110110				Software	Mana	gemen	t Tools		
			<i>l(s):</i> a				add-on card	I for TPM			r EasyStar EasyMar	tup	9011011	. 10013		
Prerequisites				S disk, OS							,ai					
Keyboard		ne (use										Secu				
Mouse		ne (use									ip (selecte		els, see	informa	tion on	left)
Power supply	Or	e or two	450 wa	atts standar	d, two max	kimum,	rear access	, hot-swap,			or passwo	ord				
						n two p	ower supplie	S		er passv	vord key lock					
Mechanical	To	wer, busi	ness b	lack color, n	netal case						nce contr	ol.				
Mechanical				/195mm x 1		m x 23	8.4"/595mm				ut keyboar		se, disk	ette		
Dimension	61			x configurati					• Se	rial port	I/O contro		2, 2.01			
Dimension System weight	01		romov	al, disk and	optical driv	/e remo	oval,				isablemer					
Dimension System weight	Sic											. /				
Dimension System weight Tool-less	Sic	stem fan	remova	al						S-comple	ant					
Dimension System weight	Sic		remova	al						S-compli		ment	<u></u>	Condition -	inform	ati
Dimension System weight Tool-less	Sic	stem fan Ick-moun	remova Itable to	al	System				3-yea	ar parts a	ant and labor;	more L	enovo	Services	informa	ation
Dimension System weight Tool-less	Sid sy: Ra Ge	stem fan ick-moun Pre enuine Wi	remova table to toadec indows	al o 5U	8 R2 Stan	dard			3-yea see S	ar parts a S-TOR					informa	ation

US model(s) announced June 12, 2012 Solution VS models withdrawn effective April 2013

ThinkServer® TS430 Redundant PSU (0441) - TopSeller (September 2012)

Type-		Memory	Pre-cont	f Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	OS	PSU
0441-1PU	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W

Processor	Up to one processor, one processor standard,	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	Intel [®] Core [™] i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)	•···· = PSUPSU
Implementation	One LGA1155 socket	optical/tape optical/tape
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	std optical
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 2 - PCle x8 3 - PCle x8 4 - PCl
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 support; RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk <i>Bay 7-10 are available on Eight 3.5" disk bay models:</i> Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	<i>2.5" disk bay models:</i> Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 6 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Baý 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 10 2.5", 0.6" high, external, for disk
Extender card Front ports	None Two USB 2.0	Slot 1 half-length, full-height, 32-bit PCI 2.3
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU * x4 electrical ** x8 electrical
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s)</i> : add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; <i>TPM model(s):</i> additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	
Keyboard Mouse	None (use USB port) None (use USB port)	Software Management Tools
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS [®] Gold gualified, redundant with two power supplies	ThinkServer EasyStartup
Mechanical	Tower, business black color, metal case	ThinkServer EasyManage
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	Security
System weight Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal,	 Security chip (selected models, see information on left) Administrator password User password
Rack mount	system fan removal Rack-mountable to 5U	 Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant
		3-year parts and labor; more Lenovo Services information see S-TS
		For more accessories, see O-TOR sheet

ThinkServer® TS430 Redundant PSU (0441) - TopSeller (November 2012)

Type-		Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	OS	PSU
0441-1RU	Xeon E3-1240V2	1x4GB	No	700	SATA/SAS	3.5	8xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W
0441-1SU	Core i3-3240	1x4GB	No	500	SATA/SAS	2.5	8xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W

Processor	Up to one processor, one processor standard,	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	Intel [®] Core [™] 13-3240 processor (2C/4T, 3.4GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Intel Xeon [®] E3-1240V2 processor (4C/8T, 3.4GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.8GHz), DDR3 memory controller (up to 1600MHz)	•••••• ••••• ••••• ••••• optical/tape std optical •••• ••••
Implementation	One LGA1155 socket	Disk Bay
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	7-10
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 3-6 3-6 3-10 4 - PCI
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Baý 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 support; RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, DAID 0, 1, 10 support	Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
	RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only) RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i),	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical
	RAID 700: ThinkServer RAID 700 adapter (LSI SAS 9260-8i), PCI Express bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support	Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk
	Battery for 700: Intelligent Battery Backup Unit (iBBU08) for RAID 700	Bay 5 2.5", 0.6" high, external, for disk Bay 6 2.5", 0.6" high, external, for disk Bay 7 2.5", 0.6" high, external, for disk
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Slot 1 half-length, full-height, 32-bit PCI 2.3
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Slot 2 half-length, full-height, PCI Express 2.0 x8*
Diskette	None (use USB port)	Slot 3 half-length, full-height, PCI Express 2.0 x8
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU * x4 electrical ** x8 electrical
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	
Front ports	Two USB 2.0	
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC);	Software Management Tools
Security chip	KVM model(s): add-on KVM card for KVM functions No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	ThinkServer EasyStartup ThinkServer EasyManage
Prerequisites	Monitor, SATA/SAS disk, OS	Security
Keyboard	None (use USB port)	 Security chip (selected models, see information on left) Administrator password
Mouse	None (use USB port)	User password
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies	Front panel key lock Boot sequence control Doot sequence control
Mechanical	Tower, business black color, metal case	Boot without keyboard, mouse, diskette Serial port I/O control
Dimension System weight	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	USB port disablement (all)
System weight Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal,	RoHS-compliant
Rack mount	system fan removal Rack-mountable to 5U	3-year parts and labor; more Lenovo Services information see S-TS
		For more accessories, see O-TOR sheet

ThinkServer[®] TS430 Redundant PSU (0441) - TopSeller (February 2013)

Type- model Processor 0441-1VU Xeon E3-1220 0441-1WU Xeon E3-1220	DIMMs RAID controller type size bays Disk(s) or V/2 1x4GB 1 Intel PCH SATA 3.5" 4xHot-swap 2x500GB SATA DV	
Processor Implementation Memory Additional memory disclaimers Graphics Disk bays	Up to one processor, one processor standard, Intel® Xeon® E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.4GHz), DDR3 memory controller (up to 1333MHz) Intel Xeon E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.5GHz), DDR3 memory controller (up to 1600MHz) One LGA1155 socket 32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets • Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays	Front - 3.5" disk bay Front - 2.5" disk bay Rear optical/tape optical/tape optical/tape std optical std optical Implies Disk Bay Disk Bay Implies Jisk Bay Jisk Bay Implies Jisk Bay Implies Implies Jisk Impli
Disk controller	Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁵ 00, 1, 10 support; RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 63.5",1" high, external, for diskBay 7-10 are available on Eight 3.5" disk bay models:Bay 73.5",1" high, external, for diskBay 83.5",1" high, external, for diskBay 93.5",1" high, external, for diskBay 103.5",1" high, external, for disk2.5" disk bay models:2.5" disk bay models:Bay 15.25",1.6" high, external, open (optical/tape)
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	 Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk Bay 6 2.5", 0.6" high, external, for disk
Tape drive Optical	Supports optional tape drive via internal USB 2.0 connector Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Diskette Chipset	None (use USB port) Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk
Ethernet Extender card	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	_ Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*
Front ports Rear ports	None Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Slot 3 half-length, full-height, PCI Express 2.0 x8 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU * x4 electrical ** x8 electrical
Intelligent Diagnostics Module (IDM) Systems mgmt	advanced diagnostics, IDM LED lights indicate failing component category Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites Keyboard Mouse	Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port)	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
Power supply Mechanical	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS [®] Gold qualified, redundant with two power supplies Tower, business black color, metal case	Security - • Security chip (selected models, see information on left) • Administrator password
Dimension System weight Tool-less Rack mount	W x H x D = $7.68"/195$ mm x $16.9"/430$ mm x $23.4"/595$ mm 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Rack-mountable to 5U	 User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
-		3-year parts and labor, more Lenovo Services information see S-TS
2008 R2 Standard:	Preloaded Operating System Genuine Windows Server [®] 2008 R2 Standard	RoHS-compliant
SBS 2011 Standard:	Genuine Windows® Small Business Server 2011 Standard	For more accessories, see O-TOR sheet

ThinkServer® TS430 Redundant PSU (0441) - TopSeller (June 2013)

Type-		Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	PSU
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	OS	qty
0441-ABU	Xeon E3-1220V2	1x8GB	5	500+Upgrade	SATA/SAS	3.5"	8xHot-swap	3x1TB SATA	DVD±RW	No	TPM	IPMI	2012 Standard	1

Processor	Up to one processor, one processor standard,	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	Intel [®] Xeon [®] E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.5GHz),	
	DDR3 memory controller (up to 1600MHz)	optical/tape
Implementation	One LGA1155 socket	std optical std optical
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 7-10
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	Disk Bay 3-6 Disk Bay 3-10 1 - PCle x16 2 - PCle x8 3 - PCle x8 4 - PCl
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁶ 0, 1, 10 support; RAID 500: ThinkServer RAID 500 adapter (LSI [®] SAS 9240-8i), PCI Express [®] bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support	Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk
	Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 3 2.5", 0.6" high, external, for disk
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 6 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk
Extender card Front ports	None Two USB 2.0	Slot 1 half-length, full-height, 32-bit PCI 2.3
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 3 half-length, full-height, PCI Express 2.0 x8
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPL * x4 electrical ** x8 electrical
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	
Keyboard Mouse	None (use USB port) None (use USB port)	Software Management Tools
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS [®] Gold qualified, redundant with two power supplies	ThinkServer EasyStartup ThinkServer EasyManage
Mechanical	Tower, business black color, metal case	Security
Dimension System weight	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration	Security chip (selected models, see information on left)
Tool-less	Side cover removal, disk and optical drive removal,	Administrator password
Rack mount	system fan removal Rack-mountable to 5U	User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		3-year parts and labor, more Lenovo Services information see S-TS
	Preloaded Operating System	RoHS-compliant
2012 Standard:	Genuine Windows Server® 2012 Standard	For more accessories, see O-TOR sheet

ThinkServer® TS430 Redundant PSU (0393) - TopSeller (June 12, 2012)

Type-		Memory	Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	(MHz/type)	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	OS	PSU
0393-14U	Core i3-2120	1333MHz UDIMM	1x2GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W
0393-15U	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD±RW	No	TPM	IPMI	No	1x450W

Processor	Up to one processor, one processor standard, Intel [®] Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache).	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	integrated Intel HD Graphics 2000, DDR3 memory controller (up to	
	1333MHz)	Image: optical/tape Image: optical/tape Image: optical/tape Image: optical/tape
	Intel Xeon [®] E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.5GHz), DDR3 memory controller (up to 1600MHz)	std optical U
Implementation	One LGA1155 socket	
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	Disk Bay 7-10
Additional memory	 four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, 	1 - PCle x16
disclaimers	dependent on processor memory controller speed and installed memory speed	Disk Bay 3-6 3-10 2 - PCle x8 3 - PCle x8 4 - PCl
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	<i>3.5" disk bay models:</i> Bay 1 5.25", 1.6" high, external, open (optical/tape)
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset,	Bay 7-10 are available on Eight 3.5" disk bay models:
	RAID 500: RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 9 0.5", 1" high, external, for disk
	RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 10 3.5", 1" high, external, for disk 2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) - Bay 2 5.25", 1.6" high, external, std optical
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 6 2.5", 0.6" high, external, for disk
Optical	Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 9 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 10 2.5", 0.6" high, external, for disk Slot 1 half-length, full-height, 32-bit PCI 2.3
Ethernet Extender cord	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Slot 2 half-length, full-height, PCI Express 2.0 x8*
Extender card Front ports	None Two USB 2.0	Slot 3 half-length, full-height, PCI Express 2.0 x8 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is	* x4 electrical
•	shared with system management), one analog VGA DB-15 connector	** x8 electrical
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; <i>TPM model(s):</i> additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	1
Keyboard	None (use USB port)	
Mouse Power supply	None (use USB port) One or two 450 watts standard, two maximum, rear access, hot-swap,	Software Management Tools
	80 PLUS® Gold qualified, redundant with two power supplies	ThinkServer EasyStartup ThinkServer EasyManage
Mechanical Dimension	Tower, business black color, metal case W x H x D = $7.68^{"}/195$ mm x $16.9^{"}/430$ mm x $23.4^{"}/595$ mm	, ,
System weight	31.7 lb (28kg) max configuration	Security
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	Security chip (selected models, see information on left) Administrator password
Rack mount	Rack-mountable to 5U	User password Front panel key lock
Limited warranty Accessories	1-year parts and labor; more Lenovo Services information see S-TOR For more accessories, see O-TOR sheet	Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control
		USB port disablement (all)

ThinkServer® TS430 Redundant PSU (0393) - TopSeller (September 2012)

Type- model	Processor	Memory DIMMs	Pre-con RAID	f Disk controller	Disk type	Disk size	Disk bays		Disk(s)	SATA optical	Intelligent Diagnostic		System mgmt	Preload OS	PSU
	Core i3-3220	1x4GB	No	Intel PCH	SATA		4xHot-swa		No	DVD±RW		TPM	IPMI	No	1x450W
Processor						lord			From		hou Free	• 0.5"	diak bay	Baar	
Processor		Intel [®] Core integrated I DDR3 mem	m i3-32 Intel HD nory con	or, one proce 20 processo Graphics 25 htroller (up to	or (2C/4T, 00,	3.3GHz	, 3MB Cad	:he),		t - 3.5" disk		t - 2.5"			JPSU
Implementa Memory	ation	One LGA1		ket I , PC3-1060	1222ML	2 2002	FCC		-	std optical		std optica	<u> </u>		
Additional r disclaimers		four 240-pil • Actual m	n DIMM emory c nt on pr		ed is the l	owest in	stalled spe	eed, stalled		Disk Bay 7-10					
Graphics		Onboard As	speed A B-15 on	ST2150 grap 1 rear; n: 1600x1200		agemen	t processo	or,	[Disk Bay 3-6		Disk Bay 3-10	′	1 - PC 2 - PC 3 - PC 4 - PC	e x8 e x8
Disk bays		Some: Fou Some: Fou Some: Eig	ur 3.5" h ur 3.5" h ht 3.5" ł	ATA disk bay ot-swap (HS) ot-swap (HS) not-swap (HS) not-swap (HS)) SATA dis) SATA/SA 5) SATA/SA	sk bays NS disk b AS disk l	bays bays		<i>3.5" d</i> Bay Bay Bay	2 5.25", 1	I.6" high, e I.6" high, e	xternal,		ical	ipe)
Disk contro	oller	Intel PCH: RAID 500:	5 F F F F F F F F F F F F F F F F F F F	Serial ATA, S. RAID [®] 0, 1, 1 ¹ ThinkServer I PCI Express [®] RAID 0, 1, 10 Additional up add RAID 5, 1 (RAID 50 is a	ATA 3.0Gt 0 support; RAID 500 9 bus, SAT 0 support grade key 50 suppor	o/s, integ adapter A 6.0Gb for RAII t	grated in cl (LSI® SAS /s, SAS 6. D 500 adaj	5 9240-8i), 0Gb/s, pter,	Bay Bay Bay Bay Bay Bay Bay Bay	4 3.5", 1 5 3.5", 1 6 3.5", 1 7- <i>10 are ava</i> 7 3.5", 1 8 3.5", 1	I" high, e. I" high, e. I" high, e. a <i>ilable on E</i> I" high, e. I" high, e. I" high, e.	xternal, xternal, xternal, <i>ight 3.5</i> xternal, xternal, xternal,	for disk for disk for disk	ay model	s:
Disk(s)		3.5" SAS:	SATA 6 SAS 6.	6.0Gb/s, 7200 .0Gb/s, 1500 .0Gb/s, 1000) rpm 0 rpm				_	disk bay mo 1 5.25", 1	-				ape)
Tape drive				ape drive via		JSB 2.0	connector		Bay	3 2.5", 0	0.6" high, e	xternal,	for disl	(
Optical		Super Mult	i-Burner	DL DVD±RV	V SATA 1.	5Gb/s D	rive		Bay Bay		0.6" high, e 0.6" high, e				
Diskette		None (use	USB po	rt)					Bay	6 2.5", 0	0.6" high, e	xternal,	for disl	(
Chipset		Intel C202 MAC, and l		t, Platform C	ontroller H	lub [PCl	H] (Slot 1-2	2, ethernet	Bay Bay	8 2.5", 0).6" high, e).6" high, e	xternal,	for disl	(
Ethernet Extender ca	ard	Two Gigabi None	t Ethern	et ports, Inte	l 82574L a	and 825	79LM			10 2.5", ().6" high, e).6" high, e				
Front ports		Two USB 2	.0						Slot -	1 half-lengt	h. full-heiah	nt. 32-bi	t PCI 2.3	•	
Rear ports				serial (9-pin) n manageme					Slot 2 Slot 3	2 half-lengt 3 half-lengt	h, full-heigh h, full-heigh	nt, PCI E nt, PCI E	Express Express	2.0 x8* 2.0 x8	
Module (ID	PM)		ac ID	dd-on Intellige dvanced diag M LED lights	nostics, indicate f	failing co	omponent		* x4	4 half-lengt electrical electrical	h, full-heigł	nt, PCI E	Express	2.0 x16*	* (near CPU
Systems m Security ch	0	IPMI 2.0-cc KVM mode No onboard	mpliant (<i>s):</i> ac d TPM c		nanageme ard for KV	ent contr M function	oller (BMC ons	C);							
		TPM mode		ditional Nuve nction, TCG			ld-on card	for TPM							
Prerequisite Keyboard Mouse Power supp	ply		USB po USB po 450 wa	rt)											
Mechanical				ack color, me		pow	or supplies	0		0	fluore I.F		aut Ta / !		
Dimension		WxHxD	= 7.68"/	195mm x 16.	9"/430mm	n x 23.4"	/595mm		Thir	nkServer Ea	oftware Mar	nagem	ent 1001	5	
System we Tool-less	eight	Side cover	removal	configuratior I, disk and op		remova	ıl,			nkServer Ea	asyManage				
Rack moun	nt	system fan Rack-mour								ouvitus at ta d		curity	an inf-	notion	n 0 ⁴¹
Limited wai Accessorie	rranty	1-year part	s and la	bor; more Le ies, see O-T(novo Serv DR sheet	vices info	ormation s	ee S-TS	Security chip (selected models, see information on le Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)						п еп)
									• US		blement (all)			

ThinkServer[®] TS430 Redundant PSU (0392) - June 12, 2012

Personal Systems Reference (PSREF)

0392-19U Core i3-2120 1x2GB No Intel PCH SATA 3.5" 4xHot-swap DVD IDM TPM IPMI No 1x45C 0392-1AU Xeon E3-1240V2 1x4GB No Intel PCH SATA 3.5" 4xHot-swap DVD IDM TPM IPMI No 1x45C 0392-1BU Xeon E3-1220V2 1x4GB No Intel PCH SATA 3.5" 4xHot-swap DVD IDM TPM IPMI No 1x45C 0392-1CU Xeon E3-1220V2 1x4GB No 500 SATA/SAS 3.5" 8xHot-swap DVD IDM TPM IPMI No 1x45C 0392-1CU Xeon E3-1220V2 1x4GB No 500 SATA/SAS 3.5" 8xHot-swap DVD IDM TPM IPMI No 1x45C 0392-1EU Xeon E3-1220V2 1x4GB No 500 SATA/SAS 3.5" 8xHot-swap DVD IDM TPM IPMI No	Туре-	Memory	Pre-conf		Disk	Disk	Disk			SATA	Intelligent		System	Preload	
 Biller Hall, Norn Es 124/92, H4GB, No. Implif CPL SATA. 3.5.4 4-Hot-samp Sectors (1998). The sector (1998) is a sector (1998). The sector (1998) is a sector (1998). The sector (1998) is a sector (1998) is a sector (1998). The sector (1998) is a sector (1998) is a sector (1998) is a sector (1998). The sector (1998) is a se									Disk(s)						PSU
2883-120 xon: E3-1220/2 r442B to bill point for the source of the so															1x450W
DB26-1101 Xum EB-12502 144GB No So SATASAS 2.5" date samp DVD DVD TM TM TM NM No 1455 S026-1101 Xum EB-12207 144GB No So SATASAS 2.5" date samp 45000B SATA DVD-WI DM TM TM KM No 24000B SATA DVD-WI DM TM TM KM No 24000B SATA DVD-WI DM TM KM No 24000B SATAS DVD-WI DM TM KM No 24000B SATAS DVD-WI DM TM KM XM															1x450W
 Bale - EU Xenn E1:22021 Listig No. 500 StATASAS 3.67 Astetistump - 4:500GB SAN DVD-HW IDM TTM KVM No. 2445 (2014) Processor I List one processor and processor and processor strategies of the statistical strategies of the /li>						3.5"	8xHot-swap								1x450W
CBR2-FU Xeen E3-1220/2 14/36 No So SATASAS 2.5 Bathd-smp 6:3000E 8AS DVD-HW DM TPM KM No 2:46 Processor Up to one processor, one processor (SCAT, 3.364, 2.3MB Cache), Table Sociel 3:2102 processor (SCAT, 3.364, 2.3MB Cache), Table Sociel 3:2102 processor (SCAT, 3.364, 2.3MB Cache), Table Sociel 3:2102 processor (SCAT, 3.364, 2.3MB Cache), Table Sociel 3:21020 processor (SCAT, 3.364, 2.3MB Cache), Table Sociel 3:2100 processor (SCAT, 3.364, 2.3MB Cache), Table Sociel 3:2100 processor (SCAT, 3.364, 2.3MB Cache), Table Sociel 3:2100 processor (SCAT, 3.364, 2.3MB Cache), Torre SCA Did Masking sociel 3:3100 processor, Maximum resolution: 1800x1200 e90Hz 3.5' disk bay 5.25', 16' high, cachernal, con (scalarbap) Some: Eight 2:5' not-wap (HS) SATA SAS disk bays Some: Eight 2:5' not-wap (HS) SATA SAS disk bays So								4							1x450W
Processor Up to one processor can processor (2G4T, 3.3GHz, 3MB Cache), integrated in the D Graphics 2000, DBR3 memory controller (up to the total the D Graphics 2000, DBR3 memory controller (up to the total the D Graphics 2000, DBR3 memory controller (up to the total the total															2x450W 2x450W
Integrated methol Cospits 19:210 processor (2C/47, 3.3GHz, 3MB Cache), Integrated methol Cospits 2000, DDR3 memory controller (up to 1600MHz) Implementation Implementation One LGA1155 socket Memory 32:06 max, UDMM, PC3-16600 1333MHz DDR3. ECC. Additional memory 0:12:00/mit bMI sockets Memory 32:02 max, UDMM, PC3-16600 1333MHz DDR3. ECC. Memory 0:12:00/mit bMI sockets Memory 0:12:00/mit bMI sockets Graphics Onboard Aspeed 3 Fto Isseen (Fto IS) AGM and tabay, the otherwap, direct cable Bisk bays Some: Four 35' hort-swap (HS) SATA 3disk bays Some: Four 35' hort-swap (HS) SATA 3disk bays Some: Four 35' hort-swap (HS) SATA 3disk bays Some: Four 35' hort-swap (HS) SATA 3disk bays Some: Four 35' hort-swap (HS) SATA 3disk bays Disk bays Some: Four 35' hort-swap (HS) SATA 3disk bays Some: Four 35' hort-swap (HS) SATA 3disk bays Disk controller MaR/CH: SATA 3disk bays Disk controller Fmit SATA disk bays Disk controller FMID 0:1, 10 support Max (A, and USS) SATA disk bays Disk bays Some: Four 35' hort-swap (HS) SATA 3disk bays Disk (S) 3'S'ST + Hohgh, external, or disk <															
initial Xeon* E3-12202 processor (4C/F, 3.1CHr, 5MB Cache), Turbe Boost 2.0 (pp 3.3CHr), DDR3 memory controller (up to 1600MHz) consumption consumption consumption implementation One LGA1155 socket memory 32G max, UDIMM, PC3-10600 1330MHz DDR3, ECC, bur 24-0 p10MM sockets memory consumption implementation Additional memory • Actual memory controller (up to 1600MHz) consumption implementation implementation implementation Graphics Orboard Aspeed AST1250 graphics/management processor, more VGA DB15 so near: Maximum resolution: 1600x1200 @OHz By 1 5.25° r16° right, atomat, processor, more VGA DB15 so near: Maximum resolution: 1600x1200 @OHz By 5 3.5° r1 http:/// external. for disk Disk bays Some: Eight 25' hot-waye (HS) SATASKS disk bays Some: Eight 25' hot-waye (Processor	Intel [®] Core integrated I	™ i3-212	20 proces	sor (2C/4T,	, 3.3ĠHz,)					k bay I		PSU
Memory 32/0B max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 24/0-in DDMM societs Image: Comparison of the section of the sectin of the section of the section of the sectio		Intel Xeon Turbo Boos 1600MHz) Intel Xeon Turbo Boos 1600MHz)	t 2.0 (up E3-124(t 2.0 (up	to 3.5GH: 1 V2 proce to 3.8GH:	z), DDR3 m ssor (4C/8 '	nemory co T, 3.4GH 2	ontroller (up to z, 8MB Cache),		std o	ptical					
Midting State Ist State State <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>Disk</td><td>Bay</td><td>Dis</td><td>k Bay</td><td></td><td></td><td></td></th<>									Disk	Bay	Dis	k Bay			
disclaimers dependent on processor memory controller speed and installed memory speed 57 disk bary models: Graphics Onboard Aspeed AST2150 graphics/management processor, one VGA DE15 on reacr. Maximum resolution: 1600x1200@60Hz Bay 2 5.25°; 1.6° high, external, for disk Bay 4 3.5°; 11° high, external, for disk Bay 7.10 are mailable on Eight 3.5° tobs wap (HS) SATXSAS disk bays Some: Eight 2.5° hot-swap (HS) SATXSAS disk bays Bay 0 Bay 4 3.5°; 11° high, external, for disk Bay 1 S.5°; 11° high, external, for disk Bay 2		four 240-pir	n DIMM :	sockets			-		3	-6	3	-10		3 - PCle	
Cirapnics Onboard Aspeed AS I 21:90 graphines/management processor, Measimum resolution: 16:00:200 @ 00Hz Bay 2:5:2:5:1:6* high, external, for disk Disk bays Some: Four 3:5: STAR Gisk bays, no hot-swap, direct cable Some: Epint 2:5' hot-swap (HS) SATA/SAS disk bays Bay 4:3:5:' 1: high, external, for disk Disk controller Intel PCH Seriel AS, SATA SAS disk bays Bay 7: 0:3:' 1: high, external, for disk Disk controller Intel PCH Seriel AT, SATA 3: Obs/s, hitegrated in chipset, RAID 50: ThinkServer PAID 500 adapter (LS)* SAS 9:240-9h; PCI Express* bus, SATA 6:00:5; SAS 6:00:by, SAS 6:00:by, PCI Express* bus, SATA 6:00:5; SAS 6:00:by, PCI Express* 0: AS 6:00:by, 10:00 upport (RAID 0:5) is available to enight disk bays Bay 10:3:7; 1: high, external, for disk Bay 12:2; 0:6' high, external, for disk Bay 2:2;	disclaimers	depender memory	nt on pro	cessor me	emory conti	roller spe	ed and installed					nal o	nen (on	tical/tan	
Disk bays Some: Four 3.5* SATA disk bays, no hot-swap, direct cable Bay 5 Some: Four 3.5* hot-swap (HS) SATA/SAS disk bays Some: Four 3.5* hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5* hot-swap (HS) SATA/SAS disk bays Bay 6 3.5*, 1* high, external, for disk Disk controller Intel FOH Serial ATA, SATA SAG disk bays Bay 5 3.5*, 1* high, external, for disk Disk controller Intel FOH Serial ATA, SATA SAG disk bays Bay 6 3.5*, 1* high, external, for disk Bay 10 Some: Eight 2.5* hot-swap (HS) SATA/SAG disk bays Bay 10 3.5*, 1* high, external, for disk Bay 10 Some: Capuet ATA, SATA SAG disk bays Bay 10 3.5*, 1* high, external, for disk Bay 10 Some: Capuet ATA, SATA SAG disk bays Bay 10 3.5*, 1* high, external, for disk Bay 10 Some: SATA 6.005b/s, 7200 rpm Bay 2 5.25*, 16* high, external, for disk Bay 2 S.5*, SAS 8.005b/s, 15000 rpm Bay 2 2.5*, 06* high, external, for disk Bay 2 Some: DVD-ROM DL SATA 1.5Gb/s 16X-48X Max' Drive Bay 9 2.5*, 06* high, external, for disk Bay 2 Some: DVD-ROM DL SATA 1.5Gb/s 16X-48X Max' Drive Bay 9 2.5*, 06* high, external, for disk Bay 2 Some: DVD-ROM DL SATA 1.5Gb/s 16X-48X Max' Drive Bay 9 2.5*, 06* high, external, for disk Bay 3 Software Man	Graphics	one VGA D Maximum r	B-15 on esolutior	rear; n: 1600x12	200@60Hz		· ·		Bay 2 Bay 3 Bay 4	5.25", 1.6" 3.5", 1" h	high, exter igh, exter igh, exter	nal, s nal, fo nal, fo	td optica or disk or disk		~)
Disk Colmotic mAID*0 /r. 10 support marker PAID*0 (1, 10 support PAID 500: ThinkServer FAID 500 adapter (LS* SAS 92.048); PCI Express* bus, SATA 6.050/s, SAS 6.060/s, RAID 0, 1, 10 support 2.5" disk bay models: Bay 10 3.5", 1* high, external, open (optical/tape) Bay 10 3.5", 1* high, external, sid optical Bay 3 2.5", 0.6° high, external, tor disk Bay 5 2.5", 0.6° high, external, tor disk Bay 6 2.5", 0.6° high, external, tor disk Bay 9 2.5", 0.6° high, external, tor disk	Disk bays	Some: Fou Some: Fou Some: Eig	ır 3.5" ha ır 3.5" ha ht 3.5" h	ot-swap (H ot-swap (H ot-swap (H	S) SATA dis S) SATA/SA IS) SATA/S	sk bays AS disk b AS disk t	ays Days		Bay 6 <i>Bay 7-10</i> Bay 7 Bay 8	3.5", 1" h <i>are availai</i> 3.5", 1" h 3.5", 1" h	iğh, exter ble on Eight igh, exter igh, exter	nal, fo 3.5" d nal, fo nal, fo	or disk <i>lisk bay</i> or disk or disk	models:	
(FAID 5 to available on eight disk bays model only) Bay 4 2.5° 0.6° high, external, for disk Disk(s) 3.5° SATA: SATA 6.0Gb/s, 7200 rpm Bay 5 2.5° 0.6° high, external, for disk Bay 4 2.5° 3.5° SATA: SATA 6.0Gb/s, 7200 rpm Bay 6 2.5° 0.6° high, external, for disk Bay 4 2.5° 0.6° high, external, for disk Bay 8 2.5° 0.6° high, external, for disk Tape drive Supports optional tape drive via internal USB 2.0 connector Bay 9 2.5° 0.6° high, external, for disk Optical Some: Super Multi-Burner DL DVD=FIW SATA 1.5Gb/s 16X-48X Maxt Drive Bay 9 2.5° 0.6° high, external, for disk Bay 9 2.5° 0.6° high, external, for disk Bay 9 2.5° 0.6° high, external, for disk Bay 10 2.5° 0.6° high, external, for disk Bay 9 2.5° 0.6° high, external, for disk Bay 10 2.5° 0.6° high, external, for disk Bay 9 2.5° 0.6° high, external, for disk Bay 10 2.5° 0.6° high, external, for disk Bay 9 2.5° 0.6° high, external, for disk Bay 10 2.5° 0.6° high, external, for disk Siot 1 <td>Disk controller</td> <td>RAID 500:</td> <td>F T P F r <i>500:</i> A</td> <td>AID[®] 0, 1, hinkServe CI Expres AID 0, 1, dditional u</td> <td>10 support r RAID 500 s[®] bus, SA 10 support upgrade key</td> <td>adapter A 6.0Gb</td> <td>(LSI® SAS 9240- ∕s, SAS 6.0Gb/s,</td> <td></td> <td>Bay 10 <i>2.5" disk</i> Bay 1 Bay 2</td> <td>3.5", 1" h <i>bay model</i> 5.25", 1.6" 5.25", 1.6"</td> <td>iğh, exter <i>s:</i> high, exter high, exter</td> <td>nal, fo nal, o nal, s</td> <td>or disk pen (op td optica</td> <td></td> <td>e)</td>	Disk controller	RAID 500:	F T P F r <i>500:</i> A	AID [®] 0, 1, hinkServe CI Expres AID 0, 1, dditional u	10 support r RAID 500 s [®] bus, SA 10 support upgrade key	adapter A 6.0Gb	(LSI® SAS 9240- ∕s, SAS 6.0Gb/s,		Bay 10 <i>2.5" disk</i> Bay 1 Bay 2	3.5", 1" h <i>bay model</i> 5.25", 1.6" 5.25", 1.6"	iğh, exter <i>s:</i> high, exter high, exter	nal, fo nal, o nal, s	or disk pen (op td optica		e)
3.5" SAS: SAS 6.0Gb/s, 15000 rpm Eay 7 2.5", 0.6" high, external, for disk Tape drive Supports optional tape drive via internal USB 2.0 connector Bay 9 2.5", 0.6" high, external, for disk Optical Some: DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Bay 9 2.5", 0.6" high, external, for disk Diskette None (use USB port) Soft 1 haft-length, full-height, 22-bit PCI 2.3 Stol 1 haft-length, full-height, PCI Express 2.0 x8" Chipset Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet Stol 1 haft-length, full-height, PCI Express 2.0 x8" Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM Stol 1 haft-length, full-height, PCI Express 2.0 x8" Front ports Two USB 2.0 nea serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Intelligent Diagnostics IDM model(s): add-on orkVM card for KVM functions Module (IDM) Onboard TPM chip; TPM model(s): add-on KVM card for KVM functions Security chip No onboard TPM chip; TPM model(s): add-on card for TPM function; TCG 1.2-compliant Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS" (00 qualified, redundant with two power supplies Software Management Tools Keyboard	Disk(s)	3 5" SATA	(RAID 50 is	available c		isk bays model o	only)	Bay 4 Bay 5	2.5", 0.6" 2.5", 0.6"	high, exter high, exter	nal, fo nal, fo	or disk or disk		
OpticalSome: DVD-ROM DL SATA 1.5Gb/s 16X-48X Max* Drive Some: Super Multi-Burner DL DVD±RW SATA 1.5Gb/s DriveBay 10 2.5*, 0.6* high, external, for diskDisketteNone (use USB port)Stata 1.5Gb/s DriveStata 1.5Gb/s DriveChipsetIntel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)Stata 1.4afi-length, full-height, PCI Express 2.0 x8* Slot 1 half-length, full-height, PCI Express 2.0 x8EthernetTwo Gigabit Ethernet ports, Intel 82574L and 82579LM NoneNoneFront portsTwo USB 2.0Rear portsFour USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connectorIntelligent Diagnostics <i>IDM model(s):</i> advanced diagnostics, IDM IED lights indicate failing component category Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM mode(s): addional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliantPrerequisitesMonitor, SATA/SAS disk, OS (sepoard None (use USB port)NouseNone (use USB port)Power supplyOne or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power suppliesMechanicalTower, business black color, metal case Side over removal, system fan removalMechanicalTower, business black color, metal case Side over removal, disk and optical drive removal, system fan removalSystem weight61.7 lb (28kg) max configuration Side over removal, disk and optical drive removal, system fan removalRack mountRack-mountable to 5U<		3.5" SAS:	SAS 6.0	0Gb/s, 150	000 rpm				Bay 7 Bay 8	2.5", 0.6" 2.5", 0.6"	high, exter high, exter	nal, fo nal, fo	or disk or disk		
Optical Some: Super Multi-Burner DL DVD±RW SATA 1.5Gb/s fbx440x Max* Drive Diskette None (use USB port) Chipset Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB) Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM Front ports Two USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Intelligent Diagnostics IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM functions Prerequisites Monitor, SATXASA Sids, QS Keyboard None (use USB port) Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies Mechanical Tower, business black color, metal case Dimension W X H X D = 7.68*/195mm x 16.9*/430mm x 23.4*/595mm System weight 61.7 lb (28kg) max configuration system fan removal Rack mount Rack-mountable to 5U Limited warranty -year parts and labor; more Lenvos Services information see S-TOR	Tape drive					USB 2.0	connector			2.5", 0.6"					
Diskette None (use USB port) Slot 2 half-length, fuil-height, PCI Express 2.0 x8* Chipset Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet Extender card Two Gigabit Ethernet ports, Intel 82574L and 82579LM Slot 2 half-length, fuil-height, PCI Express 2.0 x8* Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM * x4 electrical * x4 electrical Front ports Two USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector * x4 electrical Intelligent Diagnostics <i>IDM model(s)</i> : add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category Soft Mare Management Tools Systems mgmt Onboard Aspeed AST2150 graphics/management controller (BMC); <i>KVM model(s)</i> : add-on KVM card for KVM functions Security chip None (use USB port) Software Management Tools Prerequisites Monitor, SATA/SAS disk, OS * Keyboard None (use USB port) ThinkServer EasyStartup Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies * Mechanical Tower, business black color, metal case *	Optical								Day 10	2.5, 0.0	nign, exter	nai, io	JI UISK		
Chipset Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernett MAC, and USB) Slot 3 half-length, full-height, PCI Express 2.0 x8 Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM *x4 electrical Front ports Two USB 2.0 near ports Rear ports Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector *x4 electrical Intelligent Diagnostics <i>IDM model(s)</i> : add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVW model(s)</i> : add-on KVM functions Software Management Tools Prerequisites Monitor, SATA/SAS disk, OS * ThinkServer EasyStartup Mouse None (use USB port) * ThinkServer EasyStartup Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies Security chip (selected models, see information on left) Mechanical Tower, business black color, metal case * Security chip (selected models, see information on left) Mouse None (use USB port) * Security chip (selected models, see information on left) Additional removal * Se		•			_ DVD±RW	SATA 1.5	5Gb/s Drive								
Onlose t Mack, and USB Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CP Mack, and USB) Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CP x4 electrical Ethernet card None Two USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CP x4 electrical Tintelligent Diagnostics <i>IDM model</i> (<i>s</i>): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category Software Management Tools Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(<i>s</i>): add-on KVM card for KVM functions Security chip None (use USB port) None (use USB port) Software Management Tools Prerequisites Monitor, SATA/SAS disk, OS Keyboard Station, reduct and with two power supplies ThinkServer EasyStartup Mouse None (use USB port) One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies Security chip (selected models, see information on left) Mouse None (use USB port) Security chip (selected models, see information on left) Security chip (selected models, see information on left)	Diskette	None (use	USB por	t)											
Ethemet Two Gigabit Ethemet ports, intel 825/4L and 825/9LM ** x8 electrical Front ports Two USB 2.0 Rear ports Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Intelligent Diagnostics <i>IDM model(s):</i> add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions Security chip No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Prerequisites Monitor, SATA/SAS disk, OS • ThinkServer EasyStartup Mouse None (use USB port) • ThinkServer EasyManage Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies • Security chip (selected models, see information on left) Mechanical Tower, business black color, metal case • Administrator password Dimension W x H x D = 7.68'/195mm x 16.9''/430mm x 23.4''/595mm • Security chip (selected models, see information on left) System weight 61.7 Ib (28kg) max configuration • Sortware Management (all) • Serial p	Chipset	MAC, and L	JSB)	-		-		rnet	Slot 4 ha	alf-length, f					near CPU)
Front ports Two USB 2.0 Rear ports Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Intelligent Diagnostics <i>IDM model(s):</i> add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s): KVM model(s):</i> Security chip No onboard TPM chip: TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Prerequisites Monitor, SATA/SAS disk, OS * Keyboard None (use USB port) Mouse None (use USB port) Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies Mechanical Tower, business black color, metal case Dimension W X H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm System weight 61.7 lb (28kg) max configuration Sold cover removal, disk and optical drive removal, system fan removal system fan removal Rack mount Rack-mountable to 5U USB port disablement (all)			t Etherne	et ports, In	tel 82574L	and 8257	79LM		** x8 elec	ctrical					
Rear ports Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Intelligent Diagnostics, Module (IDM) <i>IDM model(s):</i> add-on Intelligent Diagnostics, IDM LED lights indicate failing component category Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions Security chip No onboard TPM chip; <i>TPM model(s):</i> additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Prerequisites Monitor, SATA/SAS disk, OS Keyboard None (use USB port) Mouse None (use USB port) Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies Mechanical Tower, business black color, metal case Dimension W X H x D = 7.68*/195mm x 16.9*/430mm x 23.4*/595mm System weight 61.7 lb (28kg) max configuration Stide cover removal, system fan removal system fan removal Rack mount Rack-mountable to 5U Limited warranty 3-year parts and labor; more Lenovo Services information see S-TOR			0												
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IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM card for KVM functionsSecurity chipNo onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliantPrerequisitesMonitor, SATA/SAS disk, OSKeyboardNone (use USB port)MouseNone (use USB port)Power supplyOne or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power suppliesMechanical DimensionTower, business black color, metal caseDimensionW x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mmSystem weight Tool-less61.7 lb (28kg) max configurationSide cover removal, system fan removalSide cover removal, system fan removalRack mountRack-mountable to 5ULimited warranty3-year parts and labor; more Lenovo Services information see S-TOR		IDM model	ad	vanced dia	agnostics.			ry							
Security chip No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Software Management Tools Prerequisites Monitor, SATA/SAS disk, OS • ThinkServer EasyStartup Mouse None (use USB port) • ThinkServer EasyManage Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies • Security Mechanical Tower, business black color, metal case • Security chip (selected models, see information on left) Dimension W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm • Security chip (selected models, see information on left) System weight 61.7 lb (28kg) max configuration • User password • User password Tool-less Side cover removal, disk and optical drive removal, system fan removal • Boot without keyboard, mouse, diskette Rack mount Rack-mountable to 5U • USB port disablement (all)	Systems mgmt	IPMI 2.0-co	mpliant	baseboard	d managem	ent contr	oller (BMC);	5							
Prerequisites Monitor, SATA/SAS disk, OS Software Management Tools Keyboard None (use USB port) - ThinkServer EasyStartup Mouse None (use USB port) - ThinkServer EasyManage Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies - Security Mechanical Tower, business black color, metal case - Administrator password Dimension W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm - Security chip (selected models, see information on left) System weight 61.7 lb (28kg) max configuration - Front panel key lock Tool-less Side cover removal, disk and optical drive removal, system fan removal - Boot sequence control Rack mount Rack-mountable to 5U - Serial port I/O control Limited warranty 3-year parts and labor; more Lenovo Services information see S-TOR - USB port disablement (all)	Security chip	No onboard	Ì TPM ch <i>l(s):</i> ad	hip; ditional Νι	voton WPC	CT210 ad		M							
Keyboard None (use USB port) ThinkServer EasyStartup Mouse None (use USB port) ThinkServer EasyStartup Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies ThinkServer EasyStartup Mechanical Tower, business black color, metal case Security Dimension W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm Security chip (selected models, see information on left) System weight 61.7 lb (28kg) max configuration User password Tool-less Side cover removal, disk and optical drive removal, system fan removal Boot sequence control Rack mount Rack-mountable to 5U Serial port I/O control Limited warranty 3-year parts and labor; more Lenovo Services information see S-TOR USB port disablement (all)	Prereguisites	Monitor, SA			eep						•	ement	Tools		
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80 PLUS® Gold qualified, redundant with two power supplies Security chip (selected models, see information on left) Mechanical Tower, business black color, metal case Administrator password Dimension W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm Security chip (selected models, see information on left) System weight 61.7 lb (28kg) max configuration User password Tool-less Side cover removal, disk and optical drive removal, system fan removal Boot sequence control Rack mount Rack-mountable to 5U Serial port I/O control Limited warranty 3-year parts and labor; more Lenovo Services information see S-TOR USB port disablement (all)							<i>.</i>		• I NINKSE	erver Easyl	vianage				
Mechanical Tower, business black color, metal case - Security critic (selected models, see information of fett) Dimension W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm - Administrator password System weight 61.7 lb (28kg) max configuration - Front panel key lock Tool-less Side cover removal, disk and optical drive removal, system fan removal - Boot sequence control Rack mount Rack-mountable to 5U - Serial port I/O control Limited warranty 3-year parts and labor; more Lenovo Services information see S-TOR - USB port disablement (all)	Power supply	One or two 80 PLUS® (450 wat Gold qua	ts standar Ilified, redu	a, two maxi undant with	mum, rea	ar access, hot-sw er supplies	ap,	.	u alata (t		-			1-41
Dimension W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm • Refinition and the password System weight 61.7 lb (28kg) max configuration • User password Tool-less Side cover removal, disk and optical drive removal, system fan removal • Boot sequence control Rack mount Rack-mountable to 5U • Serial port I/O control Limited warranty 3-year parts and labor; more Lenovo Services information see S-TOR • USB port disablement (all)	Mechanical											is, see	intorma	ation on	ieπ)
System weight Tool-less 61.7 lb (28kg) max configuration • Front panel key lock Side cover removal, disk and optical drive removal, system fan removal • Boot sequence control Rack mount Rack-mountable to 5U • Boot without keyboard, mouse, diskette Limited warranty 3-year parts and labor; more Lenovo Services information see S-TOR • USB port disablement (all)		-				n x 23.4"/	/595mm		 User participant 	assword	onoru				
Tool-less Side cover removal, disk and optical drive removal, system fan removal • Boot sequence control Rack mount Rack-mountable to 5U • Boot without keyboard, mouse, diskette Limited warranty 3-year parts and labor; more Lenovo Services information see S-TOR • USB port disablement (all)	System weight								 Front p 	anel key lo	ck				
Rack mount Rack-mountable to 5U • Serial port I/O control Limited warranty 3-year parts and labor; more Lenovo Services information see S-TOR • USB port disablement (all)	Tool-less			disk and	optical drive	e remova	l,		Boot se	equence co	ontrol	o diale	otto		
Limited warranty 3-year parts and labor; more Lenovo Services information see S-TOR • USB port disablement (all)	Pook mount			511								e, uisk	ene		
Accessories For more accessories, see O-TOR sheet RoHS-compliant					enovo Ser	vices info	rmation see C.T.	OR							
									RoHS-co	mpliant					

