PC Institute

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# Personal Systems Reference IBM @server xSeries

March 2001 - Version 218



IBM <sup>®</sup> Appliance Server Type-model Qnty x P	rocessor Memory	Disk	SCSI controller Me	echanical S	Slots x bays	Hot -swap disk bays	10/100 ethernet	Туре	Windows Powered C	s Availab DS dat
8654-1YX 1 x Pentiu	m <sup>®</sup> III 800 256MB	9.1GB 10K	Ultra160 1	U rack 2	slots x 4 ba	iys 2 hot-swap	2 x etherne	t AS	Preload	Nov 200
Processor SMP support Implementation L2 cache	Intel <sup>®</sup> Pentium <sup>®</sup> III 8 2-way SMP via ident Processor and L2 ca 256KB std and max	tical process ache in Flip-0	or / both VI Chip Pin Gri	RMs intear	ated on pla	nar vo Intel PGA370	sockets / te	rminato	or in empty	socket
Memory - std / max Memory - sockets Memory - features	256MB std / 1GB ma 4 sockets / 3 availab SDRAM / 133MHz /	le / Error Ch					PC133-comp	oliant		
Disk SCSI disk controller SCSI connectors IDE controller	9.1GB Ultra160 SCS Adaptec® AIC-7892 Internal 68-pin (attack Enhanced IDE / two	/ Wide Ultra hes 1-drop c	160 SCSI ( able to SCS	LVD 160N SI backplar	1B/sec) / sir ne); no exter	ngle channĕl / 6 mal SCSI connec	4-bit PCI / in tor	ie / 2.99 ntegrate	9ms averaged on moth	ge latency erboard
Architecture / chipsets Mechanical Control Panel	ServerWorks <sup>®</sup> Server NB6635 North Bridg two ethernet controll IB6566 South Bridge PC97317VUL (diske EIA 19" Rack (1U <sup>4</sup> ) Front indicators/swit	e 3.0LE (the lers, graphic e for IDE, US ette, parallel, / rack-mour	e North Bric s controller SB, ISA bus , serial, key nt only / sup	<ul> <li>F); PCI Bus s for Servio board, mo oported in</li> </ul>	s 1, 64-bit 3 ce Process ouse) IBM Netfini	3MHz, SCSI co or and Super I/0 ty Rack product	ntroller, two D National S s (rack requ	64-bit emicor ires ve	PCI slots) / iductor®	Ū
Ethernet controllers CD-ROM / diskette Serial / parallel / USB Ports	2 x Intel 82559 ethe capability and load b two RJ-45 connecto 24X-10X <sup>6</sup> CD-ROM; <i>Serial:</i> One 9-pin; <i>H</i> Two console ports in	balancing su rs on rear / : CAV (ATAP <i>Parallel:</i> Nor	ipport throu supports P2 I); bootable ne; USB: T	igh the cor XE 2.0 Boo ; IDE / 3.5' Two ports (	nnection of ot Agent / n ' 1.44MB di (Version 1.1	both ethernet p to Wake on LAN skette drive 1); <i>Mgmt:</i> Two	orts to the s I® support	ame LA	AN segmer	nt /
Systems mgmt Diagnostics	Integrated Advance reset, POST, and au Light-Path Diagnos	uto recovery	functions /	monitors	temperatur	e, fans, and pov	ver supply	•		-
Graphics controller	SVGA / PCI bus / S3		-		. ,					,
Security Software	Power-on password mgmt security (user Preloaded and optir Information Service Manageability (UM)	log-in pass mally tuned s 5.0, Netfin	worḋ, read- with Windo iity Web Se	only or rea ows Power erver Acce	ad/write aco red OS and lerator V2,	cess, dial back) <b>I appliance sof</b> t Netfinity Direct	/ unattende ware stack, or 2.12 (age	d start i Micros	mode oft Interne	t
Keyboard / mouse Cooling fans Power supply Prerequisites	None standard Eight fans (four for p and planar, two for p 200 watt / universal Remote managemen cabinet	power suppl / auto-sensi	y) ng / auto-re	estart supp	lisk(s) 25 9.0 oort 18 ck 36 Ne	entium III 800/13 36MB SDRAM E 1GB 10K-4 Ultra 3.2GB 10K-4 Ultra 3.4GB 10K-4 Ultr etfinity Gigabit E etfinity Rack (wit	CC DIMM 13 160 SCSI H a160 SCSI H a160 SCSI H a160 SCSI H thernet Adap	3MHz ( ot-Swap Hot-Swa Hot-Swa Iot-Swa	(RĎIMM II) SL HDD ap SL HDD ap SL HDD	37L7204 37L7205 37L7206 34L0301