See footnotes for important warranty information US model(s) announced June 12, 2012

ThinkServer® TS430 Redundant PSU (0392) - September 2012

Туре-		Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	ТРМ	mgmt	OS	PSU
0392-1RU	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xDirect Cable	No	DVD	No	TPM	IPMI	No	1x450W
0392-1SU	Core i3-3240	1x4GB	No	500	SATA/SAS	3.5	4xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W
0392-1TU	Core i3-3240	1x4GB	No	500	SATA/SAS	2.5	8xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W

Processor	Up to one processor, one processor standard, Intel [®] Core™ i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Intel Core i3-3240 processor (2C/4T, 3.4GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear Image: std optical/tape std optical Image: std optical Image: std optical
Implementation	One LGA1155 socket	Disk Bay
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	7-10
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 3-6 3-10 1 - PCle x6 2 - PCle x8 3 - PCle x8 4 - PCl
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	<i>3.5" disk bay models:</i> Bay 1 5.25", 1.6" high, external, open (optical/tape)
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk
Disk controller	Intel PCH: RAID 500: RAID 500: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 support; ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	Bay 7-10 are available on Eight 3.5" disk bay models:Bay 73.5", 1" high, external, for diskBay 83.5", 1" high, external, for diskBay 93.5", 1" high, external, for diskBay 103.5", 1" high, external, for disk2.5" disk bay models:Bay 15.25", 1.6" high, external, open (optical/tape)
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 6 2.5", 0.6" high, external, for disk
Optical	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Baý 10 2.5", 0.6" high, external, for disk
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*
Extender card	None Two USB 2.0	Slot 3 half-length, full-height, PCI Express 2.0 x8
Front ports Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category	
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; <i>TPM model(s):</i> additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	
Keyboard	None (use USB port)	
Mouse Power supply	None (use USB port) One or two 450 watts standard, two maximum, rear access, hot-swap,	Software Management Tools
Mechanical	80 PLUS [®] Gold qualified, redundant with two power supplies Tower, business black color, metal case	ThinkServer EasyStartup ThinkServer EasyManage
Dimension	W x H x D = $7.68^{\circ}/195$ mm x $16.9^{\circ}/430$ mm x $23.4^{\circ}/595$ mm	, , ,
System weight	61.7 lb (28kg) max configuration	Security
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	 Security chip (selected models, see information on left) Administrator password User password
Rack mount	Rack-mountable to 5U	 Oser password Front panel key lock
Limited warranty Accessories	3-year parts and labor; more Lenovo Services information see S-TS For more accessories, see O-TOR sheet	 Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)
		RoHS-compliant

ThinkServer[®] TS430 Redundant PSU (0391) - June 12, 2012

Type-		Memory	Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	(MHz/type)	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	OS	PSU
0391-12U	Core i3-2120	1333MHz UDIMM	1x4GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W
0391-13U	Xeon E3-1220V2	1333MHz UDIMM	1x4GB	No	Intel PCH	SATA	3.5"	4xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W

Processor	Up to one processor, one processor standard, Intel [®] Core™ i3-2120 processor (2C/4T, 3.3GHz, 3MB Cache),	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	integrated Intel HD Graphics 2000, DDR3 memory controller (up to	••••• 📼 🛛 🕬
	1333MHz) Intel Xeon [®] E3-1220V2 processor (4C/4T, 3.1GHz, 8MB Cache),	optical/tape
	Turbo Boost 2.0 (up to 3.5GHz), DDR3 memory controller (up to 1600MHz)	std optical
Implementation	One LGA1155 socket	Disk Bay
Memory	32GB max, UDIMM , PC3-10600 1333MHz DDR3 , ECC , four 240-pin DIMM sockets	7-10
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 3-6 3-6 3-10 4 - PCle x8 3 - PCle x8 4 - PCl
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	<i>3.5" disk bay models:</i> Bay 1 5.25", 1.6" high, external, open (optical/tape)
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays	Bay 25.25", 1.6" high, external, std opticalBay 33.5", 1" high, external, for diskBay 43.5", 1" high, external, for diskBay 53.5", 1" high, external, for diskBay 63.5", 1" high, external, for disk
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 500: RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter,	Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
	add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical
Disk(s)	<i>3.5" SATA:</i> SATA 6.0Gb/s, 7200 rpm <i>3.5" SAS:</i> SAS 6.0Gb/s, 15000 rpm <i>2.5" SAS:</i> SAS 6.0Gb/s, 10000 rpm	Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 6 2.5", 0.6" high, external, for disk
Optical	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 9 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 10 2.5", 0.6" high, external, for disk Slot 1 half-length, full-height, 32-bit PCI 2.3
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Slot 2 half-length, full-height, PCI Express 2.0 x8*
Extender card Front ports	None Two USB 2.0	Slot 3 half-length, full-height, PCI Express 2.0 x8 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	* x4 electrical
Intelligent Diagnostics Module (IDM)	advanced diagnostics,	
Systems mgmt	IDM LED lights indicate failing component category Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions	
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	
Keyboard Mouse	None (use USB port) None (use USB port)	Softwara Management Tabla
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS [®] Gold qualified, redundant with two power supplies	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage
Mechanical	Tower, business black color, metal case	
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	Security
System weight Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal	 Security chip (selected models, see information on left) Administrator password User password
Rack mount	Rack-mountable to 5U	Front panel key lock Boot sequence control
Limited warranty Accessories	1-year parts and labor; more Lenovo Services information see S-TOR For more accessories, see O-TOR sheet	 Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)

ThinkServer® TS430 Redundant PSU (0391) - September 2012

Type-		Memory	Pre-conf	Disk	Disk	Disk	Disk		SATA	Intelligent		System	Preload	
model	Processor	DIMMs	RAID	controller	type	size	bays	Disk(s)	optical	Diagnostics	TPM	mgmt	OS	PSU
0391-15U	Core i3-3220	1x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W
0391-16U	Core i3-3240	1x4GB	No	Intel PCH	SATA	3.5	4xHot-swap	No	DVD	No	TPM	IPMI	No	1x450W

Processor	Up to one processor, one processor standard, Intel [®] Core [™] i3-3220 processor (2C/4T, 3.3GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz) Intel Core i3-3240 processor (2C/4T, 3.4GHz, 3MB Cache), integrated Intel HD Graphics 2500, DDR3 memory controller (up to 1600MHz)	Front - 3.5" disk bay Front - 2.5" disk bay Rear Image: std optical/tape std optical Image: std optical Image: std optical					
Implementation	One LGA1155 socket	Disk Bay					
Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	7-10					
Additional memory disclaimers	 Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 3-6 3-6 3-10 4 - PCI					
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	3.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk Bay 1 5.25", 1.6" high, external, open (optical/tape)					
Disk bays	Some: Four 3.5" SATA disk bays, no hot-swap, direct cable Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SATA/SAS disk bays						
Disk controller	Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID 500: ThinkServer RAID 500 adapter (LSI® SAS 9240-8i), PCI Express® bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Upgrade for 500: Additional upgrade key for RAID 500 adapter, add RAID 5, 50 support (RAID 50 is available on eight disk bays model only)						
Disk(s)	3.5" SATA: SATA 6.0Gb/s, 7200 rpm 3.5" SAS: SAS 6.0Gb/s, 15000 rpm 2.5" SAS: SAS 6.0Gb/s, 10000 rpm	Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk					
Tape drive	Supports optional tape drive via internal USB 2.0 connector	Bay 6 2.5", 0.6" high, external, for disk					
Optical	DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Bay 7 2.5", 0.6" high, external, for disk					
Diskette	None (use USB port)	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk					
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB)	Bay 10 2.5", 0.6" high, external, for disk					
Ethernet	Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*					
Extender card	None	Slot 3 half-length, full-height, PCI Express 2.0 x8					
Front ports	Two USB 2.0	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU)					
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector	* x4 electrical ** x8 electrical					
Intelligent Diagnostics Module (IDM)	IDM model(s): add-on Intelligent Diagnostics Module for advanced diagnostics, IDM LED lights indicate failing component category						
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions						
Security chip	No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant						
Prerequisites	Monitor, SATA/SAS disk, OS						
Keyboard	None (use USB port)						
Mouse Rewar aurophy	None (use USB port) One or two 450 watts standard, two maximum, rear access, hot-swap,	Software Management Tools					
Power supply	80 PLUS® Gold qualified, redundant with two power supplies	ThinkServer EasyStartup ThinkServer EasyManage					
Mechanical	Tower, business black color, metal case	Security					
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	Security chip (selected models, see information on left)					
System weight	61.7 lb (28kg) max configuration	 Security chip (selected models, see information on left) Administrator password 					
Tool-less	Side cover removal, disk and optical drive removal, system fan removal	User password					
Rack mount	Rack-mountable to 5U	Front panel key lock					
Limited warranty Accessories	1-year parts and labor; more Lenovo Services information see S-TS For more accessories, see O-TOR sheet	 Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) 					
		RoHS-compliant					

ThinkServer®TS430 Accessories

Partial list of accessories supported on Leg	novo® ThinkServer	Keyboard Preferred Pro USB Keyboard	73P5220
ThinkServer Ready accessories are available Business Partners. Locate a Business Partne bplocator.lenovo.com		Mouse Lenovo Optical Mouse (USB)	06P4069
Memory 2GB PC3-10600 DDR3 ECC UDIMM (1Rx8) 4GB PC3-10600 DDR3 ECC UDIMM (2Rx8) 8GB PC3-10600 DDR3 ECC UDIMM (2Rx8)	67Y2606 67Y2607 0A89461		
Connectivity Lenovo Gigabit ET Dual Port Server Adapter Intel Ethernet I340 Quad Port Server Adapter	0A89423 0A89424		
Disk Drive ⁶ 3.5" SATA Cabled: 500GB 7.2K Enterprise 6Gbps SATA 1TB 7.2K Enterprise 6Gbps SATA 2TB 7.2K Enterprise 6Gbps SATA 3TB 7.2K Enterprise 6Gbps SATA	0A89470 0A89471 0A89472 0A89478		
3.5" SATA HS: 500GB Enterprise 6Gbps SATA HS (7200 rpm 1TB Enterprise 6Gbps SATA HS (7200 rpm) 2TB Enterprise 6Gbps SATA HS (7200 rpm) 3TB Enterprise 6Gbps SATA HS (7200 rpm)) 0A89473 0A89474 0A89475 0A89477		
3.5" SAS HS: TS430 preconfigured with SAS controller: 300GB 3.5" SAS 6Gbps HS (15000 rpm) 450GB 3.5" SAS 6Gbps HS (15000 rpm) 600GB 3.5" SAS 6Gbps HS (15000 rpm)	67Y2616 67Y2617 67Y2618		
2.5" SAS HS: TS430 preconfigured with SAS controller: 300GB 2.5" SAS 6Gbps HS (10000 rpm) 450GB 2.5" SAS 6Gbps HS (10000 rpm) 600GB 2.5" SAS 6Gbps HS (10000 rpm) 900GB 2.5" SAS 6Gbps HS (10000 rpm)	67Y2619 67Y2620 67Y2621 0A89409		
ThinkServer RAID controller and RAID upge RAID 100 Upgrade key for onboard RAID RAID 500 Adapter II RAID 500 Upgrade key for Advanced RAID	rade 67Y2626 0A89464 0A89407		
System Management Management Controller Premium	67Y2624	For more information on server accessorie www.lenovo.com/support/accessories	s, please visit:
Tower to Rack Shelf Conversion Kit TS430 Tower to Rack Shelf Conversion Kit	67Y2641	www.lenovo.com/support/thinkserverac www.lenovo.com/support/security	cessories
Redundant Power Supply <i>TS430 with Redundant PSU:</i> 450W hot-swap Redundant PSU	67Y2625	Other accessories at www.lenovo.com/ac Accessories Guide pdf at www.lenovo.com	

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ThinkServer® TS430 Redundant PSU (0392) - November 2011

0392-17U 4x10 X	Ceon E3-1220 3.1 4C/4T 1x4GB 3.5" 4xHot-swap Int		0 ATA						
0392-18U 4x10 X			SATA SATA/SAS SAS	0/1/10 0/1/10 0/1/10	DVD DVD DVD	IPMI IPMI IPMI	None None None	TPM	1x 450W 1x 450W 1x 450W
	 Highly Reliable: redundant PSU, ECC memory, and enterp Highly Manageable: enhanced remote manageability with Room to Grow: highly modular hot-swap SATA/SAS design 3-year limited warranty¹ Up to one processor, one processor standard, 	IPMI 2.0 E	BMC & optic rts up to 8	onal KVN hard driv	l ves (selec			Deer	
	Intel® Xeon® E3-1220 processor (4C/4T, 3.1GHz, 8MB Cach Boost 2.0 (up to 3.4GHz), DDR3 memory controller (up to 13			• 📼		© © © © ©	disk bay		PSU
•	One LGA1155 socket		opti	cal/tape		optical/ta	pe		
	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets		std	optical		std optica	ıl		
	 Actual memory operating speed is the lowest installed speed dependent on processor memory controller speed and inst memory speed 	ed, alled		sk Bay 7-10					
	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	3		k Bay 3-6		Disk Bay 3-10		1 - PCle 2 - PCle 3 - PCle	e x8 e x8
	Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays Some: Eight 2.5" hot-swap (HS) SAS disk bays		3.5" disk					4 - PCI	
	Supports up to RAID 0, 1, 5, 10 via optional 9240-8i v2 RAID and RAID 5 upgrade key; Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ^a 0, 1, 10	·	Bay 1 Bay 2 Bay 3 Bay 4	5.25", ⁻ 3.5", ⁻	1.6" high, 1" high,				pe)
	9240-8i v2: ThinkServer RAID 9240-8i v2 RAID a PCIe bus, SATA 6.0Gb/s, SAS 6.0Gb RAID 0, 1, 10 support	adapter,	Bay 5 Bay 6	3.5", 1 3.5", 1	1" high, 1" high,	external, external,	for disk	models	s:
Optical	Supports optional tape drive via internal USB 2.0 connector DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive None (use USB port)		Bay 7 Bay 8 Bay 9	3.5", ⁻ 3.5", ⁻	1" high, 1" high,	external, external, external,	for disk for disk		
	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2,	ethernet	— Bay 10			external,	for disk		
Ethernet	MAC, and USB) Two Gigabit Ethernet ports, Intel 82574L and 82579LM None	001	2.5" disk Bay 1	5.25", ⁻	1.6" high,		open (op		pe)
	Two USB 2.0		Bay 2 Bay 3		1.6" high, 0.6" high,		std optic for disk	al	
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one po	ort is	Bay 4	2.5", (0.6" high,	external,	for disk		
Diagnostics	shared with system management), one analog VGA DB-15 co System status LEDs on front; <i>DIT model(s):</i> add-on Doctor Inside Technology (DIT) model		Bay 5 Bay 6 Bay 7	2.5", (2.5", (0.6" high, 0.6" high, 0.6" high,	external, external,	for disk for disk		
, ,	advanced diagnostics Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC) KVM model(s): add-on KVM card for KVM functions	;	Bay 8 Bay 9 Bay 10	2.5", (0.6" high, 0.6" high, 0.6" high,	external,	for disk		
Security chip	No onboard TPM chip; <i>TPM model(s):</i> additional Nuvoton WPCT210 add-on card fo function, TCG 1.2-compliant	or TPM	Slot 2 h	alf-lengt		ght, PCI E	t PCI 2.3 xpress 2. xpress 2.		
Prerequisites	Monitor, SATA/SAS disk, OS				h, full-heig	ght, PCI E	Express 2.	0 x16**	(near CPU)
	None (use USB port)		** x8 ele	ctrical					
Power supply	None (use USB port) One or two 450 watts standard, two maximum, rear access, h 80 PLUS® Gold qualified, redundant with two power supplies	not-swap,							
	Tower, business black color, metal case								
	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm								
Tool-less	61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal			Sc	oftware M	anagem	ent Tools		
	Rack-mountable to 5U 4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks			erver Ea	asyStartup	5			
capacity	8x3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disl	ks	 ThinkS 	erver Ea	asyManag	le			
	4x 3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disl 8x 3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disl 8x 2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disl	sks			selected r	Security models, s	ee informa	ation or	n left)
	3-year parts and labor; more Lenovo Services see S-TOR she For more accessories, see O-TOR sheet		 User p Front p Boot s 	assword banel ke equence vithout k	y lock e control eyboard, r	mouse, d	iskette		
					blement (a	all)			

ThinkServer® TS430 Redundant PSU (0441) - TopSeller (Jan 2012)

Type- Slot x model bay	Processor(s)	Memory DIMMs	Disk size	Disk bays	Disk Controller	Disk type	Pre-con RAID	f Disk(s)	System Di mgmt	agnostic (DIT)	s TPM	Windows Server preload	Power Supply
	Xeon E3-1220 Xeon E3-1220 Xeon E3-1220	1x4GB	3.5"	4xHS	Intel PCH	SATA SATA SATA	No	2x500GB 2x500GB	-		None None None	TPM TPM TPM	SBS 2011 2008 R2 STD	1x 450W 1x 450W 1x 450W
	 Highly Reli Highly Mar Room to G 3-year limi Part of the 	nageable Trow: hig ted warra	e: enha ghly m anty¹	anced i odular	remote man hot-swap S	ageabi	lity with	IPMI 2.0 B	MC &	optional K	VM	elected	models)	
Processor Implementation Memory Additional memory disclaimers Graphics Disk bays Disk controller Disk (s) Tape drive Optical Diskette Chipset Ethernet Extender card Front ports Rear ports Diagnostics Systems mgmt Security chip Prerequisites Keyboard Mouse Power supply Mechanical Dimension System weight Tool-less Rack mount Max internal capacity Limited warranty Accessories Preload OS	memory sp Onboard Asp one VGA DB Maximum res Four 3.5" hot Serial ATA, S supports up 1 and RAID 5 of Supports opt Supper Multi-E None (use U Intel C202 C MAC, and US Two Gigabit I None (use U Intel C202 C MAC, and US Two Gigabit I None (use U None USB 2.0 Four USB	E3-122 (b) to 3.4G 55 sockel JDIMM , ID DIMM sc mory ope and solution: -swap (H ATA 3.00 to RAID upgrade B, SATA ional tap B, SATA ional tap B, SATA SB) Ethernet D, one se system n is LEDs (): add SB) Ethernet D, one se system n is LEDs (): add SB) Ethernet D, one se system n is LEDs (): add SB port) SB port) S	0 proc 0 proc 14z), [14z), [15z] 15	2essor DDR3 r 0600 1 3 speec memoi graphi (1200 @ ATA dis integral b/s, 72 e e via in 0-transformed b/s, 72 e e via in 0-transformed b/s, 72 e e via in 0-transformed b/s, 72 e e via in 0-transformed post of transformed post of	(4C/4T, 3.1 nemory con 333MHz DI is the lowe ry controller cs/managed 660Hz k bays ted in chipsk a optional 92 00 rpm, 3.5 ternal USB SATA 1.5Gb 12574L and wo ethernel , one analog side Technoc stics cs/managed nagement cd a optional 92 00 rpm, 3.5 ternal USB SATA 1.5Gb 12574L and wo ethernel , one analog side Technoc stics cs/managed nagement cd a of KVM fu on WPCT21 2-compliant // a om aximum nt with two case // a of the eight 600 th eight 600 ch eight 600 ch eight 600 ch eight 600 ch eight 600 ch or Services 8 sheet Small Busi	GHz, 8 troller (DR3, E st insta speed ment pl 240-8i 2.0 col /s Drive 2.0 col /s Drive (RJ-48 g) VGA logy (E ment pl controlle (nctions 0 add-c a, rear a power : 3.4"/59 noval, 3.5" SA 3.5" SA	(up to 13 CC, and ins rocessor rocessor D ⁸ 0, 1, 1 v2 RAID D -15 c DIT) moc rocessor er (BMC 5, one pr DB-15 c DIT) moc rocessor er (BMC 5, one pr TA disks SAS dis " SAS dis" SAS dis" SAS dis" SAS dis " SAS dis " SAS dis " SAS dis" SAS dis"	ed, talled r, 10 support adapter , ethernet ort is onnector dule for r, ;; for TPM hot-swap, ; sks sks sks sks sks isks isks isks is	- <i>S</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>3.5</i> <i>5.5</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.8</i> <i>8.9</i> <i>8.8</i> <i>8.9</i> <i>8.8</i> <i>8.9</i> <i>8.8</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>8.9</i> <i>9.9</i> <i>8.9</i> <i>8.9</i> <i>9.9</i> <i>8.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i> <i>9.9</i>	optical/tap std optical std optical Disk Bay 7-10 Disk Bay 3-6 2 3 5 4 5 7 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 9 5 7 7 9 10 2 7 9 2 10 2 10 2 10 2 10 2 10 2 10 2	models: , 1.6" hi , 1.6" hi 1" higt 1" higt	gh, exte gh, exte h, exte h, exte h, exte h, exte gh, ext	ernal, open (optic ernal, std optical ernal, std optical ernal, for disk ernal, for disk	PSU PSU - PCle x16 - PCle x8 - PCle x8 - PCl x8 - P

ThinkServer® TS430 Fixed PSU (0390) - TopSeller (Jan 2012)

	lot x bay	Processor(s)	Memory DIMMs	Disk size	Disk bays	Disk Controller		Pre-con RAID	f Disk(s)		System D mgmt	iagnostics (DIT)	ТРМ	Windows Serve preload	er Power Supply
)390-14U 4)390-15U 4		Xeon E3-1220 Xeon E3-1220					SATA SATA		2x500GB S 2x500GB S			None None	TPM TPM	SBS 2011 2008 R2 STE	1x Fixed 0 1x Fixed
		 Highly Relia Highly Mana Room to Gre 3-year limite Part of the U 	ageable: ow: high ed warrai	enha nly mo nty¹	nced re dular l	emote man not-swap S	ageabili	ity with II	РМІ 2.0 ВМС	: & ор			ected r	models)	
Processor		Up to one pro Intel [®] Xeon [®] Boost 2.0 (up	E3-122	0 prod	cessor	(4C/4T, 3.1	IGHz, 8			Fror	nt - 3.5″ ◎····			- 2.5" disk bay R]
Implementa	ation	One LGA115		,				、 ·	,		optical/ta			otical/tape	PSU
Memory		32GB max, L				1333MHz D	DR3, E	CC,			std optica			d optical]
Additional memory disclaimers	;	 four 240-pin Actual mer dependent memory sp 	nory ope on proc	erating	g speed	d is the lowe ry controlle					Disk Bay 7-10			[
Graphics		Onboard Asp one VGA DB Maximum res	-15 on re solution:	ear; 1600)	x1200@	@60Hz	ement p	rocessor	3		Disk Bay 3-6]		Disk Bay 3-10	4 - PCle x16 3 - PCle x8 2 - PCle x8 1 - PCl
Disk bays Disk contro Disk (s) Tape drive Optical Diskette	ller	Four 3.5" hot Serial ATA, S supports up 1 and RAID 5 u 500GB, SATA Supports opt Super Multi- None (use U	ATA 3.00 to RAID upgrade A 6.0Gb/ ional tap Burner D	Gb/s, 0, 1, 5 key; s, 720 e driv L DVI	integra 5, 10 vi 00 rpm, re via ir	ted in chips a optional 9 3.5" nternal USE	9240-8i 3 2.0 co	v2 RAID	I0 support; adapter	<i>3.5"</i> Bay Bay Bay Bay Bay	1 5.2 2 5.2 3 3.5 4 3.5	5", 1.6" hig ', 1" high ', 1" high	jh, ext , ext , ext	ernal, open (opti ernal, std optical ernal, for disk ernal, for disk ernal, for disk	cal/tape)
Chipset		Intel C202 C	, ,		rm Cor	ntroller Hub	[PCH]	(Slot 1-2	ethernet	Bay	6 3.5	', 1" hiğh	, ext	ernal, for disk	
Ethernet Extender ca Front ports Rear ports	ard	MAC, and US Two Gigabit I None Two USB 2.0 Four USB 2.0	SB) Ethernet)), one se	ports erial (9	, Intel 8 9-pin), 1	32574L and	l 82579 et (RJ-4	LM 5, one po	ort is	Bay Bay Bay Bay	7 3.5 8 3.5 9 3.5 10 3.5	', 1" high ', 1" high ', 1" high ', 1" high	, ext , ext , ext	<i>ht 3.5" disk bay n</i> ernal, for disk ernal, for disk ernal, for disk ernal, for disk	iodels:
Diagnostics	6	shared with s System statu DIT model(s)	is LEDs): add-	on fro on Do	nt;	iside Techn	•			2.5" Bay Bay Bay	1 5.2 2 5.2	5", 1.6" hig	jh, ext	ernal, open (opti ernal, std optical ernal, for disk	
Systems m	0	Onboard Asp IPMI 2.0-com <i>KVM model(</i>	peed AS ⁻ npliant ba <i>s):</i> add-	T2150 asebo ·on K\) graph ard ma	ics/manage anagement	controll	er (BMC)		Bay Bay Bay	4 2.5 5 2.5 6 2.5	', 0.6" hig ', 0.6" hig ', 0.6" hig	gh, ext gh, ext gh, ext	ernal, for disk ernal, for disk ernal, for disk	
Security ch		No onboard TPM model(s	s): addi func	tional tion, T	FCG 1.	on WPCT2 [.] 2-complian		on card f	or TPM	Bay Bay Bay Bay	8 2.5	', 0.6" hig ', 0.6" hig	ýh, ext jh, ext	ernal, for disk ernal, for disk ernal, for disk ernal, for disk	
Prerequisite Keyboard	es	Monitor, SAT		isk, O	S					1					
Mouse		None (use U												32-bit PCI 2.3 PCI Express 2.0	x8*
Power supp	oly	One fixed 40	0 watts s	standa	ard, uni	versal, 80 F	PLUS® I	Bronze q	ualified	Slot	3 half-le	ength, full-	height,	PCI Express 2.0	x8
Mechanica	l	Tower, busine									4 nan-ie 4 electric		neignt,	PCI Express 2.0	XIO (near CPU)
Dimension System we	iaht	W x H x D = 61.7 lb (28kg				//430mm x /	23.4"/59	95mm		** x8	8 electric	al			
Tool-less	iyin	Side cover re				cal drive rei	noval.								
5		system fan re	emoval				,								
Rack moun Max interna		Rack-mounta 4x3.5" SATA				th four 2TB	25" 9/	TA dicko							
capacity		8x3.5" SATA 8x3.5" SATA 4x3.5" SAS 8x3.5" SAS 8x2.5" SAS	(HS): (HS): (HS):	2.4 2.4 4.8	6.0TB w 4TB wi 8TB wi	vith eight 21 th four 6000 th eight 600 th eight 600	"B 3.5" GB 3.5")GB 3.5	SATA dis SAS dis SAS di	ks ks sks			0.4			
Limited wa Accessorie Preload OS	s	/ 3-year parts For more acc SBS 2011:	cessories	s, see	O-TOF							r EasySta r EasyMai	rtup	agement Tools	
		2000 02 07	Stand		ndour	Conver® 00	00 00 0	Stondard					Sec	urity	
		2008 R2 STI	J. Genul	ne W	nuows	Server [®] 20		סנמווטמוט		 Ac Us Fr Bc 	dministra ser pass ont pane oot sequ	tor passwo word I key lock ence contr	ord	dels, see informati	ion on left)
										• Se	erial port	I/O contro lisablemer	1	use, diskette	

ThinkServer® TS430 Redundant PSU (0391) - withdrawn

Type- Slot x model bay	Processor(s)	C GHz Th	ores / nreads	Memory DIMMs	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	SATA optical		Diagnostic (DIT)	s TPM	Power Supply
391-11U 4x6	Core i3-2100	3.1 20	C/4T	1x2GB	3.5"	4 x Hot-swap	Intel PCH	SATA	0/1/10	DVD	IPMI	None	TPM	1x 450\
	 Highly Man 	ageabl row: hi	e: enha ghly m	anced rei	mote r	nanageability v	nterprise-class vith IPMI 2.0 Bl esign – suppor	MC & optic	onal KVM		ted mod	els)		
Processor	Up to one pro Intel [®] Core™ integrated Inte DDR3 memor	i3-210 el HD 0	0 proce araphic	essor (2 s,	С/4Т, :	3.1ĠHz, 3MB (Cache),		3.5" disk k	bay Fro	•nt - <i>2.5"</i> ◎···· □	disk bay		PSU
Implementation	One LGA115	5 socke	èt È	·	,				ical/tape optical		optical/ta	<u> </u>		
Memory Additional memory	four 240-pin [• Actual men	DIMM s nory op	ockets erating	speed is	s the lo	DDR3 , ECC, west installed ler speed and		Di	sk Bay 7-10		sid optio			
disclaimers Graphics	memory sp Onboard Asp one VGA DB- Maximum res	eed AS	ear;	0.		agement proce	ssor,		sk Bay 3-6		Disk Ba 3-10	у	1 - PCle 2 - PCle 3 - PCle 4 - PCl	e x8
Disk bays Disk controller	Four 3.5" hot- Serial ATA, Sa supports up to and RAID 5 up	ATA 3.0 o RAID	Gb⁄/s, i 0, 1, 5	ntegrated	d in ch	ipset, RAID [®] 0, al 9240-8i v2 R	1, 10 support; AID adapter	; <i>3.5" disi</i> Bay 1 Bay 2		6" high,		, open (op		pe)
Tape drive Optical Diskotto	Supports opti DVD-ROM DI None (use US	onal ta SATA	pe drive 1.5Gb/	e via inte /s 16X-48	rnal U 3X Ma	SB 2.0 connec x ⁴ Drive	tor	Bay 3 Bay 4 Bay 5	3.5", 1" 3.5", 1"	high, high,	external external	, for disk , for disk , for disk , for disk		
Diskette Chipset	Intel C202 Cl	, hipset,	,	m Contro	oller H	ub [PCH] (Slot	1-2, ethernet	Bay 6	3.5", 1"	high,	external	, for disk 5 <i>" disk bay</i>	model	· ·
Ethernet Extender card Front ports	MAC, and US Two Gigabit E None Two USB 2.0	Etherne				nd 82579LM	o port is	Bay 7 Bay 8 Bay 9	3.5", 1" 3.5", 1"	high, high, high,	external external external	, for disk , for disk , for disk , for disk , for disk	mouers	5.
Rear ports Diagnostics		s LEDs adc	nanage on fror I-on Do	ement), c nt; octor Insid	one an de Tec	alog VGA DB-	15 connector	Bay 1 Bay 2	5.25", 1.	6" high, 6" high,	external	, open (op , std optic	otical/ta al	pe)
Systems mgmt	Onboard Asp IPMI 2.0-com KVM model(s	eed AS	T2150 aseboa	ard mana	/mana igeme	agement proce nt controller (B A functions	ssor, MC);	Bay 3 Bay 4 Bay 5 Bay 6	2.5", 0. 2.5", 0.	6" high, 6" high,	external external	, for disk , for disk , for disk , for disk		
Security chip	No onboard T TPM model(s	PM chi c): add fund	p; litional ction, T	Nuvoton CG 1.2-c	WPC	Γ210 add-on ca	ard for TPM	Bay 7 Bay 8 Bay 9	2.5", 0. 2.5", 0. 2.5", 0.	6" high, 6" high, 6" high,	external external external	, for disk , for disk , for disk		
Prerequisites Keyboard Mouse Power supply		SB port SB port 50 watt)) s stand	ard, two		num, rear acce wo power supp		Slot 2 h Slot 3 h	half-length half-length half-length	, full-heig , full-heig , full-heig	ght, 32-b ght, PCI ght, PCI	Express 2. Express 2.	0 x8	
Mechanical Dimension System weight Tool-less Rack mount	Tower, busine W x H x D = 7 61.7 lb (28kg) Side cover re system fan re Rack-mounta	ess blac 7.68"/19) max c moval, emoval ble to 5	k color 95mm > onfigur disk an	, metal c < 16.9"/43 ation Id optical	ase 30mm drive	x 23.4"/595mr removal,	n		ectrical	, ıun-nei	gni, r∪l	Express 2.	U X 10 "	(near CPI
Max internal capacity	4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks 8x3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4x3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8x2.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks								Sof Server Eas			ent Tools		
Limited warranty Accessories	y 1-year parts and labor; more Lenovo Services see S-TOR sheet For more accessories, see O-TOR sheet								Server Eas	yManag	е			
				-				 Admir User Front Boot Boot Serial USB 	ity chip (s nistrator pa bassword panel key sequence without key port I/O c port l/O c port disabl ompliant	elected r assword lock control yboard, r control	nouse, c	see informa liskette	ation or	n left)

ThinkServer® TS430 Redundant PSU (0392) - withdrawn

3382-124 Art0 Core is 2-100 3.1 2/2/11 1/2/268 2.5 8.4 Moleswap 924/68 V/2 SAS 0/1/10 DVD IPMI None TPMI 0382-124 Art0 Core is 3-100 3.1 2/2/11 1/2/268 3.5 8.4 Moleswap Intel PCH SATA 5.4 SATA choices • Highly Reliable:: redundant PSU ECC memory and enterprise-class SAE & SATA choices • Highly Reliable:: redundant PSU ECC memory and enterprise-class SAE & SATA choices • Highly Reliable:: redundant PSU ECC memory and enterprise-class SAE & SATA choices • Highly Reliable:: redundant Processor Processor Up to the processor, one processor standard, memory apped file IPCH SATA (skick bay Front - 3.5' disk bay	Type- Slot x model bay	Cores / Memory Disk Disk Disk Processor(s) GHz Threads DIMMs size bays Controlle	Disk RAID SATA System Diagnostics Power type Int optical mgmt (DIT) TPM Supply
3382-14U 4/10 Core i8-2100 3.1 2/2/4T 1/2/26B 3.5° 8/4 Mol-swap 9240-581/42 SATA/SAS 0/1/10 DVD IPMI None TPM 9382-15U 4x6 Core i8-2100 3.1 2/2/4T 1/2/26B 3.5° 4/4/to-swap Intel PCH SATA 0/1/10 DVD IPMI None TPM 9382-15U 4x6 Core i8-2100 3.1 2/2/4T 1/2/26B 3.5° 4/4/to-swap Intel PCH SATA/SAS desize SATA/SAS desize SATA/SAS desize SATA/SAS desize SATA/SAS desize SATA/SAS desize Intel PCH SATA/SAS desize SATA/S			
 Highly Reliable: redundant PSU, ECC memory, and enterprise-class SAS & SATA choices Highly Manageable: enhanced removal and another processor in processor standard, implementation on a Conv. Highly modular hol-ways PAT/SAS design – supports up to 8 hand drives (selected models) Processor Processor Up to one processor, one processor standard, implementation on a Convertient of the Co	0392-14U 4x10	Core i3-2100 3.1 2C/4T 1x2GB 3.5" 8 x Hot-swap 9240-8i v	2 SATA/SAS 0/1/10 DVD IPMI None TPM 1x 450
 High Manageable: enhanced remote manageability with IPML 2.0 BIC & optional KVM System Stanker Strangen, Stanker Strangen, Stanker Stealer, /li>)392-15U 4x6 (Core i3-2100 3.1 2C/4T 1x2GB 3.5" 4xHot-swap Intel PCH	SATA 0/1/10 DVD IPMI None TPM 1x 450
Intel® Corée® 13-2100 processor (2C47.3.1GHz, 3MB Cache), implementation Intel® Caphics, DDR3 memory controller (up to 1333MHz) Implementation One LGA1155 socket Wemory 32GB max, UDMM, PC3-10600 1333MHz DDR3, ECC, incervator 40; pp. DDMM, sockets Graphics Onboard Aspeed AST2160 graphics/management processor, memory speed Graphics Onboard Aspeed AST2160 graphics/management processor, memory speed Disk bays Some: Equ 135 'not-swap (HS) SATA disk bays Disk controller Some: Equ 135 'not-swap (HS) SATA disk bays Disk controller Supporte kay: Intel PCH: Serial XTA, SATA 3.0Gbs, RATA DS 10, 10 support Supports up to RAID 0.1, 10 via optional 3240-8i v/2: Intel PCH: Serial XTA, SATA 3.0Gbs, RATA DS 10, 10 support Supports optional tape drive via internal USB 2.0 connector DOV-ROM DL SCATA 1.5Gbs 1547 ML 200, 01 via VEATA 3.5Gb 456 0000x; Supports optional tape drive via internal USB 2.0 connector DOV-ROM DL SCATA 1.5Gbs 1547 Land 82574L and 82579LM Disk controller Intel C202C Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB) Four USB 2.0, one serial (P-pin), two ethernet (PCH3, one port is shared with system management), one analog VGA DB-15 connector DOV-ROM DL SCATA 1.5Gbs 15474L and 82579LM DVD-ROM DL SCATA 1.5Gbs 15474L and 82579LM Bay 6 2.57; 0.67 high, external, for disk Bay 7 2.57; 0.67 high, external, for disk Bay 7 2.57; 0.67 high, external, for disk Bay 7 2.57;		 Highly Manageable: enhanced remote manageability with IPMI 2.0 Room to Grow: highly modular hot-swap SATA/SAS design – sup 	BMC & optional KVM
DDFA memory controller (up to 13:33MHz) processing Memory 32/8 max, UDMM, PC3-10600 1333MHz) processing ad optical Memory 32/8 max, UDMM, PC3-10600 1333MHz) processing ad optical Memory 32/8 max, UDMM, PC3-10600 1333MHz) processing ad optical Memory • 0 max, UDMM, PC3-10600 1333MHz) processing ad optical Memory • 0 max, UDMM, PC3-10600 1333MHz) processing ad optical Graphics Onboard Aspect AST2150 graphics/management processor, memory speed processing processing Disk controller Some: Equ 3.5 To hot-swap (HS) SATA lisk bays Some: Equ 3.5 To hot-swap (HS) SATA lisk bays Bay 4 3.5 Thigh, external, for disk Bay 4 ADS to processing Supports un to RAID 0.1 (15) SAS disk bays Bay 4 3.5 Thigh, external, for disk Bay 6 3.5 Thigh, external, for disk Bay 5 3.5 Thigh, external, for disk Bay 5 3.5 Thigh, external, for disk Bay 6 3.5 Thigh, external, for disk Bay 5 3.5 Thigh, external, for disk Bay 5 3.5 Thigh, external, for disk Bay 6 3.5 Thigh, external, for disk Bay 5 3.5 Thigh, external, for disk Bay 5 2.5 Thigh, external, for disk Bay 6 2.5 Thigh, external, for disk	Processor	Intel [®] Core™ i3-2100 processor (2C/4T, 3.1GHz, 3MB Cache),	
Memory 32:28 max, DUNMM, PC2-10600 T333MP2 DDAR, ECU, Memory A spendent on pockaling peed is the lowest installed speed. memory speed Memory speed Graphics Onboard Aspeed AST2150 graphics/management processor, on VGA DD-15 on rear, on VGA DD-15 or rear, on VGA DD-15 or rear, on VGA DD-15 on rear (VGA DD-15 on rear), on value on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-15 on rear), on VGA DD-15 on rear (VGA DD-15 on rear), on VGA DD-1	Implementation	, , ,	optical/tape optical/tape
Adjust Adjust and solution of work of the solution of the solutis solution of the solutis solution of the solution of	Memory		
Graphics Onboard Aspeed AS12150 graphics/management processor, Maximum resolution: 1600x1200@60Hz Disk bays Some: Four 35° SATA disk bays, no hot-swap, direct cable Some: Eight 25° Inclewap (HS) SATA disk bays Some: Eight 25° Inclewap (HS) SATA disk BS 0 concetor Dubated USB port) 35° Int High, external, for disk Bay 7 25° Inclewap (HS) AST, HS, HS, HS, HS, HS, HS, HS, HS, HS, HS	memory	dependent on processor memory controller speed and installed	7-10
Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Eight 3.5" hot-swap (HS) SATA SAS disk bays Some: Eight 3.5" hot-swap (HS) SATA SASA disk bays Some: Eight 3.5" hot-swap (HS) SATA SASA disk bays Supports up to RAID 0.1, 51 0via optional 3240-81 v2 RAID adapter and RAID 5 upgrade key: Intel PCH: Serial ATA, SATA 3.0Gb/s, Intel PCH: Serial ATA, SATA 3.0Gb/s, PCIe bus, SATA 6.0Gb/s, SAS 6.0Gb/s, PCIe bus, SATA 6.0Gb/s, CARAU SAS PCIE bus, SATA 6.0Gb/s, SAS 6.0Gb/s, PCIE bus, SATA 6.0Gb/s, SAS 6.0Gb/s, PCIE bus, SATA 6.0Gb/s, SAS 6.0Gb/s, PCIE bus, SATA 6.0Gb/s, CARAU SAS PCIE bus, SATA 6.0Gb/s, SAS 6.0Gb/s, PCIE bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Graphics	one VGA DB-15 on rear;	Disk Bay Disk Bay 2 - PCle x8 3-6 3-10 3 - PCle x8
Disk controller Supports up to RAND 0, 1, 5, 10 via optional 9240-8i v2 RAID adapter, and RAID 2 bugrade key; Intel PCH: Bay 3, 3, 5, 1* high, setternal, for disk Bay 4, 3, 5, 1* high, external, for disk Bay 6, 3, 5, 1* high, external, for disk Bay 6, 3, 5, 1* high, external, for disk Bay 7, 3, 5, 1* high, external, for disk Bay 7, 3, 1* high, external, for disk Bay 7, 3, 1* high, external, for disk Bay 9, 3, 1* high, external, for disk Bay 9, 3, 5, 1* high, external, for disk Bay 9, 3, 1* high, external, for disk Bay 2, 5, 0, 6* high, external, for disk Bay 2, 5, 0, 6* high, external, for disk Bay 2, 5, 0, 6* high, external,	Disk bays	Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays	Bay 1 5.25", 1.6" high, external, open (optical/tape)
9240-8i v2: ThinkServer RAID 9240-8i v2 RAID adapter, PCIcb bus, SXA 6.0Gb/s, RAID 0, 1, 10 support Bay 7 10 are available on Eight 3.5" d1k bay models Tape drive Supports optional tape drive via internal USB 2.0 connector Bay 8 3.5", 1" high, external, for disk Diskette DVD-ROM DL SATA 1.5Gb/s 168X-48X Max ² Drive Bay 8 3.5", 1" high, external, for disk Diskette None (use USB port) Bay 9 3.5", 1" high, external, for disk Chipset Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM Bay 1 0 .3.5", 1" high, external, for disk Ethernet Two USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Bay 4 2.5", 0.6" high, external, for disk Diagnostics System status LEDs on front; IDI <i>model(s)</i> : add-on Doctor Inside Technology (DIT) module for advanced diagnostics Bay 8 2.5", 0.6" high, external, for disk System status LEDs on front; IDI <i>model(s)</i> : add-on KVM ard not KVM functions Bay 1 0 .2.5", 0.6" high, external, for disk System status LEDs on front; IDI <i>model(s)</i> : add-on KVM fard for KVM functions Bay 1 0 .2.5", 0.6" high, external, for disk System status LEDs on front; IDI <i>model(s)</i> : add-on KVM fard for KVM functions Bay 1 0 .2.5", 0.6" high, external, for disk System status LEDs on front; IDI <i>model(s)</i> : add-on KVM fard for KVM functions Bay 1	Disk controller	Supports up to RAID 0, 1, 5, 10 via optional 9240-8i v2 RAID adapte and RAID 5 upgrade key;	r Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk
Tape drive Optical Supports optional tape drive via internal USB 2.0 connector DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive Bay 9 3.5 ⁺ , 1 ⁺ high, external, for disk Diskette None (use USB port) Bay 10 3.5 ⁺ , 1 ⁺ high, external, for disk Chipset Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet MAC, and USB) Bay 1 5.25 ⁺ , 1.6 ⁺ high, external, for disk Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM Bay 2 5.25 ⁺ , 1.6 ⁺ high, external, std optical Bay 3 2.5 ⁺ , 0.6 ⁺ high, external, for disk Rear ports Four USB 2.0 nes serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector advanced diagnostics Bay 2 5.25 ⁺ , 0.6 ⁺ high, external, for disk Bay 2 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 2 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 8 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 9 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 9 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 9 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 9 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 9 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 9 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 9 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 9 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 9 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 1 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 1 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 1 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 1 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 1 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 1 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 1 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 1 2.5 ⁺ , 0.6 ⁺ high, external, for disk Bay 1 2.5 ⁺ , 0.6 ⁺ high, external, for disk B		9240-8i v2: ThinkServer RAID 9240-8i v2 RAID adapter PCIe bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Bay 7-10 are available on Eight 3.5" disk bay models: Bay 7 3.5", 1" high, external, for disk
Chipset Intel C202 Chipset, Platform Controller Hub (PCH) (Slot 1-2, ethernet MAC, and USB) Bay 1 5.25°, 1.6° high, external, open (optical/lag Bay 2 Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM Bay 2 5.25°, 1.6° high, external, for disk Bay 2 5.25°, 0.6° high, external, for disk 5.25°, 0.6° high, external, for disk 5.25°, 0.6° high, external, for disk 5.25°, 0.	Optical	Supports optional tape drive via internal USB 2.0 connector DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive	Baý 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
Ethernet Two Gigabit Ethernet ports, Intel 82574L and 82579LM Extender card None Front ports Two USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Diagnostics System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) module for advanced diagnostics Systems mgmt Onboard TPM chip; TPM model(s): add-on VVM card for KVM functions Security chip No onboard TPM chip; TPM model(s): add-on NCM there to the the total set of the tot			^{et} Bay 1 5.25", 1.6" high, external, open (optical/tape)
Front ports Rear portsTwo USB 2.0Bay 5 2.5'0.6 migh, external, for disk Bay 5 2.5', 0.6' high, external, for disk Bay 6 2.5', 0.6' high, external, for disk Bay 7 2.5', 0.6' high, external, for disk Bay 7 2.5', 0.6' high, external, for disk Bay 8 2.5', 0.6'' high, external, for disk Bay 8 2.5'', 0.6'' high, external, for disk Bay 9 0.2.5'', 0.6'' high, external, for disk Bay 10 2.5'', 0.6'' high, external, for disk Bay 10 2.5'' 0.6'' high, external, for disk Ba		Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 3 2.5", 0.6" high, external, for disk
Rear ports Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 connector Bay 6 2.5", 0.6" high, external, for disk Diagnostics System status LEDs on front; Dif model(s): add-on Doctor Inside Technology (DIT) module for advanced diagnostics Bay 7 2.5", 0.6" high, external, for disk Systems mgmt Onboard Aspeed AST2150 graphics/management cortroller (BMC); KVM model(s): add-on KVM functions Bay 9 2.5", 0.6" high, external, for disk Security chip No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Stot 1 half-length, full-height, PCI Express 2.0 x8* Prerequisites Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) Power supply One two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies Software Management Tools Machanical Tower, business black color, metal case ThinkServer EasyStartup Nak internal 4x3.5" SATA (DC/HS): 8.0TB with eight 600GB 3.5" SATA disks capacity 8x3.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks X8 electrical Security chip (selected models, see information on Ax3.5" SATA (DC/HS): Max internal 4x3.5" SAS (HS): 4.8TB			
Diagnostics System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) module for advanced diagnostics Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external	Rear ports		Bay 6 2.5", 0.6" high, external, for disk
Systems mgmt Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); KVM model(s): add-on KVM functions Security chip No onboard TPM chip; TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Prerequisites Monitor, SATA/SAS disk, OS Keyboard None (use USB port) Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS* Gold qualified, redundant with two power supplies Mechanical Tower, business black color, metal case Dimension W x H x D = 7.68*/195mm x 16.9*/430mm x 23.4*/595mm 61.7 lb (28kg) max configuration Side X and optical drive removal, system fan removal Rack mount 4x3.5* SATA (HS): 8.0TB with four 2TB 3.5* SATA disks Rax internal 4x3.5* SAS (HS): 2.4TB with four 600GB 3.5* SAS disks 8x.2.5* SAS (HS): 4.8TB with eight 600GB 2.5* SAS disks 8x.2.5* SAS (HS): 4.8TB with eight 600GB 2.5* SAS disks Limited warranty 3-year parts and labor; more Lenovo Services see S-TOR sheet For more accessories, see O-TOR sheet For more accessories, see O-TOR sheet	Diagnostics	System status LEDs on front; DIT model(s): add-on Doctor Inside Technology (DIT) module for	Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk
TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant Slot 4 half-length, full-height, PCI Express 2.0 x16** Prerequisites Monitor, SATA/SAS disk, OS * x4 electrical Keyboard None (use USB port) * x8 electrical Mouse None (use USB port) * x8 electrical Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies ** Mechanical Tower, business black color, metal case ** Dimension W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm ** System weight 61.7 lb (28kg) max configuration ** Tool-less Side cover removal, system fan removal ** Rack-mount Rack-mountable to 5U ** Max internal capacity 4x3.5" SATA (HS): 16.0TB with four 2TB 3.5" SATA disks 8x3.5" SAS (HS): ** Max internal capacity 4x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8x2.5" SAS (HS): ** Limited warranty Accessories 3-year parts and labor; more Lenovo Services see S-TOR sheet * For more accessories, see O-TOR sheet * Boot without keyboard, mouse, diskette * Serial port I/O contr	Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions	Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8*
Principulation Monne (use USB port) Mouse None (use USB port) Power supply One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power supplies Mechanical Tower, business black color, metal case Dimension W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm System weight 61.7 lb (28kg) max configuration Tool-less Side cover removal, disk and optical drive removal, system fan removal Rack mount Rack-mountable to 5U Max internal 4 x3.5" SATA (DC/HS): 8 x3.5" SAS (HS): 2.4TB with four 2TB 3.5" SATA disks capacity 8 x3.5" SAS (HS): 2.4TB with our 600GB 3.5" SAS disks 8 x2.5" SAS (HS): Limited warranty 3-year parts and labor; more Lenovo Services see S-TOR sheet For more accessories, see O-TOR sheet		TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPL * x4 electrical
MouseNone (use USB port)Power supplyOne or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS® Gold qualified, redundant with two power suppliesMechanicalTower, business black color, metal caseDimensionW x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mmSystem weight61.7 lb (28kg) max configurationTool-lessSide cover removal, disk and optical drive removal, system fan removalRack mountRack-mountable to 5UMax internal capacity $4x3.5"$ SATA (DC/HS):8x3.5" SATA (HS):16.0TB with four 2TB 3.5" SATA disks $4x3.5"$ SAS (HS):8x3.5" SAS (HS):2.4TB with four 00GB 3.5" SAS disks $8x3.5"$ SAS (HS):Limited warranty Accessories3-year parts and labor; more Lenovo Services see S-TOR sheetLimited warranty Accessories3-year parts and labor; more Lenovo Services see S-TOR sheetFor more accessories, see O-TOR sheetSerial port I/O control			
80 PLUS® Gold qualified, redundant with two power suppliesMechanicalTower, business black color, metal caseDimensionW x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mmSystem weight61.7 lb (28kg) max configurationTool-lessSide cover removal, disk and optical drive removal, system fan removalRack mountRack-mountable to 5UMax internal capacity4x 3.5" SATA (DC/HS):80.75" SATA (DC/HS):8.0TB with four 2TB 3.5" SATA disks 4x 3.5" SATA (HS):16.0TB with four 2TB 3.5" SATA disks 4x 3.5" SAS (HS):Security80.75" SAS (HS):2.4TB with four 000GB 3.5" SAS disks 8x 3.5" SAS (HS):Limited warranty Accessories3-year parts and labor; more Lenovo Services see S-TOR sheet For more accessories, see O-TOR sheetFor more accessories, see O-TOR sheetServices see S-TOR sheet	Mouse	None (use USB port)	
Dimension W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm System weight 61.7 lb (28kg) max configuration Software Management Tools Tool-less Side cover removal, disk and optical drive removal, system fan removal Software Management Tools Rack mount Rack-mountable to 5U ThinkServer EasyStartup ThinkServer EasyManage Max internal capacity 4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks Security 8x3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks Security chip (selected models, see information on Administrator password Limited warranty Accessories 3-year parts and labor; more Lenovo Services see S-TOR sheet For more accessories, see O-TOR sheet Service Service Control Boot without keyboard, mouse, diskette	,		D,
System weight Tool-less 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal, system fan removal Software Management Tools Rack mount Rack-mountable to 5U ThinkServer EasyStartup Max internal capacity 4x3.5" SATA (DC/HS): 8x3.5" SATA (HS): 8.0TB with four 2TB 3.5" SATA disks 4x3.5" SAS (HS): • ThinkServer EasyManage Max internal capacity 4x3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4x3.5" SAS (HS): • Security Max internal capacity 5 SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4x3.5" SAS (HS): • Security chip (selected models, see information on • Administrator password Limited warranty Accessories 3-year parts and labor; more Lenovo Services see S-TOR sheet For more accessories, see O-TOR sheet • Toront panel key lock			
Tool-lessSide cover removal, disk and optical drive removal, system fan removalSoftware Management ToolsRack mountRack-mountable to 5U• ThinkServer EasyStartup • ThinkServer EasyManageMax internal capacity $4x3.5"$ SATA (DC/HS): $8x3.5"$ SATA (HS): $8.0TB$ with four 2TB $3.5"$ SATA disks $4x3.5"$ SATA (HS):• ThinkServer EasyManage $8x3.5"$ SATA (HS): $8x3.5"$ SATA (HS): $16.0TB$ with eight 2TB $3.5"$ SATA disks $4x3.5"$ SATA (HS):• Security • Security $8x3.5"$ SATA (HS): $8x3.5"$ SAS (HS): $2.4TB$ with four 600GB $3.5"$ SAS disks $8x2.5"$ SAS (HS):• Security chip (selected models, see information on • Administrator password • User password • User password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control			0.4
Max internal capacity 4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks 8x3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 8x3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8x2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks Limited warranty Accessories 3-year parts and labor; more Lenovo Services see S-TOR sheet For more accessories, see O-TOR sheet	Tool-less	Side cover removal, disk and optical drive removal, system fan removal	ThinkServer EasyStartup
capacity 8 x 3.5" SATA (HS): 4 x 3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8 x 3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8 x 2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks • Security chip (selected models, see information on Administrator password Limited warranty Accessories 3-year parts and labor; more Lenovo Services see S-TOR sheet For more accessories, see O-TOR sheet • Security chip (selected models, see information on • Administrator password			
Limited warranty 3-year parts and labor; more Lenovo Services see S-TOR sheet Accessories For more accessories, see O-TOR sheet • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control		8 x 3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks 4 x 3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8 x 3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks	 Security chip (selected models, see information on left) Administrator password User password
		3-year parts and labor; more Lenovo Services see S-TOR sheet	 Boot sequence control Boot without keyboard, mouse, diskette
RoHS-compliant			