					Ne Ne IB IB	etfinity Console S etfinity Console S etBay 1 x 4 Cons etBay 1 x 4 Cons M Smart-UPS M M Smart-UPS M PC Smart-UPS 5	Server Selec sole Switch sole Switch lodel 1400RI lodel 3000RI	tor Swit VIB for N	ch (8-port) Netfinity	28L0542 94G744 09N4290 09N4299 94G667 94G667 37L6861
Back PCI slot PCI PCI slot PCI slot PCI PCI slot PCI PCI Slot PCI PCI Fan Fan Pot-Swp Disk (std) Front Front	PCL slot Bay ② Bay ③ Bay ③ Bay ④ Slot 1: Slot 2: ○ Steal ○ H 1.7 ○ 44 to ○ Setul ○ PC-D ○ SCS: ○ PXE ○ DMI ○ DMI ○ Inclu ○ One ○ Steal	3.5", UltraS 5.25", UltraS 3.5", SL 1", 3.5", SL 1", fullsize, 64- halfsize, 64- lth black 72" (1U) x W b 62 lbs (min p Program is Doctor diagno ISelect near Bullet Agent 2.1, Wired ft des rack mo line cord ictive failure ules, memor	lim 0.8", ac ac bit 33MHz F bit 33MHz F bit 33MHz F ' 17.3" x D 2 imum to ma a available b ostics is ava startup by p near startu or Managen ounting kit analysis or y, fans, pov	ccess, std ccess, std ccess, ope PCI 2.1 (5v PCI 2.1 (5v 25.7" aximum co y pressing pressing C p by press nent 1.1a	CD-ROM hot-swap c en for hot-sv ) ) f1 at startu ressing F2 a TRL+A ing CTRL+S r(s), voltage	wap disk up at startup S e regulator	<ul> <li>3 year p</li> <li>International Internation</li> <li>On site</li> <li>All cities</li> <li>8 am - 1</li> <li>Next burrespon</li> <li>On site</li> <li>24 hr averation</li> <li>IBM Se</li> <li>IBM Se</li> <li>24 hou electron (www.p)</li> </ul>	barts an tional V warrar s in all 5 pm, M usiness se time varrar / 7 day ge res igible lo rver St sstemX r / 7 da rver St stemX r / 7 day	Ion- Fri co s day avera nty upgrad coverage ponse <sup>7</sup> tim ocations) art Up Sup	arranty <sup>3</sup> ervice <sup>3</sup> ars verage age e option: , 4 hour ie port e <sup>14</sup> , fax, ort

All models: Max int disk capacity: 72.8GB with two 36.4GB SL SCSI disks

●hs disk 9.1G

IBM <sup>®</sup> Appliance Server Type-model Qnty x P		emory	Disk	SCSI controller	Mechanica	I Slots x bay		ot -swap isk bays	10/100 etherne		Preload	Availabl dat
8654-1XX 1 x Pentiu	m <sup>®</sup> III 800 2	56MB	9.1GB 10K	Ultra160	1U rack	2 slots x 4 k	bays 21	not-swap	2 x ether	net AS	TurboLinux	Nov 200
Processor SMP support mplementation _2 cache	Intel <sup>®</sup> Pention 2-way SMP Processor a 256KB std a	via ide ind L2	ntical proce cache in Flip	ssor / both -Chip Pin	VRMs in	egrated on	planar / two In	tel PGA3	70 socket	s / term	inator in emp	oty socket
Memory - std / max Memory - sockets Memory - features	256MB std / 4 sockets / 3 SDRAM / 13	3 availa	able / Error (							mpliant		
Disk SCSI disk controller SCSI connectors DE controller		IC-7892 pin (att	2 / Wide Ultr aches 1-dro	a'160 SCS p cable to	I (LVD 16 SCSI bac	0MB/sec) / s kplane); no	single cl externa	nannel / ( I SCSI co	64-bit PCI onnector		.99ms avera ated on moth	
Architecture / chipsets Mechanical Control Panel	NB6635 Nor two ethernet IB6566 Sout PC97317VU	rth Brid t contro th Bridg JL (disk ck (1U <sup>4</sup>	lge 3.0LE (th ollers, graph ge for IDE, l kette, paralle ) / rack-mou	ne North B ics control JSB, ISA b el, serial, k unt only / s	ridge has ler); PCI E ous for Se eyboard, upported	Bus 1, 64-bit rvice Proces mouse) in IBM Netfin	33MHz sor and nity Rac	, SCSI co I Super I/ k produc	ontroller, t O Nationa ts (rack re	wo 64-b I Semic equires	z, IB6566 So it PCI slots) conductor® vented front	/