ThinkServer® TS430 Redundant PSU (0393) - TopSeller - withdrawn

Type- Slot x model bay	Processor(s)	Cores GHz Thread	/ Memory s DIMMs		Disk bays	Disk Controller	Disk type	RAID Int	SATA optical	System mgmt	Diagnostic (DIT)	s TPM	Power Supply
	Core i3-2100 Xeon E3-1220	3.1 2C/4T 3.1 4C/4T			4 x Hot-swap 4 x Hot-swap	Intel PCH Intel PCH	SATA SATA		DVD±RW DVD±RW		None None		1x 450W 1x 450W
	 Highly Mana 	ageable: en row: highly ed warranty	hanced re modular h	mote ot-swa	manageability	nterprise-class with IPMI 2.0 BI lesign – suppor	NC & opt	ional KVI	Л	ed mode	els)		
Processor	integrated Inte DDR3 memor Intel Xeon [®] E	i3-2100 pro el HD Graph ry controller 3-1220 pro to 3.4GHz),	icessor (2 lics, (up to 133 cessor (40	C/4T, 3MHz C/4T, 3	3.1GHz, 3MB	Cache), Turbo	ot ® o	<i>3.5" disk</i>	a bay From	••••• •	pe	PSU	PSU
Additional memory	32GB max, U four 240-pin D • Actual mem	DIMM, PC3 DIMM socket nory operation	ts ng speed is	s the I	z DDR3, ECC, owest installed oller speed and	speed,		Disk Bay 7-10			_	1 - PCI	e x16
disclaimers Graphics	memory sp	eed eed AST215 15 on rear;	50 graphics	s/man	agement proce		- LL	Disk Bay 3-6		Disk Bay 3-10		2 - PCI 3 - PCI 4 - PCI	e x8
Disk bays Disk controller Tape drive Optical	Four 3.5" hot- Serial ATA, SA supports up to and RAID 5 u	swap (HS) S ATA 3.0Gb/s o RAID 0, 1, pgrade key; onal tape dr	SATA disk , integrate 5, 10 via ive via inte	bays d in cł option ernal L	al 9240-8i v2 F JSB 2.0 conne	•	Bay 1	5.25", 3.5", 3.5", 3.5",	1.6" high, e 1.6" high, e 1" high, e 1" high, e 1" high, e	external, external, external, external,			pe)
Diskette	None (use US		_				Bay 7-	10 are av	ailable on l	Eight 3.5	" disk bay	models	s:
Chipset Ethernet Extender card Front ports	MAC, and US Two Gigabit E None Two USB 2.0	B) thernet port	s, Intel 82	574L a				3.5", 3.5",	1" hiğh, e 1" high, e 1" high, e	external, external,	for disk for disk for disk for disk		
Rear ports Diagnostics		ystem mana s LEDs on fr : add-on [gement), o ont;	one ar de Teo	ernet (RJ-45, oi nalog VGA DB- chnology (DIT)	15 connector	Bay 1 Bay 2 Bay 3 Bay 4 Bay 5	5.25", 2.5", 2.5",	1.6" high, (1.6" high, (0.6" high, (0.6" high, (0.6" high, (external, external, external,	std optica for disk for disk	itical/ta al	pe)
Systems mgmt Security chip	Onboard Aspe IPMI 2.0-com <i>KVM model(s)</i> No onboard T	eed AST215 pliant baseb b): add-on h	0 graphics	s/man ageme	agement proce ent controller (E M functions	essor, BMC);	Bay 6 Bay 7 Bay 8 Bay 9	2.5", 2.5", 2.5",	0.6" high, 0.6" high, 0.6" high, 0.6" high, 0.6" high,	external, external, external,	for disk for disk for disk		
	TPM model(s): additiona function,	TCG 1.2-0	WPC compl	T210 add-on c iant	ard for TPM	Bay 10) 2.5",	0.6" high, o th, full-heig	external,	for disk		
Prerequisites Keyboard Mouse Power supply	Monitor, SATA None (use US None (use US One or two 45 80 PLUS® Go	SB port) SB port) 50 watts star	ndard, two	maxir t with	mum, rear acce two power sup	ess, hot-swap, plies	Slot 2 Slot 3 Slot 4 * x4 e	half-leng half-leng	th, full-heig th, full-heig th, full-heig th, full-heig	ht, PCI E ht, PCI E	Express 2.0 Express 2.0	0 x8	(near CPU)
Mechanical Dimension System weight Tool-less	61.7 lb (28kg) Side cover rer system fan rei	7.68"/195mn) max config moval, disk a moval	n x 16.9"/4 uration	30mm	n x 23.4"/595m e removal,	m							
Rack mount Max internal capacity	Rack-mountal 4x3.5" SATA 8x3.5" SATA 4x3.5" SAS (8x3.5" SAS (8x2.5" SAS ((DC/HS): 8 (HS): 1 (HS): 2 (HS): 2	6.0TB with 2.4TB with 4.8TB with	n eigh four 6 eight	TB 3.5" SATA (t 2TB 3.5" SATA 600GB 3.5" SA 600GB 3.5" SA 600GB 2.5" SA	A disks S disks \S disks	• Think • Think	Server E	oftware Ma asyStartup asyManage	0	ent Tools		
Limited warranty Accessories		and labor; m	ore Lenovo	Serv			 Adm User From Boot Boot Seria USB 	inistrator password panel ke sequenc without k l port I/O	(selected n password d ey lock e control eyboard, n control blement (a	nouse, d		ation or	n left)

ThinkServer® TS430 Redundant PSU (0441) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Slot x model bay	Cores / Memory Disk Disk Disk Processor(s) GHz Threads DIMMs size bays Controller	Disk RAID SATA System Diagnostics Power type Int optical mgmt (DIT) TPM Supply
	•	SATA/SAS 0/1/10 DVD±RW IPMI None TPM 1x 450W
	Xeon E3-1240 3.3 4C/8T 1x4GB 2.5" 8xHot-swap 9240-8i v2 Core i3-2100 3.1 2C/4T 1x2GB 3.5" 4xHot-swap Intel PCH	
		SATA 0/1/10 DVD±RW IPMI None TPM 1x 450W SATA SATA <th< td=""></th<>
	Xeon E3-1270 3.4 4C/8T 1x4GB 2.5" 8x Hot-swap 9240-8i v2	
		SATA/SAS 0/1/10 DVD±RW KVM None TPM 1x 450W
	 3-year limited warrantyⁱ Part of the US TopSeller™ Program 	
Processor	Up to one processor, one processor standard, Intel [®] Core™ i3-2100 processor (2C/4T, 3.1GHz, 3MB Cache),	Front - 3.5" disk bay Front - 2.5" disk bay Rear
	integrated Intel HD Graphics.	
	DDR3 memory controller (up to 1333MHz)	Optical/tape Optical/tape Optical/tape
	Intel Xeon [®] E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.4GHz), DDR3 memory controller (up to 1333MHz)	
	Intel Xeon E3-1230 processor (4C/8T, 3.2GHz, 8MB Cache), Turbo	
	Boost 2.0 (up to 3.6GHz), DDR3 memory controller (up to 1333MHz)	
	Intel Xeon E3-1240 processor (4C/8T, 3.3GHz, 8MB Cache), Turbo Boost 2.0 (up to 3.7GHz), DDR3 memory controller (up to 1333MHz)	7-10
	Intel Xeon E3-1270 processor (4C/8T, 3.4GHz, 8MB Cache), Turbo	
	Boost 2.0 (up to 3.8GHz), DDR3 memory controller (up to 1333MHz)	Disk Bay Disk Bay 2 - PCIe x8
Implementation	One LGA1155 socket	3-6 3-10 <u>3 - PCle x8</u> 4 - PCl
Vemory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC, four 240-pin DIMM sockets	
Additional	 Actual memory operating speed is the lowest installed speed, 	3.5" disk bay models:
memory	dependent on processor memory controller speed and installed	Bay 1 5.25", 1.6" high, external, open (optical/tape)
disclaimers	memory speed	Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear;	Bay 4 3.5", 1" high, external, for disk
	Maximum resolution: 1600x1200@60Hz	Bay 5 3.5", 1" high, external, for disk Bay 6 3.5", 1" high, external, for disk
Disk bays	Some: Four 3.5" hot-swap (HS) SATA disk bays	Bay 6 3.5", 1" high, external, for disk Bay 7-10 are available on Eight 3.5" disk bay models:
,	Some: Eight 3.5" hot-swap (HS) SATA/SAS disk bays	Bay 7 3.5", 1" high, external, for disk
Disk controller	Some: Eight 2.5" hot-swap (HS) SAS disk bays Supports up to RAID 0, 1, 5, 10 via optional 9240-8i v2 RAID adapter	Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk
	and RAID 5 upgrade key;	Bay 10 3.5", 1" high, external, for disk
	Intel PCH: Serial ATA, SATA 3.0Gb/s,	
	<i>9240-8i v2:</i> integrated in chipset, RAID ⁸ 0, 1, 10 support ThinkServer RAID 9240-8i v2 RAID adapter,	2.5" disk bay models: Bay 1 5.25", 1.6" high, external, open (optical/tape)
	PCIe bus, SATA 6.0Gb/s, SAS 6.0Gb/s,	Bay 2 5.25", 1.6" high, external, std optical
Tana driva	RAID 0, 1, 10 support	Bay 3 2.5", 0.6" high, external, for disk
Tape drive Optical	Supports optional tape drive via internal USB 2.0 connector Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive	Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk
Diskette	None (use USB port)	Bay 6 2.5", 0.6" high, external, for disk
Chipset	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethernet	Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk
Ethernet	MAC, and USB) Two Gigabit Ethernet ports, Intel 82574L and 82579LM	Bay 9 2.5", 0.6" high, external, for disk
Extender card	None	Bay 10 2.5", 0.6" high, external, for disk
Front ports	Two USB 2.0	Slot 1 half-length, full-height, 32-bit PCI 2.3
Rear ports	Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is	Slot 2 half-length, full-height, PCI Express 2.0 x8*
Diagnostics	shared with system management), one analog VGA DB-15 connector System status LEDs on front;	Slot 3 half-length, full-height, PCI Express 2.0 x8 Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU
agnostos	DIT model(s): add-on Doctor Inside Technology (DIT) module for	* x4 electrical
Puotomo manet	advanced diagnostics	** x8 electrical
Systems mgmt	Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC);	
	KVM model(s): add-on KVM card for KVM functions	
Security chip	No onboard TPM chip;	
	TPM model(s): additional Nuvoton WPCT210 add-on card for TPM function, TCG 1.2-compliant	
Prerequisites	Monitor, SATA/SAS disk, OS	—
Keyboard	None (use USB port)	
Mouse	None (use USB port)	
Power supply	One or two 450 watts standard, two maximum, rear access, hot-swap, 80 PLUS [®] Gold qualified, redundant with two power supplies	
<i>Mechanical</i>	Tower, business black color, metal case	Software Management Tools
Dimension	W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm	ThinkServer EasyStartup
System weight	61.7 lb (28kg) max configuration	ThinkServer EasyManage
ool-less	Side cover removal, disk and optical drive removal,	Security
lack mount	system fan removal Rack-mountable to 5U	 Security chip (selected models, see information on left)
	4x3.5" SATA (DC/HS): 8.0TB with four 2TB 3.5" SATA disks	Administrator password
	8x3.5" SATA (HS): 16.0TB with eight 2TB 3.5" SATA disks	User password
Max internal		 Front panel key lock
/lax internal	4 x 3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks	
Max internal	4x3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks	 Boot sequence control Boot without keyboard, mouse, diskette
Max internal capacity	4x3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks 8x2.5" SAS (HS): 4.8TB with eight 600GB 2.5" SAS disks	 Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control
/ax internal apacity	4x3.5" SAS (HS): 2.4TB with four 600GB 3.5" SAS disks 8x3.5" SAS (HS): 4.8TB with eight 600GB 3.5" SAS disks	 Boot sequence control Boot without keyboard, mouse, diskette

See footnotes for important warranty information US model(s) announced August 23, 2011 US model(s) withdrawn effective October 2012

ThinkServer® TS430 Fixed PSU (0387) - withdrawn

Type- Slot x model bay	Processor(s) GHz	Cores / Threads		Disk size	Disk bays	Disk Controller	Disk type	RAID Int	SATA optical	System mgmt	Diagnostic (DIT)	S TPM	Power Supply
	Core i3-2100 3.1 Core i3-2100 3.1		1x2GB 1x2GB		4 x Direct Cable 4 x Hot-swap	Intel PCH Intel PCH	SATA SATA	0/1/10 0/1/10	DVD DVD	IPMI IPMI	None None		1x Fixed 1x Fixed
	 Highly Reliable: Highly Managea Room to Grow: 1-year limited w. 	ble: enh highly m	anced rei	note n	hanageability with	th IPMI 2.0 BM	IC & opti			ed models	5)		
Processor	Up to one proces Intel [®] Core™ i3-/ integrated Intel H DDR3 memory c	2100 pro ID Graph	icessor (2	2C/4T	3.1GHz, 3MB C	ache),		•••• 📼	k bay Fro	©•••• [=		Rear PS	U
Implementation	One LGA1155 so		10000 1/					ptical/tape td optical		optical/tap			_
Memory	32GB max, UDIN four 240-pin DIM			333MF	IZ DDR3, ECC,					Siu Oplica	<u>'</u>		
Additional memory disclaimers	 Actual memory dependent on memory speed 	processo	ng speed or memory	is the y conti	lowest installed soller speed and	speed, installed		Disk Bay 7-10					
Graphics	Onboard Aspeed one VGA DB-15 Maximum resolu	on rear;	0 1		agement proces	ssor,		Disk Bay 3-6		Disk Bay 3-10		4 - PCle 3 - PCle 2 - PCle 1 - PCl	x8
Disk bays Disk controller	Some: Four 3.5' Some: Four 3.5' Serial ATA, SATA supports up to R and RAID 5 upgr	" hot-swa 3.0Gb/s AID 0, 1,	p (HŚ) Ś/ , integrate	ATA di: ed in c	sk bays hipset, RAID ⁸ 0,	1, 10 support		5.25",	1.6" high, 1.6" high,		std optica		e)
Tape drive Optical	Supports optiona DVD-ROM DL S/	al tape dr ATA 1.5G				tor	Bay 4 Bay 5	3.5", 3.5",	1" high, 1" high,	external, external,	for disk for disk		
Diskette Chipset	None (use USB Intel C202 Chips	,	orm Cont	roller I	Hub [PCH] (Slot	1-2 ethernet	Bay 6 Bav 7-		1" high, <i>ailable on</i> l	external, <i>Eiaht 3.5</i>		models	:
Ethernet Extender card	MAC, and USB) Two Gigabit Ethe None					r-z, etternet	Bay 7 Bay 8 Bay 9	3.5", 3.5",	1" high, 1" high, 1" high,	external, external, external, external,	for disk for disk for disk		
Front ports Rear ports	Two USB 2.0 Four USB 2.0, or	ne serial	(9-nin) tv	vo eth	ernet (B.I-45 on	e nort is			0	external,			
Diagnostics	shared with syste System status LE	em mana EDs on fr add-on [gement), ont;	one a ide Te		5 connector	Bay 1 Bay 2 Bay 3	5.25", 2.5",	1.6" high, 1.6" high, 0.6" high,	external, external,	std optica for disk		be)
Systems mgmt	Onboard Aspeed IPMI 2.0-complia <i>KVM model(s):</i>	AST215 Int baseb add-on k	60 graphic loard mar	s/mar agem	ent controller (B	ssor, MC);	Bay 4 Bay 5 Bay 6 Bay 7	2.5", 2.5",	0.6" high, 0.6" high, 0.6" high, 0.6" high,	external, external,	for disk for disk		
Security chip		additiona function,	TCG 1.2			rd for TPM	Bay 8 Bay 9	2.5", 2.5",	0.6" high, 0.6" high, 0.6" high,	external, external,	for disk for disk		
Prerequisites Keyboard	Monitor, SATA/SA None (use USB)		OS				Slot 1	half-leng	th, full-heig	aht, 32-bit	PCI 2.3		
Mouse	None (use USB One fixed 400 wa	port)	lard univ	oreal		e qualified	Slot 2 Slot 3	half-leng half-leng	th, full-heig th, full-heig	ght, PCI E ght, PCI E	xpress 2.0 xpress 2.0) x8	
Power supply Mechanical	Tower, business					e quaimeu		half-leng	th, full-heig	ght, PCI E	express 2.0) x16**	(near CPU)
Dimension System weight Tool-less	W x H x D = 7.68 61.7 lb (28kg) ma Side cover removi system fan removi	3"/195mm ax config val, disk a	n x 16.9"/4 uration	430mr		1		electrical					
Rack mount	Rack-mountable	to 5U											
Max internal capacity	4x3.5" SATA (D(8x3.5" SATA (HS 4x3.5" SAS (HS 8x3.5" SAS (HS 8x2.5" SAS (HS	S): 1): 2): 4	6.0TB with 2.4TB with 4.8TB with	th eigh 1 four (1 eight	2TB 3.5" SATA di t 2TB 3.5" SATA 600GB 3.5" SAS 600GB 3.5" SAS 600GB 2.5" SAS	disks disks 5 disks		s	oftware M	anageme	ent Tools		
Limited warranty Accessories	1-year parts and For more access	labor; m	ore Lenov	/o Ser				Server E	asyStartup asyManag)			
							 Adm Use Fron Boo Boo Seri USE 	inistrator r passwor t panel ke t sequenc t without k al port I/C	(selected r password d ey lock e control keyboard, r o control ublement (a	nouse, di		ition on	left)

ThinkServer® TS430 Fixed PSU (0388) - withdrawn

Type- Slot x model bay		res / Memory eads DIMMs	Disk size	Disk bays	Disk Controller		Disk type	RAID Int	SATA optical		Diagnostic (DIT)	S TPM	Power Supply
0388-11U 4x6 (0388-12U 4x10 (0388-13U 4x10 (0388-13U 4x10 (0388-14U 4x6 (Core i3-2100 3.1 20 Core i3-2100 3.1 20	2/4T 1x2GB 2/4T 1x2GB	3.5" 2.5"	4 x Hot-swap 8 x Hot-swap 8 x Hot-swap 4 x Direct Cable	Intel PCH 9240-8i v2 9240-8i v2	SAS	A/SAS	0/1/10 0/1/10 0/1/10 0/1/10	DVD DVD DVD DVD	IPMI IPMI IPMI IPMI	None None None None	TPM TPM	1x Fixed 1x Fixed 1x Fixed 1x Fixed
	 Highly Reliable: EQ Highly Manageable: Room to Grow: hig 3-year limited warra 	CC memory and enhanced rea hly modular he	d ente mote r	erprise-class SA nanageability w	S & SATA ch ith IPMI 2.0 E	oices BMC d	s & optio	nal KVN	1				TX TIXEd
Processor	Up to one processor Intel [®] Core™ i3-210 integrated Intel HD 0 DDR3 memory contr	0 processor (Graphics,	2C/4T	, 3.1GHz, 3MB	Cache),	י 	@ • •	•• 📼	kbay Fro	© • • • • •		Rear	U
Implementation	One LGA1155 socke	et						tical/tape		optical/ta	<u> </u>		
Memory	32GB max, UDIMM,		333MH	Iz DDR3, ECC,			sto	loptical		std optica	al		
Additional memory disclaimers	 four 240-pin DIMM s Actual memory op dependent on prod memory speed 	erating speed					D	isk Bay 7-10					
Graphics	Onboard Aspeed AS one VGA DB-15 on r Maximum resolution	ear;		nagement proce	essor,		Di	isk Bay 3-6		Disk Bay 3-10	/	4 - PCle 3 - PCle 2 - PCle 1 - PCl	x8
Disk bays Disk controller	Some: Four 3.5" SA Some: Four 3.5" ho Some: Eight 3.5" ho Some: Eight 2.5" ho Supports up to RAID and RAID 5 upgrade Intel PCH: 9240-8i v2:	t-swap (HS) S, bt-swap (HS) S bt-swap (HS) S 0 0, 1, 5, 10 via key; Serial ATA integrated ThinkServ	ATA dia ATA/S AS dia A optio A, SATA in chi rer RA	sk bays AS disk bays sk bays nal 9240-8i v2 F	RAID adapter , 10 support AID adapter,	r E E E	Bay 1 Bay 2 Bay 3 Bay 4 Bay 5 Bay 6	5.25", 3.5", 3.5", 3.5", 3.5", 3.5", 0 are av	odels: 1.6" high, 1.6" high, 1" high, 1" high, 1" high, 1" high, vailable on 1" high,	external external external external <i>Eight 3.5</i>	, std optic , for disk , for disk , for disk , for disk	al	
Tape drive Optical Diskette	Supports optional ta DVD-ROM DL SATA None (use USB port	RAID 0, 1 pe drive via int 1.5Gb/s 16X-4	, 10 sı ernal	upport USB 2.0 conne		E	Bay 8 Bay 9 Bay 10	3.5", 3.5",	1" high, 1" high, 1" high,	external, external	, for disk , for disk , for disk		
Chipset Ethernet Extender card Front ports Rear ports Diagnostics Systems mgmt Security chip Prerequisites Keyboard Mouse Power supply Mechanical Dimension System weight Tool-less	adv Onboard Aspeed AS IPMI 2.0-compliant b <i>KVM model(s):</i> add No onboard TPM chi <i>TPM model(s):</i> add	t ports, Intel 82 erial (9-pin), tv management), on front; I-on Doctor Ins anced diagnos TZ150 graphic aseboard mar I-on KVM card p; litional Nuvoto ction, TCG 1.2 disk, OS) standard, univ k color, metal 25mm x 16.9"// onfiguration	2574L vo eth one a side Te stics cs/mar for K\ n WPC -comp ersal, case 430mr	and 82579LM ernet (RJ-45, or inalog VGA DB- ichnology (DIT) hagement proce ent controller (E /M functions CT210 add-on c liant 80 PLUS® Bron n x 23.4"/595mi	ne port is 15 connector module for essor, 3MC); ard for TPM ze qualified	r	Bay 1 Bay 2 Bay 3 Bay 4 Bay 5 Bay 6 Bay 7 Bay 8 Bay 9 Bay 10 Slot 1 Slot 1 Slot 1 Slot 3 Slot 4	5.25", 5.25", 2.5", 2.5", 2.5", 2.5", 2.5", 2.5", 2.5", 2.5", 0.2.5", half-leng half-leng half-leng half-leng cetrical	1.6" high, 1.6" high, 0.6" high, 0.6" high, 0.6" high, 0.6" high, 0.6" high, 0.6" high, 0.6" high, 0.6" high, th, full-hei th, full-hei th, full-hei th, full-hei	external external external external external external external external external ght, 32-bi ght, PCI I ght, PCI I	, std optic , for disk , for disk	.0 x8* 0 x8	
1001-1855	system fan removal	uisk and optic	arunve	e removal,		F		6	oftwara N	lanagom	ont Tools		
Rack mount Max internal	Rack-mountable to 5 4x3.5" SATA (DC/H		four	2TB 3.5" SATA (licko		Think		S oftware N EasyStartu	•			
capacity	4x3.5 SATA (DC/HS 8x3.5" SATA (HS): 4x3.5" SAS (HS): 8x3.5" SAS (HS): 8x2.5" SAS (HS):	16.0TB wi 2.4TB with 4.8TB with	th eigh 1 four (1 eight	at 2TB 3.5" SATA (1t 2TB 3.5" SATA 600GB 3.5" SA 600GB 3.5" SA 600GB 3.5" SA	A disks S disks \S disks	•	• Thinks	Server E rity chip	EasyManag (selected	ge Security models, s	see inform	ation or	left)
Limited warranty Accessories	 3-year parts and lab. For more accessorie 	or; more Leno	vo Ser	vices see S-TO		•	User Front Boot Boot Seria USB	passwor panel k sequenc without I port I/C	ey lock ce control keyboard, D control ablement (mouse, d	liskette		-

ThinkServer® TS430 Fixed PSU (0390) - TopSeller - withdrawn

Type- Slot x model bay	Cores / Memory Disk Disk Disk Processor(s) GHz Threads DIMMs size bays Contro	
0390-12U 4x6 >	Keon E3-1220 3.1 4C/4T 1x2GB 3.5" 4 x Hot-swap Intel PC Keon E3-1220 3.1 4C/4T 1x2GB 3.5" 4 x Hot-swap 9240-8 Core i3-2100 3.1 2C/4T 1x2GB 3.5" 4 x Hot-swap 9240-8 Core i3-2100 3.1 2C/4T 1x2GB 3.5" 4 x Hot-swap Intel PC	v2 SATA/SAS 0/1/10 DVD±RW IPMI None TPM 1x Fixed
•	Highly Reliable: ECC memory and enterprise-class SAS & SATA Highly Manageable: enhanced remote manageability with IPMI 2 Room to Grow: highly modular hot-swap SATA/SAS design – suj 3-year limited warranty ¹ Part of the US TopSeller™ Program	0 BMC & optional KVM
Processor	Up to one processor, one processor standard, Intel [®] Core [™] i3-2100 processor (2C/4T, 3.1GHz, 3MB Cache), integrated Intel HD Graphics, DDR3 memory controller (up to 1333MHz) Intel Xeon [®] E3-1220 processor (4C/4T, 3.1GHz, 8MB Cache), Tu Boost 2.0 (up to 3.4GHz), DDR3 memory controller (up to 1333MH One LGA1155 socket	tz) std optical 0
Implementation Memory	32GB max, UDIMM, PC3-10600 1333MHz DDR3, ECC,	
Additional memory disclaimers	 four 240-pin DIMM sockets Actual memory operating speed is the lowest installed speed, dependent on processor memory controller speed and installed memory speed 	Disk Bay 3-PCle x8 3-6 3-10
Graphics	Onboard Aspeed AST2150 graphics/management processor, one VGA DB-15 on rear; Maximum resolution: 1600x1200@60Hz	3.5" disk bay models:
Disk bays Disk controller	Some: Four 3.5" hot-swap (HS) SATA disk bays Some: Four 3.5" hot-swap (HS) SATA/SAS disk bays Supports up to RAID 0, 1, 5, 10 via optional 9240-8i v2 RAID adag and RAID 5 upgrade key; Intel PCH: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 10 supp 9240-8i v2:	Bay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 3.5", 1" high, external, for disk Bay 4 3.5", 1" high, external, for disk Bay 5 3.5", 1" high, external, for disk ort Bay 6 3.5", 1" high, external, for disk
Tape drive Optical Diskette	PCIe bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support Supports optional tape drive via internal USB 2.0 connector Super Multi-Burner DL DVD±RW SATA 1.5Gb/s Drive None (use USB port)	Bay 7 3.5", 1" high, external, for disk Bay 8 3.5", 1" high, external, for disk Bay 9 3.5", 1" high, external, for disk Bay 10 3.5", 1" high, external, for disk
Chipset Ethernet Extender card Front ports Rear ports Diagnostics Systems mgmt Security chip Prerequisites Keyboard Mouse Power supply Mechanical Dimension System weight Tool-less	Intel C202 Chipset, Platform Controller Hub [PCH] (Slot 1-2, ethe MAC, and USB) Two Gigabit Ethernet ports, Intel 82574L and 82579LM None Two USB 2.0 Four USB 2.0, one serial (9-pin), two ethernet (RJ-45, one port is shared with system management), one analog VGA DB-15 conner System status LEDs on front; <i>DIT model(s):</i> add-on Doctor Inside Technology (DIT) module for advanced diagnostics Onboard Aspeed AST2150 graphics/management processor, IPMI 2.0-compliant baseboard management controller (BMC); <i>KVM model(s):</i> add-on KVM card for KVM functions No onboard TPM chip; <i>TPM model(s):</i> additional Nuvoton WPCT210 add-on card for TP function, TCG 1.2-compliant Monitor, SATA/SAS disk, OS None (use USB port) None (use USB port) One fixed 400 watts standard, universal, 80 PLUS® Bronze qualifie Tower, business black color, metal case W x H x D = 7.68"/195mm x 16.9"/430mm x 23.4"/595mm 61.7 lb (28kg) max configuration Side cover removal, disk and optical drive removal,	M Hay 1 5.25", 1.6" high, external, open (optical/tape) Bay 2 5.25", 1.6" high, external, std optical Bay 3 2.5", 0.6" high, external, for disk Bay 4 2.5", 0.6" high, external, for disk Bay 5 2.5", 0.6" high, external, for disk Bay 7 2.5", 0.6" high, external, for disk Bay 8 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk Bay 9 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk Bay 10 2.5", 0.6" high, external, for disk Slot 1 half-length, full-height, 32-bit PCI 2.3 Slot 2 half-length, full-height, PCI Express 2.0 x8* Slot 4 half-length, full-height, PCI Express 2.0 x16** (near CPU) * x4 electrical ** x8 electrical
Rack mount	system fan removal Rack-mountable to 5U	Software Management Tools
Max internal capacity	4x3.5" SATA (DC/HS):8.0TB with four 2TB 3.5" SATA disks $8x3.5"$ SATA (HS):16.0TB with eight 2TB 3.5" SATA disks $4x3.5"$ SAS (HS):2.4TB with four 600GB 3.5" SAS disks $8x3.5"$ SAS (HS):4.8TB with eight 600GB 3.5" SAS disks $8x2.5"$ SAS (HS):4.8TB with eight 600GB 2.5" SAS disks	ThinkServer EasyStartup ThinkServer EasyManage Security Security chip (selected models, see information on left) Administrator password
Limited warranty Accessories	3-year parts and labor; more Lenovo Services see S-TOR sheet For more accessories, see O-TOR sheet	Administrator password User password Front panel key lock Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) RoHS-compliant

ThinkServer™ TS430 Fixed PSU (0388) - November 2011

Type- Slot x model bay		Cores / Memory hreads DIMMs	Disk size	Disk bays	Disk Controller		Disk type	RAID Int	SATA optical	System mgmt	Diagnostics (DIT)	трм	Power Supply
0388-16U 4x10 2	Xeon E3-1220 3.1 4 Xeon E3-1220 3.1 4 Xeon E3-1220 3.1 4	C/4T 1x4GB	3.5"	4 x Hot-swap 8 x Hot-swap 8 x Hot-swap	Intel PCH 9240-8i v2 9240-8i v2		A/SAS	0/1/10 0/1/10 0/1/10	DVD DVD DVD	IPMI IPMI IPMI	None None None	TPM	1x Fixed 1x Fixed 1x Fixed
	 Highly Reliable: E Highly Manageable Room to Grow: highly 3-year limited ward 	e: enhanced re ghly modular h	mote I	manageability v	vith IPMI 2.0 E	вмс	& optio			ed model	's)		
Processor	Up to one processo Intel [®] Xeon [®] E3-12 Boost 2.0 (up to 3.4	20 processor	(4C/41	r, 3.1GHz, 8MB	Cache) , Turb to 1333MHz)	0		3.5" dis	k bay Fro	ont - 2.5″ ◎····	disk bay F		
Implementation	One LGA1155 sock				,			tical/tape		optical/ta		PS	SU
Memory	32GB max, UDIMM four 240-pin DIMM		333MI	Hz DDR3, ECC	,			d optical		std optica			
Additional memory disclaimers	 Actual memory o dependent on pro memory speed 	perating speed						isk Bay 7-10					
Graphics	Onboard Aspeed A one VGA DB-15 on Maximum resolution	n: 1600x1200@	60Hz	0 1	essor,		D	isk Bay 3-6		Disk Bay 3-10		4 - PCle 3 - PCle 2 - PCle 1 - PCl	x8
Disk bays Disk controller	Some: Four 3.5" h Some: Eight 3.5" h Some: Eight 2.5" h Supports up to RAI and RAID 5 upgrad Intel PCH: 9240-8i v2:	not-swap (HS) s not-swap (HS) s ID 0, 1, 5, 10 vi de key; Serial AT/ integrated ThinkSer PCIe bus	SATA/S SAS di a optic A, SAT I in chi ver RA SATA	SAS dísk bays sk bays onal 9240-8i v2 A 3.0Gb/s, ipset, RAID ^s 0, ID 9240-8i v2 F 6.0Gb/s, SAS	1, 10 support RAID adapter,	r 	Bay 1 Bay 2 Bay 3 Bay 4 Bay 5 Bay 6	5.25", 3.5", 3.5", 3.5", 3.5",	1.6" high, 1.6" high, 1" high, 1" high, 1" high, 1" high,	external, external, external, external, external,	open (opt std optica for disk for disk for disk for disk	iical/ta I	. /
Tape drive Optical Diskette	Supports optional ta DVD-ROM DL SATA None (use USB por	A ['] 1.5Gb/s 16X- rt)	ternal 48X N	ÚŚB 2.0 conne lax⁴ Drive			Bay 7 Bay 8 Bay 9	3.5", 3.5", 3.5",	1" high, 1" high, 1" high,	external, external, external,	for disk bay i for disk for disk for disk	models	s:
Chipset	Intel C202 Chipset MAC, and USB)	t, Platform Con	troller	Hub [PCH] (Sid	ot 1-2, etherne				0	external,	for disk		
Ethernet Extender card	Two Gigabit Ethern None	et ports, Intel 8	2574L	and 82579LM			<i>2.5" dis</i> Bay 1	k bay m 5.25".		external.	, open (opt	tical/ta	pe)
Front ports	Two USB 2.0						Bay 2	5.25",	1.6" high,	external,	, std optica		/
Rear ports	Four USB 2.0, one	serial (9-pin), t	wo eth	ernet (RJ-45, c	one port is	L	Bay 3 Bay 4	2.5", 2.5",	0.6" high, 0.6" high,				
Diagnostics			side Te	-		ĺ	Bay 5 Bay 6 Bay 7	2.5", 2.5", 2.5",	0.6" high, 0.6" high, 0.6" high,	external, external,	for disk for disk		
Systems mgmt	Onboard Aspeed A IPMI 2.0-compliant <i>KVM model(s):</i> ad	ST2150 graphi baseboard ma	cs/ma nagen	nent controller (Bay 8 Bay 9 Bay 10	2.5", 2.5", 2.5",	0.6" high, 0.6" high, 0.6" high,	external,	for disk		
Security chip	No onboard TPM cl TPM model(s): ad fu	hip; Iditional Nuvoto nction, TCG 1.2			card for TPM	1	Slot 2 Slot 3	half-leng half-leng	th, full-heig	ght, PCI E ght, PCI E	Express 2.0 Express 2.0) x8	
Prerequisites Keyboard Mouse Power supply	Monitor, SATA/SAS None (use USB por None (use USB por One fixed 400 watts	rt) rt)	voraal		nto qualified	1	* x4 el	half-lenç ectrical ectrical	yth, full-heig	ght, PCI E	Express 2.0) x16**	(near CPU)
Mechanical Dimension System weight Tool-less	Tower, business bla W x H x D = 7.68"/1 61.7 lb (28kg) max Side cover removal	ack color, metal 195mm x 16.9", configuration	case 430m	m x 23.4"/595m									
Rack mount	system fan removal Rack-mountable to	í '											
Max internal capacity	4x3.5" SATA (DC/F 8x3.5" SATA (HS): 4x3.5" SAS (HS): 8x3.5" SAS (HS):	HS): 8.0TB wit 16.0TB w 2.4TB wit 4.8TB wit	ith eigl h four h eigh	ht 2TB 3.5" SAT 600GB 3.5" SA t 600GB 3.5" S	ΓA disks \S disks AS disks			Server E	oftware M asyStartup asyManag	5	ent Tools		
1 for the 1	8x2.5" SAS (HS):			t 600GB 2.5" S					S	Security			
Limited warrant Accessories	 J-year parts and lal For more accessori 				UR sheet	•	 Admi User Front Boot Boot Seria USB 	nistrator passwo panel k sequend without I port I/C port disa	password rd ey lock ce control keyboard, r D control ablement (a	mouse, d	see informa liskette	tion or	n left)
						[]	RoHS-0	compliar	nt				

ThinkServer™ TS430 Fixed PSU (0389) - TopSeller - withdrawn

Type- Slot x model bay	Processor(s)	GHz	Cores / Threads	Memory DIMMs	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	SATA optical	System mgmt	Diagnost (DIT)	ics TPM	Power Supply
)389-11U 4x6	Core i3-2100	3.1	2C/4T	1x2GB	3.5"	4 x Direct Cable	Intel PCH	SATA	0/1/10	DVD	IPMI	None	TPM	1x Fixed
	 Highly Mana 	ageat ow: l ed wa	ole: enha highly mo rranty ¹	nced ren odular ho	note n ot-swa	rprise-class SAS nanageability wit p SATA/SAS des	h IPMI 2.0 BM	C & optic		es (selecti	ed model	ls)		
Processor	Up to one pr Intel [®] Core™ integrated In DDR3 memo	[⊿] i3-2 tel HI	100 prod D Graphi	cessor (2 cs,	2C/4T,	3.1GHz, 3MB C	ache),		- 3.5" disk	<i>bay</i> Fro	ont - 2.5″ ◎····· ⊑			SU
Implementation			•		50111112	-)		0	ptical/tape		optical/ta	ipe		
Memory	32GB max, I four 240-pin				33MH	IZ DDR3, ECC,		s	d optical		std optica	al		
Additional memory disclaimers		t on p				lowest installed s oller speed and			Disk Bay 7-10			_		
Graphics	Onboard As one VGA DE Maximum re	8-15 c	n rear;			agement proces	sor,		Disk Bay 3-6		Disk Bay 3-10	/	4 - PCle 3 - PCle 2 - PCle 1 - PCl	e x8
Disk bays Disk controller		SATA to RA	3.0Gb/s, \ID 0, 1,	integrate	d in c	irect cable hipset, RAID [®] 0, Ial 9240-8i v2 RA		; <i>3.5" di</i> Bay 1 Bay 2		<i>dels:</i> 1.6" high, 1.6" high,				.pe)
Tape drive Optical Diskette	Supports op DVD-ROM D None (use U	L SA	TA 1.5Gb			JSB 2.0 connect ax⁴ Drive	or	Bay 3 Bay 4 Bay 5	3.5", 3.5",	1" high, 1" high,	external,	, for disk , for disk , for disk		
Chipset		hips	- /	orm Contr	oller H	Hub [PCH] (Slot	1-2, ethernet	Bay 6	3.5",		external	, for disk		s:
Ethernet Extender card Front ports Rear ports	Two Gigabit None Two USB 2.0 Four USB 2.	Ether) 0, on	e serial (9-pin), tw	vo ethe	and 82579LM		Bay 7 Bay 8 Bay 9	3.5", 3.5", 3.5",	1" high, 1" high, 1" high,	external external external	, for disk , for disk , for disk , for disk		
Diagnostics	System statu DIT model(s	us LE): a	Ds on fro add-on D	ont;	ide Te	nalog VGA DB-1 chnology (DIT) n		2.5" di Bay 1 Bay 2 Bay 3	5.25",	<i>odels:</i> 1.6" high, 1.6" high, 0.6" high,	external	, std opti	ċal	ıpe)
Systems mgmt	IPMI 2.0-con KVM model(npliar <i>'s):</i> a	nt basebo add-on K	bard man	agem	agement proces ent controller (BI 'M functions		Bay 4 Bay 5 Bay 6	2.5", 2.5",	0.6" high, 0.6" high, 0.6" high, 0.6" high,	external external	, for disk , for disk		
Security chip		<i>s):</i> a	additiona unction,	TCG 1.2-		CT210 add-on ca liant	rd for TPM	Bay 7 Bay 8 Bay 9	2.5", 2.5", 2.5",	0.6" high, 0.6" high, 0.6" high,	external external external	, for disk , for disk , for disk		
Prerequisites Keyboard Mouse	Monitor, SAT None (use U None (use U	ISB p ISB p	ort) ort)					Slot 1	half-lengt	0.6" high, th, full-hei th, full-hei	ght, 32-bi	it PCI 2.3		
Power supply						80 PLUS® Bronz	e qualified	Slot 3	half-lengt	th, full-hei	ght, PCI I	Express 2	2.0 x8	
Mechanical Dimension System weight Tool-less Rack mount	Tower, busin W x H x D = 61.7 lb (28kg Side cover re system fan r Rack-mounta	7.68' g) ma emov emov	'/195mm x configu al, disk a al	x 16.9"/4 iration	l30mn	n x 23.4"/595mm e removal,	I	* x4 e	lectrical lectrical	th, full-hei	gnt, PCI I	Express 2	2.0 X16**	` (near CPU
Max internal capacity	4x3.5" SATA 8x3.5" SATA 4x3.5" SAS 8x3.5" SAS 8x2.5" SAS	A (DC A (HS (HS) (HS)	/HS): 8.): 10 : 2. : 4.	5.0TB with 4TB with 8TB with	h eigh four 6 eight	TB 3.5" SATA di t 2TB 3.5" SATA 500GB 3.5" SAS 600GB 3.5" SAS 600GB 2.5" SAS	disks disks 6 disks							
Limited warrant Accessories		and I	abor; mo	re Lenov	o Serv	vices see S-TOR		• Think	Server Ea	oftware M asyStartu asyManag	0	ent Tools	6	
								 Adm User Fron Boot Boot Seria USB 	inistrator password t panel ke sequenc without k al port I/O	(selected) password d ey lock e control control blement (a	mouse, d		nation o	n left)

ThinkServer



Lenovo ThinkServer RS210 (Four 2.5" Disk Bays)



Lenovo ThinkServer RS210 (Two 3.5" Disk Bays)



Lenovo ThinkServer RS210



Lenovo ThinkServer RS210



Lenovo ThinkServer RS210 (Two 3.5" Disk Bays)

ThinkServer™ RS210 (6534) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

	Proc- Base Max Memory Memory Memory Disk RAID	Disk Disk RAID IMM Power Avail						
model bay e 6534-11U 2x3 6534-14U 2x5 6534-16U 2x3 6534-17U 2x3 * Multi = RAID-0/	X3450 2.66 3.20 4 1x4GB RDIMM 1333MHz 2.5" None 3-530 2.93 2 1x1GB UDIMM 1333MHz 3.5" None 2 X3450 2.66 3.20 4 1x4GB RDIMM 1333MHz 3.5" None 2	2xSimple-swap SATA 0/1 1x351W Jan 10						
Processor(s)	Up to one processor, one processor standard, Intel® Core™ i3 Processor i3-530 with dual-core, Hyper-Threading Technology and 64, 1333MHz DDR3 memory controller, 4MB cache or Intel Xeon® Processor X3430 and X3450 with quad-core, 2.5GT/s (giga-transfers/second) DMI (Direct Media Interface), Turbo Boost Technology, Hyper-Threading Technology (X3450 only), Intel 64, 1333MHz DDR3 memory controller, 8MB cache One LGA1156 socket	1U Rack top Front (Model 11U/16/17U) Image: Strain Strai						
Memory	1GB, 2GB, or 4GB std, UDIMM or RDIMM*, PC3-10600 1333MHz DDR3, Advanced ECC**, Memory Mirroring 11U/16U: Four 240-pin DIMM sockets, 16GB max (Pending availability of 4GB UDIMM), std memory in 1 socket, 3 sockets available 14U/17U: Six 240-pin DIMM sockets, supports up to 6 single- or dual-rank RDIMMs, or up to 4 quad-rank RDIMMs * Cannot intermix RDIMM and UDIMM memory ** Advanced ECC-enable DIMMs required	Memory CPU sockets PSU III fan fan fan optical disks						
Graphics	Matrox [®] G200eV, integrated in Integrated Management Module (IMM), one VGA DB-15 in rear; 128MB, shared with IMM;							
Disk bays Disk Controller	Maximum resolution: 1024x768@85Hz 11U/17U: two 3.5" hot-swap (HS) SATA/SAS disk bays 16U: two 3.5" simple-swap (SS) SATA disk bays 14U: four HS SATA/SAS disk bays on 2.5" Slim-Form-Factor (SFF) 11U/16U: ServeRAID®-BR10il, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID® 0, 1 support	Mechanical Specifications • 1U Mechanical; rack-mount only • Black color front; metal case • 17.3"W x 22"D x 1.75"H • 440mm W x 560mm D x 43mm H • 28 lb (12.7kg) max configuration • Toolless top cover removal						
Optical Diskette Ethernet	SAS 3Gb/s, RAID 0, 1, 5, 6, 10 support 17U: ServeRAID M1015, PCI Express bus, SATA 6Gb/s, SAS 6Gb/s, RAID 0, 1, 5***, 10 support *** RAID 5 is supported by add-in Advanced Feature Key UltraSlim Enhanced DVD±RW None (use USB port) Two gigabit ethernet ports***, Intel 82574L *** One port shared with system management	Toolless disk and optical drive removal Toolless adapter retention Disk Bays 11U/16U/17U: Bay 1 5.25",0.5" high, external, std optical Bay 2 3.5", 1" high, external, optional disk Bay 3 3.5", 1" high, external, optional disk 14U:						
Chipset	Intel 3420 Chipset, Platform Controller Hub (PCH) for PCI, ethernet and USB	Bay 1 5.25",0.5" high, external, std optical Bay 2 2.5", 0.6" high, external, optional disk						
Front ports Rear ports Internal ports Diagnostics Systems mgmt	Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15),one ethernet (RJ-45), one ethernet/system management (RJ-45), serial (9-pin) One USB 2.0 for embedded hypervisor Diagnostic LEDs (error LEDs for fans and memory) Trusted Platform Module (TPM) 1.2 support, IPMI 2.0-compliant 11U/16U: IMM Standard, upgradeable to IMM Premium	Bay 3 2.5", 0.6" high, external, optional disk Bay 4 2.5", 0.6" high, external, optional disk Bay 5 2.5", 0.6" high, external, optional disk Expansion Slots Slot 1: low-profile, PCI Express x8 Slot 2: half-length, full-height, PCI Express x8						
Prerequisites	14U/17U: IMM Premium Monitor, SATA/SAS disk, OS	Power-On Hotkey Setup Utility: F1 at startup						
Keyboard Mouse Power supply(s)	None (use USB port) None (use USB port) 11U/16U/17U: One 351 watts, universal, auto switch, no hot-swap, no redundancy 14U: One 351 watts, high efficiency, universal,	Diagnostic: F2 at startup Network Boot: F12 at startup RAID Configuration Utility: Ctrl+C at startup Security						
Cooling	Six fans std (five system, one power supply), six maximum, variable speed, no hot-swap, no redundancy	 Side cover lock (shins with two identical keys) 						
Dual-rank RDIM	Max memory capacity (RDIMM models)MM: 6GB with six 1GB PC3-10600 DDR3 RDIMMs (using 67Y0014)M: 12GB with six 2GB PC3-10600 DDR3 RDIMMs (using 67Y0124)M: 16GB with four 4GB PC3-8500 DDR3 RDIMMs (using 67Y0125)32GB with four 8GB RDIMMs (Pending availability)	Administrator password Boot sequence control Boot without keyboard, mouse, diskette Sorial part I/O control						
- 3-vear parta	Limited Warranty ¹							
selected part <i>⇔</i> ThinkPlus [™]	placeable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) services available; see lenovo.com/thinkplus/warranty	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage						
 Post warra 	vice upgrade options (in eligible locations) ⁷ nty maintenance services ay ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378	ThinkPlus Priority Support, 90-day Trial						
	mportant warranty information	RoHS-compliant © Lenovo						

See footnotes for important warranty information US models announced November 24, 2009 or January 8, 2010 US models withdrawn effective September 2010

ThinkServer™ RS210 (6533) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Slot x model bay	Processor	Base GHz Co			Memory type	Memory speed		RAID battery	Disk bays	Disk type	RAII Int	D IMM Premium	Power supply(s)	Avail date	
6533-12U 2x3	Pentium G6950	2.80	2 1)	x1GB		1333MHz	3.5"	None	2xSimple-swap		0/1		1x351W	Jan 10	
	 This model This small a 					nodel is pa	rt of tl	he US To	opSeller™ Prog	ram					
Processor(s)	Up to one proc Intel [®] Pentiun								1U Rack top		F	ront			
Implementation	Intel 64, 1066 One LGA1156	MHz DD					he		Riser Riser			optical	disk	disk	
Memory	1GB std, UDIM Advanced EC Four 240-pin E 16GB max (Pe std memory in * System autor DDR3 memory ** Advanced E	C ^{**} , Me DIMM so ending av 1 socke matically control	mory ckets, /ailabil t, 3 so / clock ler	Mirror lity of 4 ckets a s dowr	ing GB UDIN available n for proc	MM),	1066	MHz	slot 1	1 - PCle x8 2	2 - PCle x8				
Graphics	Matrox [®] G200 (IMM), one VG <i>Maximum reso</i>	ia db-18	5 in rea	ar; 128	́MB, shar			ule	CPU Sockets						
Disk bays Disk Controller	Two 3.5" simpl ServeRAID®-B RAID ⁸ 0, 1 sup	BR10il, P port	ĊI Éxp	oress®	sk bays bus, SAT/	A 3Gb/s, S	SAS 30	Gb/s,	fan fan	fan fan far	7				
Optical Diskette Ethernet	UltraSlim Enha None (use US Two gigabit eth *** One port sl	B port) hernet po	orts***	, Intel a	32574L anageme	nt			optical disks						
Chipset	Intel 3420 Chi ethernet and L	i pset , Pl					PCI,		• 1U Mechan	ical; rack-m	iount o	ecification	ns		
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites	None Two USB 2.0, Four USB 2.0, one ethernet/s One USB 2.0 f Diagnostic LEI IMM standard, IPMI 2.0-comp Monitor, SATA	ystem m for embe Ds (error Trusted bliant	nanage dded I r LEDs Platfo	ement hyperv s for fai	(RJ-45), s isor ns and m	śerial (9-p emory)	RJ-45),	 28 lb (12.7k) Toolless top Toolless dis 	 440mm W x 560mm D x 43mm H 28 lb (12.7kg) max configuration Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention 						
Keyboard Mouse Power supply(s) Cooling	None (use US None (use US One 351 watts Six fans std (fir speed, no hot-	B port) s, univers ve syste	m, one	e powe	r supply)	t-swap, nc), six maxi	o redur mum,	ndancy variable	•						
1GB PC3-10600 160GB ² 3.5" SA 250GB 3.5" SA 500GB 3.5" SA 750GB 3.5" SA 1TB 3.5" SATA Other accessori	TA Simple-swap TA Simple-swap TA Simple-swap TA Simple-swap Simple-swap	Hz UDIN			67Y01 45J61 45J61 45J61 45J61 67Y13	95 96 97 98				;",0.5" high,		•			
									Bay 3 3.5" Slot 1: low-pr	, 1" high, Exp ofile, PCI E	ansio Express				
									Slot 2: half-le	0 /	0 /	PCI Expre Hotkey	ss x8		
	0-4		Toolo		Setup Utility Diagnostic: Network Bo RAID Config	F2 at startu ot: F12 at s	p [:] tartup	'l+C at sta	rtup						
ThinkServer Ea		tware M	•								Secu		p		
2.0TB with two		Max inte sks (usir			t y				 Side cover prohibits 	removal of					
Limited Warranty ¹ ⇒ 1-year parts and labor ⇒ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ⇒ ThinkPlus [™] services available; see lenovo.com/thinkplus/warranty								or	 Power-on password Administrator password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) 						
 Post warra 	vice upgrade op nty maintenance	e service	es			adlada oc		7070	ThinkPlus Pr	<i>y</i>	ort, 90-	-day Trial			
	ay ¹⁴ toll-free su	pport du	ring th	ie warr	anty peri	od via 80	J-426-7	/3/8	RoHS-compl	lant					

See footnotes for important warranty information US model announced January 8, 2010 US model withdrawn effective September 2010

TS200, RS210.			
ThinkServer Ready accessories are available Business Partners. Locate a Business Partne bplocator.lenovo.com			
Memory ⁵³ 1GB PC3-10600 DDR3 1333MHz UDIMM 2GB PC3-10600 DDR3 1333MHz UDIMM 1GB PC3-10600 DDR3 RDIMM (1R x 8) 2GB PC3-10600 DDR3 RDIMM (2R x 8) 4GB PC3-8500 DDR3 RDIMM (4R x 8) ⁵³ Mixing of UDIMM and RDIMM is not supp	67Y0122 ann 11, 67Y0123 ann 11, 67Y0014 ann 05, 67Y0124 ann 11, 67Y0125 ann 11, ort	/24/09 /05/09 /24/09	Disk Drive 2.5" SAS Hot-swap (HS): 73GB ² 2.5" SAS SFF HS (15000 rpm) 146GB 2.5" SAS SFF HS (15000 rpm) 67Y0115 ann 05/05/09 67Y0116 ann 05/05/09 67Y0117 ann 05/05/09 300GB 2.5" SAS SFF HS (10000 rpm)
Backup IBM® RDX 160GB Cartridge IBM RDX 320GB Cartridge IBM RDX 500GB Cartridge IBM DDS Generation 6 5-Pack Media	67Y0169 ann 11/ 67Y0170 ann 11/ 67Y0171 ann 11/ 67Y1377 ann 11/	/10/09 /10/09 /10/09	2.5" SATA Hot-swap (HS): 300GB 2.5" SATA SFF HS (10000 rpm) 160GB 2.5" SATA SFF HS (7200 rpm) 500GB 2.5" SATA SFF HS (7200 rpm) 67Y0120 ann 09/08/09 67Y0121 ann 09/08/09 3.5" SAS Hot-swap (HS):
IBM LTO Generation 3 5-Pack Media Connectivity IBM 8Gb FC Single-port HBA by QLogic IBM 8Gb FC Dual-port HBA by QLogic IBM 8Gb FC Single-port HBA by Emulex [®] IBM 8Gb FC Dual-port HBA by Emulex	67Y1379 ann 11/ 67Y0172 ann 11/ 67Y0173 ann 11/ 67Y0174 ann 11/ 67Y0175 ann 11/	/10/09 /10/09 /10/09	146GB 3.5" SAS HS (15000 rpm) 45J6211 ann 09/30/08 3.5" 6Gb/s SAS HS: 300GB 3.5" SAS HS (15000 rpm) 67Y1384 ann 01/26/10 600GB 3.5" SAS HS (15000 rpm) 600GB 3.5" SAS HS (15000 rpm) 67Y1385 ann 01/26/10 67Y1386 ann 01/26/10
IBM 8Gb FC Single-port HBA by Brocade® IBM 8Gb FC Dual-port HBA by Brocade ThinkServer IBM RAID controller SAS 3Gb HBA Controller V2 ServeRAID® M1015	67Y0176 ann 11/ 67Y0177 ann 11/ 67Y0183 ann 11/ 67Y1368 ann 12/	/10/09 /10/09 /10/09 /10/09 /08/09	3.5" SATA Hot-swap (HS): 45J6200 ann 09/30/08 160GB 3.5" SATA HS (7200 rpm) 45J6201 ann 09/30/08 250GB 3.5" SATA HS (7200 rpm) 45J6202 ann 09/30/08 500GB 3.5" SATA HS (7200 rpm) 45J6202 ann 09/30/08 750GB 3.5" SATA HS (7200 rpm) 45J6203 ann 09/30/08 1TB 3.5" SATA HS (7200 rpm) 45J6203 ann 09/30/08
ServeRAID M5015 ServeRAID M5014 ServeRAID M1000 Series Adv Feature Key ServeRAID M5000 Series Battery Kit ServeRAID M5000 Series Adv Feature Key	67Y0184 ann 11/ 67Y0185 ann 11/ 67Y1369 ann 12/ 67Y0186 ann 11/ 67Y0188 ann 12/	/10/09 /08/09 /10/09	3.5" SATA Simple-swap: 160GB 3.5" SATA Simple-swap (7200 rpm) 250GB 3.5" SATA Simple-swap (7200 rpm) 45J6195 ann 09/30/08 500GB 3.5" SATA Simple-swap (7200 rpm) 45J6196 ann 09/30/08 750GB 3.5" SATA Simple-swap (7200 rpm) 45J6197 ann 09/30/08 750GB 3.5" SATA Simple-swap (7200 rpm) 45J6198 ann 09/30/08 750GB 3.5" SATA Simple-swap (7200 rpm) 45J6198 ann 09/30/08
Keyboard Preferred Pro USB Keyboard	73P5220 ann 06/	/21/05	1TB 3.5" SATA Simple-swap (7200 rpm) 67Y1380 ann 11/24/09
Mouse Lenovo Optical Mouse (USB)	06P4069 <i>ann 05/</i>	/21/03	For more information on server accessories, please visit: www.lenovo.com/support/accessories www.lenovo.com/support/thinkserveraccessories www.lenovo.com/support/security
			Other accessories at www.lenovo.com/accessories
			Accessories Guide pdf at www.lenovo.com/accessoriesguide

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Partial list of Lenovo® ThinkPlus Services for ThinkServer	•	ThinkPlus Priority Support	
For more information see: http://www.lenovo.com/services_warranty/us/en/index.htm	ml	 9x5 Next Business Day response Lenovo Onsite Repair 24x7 4-hour response Lenovo Onsite Repair (for Priority 4 \$ 24x7 support with priority routing and advanced level technic 	
For more information see:	ml	 9x5 Next Business Day response Lenovo Onsite Repair 24x7 4-hour response Lenovo Onsite Repair (for Priority 4 S 24x7 support with priority routing and advanced level technic 7S200 with 1-year warranty 3-year Priority Support 4 3-year Priority Support with Hard Disk Drive Retention 9x5 Next Business Day response Lenovo Onsite Repair 24x7 4-hour response Lenovo Onsite Repair (for Priority 4 S 24x7 support with priority routing and advanced level technic 9x5 Next Business Day response Lenovo Onsite Repair 24x7 support with Priority routing and advanced level technic 9x5 Next Business Day response Lenovo Onsite Repair 24x7 4-hour response Lenovo Onsite Repair (for Priority 4 S 24x7 3-upport with PDR) means customer keeps HDDR = Hard Disk Drive Retention TS200 with 3-year warranty 3-year Priority Support with HDDR 4 3-year Priority Support with HDDR 4<	5K4057 5K4058 5K4060 5K4061 5K4071 5K4072 5K4072 5K4072 5K4075 n Support) icians
 Lenovo Online Data Backup Secure offsite data storage 256-bit Advanced Encryption System Data recovery or access in case of an unforeseen event Automatic, remote management Choose which business critical data to back up 1-year 25GB Server Lenovo Online Data Backup (US) 1-year 50GB Server Lenovo Online Data Backup (US) 1-year 100GB Server Lenovo Online Data Backup (US) 	45K2115 45K2116 45K2117	3-year ThinkPlus Productivity, TS200 (1-year)43-year ThinkPlus Productivity, TS200 (3-year)43-year ThinkPlus Productivity, RS210 (1-year)4	5K4084 5K4086 5K4092 5K4094

ThinkServer



Lenovo ThinkServer TD200



Lenovo ThinkServer TD200x



Lenovo ThinkServer TD200



Lenovo ThinkServer TD200x

ThinkServer™ TD200 (3809) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x bay	Proc- essor(s)	GHz (Cores	Memory DIMMs	Memory speed		RAID Battery	Dis bay		Disk type	RAID Int P	IMM remium	Power supply(s)	Etherne	Avail et date		
FD200 3809-3A FD200 3809-3B	U 6x7 U 6x7 • <i>Easy</i> • <i>Thes</i>	1xE5502 1xE5504 to use with the models	1.86 2.00 th Thin have a	2 4 kSer 3-ye	1x2GB 1x2GB ver Easy ar limite	1333MHz 1333MHz Startup an d warranty (SMB) mo	3.5" 3.5" d Eas y	None None Manag	4xSimı 4xHot- <i>e softw</i>	are		0/1 0/1	None None	670W 670W	2xGb	Sep 09 Sep 09		
Processor(s) mplementation Memory	Intel® X 4.8GT/s 800MH Intel Xe 4.8GT/s Process 2GB sto RDIMM Memor	s (giga-tra z DDR3 m con Proce s QPI, 800 sor uses F d, 96GB m l, PC3-106 y Mirrorir	cesso nsfers/ memory ssor E MHz E C-LGA nax (48 500 13: ng, twe	r E55 seco con 5550 DR3 DR3 DR3 GB p 33MI Ive 2	502 with nd) QPI troller, ar 4 with qu 3 memor kage, tw ber proce 12 DDR 40-pin D	dual-core (QuickPath nd 4MB ca Jad-core, y controlle to LGA136	n Interc che or r, and 4 6 sock ced EC ets***,	IMB ca ets C **,	che	Front opt opt	ical		2 -	PS PS PCIe x8 PCIe x16	SU			
Graphics	** Adva *** Ove Matrox®	nemory co inced ECC r six DIMN G200e in um resolut	C-enabl /Is requ tegrate	e DII uires ed, or	dual pro ne VGA	cessors DB-15 in re	ear, 16	MB;		Q Q								
Disk bays Disk Controller Optical	<i>3AU:</i> fo <i>3BU:</i> fo ServeR RAID ⁸ (our 3.5" sin our 3.5" ho AID®-BR1), 1 suppo	mple-sv ot-swap 0i, PC rt	wap o (HS I Exp	(SS) SA i) SATA/S press® bu	TA disk bay SAS disk b s, SATA 30	ays 3b/s, S	AS 3G	o/s,	 Busir 8.6"V 218m 77 lb Toolle 	r mechanica ness black co V x 29.4"D x nm W x 747n (35kg) max ess side cove	olor; me 17.3"H nm D x configu er remo	etal case 440mm uration oval	e n H				
Diskette Ethernet	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s None (use USB port) Two Gigabit Ethernet ports, Broadcom® 5709C, PCI Express bus, TCP/IP Offload Engine(TOE), load balancing Intel 5520 Chipset, Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, a PCI slot, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O None Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45) Two USB 2.0, one connector for tape drive, one connector for embedded hypervisor Diagnostic LEDs (system-error LED on front cover; error LEDs for RAID, memory, processors, voltage regulator module, power supply Integrated Management Module (IMM) std, IPMI 2.0-compliant, Trusted Platform Module (TPM) 1.2 support, upgradeable to IMM Premium Monitor, SATA/SAS disk, OS									 Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Rack shelf support 								
Chipset										Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical Bay 3 5.25", 1.6" high, external, optional optical Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Bay 6 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express x8 Slot 2: full, PCI Express x16 (x8 electrical) Slot 3: full, PCI Express x8 (x4 electrical) Slot 4: full, PCI Express x8 Slot 6: half-length, 32-bit PCI 2.3								
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites																		
Keyboard Mouse Power supply(s) Cooling	None (i One 67		oort) andard			um, rear ac able speed			al									
Accessories Intel Xeon Dual- Intel Xeon Quad 2GB PC3-10600 4GB PC3-10600 750GB 3.5" SAT 1TB 3.5" SATA I Other accessori	-Core P DDR3 DDR3 A Disk S Disk HS	rocessor E 1333 MHz 1333 MHz SS (7200 r (7200 rpm	E5504 RDIM RDIM pm)	М	S	67Y000 67Y000 67Y00 67Y00 45J619 45J620	09 15 16 98			Thinks Setup	Server Easy Server Easy	Startup Manage Power - t startu	e On Ho	nent Too tkey	ls			
Max internal ca 3AU: 3.0TB with 3BU: 4.0TB with	four 75									 Netwo 	ork Boot: F12 configuration	2 at sta n utility:	: Ctrl+A		р			
 ✓ 3-year parts a ✓ 3-year parts a ✓ Customer Represented parts ✓ ThinkPlus™ s ✓ Onsite serv 	ady, hypo nd labou blaceabl ³ , 8 am - ervices a	ervisor col L r e Unit (CR - 5 pm, Mo available;	imited IU) par on - Fri see ler	r emi War ts on cove	ranty ¹ Iy (with rage exc .com/thin	luding hol hkplus/war	idays)	vice fo		 pro Powe Adm Boot Boot Seria USB 	cover lock (s hibits remov er-on passwo inistrator pas sequence c without keyt al port I/O co port disable rlus Priority \$	ships w al of fro ord ssword ontrol ooard, r ntrol ment (a	ont pane mouse, all)	identical el and dis diskette				
 Post warrar 	ity main	tenance s	ervices	s –		nty period ¹	via 80)-426-7	378		compliant	Jappon	., 30- ua	y IIIdi				

See footnotes for important warranty information US models announced September 8, 2009 US models withdrawn effective September 2010

ThinkServer™ TD200 (3817) - TopSeller - withdrawn

TD200 3817-30 * Multi = RAID-0/ Processor(s)	U 6x7 1xE5506 2.13 4 2x2GB 1333MHz 3.5" None 4xHot- 1/5/6/10 support • Easy to use with ThinkServer EasyStartup and EasyManage softw • These models have a 3-year limited warranty ¹ • This small and medium business (SMB) model is part of the EMEA Up to two processors, one processor standard,	vare
Processor(s)	Up to two processors, one processor standard	
Implementation Memory	Intel® Xeon® Processor E5506 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 800MHz DDR3 memory controller, and 4MB cache Processor uses FC-LGA package, two LGA1366 sockets 4GB std, 96GB max (48GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, Advanced ECC**, Memory Mirroring, twelve 240-pin DIMM sockets***, * System automatically clocks down for processors with 800MHz DDR3 memory controller *** Advanced ECC-enable DIMMs required *** Over six DIMMs requires dual processors	Front Rear PSU optical optical optical optical 0
Graphics	Matrox [®] G200e integrated, one VGA DB-15 in rear, 16MB; Maximum resolution: 1600x1200@85Hz	
Disk bays Disk Controller	Four 3.5" hot-swap (HS) SATA/SAS disk bays ServeRAID-MR10i, PCIe bus, SATA 3Gb/s, SAS 3Gb/s, RAID 0, 1, 5, 6, 10, 50 support	 Tower mechanical, rack-mountable to 5U Business black color; metal case 8.6"W x 29.4"D x 17.3"H
Optical Diskette Ethernet	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s None (use USB port) Two Gigabit Ethernet ports, Broadcom [®] 5709C, PCI Express bus, TCP/IP Offload Engine(TOE), load balancing	 218mm W x 747mm D x 440mm H 77 lb (35kg) max configuration Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention
Chipset	Intel 5520 Chipset, Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, a PCI slot, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O	 Illuminated front icons Rack shelf support Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites	None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45) Two USB 2.0, one connector for tape drive, one connector for embedded hypervisor Diagnostic LEDs (system-error LED on front cover; error LEDs for RAID, memory, processors, voltage regulator module, power supply) Integrated Management Module (IMM) std, IPMI 2.0-compliant, Trusted Platform Module (TPM) 1.2 support, upgradeable to IMM Premium Monitor, SATA/SAS disk, OS	Baý 3 5.25", 1.6" high, external, optional optical Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Bay 6 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express x8 Slot 2: full, PCI Express x16 (x8 electrical) Slot 3: full, PCI Express x8 (x4 electrical) Slot 4: full, PCI Express x8 Slot 5: full, PCI Express x8 Slot 5: full, PCI Express x8 Slot 6: half-length, 32-bit PCI 2.3
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) Two 920 watts standard, two maximum, rear access, hot-swap, redundant with two power supplies Three fans std, three maximum, variable speed, hot-swap	
2GB PC3-10600 4GB PC3-10600 146GB ² 3.5" SA 160GB 3.5" SAT 250GB 3.5" SAT 500GB 3.5" SAT 750GB 3.5" SATA I 1TB 3.5" SATA I	Core Processor E5506 67Y0010 0 DDR3 ECC RDIMM 67Y0015 0 DDR3 ECC RDIMM 67Y0016 S HS (15000 rpm) 45J6211 A HS (7200 rpm) 45J6200 A HS (7200 rpm) 45J6201 A HS (7200 rpm) 45J6202 A HS (7200 rpm) 45J6203 HS (7200 rpm) 45J6203 HS (7200 rpm) 45J6204 es at lenovo.com/accessories 45J6204	Virtualization Virtualization ready, hypervisor connector embedded Software Management Tools • ThinkServer EasyStartup • ThinkServer EasyManage Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup • RAID configuration utility: Ctrl+A at startup
 ⇒ 3-year parts a ⇒ Customer Reselected part ⇒ ThinkPlus™ s • Onsite serv • Post warra 	TB HS SATA disks Limited Warranty ¹	Security • Side cover lock (ships with two identical keys) - prohibits removal of front panel and disks • Power-on password • Administrator password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all) ThinkPlus Priority Support, 90-day Trial RoHS-compliant

See footnotes for important warranty information US model announced September 29, 2009 US model withdrawn effective September 2010

ThinkServer™ TD200x (3822) - TopSeller - withdrawn

TD200x 3822-420 TD200x 3822-430 * Multi = RAID-0/1/9 Processor(s) U Implementation P Memory 4 Memory 4 Graphics M Disk bays 8 Disk Controller S Disk Controller S Diskette N Ethernet T	U 6x11 1xE5530 2.40 4	ance tower compu business (SMB) mo to processors stat 520 or E5530 with c ond) QPI (QuickPa htroller, and 8MB c kage, two LGA136 GB max (64GB pe to DR3*, Advanc 240-pin DIMM sock tets, 14, 13, or 10 s 3-channel per proc s down for process MMs required es dual processors ne VGA DB-15 in r	2.5" Ba ting and v dels are p andard, quad-core th Intercon ache 6 sockets r processe r processe rets, sockets av. cessor (3-5)	8xHot ttery 8xHot virtualization part of the U s, nnect), pr), , ailable***, 3-2)	t-swap SATA/SAS t-swap SATA/SAS n ready	Rear PSU PSU PSU II D II D II D II D II D II D II D II				
Implementation P Memory 4 Memory 4 Graphics M Disk bays 8 Disk Controller S Disk Controller S Diskette N Ethernet T	Intel® Xeon® Processor E55 5.86GT/s (giga-transfers/seci 1066MHz DDR3 memory coi Processor uses FC-LGA pace 4GB, 6GB, or 12GB std, 128 RDIMM, PC3-10600 1333MH Memory Mirroring, sixteen 2 std memory in 2, 3, or 6 sock eight sockets distributed into * System automatically clock DDR3 memory controller ** Advanced ECC-enable DII *** Over eight DIMMs require Matrox® G200e, integrated, o Maximum resolution: 1600x 8 hot-swap (HS) SATA/SAS of	520 or E5530 with of ond) QPI (QuickPa htroller, and 8MB ci- kage, two LGA136 GB max (64GB pe 1z DDR3*, Advanc 240-pin DIMM sock tets, 14, 13, or 10 s 3-channel per proc s down for process MMs required as dual processors ne VGA DB-15 in r	th Intercon ache 6 sockets r processo ed ECC** aets, sockets avo cessor (3-3	or), ; ailable***, 3-2)	optical	PSU PSU DI D DI D DI D DI D DI D DI D DI D DI				
M Disk bays 8 Disk Controller S P A Optical S Diskette N Ethernet T	Maximum resolution: 1600x ⁻ 8 hot-swap (HS) SATA/SAS c					3 - PCle x8 4 - PCle x8 5 - PCle x8 6 - PCl				
4 Optical S Diskette N Ethernet T	ServeRAID [®] -MR10i, PCI Exp RAID [®] 0, 1, 5, 6, 10, 50, 60 s	1200@85Hz disk bays, std press®bus, SATA 30			 Tower mechanical, rack-mountable to 5U Business black color; metal case 8.6"W x 29.4"D x 17.3"H 218mm W x 747mm D x 440mm H 84 lb (38kg) max configuration 					
Chipset Ir	43U: Battery backed cache Super Multi-Burner DL DVD± None (use USB port) Two Gigabit Ethernet ports, E TCP/IP Offload Engine(TOE)	integrated RW, SATA 1.5Gb/s Broadcom® 5709C,		ess bus,	Toolless side c Toolless disk a Toolless adapte Illuminated fror Rack shelf sup	over removal nd optical drive removal er retention nt icons port				
(1 	Intel 5520 Chipset, Intel I/O (see right) and links to BCM5 (ESI) to Intel I/O Controller H PCIe links to SATA/SAS cont Super I/O	5709C, enterprise s lub 10 (ICH10) for l	outh bridg JSB, a PC	e interface I slot,	Bay 2 5.25",1. Bay 3 5.25",1. Bay 4 2.5", 0. Bay 5 2.5", 0.	.6" high, external, std optical .6" high, external, optional optical .6" high, external, optional optical .6" high, external, optional disk .6" high, external, optional disk				
Front ports T Rear ports F Internal ports O Diagnostics E Systems mgmt Ir If	None Two USB 2.0 Four USB 2.0, external monit two ethernet (RJ-45), system Two USB 2.0, one connector one connector for embedded Easy LED Diagnostics (opera with error LEDs for fans, disk regulator module, PCI slots, Integrated Management Mod Trusted Platform Module (TP IPMI 2.0-compliant, Monitor, SATA/SAS disk, OS	n management (RJ for tape drive, hypervisor ator information pai is, RAID, memory, p power supplies) lule (IMM) Premiun	-45) nel on fror processors	nt cover	Bay 6 2.5", 0.6" high, external, optional disk Bay 7 2.5", 0.6" high, external, optional disk Bay 8 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 10 2.5", 0.6" high, external, optional disk Bay 11 2.5", 0.6" high, external, optional disk Slot 1: half-length, full-height, PCI Express x8 Slot 2: full, PCI Express x16 (x8 electrical) Slot 3: full, PCI Express x8 (x4 electrical) Slot 4: full, PCI Express x8 (x4 electrical) Slot 5: full, PCI Express x8 Slot 6: half-length, full-height, 32-bit PCI 2.3 Virtualization Virtualization ready, hypervisor connector embeddet Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup					
Móuse N Power supply(s) T h Cooling S Accessories	None (use USB port) None (use USB port) Two 920 watts standard, two hot-swap, auto-sensing, redu Six fans std, six maximum, va	Indant with two pov ariable speed, hot-s	ver supplie swap	es						
Intel Xeon Quad-C 2GB PC3-10600 E 300GB ² 2.5" SAS 500GB 2.5" SATA	Core Processor E5520 Core Processor E5530 DDR3 1333 MHz RDIMM SFF HS (10000 rpm) SFF HS (7200 rpm) s at lenovo.com /accessories	67Y001 67Y010 67Y001 67Y011 67Y012 s			IsyManage					
	500GB SATA SFF disks Limited War Ind labor laceable Unit (CRU) parts on	e for	Security Side cover lock (ships with two identical keys) - prohibits removal of front panel and disks Power-on password Administrator password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) ThinkPlus Priority Support, 90-day Trial							

ThinkServer™ TD200x (3822) - TopSeller (January 2010) - withdrawn

Personal Systems Reference (PSREF)

	Type- model	Slot x bay	Proc- essor(s)	GHz C		Memory DIMMs	Memory speed		RAID Battery	Disk bays		Disk type	RAID Int	IMM Power Premium supply(s)	Ethernet	Avai date			
TD200x 38 TD200x 38	22-48U •	6x7 6x11 These Fully	1xE5504	2.00 2.26 have a gh per	4 4 3-yea forma	1x2GB 1x4GB ar limited ance tow	ver compu	2.5" • • ting, a	No and virt	8xHot-si tualization	wap SA n ready	ATA/SAS⁴ ATA/SAS	0/1/10	Premium 1x920W Premium 1x920W					
Processor(s Implementa Memory Graphics	í Ir 4 8 8 Ir 5 5 5 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	Advantage of the second	vo process eon® Prod ((giga-trar z DDR3 m on Proce (s QPI, 10) (sor uses F 4GB std, , PC3-106 y Mirrorin nory in 1 s ckets distr n automat Hz DDR3 nced ECC eight DIM G200e, in	cessor asfers/s emory ssor E 66MHz C-LGA 128GE 00 133 g, sixtu ocket, ibuted ically c memo -enabl 1Ms re ttegrate	E55 secor conti 5520 2 DDF pact max 30HH een 2 15 so into clocks ry con e DIN quire ed, or	04 with 6 dd) QPI i oller, ar with qu 33 mem kage, tw (64GB z DDR3 40-pin I ockets a 3-chann 5 down for throller MS req s dual p me VGA	quad-core (QuickPati d 4MB ca iad-core, ory contro o LGA136 per proces *, Advanc DIMM sock vailable*** el per proc or process uired rocessors DB-15 in r	n Inter che o ller, a 6 socl socr), ced E cets, , cesso cors w	r kets CC**, r (3-3-2 ith 800l	ot), 3 cache	• Towe	r mechan] 	Rear PS PS PS PS PS PS PS PS PS PS	U				
Disk bays Disk Contro	48U: eight HS SATA/SÁS diśk bays, 2.5" Slim-Form-Factor (SFF) std Controller ServeRAID® M1015, PCI Express bus, SATA 6Gb/s, SAS 6Gb/s, RAID 0, 1, 10 support al Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s									ib/s,	 8.6"W x 29.4"D x 17.3"H 218mm W x 747mm D x 440mm H 84 lb (38kg) max configuration Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons 								
Optical Diskette Ethernet	None (use USB port) Two Gigabit Ethernet ports, Broadcom [®] 5709C, PCI Express bus, TCP/IP Offload Engine(TOE), load balancing										shelf sup 5.25",1	port .6" high	, external, std opti						
Chipset	(s (f P	Intel 5520 Chipset, Intel I/O Hub (IOH) for PCI Express slots 1-5 (see right) and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, a PCI slot, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O								interface lot,	Bay 2 Bay 3 Bay 4 Bay 5 Bay 6	5.25",1 3.5", 1 3.5", 1 3.5", 1	.6" high " high, " high, " high,	 external, optiona external, optiona external, optiona external, optiona external, optiona 	l optical I disk I disk I disk I disk				
Extender ca Front ports Rear ports Internal port Diagnostics Systems mg Prerequisite	T F tv o E w re jmt Ir T	Super I/O None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45) Two USB 2.0, one connector for tape drive, one connector for embedded hypervisor Easy LED Diagnostics (operator information panel on front cover with error LEDs for fans, disks, RAID, memory, processors, voltage regulator module, PCI slots, power supplies) Integrated Management Module (IMM) Premium, Trusted Platform Module (TPM) 1.2 support, IPMI 2.0-compliant, Monitor, SATA/SAS disk, OS									Bay 7 3.5", 1" high, external, optional disk <i>48U:</i> Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical Bay 3 5.25", 1.6" high, external, optional optical Bay 4 2.5", 0.6" high, external, optional disk Bay 5 2.5", 0.6" high, external, optional disk Bay 6 2.5", 0.6" high, external, optional disk Bay 8 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 10 2.5", 0.6" high, external, optional disk								
Keyboard Mouse Power supp Cooling	N N N S S	lone (u lone (u one 920 ot-swa ix fans	se USB p se USB p) watts sta p, auto-se std, six m	ort) ort) andard nsing, naximu Acce	, two redu m, va	ndant wi iriable sj	th two pow	ver su			Slot 1: Slot 2: Slot 3: Slot 4: Slot 5:	half-lengt full, PCI I full, PCI I full, PCI I full, PCI I	th, full-h Express Express Express Express Express		x8				
2GB PC3-1 4GB PC3-1 Other acce	0600 E	DR3 1	333 MHz	RDIMI	M ories				67Y00 67Y00	016	 Diagno Netwo 	Utility: F1 ostic: F2 ork Boot: I	1 at star at startu F12 at s	lb					
Virtualizatio	on read	v. hvpe	ervisor cor	Virtua nector						ŀ		sonnigura	aon uul	Security					
Virtualization ready, hypervisor connector embedded Software Management Tools • ThinkServer EasyStartup • ThinkServer EasyManage Limited Warranty ¹								or	 pro Powe Admi Boot Boot Seria 	hibits rem er-on pase nistrator sequence	noval of sword passwo e contro control	with two identical k front panel and disk rd d, mouse, diskette							
 Onsite 	servic	e upgra	ade optior	ns (in e	ligibl			ranty			ThinkPlus Priority Support, 90-day Trial								
Deat	arrant	maint	enance se	FVIDOO															

See footnotes for important warranty information US models announced January 26, 2010 US models withdrawn effective September 2010