Ethernet controllers CD-ROM / diskette Serial / parallel / USB Ports	capability ar two RJ-45 c 24X-10X <sup>6</sup> CI	nd load onnect D-ROM 9-pin;	balancing s ors on rear 1; CAV (ATA <i>Parallel:</i> No	support thr / supports \PI); boota one; USB	ough the o PXE 2.0 E ble; IDE / : Two port	connection c Boot Agent / 3.5" 1.44ME s (Version 1	of both e no Wal diskett 1.1); <i>M</i>	ethernet p ke on LA e drive	oorts to th N <sup>®</sup> suppor	e same	us / redundar LAN segme systems ma	nt /
Systems mgmt Diagnostics	reset, POST	r, and a	auto recover	y functions	s / monito	rs temperatu	ire, fans	s, and po	wer suppl	y Ū	nt / allows di C-Doctor in l	•
Graphics controller	SVGA / PCI			0		, i	,		0			/
Security			0	· · ·	,					selecta	able boot / sy	stems
Software	mamt securi	ity (use <b>and op</b>	er log-in pas timally tune	sworḋ, rea <b>∋d with Tu</b>	d-only or r <b>boLinux</b>	read/write a	ccess. d	dial back	) / unatten	ded sta		
Keyboard / mouse Cooling fans Power supply Prerequisites	None standard Eight fans (four for processor(s) and planar, two for disk(s) and planar, two for power supply) 200 watt / universal / auto-sensing / auto-restart support Remote management console (client workstation), rack cabinet				r disk(s) 2 ipport rack 1 I I I I I I	256MB SDRAM ECC DIMM 133MHz (RDIMM II) 33L314         9.1GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L720         18.2GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L720         36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L720         36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L720         Netfinity Rack (with perforated door and side panels)         930691         Netfinity Console Server Selector Switch (4-port)         28L054         Netfinity Console Server Selector Switch (8-port)         94G744         NetBay 1 x 4 Console Switch         09N422         NetBay 1 x 4 Console Switch         09N425         IBM Smart-UPS Model 1400RMB for Netfinity         94G667					37L7204 37L7205 37L7206 els) 9306910 28L0542	
Back PCI alot PCI alot PCI alot PCI PCI Slot #2 PCI Slot #1 Motherboard UIMM Sockets Opt CPU Fan	Hot-Swp Disk (opt)	Bay @ Bay @ Bay @ Slot 1: Slot 2: Slot 2: Slot 2: Slot 2: Slot 2: Slot 4: Slot 4: Slot 2: Slot 2: Slo	<ul> <li>3.5", SL 1</li> <li>3.5", SL 1</li> <li>3.5", SL 1</li> <li>fullsize, 64</li> <li>halfsize, 64</li> <li>alth black</li> <li>.72" (1U) x \ to 62 lbs (mi up Program</li> <li>Doctor diagi SISelect neat</li> <li>Bullet Agei I 2.1, Wired udes rack me e line cord dictive failur</li> </ul>	Slim 0.8", ", -bit 33MH: -bit 33MH: N 17.3" x [ nimum tor is available oostics is a startup b nt near star for Manag iounting kit e analysis ory, fans, p int disk ca	access, s access, s access, o z PCI 2.1 2 PCI 2.1 0 25.7" maximum by pressi vailable by y pressing tup by pre ement 1.1 on proces ower supp pacity:	std CD-ROM std hot-swap open for hot- (5v) (5v) (5v) configuration ng F1 at star v pressing F2 CTRL+A ssing CTRL- a sor(s), volta oly, and disk	o disk swap di tup 2 at start +S ge regu	tup lator	<ul> <li>⇒ 3 yea</li> <li>⇒ Inter</li> <li>⇒ On s</li> <li>⇒ 8 am</li> <li>⇒ Next</li> <li>resp</li> <li>⇒ On s</li> <li>• 24</li> <li>av</li> <li>(int</li> <li>⇒ IBM</li> <li>⇒ 24 h</li> <li>elec</li> <li>(www</li> </ul>	ar parts nationa ite warf ties in - 5 pm busine onse ti ite war hr / 7 d erage r eligible Server Systen our / 7 ( cronic, i w.pc.ib	and labor w and labor w l Warranty S anty all 3 ye all states , Mon- Fri co ess day aver me ranty upgrad ay coverage esponse <sup>7</sup> tin e locations) Start Up Sup Xtra <sup>®,16</sup> day telephor and Internet m.com) supp iller warranty	varranty <sup>3</sup> Service <sup>3</sup> ears overage age de option: a, 4 hour ne oport ne <sup>14</sup> , fax, port