ThinkServer™ TD200 (3724) - Special Bid - withdrawn

Type- Name model	Slot x Proc- Memory Memory Disk Dis bay essor(s) GHz Cores DIMMs speed size Disk(s) ba								
	U 6x7 1xE5502 1.86 2 1x2GB 1333MHz 3.5" None 4xHot- U 6x11 1xE5502 1.86 2 1x2GB 1333MHz 2.5" None 8xHot-	-swap SATA/SAS ⁴ 0/1 DVDRW 670W 2xGb Jul 09							
	• These models have a 3-year limited warranty								
Processor(s)	Up to two processors, one processor standard, Intel® Xeon® Processor E5502 with dual-core,	Front* Rear							
	4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 800MHz DDR3 memory controller, and 4MB cache	optical PSU							
Implementation	Processor uses FC-LGA package, two LGA1366 sockets								
Memory	2GB std, 96GB max (48GB per processor), RDIMM, PC3-10600 1333MHz DDR3**, Advanced ECC***, Memory Mirroring, twelve 240-pin DIMM sockets, std memory in 1 socket, 11 sockets available****, ** System automatically clocks down for processors with 800MHz DDR3 memory controller *** Advanced ECC-enable DIMMs required **** Over six DIMMs requires dual processors	optical III II III II III II III III III II III III III III III III III III III III III III III III III III III III III III III III IIII III III III III IIII III III IIII IIII III IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII							
Graphics	Matrox [®] G200e integrated, one VGA DB-15 rear Maximum resolution: 1024x768@85Hz								
Disk bays	38U: four 3.5" hot-swap (HS) SATA/SAS disk bays 39U: eight hot-swap (HS) SATA/SAS disk bays,	* Only 2.5" SFF SATA/SAS model shown							
Disk Controller	2.5" Slim-Form-Factor (SFF) ServeRAID®-BR10i, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID [®] 0, 1 support	Tower mechanical, rack-mountable to 5U Business black color; metal case 8.6"W x 29.4"D x 17.3"H							
Optical Diskette Ethernet	Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s None (use optional USB diskette) Two Gigabit Ethernet ports, Broadcom® 5709C, PCI Express bus, TCP/IP Offload Engine(TOE), load balancing	 218mm W x 747mm D x 440mm H 77 lb (35kg) max configuration Toolless side cover removal Toolless disk and optical drive removal Toolless adapter retention 							
Chipset	Intel 5520 Chipset, Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, a PCI slot, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O	 Illuminated front icons Rack shelf support Model with 3.5" disk bays: Bay 1 5.25", 1.6" high, external, std optical 							
Extender card Front ports Rear ports Diagnostics Systems mgmt Prerequisites	None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45) Diagnostic LEDs (system-error LED on front cover; error LEDs for RAID, memory, processors, voltage regulator module, power supply) Integrated Management Module (IMM) std, IPMI 2.0-compliant, upgradeable to IMM Premium Monitor, SATA/SAS disk, OS	Bay 25.25", 1.6" high, external, optional opticalBay 35.25", 1.6" high, external, optional opticalBay 43.5", 1" high, external, optional diskBay 53.5", 1" high, external, optional diskBay 63.5", 1" high, external, optional diskBay 73.5", 1" high, external, optional diskBay 73.5", 1" high, external, optional diskBay 15.25", 1.6" high, external, optional diskBay 25.25", 1.6" high, external, optional disk							
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) one 670 watts standard, one maximum, rear access, universal Three fans std, three maximum, variable speed, hot-swap	Bay 35.25", 1.6" high, external, optional opticalBay 42.5", 0.6" high, external, optional diskBay 52.5", 0.6" high, external, optional diskBay 62.5", 0.6" high, external, optional disk							
Accessories		Bay 7 2.5", 0.6" high, external, optional disk Bay 8 2.5", 0.6" high, external, optional disk							
2GB PC3-10600 4GB PC3-10600 300GB ² 2.5" SA 450GB 3.5" SA 1TB 3.5" Hot-sw USB Portable D	0 DDR3 1333 MHz RDIMM 67Y0014 0 DDR3 1333 MHz RDIMM 67Y0015 0 DDR3 1333 MHz RDIMM 67Y016 S SFF HS (10000 rpm) 67Y0118 6 Disk HS (15000 rpm) 67Y0119 vap SATA Disk (7200 rpm) 45J6204 iskette Drive 05K9276 es at lenovo.com/accessories 5000000000000000000000000000000000000	Bay 9 2.5", 0.6" high, external, optional disk Bay 10 2.5", 0.6" high, external, optional disk Bay 11 2.5", 0.6" high, external, optional disk Slot 1: half-length, full-height, PCI Express x8 Slot 2: full, PCI Express x16 (x8 electrical) Slot 3: full, PCI Express x8 (x4 electrical) Slot 4: full, PCI Express x8 Slot 5: full, PCI Express x8 Slot 5: full, PCI Express x8 Slot 6: half-length, 32-bit PCI 2.3							
• ThinkServer E	Software Management Tools ThinkServer EasyManage 	Power-On Hotkey							
Max internal ca 38U: 4.0TB with	, , , , , , , , , , , , , , , , , , ,	 Setup Utility: F1 at startup Diagnostic: F2 at startup Network Boot: F12 at startup RAID configuration utility: Ctrl+A at startup 							
Virtualization Virtualization rea	ady, hypervisor connector embedded, B port for virtualization hypervisor	Security Side cover lock (ships with two identical keys) prohibits removal of front panel and disks Power-on password 							
selected parts	Limited Warranty ¹ and labor placeable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ervices available; see lenovo.com/thinkplus/warranty	 Administrator password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) 							
 Onsite serv Post warrar 	rice upgrade options (in eligible locations) ⁷ hty maintenance services	ThinkPlus Priority Support, 90-day Trial							
	ay ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378	RoHS-compliant							

ThinkServer™ TD200 (3824) - Special Bid - withdrawn

Type- Name model		Disk Disk RAID Power Avail bays type Int Optical supply(s) Ethernet date						
TD200 3824-371	J 6x7 1xE5502 1.86 2 1x2GB 1333MHz 3.5" None 4xSir	nple-swap SATA DVDRW 670W 2xGb Jul 09						
	 High performance server with rock solid technology and proven I Easy to use with ThinkServer EasyStartup and EasyManage softw This model has a 1-year limited warranty¹ 							
Processor(s)	Up to two processors, one processor standard, Intel® Xeon® Processor E5502 with dual-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 800MHz DDR3 memory controller, and 4MB cache Processor uses FC-LGA package, two LGA1366 sockets	Front Rear						
Memory	2GB std, 96GB max (48GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, Advanced ECC**, Memory Mirroring, twelve 240-pin DIMM sockets, std memory in 1 socket, 11 sockets available****, * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Advanced ECC-enable DIMMs required *** Over six DIMMs requires dual processors	optical III optical III III III III III III III III III III III III IIII III IIII III IIII IIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII						
Graphics	Matrox [®] G200e integrated, one VGA DB-15 rear Maximum resolution: 1024x768@85Hz							
Disk bays Disk Controller Optical Diskette Ethernet	Four 3.5" simple-swap SATA disk bays Serial ATA, SATA 3Gb/s, integrated in ICH10 Super Multi-Burner DL DVD±RW, SATA 1.5Gb/s None (use optional USB diskette) Two Gigabit Ethernet ports, Broadcom® 5709C, PCI Express bus, TCP/IP Offload Engine(TOE), Load balancing	 Tower mechanical, rack-mountable to 5U Business black color; metal case 8.6"W x 29.4"D x 17.3"H 218mm W x 747mm D x 440mm H 77 lb (35kg) max configuration Toolless side cover removal 						
Chipset	Intel 5520 Chipset, Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, a PCI slot, LPC bus to VSC452 for limited Super I/O	 Toolless disk and optical drive removal Toolless adapter retention Illuminated front icons Rack shelf support 						
Extender card Front ports Rear ports Diagnostics Systems mgmt Prerequisites	None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45) Diagnostic LEDs (system-error LED on front cover; error LEDs for RAID, memory, processors, voltage regulator module, power supply) Integrated Management Module (IMM) std, IPMI 2.0-compliant, upgradeable to IMM Premium Monitor, SATA disk, OS	Bay 7 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express x8						
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One 670 watts standard, one maximum, rear access, universal Three fans std, three maximum, variable speed, hot-swap	Slot 2: full, PCI Express x16 (x8 electrical) Slot 3: full, PCI Express x8 (x4 electrical) Slot 4: full, PCI Express x8 (x4 electrical) Slot 5: full, PCI Express x8 Slot 6: half-length, 32-bit PCI 2.3						
2GB PC3-10600 4GB PC3-10600 160GB ² 3.5" Sin 250GB 3.5" Sim 500GB 3.5" Sim 750GB 3.5" Sim USB Portable D Lenovo® TV L15	DDR3 1333 MHz RDIMM 67Y0014 DDR3 1333 MHz RDIMM 67Y0015 DDR3 1333 MHz RDIMM 67Y0016 DDR3 1333 MHz RDIMM 67Y0016 ple-swap SATA 3.0Gb/s Disk (7200 rpm) 45J6195 ple-swap SATA 3.0Gb/s Disk (7200 rpm) 45J6196 ple-swap SATA 3.0Gb/s Disk (7200 rpm) 45J6197 ple-swap SATA 3.0Gb/s Disk (7200 rpm) 45J6198 skette Drive 05K9276 1 15-inch Analog TFT Monitor 9165AC6 es at lenovo.com/accessories 9165AC6							
ThinkServer Ea	Software Management Tools asyStartup • ThinkServer EasyManage	Power-On Hotkey Setup Utility: F1 at startup Diagnostic: F2 at startup						
Max internal ca	pacity 750GB SATA disks	Network Boot: F12 at startup RAID configuration utility: Ctrl+A at startup						
Virtualization Virtualization rea one internal USI	ady, hypervisor connector embedded, 3 port for virtualization hypervisor Limited Warranty ¹	Security Side cover lock (ships with two identical keys) prohibits removal of front panel and disks Power-on password Administrator password Boot sequence control 						
selected parts	nd labor blaceable Unit (CRU) parts only (with limited onsite service for s ⁹ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ervices available; see lenovo.com/thinkplus/warranty	Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all)						
 Onsite serv 	ice upgrade options (in eligible locations) ⁷	ThinkPlus Priority Support, 90-day Trial						

ThinkServer



Lenovo ThinkServer TD230



Lenovo ThinkServer TD230



Lenovo ThinkServer TD230 (Direct Cable)

ThinkServer®TD230 (1040) - March 2011 - withdrawn

Type- Name mode	Slot x I bay	Proc- essor(s)	GHz Core	Memory s DIMMs	Disk(s)	Disk size	Disk bays	Dis Contro		Disk type	RAID Int	System mgmt	Ethernet	Avai date
TD230 1040-14l TD230 1040-15l TD230 1040-16l	J 5x6 ⁻	1 x E5603	1.60 4	1x2GB 1x2GB 1x2GB	None None None	3.5" 3.5" 3.5"	5 x Direct Cab 4 x Hot-swap 4 x Hot-swap	ICH10		SATA SATA SATA/SAS	0/1/10 0/1/10 0/1/10	IPMI	2xGb 2xGb 2xGb	Mar 11 Mar 11 Mar 11
				ear limited computing			point							
Processor(s)	Intel® Xe 4.8GT/s Intel 64, 1066MH Two LGA	eon [®] Proc (giga-tran Virtualiza Iz DDR3 n A1366 soc	essor E5 sfers/seco tion Techn nemory co kets	ntroller, ar	uad-core QuickPath Id 4MB ca	Interc	connect),		optical		Rear	PSU]	
Memory Graphics	RDIMM, eight 244 * System DDR3 m ** Over f	PC3-106 0-pin DIM n automati nemory co four DIMM	00 1333M M sockets cally clock ntroller s requires	**, s down for dual proce	, EĆĊ, Mo processo essors	ors wit	h 1066MHz	8	disk disk disk disk		2 - F	PCIe x8 PCIe x8 PCIe x8		
Disk bays Disk controller	one VGA Maximul Some: Some: Some: Some:]	A DB-15 or m resolution Five 3.5" S Four 3.5" I Serial ATA RAID ⁸ 0, 1 ThinkServe	n rear, 321 on: 1600x SATA disk not-swap (, SATA 3.0 , 10 supp er SAS 924	MB; 1200@521 bays, no h HS) SATA)Gb/s, inte ort 40-8i v2, P	Hz ot-swap, o disk bays grated in CI Expres	direct c i ICH10 ss® bus	cable (DC) R, s,	 8.3"W 210m 57.6 II 	ess bla x 20.1 m W x o (26.2	anical ick color; me "D x 18.5"H 510mm D x kg) max cor cover remo	etal case 470mm	н]	
Optical Diskette Ethernet Chipset	SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support DC Model(s): Six SATA connectors for opticals and disks DVD-ROM DL SATA 1.5Gb/s 16X-48X Max ⁴ Drive None (use USB port) Two Gigabit Ethernet ports, Intel 82574L and 82567 Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right) and links to 82574L, enterprise south bridge interface (FSI) to tate I/O Constrained tube 10 PAID (VEL10P) for ISP								• Toolless optical drive removal <i>Hot-swap model(s):</i> Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Bay 6 3.5", 1" high, external, optional disk					
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites	(ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, slots 4-5, onboard SATA controller, and links to 82567 None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector for optional tape drive System status LEDs on front, Diagnostic LEDs on rear Onboard ServerEngines Pilot II graphics/management controller, IPMI 2.0-compliant baseboard management controller (BMC) Monitor, disk, OS								Direct cable model(s): Bay 1 5.25", 1.6" high, external, optional disk Bay 2 5.25", 1.6" high, external, optional optical Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Bay 6 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk					
Keyboard Mouse	None (u None (u One fixe Five fan	se USB po se USB po d 625 wat s std (pow	ort) ts standar er supply,	d, universa two front, or second	one rear,	first pr	onze qualified ocessor),	Slot 2: h Slot 3: h Slot 4: h	nalf-len nalf-len nalf-len nalf-len	igth, full-heig igth, full-heig igth, full-heig igth, full-heig igth, full-heig al	ght, PCI ght, PCI ght, 32-I	Expres Expres	ss 2.0 x8 ss 2.0 x8* 2.3	**
			memory					Setup Networ ICH10 LSI 94	rk Boot R RAIE	F2 at :: F12 a	- On Hot startup at startup E at star H at star	o tup		
32GB with eight 3.5" SATA HS: 3.5" SATA DC:	8.0TB wit	Max th four 2Tt	c internal 3 3.5" SAT	capacity A disks				• ThinkS		Software Ma EasyStartup	•		ols	
 3-year parts a Customer Repselected parts Lenovo Servic Onsite serv Post warran 24 hour x 7 da 	nd labor blaceable s³, 8 am - ces availa ice upgra ity mainte	Li 9 Unit (CRU 5 pm, Mor able; see le ade option enance se	mited Wa J) parts or n - Fri cove enovo.com/ s (in eligil rvices	rranty ¹ hly (with lir erage exclu services_wa ble location	uding holi rranty/us/e ns) ⁷	idays)		 User Front Boot Boot Serial 	passwo panel I sequer without port I/ port dis	or password ord lock out loce control keyboard, r O control sablement (a	nouse, d			

ThinkServer®TD230 (1039) - March 2011 - withdrawn

Type- Name mode	Slot x bay	Proc- essor(s)	GHz C		lemory DIMMs	Disk(s)	Disk size	Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Ethernet	Ava dat
TD230 1039-13 TD230 1039-14	J 5x6		1.60	4 1	x2GB x2GB	None None	3.5" 3.5"	5 x Direct Cabl 4 x Hot-swap	e ICH10R ICH10R	SATA SATA	0/1/10 0/1/10	IPMI IPMI	2xGb 2xGb	
Processor(s) Implementation Memory Graphics Disk bays Disk controller Optical Diskette Ethernet Chipset	 Flex. Up to t Intel® 3 4.8GT/ Intel 64 1066M Two LC 2GB st RDIMM eight 2 * Syste DDR3 ** Ove DDR3 ** Ove DDR3 ** Ove Maxim Some: Some:	wo process Keon® Proc s (giga-trar t, Virtualiza Hz DDR3 r GA1366 soc d, 32GB m 1, PC3-106 40-pin DIM mautomat memory co f four DIM/V rd ServerEl A DB-15 o <i>um resolutii</i> Five 3.5" S Four 3.5" Got 1.0 sup <i>del(s)</i> : Six OM DL SA use USB p gabit Ether 500 Chipse ght) and lini	een tow ors, on cessor isfers/s tion Ten nemory kets ax (160 00 133 M sock ically c ntroller ls requi mgines ^T n rear, <i>on:</i> 160 SATA di hot-swa 3.0Gb/s oport SATA c TA 1.50 ort) net por	e pro E560 econo chnold y cont 3B pe 3MHz zets**, ires d 32ME 00x12 isk ba ap (HS s, inte conne conne conne bb/s 1 its, Int its, Int	mputing cessor s 3 with q i) QPI (C gy, roller, ar r proces DDR3* down fou ual proce t II graph s; 00@52I ys, no h S) SATA grated ir ctors for 6X-48X el 82572 lub (IOH , enterpi	tandard, uad-core QuickPath ad 4MB ca isor), , ECC, M r process essors hics/man Hz ot-swap, disk bays n ICH10F opticals Max ⁴ Dri 4L and 82) for PCI rise south	price p a, a Interce ache emory ors wit ageme direct of s and dis ve 2567 Exprese b bridge	eonnect), Mirroring , h 1066MHz nt controller, cable (DC) sks ss slots 1-3 e interface	Tower me Business 8.3"W x 2 210mm V 57.6 lb (2 Toolless Toolless Hot-swap r Bay 1 5. Bay 2 5. Bay 3 3	cal cal cal cal cal cal cal cal cal cal	metal cas 5"H 2 x 470mm configurat moval removal n, externa n, externa	PSU PCIe x8 PCIe x8 PCIe x8 PCIe x4 e n H ion	nal optica	
Extender card Front ports Rear ports Diagnostics Systems mgmt Prerequisites Keyboard Mouse Power supply(s) Cooling	slots 4 None Two US Four U two eth One U Systen Onboa IPMI 2 Monito None (None (One fix Five fa	SB 2.0, ext hernet (RJ-4 SB 2.0 cont n status LEI rd ServerEn .0-complian r, disk, OS use USB po use USB po	ernal m 45) nector f Ds on f ngines t basel ort) ort) ts stan rer supp	contro nonito for op ront, I Pilot I poard dard, ply, tw	n (VGA I tional ta Diagnosi I graphic manage universa o front, f	DB-15), s pe drive tic LEDs cs/management co al, 80 PLU one rear,	82567 erial (9 on real gement ntroller JS® Bro first pr	orse qualified ocessor),	Bay 4 3. Bay 5 3. Bay 6 3. Direct cabl Bay 1 Bay 2 5. Bay 3 3. Bay 4 3. Bay 5 3. Bay 4 3. Bay 5 3. Bay 7 3. Slot 1: half Slot 2: half Slot 2: half Slot 4: half	5", 1" high, 5", 1" high, 5", 1" high, 25", 1.6" hig 25", 1.6" hig 25", 1.6" hig 5", 1" high, 5", 1" high, 5", 1" high, 5", 1" high, 5", 1" high, 5", 1" high, -length, full-f -length, full-f -length, full-f	externa externa externa h, externa ext	I, optior I, optior I, optior I, optior I, optior I, optio I, optio I, optio I, optio I, optio I, optio I, Expres I Expres I Expres I Expres I Expres I Expres	nal disk nal disk nal disk nal optical nal optica nal disk nal disk nal disk nal disk ss 2.0 x8 ss 2.0 x8 ss 2.0 x8 ss 2.0 x8 ss 2.0 x8	
32GB with eight 3.5" SATA HS: 3.5" SATA DC: → 1-year parts a → Customer Re selected part: → Lenovo Servi • Onsite serv • Post warra	8.0TB v 10.0TB Ind labo placeab s ³ , 8 am ces avai ice upg	C3-10600 E Max vith four 2T with five 2T Li r le Unit (CRI - 5 pm, Mo lable; see li rade option	DDR3 F c interr B 3.5" (FB 3.5" imited U) parts n - Fri c enovo.cc is (in el	ADIMA nal ca SATA SATA Warra sonly covera om/ser	pacity disks disks anty ¹ (with linge exclu vices_wa	uding hol	idays)	vice for ro-warranty.html	 Administ User pas Front par Boot seq Boot with Serial po 	ity: F2 boot: F1 AID: Ctr Software ver EasyStar	tup Security rd bl d, mouse,	nent Toc		

ThinkServer®TD230 (1027) - TopSeller (March 2011) - withdrawn

1007 101	bay essor(s)	GHz Cores	Memory DIMMs	Disk(s)	Disk size	Disk bays	Disk Controller	Disk type	SATA optical	RAID Syste Int mgm	m It Etherne	Avai t date
1027-130	5x7 1xE5603	1.60 4	1x2GB	None	3.5"	5 x Direct Cable	ICH10R	SATA	DVD	0/1/10 IPM	I 2xGb	Mar 1
	 This model h. Flexible and g This small and 	green tower o	computin	g at value		point art of the US To _l	oSeller™ P	rogram				
Processor(s)	Up to two proce Intel® Xeon® Pr 4.8GT/s (giga-tr Intel 64, Virtuali 1066MHz DDR3	ocessor E5 ansfers/secc zation Techn 3 memory co	603 with ond) QPI ology,	quad-cor (QuickPat	e , h Inter	rconnect),	\$ <u> </u>	tical		Rear PSU]]	
mplementation Memory	Two LGA1366 s 2GB std, 32GB RDIMM, PC3-10 eight 240-pin DI * System autom DDR3 memory ** Over four DIM	max (16GB 0600 1333M MM sockets atically clock controller	Hz DDR3	*, ECC, N or process			optical					
Graphics	Onboard Server one VGA DB-15 Maximum resolution	on rear, 321	ИВ;		nagem	ent controller,		disk		3 - PCle x8 4 - PCl 5 - PCle x4		
Disk bays Disk controller	Five 3.5" SATA Six SATA conne Serial ATA, SAT RAID ⁸ 0, 1, 10 s	ctors for opti A 3.0Gb/s, in	cals and	disks,		DC)	 Tower mechanical Business black color; metal case 8.3"W x 20.1"D x 18.5"H 210mm W x 510mm D x 470mm H 57.6 lb (26.2kg) max configuration Toolless side cover removal Toolless disk and optical drive removal 					
Optical Diskette Ethernet	DVD-ROM DL S None (use USB Two Gigabit Eth	port)										
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right) and links to 82574L, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, slots 4-5, onboard SATA controller, and links to 82567 None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector for optional tape drive System status LEDs on front, Diagnostic LEDs on rear Onboard ServerEngines Pilot II graphics/management controller, IPMI 2.0-compliant baseboard management controller (BMC) Monitor, SATA/SAS disk, OS						Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Bay 6 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express 2.0 x8 Slot 2: half-length, full-height, PCI Express 2.0 x8 Slot 3: half-length, full-height, PCI Express 2.0 x8 Slot 5: half-length, full-height, PCI Express x4				al	
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt Prerequisites											**	
Keyboard Mouse Power supply(s) Cooling	None (use USB None (use USB One fixed 625 w Five fans std (pr one optional pro	port) atts standar ower supply,	two front	, one rear	, first p		. *** x4 elec	ctrical				
							 Setup Ut Network ICH10R 	Boot:	F2 at s F12 at	On Hotkey startup startup		
32GB with eight		ax memory (DDR3 RDI					• ICHIUR			at startup	ols	
	M	ax internal					 ThinkSei 		syStartup			
 Lenovo Servio Onsite servio Post warrar 	nd labor blaceable Unit (C s ³ , 8 am - 5 pm, M	Limited War RU) parts or lon - Fri cove e lenovo.com/ ons (in eligit services	ly (with I erage exc services_w ble location	luding ho varranty/us/ ons) ⁷	lidays /en/lend)	 Adminis User pa Front pa Boot se Boot wit Serial p USB po RoHS-cor 	ssword anel lock quence hout ke ort I/O o rt disab	assword cout control yboard, m control	ecurity nouse, diskette I)	9	

ThinkServer®TD230 (1029) - TopSeller (March 2011) - withdrawn

Type- Name mode	Slot x Pro	oc- or(s) GHz Cores	Memory DIMMs	Disk(s)	Disk size	Disk bays	c	Disk Controller	Disk type	RAID Int	System mgmt	
TD230 1029-150 TD230 1029-160 TD230 1029-170 TD230 1029-180 TD230 1029-180 TD230 1029-180 TD230 1029-180 TD230 1029-180 TD230 1029-190 TD230 1029-180	J 5x7 1xE5 J 5x7 1xE5 J 5x6 1xE5 J 5x6 1xE5 J 5x6 1xE5 J 5x6 1xE5 J 5x6 1xE5 U 5x6 1xE5	603 1.60 4 606 2.13 4 606 2.13 4 607 2.26 4 645 2.40 6 620 2.40 4	1 x 2GB 1 x 2GB 1 x 2GB 1 x 4GB 1 x 4GB 1 x 4GB 1 x 4GB 1 x 4GB	None None None None None None ear limite	3.5" 3.5" 3.5" 3.5" 3.5" 3.5" 3.5" 3.5"	5 x Direct Cal 5 x Direct Cal 4 x Hot-swap 4 x Hot-swap 4 x Hot-swap 4 x Hot-swap 4 x Hot-swap 4 x Hot-swap anty	ble ICH10 ICH10 ICH10 ICH10 ICH10 9240-8	R R R	SATA SATA SATA SATA SATA SATA/SAS		IPMI IPMI IPMI IPMI IPMI O KVM	Mar 11 Mar 11 Mar 11 Mar 11 Mar 11 Mar 11
Processor(s)	Intel® Xeon® I 4.8GT/s (giga Intel 64, Virtua 1066MHz DDI Intel Xeon Pr 4.8GT/s QPI, Intel 64, Virtua 1066MHz DDI Intel Xeon Pr 5.86GT/s QPI Virtualization 1066MHz DDI Intel Xeon Pr 5.86GT/s QPI Virtualization 1066MHz DDI Intel Xeon Pr 5.86GT/s QPI	cessors, one pro Processor E56 -transfers/secor alization Techno R3 memory con ocessor E5606 alization Techno R3 memory con ocessor E5607 alization Techno R3 memory con ocessor E5620 , Intel 64, Hype Technology, Turf R3 memory con ocessor E5645 , alization Techno	03 with qu hd) QPI (C logy, httroller, an with qua logy, htroller, an with qua r-Threadin bo Boost htroller, an with six-	uad-core QuickPath d 4MB ca d-core, d 8MB ca d-core, ng Technolo d 12MB c	ache or ache or ache or ache or blogy, gy,	r r	• Tower I	Hot-swap)	1 - PC 3 - PC 4 - PC 5 - PC metal case	Cle x8 Cle x8 Cl		
Implementation Memory	1333MHz DDI Two LGA1366 2GB or 4GB s RDIMM, PC3- eight 240-pin * System auto DDR3 memor	R3 memory con sockets td, 32GB max (10600 1333MH DIMM sockets** matically clocks	(16GB pe z DDR3*,	r process , ECC , M r process	or), emory		 210mm W x 510mm D x 470mm H 57.6 lb (26.2kg) max configuration Toolless side cover removal Toolless optical drive removal Hot-swap model(s): Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical Bay 3 3.5", 1" high, external, optional disk 					
Graphics	Onboard Serv one VGA DB-	rerEngines™ Pil 15 on rear, 32M	ot II grapł B;	nics/mana	ageme	nt controller,	Bay 5	3.5", 1" high, 3.5", 1" high, 3.5", 1" high,	external, external, external,	optional	disk	
Disk bays Disk controller	Some: Some: Some: Some: DC Model(s):	direct cable (DC) Four 3.5" hot-swap (HS) SATA disk bays Serial ATA, SATA 3.0Gb/s, integrated in ICH10R, RAID ⁸ 0, 1, 10 support ThinkServer SAS 9240-8i v2, PCI Express [®] bus, SATA 6.0Gb/s, SAS 6.0Gb/s, RAID 0, 1, 10 support						Direct cable model(s): Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Bay 6 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk				
Optical Diskette Ethernet Chipset	Super Multi-B None (use US Two Gigabit E Intel 5500 Ch (see right) and (ESI) to Intel I	urner DL DVD± B port) thernet ports, Ir ipset , Intel I/O I d links to 82574 /O Controller Hu	RW SATA htel 82574 Hub (IOH L, enterpr ub 10 RAI	1.5Gb/s L and 82 for PCI ise south D (ICH10	Drive 2567 Expres bridge DR) for	s slots 1-3	Slot 2: half-length, full-height, PCI Express 2.0 x8 Slot 3: half-length, full-height, PCI Express 2.0 x8 Slot 3: half-length, full-height, PCI Express 2.0 x8 Slot 4: half-length, full-height, 32-bit PCI 2.3 Slot 5: half-length, full-height, PCI Express x4 *** x4 electrical				**	
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgmt	 (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, slots 4-5, onboard SATA controller, and links to 82567 None Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector for optional tape drive System status LEDs on front, Diagnostic LEDs on rear Onboard ServerEngines Pilot II graphics/management controller <i>IPMI model(s):</i> IPMI 2.0-compliant baseboard management controller (BMC) <i>KVM model(s):</i> IPMI functions <i>PLUS</i> KVM, ThinkServer Remote Management Module 3, supports one additional ethernet port Monitor, disk, OS 							Power-On Hotkey • Setup Utility: F2 at startup • Network Boot: F12 at startup • ICH10R RAID: Ctrl+E at startup Software Management Tools • ThinkServer EasyStartup Security				
Keyboard Mouse Power supply(s) Cooling	None (use US None (use US One fixed 625 Five fans std (B port)	wo front, o	one rear,	Administrator password User password Frant page lock out							

See footnotes for important warranty information See US models announced March 15, 2011; previous models on March 1, 2011 US models withdrawn effective June 2013

ThinkServer®TD230 (1029) - TopSeller - withdrawn

		Slot x bay	Proc essor		GHz (Cores	Memory DIMMs	Memory speed	Disk size		Disk bays	Disk Controller	Disk type	RAID Int	System mgmt	Av da
								1333MH 1333MH				ICH10R 9240-8i(v2)+Upgrade	SATA SATA/SAS⁴	0/1/10 0/1/5/10	IPMI KVM	Jul 1 Jul 1
	•	Flexib	le and	gre	en to	ver c	omputin	l warranty g at value (SMB) mo	price		of the	US TopSeller™ Progra	am			
Processor(s)	Int 4.8 Int 80 Int 5.8 Vir 10	el [®] Xe BGT/s el 64, 0MHz el Xe B6GT/ tualiz 66MH	eon® P (giga-t Urtuali DDR3 on Pro s QPI, ation Te z DDR	roc rans izati me ces Inte echr 3 m	esso sfers/ ion Te mory sor E l 64, nolog	r E55 seco cont cont 562 Hype y, Tu	607 with and) QPI blogy, croller, ar 0 with qu er-Threac bo Boos	standard, quad-cor (QuickPat ad 4MB ca ad-core, ling Techr t Technolo nd 12MB	h Inte Iche c Iology Ogy,	or /,	t),	Front]	
Implementation Memory	4G RE eig * S	B std DIMM, ht 24 Systen 66MH	, 32GB PC3-1 D-pin D n autom z DDR	ma 060 IMN natio 3 m	ix (16 0 13 /I soc cally o emor	33Mİ kets* clock y col	*, s down f	*, EĆC , N or process		•		disk disk disk disk		1 - PCle x8 2 - PCle x8 3 - PCle x8 4 - PCl 5 - PCle x4		
Graphics	on	e VGA	A DB-18	5 or	rear	, 32N		phics/mar 2Hz	nagen	nent con	troller,	 Tower mechanical Business black color; metal case 8.3"W x 20.1"D x 18.5"H 210mm W x 510mm D x 470mm H 57.6 lb (26.2kg) max configuration Toolless side cover removal Toolless disk and optical drive removal Bay 1 5.25", 1.6" high, external, std optical Bay 2 5.25", 1.6" high, external, optional optical Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express 2.0 x8 Slot 2: half-length, full-height, PCI Express 2.0 x8 Slot 3: half-length, full-height, PCI Express 2.0 x8 slot 3: half-length, full-height, PCI Express 2.0 x8 *** Slot 4: half-length, full-height, PCI Express 2.0 x8 				
Disk bays Disk controlle	So So r So So	ome: ome: ome: ome: ome:	Four 3. Four 3. Serial A RAID [®] (ThinkSe SATA 6	5" h 5" H (TA,), 1, erve .0G nal i	ot-sw IS SA SAT/ , 10 s er SA b/s, S upgra	ap (I TA/S 3.0 uppc 3924 SAS (de k	HS) SATA AS disk Gb/s, int ort 0-8i v2, 5.0Gb/s,	A disk bay	chips ess® b	ous,						al
Optical Diskette Ethernet Chipset	No Tw Int (se	per M ne (ua o Giga el 55(ee righ	ulti-Bur se USE abit Eth 00 Chip nt) and	rner po nern se t	rt) iet po t, Inte s to 8	DVD± rts, I I I/O 2574	ntel 825 Hub (IO IL; enter	A 1.5Gb/ 74L and 8 H) for PCI prise sout	2567 Expr h brid	lge interf						
Extender card Front ports Rear ports Internal ports Diagnostics Systems mgr Prerequisites	slo Tw Fo two Or Sy nt Or <i>IPI</i> <i>KV</i>	its 4-5 ine o USE ur US o ethe e USI stem board <i>M mo</i>	, onboa 3 2.0 B 2.0, e rnet (R B 2.0 c status I I Serve <i>del(s):</i>	ard exte J-4. onn ED rEn IPN cor IPN Ma sup	sATA ernal (5) ector 9s on gines (1 2.0 htrolle (1 fun nage poorts	for c front Pilo -com r (BN ction ment s one	tor (VGA ptional ta , Diagno t II graph pliant ba IC) s PLUS Module	seboard i KVM, Thii	8256 serial on re geme nanag	(9-pin), ear and b ent contro gement rver Rem						
Keyboard Mouse Power supply Cooling	No No (s) On Fiv	ne (u ne (u le fixe re fans	se USE se USE d 625 v s std (p	po po vatt	rt) rt) s stai er sup	ndaro	wo front	al, 80 PL , one rear I processo	, first	Bronze q processo	ualifiec or),	Setup Utility:	Power-On F F2 at startu	•		
32GB with eig			M	ax	mem	ory c	apacity	-				Network Boot: ICH10R RAID: 9420-8i RAID:	F12 at star Ctrl+E at s Ctrl+H at s	tup tartup tartup		
3.5" SATA HS 3.5" SAS HS:			th four a	2TE	3.5"	SAT	apacity A disks AS disks	;				Soft ThinkServer Easy	vare Manage Startup Securi		ols	
 3-year part Customer l selected pa Lenovo Se Onsite si Post war 	s and Replac Ints ³ , 8 rvices ervice	labor eable am - availa upgra	Unit (C 5 pm, N Ible; se Ide opt	Lii CRU Ion e le ions	mitec) par - Fri novo.c s (in e	l War ts on cove com/s	ranty ¹ ly (with l rage exc ervices_w	imited on luding ho varranty/us/	lidays	s)		Administrator pa User password Front panel key I Boot sequence c Boot without key Serial port I/O cc USB port disable	ssword ock ontrol board, mouse ontrol)	

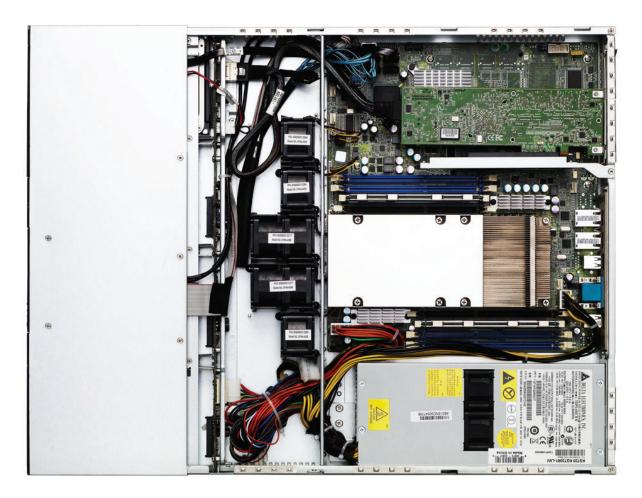
ThinkServer.



Lenovo ThinkServer RD230



Lenovo ThinkServer RD230



Lenovo ThinkServer RD230

ThinkServer™ RD230 (1044) - July 2011 - withdrawn

Туре-	Slot x Proc- Memory Memory Disk RAID Disk	Disk SATA RAID System Avail			
Name model RD230 1044-20L	bay essor(s) GHz Cores DIMMs speed size Battery bays J 1 x 5 1 x E5606 2.13 4 1 x 4GB 1333MHz 3.5" None 4 x Hot-sw	type optical Int migmt Ethernet date vap SATA/SAS ⁴ DVD±RW 0/1/5/6/10 KVM 2xGb Jul11			
	 3-year limited warranty¹ High performance, advanced RAID, and remote management supp 	ported at value price point			
Processor(s) Implementation	Up to two processors, one processor standard, Intel® Xeon® Processor E5606 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 8MB cache Two LGA1366 sockets	1U Rack top Front Power supply Socket of Socket of So			
Memory	4GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3* , ECC , Memory Mirroring , eight 240-pin DIMM sockets** * System automatically clocks down for processors with 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors				
Graphics	Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz	Memory			
Disk bays Disk controller	Four 3.5" hot-swap (HS) SATA/SAS disk bays ThinkServer 8708EM2 SAS RAID Controller, PCI Express® bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 5, 6, 10 support	fan fan fan fan			
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers	optical disks			
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slot (see right), enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, onboard SATA controller	 1U Mechanical; rack-mount only Black color front; metal case 17.2"W x 22.4"D x 1.72"H 			
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites Keyboard Mouse Power supply(s) Cooling	(See Right) One PCI Express 2.0 x16 slot standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor <i>IPMI model(s):</i> IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub <i>KVM model(s):</i> IPMI functions <i>PLUS</i> KVM supported, 24bit high quality video compression Monitor, keyboard, mouse, SATA/SAS disk, rack, OS None (use USB port) None (use USB port) One 600 watts standard, one maximum, variable speed fan, auto-sensing, no redundancy Five fans standard, five maximum, variable speed	 17.2"W x 22.4"D x 1.72"H 436mm W x 568mm D x 43.6mm H 37.7 lb (17kg) max configuration Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention Bay 1 5.25", 0.5" high, external, std optical disk Bay 2 3.5", 1" high, external, optional disk Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express 2.0 x16 			
	Accessories	Virtualization Virtualization ready, VMWare Ready™certified			
	DDR3 1333 MHz RDIMM 67Y1432 s on O-ARTsheet 67Y1432	Power-On Hotkey			
Other accessorie	es at lenovo.com /accessories Max memory capacity 8GB RDIMMs	Setup Utility: DEL at startup Network Boot: F12 at startup 1068E RAID: Ctrl+E at startup Add-on SATA/SAS RAID: Ctrl+H at startup			
	Max internal capacity 8.0TB with four 2TB 3.5" SATA disks 2.4TB with four 600GB 3.5" SAS disks	Software Management Tools ThinkServer EasyStartup 			
 selected parts ⇒ Lenovo Servio • Onsite serv • Post warran 	Limited Warranty ¹ nd labor blaceable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ces available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html ice upgrade options (in eligible locations) ⁷ ity maintenance services av ¹¹ toll-free support during the warranty period ¹	Security Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) RoHS-compliant			

ThinkServer™ RD230 (1044) - May 2011 - withdrawn

Type- Name model	Slot x Proc- Memory Memory Disk RAID Disk bay essor(s) GHz Cores DIMMs speed size Battery bays	Disk SATA RAID System Avai type optical Int mgmt Ethernet date
	J 1 x 5 1 x E 5603 1.60 4 1 x 2 GB 1333 MHz 3.5" None 4 x Hot-sw J 1 x 5 1 x E 5603 1.60 4 1 x 2 GB 1333 MHz 3.5" None 4 x Hot-sw	vap SATA/SAS ⁴ DVD±RW 0/1/1E IPMI 2xGb May1 vap SATA/SAS DVD±RW 0/1/1E KVM 2xGb May1
	 These models have a 3-year limited warranty¹ High performance, advanced RAID, and remote management support 	ported at value price point
Processor(s) Implementation Memory Graphics Disk bays Disk controller Optical Diskette Ethernet Chipset Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites Keyboard Mouse Power supply(s) Cooling	Up to two processors, one processor standard, Intel® Xeon® Processor E5603 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets 2GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** * System automatically clocks down for processors with 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz Four 3.5" hot-swap (HS) SATA/SAS disk bays LSI™ LSISAS1068E, PCI Express® bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID® 0, 1, 1E support UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slot (see right), enterprise south bridge interface (ESI) to Intel I/O Controller (See Right) One PCI Express 2.0 x16 slot standard Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor <i>IPMI model</i> (5): IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub <i>KVM model</i> (5): IPMI functions <i>PLUS</i> KVM supported, 24bit high quality video compression Monitor, keyboard, mouse, SATA/SAS disk, rack, OS None (use USB port) One 600 watts standard, one maximum, variable speed fan, auto-sensing, no redundancy Five fans standard, five maximum, variable speed fan, auto-sensing, no redundancy Five fans standard, five maximum, variable speed	IU Rack top Front Image: Second S
	Accessories DDR3 1333 MHz RDIMM 67Y1432	Virtualization Virtualization ready, VMWare Ready™certified
	es on O-ARTsheet	Power-On Hotkey Setup Utility: DEL at startup
64GB with eight	es at lenovo.com /accessories Max memory capacity a 8GB RDIMMs	Network Boot: F12 at startup 1068E RAID: Ctrl+E at startup Add-on SATA/SAS RAID: Ctrl+H at startup
3.5" SATA HS:	Max internal capacity 8.0TB with four 2TB 3.5" SATA disks	Software Management Tools ThinkServer EasyStartup
3.5" SAS HS:	2.4TB with four 600GB 3.5" SAS disks	Security
selected part → Lenovo Servi • Onsite serv • Post warran	placeable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ces available; see lenovo.com/services_warranty/us/en/lenovo-warranty.html rice upgrade options (in eligible locations) ⁷ nty maintenance services	USB port disablement (all)
→ 24 hour x 7 d	ay ¹⁴ toll-free support during the warranty period ¹	RoHS-compliant

ThinkServer™ RD230 (1043) - May 2011 - withdrawn

Personal Systems Reference (PSREF)

Type- Name model		Disk Disk SATA RAID System Avai bays type optical Int mgmt Ethernet date				
		ot-swap SATA/SAS ⁴ DVD±RW 0/1/1E IPMI 2xGb May1 ot-swap SATA/SAS DVD±RW 0/1/1E KVM 2xGb May1 pported at value price point				
Processor(s) Implementation Memory	Up to two processors, one processor standard, Intel® Xeon® Processor E5603 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets 2GB std, 64GB max (32GB per processor),	1U Rack top Front Biser Stop Power supply Rear				
Ĩ	RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** * System automatically clocks down for processors with 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors					
Graphics	Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; <i>Maximum resolution:</i> 1600x1200@60Hz	Memory Sockets				
Disk bays Disk controller	Four 3.5" hot-swap (HS) SATA/SAS disk bays LSI™ LSISAS1068E, PCI Express® bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID® 0, 1, 1E support	fan fan fan fan				
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers	optical disks				
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slot (see right), enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, onboard SATA controller	 1U Mechanical; rack-mount only Black color front; metal case 17.2"W x 22.4"D x 1.72"H 				
Internal port Diagnostics Systems mgmt	(See Right) One PCI Express 2.0 x16 slot standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor <i>IPMI model(s):</i> IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub <i>KVM model(s):</i> IPMI functions PLUS KVM supported, 24bit high quality video compression Monitor, keyboard, mouse, SATA/SAS disk, rack, OS	 17.2"W x 22.4"D x 1.72"H 436mm W x 568mm D x 43.6mm H 37.7 lb (17kg) max configuration Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention Bay 1 5.25", 0.5" high, external, std optical Bay 2 3.5", 1" high, external, optional disk Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express 2.0 x16 				
	None (use USB port) None (use USB port) One 600 watts standard, one maximum, variable speed fan, auto-sensing, no redundancy Five fans standard, five maximum, variable speed					
	S (7200 rpm) 67Y1402	Virtualization				
Other accessorie	s at lenovo.com /accessories	Virtualization Virtualization ready, VMWare Ready™ certified Power-On Hotkey				
64GB with eight	Max memory capacity 8GB RDIMMs	Setup Utility: DEL at startup Network Boot: F12 at startup 1068E RAID: Ctrl+E at startup				
	Max internal capacity 3.0TB with four 2TB 3.5" SATA disks 2.4TB with four 600GB 3.5" SAS disks	Software Management Tools • ThinkServer EasyStartup				
 1-year parts a Customer Repselected parts Lenovo Servio Onsite servi Post warran 	Limited Warranty ¹ nd labor laceable Unit (CRU) parts only (with limited onsite service for ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) es available; see lenovo.com/services_warranty/us/en/lenovo-warranty.htm ce upgrade options (in eligible locations) ⁷ ty maintenance services	USB port disablement (all)				
24 nour x 7 da	y ¹⁴ toll-free support during the warranty period ¹	RoHS-compliant				

See footnotes for important warranty information US models announced May 31, 2011 US models withdrawn effective June 2013

ThinkServer™ RD230 (1044) - March 2011 - withdrawn

Type- Name model	Slot x Proc- Memory Memory Disk RAID Disk bay essor(s) GHz Cores DIMMs speed size Battery bays	Disk SATA RAID System Avai type optical Int mgmt Ethernet date						
RD230 1044-16l	J 1 x 5 1 x E5603 1.60 4 1 x 2GB 1333MHz 3.5" None 4 x Hot-sw	/ap SATA DVD±RW 0/1/5/10 IPMI 2xGb Mar11						
RD230 1044-170	 These models have a 3-year limited warranty¹ 	vap SATA/SAS⁴ DVD±RW 0/1/5/6/10 KVM 2xGb Mar1						
Processor(s)	High performance, advanced RAID, and remote management supp	1U Rack top Front						
Implementation	Up to two processors, one processor standard, Intel® Xeon® Processor E5603 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 4MB cache or Intel Xeon Processor E5606 with quad-core, 4.8GT/s QPI, Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 8MB cache Two LGA1366 sockets	Sockernon py Sockernon py S						
Memory	2GB or 4GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** * System automatically clocks down for processors with 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors							
Graphics	Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz	fan fan fan fan						
Disk bays Disk controller	 16U: Four 3.5" hot-swap (HS) SATA disk bays 17U: Four 3.5" hot-swap (HS) SATA/SAS disk bays 16U: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID⁸ 0, 1, 5, 10 support 17U: ThinkServer 8708ELP SAS RAID Controller, PCI Express[®] bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 5, 6, 10 support 	 optical disks 1U Mechanical; rack-mount only Black color front; metal case 17.2"W x 22.4"D x 1.72"H 126 mm W x 62 mm W x 12 mm H 						
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers	 436mm W x 568mm D x 43.6mm H 37.7 lb (17kg) max configuration Toolless top cover removal Toolless disk and optical drive removal 						
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slot (see right), enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, onboard SATA controller	 Toolless adapter retention Bay 1 5.25", 0.5" high, external, std optical Bay 2 3.5", 1" high, external, optional disk Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express 2.0 x16 						
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt	(See Right) One PCI Express 2.0 x16 slot standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor <i>IPMI model(s):</i> IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub <i>KVM model(s):</i> IPMI functions PLUS KVM supported,							
Prerequisites	24bit high quality video compression Monitor, keyboard, mouse, SATA/SAS disk, rack, OS							
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One 600 watts standard, one maximum, variable speed fan, auto-sensing, no redundancy Five fans standard, five maximum, variable speed							
	Accessories DDR3 1333 MHz RDIMM 67Y1432 so on O-ARTsheet	Virtualization Virtualization ready, VMWare Ready [™] certified						
	es at lenovo.com/accessories	Power-On Hotkey Setup Utility: DEL at startup						
64GB with eight	Max memory capacity	Network Boot: F12 at startup Onboard SATA RAID: Ctrl+I at startup Add-on SATA/SAS RAID: Ctrl+H at startup						
	Max internal capacity 8.0TB with four 2TB 3.5" SATA disks 2.4TB with four 600GB 3.5" SAS disks	Software Management Tools • ThinkServer EasyStartup						
 3-year parts a Customer Re selected part Lenovo Servi Onsite servi Post warral 	Limited Warranty ¹	Security • Administrator password • User password • Boot sequence control • Boot without keyboard, mouse, diskette • Serial port I/O control • USB port disablement (all) RoHS-compliant						

ThinkServer™ RD230 (1043) - March 2011 - withdrawn

Type- Name model		Disk Disk SATA RAID System Avail ays type optical Int mgmt Ethernet date
RD230 1043-12L	1x5 1xE5603 1.60 4 1x2GB 1333MHz 3.5" None 4xHc	ot-swap SATA DVD±RW 0/1/5/10 IPMI 2xGb Mar11
	 This model has a 1-year limited warranty¹ High performance, advanced RAID, and remote management support of the second sec	ported at value price point
Processor(s)	Up to two processors, one processor standard, Intel® Xeon® Processor E5603 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology,	1U Rack top Front Image: Second sec
Implementation	1066MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets	
Memory	2GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** * System automatically clocks down for processors with 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors	
Graphics	Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz	Sockets
Disk bays Disk controller	Four 3.5" hot-swap (HS) SATA disk bays Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID [®] 0, 1, 5, 10 support	fan fan fan fan
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers	optical disks
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slot (see right), enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, onboard SATA controller	 1U Mechanical; rack-mount only Black color front; metal case 17.2"W x 22.4"D x 1.72"H
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt	(See Right) One PCI Express 2.0 x16 slot standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub	 436mm W x 568mm D x 43.6mm H 37.7 lb (17kg) max configuration Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention Bay 1 5.25", 0.5" high, external, std optical Bay 2 3.5", 1" high, external, optional disk Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk
Prerequisites	Monitor, keyboard, mouse, SATA/SAS disk, rack, OS	Bay 5 3.5", 1" high, external, optional disk
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One 600 watts standard, one maximum, variable speed fan, auto-sensing, no redundancy Five fans standard, five maximum, variable speed	Slot 1: half-length, full-height, PCI Express 2.0 x16
2GB PC3-10600 8GB PC3-10600 500GB ² 3.5" SAT 1TB 3.5" SATA H More accessorie	Accessories DDR3 1333 MHz RDIMM 67Y1432 DDR3 1333 MHz RDIMM 67Y1464 A HS (7200 rpm) 67Y1401	
		Virtualization Virtualization ready, VMWare Ready™certified
6400 with eight	Max memory capacity	Power-On Hotkey • Setup Utility: DEL at startup • Network Boot: F12 at startup • Onboard SATA RAID: Ctrl+l at startup
64GB with eight	Max internal capacity	Software Management Tools ThinkServer EasyStartup
8.0TB with four 2	TB 3.5" SATA disks	Security
selected parts ← Lenovo Servio • Onsite servi	Limited Warranty ¹ nd labor blaceable Unit (CRU) parts only (with limited onsite service for ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) es available; see lenovo.com/services_warranty/us/en/lenovo-warranty.htm ice upgrade options (in eligible locations) ⁷ ty maintenance services	 Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette
	y ¹⁴ toll-free support during the warranty period ¹	RoHS-compliant

ThinkServer™ RD230 (4011) - TopSeller (March 2011) - withdrawn

Personal Systems Reference (PSREF)

Type- Name model		Disk Disk SATA RAID System Ava bays type optical Int mgmt Ethernet da
RD230 4011-17U RD230 4011-18U RD230 4011-19U RD230 4011-1AU RD230 4011-1BU RD230 4011-1BU RD230 4011-1CU	J 1x5 1xE5606 2.13 4 1x4GB 1333MHz 3.5" 4xH J 1x5 1xE5607 2.26 4 1x4GB 1333MHz 3.5" 4xH J 1x5 1xE5607 2.26 4 1x4GB 1333MHz 3.5" 4xH J 1x5 1xE5620 2.40 4 1x4GB 1333MHz 3.5" 4xH J 1x5 1xE5645 2.40 6 1x8GB 1333MHz 3.5" 4xH J 1x5 1xE5645 2.40 6 1x8GB 1333MHz 3.5" Battery 4xH J 1x5 2xX5650 2.66 12 2x8GB 1333MHz 3.5" Battery 4xH	ot-swapSATADVD±RW0/1/5/10IPMI2 x Gb Marot-swapSATADVD±RW0/1/5/10IPMI2 x Gb Marot-swapSATADVD±RW0/1/5/10KVM2 x Gb Marot-swapSATADVD±RW0/1/5/10KVM2 x Gb Marot-swapSATADVD±RW0/1/5/10KVM2 x Gb Marot-swapSATADVD±RW0/1/5/10IPMI2 x Gb Marot-swapSATA/SAS4DVD±RW0/1/5/6/10KVM2 x Gb Marot-swapSATA/SAS4DVD±RW0/1/5/6/10KVM2 x Gb Marot-swapSATADVD±RW0/1/5/10KVM2 x Gb Marot-swapSATADVD±RW0/1/5/10KVM2 x Gb Mar
	These small and medium business (SMB) models are part of the second	e US TopSeller™ Program
Processor(s)	Up to two processors, one or two processors standard, Intel® Xeon® Processor E5603 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 4MB cache or Intel Xeon Processor E5606 with quad-core, 4.8GT/s QPI, Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 8MB cache or Intel Xeon Processor E5607 with quad-core, 4.8GT/s QPI, Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 8MB cache or Intel Xeon Processor E5607 with quad-core, 5.8GGT/s QPI, Intel 64, Virtualization Technology, 1066MHz DDR3 memory controller, and 8MB cache or Intel Xeon Processor E5620 with quad-core, 5.86GT/s QPI, Intel 64, Hyper-Threading Technology, Virtualization Technology, Turbo Boost Technology, 1066MHz DDR3 memory controller, and 12MB cache or Intel Xeon Processor E5645 with six-core, 5.86GT/s QPI, Intel 64, Virtualization Technology, 1333MHz DDR3 memory controller, and 12MB cache or Intel Xeon Processor X5650 with six-core, 6.4GT/s QPI, Intel 64, Hyper-Threading Technology, Virtualization Technology, Turbo Boost Technology, 1333MHz DDR3 memory controller, and 12MB cache or Intel Xeon Processor X5650 with six-core, 6.4GT/s QPI, Intel 64, Hyper-Threading Technology, Virtualization Technology, Turbo Boost Technology, 1333MHz DDR3 memory controller, and 12MB cache or Intel Xeon Processor X5650 with six-core, 6.4GT/s QPI, Intel 64, Hyper-Threading Technology, Virtualization Technology, Turbo Boost Technology, 1333MHz DDR3 memory controller, and 12MB cache	1U Rack top Front Image: second se
mplementation /lemory	Two LGA1366 sockets 4GB, 8GB, or 16GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring eight 240-pin DIMM sockets** * System automatically clocks down for processors with 1066MHz DDR3 memory controller ** Over four DIMMs requires dual processors	 Black color front; metal case 17.2"W x 22.4"D x 1.72"H 436mm W x 568mm D x 43.6mm H 37.7 lb (17kg) max configuration
Graphics	Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz	 Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention
Disk bays Disk controller	16U/17U/18U/19U/1AU/1DU: Four 3.5" hot-swap (HS) SATA disk bays 1BU/1CU: Four 3.5" hot-swap (HS) SATA/SAS disk bays 16U/17U/18U/19U/1AU/1DU: Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 5, 10 support 1BU/1CU: ThinkServer 8708EM2 SAS RAID Controller, PCI Express® bus, SATA 3.0Gb/s, RAID 0, 1, 5, 6, 10 support, Battery backed cache integrated	Bay 1 5.25", 0.5" high, external, std optical Bay 2 3.5", 1" high, external, optional disk Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express 2.0 x16
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers	Virtualization
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slot (see right), enterprise south bridge interface (ESI) to Intel I/O Controlle Hub 10 RAID (ICH10R) for USB, onboard SATA controller	
Riser card Front ports Rear ports	(See Right) One PCI Express 2.0 x16 slot standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45)	Setup Utility: DEL at startup Network Boot: F12 at startup Onboard SATA RAID: Ctrl+I at startup Add-on SATA/SAS RAID: Ctrl+H at startup
nternal port Diagnostics Systems mgmt	One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor <i>IPMI model(s):</i> IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub <i>KVM model(s):</i> IPMI functions PLUS KVM supported, 24bit high quality video compression	Software Management Tools • ThinkServer EasyStartup Security • Administrator password • User password • Boot sequence control • Boot without keyboard, mouse, diskette
Prerequisites Keyboard	Monitor, keyboard, mouse, SATA/SAS disk, rack, OS None (use USB port)	Serial port I/O control USB port disablement (all)
Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One 600 watts standard, one maximum, variable speed fan, auto-sensing, no redundancy Five fans standard, five maximum, variable speed	RoHS-compliant

US model announced March 8, 2011; previous models on March 1, 2011

US model withdrawn effective March 2011 or June 2013

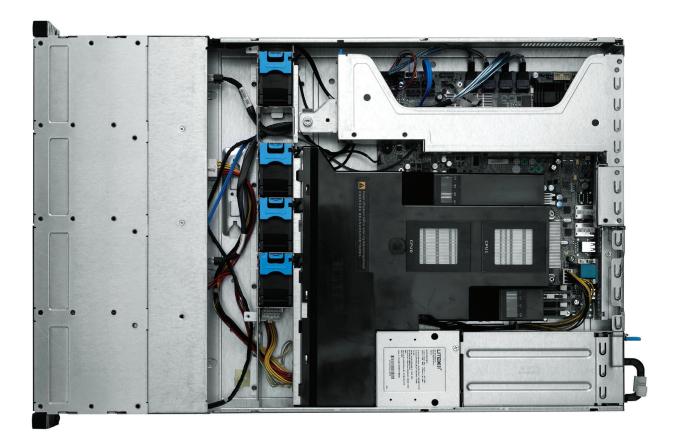
ThinkServer



Lenovo ThinkServer RD240



Lenovo ThinkServer RD240



Lenovo ThinkServer RD240

ThinkServer™ RD240 (1048) - July 2011 - withdrawn

Type- Name model	Slot x bay	Proc- essor(s)	GHz Cores	Memory DIMMs		RAID Battery	Disk bays	Di: Conti		Disk type	RAID Int	Syste mgn	em Pov nt supp	/er ly(s) Ether	net	Avail date
RD240 1048-16L RD240 1048-17L							8 x Hot-swap 8 x Hot-swap						∕l 2x75	OW 2xG OW 2xG	ib	Jul 11 Jul 11
*Multi = RAID 0/ [.]	1/5/6/10	/50/60				5										
Processor(s)	Up to	two proce	essors, one				dard,		2U F	Rack top			Front			
Implementation	5.86G Intel 6 Virtua 1333N Intel 2 6.4GT Virtua 1333N	T/s (giga- 4, Hyper- lization Te 1Hz DDR (eon Pro /s QPI, In lization Te	Threading T echnology, T 3 memory c cessor X56 itel 64, Hype echnology, T 3 memory c	cond) Q echnolog urbo Boc ontroller, 50 with s er-Thread urbo Boc	PI (Qi gy, ost Teo and six-co ding T ost Teo	uickPath chnology 12MB ca re , echnology	che gy, ',),		Riser slot	Memory	Power supply	disk	disk dis disk dis	k di k di	
Memory	4GB c RDIMI eight 2 * Syste DDR3	or 8GB sto M, PC3-1 240-pin D em autom memory	d, 64GB ma 0600 1333N IMM sockets	IHz DDR s**, sks down	83 *, É for pi	CC, Mer	^{:),} nory Mirrori i s with 1066N	•		Memory sockets	s ry		PSU =		1 - PCle 2 - PCle 3 - PCle	x8 x8 x8
Graphics	Onboa one V	ard Aspee GA DB-15		graphics /IB;	s/man		t processor,		fan	n fan fan fa	an	optical				
Disk bays Disk controller	Thinks PCI E RAID	Server 87 xpress bu 0, 1, 5, 6,	wap (HS) S 08EM2 SAS Is, SATA 3.0 10, 50, 60 cache integ	S RAID C Gb/s, SA support;	ontro	ller,			• De • Bla	J Mechanica esigned for E ack color fro 9"W x 27.6"E	EIA-31 ont; me	tal case		ch rack on	lly	
Optical Diskette Ethernet	None	(use USB	nced DVD±F port) ports		el 825	574L con	trollers		• 48 • 66 • To	33mm W x 7 5.6 lb (30kg) oolless top co	00mm max c over re	D x 87 configur emoval				
Chipset	Intel 5 (see ri	500 Chip ght), links	set, Intel I/) Hub (I0 1068Е, е	OH) fo enterp	or PCI Ex rise sout	press slots 1			oolless disk r oolless adapt 1 5.25", (ter rete 0.5" hi	ention ah. exte	ernal, sto	l optical		
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt	(x4 ele Two U Four U two et One U Diagne Onboa	ectrical) sl SB 2.0 JSB 2.0, e hernet (R ISB 2.0 co ostic and ard Aspee <i>nodel(s):</i>	lots standar external moi J-45)	d nitor (VG us LEDs graphics mpliant b BMC), sto form flasi	A DB on fro s/man baseb brage	-15), ser ont pane agemen oard ma over IP,	l t processor nagement		Bay Bay Bay Bay Bay Bay Bay Slot Slot	2 3.5", 3 3.5", 4 3.5", 5 3.5", 6 3.5", 7 3.5", 7 3.5", 7 3.5", 8 3.5", 9 3.5", 1 1: full-lengt 1 2: full-lengt 3 3: half-leng	1" higł 1" higł 1" higł 1" higł 1" higł 1" higł 1" higł 1" higł h, full h, full	n, exte n, exte n, exte n, exte n, exte n, exte n, exte -height, -height,	ernal, op ernal, op ernal, op ernal, op ernal, op ernal, op ernal, op ernal, op PCI Exp PCI Exp	tional disk tional disk tional disk tional disk tional disk tional disk tional disk vress 2.0 > vress 2.0 >	(8 (8***	
Prerequisites Keyboard Mouse Power supply(s) Cooling	Monito None None One o auto-s	or, keyboa (use USB (use USB r two 750 ensing, re	port)	uality vid SATA/SA lard, two th two po	leo co AS dis maxii ower s	mpressi k, rack, (mum, va supplies	on DS riable speed	fan,	*** >	x4 electrical						
5			-									Virtual	ization			
64GB with eight	8GB P		DDR3 RD		У				Virtu	ualization re			,	certified		
3.5" SATA HS: 3.5" SAS HS:	16.0TB 4.8TB v	with eigh	lax interna l t 2TB HS S/ 600GB HS	ATA disks	S				• Ne • 10	tup Utility: twork Boot: 68E RAID: 08EM2 RAII	DEI F12 Ctrl D: Ctrl	at star at star +C at st +H at st	tup artup artup			
									• Th	S einkServer E			agement	Tools		
 → 3-year parts a → Customer Reselected part → Lenovo Servi • Onsite serv • Post warrai → 24 hour x 7 d 	placeat s ³ , 8 am ces ava vice upo nty mai	ble Unit (C 1 - 5 pm, M lilable; se grade opti ntenance	lon - Fri cov e lenovo.com ions (in elig services	only (with verage ex /services_ ible locat	ccludi warra tions)	ng holid nty/us/en/ 7	ays)	y.html	 Us Bo Bo So Us 	dministrator ser passwor oot sequenc oot without k erial port I/O SB port disa HS-complian	d e cont ceyboa contr bleme	rol Ird, mou ol	-	tte		

ThinkServer™ RD240 (1047) - March 2011 - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x bay	Proc- essor(s)	GHz Co		Memory DIMMs	Disk size	RAID Battery	Disk bays	Dis Contr		Disk type	RA In		System mgmt	Power supply(s)	Ethernet	Ava dat
1047-12	J 3x9 1	x E5603	1.60	4 1	I x 2GB	3.5"	None	8 x Hot-swap	106	8E	SATA/SA	S⁴ 0/1,	/1E		1 x 750W		
		model ha performa						gement suppc	orted a	at valu	ie price p	oint					
Processor(s)	Intel® 2 4.8GT/ Intel 64 1066M	wo proces Keon® Pro 's (giga-tra 4, Virtualiz Hz DDR3 6A1366 so	ocesso ansfers/ zation Te memor	r E56 seco echno	603 with nd) QPI blogy,	quad (Quic	-core , kPath In	terconnect), ne	2	2U Ra	ick top		0000	Fro	nt disk dis disk dis		al disk disk
Memory	RDIMM eight 2 * Syste DDR3	40-pin DI	MM soc atically controlle	33MĤ kets* clock er	Iz DDR *, s down	3 *, EC for pro	ocessors	o ry Mirroring with 1066MH			СРИ	Memory sockets		Rea	ar		
Graphics	one VG	rd Aspeed A DB-15 <i>um resolu</i>	on rear	, 8Mĕ	3;		igement	processor,						PSI PSI	-	1 - PC 2 - PC 3 - PC	le x8
Disk bays Disk controller	LSI™ L SATA 3	5.5" hot-sv SISAS10 0.0Gb/s, S	68E, P0 SAS 3.0	CI Ex Gb/s,	press® t RAID ⁸	ous,	-	ort		fan		fan	ntic				
Dptical Diskette Ethernet	None (im Enhan use USB gabit Ethe	port)			1 8257	74L cont	rollers		. 211 M	disk //echanic		optic	al			
Chipset	(see rig		to LSIS	AS1	068E, ei	nterpr	ise soutl	press slots 1-3 n bridge interfa) for USB	ace	 Desi Blac 		EIA-31 ont; me	etal o	case	19-inch ra	ack only	
Riser card Front ports Rear ports nternal port Diagnostics Systems mgmt	(x4 ele Two US Four U two eth One US Diagno Onboa IPMI 2 storage	ctrical) slo SB 2.0 SB 2.0, e nernet (RJ SB 2.0 co ostic and s rd Aspeed	ots stan xternal i J-45) nnector system s d AST20 ant base remote	dard monif status 050 g	tor (VGA s LEDs raphics of mana	A DB- ⁻ on from mana	15), seria nt panel igement nt contro	processor bler (BMC),		 483r 66.6 Tool Tool 	nm W x 7 Ib (30kg less top c less disk less adap 5.25", 3.5", 3.5", 3.5",	700mm) max o cover re remova oter rete	D x confi emo al entic gh, 1, 1,	87.5mi guration val on externa externa externa externa externa		al disk al disk al disk	
Prerequisites Keyboard Mouse Power supply(s) Cooling 2GB PC3-10600	Monito None (None (One 75 auto-se Four fa	r, keyboai use USB use USB 50 watts s ensing, re ns standa 1333 MH	rd, mou port) port) tandard dundan ard, four Acce z RDIM	, two t with max essor	maximi i two po imum, v	um, va wer si	ariable s upplies e speed 67Y1	beed fan, 432		Bay 6 Bay 7 Bay 8 Bay 9 Slot 1 Slot 2 Slot 3	3.5", 3.5", 3.5", 3.5", 3.5", tull-leng	1" high 1" high 1" high 1" high 1" high th, full th, full gth, full	n, n, n, -hei -hei	externa externa externa externa ght, PC ght, PC	I, optiona I, optiona I, optiona I, optiona Express Express Express	al disk al disk al disk al disk al disk s 2.0 x8 s 2.0 x8**	
8GB PC3-10600 1TB 3.5" SATA H 450GB ² 3.5" SA More accessorie	IS (720 S HS (1	0 rpm) 5000 rpm	ı)	IVI			67Y1 67Y1 67Y1	480									
Other accessorie	es at le r	novo.com	n/access	sories	6				,	Virtua	lization re	eady, V	MW	ualizati are Rea r-On Ho	ady™cert	fied	
64GB with eight	8GB PC		DDR3			1			•	 Netwise 	o Utility: ork Boot 068E RA	DE : F12	L at 2 at	startup startup			
		with eight	2TB HS	S SAT	A disks					• Thinl	Server E		artup	2	nent Too	ls	
 Customer Repselected parts Lenovo Servio Onsite servio Post warrar 	Max internal capacity 'SATA HS: 16.0TB with eight 2TB HS SATA disks 'SAS HS: 4.8TB with eight 600GB HS SAS disks Limited Warranty ¹ -year parts and labor Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) .enovo Services available; see lenovo.com/services_warranty/us/en/lenovo-warra Onsite service upgrade options (in eligible locations) ⁷ Post warranty maintenance services 4 hour x 7 day ¹⁴ toll-free support during the warranty period ¹										ninistrator r passwo t sequend t without al port I/C g port disa -complia	rd ce cont keyboa D contro ableme	rol rol rd, ol				

See footnotes for important warranty information US model announced March 1, 2011

ThinkServer™ RD240 (1048) - March 2011 - withdrawn

Type- Name model	Slot x bay	Proc- essor(s)	GHz Cores	Memory DIMMs		RAID Battery	Disk bays	Dis Contr		Disk type	RAID Int		stem gmt	Power supply(s)	Etherne	Avail t date
RD240 1048-14L RD240 1048-15L				1x2GB 1x4GB		Battery	8 x Hot-swap 8 x Hot-swap			SATA/SAS⁴ SATA/SAS			MI /M	1 x 750W 1 x 750W		
*Multi = RAID 0/ [.]	1/5/6/10)/50/60														
Processor(s) Implementation	4.8GT Intel 6 1066N Intel 3 5.86G Virtua 1333N	Xeon® Pr /s (giga-tr 4, Virtualia /Hz DDR3 (eon Proc T/s QPI, In lization Te	zation Techr 8 memory co cessor E56 ntel 64, Hyp chnology, Tu 8 memory co	603 with ond) QP ology, ontroller, 19 with s er-Threa urbo Boo	and 4 ix-co st Teo	d-core, ckPath I 4MB cac re, Technolo chnology	ogy, ',			Rack top	Memory	Power supply	Fro	ont disk dis disk dis		cal disk disk
Memory	RDIM eight 2 * Syst DDR3	M, PC3-10 240-pin DI em autom memory o	MM sockets atically cloc	Hz DDR **, ks down	3*, È for pi	CC, Mer), nory Mirrorir s with 1066M	•		CPU CPU Sockets	ory ets	L	Rea PS PS	U	2 - Pi 3 - Pi	Cle x8 Cle x8 Cle x8
Graphics	one V	GA DB-15	d AST2050 on rear, 8N <i>ution:</i> 1600	ĬB; '		agemen	t processor,		fan	fan fan disk	fan	optical				
Disk bays Disk controller	Sõme Some	 : LSI[™] L³ SATA 3 : ThinkSe PCI Exp RAID 0 	vap (HS) S/ SISAS1068 .0Gb/s, SAS erver 8708E press bus, S , 1, 5, 6, 10, backed cac	E, PCI E 3.0Gb/s LP SAS ATA 3.0 50, 60 s	xpres s, RA RAIE Gb/s, suppo	is [®] bus, ID ⁸ 0, 1,) Control SAS 3.0	ler,		 De Bla 19 	I Mechanica signed for ack color fro "W x 27.6"I 3mm W x 7	al EIA-31 ont; me D x 3.4	0 star etal ca 14"H	se		ack only	
Optical Diskette Ethernet	None	(use USB	iced DVD±F port) ernet ports,		el 825	74L con	trollers		• 66 • To • To	.6 lb (30kg) olless top c olless disk olless adap) max (cover re remov	configi emova al	uratio I			
Chipset	(see r	ight), links	to LSISAS	1068E, e	ntérp	rise sout	th bridge inte		 Bay Bay 	1 5.25",	0.5" h	igh, ex	terna	al, std op al, option		
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt	Diagnostic and system status LEDs on front panel								Slot Slot	4 3.5", 5 3.5", 6 3.5", 7 3.5", 8 3.5",	th, ful gth, ful	h, e> h, e> h, e> h, e> h, e> h, e> l-heigh	aterna aterna aterna aterna aterna aterna nt, P(nt, P(CI Expres	al disk al disk al disk al disk al disk al disk s 2.0 x8 s 2.0 x8*	**
Prerequisites Keyboard Mouse Power supply(s) Cooling	None None One 7 auto-s	(use USB (use USB 50 watts s ensing, re		o maxim h two pc	um, v wer s	ariable s	speed fan,									
64GB with eight	8GB P		DDR3 RDI		y				Virtu	alization re			e Re	ady™cert	ified	
3.5" SATA HS: 3.5" SAS HS:		with eight		TA disks					• Net • 106	tup Utility: twork Boot: 8E RAID: 98ELP RAII	DE F12 Ctr D: Ctr		artup artup startu startu	up up		
									• Thi	s nkServer E			nage	ment Too	IS	
 ở 3-year parts a ở Customer Re selected part ∠enovo Servi Onsite servi Post warrai 	placeal s ³ , 8 an ces ava vice upo nty mai	ole Unit (C n - 5 pm, M ailable; see grade opti- ntenance	lon - Fri cov e lenovo.com ons (in eligi	nly (with erage ex <u>/services_</u> ble locat	cludi warra ions)	ng holid nty/us/en/ 7	ays)	y.html	 Us Bo Bo Se US 	Iministrator ser passwo oot sequend oot without Frial port I/C SB port disa IS-complian	rd ce con keyboa D conti ablema	vord trol ard, m rol		-		

ThinkServer™ RD240 (1046) - TopSeller (March 2011) - withdrawn

-	<u></u>			Dial		-	F 1 /	B	o :		
Name model	Slot x Proc- bay essor(s	Memo GHz Cores DIMM	ry Disk RAID s size Battery	Disk bays	Dis Contr		Disk type	RAID Int	System mgmt	Power supply(s) Etherne	Avai et date
RD240 1046-1DL	J 3x9 1xE560 J 3x9 1xE560 J 3x9 1xE562 J 3x9 1xE564 J 3x9 1xE564 J 3x9 2xX565 • These model	6 2.13 4 1x4G 7 2.26 4 1x4G 0 2.40 4 1x4G	B 3.5" B 3.5" B 3.5" B 3.5" B 3.5" B 3.5" Battery B 3.5" Battery ited warranty ¹	8 x Hot-swap 8 x Hot-swap 8 x Hot-swap 8 x Hot-swap 8 x Hot-swap 8 x Hot-swap 8 x Hot-swap 9 x Hot-swap	1068 8708 8708 1068 8708 8708	E EM2 EM2 EM2 EM2 EM2	SATA/SAS SATA/SAS SATA/SAS SATA/SAS	0/1/1E Multi* Multi 0/1/1E Multi Multi	IPMI KVM KVM KVM	1x750W 2xGb 1x750W 2xGb 1x750W 2xGb 1x750W 2xGb 1x750W 2xGb 2x750W 2xGb 2x750W 2xGb	Mar 11 Mar 11 Mar 11 Mar 11 Mar 11
*Multi = RAID 0/1			,	··· · · · ·				,			
Processor(s)	Intel® Xeon® I 4.8GT/s (giga Intel 64, Virtua 1066MHz DDI Intel Xeon Pr 4.8GT/s QPI, 1066MHz DDI Intel Xeon Pr 4.8GT/s QPI,	cessors, one or two Processor E5603 -transfers/second) alization Technolog R3 memory control ocessor E5606 wi Intel 64, Virtualizat Cocessor E5607 wi Intel 64, Virtualizat	with quad-core QPI (QuickPath y, ler, and 4MB ca th quad-core , on Technology, ler, and 8MB ca th quad-core , on Technology,	, Interconnect), ache or ache or		2U Ri	<u>}</u>	Memory	Fro Power supply	opt	ical disk disk
Implementation	Intel Xeon Pr 5.86GT/s QPI Virtualization 1066MHz DDI Intel Xeon Pr 5.86GT/s QPI 1333MHz DDI Intel Xeon Pr 6.4GT/s QPI, Virtualization	R3 memory control ocessor E5620 wi , Intel 64, Hyper-Th Technology, Turbo I R3 memory control ocessor E5645 wi , Intel 64, Virtualiza R3 memory control ocessor X5650 wi Intel 64, Hyper-Thr Technology, Turbo I R3 memory control i sockets	th quad-core , rreading Technologies, Boost Technologies, ler, and 12MB of th six-core , tition Technologies, ler, and 12MB of th six-core , eading Technologies, Boost Technologies, Boo	ology, gy, cache or y, cache or ogy, gy,		fan	fan fan fa disk	n optio	Rea PSI PSI		² Cle x8 ² Cle x8 ² Cle x8
Memory	4GB, 8GB, or RDIMM, PC3- eight 240-pin ** System auto DDR3 memor	16GB std, 64GB r 10600 1333MHz D DIMM sockets***, omatically clocks d	DR3**, ECC, N	lemory Mirror	0.	 Des Bla 19" 483 66. Too 	tck color fro 'W x 27.6"D 3mm W x 70 6 lb (30kg) olless top co	A-310 s nt; metal x 3.44"H 00mm D max con over rem	case H x 87.5m figuratio oval		/
Graphics	one VGA DB-	eed AST2050 grap 15 on rear, 8MB; <i>olution:</i> 1600x1200		ent processor,			olless disk a olless adapt	er retent	ion	al, std optical	
Disk bays Disk controller	Some: LSI™ SATA Some: Think PCI E RAID	swap (HS) SATA/S LSISAS1068E, PC 3.0Gb/s, SAS 3.00 Server 8708EM2 S Express bus, SATA 0, 1, 5, 6, 10, 50, 6 ry backed cache in	CI Express [®] bus Gb/s, RAID ⁸ 0, 1 GAS RAID Conti 3.0Gb/s, SAS 3 60 support	I, 1E support roller,		Bay Bay Bay Bay Bay Bay Bay	2 3.5", 3 3.5", 4 3.5", 5 3.5", 6 3.5", 7 3.5", 8 3.5",	1" high, 1" high, 1" high, 1" high, 1" high, 1" high, 1" high,	externa externa externa externa externa externa	al, optional disk al, optional disk al, optional disk al, optional disk al, optional disk al, optional disk al, optional disk	
Optical Diskette Ethernet	None (use US Two Gigabit E	thernet ports, dual				Slot 2	1: full-lengtl 2: full-lengtl	h. full-he	eight, Po eight, Po	al, optional disk CI Express 2.0 x8 CI Express 2.0 x8	****
Chipset	(see right), lin	ipset, Intel I/O Huk ks to LSISAS1068I /O Controller Hub	E, entérprise so	uth bridge inte		Slot :	3: half-lengt 4 electrical	th, full-he	eight, P	CI Express 2.0 x8	****
Riser card Front ports	(See Right) O (x4 electrical) Two USB 2.0	ne PCI Express 2.0 slots standard) x8, two PCI E	xpress 2.0 x8		Virtua	alization rea	ady, VMV		ady [™] certified	
Rear ports Internal port Diagnostics Systems mgmt	two ethernet (One USB 2.0 Diagnostic and Onboard Aspe		Ds on front par nics/manageme nt baseboard m storage over IF lash, BIOS upd	nel ent processor nanagement		• Netv • 106 • 870	up Utility: work Boot: 8E RAID: 8EM2 RAID 8EM2 RAID Sc nkServer Ea	DEL a F12 at Ctrl+C Ctrl+H	Manage	b tup	
Prerequisites		<i>):</i> IPMI functions P 24bit high quality pard, mouse, SATA	Video compres	sion			ministrator	2	Securit	ÿ	
Keyboard Mouse Power supply(s)	None (use US None (use US One or two 75 auto-sensing,	B port) B port) 0 watts standard, t redundant with two	wo maximum, v power supplie	variable speed	fan,	 Us Bo Bo Se 	er password ot sequence ot without k rial port I/O B port disa	d e control eyboard control	, mouse	, diskette	
Cooling	1 001 10115 5101	idard, four maximu	in, valiable spe	cu -			S-compliant		、 /		

Partial list of accessories supported on L TD230, RD230, RD240.	enovo [®] ThinkServer	ThinkServer RAID controller and RAID u TD230:	pgrade
ThinkServer Ready accessories are available	e through Lenovo	SATA RAID 5 Upgrade for onboard RAID	67Y1459 ann 07/27/10
Business Partners. Locate a Business Partn bplocator.lenovo.com		<i>RD230, RD240:</i> ThinkServer RAID 700 Adapter (512MB)	67Y2646 ann 11/01/11
Processor ⁵⁰		ThinkServer RAID 700 Battery	67Y2647 ann 11/01/11
TD230:		System Management	
Intel® Xeon® E5503 Processor Option Kit Intel Xeon E5506 Processor Option Kit	67Y1448 ann 07/27/10 67Y1449 ann 07/27/10	TD230: Remote Management Module 3	67Y1461 ann 07/27/10
Intel Xeon E5507 Processor Option Kit Intel Xeon E5620 Processor Option Kit	67Y1458 ann 07/27/10 67Y1457 ann 07/27/10	Redundant Power Supply	
ntel Xeon L5609 Processor Option Kit ntel Xeon E5630 Processor Option Kit	67Y1450 ann 01/25/11 67Y1456 ann 01/25/11	<i>RD240:</i> ThinkServer RD240 Redundant PSU	67Y1497 ann 07/27/10
ntel Xeon E5640 Processor Option Kit ntel Xeon X5650 Processor Option Kit	67Y1453 ann 01/25/11 67Y1455 ann 01/25/11	Disk Drive	<i>(</i>
ntel Xeon X5660 Processor Option Kit ntel Xeon X5667 Processor Option Kit	67Y1454 ann 01/25/11 67Y1452 ann 01/25/11	3.5" SATA Direct Cable (DC) and Hot-swap TD230, RD230:	
ntel Xeon X5670 Processor Option Kit ntel Xeon E5603 Processor Option Kit	67Y1451 ann 01/25/11 0A89385 ann 03/01/11	500GB 3.5" SATA DC/HS (7200 rpm) 1TB 3.5" SATA DC/HS (7200 rpm)	67Y1401 ann 07/27/10 67Y1402 ann 07/27/10
ntel Xeon E5606 Processor Option Kit ntel Xeon E5607 Processor Option Kit	0A89386 ann 03/01/11 0A89387 ann 03/01/11		67Y2642 ann 03/01/1
ntel Xeon E5645 Processor Option Kit ntel Xeon E5649 Processor Option Kit	0A89388 ann 03/01/11 0A89389 ann 03/01/11		
ntel Xeon X5672 Processor Option Kit ntel Xeon X5675 Processor Option Kit	0A89390 ann 03/01/11 0A89391 ann 03/01/11	500GB 3.5" SATA HS (7200 rpm) 1TB 3.5" SATA HS (7200 rpm)	67Y1479 ann 07/27/10 67Y1480 ann 07/27/10
		2TB 3.5" SATA HS (7200 rpm)	67Y2643 ann 03/01/1
ntel Xeon E5503 Processor Option Kit ntel Xeon E5506 Processor Option Kit	67Y1483 ann 07/27/10 67Y1444 ann 07/27/10	3.5" SAS HS: TD230 preconfigured with SAS controller,	RD230:
ntel Xeon E5507 Processor Option Kit ntel Xeon E5620 Processor Option Kit	67Y1493 ann 07/27/10 67Y1492 ann 07/27/10	300GB 3.5" SAŠ HS (15000 rpm) 450GB 3.5" SAS HS (15000 rpm)	67Y1437 ann 07/27/1 67Y1462 ann 07/27/1
ntel Xeon E5640 Processor Option Kit ntel Xeon L5609 Processor Option Kit	67Y1488 ann 07/27/10 67Y1485 ann 01/25/11	600GB 3.5" SAS HS (15000 rpm)	67Y2644 ann 03/01/1
ntel Xeon E5630 Processor Option Kit ntel Xeon X5650 Processor Option Kit	67Y1491 ann 01/25/11 67Y1490 ann 01/25/11	<i>RD240:</i> 300GB 3.5" SAS HS (15000 rpm)	67Y1481 ann 07/27/10
ntel Xeon X5660 Processor Option Kit	67Y1489 ann 01/25/11 67Y1487 ann 01/25/11	450GB 3.5" SAS HS (15000 rpm)	67Y1482 ann 07/27/10 67Y2645 ann 03/01/1
ntel Xeon X5667 Processor Option Kit ntel Xeon X5670 Processor Option Kit	67Y1486 ann 01/25/11	600GB 3.5" SAS HS (15000 rpm)	0712043 ann 03/01/1
ntel Xeon E5603 Processor Option Kit ntel Xeon E5606 Processor Option Kit	0A89392 ann 03/01/11 0A89393 ann 03/01/11	Keyboard Preferred Pro USB Keyboard	73P5220 ann 06/21/05
ntel Xeon E5607 Processor Option Kit ntel Xeon E5645 Processor Option Kit	0A89394 ann 03/01/11 0A89395 ann 03/01/11	Mouse	00004000
Intel Xeon E5649 Processor Option Kit Intel Xeon X5672 Processor Option Kit	0A89396 ann 03/01/11 0A89397 ann 03/01/11	Lenovo Optical Mouse (USB)	06P4069 ann 05/21/03
ntel Xeon X5675 Processor Option Kit	0A89398 ann 03/01/11		
RD240: ntel Xeon E5503 Processor Option Kit	67Y1466 ann 07/27/10		
ntel Xeon E5506 Processor Option Kit ntel Xeon E5507 Processor Option Kit	67Y1467 ann 07/27/10 67Y1476 ann 07/27/10		
ntel Xeon E5620 Processor Option Kit ntel Xeon E5640 Processor Option Kit	67Y1475 ann 07/27/10 67Y1471 ann 07/27/10		
ntel Xeon L5609 Processor Option Kit ntel Xeon E5630 Processor Option Kit	67Y1468 ann 01/25/11 67Y1474 ann 01/25/11		
ntel Xeon X5650 Processor Option Kit ntel Xeon X5660 Processor Option Kit	67Y1473 ann 01/25/11 67Y1472 ann 01/25/11		
ntel Xeon X5667 Processor Option Kit	67Y1470 ann 01/25/11		
ntel Xeon X5670 Processor Option Kit ntel Xeon E5603 Processor Option Kit	67Y1469 ann 01/25/11 0A89399 ann 03/01/11		
ntel Xeon E5606 Processor Option Kit ntel Xeon E5607 Processor Option Kit	0A89400 ann 03/01/11 0A89401 ann 03/01/11		
ntel Xeon E5645 Processor Option Kit ntel Xeon E5649 Processor Option Kit	0A89402 ann 03/01/11 0A89403 ann 03/01/11		
ntel Xeon X5672 Processor Option Kit ntel Xeon X5675 Processor Option Kit	0A89404 ann 03/01/11 0A89405 ann 03/01/11		
⁵⁰ Additional processor must match the exist	ng processor	For more information on server accessorie	s, please visit:
Memory All:		www.lenovo.com/support/accessories www.lenovo.com/support/thinkserverac	cessories
2GB PC3-10600 DDR3 RDIMM (2R x 8) 4GB PC3-10600 DDR3 RDIMM (2R x 4)	67Y1432 ann 07/27/10 67Y1433 ann 07/27/10	www.lenovo.com/support/security	
RD230, RD240:		Other accessories at www.lenovo.com/ac	
8GB PC3-8500 DDR3 RDIMM (2R x 4)	67Y1464 ann 07/27/10	Accessories Guide pdf at www.lenovo.con	n/accessoriesguide

ThinkServer.