Type-model Qnty x Pr			Mechanical	,	10/100 ethernet	Type Powered C	
8658-33Y 1 x Pentiu 8658-3XY 2 x Pentiu	m® III 800 256MB 3 x 36.4GB Ultra m III 800 1GB 6 x 36.4GB Ultra			5 slots x 10 bays 5 slots x 10 bays			
Intel® processor(s) L2 cache Implementation SMP support	One or two Pentium® III 800EB MH 256KB std and max / ECC / at proc Motherboard contains two Intel Slot one VRM socket (one VRM integrat 2-way SMP via second identical 80	essor speed / pro 1 connectors for ed), four DIMM s	ocessor and SECC2 ca ockets, PC	d L2 cache in Sing rtridges (open Slot I slots, and integra	t 1 used by te ited subsyste	erminator), ems	
Memory - std / max Memory - sockets Memory - features	256MB or 1GB std / 2GB max (Wii 4 sockets / 3 available / ECC (all ha SDRAM / 133MHz / four 168-pin go	ave Error Checkin	ig and Corr	ecting (ECC) mem	ory controlle		
	<ul> <li>33Y: IBM ServeRAID-4L / Ultra160 pin internal connector, one 68-16-bit 68-pin LVD cable from 3XY: IBM ServeRAID-4H / Ultra160 2 external only) / two 68-pin in battery-backed / RAID 0, 1, 1E</li> <li>All: Adaptec® AHA-7899 / Ultra162 2 channels (both internal, no Single Primary IDE (ROSB4) South Three or six 36-4GB / 7200 rpm / Ult Six hot-swap / 80-pin SCA-2 connect</li> </ul>	-pin VHDCI exterr internal connecto ) SCSI (LVD 160M iternal connectors 5, 5E, 00, 10, 1E0 60 SCSI (LVD 160 external) / two 68 Bridge / one conn Bridge / one conn 1ra160 SCSI / 7.0	nal connecto or to backpl MB/sec) / 64 a, four 68-pi (0, 50 / 16-bit MB/sec) / 6 B-pin interna vector on pla ms or less	or / 16MB ECC cac ane I-bit PCI adapter / / n VHDCI external of t 68-pin LVD cable t4-bit PCI / on plan al connectors on pl anar / one 1-drop II average read seek	the / RAID 0, 4 channels (2 connectors / ^ from internal ar / lanar DE cable (CD time / 4.17 n	1, 1E, 5E, 00, 1 2 external/interna 128MB ECC cac connector to ba	0,1E0,50 / al, che, ickplane backplane
Mechanical Rack support Bus slots (see below Chip set Bays / available	Tower or EIA 19" Rack (5U <sup>4</sup> ) Rack systems supported in IBM Net PCI 2.1 (33MHz) / dual peer PCI / 64 graphics, ethernet, South Bridge) / n ServerWorks <sup>®</sup> ServerSet III™ LE cl Service Processor and Super I/O Na (See diagram below): 10 bays / three	I-biť PCI (three PC io hot-swap slots h <b>ip set</b> / NB6635 ational Semicondu	CI slots, SC North Bridg Ictor® PC97	SI controller) / 32-b e 3.0LE / IB6566 S 317VUL (diskette,	218.4GE k (no rack to it PCI (two P fouth Bridge f parallel, seria	<u>3<sup>2</sup> with six 36.4G</u> tower conversio CI slots, for IDE, USB, IS al, keyboard, mo	B <u>SL disks</u> on) A bus for ouse)