Lenovo® ThinkServer RD210



Lenovo ThinkServer RD220 (8 Disk Bays plus Tape Drive)



Lenovo ThinkServer RD220 (12 Disk Bays)



Lenovo ThinkServer RD220

ThinkServer™ RD210 (3795) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x bay	Proc- essor(s)	GHz Core		Memory speed	Disk size	RAID Battery	Disk bays		Disk type	RAID Int	IMM Premium	Power n supply(s)	Etherne	Avail t date
RD210 3795-21L							None		vap S	SATA/SAS		None	1x675W		
			as a 1-yea nd medium			odel is	part of t	he US Top	Selle	r™ Progra	m				
Processor(s)			essors, one rocessor l						1U R	ack top		F	Front		
	4.8GT 800MI	/s (giga-t Hz DDR3	ransfers/se memory c	cond) QI	PI (QuickF and 4MB	Path Int cache		:t),	ę	Power s	Riser			lisk	a _ 00
Implementation Memory	1GB s RDIMI Memo standa eight s ** Sys DDR3 *** Ad	td, 128G M, PC3-1 ory Mirro ard memo sockets d tem auto memory vanced E	FC-LGA p B max (640 0600 1333 ring, sixtee ory in 1 soci istributed in matically cl controller CC-enable DIMMs recommended	GB per pr MHz DD en 240-pi ket, 15 s nto 3-cha ocks dov	rocessor), R3**, Adv n DIMM so ockets ava nnel per p n for proc required	anced ockets, ailable* process cessor	ECC***,) ЛНz	Opt PSU	Power supply	1 Memory sockets	ſ	Rear [PClex16] [2-F	Clex16	Opt PSU PSU
Graphics	Matro	«® G200e	, integrated <i>lution:</i> 128	l, two VG	A DB-15 (nd rear),	8MB;			Memory sockets				
Disk bays Disk Controller Optical Diskette Ethernet	Servel RAID ⁸ UltraS None Two G Broad	RAID [®] -BI 0, 1 sup lim Enha (use USE igabit Eth com® 570	nced DVD	Express® ERW s, TCP/IF ed over F	ous, SATA Offload E Clebus, I	3Gb/s Engine oad ba	s, ŠAS 3G (TOE), Ilancing,	ìb/s,	 Bla 	·	al; rack	tal case			
Chipset	Intel 5 links to I/O Co	520 Chij D BCM57 Introller H	oset, Intel I 09C, enter lub 10 (ICI bus to VS0	/O Hub (prise sou 110) for L	OH) for P th bridge ISB, PCIe	CI Exp interface links t	oress slot ce (ESI) t o SATA/S	s and o Intel	34.TooToo	Omm W x 3 5 lb (15.6l olless top o olless disk olless adap	kg) max cover re and op	configu moval tical driv			
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites	conver Two U Two U two et One U Easy I inform Integra Truste upgrad	rtible via SB 2.0, e SB 2.0, e hernet (F ISB conn LED Diag ation LEI ated Man d Platforr deable to	D PCI Expr optional ris external mo xternal mo J-45), syst ector for er nostics (pu D and syste agement M m Module (IMM Prem ard, mouse	er card(s nitor (VG em mana nbedded Ill-out ope em-error lodule (IN TPM) 1.2) to 64-bit A DB-15) A DB-15) agement (hypervisc erator info LED) /IM) std, II support,	133M , serial RJ-45) or rmation PMI 2.0	(9-pin), n panel w D-complia	ith	Eas Bay Bay Bay Bay Bay Bay Slot	2 2.5", 3 2.5", 4 2.5", 5 2.5", 6 2.5", 7 2.5", 1: low-prot	agnosti 0.5" hig 0.6" hig 0.6" hig 0.6" hig 0.6" hig 0.6" hig file,	cs panel gh, exter gh, exter gh, exter gh, exter gh, exter gh, exter gh, exter		nal disk nal disk nal disk nal disk nal disk nal disk ss 2.0 x1	
Keyboard Mouse Power supply(s) Cooling	None One 6 redund	dant with		supplies				sing,							
Accessories Intel Xeon Dual- 1GB PC3-10600 2GB PC3-10600 4GB PC3-10600 73GB ² 2.5" SAS 300GB 2.5" SAS 500GB 2.5" SAT Other accessori	DDR3 DDR3 DDR3 DDR3 SSFF H SSFF H SSFF H SSFF H ASFF	3 1333 M 3 1333 M 3 1333 M IS (15000 IS (1000 IS (1000 HS (7200	Hz RDIMM Hz RDIMM Hz RDIMM 0 rpm) 0 rpm) 0 rpm) 0 rpm)		67Y(67Y(67Y(67Y(67Y(67Y(67Y(0014 0015 0016 0115 0116 0118			 Diag 	up Utility: I gnostic: F2 work Boot	F1 at st 2 at sta	artup rtup	Hotkey		
Max internal ca 3.0TB with six 5			- disks							s NkServer E NkServer E	EasySta	rtup	gement Too	ols	
Virtualization Virtualization re: → 1-year parts a → Customer Re: selected parts → ThinkPlus™s	and labo placeat s ³ , 8 am	or ble Unit ((1 - 5 pm, I	Limited W CRU) parts Mon - Fri co	/arranty ¹ only (wit	h limited o	holiday	/s)	or	 Adi Boi Boi Sei 	wer-on pa ministrato ot sequen ot without rial port I/0 B port dis	r passw ce cont keyboa O contr	rol Ird, mous ol	se, diskette		
 Onsite service Post warrant 24 hour x 7 data 	vice upo nty mai	grade opt ntenance	ions (in eli services	gible loca	tions)7		-	7378		<pre>kPlus Prio S-complia</pre>		port, 90-	-day Trial		

See footnotes for important warranty information US model announced May 5, 2009 US model withdrawn effective February 2011

ThinkServer™ RD210 (3796) - TopSeller (2GB RDIMM) - withdrawn

Typ Name mod		ilot x bay	Proc- essor(s)	GHz Core		Memory speed	Disk size	RAID Battery	Disk bays		Disk type	RAID Int	IMM Premium	Power supply(s)	Etherne	Avai t date
RD210 3796- RD210 3796- * Multi = RAII	-23U 2 D-0/1/5	2x7 5/6/10	1xE5506)/50/60 si	2.13 4	1x2GB [·]	1333MHz 1333MHz ted warrai	2.5"	None None			SATA/SAS⁴ SATA/SAS		None None	2x675W 2x675W		May 09 May 09
	•	Eas	y to use v	vith Think	Server Ea	syStartup	and E		age softwa t of the US		Seller™ Pro	ogram				
Processor(s)	lr 4	ntel® 2 .8GT/	Xeon® Pr /s (giga-tr	essors, one rocessor ransfers/se memory of	E5504 or econd) QF	E5506 wit PI (QuickP	th qua Path Int	erconne	ct),		Rack top Pov	Riser		ront disk disk dis disk disk dis	sk ₀ (sk opti ca	
Implementation	2 R N si e **	GB s DIMI Iemo tanda ight s * Syst r 106 * Adv	td, 128GE A , PC3-10 ry Mirror rd memo ockets dia cem autor 6MHz DD vanced E0	FC-LGA B max (64 0600 1333 ing, sixte ry in 1 soo stributed i natically c 0R3 memo CC-enable DIMMs ree	GB per pr BMHz DDI en 240-pir cket, 15 so nto 3-chai locks dow ory contro e DIMMs r	rocessor), R3**, Adv n DIMM so ockets ava nnel per p n for proc ller reguired	anced ockets, ailable* process cessors	l ECC *** , sor (3-3-2	<u>2)</u>	Power supply	Power supply	slot 1 Memory sockets		ear -PCle x16] 2 - PCl		PSU PSU
Graphics	N	/latrox	® G200e,	integrate	d, two VG	A DB-15 (nd rear),	8MB;			Memory sockets				
Disk bays Disk Controlle Optical Diskette Ethernet	er 2 3 2 0 U N T B	27U: S Gb/s, 23U: S 3, 1, 5 JItraSI Jone (wo Gi Broado	erveRAII RAID ⁸ 0, erveRAII 6, 10, 50 im Enhar use USB gabit Eth com [®] 570) disk bay D®-BR10i, , 1 suppor D-MR10i, D support nced DVD port) ernet port 9C opera 4 int ethe	PCI Expr t PCIe bus, ±RW s, TCP/IP ed over P	SATA 3G Offload E Clebus, I	SATA 3 b/s, SA Engine oad ba	3Gb/s, S AS 3Gb/s (TOE), Ilancing,	AS s, RAID	• 1U • Bla • 17 • 44	h fan fan sks J Mechanica ack color fro .3"W x 27.5 Omm W x 7 .5 lb (15.6k	al; rackont; me 5"D x 1. 711.4mr	-mount or tal case .75"H m D x 431	mm H		
Chipset	liı 1/	nks to O Co	b BCM570 ntroller H	oset, Intel 09C, enter ub 10 (IC bus to VS	prise soù 110) for U	th bridge i ISB, PCIe	interfa links t	ce (ESI) to SATA/S	to Intel	• To • To • IIIt	olless top c olless disk olless adap iminated fro isy LED Dia	and opt ter rete ont icon	tical drive ention Is with pu			
Riser card Front ports Rear ports Internal port Diagnostics Systems mgn Prerequisites	で下下 tv ロード ロー Ir Tu u	onver wo US wo eth Dne U Easy L forma ntegra rusted pgrad	tible via c SB 2.0, e SB 2.0, e SB 2.0, e SB conne SB conne ED Diag ation LED diag to LED Mana d Platforn leable to	PCI Exp pptional ris xternal mo xternal mo J-45), sys ector for e nostics (p) and syst agement N n Module IMM Pren urd, mouse	ser card(s pnitor (VG tem mana mbedded ull-out ope em-error I Aodule (IN (TPM) 1.2) to 64-bit A DB-15) A DB-15) gement (I hypervisco erator info _ED) /M) std, If support,	133M , serial RJ-45) or rmation PMI 2.0	(9-pin), n panel v 0-complia	vith	Bay Bay Bay Bay Bay Bay Bay Slot	1 5.25",(2 2.5", (3 2.5", (4 2.5", (5 2.5", (6 2.5", (0.5" hig 0.6" hig 0.6" hig 0.6" hig 0.6" hig 0.6" hig 0.6" hig 0.6" hig	h, extern h, extern h, extern h, extern h, extern h, extern h, extern h, extern	nal, std op nal, option nal, option nal, option nal, option nal, option nal, option PCI Expres PCI Expres	al disk al disk al disk al disk al disk al disk s 2.0 x1	6 6
Keyboard Mouse Power supply Cooling	N N r(s) Tr re	lone (lone (wo 67 edunc	use USB use USB 5 watts s lant with	port)	wo maxin	num, hot-s	swap, a	auto-sen	sing,				/irtualiza			
Accessories Intel Xeon D 2GB PC3-10 300GB ² 2.5" 500GB 2.5" Other access	s ual-Co)600 E SAS S SATA	ore Pi DR3 SFF I SFF I	rocessor 1333 M⊢ HS (1000 HS (7200	E5504 Iz RDIMN 0 rpm) rpm)		67Y0 67Y0 67Y0 67Y0	0007 0015 0118			• Se • Dia	tup Utility: F gnostic: F2 twork Boot:	Pov 1 at sta at star F12 at	wer-On I artup tup startup	Hotkey		
											s nkServer E nkServer E	asySta	rtup	ement Too	IS	
Max interna 3.0TB with s 3-year par Customer selected p ThinkPlus	rts and Repla	d labo aceab 8 am	or le Unit (C - 5 pm, N	Limited V RU) parts Ion - Fri c	only (with overage e	h limited o	holiday	ys)		 Ac Bc Bc Sc 	wer-on pas Iministrator oot sequenc oot without k rial port I/C SB port disa	passwo e contr ceyboar contro	ol rd, mouse	e, diskette		
 Onsite s Post wat 	servico	e upg / mair	rade opti ntenance	ons (in el services		tions)7			7378		kPlus Priori S-complian	, ,,	port, 90-c	lay Trial		

ThinkServer™ RD210 (3796) - TopSeller (4GB RDIMM) - withdrawn

RD210 3796-2CU 2x7 1xE5540 2.53 4 2x2GB 1333MHz 2.5" Battery 6xHot-swap SATA/SAS ⁴ Multi* Premium 2x675W 2xGb Mather and the set of	Namo	Type- model	Slot x	Proc-	GHz Coro	Memory	Memory speed	Disk size	RAID Battery	Dis		Disk	RAID Int	IMM Premium	Power	Av rnet da
 • This model has a 3-year limited warranty: • Easy load use with ThinkSever EasyStatup and EasyManage software. • Processor(s) Up to two processors, one processors standard, intel[®] Xeon[®] Decessor ES40 with quad-core, 5.86G TA (gga transfers/second) CPI (QuickPath Interconnect), 5.86G TA (gga transfers/second) CPI (DuickPath Interconnect), 5.86G TA (gga transfers/second) CPI (Gga transfers/second) CPI (Gga transfers/second) CPI (Gga transfers/second) CPI (Gga transfers/second) CPI (Gga transfers/se				. ,							-					
 Easy to use with ThinkServer EasyStarting and EasyManage software 	* Multi =	RAID-0/	1/5/6/10)/50/60 su	ipport				-							-
Intell Xaoni Processor ES40 with quad-core. SeGT7s (gas-transfersisecond) (2014) (Quad-Path Interconnect), Monochic DIPS Proceeding Controller and Add Scathe Memory Implementation Memory 408 bast 12620 more KedGa personson, memory in 1 socket, 15 sockets available***. explicit sockets dama per processon (3-32) to 1058MHz DDR3**. Advanced ECC***, Manuary in 1 socket, 15 sockets available***. explicit sockets dama per processon (3-32) to 1058MHz DDR3 memory controller Image adm disk in the memory Micro Advanced ECC***, Manuary in 1 socket, 15 sockets available***. explicit sockets dama per processon (3-32) to 1058MHz DDR3 memory controller Image adm disk in the memory Micro Advanced ECC***, Manuary in 1 socket, 15 sockets available***. explicit sockets dama per processon (3-32) to 1058MHz DDR3 memory controller Image adm disk in the memory Micro Advanced ECC***, Manuary Sockets available***. explicit sockets dama per processon (3-32) to 1058MHz DDR3 memory controller Image adm disk in the memory Micro Advanced ECC***, Manuary Sockets available***. Explicit sockets dama per processon (3-32) to 1058MHz DDR3 memory controller Image adm disk in the memory Micro Advanced ECC***, Manuary Sockets available the memory Micro Advanced ECC***, Manuary Sockets available the memory Micro Advanced ECC***, Manuary Sockets available the memory Micro Advanced ECC***, Manuary Sockets available the memory Micro Advanced ECC***, Manuary Sockets available the memory Micro Advanced ECC***, Manuary Sockets available the memory Micro Advanced ECC***, Manuary Sockets available the memory Micro Advanced ECC***, Manuary Sockets available the memory Micro Advanced ECC***, Manuary Sockets available the memory Micro Advanced ECC***, Manuary Sockets available the memory Micro Advanced ECC***, Manuary Sockets avail the memory Micro Micro Advanced ECC***, Manuary Micro Micro Adv			 Easy 	/ to use w	ith ThinkS	erver Ea	syStartup a					™ Program	1			
Memory 408 std, 1268 max (MeGB processor), Normality, Put-1600 std, 126 processor), State macrony in socket, 15 socket savelable***, eight socket sistifulution in 3-channel per processor (3-3-2), ** System automically clock down for processors with 800MHz or 1066MHz DDRS memory controller Image: I	Processo	or(s)	Intel [®])	Keon® Pro	ocessor E	5540 wit	h quad-co	re,	erconne	ct),			R:]
Ribition PDIMM PCD-1680 PCD-17800 PCD-17800 PCD-17800 <th< td=""><td>Impleme</td><td>entation</td><td></td><td></td><td></td><td></td><td></td><td></td><td>kets</td><td></td><td>Pow</td><td>Sers</td><td>ser :</td><td>disl</td><td>k disk disk op</td><td>tical</td></th<>	Impleme	entation							kets		Pow	Sers	ser :	disl	k disk disk op	tical
Maximum resolution: 1280x1024690Hz Disk bays Disk Controller Fortswap (HS) disk bays on 25° Sim-Form-Factor (SFF) sld ServeRAID* (HS) disk bays on 25° Sim-Form-Factor (SFF) sld ServeRAID* (HS) disk bays on 25° Sim-Form-Factor (SFF) sld ServeRAID* (HS) disk bays on 25° Sim-Form-Factor (SFF) sld ServeRAID* (HS) disk bays on 25° Sim-Form-Factor (SFF) sld ServeRAID* (HS) disk bays on 25° Sim-Form-Factor (SFF) sld Disk disk Image: I			RDIMM Memor std me eight so ** Syst 1066M ***Adva	I, PC3-10 ry Mirrori mory in 1 ockets dis em autom Hz DDR3 anced EC	600 1333 ng, sixtee socket, 15 stributed in natically clo memory of C-enable	MHz DDF n 240-pir 5 sockets to 3-char ocks dow controller DIMMs re	R3**, Adva a DIMM soo available** anel per pro n for proce equired	ckets, ***, ocesso ssors v	r (3-3-2)	MHz or	er supply er supply	- CPU	1 Memory sockets		e x16 2 - PCle x16	PSU
Disk Controller ServeRAID*-MR10, PCI Express* bus, SATA 3Gb/s, SAS 3Gb/s, BAID*0, 1, 5, 6, 10, 50 support, Battery backed cache integrated disks optical Diskette None (use USB port) it UtraSile methanead DVD/ERW - 110 Mechanical; rack-mount only Bitery backed cache integrated None (use USB port) - 100 Mechanical; rack-mount only Bitery backed cache integrated - 100 Mechanical; rack-mount only Diskette None (use USB port) - 100 Mechanical; rack-mount only Bitery backed cache integrated - 100 Mechanical; rack-mount only Diskette None (use USB port) - 100 Mechanical; rack-mount only Bitery backed cache integrated - 100 Mechanical; rack-mount only Chipset Intel 5520 Chipset, Intel I/O Hub (OH) for DSB, Portel einks to SATA/SAS - 100 Mechanical; rack-mount Controller Hub 10 (ICH10) for USB, PCIe links to SATA/SAS - 00 Mechanical; standard, st	Graphics	S						ont and	d rear), 8	BMB;			nory			
Diskette None (use USB port) • Diskette Ethernet ports, TCP/IP Offload Engine(TOE), Broadcom* 5708C operated over PCIe bus, load balancing, upgradeable to 4 int ethernet ports and optional daughter card. • Disket color front, meal case. Chipset Intel 5520 Chipset, Intel //O Hub (IOH) for PCI Express slots and Intel to 805709C, enternet ports south hotige interface (ES) to Intel (INC Controller Hub 10 (ICH10) for VCI Express slots and to 0ptical drive removal. • Toolless disk and optical drive removal. Riser card (See Right) Two PCI Express 2.0 x16 slots std, convertible via optional daughter drive removal. • Toolless disk and optical drive removal. Riser card (See Right) Two PCI Express 2.0 x16 slots std, convertible via optional disk Burpt //O • Toolless disk and optical drive removal. Rear ports Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), throe there (RJ-45), system management (RJ-45), system management (RJ-45), system entron (RD-10), removisor Bay 1 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external, optional disk Bay 2 2.57, 0.6° high, external,			ServeF RAID ⁸	RAID®-MŔ 0, 1, 5, 6,	10i, PCÍ E 10, 50 su	Express® l pport,					r	<u> </u>				
Chipset Intel 5520 Chipset, Intel I/C Hub (ICH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel Controllers tub 10 (ICH10) for USB, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O Toolless dayter retention Riser card (See Right) Two PCI Express 2.0 x16 slots std, convertible via optional riser card(s) to 64-bit 133MHz PCI-X two USB 2.0, external monitor (VGA DB-15). serial (9-pin), two ethernet (RJ-45), system management (RJ-45). Diagnostics Bay 1 5.25°, 0.5° high, external, optional disk Bay 4 2.5°, 0.6° high, external, optional disk. Bay 4 Soft high, external, optional disk. Bay 4 Soft high, external, optional disk. Bay 4 Soft high, external, optional disk. Bay 4 Soft high, external, optional disk. Bay 4 Soft high, external, optional disk. Bay 4 Soft high, external, optional disk. Bay 4 Soft high, external, optional disk. Bay 4 Soft high, external, optional disk. Bay 4 Soft high, external, optional disk. Bay 5 Soft high, external, optional disk. Bay 5 Soft high, external, optional disk. Soft 1: wo-profile, PCI Express 2.0 x16 Soft high, external, optional disk. Soft 1: wo-profile, PCI Express 2.0 x16 Soft 1: wo-profile, PCI Express 2.0 x16 Soft 1: wo-profile, PCI Express 2.0 x16 Soft 3: Fill S	Diskette		None (Two Gi Broado	use USB gabit Ethe com® 5709	port) ernet ports 9C operate	s, TCP/IP ed over P	Clebus, loa	ad bala	ncing,	I	 Black 17.3 440n 	k color froi "W x 27.5" nm W x 71	nt; meta 'D x 1.7 1.4mm	l case 5"H D x 43mi	m H	
Insert cardu Convertible via optional riser card(s) to 64-bit 133MHz PCI-X Bay 1 5.25", 0.5" high, external, optional disk Front ports Two USB 2.0, external monitor (VGA DB-15) Bay 1 5.25", 0.5" high, external, optional disk Rear ports Two USB 2.0, external monitor (VGA DB-15) Bay 1 5.25", 0.5" high, external, optional disk Internal port One USB connector for embedded hypervisor Bay 1 5.25", 0.5" high, external, optional disk Systems mgmt Integrated Management Module (IMM) Premium, IPM 2.0-compliant, Trusted Platform Module (TPM) 1.2 support Bay 1 5.25", 0.5" high, external, optional disk Systems mgmt Integrated Management Module (IMM) Premium, IPM 2.0-compliant, Trusted Platform Module (TPM) 1.2 support Bay 1 5.25", 0.6" high, external, optional disk Reyboard None (use USB port) None (use USB port) Stat and and r, two maximum, variable speed fan, hot-swap, auto-sensing, redundant with two power supplies Stot 1: low-profile, PCI Express 2.0 x16 Cooling Six fans std, six maximum, variable speed, hot-swap Secure VT0118 Sotup Utility:F1 at startup Obd 2.5" SAS SFF HS (10000 rpm) 67Y0016 Sotup Utility:F1 at startup Diagnostic: F2 at startup Sotoge 2.5" SAS SFF HS (10000 rpm) 67Y0118 Sotup Utility:F1 at startup Diagnostic: F2 at	Chipset		links to I/O Cor	BCM570 htroller Hu	9C, enterp ub 10 (ICH	orise sout 10) for U	th bridge in SB, PCIe l	iterface inks to	(ESI) to	Intel	 Tooll Tooll Tooll Illum 	ess top co ess disk a ess adapte inated fror	over rem nd optic er reten nt icons	ioval cal drive r tion with pull-	emoval	
Mouse None (use USB port) Power supply(s) Two 675 watts standard, two maximum, variable speed fan, hot-swap, auto-sensing, redundant with two power supplies Cooling Six fans std, six maximum, variable speed, hot-swap Accessories Intel Xeon Quad-Core Processor E5540 67Y0096 73GB* 2.5" SAS SFF HS (15000 rpm) 67Y0115 146GB 2.5" SAS SFF HS (10000 rpm) 67Y0116 300GB 2.5" SAS SFF HS (10000 rpm) 67Y0118 500GB 2.5" SATA SFF HS (7200 rpm) 67Y0121 Other accessories at lenovo.com/accessories 67Y0121 Network Boot: F12 at startup Network Boot: F12 at startup Notwork Boot: F12 at startup Network Boot: F12 at startup Software Management Tools ThinkServer EasyStartup 3.0TB with six 500GB SATA SFF disks ThinkServer EasyManage Virtualization Security Virtualization ready, hypervisor connector embedded Power-on password Software Replaceable Unit (CRU) parts only (with limited onsite service for selected parts*, 8 am - 5 pm, Mon - Fri coverage excluding holidays) Power on password * DinkPlus ^M services available; see lenovo.com/thinkplus/warranty • Onsite service upgrade options (in eligible locations)' * Post warranty maintenance services ThinkPlus Pri	Front por Rear por Internal p Diagnost Systems	rts rts port tics s mgmt	conver Two US Two US two eth One US Easy L informa Integra IPMI 2.	tible via o SB 2.0, ex SB 2.0, ex nernet (RJ SB conne ED Diagn ation LED ted Mana .0-complia	ptional rise ternal mol ternal mol -45), syste ctor for en ostics (pu and syste gement M ant, Truste	er card(s) nitor (VG. em mana nbedded II-out ope m-error L odule (IN d Platforr) to 64-bit 1 A DB-15) A DB-15), s gement (R hypervisor rator inforr ED) IM) Premiu n Module (33MH: serial (! J-45) nation Im, TPM) 1	9-pin), panel wi		Bay 1 Bay 2 Bay 3 Bay 4 Bay 5 Bay 6 Bay 7 Slot 1:	5.25", 0 2.5", 0 2.5", 0 2.5", 0 2.5", 0 2.5", 0 2.5", 0 2.5", 0	.5" high .6" high .6" high .6" high .6" high .6" high .6" high	, externa , externa , externa , externa , externa , externa , externa	I, optional dis I, optional dis I, optional dis I, optional dis I, optional dis I, optional dis CI Express 2.0	k k k k k x16
Intel Xeon Quad-Core Processor E5540 67Y0096 73GB° 2.5" SAS SFF HS (15000 rpm) 67Y0115 146GB 2.5" SAS SFF HS (10000 rpm) 67Y0116 300GB 2.5" SAS SFF HS (10000 rpm) 67Y0118 500GB 2.5" SATA SFF HS (7200 rpm) 67Y0121 Other accessories at lenovo.com/accessories 67Y0121 Max internal capacity . Network Boot: F12 at startup 3.0TB with six 500GB SATA SFF disks . ThinkServer EasyStartup Virtualization . ThinkServer EasyManage Virtualization ready, hypervisor connector embedded . Power-on password . Soty sequence control . Administrator password . Boot sequence control . Boot sequence control . Sort sever control . Services available; see lenovo.com/thinkplus/warranty . Onsite service upgrade options (in eligible locations) ⁷ . USB port disablement (front or all) ThinkPlus Priority Support, 90-day Trial ThinkPlus Priority Support, 90-day Trial	Mouse Power su		None (Two 67 hot-swa	use USB '5 watts st ap, auto-s	port) tandard, tv ensing, re	dundant	with two po	wer su								
Max internal capacity • ThinkServer EasyStartup 3.0TB with six 500GB SATA SFF disks • ThinkServer EasyManage Virtualization • ThinkServer EasyManage Virtualization ready, hypervisor connector embedded • Power-on password Limited Warranty1 • Administrator password • 3-year parts and labor • Boot sequence control • Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) • Serial port I/O control • ThinkPlus™ services available; see lenovo.com/thinkplus/warranty • USB port disablement (front or all) • ThinkPlus ™ service upgrade options (in eligible locations)7 • Post warranty maintenance services	Intel Xe 73GB ² 2 146GB 300GB 500GB	on Quad 2.5" SAS 2.5" SAS 2.5" SAS 2.5" SAS	SFF H SSFF H SSFF H ASFF H	S (15000 S (10000 S (10000 HS (7200	rpm) rpm) rpm) rpm)	ies	67Y01 67Y01 67Y01	15 16 18			 Diagr 	nostic: F2 a	l at star at startu	tup Ip	otkey	
Virtualization ready, hypervisor connector embedded Power-on password Administrator password Boot sequence control Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) ThinkPlusTM services available; see lenovo.com/thinkplus/warranty Onsite service upgrade options (in eligible locations)⁷ Post warranty maintenance services ThinkPlus ThinkPlus Priority Support, 90-day Trial				ATA SFF	disks							Server Ea	isyStart	up	nent Tools	
Onsite service upgrade options (in eligible locations) ⁷ Post warranty maintenance services ThinkPlus Priority Support, 90-day Trial	 ✓ Virtualiz ✓ 3-yea ✓ Custo select 	zation rea ar parts a omer Re cted parts	nd labo placeab s ³ , 8 am	r le Unit (Cl - 5 pm, M	Limited W RU) parts on - Fri co	arranty ¹ only (with verage e	n limited or xcluding h	olidays)	r	 Adm Boot Boot Seria 	inistrator p sequence without ke al port I/O	asswor contro eyboard control	d I , mouse,	diskette	
nono compilant	• On • Pos	isite serv st warrar	rice upg nty main	rade option tenance s	ons (in elig services	jible loca	tions) ⁷	-		378				ort, 90-da	y Trial	

ThinkServer™ RD210 (3818) - Special Bid - withdrawn

Personal Systems Reference (PSREF)

Type Name mode			s) GHz C			Memory speed	Disk size	RAID Battery	Disk bays		Disk type	RAID Int	IMM Premium	Power supply(s)	Ethernet	Avail date
RD210 3818-2	25U 2x7		-			1333MHz	2.5"	None	6xHot-s	wap	SATA/SA		None	1x675W		
	• Thi	s model	has a 1-y	/ear	limited v	varranty ¹				1						
Processor(s)	Intel® 4.8G1 800M	Xeon ® [/s (giga Hz DDR	Process -transfers 3 memor	or E s/sec y co	5502 wit cond) QF ntroller,	or standa h dual-co PI (QuickF and 4MB	ore, Path Int cache		ct),		Rack top	Riser	F		lisk optica	
Implementatio Memory	1GB s RDIM Memo stand eight ** Sys DDR3 *** Ac	std, 1280 M, PC3- ory Mirr ard men sockets stem aut 3 memor dvanced	GB max (10600 13 oring, six hory in 1 distribute omaticall y control ECC-ena	64G 333N kteer sock d int y clc ler able	B per pr //Hz DDI a 240-pir a 240-pir	two LGA1 occessor) R3** , Adv n DIMM s ockets avenue nel per p n for proo required l process	, vanced cockets ailable process cessor	l ECC *** ****, sor (3-3-2	2)	Opt PSU	Power supply	Memory M	Ē	lear - PCIe x16 2 - P	7Cie x16	Opt PSU PSU
Graphics			e, integra			A DB-15 60Hz	(front a	nd rear),	8MB;			ets				
Disk bays Disk Controlle Optical Diskette Ethernet	r Serve RAID ³ None None Two G TCP/I	RAID [®] -E [®] 0, 1 su (use op Gigabit E P Offloa	BR 10i, PO oport tional US thernet p d Engine	B dis orts (TO	kpress® t skette) , Broadc E), load	Slim-Forn bus, SATA om® 5709 balancing via optior	A 3Gb/s 9C, PC g,	s, SAS 3 I Expres	àb∕s, sbus,	• Bla • 17	sks I Mechani ack color f .3"W x 27	cal; rack ront; me .5"D x 1	tal case .75"H			
Chipset	links t I/O Co	o BCM5	709C, er Hub 10 (iterp ICH	rise soù 10) for U	OH) for F th bridge ISB, PCIe imited Su	interfa inks t	ce (ESI) o SATA/	to Intel	• 34 • To • To	0mm W x .5 lb (15.6 olless top olless disk olless ada	kg) max cover re and op	c configur moval tical drive	ation		
Riser card Front ports Rear ports Internal port Diagnostics Systems mgm Prerequisites	conve Two L Two L two e One L Easy inform t Integr Truste upgra	ertible via JSB 2.0, JSB 2.0, JSB con LED Dia nation LE ated Ma ed Platfo deable t	a optiona external RJ-45), s nector fo gnostics ED and s nagement rm Modu o IMM Pr	rise mor wor syste (pull yster of Mo le (T remin	er card(s nitor (VG em mana bedded I-out ope m-error I odule (IN 'PM) 1.2 um	16 slots s) to 64-bit A DB-15) A DB-15) gement (hypervise erator info serator info LED) IM) std, I support, AS disk, r	t 133M , serial (RJ-45) or prmatio PMI 2.0	(9-pin), n panel v 0-compli	vith	Ea Bay Bay Bay Bay Bay Bay Slot	2 2.5", 3 2.5", 4 2.5", 5 2.5", 6 2.5", 7 2.5", 1: low-pro	iagnosti ,0.5" hig 0.6" hig 0.6" hig 0.6" hig 0.6" hig 0.6" hig ofile,	cs panel gh, exter gh, exter gh, exter gh, exter gh, exter gh, exter gh, exter	Ill-out nal, optior nal, optior nal, optior nal, optior nal, optior nal, optior PCI Expres PCI Expres	nal disk nal disk nal disk nal disk nal disk nal disk ss 2.0 x1	6
Keyboard Mouse Power supply(Cooling	None s) One 6 redun	dant wit	B port) s standar h two pov	ver s	supplies	num, hot- speed, h	• •		sing,							
Accessories Intel Xeon Du 1GB PC3-100 2GB PC3-100 4GB PC3-100 4GB PC3-100 73GB ² 2.5" S 146GB 2.5" S 300GB 2.5" S USB Portable Lenovo® TV L Other access	ial-Core F 600 DDR 600 DDR 600 DDR 600 DDR AS SFF F 6AS SFF 9 Diskette 151 15-ir	3 1333 N 3 1333 N 3 1333 N HS (1500 HS (100 HS (100 Drive nch Anal	AHZ RDII AHZ RDII AHZ RDII 00 rpm) 00 rpm) 00 rpm) 00 rpm)	MM MM		67Y(67Y) 67Y(67Y) 67Y(67Y) 05K	0004 0014 0015 0016 0115 0116 0118 9276 5AC6			• Dia	tup Utility: Ignostic: F Iwork Boo	F1 at st 2 at star	rtup	Hotkey		
Max internal 1.8TB with six	• •		\S SFF d	isks						• Thi • Thi	nkServer nkServer	EasySta	rtup	ement Too	ols	
Virtualization					ala c -l -l								Secur	ity		
 ✓ 1-year part ✓ Customer liselected part ✓ ThinkPlus^T 	s and lab Replacea arts³, 8 an [™] service	or ble Unit n - 5 pm s availat	Limite (CRU) pa Mon - Fr ble; see le	d Wa arts c i cov enov	arranty ¹ only (with verage e o.com/th	h limited xcluding hinkplus/	holiday	ys)	or	 Ad Bo Bo Se US 	erial port I/ BB port dis	r passw ice contr keyboa O contro ableme	rol rd, mous ol nt (front o	,		
 Onsite se Post war 	ranty mai	intenand	e service	es						Think	kPlus Prio	rity Sup	oort, 90-0	day Trial		
→ 24 hour x 7	day ¹⁴ tol	I-free su	pport du	ring	the war	anty peri	od ¹ via	800-426	7378	RoH	S-complia	nt				

See footnotes for important warranty information US model listed are special bid models for technical reference only US models withdrawn effective December 2009

ThinkServer™ RD210 (3819) - Special Bid - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x bay	Proc- essor(s)	GHz Core		Memory speed	Disk size	RAID Battery	Disk bays		Disk type	RAID Int	IMM Premiur	Power n supply(s)	Ethernet	Avail date
RD210 3819-26		.,			1333MHz	2.5"	None	6xHot-s	мар	SATA/SA		None	1x675W	2xGb	May 09
	• This	model h	as a 3-yea	r limited w	warranty ¹										
Processor(s)			essors, one rocessor E						10	Rack top		_	Front		
	4.8GT/	/s (giga-t	ransfers/se memory c	cond) QF	PI (QuickF	Path In		ct),	$\ _{\circ}$		Riser			disk 🖂 i	
mplementation			FC-LGA p						Opt PSU	owe	Riser slot 1		disk disk	disk optic	
Memory	RDIMM Memo standa eight s ** Syst DDR3 *** Adv	M, PC3-1 ry Mirror rd memo ockets di cem autor memory vanced E	B max (640 0600 1333 ring, sixtee ory in 1 soc stributed ir matically cl controller CC-enable DIMMs rec	MHz DDI en 240-pii ket, 15 so to 3-cha ocks dow	R3**, Adv n DIMM s ockets ava nnel per p n for proo	vanced ockets ailable process cessor	sor (3-3-2	<u>2</u>)	US		slot 2 A Memory Memory Slot 2	СРИ	Rear	PCle x16	Opt PSU PSU
Graphics	Matrox	® G200e,	integrated	, two VG	A DB-15 (nd rear)	8MB;			nory cets				
Disk bays Disk Controller Optical Diskette Ethernet	ServeF RAID ⁸ None None (Two Gi TCP/IF	RAID [®] -BF 0, 1 supp use optic gabit Eth P Offload) disk bays R10i, PCI E port onal USB d nernet ports Engine(TC 4 int ether	Express® I liskette) s, Broado DE), load	ous, SATA com® 5709 balancing	3Gb/s 9C, PC 3,	s, SAS 3 I Expres	Gb/s, sbus,	di: • 1l • Bl	n fan fa sks J Mechar ack color 7.3"W x 2	iical; rack front; me	etal case			
Chipset	links to I/O Co	o BCM57 ntroller ⊢	oset, Intel I 09C, enter lub 10 (ICH bus to VSC	prise soù 110) for L	th bridge ISB, PCIe	interfa links t	ce (ESI) to SATA/	to Intel	 34 To To 	10mm W 2 1.5 lb (15. polless top polless dis polless ad	6kg) max cover re k and op	x config emoval otical dri			
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites	conver Two US Two US two eth One U Easy L informa Integra Trusteo upgrad	tible via (SB 2.0, e SB 2.0, e nernet (R SB conno ED Diag ation LEI ted Man d Platforr leable to	PCI Exproprional ris optional ris external mo J-45), syst ector for er nostics (pu D and syste agement M agement M MM Prem ard, mouse	er card(s nitor (VG em mana nbedded Ill-out ope em-error I lodule (IN TPM) 1.2 ium) to 64-bit A DB-15) A DB-15) agement (hypervisc erator info LED) /IM) std, I support,	t 133M , serial RJ-45) or rmatio PMI 2.4	l (9-pin), n panel 0-compli	with	Illi Ea Bay Bay Bay Bay Bay Bay Bay Bay Slot	uminated asy LED I 1 5.25 2 2.5" 3 2.5" 4 2.5" 5 2.5" 6 2.5" 7 2.5" 1 low-pi	front icon Diagnosti 5",0.5" hi , 0.6" hi	ns with ics pane gh, exte gh, exte gh, exte gh, exte gh, exte gh, exte gh, exte		onal disk onal disk onal disk onal disk onal disk onal disk onal disk	6
Keyboard Mouse Power supply(s) Cooling	None (One 67 redund	lant with		supplies				sing,							
Accessories Intel Xeon Dual 1GB PC3-10600 2GB PC3-10600 4GB PC3-10600 73GB ² 2.5" SAS 146GB 2.5" SAS 300GB 2.5" SAS	-Core P 0 DDR3 0 DDR3 0 DDR3 3 SFF H S SFF H S SFF H S SFF H	rocessor 1333 MI 1333 MI 1333 MI S (15000 IS (1000 IS (1000	E5502 Hz RDIMM Hz RDIMM Hz RDIMM) rpm) 0 rpm) 0 rpm) 0 rpm)		67Y(67Y(67Y(67Y(67Y(67Y(67Y(0004 0014 0015 0016 0115 0116 0118 0121					Po	ower-On	1 Hotkey		
USB Portable D Lenovo® TV L15 Other accessor	iskette l 51 15-in	Drive ch Analo	g TFT Mon	itor ries	05K9	9276 5AC6			• Dia	tup Utility agnostic: twork Bo	F2 at sta ot: F12 a	rtup' t startup			
Max internal ca 3.0TB with six 5		ATA SFF	disks							inkServei inkServei	⁻ EasySta	artup	igement To	ols	
Virtualization												Secu	urity		
 ✓ 3-year parts a ✓ Customer Reselected part ✓ ThinkPlus™s 	and labo placeab s ³ , 8 am	or le Unit (C - 5 pm, N	Limited W CRU) parts Aon - Fri co	/arranty ¹ only (wit	h limited xcluding	holida	ys)	or	 Ac Bc Bc Se 	ower-on p dministrat oot seque oot withou erial port SB port d	or passw nce cont ut keyboa I/O contr	vord rol ard, mou ol	use, diskette t or all)	2	
 Onsite service Post warrante 	ice upg	rade opt	ions (in elig						Thin	kPlus Pri	ority Sup	port, 90	-day Trial		
\Rightarrow 24 hour x 7 d	ay ¹⁴ toll-	free sup	port during	the war	ranty peri	od¹ via	800-426	-7378	RoH	S-compli	ant				

See footnotes for important warranty information US model listed are special bid models for technical reference only US models withdrawn effective December 2009

ThinkServer™ RD220 (3798) - TopSeller (8 Disk Bays) - withdrawn

Type- Name model	Slot x bay	Proc- essor(s)	GHz Cores		Memory speed	Disk size	RAID Battery	Disk bays		Disk type	RAID Int	IMM Premium	Power supply(s)	Etherne	Avai t date	
RD220 3798-160 RD220 3798-1F0 RD220 3798-1L0 * Multi = RAID-0/	J 4x9 J 4x9	1xE5520 2xE5540	2.26 4 2.53 8	1x2GB	1333MHz 1333MHz 1333MHz	2.5"	None None None	8xHot-swa 8xHot-swa 8xHot-swa	ap S/	ATA/SAS	6 Multi*		2x675W 2x675W 2x675W	2xGb 2xGb	May 09 May 09 May 09	
	• Eas	y to use w		Server E	asyStartu	p and l		age softwa rt of the US		Seller™ .	Progran	n				
Processor(s)			essors, one				dard,		2U F	Rack top		F	ront			
Implementation	4.8GT 800M Intel 2 5.86G	/s (giga-ti Hz DDR3 Keon Pro iT/s QPI,1	ransfers/se memory c cessor E5 066MHz D	econd) C ontroller 520 or E DDR3 me	PI (Quick , and 4ME 5540 with emory cor	Path Ir 3 cach 1 quad 1 troller	e or I-core , , and 8M	,.	Power supply	ver :	Riser slot 2		disk disk disk disk	disk disk disk disk	ptical	
Memory	Processor uses FC-LGA package, two LGA1366 sockets 2GB or 4GB std, 128GB max (64GB per processor), RDIMM, PC3-10600 1333MHz DDR3**, Advanced ECC***, Memory Mirroring, sixteen 240-pin DIMM sockets, std memory in 1 or 2 sockets, 15 or 14 sockets available****, eight sockets distributed into 3-channel per processor (3-3-2) ** System automatically clocks down for processors with 800MHz of 1066MHz DDR3 memory controller ***Advanced ECC-enable DIMMs required **** Over eight DIMMs requires dual processors										2 Sockets Sockets		ear - PCle x8 3 2 - PCle x8 4 	PCIe x8	PSU PSU	
Graphics	Matro <i>Maxir</i>	x® G200e, num resol	, integrated <i>ution:</i> 128	l, two V0 0x1024	GA DB-15 @60Hz	(front	and rear), 16MB;		[fan fan	fan				
Disk bays Disk Controller	16U: SAS 3 1FU/1	Serv BGb/s, RA <i>LU:</i> Serv) disk bays /eRAID®-B .ID [®] 0, 1 su /eRAID-MF 10, 50, 60	R10i, P0 pport R10i, PC	CI Express le bus, S/	s® bus,	SATA 30	Gb/s,	 Bla 	Mechar ack color	front; m	optical ck-mount o netal case	only			
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, Broadcom [®] 5709C, PCI Express bus, TCP/IP Offload Engine(TOE), load balancing, upgradeable to 4 int ethernet ports via optional daughter card								 17.5"W x 27.5"D x 3.36"H 443.6mm W x 698mm D x 85.4mm H 65 lb (29.5kg) max configuration Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention 							
Chipset	links t I/O Co	o BCM57 ontroller H	oset, Intel 09C, enter lub 10 (ICH bus to VS0	prise so 110) for	ùth b ^r idge USB, PCI	e interfa e links	to SATA	to Intel	 Illu 	minated sy LED I 1 5.25	front ice Diagnos 5",0.5" h	ons with p tics panel	rnal, std or	otical nal disk		
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites	controller, LPC bus to VSC452 for limited Super I/O (See Right) Four PCI Express 2.0 x8 slots std, convertible via optional riser card(s) to 64-bit 133MHz PCI-X Two USB 2.0, external monitor (VGA DB-15) Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45) One USB connector for embedded hypervisor Easy LED Diagnostics (pull-out operator information panel with information LED and system-error LED) Trusted Platform Module (TPM) 1.2 support 16U: Integrated Management Module (IMM) std, IPMI 2.0-compliant, upgradeable to IMM Premium 1FU/1LU: IMM Premium, IPMI 2.0-compliant Monitor, keyboard, mouse, SATA/SAS disk, rack, OS							,	Bay 3 2.5", 0.6" high, external, optional disk Bay 4 2.5", 0.6" high, external, optional disk Bay 5 2.5", 0.6" high, external, optional disk Bay 6 2.5", 0.6" high, external, optional disk Bay 7 2.5", 0.6" high, external, optional disk Bay 8 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Slot 1: full-length, full-height, PCI Express 2.0 x8 Slot 2: low-profile, PCI Express 2.0 x8 Slot 3: full-length, full-height, PCI Express 2.0 x8 Slot 4: half-length, full-height, PCI Express 2.0 x8							
Keyboard Mouse Power supply(s) Cooling	None Two 6 hot-sv	vap, auto-		edundan	t with two	power	r supplies	5	 Dia 	up Utility gnostic: work Bo	r: F1 at s F2 at sta		Hotkey			
Max internal ca 4.0TB ² with eight			SFF disks								Softwa	are Manaç	gement Too	ols		
Virtualization				mhadd	d					nkServei nkServei						
Virtualization ready, hypervisor connector embedded Limited Warranty ¹ ⇒ 3-year parts and labor ⇒ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ⇒ ThinkPlus™ services available; see lenovo.com/thinkplus/warranty							for	 Ad Bo Bo Se 	rial port	tor pass ence cor ut keybo I/O cont	word htrol bard, mous	se, diskette				
 Onsite service Post warrant 	vice up nty mai	grade opti ntenance	ions (in eli services	gible loc	ations)7				ThinkPlus Priority Support, 90-day Trial							
	ranty maintenance services ′ day¹⁴ toll-free support during the warranty period¹ via 800-426-7378								RoHS-compliant							

ThinkServer™ RD220 (3798) - TopSeller (Tape Drive) - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x bay	Proc- essor(s)	GHz Core		Memory speed	Disk size	RAID Battery	Disk bays		Dis typ		RAID Int	IMM Premium	Power supply(s)E	thernet	Avail date
RD220 3798-13		. ,				2.5"	None	8xHot-	swap S				None	2x675W		
* Multi = RAID-0			•••													
	• Easy	to use w	ns a 3-year rith ThinkS I medium I	erver Eas	yStartup					er™ Pr	ogram	1				
Processor(s)	Intel [®] X	eon® Pr	ssors, one ocessor E ansfers/see	5506 with	quad-co	ore,	erconne	ct).	2U R	Π						
Implementation	800MH	z ĎĎR3 i	memory co	ontroller, a	nd 4MB	cache		,,	Power supply							
Memory	2GB sto RDIMM Memor std mer eight so ** Syste 1066MF ***Adva	Processor uses FC-LGA package, two LGA1366 sockets 2GB std, 128GB max (64GB per processor), RDIMM, PC3-10600 1333MHz DDR3**, Advanced ECC***, Memory Mirroring, sixteen 240-pin DIMM sockets, std memory in 1 socket, 15 sockets available****, eight sockets distributed into 3-channel per processor (3-3-2) ** System automatically clocks down for processors with 800MHz or 1066MHz DDR3 memory controller ***Advanced ECC-enable DIMMs required **** Over eight DIMMs requires dual processors								Power supply	CPU	slot 1 Memory Memory sockets sockets	Rea 1-F	x8	PSU PSU	
Graphics	Matrox [®] G200e, integrated, two VGA DB-15 (front and rear), 16MB; Maximum resolution: 1280x1024@60Hz										L	nory (ets				
Disk bays Disk Controller Tape backup	8 hot-swap (HS) disk bays on 2.5" Slim-Form-Factor (SFF) std ServeRAID [®] MR10i, PCI Express [®] bus, SATA 3Gb/s, SAS 3Gb/s, RAID [®] 0, 1, 5, 6, 10, 50, 60 support Optional, internal/external, 3.5", USB or SATA via disk controller								Opt Tape		fan disks		^{an}			
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, Broadcom [®] 5709C, PCI Express bus, TCP/IP Offload Engine(TOE), load balancing, upgradeable to 4 int ethernet ports via optional daughter card							sbus,	• 2U • Bla • 17. • 443							
Chipset	Intel 5520 Chipset, Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O							to Intel	 Too Too Too Illui 	olless olless olless minate	top co disk ar adapte ed fron	ver ren nd optio er reter nt icons	cal drive r ition with pull	removal		
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites	(See Right) Four PCI Express 2.0 x8 slots std, convertible via optional riser card(s) to 64-bit 133MHz PCI-X Two USB 2.0, external monitor (VGA DB-15) Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45), One USB connector for embedded hypervisor Easy LED Diagnostics (pull-out operator information panel with information LED and system-error LED) Integrated Management Module (IMM) std, IPMI 2.0-compliant, Trusted Platform Module (TPM) 1.2 support, upgradeable to IMM Premium Monitor, keyboard, mouse, SATA/SAS disk, rack, OS							vith	Easy LED Diagnostics panel Bay 1 5.25", 0.5" high, external, std optical Bay 2 2.5", 0.6" high, external, optional disk Bay 3 2.5", 0.6" high, external, optional disk Bay 4 2.5", 0.6" high, external, optional disk Bay 5 2.5", 0.6" high, external, optional disk Bay 6 2.5", 0.6" high, external, optional disk Bay 7 2.5", 0.6" high, external, optional disk Bay 8 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 10 3.5", 1.6" high, external, optional tape						disk disk disk disk disk disk disk disk	
Keyboard Mouse Power supply(s) Cooling	None (u Two 675 hot-swa	p, auto-s	port)	dundant v	vith two p	ower s	supplies		Slot 2 Slot 3	2: low 3: full-	-profile	é, , full-h	PC eight, PC	CI Express 2 CI Express 2 CI Express 2 CI Express 2 CI Express 2	2.0 x8 2.0 x8	
2GB PC3-1060 300GB ² 2.5" SA 500GB 2.5" SA	s uad-Core Processor E5506 67Y0005 600 DDR3 1333 MHz RDIMM 67Y0015 SAS SFF HS (10000 rpm) 67Y0118 SATA SFF HS (7200 rpm) 67Y0121 sories at lenovo.com/accessories 67Y0121								Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup							
Max internal ca 4.0TB with eight		SATA SF	F disks								ver Ea	ftware syStari syMan	up	ment Tools		
Virtualization													Security	y		
Virtualization re	ady, hype										n pass	word asswo	rd.			
selected part ⇒ ThinkPlus™ s	ner Replaceable Unit (CRU) parts only (with limited onsite service for d parts³, 8 am - 5 pm, Mon - Fri coverage excluding holidays) lus™ services available; see lenovo.com/thinkplus/warranty							or	 Boo Boo Ser US 	ot seq ot with rial po B por	uence hout ke ort I/O d t disab	contro control lement	l l, mouse, : (front or	all)		
 Post warra 	ice upgrade options (in eligible locations) ⁷ Ity maintenance services							ThinkPlus Priority Support, 90-day Trial								
→ 24 hour x 7 d	ay ¹⁴ toll-f	/ maintenance services ¹⁴ toll-free support during the warranty period ¹ via 800-426-737								RoHS-compliant						

See footnotes for important warranty information US model announced May 5, 2009 US model withdrawn effective February 2011

ThinkServer™ RD220 (3779) - Special Bid - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x Proc- Memory Memory Disk RAID Disk bay essor(s) GHz Cores DIMMs speed size Battery bays							
	J 4x13 1xE5502 1.86 2 1x1GB 1333MHz 2.5" None 12xHot-							
	• This model has a 3-year limited warranty ¹							
Processor(s)	Up to two processors, one processor standard, Intel [®] Xeon [®] Processor E5502 with dual-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), 800MHz DDR3 memory controller, and 4MB cache	2U Rack top Front						
mplementation	Processor uses FC-LGA package, two LGA1366 sockets	Power slot 1						
Memory	1GB std, 128GB max (64GB per processor), RDIMM, PC3-10600 1333MHz DDR3**, Advanced ECC***, Memory Mirroring, sixteen 240-pin DIMM sockets, standard memory in 1 socket, 15 sockets available****, eight sockets distributed into 3-channel per processor (3-3-2) ** System automatically clocks down for processors with 800MHz DDR3 memory controller *** Advanced ECC-enable DIMMs required **** Over eight DIMMs required dual processors	Opt PSU Ser s lot 1 Memory Rear Image: Base of the ser s lot 1 Sockets Sockets Pole x8 Image: Base of the ser s lot 1 Sockets Sockets Pole x8 Image: Base of the ser s lot 1 Sockets Pole x8 Pole x8 Image: Base of the ser s lot 1 Sockets Pole x8 Pole x8 Image: Base of the ser s lot 1 Sockets Pole x8 Pole x8 Image: Base of the ser s lot 1 Sockets Pole x8 Pole x8						
Graphics	Matrox [®] G200e, integrated, two VGA DB-15 (front and rear), 16MB; Maximum resolution: 1280x1024@60Hz							
Disk bays Disk Controller Optical Diskette Ethernet	12 hot-swap (HS) disk bays on 2.5" Slim-Form-Factor (SFF) std ServeRAID®-BR10i, PCI Express® bus, SATA 3Gb/s, SAS 3Gb/s, RAID® 0, 1 support None None (use optional USB diskette) Two Gigabit Ethernet ports, Broadcom® 5709C, PCI Express bus, TCP/IP Offload Engine(TOE), load balancing, upgradeable to 4 int ethernet ports via optional daughter card	fan fan disks optical • 2U Mechanical; rack-mount only • Black color front; metal case • 17.5"W x 27.5"D x 3.36"H						
Chipset	Intel 5520 Chipset, Intel I/O Hub (IOH) for PCI Express slots and links to BCM5709C, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 (ICH10) for USB, PCIe links to SATA/SAS controller, LPC bus to VSC452 for limited Super I/O	 443.6mm W x 698mm D x 85.4mm H 65 lb (29.5kg) max configuration Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention 						
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites	(See Right) Four PCI Express 2.0 x8 slots std, convertible via optional riser card(s) to 64-bit 133MHz PCI-X Two USB 2.0, external monitor (VGA DB-15) Two USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45), system management (RJ-45) One USB connector for embedded hypervisor Easy LED Diagnostics (pull-out operator information panel with information LED and system-error LED) Integrated Management Module (IMM) std, IPMI 2.0-compliant, Trusted Platform Module (TPM) 1.2 support, upgradeable to IMM Premium Monitor, keyboard, mouse, SATA/SAS disk, rack, OS	 Illuminated front icons with pull-out Easy LED Diagnostics panel Bay 1 5.25", 0.5" high, external, optional optical Bay 2 2.5", 0.6" high, external, optional disk Bay 3 2.5", 0.6" high, external, optional disk Bay 4 2.5", 0.6" high, external, optional disk Bay 5 2.5", 0.6" high, external, optional disk Bay 6 2.5", 0.6" high, external, optional disk Bay 8 2.5", 0.6" high, external, optional disk Bay 8 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk Bay 9 2.5", 0.6" high, external, optional disk 						
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One 675 watts standard, two maximum, variable speed fan, hot-swap, auto-sensing, redundant with two power supplies Three fans std, three maximum, variable speed, hot-swap	Baý 11 2.5", 0.6" high, external, optional disk Bay 12 2.5", 0.6" high, external, optional disk Bay 13 2.5", 0.6" high, external, optional disk Slot 1: full-length, full-height, PCI Express 2.0 x8						
Accessories Intel Xeon Dua 1GB PC3-1060 2GB PC3-1060 4GB PC3-1060 73GB ² 2.5" SAS	-Core Processor E5502 67Y0004 0 DDR3 1333 MHz RDIMM 67Y0014 0 DDR3 1333 MHz RDIMM 67Y0015 0 DDR3 1333 MHz RDIMM 67Y0016 6 SFF HS (15000 rpm) 67Y0115	Slot 2: low-profile, PCI Express 2.0 x8 Slot 3: full-length, full-height, PCI Express 2.0 x8 Slot 4: half-length, full-height, PCI Express 2.0 x8						
300GB 2.5" SA 500GB 2.5" SA USB Portable I Lenovo® TV L1	S SFF HS (10000 rpm) 67Y0118 A SFF HS (7200 rpm) 67Y0121	Power-On Hotkey • Setup Utility: F1 at startup • Diagnostic: F2 at startup • Network Boot: F12 at startup						
Max internal c 6.0TB with twel	apacity re 500GB SATA SFF disks	Software Management Tools ThinkServer EasyStartup ThinkServer EasyManage						
Virtualization		Security						
 ⇒ 3-year parts ⇒ Customer Reserved particular 	ady, hypervisor connector embedded Limited Warranty ¹ and labor placeable Unit (CRU) parts only (with limited onsite service for s ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) services available; see lenovo.com/thinkplus/warranty	 Power-on password Administrator password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (front or all) 						
 Onsite ser 	rice upgrade options (in eligible locations) ⁷ nty maintenance services	ThinkPlus Priority Support, 90-day Trial						
	ay ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378	RoHS-compliant						

See footnotes for important warranty information US models listed are special bid models for technical reference only US models withdrawn effective December 2009

67Y0115 ann 05/05/09 67Y0116 ann 05/05/09 67Y0117 ann 05/05/09
67Y0118 ann 05/05/0
67Y0002 ann 05/05/0 67Y0120 ann 09/08/0 67Y0121 ann 09/08/0
67Y0121 ann 09/08/08
45J6211 ann 09/30/06
45J6200 ann 09/30/08 45J6201 ann 09/30/08
45J6202 ann 09/30/00 45J6203 ann 09/30/00 45J6204 ann 09/30/00
pm) 45J6195 <i>ann 09/30/06</i> pm) 45J6196 <i>ann 09/30/06</i>
pm) 45J6196 <i>ann 09/30/08</i> pm) 45J6197 <i>ann 09/30/08</i> pm) 45J6198 <i>ann 09/30/08</i>
67Y1384 ann 01/26/1 67Y1385 ann 01/26/1
67Y1386 ann 01/26/10
ories, please visit: es raccessories
n/accessories
com/accessoriesguide
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ThinkServer[™] TD200x, RD210, RD220 - ThinkPlus[™] Services

Partial list of Lenovo® ThinkPlus Services for ThinkServe D200x, RD210, RD220	er™	ThinkPlus Priority Support	
D200X, ND210, ND220		 9x5 Next Business Day response Lenovo Onsite Repair 24x7 4-hour response Lenovo Onsite Repair (for Priority 	
or more information see:		 24x7 4-hour response Lenovo Onsite Repair (ior Phone 24x7 support with priority routing and advanced level te 	
ttp://www.lenovo.com/services_warranty/us/en/index.h	tml	TD200x with 1-year warranty	
Training classes		3-year Priority Support	45K4064
 The basics on components, diagnostics, troubleshooting, 	and	3-year Priority 4 Support	45K4065
managing Lenovo servers, delivered in interactive online f	format	TD200x with 3-year warranty	451/4005
Online Training, Understanding Lenovo Servers	45K4080	3-year Priority Support 3-year Priority 4 Support	45K4067 45K4068
Online Training, Understanding Systems Management	45K4081	RD210, RD220 with 1-year warranty	10111000
nstallation, ThinkServer Hardware Only	45K4082	3-year Priority Support	45K5307
ThinkPlus service upgrade options ⁷		3-year Priority 4 Support	45K5308
LOR = Lenovo Onsite Repair		RD210, RD220 with 3-year warranty	
TD200x with 1-year warranty		3-year Priority Support 3-year Priority 4 Support	45K4077
B-year LOR 9x5 Next Business Day	45K4062	S-year Frionty 4 Support	45K4078
B-year LOR 9x5 4 hour response	45K4063	ThinkPlus Priority Support with Hard Disk Drive Rete	<u>ntion</u>
-year LOR 9x5 Next Business Day	51J0731 51J0732	9x5 Next Business Day response Lenovo Onsite Repair	
4-year LOR 9x5 4 hour response 5-year LOR 9x5 Next Business Day	51J0732	 24x7 4-hour response Lenovo Onsite Repair (for Priority) 	
5-year LOR 9x5 4 hour response	51J0734	 24x7 support with priority routing and advanced level te Hard Disk Drive Retention (HDDR) means customer keep 	
TD200x with 3-year warranty		HDDR = Hard Disk Drive Retention	
B-year LOR 9x5 4 hour response	45K4066		
1-year LOR 9x5 Next Business Day 1-year LOR 9x5 4 hour response	51J0735 51J0736	<i>TD200x with 1-year warranty</i> 3-year Priority Support with HDDR	45K5445
-year LOR 9x5 Next Business Day	51J0737	3-year Priority 4 Support with HDDR	45K5446
5-year LOR 9x5 4 hour response	51J0738	TD200x with 3-year warranty	
RD210, RD220 with 1-year warranty		3-year Priority Support with HDDR	45K544
B-year LOR 9x5 Next Business Day	45K5305	3-year Priority 4 Support with HDDR	45K5448
B-year LOR 9x5 4 hour response	45K5306	RD210, RD220 with 1-year warranty	
I-year LOR 9x5 Next Business Day I-year LOR 9x5 4 hour response	51J0747 51J0748	3-year Priority Support with HDDR	45K5453
-year LOR 9x5 Next Business Day	51J0748	3-year Priority 4 Support with HDDR	45K5454
-year LOR 9x5 4 hour response	51J0750	RD210, RD220 with 3-year warranty	
RD210, RD220 with 3-year warranty		3-year Priority Support with HDDR	45K5455
3-year LOR 9x5 4 hour response	45K4076	3-year Priority 4 Support with HDDR	45K5456
1-year LOR 9x5 Next Business Day 1-year LOR 9x5 4 hour response	51J0751 51J0752	ThinkPlus Productivity	
5-year LOR 9x5 Next Business Day	51J0752	Priority Support	
-year LOR 9x5 4 hour response	51J0754	Online Training, Understanding Lenovo Servers	
		One-time hardware installation	
		2 year Think Blue Braductivity TD200y (1 year)	45K4088
		3-year ThinkPlus Productivity, TD200x (1-year) 3-year ThinkPlus Productivity, TD200x (3-year)	45K4080
		3-year ThinkPlus Productivity, RD210, RD220 (1-year)	45K5309
		3-year ThinkPlus Productivity, RD210, RD220 (3-year)	45K4096
		1	

ThinkServer™ RD230 (4010) - TopSeller -withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x Proc- Memory Memory Disk RAID bay essor(s) GHz Cores DIMMs speed size Battery	Disk Disk SATA RAID System Avai bays type optical Int mgmt Ethernet date					
RD230 4010-11L	 1x5 1xE5503 2.00 2 1x2GB 1333MHz 3.5" None 4x This model has a 1-year limited warranty¹ High performance, advanced RAID, and remote management This small and medium business (SMB) model is part of the compared to the	Hot-swap SATA DVD±RW 0/1/5/10 IPMI 2xGb Dec10 supported at value price point					
Processor(s) mplementation Memory	Up to two processors, one processor standard, Intel® Xeon® Processor E5503 with dual-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets 2GB std, 64GB max (32GB per processor),	g, IU Rack top Front Power supply g, Rear					
	RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirrorin eight 240-pin DIMM sockets** * System automatically clocks down for processors with 800MH DDR3 memory controller ** Over four DIMMs requires dual processors						
Graphics	Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz	Sockets					
Disk bays Disk controller	Four 3.5" hot-swap (HS) SATA disk bays Serial ATA, SATA 3.0Gb/s, integrated in chipset, RAID ⁸ 0, 1, 5, 10 support	fan fan fan fan					
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers	optical disks					
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slot (seright), enterprise south bridge interface (ESI) to Intel I/O Control Hub 10 RAID (ICH10R) for USB, onboard SATA controller	IU Mechanical; rack-mount only Black color front; metal case 17.2"W x 22.4"D x 1.72"H					
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt	(See Right) One PCI Express 2.0 x16 slot standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub	 436mm W x 568mm D x 43.6mm H 37.7 lb (17kg) max configuration Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention Bay 1 5.25", 0.5" high, external, std optical Bay 2 3.5", 1" high, external, optional disk Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk 					
Prerequisites Keyboard Mouse Power supply(s) Cooling	Monitor, keyboard, mouse, SATA/SAS disk, rack, OS None (use USB port) None (use USB port) One 600 watts standard, one maximum, variable speed fan, auto-sensing, no redundancy Five fans standard, five maximum, variable speed	Bay 5 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express 2.0 x16					
Intel Xeon E550: 2GB PC3-10600 8GB PC3-10600 500GB ² 3.5" SAT 1TB 3.5" SATA F More accessorie	Accessories 3 Processor Option Kit 67Y1483 0 DDR3 1333 MHz RDIMM 67Y1432 0 DDR3 1333 MHz RDIMM 67Y1464 A HS (7200 rpm) 67Y1401						
		Virtualization Virtualization ready, VMWare Ready [™] certified Power-On Hotkey					
64GB with eight	Max memory capacity 8GB RDIMMs	Setup Utility: DEL at startup Network Boot: F12 at startup Onboard SATA RAID: Ctrl+I at startup					
	Max internal capacity 2TB 3.5" SATA disks	Software Management Tools ThinkServer EasyStartup					
 1-year parts a Customer Reselected parts ThinkPlusTMs Onsite serv 	Limited Warranty ¹	Security Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) 8 RoHS-compliant					

See footnotes for important warranty information US model announced December 14, 2010 US model withdrawn effective August 2011

ThinkServer™ RD230 (4011) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x bay	Proc- essor(s)	GHz Cor	Memor s DIMMs			RAID Battery	Disk bays		Disk type	SATA optical	RAID Int	System mgmt	Ethernet	Avail date
RD230 4011-12L RD230 4011-13L RD230 4011-14L	J 1x5 1 J 1x5 1	x E5507 x E5620	2.26 4 2.40 4	1x4GE 1x4GE		z 3.5" z 3.5"	Battery	4 x Hot-s	ot-swap SATA DVD±RW 0/1/5/10 IPMI 2xGb Dec10 ot-swap SATA DVD±RW 0/1/5/10 KVM 2xGb Dec10 ot-swap SATA/SAS ⁴ DVD±RW 0/1/5/6/10 KVM 2xGb Dec10						
					ed warran ss (SMB) n		are par	t of the U	S Top	Seller™ Pro	ogram				
Processor(s) Implementation	Intel® X 4.8GT/s Intel 64, 800MHz Intel Xe 4.8GT/s 800MHz Intel Xe 5.86GT/ Virtualiz 1066MH	eon [®] Pro (giga-tra Virtualiz DDR3 r on Proc QPI, Into DDR3 r on Proc (s QPI, Into s QPI, Into con Proc	ansfers/se ation Tec nemory c essor E5 el 64, Virt nemory c essor E5 ttel 64, H chnology, memory	5506 wit cond) QF nnology, ontroller, 507 with ualization ontroller, 620 with (per-Thre Turbo Bo	or standard h quad-co l'I (QuickPa and 4MB d quad-core Technolog and 4MB d quad-core ading Tech bost Techno , and 12MB	re, th Inte ache o , ly, ache o , nology,	or or /,	ct),			115.511	Power supply	disk	1 - PCIe	disk ×16
Memory	RDIMM, eight 24 * Syster or 1066	, PC3-10 0-pin DIN n automa MHz DDI	600 1333 MM socke atically clo R3 memo	MHz DDI ts** ocks dowr ry control	per proces R3*, ECC, n for proces ler rocessors	Memo	•		far	Memory fan fan	U fan fan				
Graphics	one VG/	A DB-15	on rear, 8	0 graphic MB; 0x1200@	s/manager 60Hz	nent p	rocesso	r,	opt		disks	1			
Disk bays Disk controller	14U: 12U/13l 14U:	Four 3 Serial RAID [®] ThinkS PCI E RAID (.5" hot-sv ATA, SAT 0, 1, 5, 1 Server 87 (press® b 0, 1, 5, 6,	vap (HS) A 3.0Gb/s 0 support 08ELP SA us, SATA 10 suppo	AS RAID C 3.0Gb/s, S ort	diśk b d in ch ontroll	ipset, er,		 Bla 17. 430 37. Too 	ack color fro .2"W x 22.4 6mm W x 5 .7 lb (17kg) olless top c	al; rack-mou ont; metal c "D x 1.72"H 68mm D x max config over remov	ase H 43.6mm H guration al			
Optical Diskette Ethernet	14U: Battery backed cache integrated • Toolless disk and optical drive removal UltraSlim Enhanced DVD±RW • Toolless adapter retention None (use USB port) Bay 1 5.25", 0.5" high, external, std op Two Gigabit Ethernet ports, dual Intel 82574L controllers Bay 2 3.5", 1" high, external, option								tical al disk						
Chipset	Intel 55 right), er	00 Chips	set, Intel south br	/O Hub (I dge interf	OH) for PC ace (ESI) f iboard SAT	l Expr o Intel	ess slot I/O Cor		Bay Bay Bay Bay	3 3.5", 4 3.5",	1" high, 1" high,	external, external, external, external,	option option	al disk al disk	
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites	Two US Four US two ethe One US Diagnos Onboard <i>IPMI mo</i>	B 2.0 B 2.0, exempts of the second second second base of the second second base of the second second base of the second second base of the second second base of the second second base of the second second base of the second second base of the second second base of the second second base of the second second base of the second second second base of the second second second base of the second second second base of the second second second base of the second second second second base of the second second second second base of the second second second second second base of the second second second second second second base of the second second second second second second second second second base of the second	kternal m -45) nnector ystem sta d AST205 PMI 2.0-c ontroller emote pla JSB 2.0 v PMI funct 4bit high	onitor (VG ographic ompliant BMC), st tform flas intual hub ions PLU quality vio	16 slot star A DB-15), on front p s/manager baseboard orage over h, BIOS u S KVM sup S KVM sup deo compro	serial anel nent p mana IP, odate, oportecession	rocesso gement	r	Slot	1: half-leng	th, full-heig	iht, PCI E	Express	2.0 x16	
Keyboard	,	se USB	,	, 5414/5/		л, ОС					Virtu	alization			
Mouse Power supply(s)	One 600 auto-ser	nsing, no	tandard, o redunda	ncy	num, varia	·	eed fan,		Virtu	alization re	ady, VMWa Power -	re Ready On Hotk		ied	
Cooling 64GB with eight		Ма	-	ry capac	variable sp i ty	eed			 Net Ont 	up Utility: work Boot: board SATA		DEL at st F12 at st Ctrl+l at s	artup startup		
			ax intern	al capaci	tv				• Aut		oftware Ma				
3.5" SATA HS: 3.5" SAS HS:		ith four 2	TB 3.5" S	-	8				• Thii		asyStartup	•			
Limited Warranty ¹ ⇒ 3-year parts and labor ⇒ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ⇒ ThinkPlus™ services available; see lenovo.com/thinkplus/warranty • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services ⇒ 24 hour x 7 day ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378								 Us Bo Bo Se US 	rial port I/C	password d e control ceyboard, n control blement (a		kette			

See footnotes for important warranty information US models announced December 14, 2010 US models withdrawn effective August 2011

ThinkServer[™] RD230 (1043) - withdrawn

Personal Systems Reference (PSREF)

Type- Name model		Disk Disk SATA RAID System Avail Days type optical Int mgmt Ethernet date							
R D230 1043-11U	 1x5 1xE5503 2.00 2 1x2GB 1333MHz 3.5" None 4xHe This model has a 1-year limited warranty¹ High performance, advanced RAID, and remote management support of the second se								
Processor(s) Implementation Memory	Up to two processors, one processor standard, Intel® Xeon® Processor E5503 with dual-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets 2GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors	1U Rack top Front Image: Series of CPU Power supply Rear Image: Series of CPU							
Graphics Disk bays Disk controller	Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; <i>Maximum resolution:</i> 1600x1200@60Hz Four 3.5" hot-swap (HS) SATA disk bays Serial ATA, SATA 3.0Gb/s, integrated in chipset,	Memory sockets							
Optical Diskette Ethernet Chipset	RAID ⁸ 0, 1, 5, 10 support UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slot (see	• 1U Mechanical; rack-mount only							
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt Prerequisites	right), enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, onboard SATA controller (See Right) One PCI Express 2.0 x16 slot standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub Monitor, keyboard, mouse, SATA/SAS disk, rack, OS	 Black color front; metal case 17.2"W x 22.4"D x 1.72"H 436mm W x 568mm D x 43.6mm H 37.7 lb (17kg) max configuration Toolless top cover removal Toolless disk and optical drive removal Toolless adapter retention Bay 1 5.25", 0.5" high, external, std optical Bay 2 3.5", 1" high, external, optional disk Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk 							
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One 600 watts standard, one maximum, variable speed fan, auto-sensing, no redundancy Five fans standard, five maximum, variable speed	Slot 1: half-length, full-height, PCI Express 2.0 x16							
2GB PC3-10600 8GB PC3-10600 500GB ² 3.5" SAT 1TB 3.5" SATA H	Accessories B Processor Option Kit 67Y1483 DDR3 1333 MHz RDIMM 67Y1432 DDR3 1333 MHz RDIMM 67Y1464 A HS (7200 rpm) 67Y1401 S (7200 rpm) 67Y1402 s on O-ARTsheet 67Y1402								
Other accessorie	es at lenovo.com /accessories	Virtualization Virtualization ready, VMWare Ready™certified Power-On Hotkey							
64GB with eight	Max memory capacity 8GB RDIMMs	Setup Utility: DEL at startup Network Boot: F12 at startup Onboard SATA RAID: Ctrl+I at startup							
	Max internal capacity 2TB 3.5" SATA disks	Software Management Tools ThinkServer EasyStartup							
 → 1-year parts a → Customer Rej selected parts → ThinkPlus™ s → Onsite serv → Post warrar 	Limited Warranty ¹	Security Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) RoHS-compliant							

See footnotes for important warranty information US model announced December 14, 2010 US model withdrawn effective August 2011

ThinkServer™ RD230 (1044) - withdrawn

RD230 1044-15L Processor(s) Implementation Memory Graphics	 These models have a 3-year limited warranty¹ High performance, advanced RAID, and remote management sup Up to two processors, one processor standard, Intel® Xeon® Processor E5503 with dual-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache Intel Xeon Processor E5506 with quad-core, 4.8GT/s QPI, Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets 2GB or 4GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz 11U: Four 3.5" hot-swap (HS) SATA disk bays 15U: Four 3.5" hot-swap (HS) SATA/SAS disk bays 11U: Serial ATA, SATA 3.0Gb/s, integrated in chipset, 	wap SATA/SAS ⁴ DVD±RW 0/1/5/6/10 KVM 2xGb Dec10
Processor(s) Implementation Memory Graphics	 These models have a 3-year limited warranty¹ High performance, advanced RAID, and remote management sup Up to two processors, one processor standard, Intel® Xeon® Processor E5503 with dual-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache Intel Xeon Processor E5506 with quad-core, 4.8GT/s QPI, Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets 2GB or 4GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz 11U: Four 3.5" hot-swap (HS) SATA disk bays 15U: Four 3.5" hot-swap (HS) SATA/SAS disk bays 11U: Serial ATA, SATA 3.0Gb/s, integrated in chipset, 	Pront IU Rack top IU Rack top Front Image: CPU Power supply Image: CPU Image: CPU
Implementation Memory Graphics	Intel® Xeon® Processor E5503 with dual-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache Intel Xeon Processor E5506 with quad-core, 4.8GT/s QPI, Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets 2GB or 4GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz 11U: Four 3.5" hot-swap (HS) SATA disk bays 15U: Four 3.5" hot-swap (HS) SATA/SAS disk bays 11U: Serial ATA, SATA 3.0Gb/s, integrated in chipset,	Power supply Rear CPU CPU CPU CPU CPU CPU CPU
Memory Graphics	2GB or 4GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets** * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz 11U: Four 3.5" hot-swap (HS) SATA disk bays 15U: Four 3.5" hot-swap (HS) SATA/SAS disk bays 11U: Serial ATA, SATA 3.0Gb/s, integrated in chipset,	
•	Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; <i>Maximum resolution:</i> 1600x1200@60Hz 11U: Four 3.5" hot-swap (HS) SATA disk bays 15U: Four 3.5" hot-swap (HS) SATA/SAS disk bays 11U: Serial ATA, SATA 3.0Gb/s, integrated in chipset,	
Dieleheure	<i>15U:</i> Four 3.5" hot-swap (HS) SATA/SAS disk bays <i>11U:</i> Serial ATA, SATA 3.0Gb/s, integrated in chipset,	fan fan fan fan fan
Disk bays	11U: Serial ATA, SATA 3.0Gb/s, integrated in chipset,	
Disk controller	RAID ⁸ 0, 1, 5, 10 support 15U: ThinkServer 8708ELP SAS RAID Controller, PCI Express [®] bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 5, 6, 10 support	optical disks 1U Mechanical; rack-mount only Black color front; metal case
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers	 + 17.2"W x 22.4"D x 1.72"H + 436mm W x 568mm D x 43.6mm H + 37.7 lb (17kg) max configuration + Toolless top cover removal
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slot (see right), enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB, onboard SATA controller	 Toolless disk and optical drive removal Toolless adapter retention
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt	(See Right) One PCI Express 2.0 x16 slot standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor <i>IPMI model(s):</i> IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub <i>KVM model(s):</i> IPMI functions PLUS KVM supported, 24bit high quality video compression	Bay 1 5.25", 0.5" high, external, std optical Bay 2 3.5", 1" high, external, optional disk Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Slot 1: half-length, full-height, PCI Express 2.0 x16
Prerequisites	Monitor, keyboard, mouse, SATA/SAS disk, rack, OS	
Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One 600 watts standard, one maximum, variable speed fan, auto-sensing, no redundancy Five fans standard, five maximum, variable speed	
	Accessories	Virtualization
2GB PC3-10600	3 Processor Option Kit 67Y1483 9 DDR3 1333 MHz RDIMM 67Y1432 as on O-ARTsheet	Virtualization ready, VMWare Ready [™] certified Power-On Hotkey
Other accessorie	es at lenovo.com /accessories	Setup Utility: DEL at startup
64GB with eight	Max memory capacity 8GB RDIMMs	Network Boot: F12 at startup Onboard SATA RAID: Ctrl+I at startup Add-on SATA/SAS RAID: Ctrl+H at startup
	Max internal capacity 8.0TB with four 2TB 3.5" SATA disks 2.4TB with four 600GB 3.5" SAS disks	Software Management Tools • ThinkServer EasyStartup
 ⇒ 3-year parts a ⇒ Customer Regselected parts ⇒ ThinkPlus™s • Onsite serv • Post warrar 	Limited Warranty ¹	Security Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) RoHS-compliant

See footnotes for important warranty information US models announced December 14, 2010 US models withdrawn effective August 2011

ThinkServer[™] RD240 (1047) - withdrawn

Personal Systems Reference (PSREF)

Name model RD240 1047-111	-	()	Slot x Proc- Memory Disk RAID Disk Di bay essor(s) GHz Cores DIMMs size Battery bays Cont									mgmt	supply(s)	Ethernet	Avai date	
	J 3x9 1xE5503 2.00 2 1x2GB 3.5" None 8xHot-swap 1								8E \$	type SATA/SAS⁴	0/1/1E	IPMI	1 x 750W			
			as a 1-year ance, scala				gement suppo	orted a	at valu	e price poi	nt					
Processor(s)	4.8GT	Xeon® Pro /s (giga-tra 4, Virtualiz	ation Tech	5503 with cond) QPI nology,	dual- (Quic	core , kPath In	terconnect),	2		ck top		Fror	disk disk		isk isk	
mplementation Memory	Two L0 2GB, 6 RDIMI eight 2 * Syste DDR3	800MHz DDR3 memory controller, and 4MB cache Two LGA1366 sockets 2GB, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3*, ECC, Memory Mirroring, eight 240-pin DIMM sockets**, * System automatically clocks down for processors with 800MHz DDR3 memory controller ** Over four DIMMs requires dual processors														
Graphics	 ** Over four DIMMs requires dual processors Onboard Aspeed AST2050 graphics/management processor, one VGA DB-15 on rear, 8MB; Maximum resolution: 1600x1200@60Hz 								SOCKETS	Memory		PSU PSU		1 - PCle 2 - PCle 3 - PCle	e x8	
Disk bays Disk controller	Eight 3.5" hot-swap (HS) SATA/SAS disk bays LSI™ LSISAS1068E, PCI Express [®] bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID ⁸ 0, 1, 1E support								fan 1	fan fan fan						
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers								disk optical							
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right), links to LSISAS1068E, enterprise south bridge interfac (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB							ace .	Desig Black	lechanical gned for El c color from / x 27.6"D ;	t; metal o		9-inch rac	k only		
Riser card Front ports Rear ports nternal port Diagnostics Systems mgmt	(See Right) One PCI Express 2.0 x8, two PCI Express 2.0 x8 (x4 electrical) slots standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel							• • • • • • • • • • • • • •	 483mm W x 700mm D x 87.5mm H 66.6 lb (30kg) max configuration Toolless top cover removal Toolless disk removal Toolless dapter retention Bay 1 5.25", 0.5" high, external, std optical Bay 2 3.5", 1" high, external, optional disk Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk Bay 6 3.5", 1" high, external, optional disk Bay 8 3.5", 1" high, external, optional disk Bay 8 3.5", 1" high, external, optional disk Bay 9 3.5", 1" high, external, optional disk Bay 9 3.5", 1" high, external, optional disk Bay 9 3.5", 1" high, external, optional disk Bay 9 3.5", 1" high, external, optional disk Slot 1: full-length, full-height, PCI Express 2.0 x8*** Slot 3: half-length, full-height, PCI Express 2.0 x8*** 							
Cooling																
2GB PC3-1060 8GB PC3-1060 1TB 3.5" SATA I 450GB ² 3.5" SA								*** x4 electrical								
Other accessori	es at le i	novo.com	n/accessori	es				١	/irtual	ization read	dy, VMW		dy™ certifie	ed		
64GB with eight	Max memory capacity 4GB with eight 8GB PC3-10600 DDR3 RDIMMs							•	Power-On Hotkey Setup Utility: DEL at startup Network Boot: F12 at startup LSI 1068E RAID: Ctrl+C at startup							
3.5" SATA HS: 3.5" SAS HS:		with eight		ATA disks					Think	Sof Server Eas			ent Tools			
Limited Warranty ¹ ✓ 1-year parts and labor ✓ Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) ✓ ThinkPlus [™] services available; see lenovo.com/thinkplus/warranty • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services ✓ 24 hour x 7 day ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378							•	User Boot Boot Seria	inistrator pa password sequence without ke al port I/O c port disab	assword control yboard, control		diskette				

See footnotes for important warranty information US model announced July 27, 2010 US model withdrawn effective August 2011

ThinkServer™ RD240 (1048) - withdrawn

Personal Systems Reference (PSREF)

Type- Name model		Proc- essor(s)	GHz Cores	Memory DIMMs		RAID Battery		Disk ays (Disk Contro		Disk type	RAI Int		ystem ngmt	Power supply(s)	Etherne	Avail t date
RD240 1048-11L RD240 1048-12L RD240 1048-13L	J 3 x 9 1	x E5640	2.66 4		3.5"		/ 8xHo	ot-swap	8708	E S	ATA/SAS⁴ ATA/SAS ATA/SAS	0/1/ [:] Mult Mult	i*	IPMI KVM KVM	1x750W 1x750W 2x750W	2 x Gb	Jul 10 Jul 10 Jul 10
*Multi = RAID 0/1																	
Processor(s)	Intel® > 4.8GT/s Intel 64 800MH Intel X0 5.86GT Virtualii 1066Mi Intel X0 6.4GT/s Virtualii 1333Mi	(eon® Pro s (giga-tra ; Virtualiz z DDR3 r eon Proc Vs QPI, In zation Teo Hz DDR3 eon Proc s QPI, Intu zation Teo Hz DDR3	sors, one o ccessor E5 unsfers/sec ation Techr nemory co essor E56- tel 64, Hype essor X56 el 64, Hype chnology, Ti memory co	503 with ond) QP nology, ntroller, a 10 with q er-Threa ontroller, 50 with s r-Threac urbo Boo	dual (Qui und 4I uad- ding st Teo and ix-co ling T st Teo	I-core, ckPath I MB cach core, Technology 12MB ca re, echnology	Interco ne or ogy, y, ache or gy,					_ <u>∽⊰</u> ⊓	Power supply	Rea	disk disk disk disk	disk c	lisk lisk
Implementation		A1366 sc		P mov (2000) nor pro		*)			CPL Memory sockets	J		PSI	-	2 - PCI 3 - PCI	
Memory	RDIMM eight 24 * Syste 1066M	I, PC3-10 40-pin DIM m automa Hz DDR3	B std, 640 600 1333M MM sockets atically cloc memory co Ms requires	Hz DDR s**, ks down ontroller	3 *, Е for pi	CC, Mei rocessoi	mory I	/irrorin	•	fan		fan	optica	I PSI			
Graphics	one VG	A DB-15	I AST2050 on rear, 8N <i>tion:</i> 1600;	IB;		agemer	nt proce	essor,			J Mechani		10 eta	Dard	19-inch ra	ck only	
Disk bays Disk controller	Some: Some:	LSI [™] LS SATA 3.0 ThinkSe PCI Exp RAID 0,	ap (HS) SA SISAS1068 OGb/s, SAS rver 8708E ress bus, S 1, 5, 6, 10, packed cac	E, PCI E 3.0Gb/s LP SAS ATA 3.00 50, 60 s	xpres s, RA RAID Gb/s, uppo	s® bus, ID [®] 0, 1, O Contro SAS 3.(oller,	pport		 Bla 19 48 66 To To 	ack color f "W x 27.6 3mm W x 6.6 lb (30kg olless top olless disk olless ada	ront; m "D x 3. 700mr g) max cover	etal c 44"H n D x confiç remov val	ase 87.5m guratio al	m H	ok only	
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers									Bay Bay Bay	2 3.5",	', 0.5" l 1" hig 1" hig	gh, e	externa	I, std opti I, optiona	l disk	
Chipset	(see rig	ht), links	set, Intel I/0 to LSISAS ⁻ Controller	1068E, e	ntérp	rise sou	ith brid	ge inte		Bay Bay	4 3.5", 5 3.5", 6 3.5",	1" hiệ 1" hiệ 1" hiệ	gh, e gh, e gh, e	externa externa externa	ll, optiona ll, optiona ll, optiona	l disk I disk I disk	
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt	(x4 elec Two US Four US two eth One US Diagno Onboar <i>IPMI m</i>	ctrical) slo SB 2.0 ernet (RJ SB 2.0 con stic and s rd Aspeec odel(s): II c t nodel(s): II 2		d iitor (VG, graphics mpliant b MC), sto orm flash ual hub ns PLUS uality vid	A DB- on fro /man aseb rage n, BIC KVN eo co	-15), ser ont pane agemen oard ma over IP, OS upda I suppor	rial (9-p el an proce an agen te, rted, ion	oin), essor								*	
Prerequisites Keyboard		use USB j		5414/54	5 uis	K, TACK,	05										
Mouse Power supply(s) Cooling	None (i One or auto-se	use USB two 750 v ensing, rec		h two po	wer s	supplies		speed	fan,	Virtu	ualization		VMWa	ualizat are Rea On Ho	ady [™] certii	ied	
64GB with eight		Ма	x memory	capacit						• Ne • 106	tup Utility: twork Boo 68E RAID 08ELP RA	DE t: F1 : Ct	EL at s 2 at st rl+C a	tartup tartup t startu	qu		
3.5" SATA HS: 1 3.5" SAS HS: 4	16.0TB v 4.8TB w	vith eight	ax internal 2TB HS SA 600GB HS \$	TA disks						• Thi	inkServer			•	ment Tool	S	
Limited Warranty ¹ → 3-year parts and labor → Customer Replaceable Unit (CRU) parts only (with limited onsite service for selected parts ³ , 8 am - 5 pm, Mon - Fri coverage excluding holidays) → ThinkPlus TM services available; see lenovo.com/thinkplus/warranty • Onsite service upgrade options (in eligible locations) ⁷ • Post warranty maintenance services → 24 hour x 7 day ¹⁴ toll-free support during the warranty period ¹ via 800-426-7378								78	 Us Bo Bo Se US 	dministrato ser passwo pot sequer pot withou erial port li SB port dis dS-complia	ord nce cor t keybc O cont sablem	word ntrol bard, n trol					

See footnotes for important warranty information US models announced July 27, 2010 US models withdrawn effective August 2011

ThinkServer™ RD240 (1046) - TopSeller - withdrawn

Personal Systems Reference (PSREF)

Type- Name model	Slot x Proc- Memory Disk RAID Disk Disk bay essor(s) GHz Cores DIMMs size Battery bays Contro	
RD240 1046-12U RD240 1046-13U	3x9 1xE5506 2.13 4 1x2GB 3.5" 8xHot-swap 1068 3x9 1xE5507 2.26 4 1x4GB 3.5" 8xHot-swap 8708 3x9 1xE5620 2.40 4 1x4GB 3.5" 8xHot-swap 8708 3x9 1xE5620 2.40 4 1x4GB 3.5" Battery 8xHot-swap 8708 3x9 2xE5640 2.66 8 2x4GB 3.5" Battery 8xHot-swap 8708 5/6/10/50/60 2 4 3.5" Battery 8xHot-swap 8708	3E SATA/SAS Multi* KVM 1 x 750W 2 x Gb Jul 10 3E SATA/SAS Multi KVM 2 x 750W 2 x Gb Jul 10
Processor(s) Implementation Memory	Up to two processors, one or two processors standard, Intel® Xeon® Processor E5506 with quad-core, 4.8GT/s (giga-transfers/second) QPI (QuickPath Interconnect), Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache or Intel Xeon Processor E5507 with quad-core, 4.8GT/s QPI, Intel 64, Virtualization Technology, 800MHz DDR3 memory controller, and 4MB cache or Intel Xeon Processor E5620 or E5640 with quad-core, 5.86GT/s QPI, Intel 64, Hyper-Threading Technology, Virtualization Technology, Turbo Boost Technology, 1066MHz DDR3 memory controller, and 12MB cache Two LGA1366 sockets 2GB, 4GB, or 8GB std, 64GB max (32GB per processor), RDIMM, PC3-10600 1333MHz DDR3**, ECC, Memory Mirroring,	2U Rack top Front Power supply CPU CPU Sockets Sockets Sockets PSU CPU PSU CPU From 3 PSU Fr
Graphics	eight 240-pin DIMM sockets***, ** System automatically clocks down for processors with 800MHz or 1066MHz DDR3 memory controller *** Over four DIMMs requires dual processors Onboard Aspeed AST2050 graphics/management processor,	
Disk bays Disk controller	one VGA DB-15 on rear, 8MB; <u>Maximum resolution:</u> 1600x1200@60Hz Eight 3.5" hot-swap (HS) SATA/SAS disk bays <u>Some:</u> LSI [™] LSISAS1068E, PCI Express [®] bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID [®] 0, 1, 1E support <u>Some:</u> ThinkServer 8708ELP SAS RAID Controller, PCI Express bus, SATA 3.0Gb/s, SAS 3.0Gb/s, RAID 0, 1, 5, 6, 10, 50, 60 support <u>Some:</u> Battery backed cache integrated	 2U Mechanical Designed for EIA-310 standard 19-inch rack only Black color front; metal case 19"W x 27.6"D x 3.44"H 483mm W x 700mm D x 87.5mm H 66.6 lb (30kg) max configuration Toolless top cover removal Toolless disk and removal
Optical Diskette Ethernet	UltraSlim Enhanced DVD±RW None (use USB port) Two Gigabit Ethernet ports, dual Intel 82574L controllers	Toolless adapter retention Bay 1 5.25", 0.5" high, external, std optical Bay 2 3.5", 1" high, external, optional disk
Chipset	Intel 5500 Chipset, Intel I/O Hub (IOH) for PCI Express slots 1-3 (see right), links to LSISAS1068E, enterprise south bridge interface (ESI) to Intel I/O Controller Hub 10 RAID (ICH10R) for USB	Bay 3 3.5", 1" high, external, optional disk Bay 4 3.5", 1" high, external, optional disk Bay 5 3.5", 1" high, external, optional disk
Riser card Front ports Rear ports Internal port Diagnostics Systems mgmt	(See Right) One PCI Express 2.0 x8, two PCI Express 2.0 x8 (x4 electrical) slots standard Two USB 2.0 Four USB 2.0, external monitor (VGA DB-15), serial (9-pin), two ethernet (RJ-45) One USB 2.0 connector Diagnostic and system status LEDs on front panel Onboard Aspeed AST2050 graphics/management processor <i>IPMI model(s)</i> : IPMI 2.0-compliant baseboard management controller (BMC), storage over IP, remote platform flash, BIOS update, USB 2.0 virtual hub <i>KVM model(s)</i> : IPMI functions PLUS KVM supported, 24bit high quality video compression Monitor, keyboard, mouse, SATA/SAS disk, rack, OS	Bay 6 3.5", 1" high, external, optional disk Bay 7 3.5", 1" high, external, optional disk Bay 8 3.5", 1" high, external, optional disk Bay 9 3.5", 1" high, external, optional disk Slot 1: full-length, full-height, PCI Express 2.0 x8 Slot 2: full-length, full-height, PCI Express 2.0 x8**** Slot 3: half-length, full-height, PCI Express 2.0 x8**** **** x4 electrical
Prerequisites Keyboard Mouse Power supply(s) Cooling	None (use USB port) None (use USB port) One or two 750 watts standard, two maximum, variable speed fan, auto-sensing, redundant with two power supplies Four fans standard, four maximum, variable speed	Virtualization Virtualization ready, VMWare Ready [™] certified Power-On Hotkey • Setup Utility: DEL at startup
64GB with eight 8	Max memory capacity 3GB PC3-10600 DDR3 RDIMMs	Network Boot: F12 at startup 1068E RAID: Ctrl+C at startup 8708ELP RAID: Ctrl+H at startup
	Max internal capacity 5.0TB with eight 2TB HS SATA disks 8TB with eight 600GB HS SAS disks	Software Management Tools ThinkServer EasyStartup
 ⇒ 3-year parts ar ⇒ Customer Rep selected parts ⇒ ThinkPlus™ se • Onsite servi • Post warran 	Limited Warranty ¹	Security Administrator password User password Boot sequence control Boot without keyboard, mouse, diskette Serial port I/O control USB port disablement (all) RoHS-compliant

See footnotes for important warranty information US models announced July 27, 2010 US models withdrawn effective August 2011 **Availability:** All offers subject to availability. Lenovo reserves the right to alter product offerings and specifications at any time, without notice. Lenovo is not responsible for photographic or typographic errors.

Warranty: For a copy of applicable product warranties, write to: Warranty Information, 500 Park Offices Drive, RTP, NC, 27709, Attn: Dept ZPYA/B600. Lenovo makes no representation or warranty regarding third party products or services.

- ¹ Limited warranty: Support unrelated to a warranty issue may be subject to additional charges.
- ² Hard drive: GB = billion bytes, TB = trillion bytes. Accessible capacity is less.
- ³ Systems with limited onsite service are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by Lenovo. Lenovo will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by Lenovo for onsite replacement. For a list of onsite replaceable parts, contact Lenovo. In the United States call 1-800-426-7378. Support unrelated to a warranty issue may be subject to additional charges.
- ⁴ SATA/SAS: The system configuration supports the installation of either SATA or SAS disks. A configuration including both SATA and SAS disks is not supported.
- ThinkPlus Services: These services are available for machines normally used for business, professional, or trade purposes, rather than personal, family, or household purposes. Not all machine types and models are covered. Service period begins with the equipment date of purchase. Service must be purchased during the original limited product warranty period. Service levels are response time objectives and are not guarantees. If the machine problem turns out to be a Customer Replaceable Unit (CRU), a part will be express shipped to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. P&L means parts and labor. P/U means pick-up. See ThinkPlus terms and conditions for complete details and restrictions.

- ⁸ RAID: Supported RAID levels for a system will vary from the stated capabilities of the RAID controller due to dependencies on the number and capacity of physical disks in the system and on customer requirements for performance, fault tolerance, or data redundancy.
 - RAID levels and requirements:
 - *RAID 0 (striping)* provides increased performance by writing data across multiple drives.
- RAID 1 (mirroring) provides fault tolerance by writing the data on two drives.
- RAID 5 (striping with parity) uses distributed parity data to provide fault tolerance more efficiently than RAID 1. Requires three or more drives.
- RAID 6 (striped set with dual distributed parity) provides fault tolerance from two drive failures; array continues to operate with up to two failed drives. Requires four drives.
- RAID 10 (or RAID 1+0) combines
 RAID 1 and RAID 0 to create a stripe of mirrors that is fault tolerant while offering increased performance.
 Requires four drives.
- RAID 50 (or RAID 5+0) combines RAID 5 and RAID 0 to create blocklevel striping with distributed parity improving performance over RAID 5. Requires six drives.
- *RAID 60 (or RAID 6+0)* combines RAID 6 and RAID 0 to create blocklevel striping with distributed double parity improving performance over RAID 6. Requires eight drives.

- ¹⁰ Modem speeds: Public network download speeds are limited to 53Kbps. Upload speeds are limited to 48Kbps for V.92 modems. Actual speeds depend on many factors and are often less than the maximum possible. V.92 functions and speeds require compatible phone line and server equipment. Check with your telephone and ISP service providers for availability.
- ¹¹ For combination drives, maximum speeds only are given in the following order: CD read, CD write, CD re-write, DVD read.
- ¹⁴ Response times may vary. May exclude some holidays. Telephone support may be subject to additional charges.
- ¹⁵ Update Connector is available at no charge to registered customers during the limited warranty period. Line charges may apply.
- ¹⁶ **Embedded Security Subsystem** works with optional VPN software.