10/100 ethernet CD-ROM / diskette Serial / parallel / USE Graphics controller	All: AMD® Am79C975 / on planar / 33Y: <b>1 x Netfinity 10/100 Ethernet</b> 3XY: <b>3 x Netfinity 10/100 Ethernet</b> 40X-17X <sup>6</sup> CD-ROM / multisession / I Serial: Three 9-pin (one for Mgmt P SVGA / PCI 2.1 bus / S3® Savage4	Adapter 2 / 32-b Adapter 2 / 32-b DE interface / 1.6 rocessor) Paral	it PCI adapt it PCI adapt " HH / boot <i>IIeI:</i> One (EI	ter / full duplex / 82 ter / full duplex / 82 able; <i>Diskette:</i> 3.5 PP, ECP) / IEEE 12	559 chip set 559 chip set " 1.44MB disl 284 <i>USB:</i> 1	/ in Slot 1 / in Slot 1, 2, 4 kette drive / dus ſwo ports (Versi	on 1.1)
Security	Power-on password / administrator p power button, and reset button (towe password, read-only or read/write ad	er only) / unattend	led boot / s	electable boot / sys			
Systems mgmt Diagnostics Software	Integrated Advanced System Mgm POST, and auto recovery functions Diagnostics LED Panel (under cov system board error LEDs / diagnostic Preloaded and optimally tuned witl (agent only), Universal Manageabil tion Utility, Columbia Data Product	/ monitors tempe er) / Light-Path Di s in ROM by pres h Windows Powe ity (UM) Server E	agnostics™ sing F2 at s red OS and xtensions,	s, and power supp provides an LED n tartup for PC-Docto appliance softwa ServeRAID Manag	lies nap to failing or ire stack, Net ger, Advance	component / tfinity Director 2 ed Appliance Co	2.12
Keyboard / mouse Power supply Fans	<i>Tower only:</i> IBM 101-key keyboard <i>Std:</i> two 250 watt hot-swap; <i>Max:</i> th redundant with two power supplies / voltage-sensing / auto-restart / fans Two (fan in rear, blower in front) / no	ree 250 watt hot- worldwide / in each power su	swap /	Pentium III 800/133 128MB SDRAM EC 256MB SDRAM EC 512MB SDRAM EC 1GB SDRAM ECC	C DIMM 133 C DIMM 133 C DIMM 133 DIMM 133	MHz RDĬMM II MHz RDIMM II MHz RDIMM II Hz RDIMM II	10K2338 33L3123 33L3125 33L3127 33L3127 33L3129
Prerequisites	fan failure signals Diagnostic LED ar fan failure signals Diagnostic LED ar fan in each power supply Monitor, disk; rack model requires ra	nd Mgmt Process	or /	Netfinity 5Ux24D To Netfinity 250W Hot- 36.4GB Ultra160 So 36.4GB 10K-4 Ultra	Swap Redun	idant Pwr Supply SL HDD	37L7203
Slot 2: fullsize, 32-b Slot 3: fullsize, 64-b Slot 4: fullsize, 64-b Slot 5: fullsize, 64-b Slot 5: fullsize, 64-b Bay 5.25" HH CD-ROM	it 33MHz PCI 2.1 (5v), Bus A* it 33MHz PCI 2.1 (5v), Bus B** it 33MHz PCI 2.1 (5v), Bus B* it 33MHz PCI 2.1 (5v), Bus B ① 3.5", SL 1", access, diskette ② 3.5", SL 1", access, hot swap* ③ 3.5", SL 1", access, hot swap* ③ 3.5", SL 1", access, hot swap* ⑤ 3.5", SL 1", access, hot swap* ③ 3.5", SL 1", access, open ④ 5.25", HH 1.6" access, open ④ 5.25", HH 1.6" access, CD-ROM ⑤ 2 through 7 support 6 SL disks HH hot-swap disks via SCA-2 bectors; Bays 8 and 9 support 3.5" S via Media Bay Conversion Kit	<ul> <li>Operator Inform</li> <li>Predictive failur memory, process</li> <li>and fans in con</li> </ul>	dapter slots bles device rives) to sna etup Utility i startup ar startup by nation Pane e analysis o ssors, VRM junction witt rt the syste component x W 8.6" x W 16.8" x I unds olor ps bays usi	(no screws) s (CD-ROM, ip in and out nvoked by r pressing l (in front) on disk options, s, power supplies, h Netfinity m administrator failure D 26.0" D 24.8"	<ul> <li>3 year pa</li> <li>Internatio</li> <li>On site w</li> <li>All cities</li> <li>8 am - 5 j</li> <li>Next bus response</li> <li>On site w</li> <li>(in eligibl</li> <li>24 hr / averag</li> <li>24 hr / averag</li> <li>90-day IE</li> <li>IBM Syst</li> <li>24 hor / electroni (www.pc</li> </ul>	varranty upgrade le locations): 7 day coverage, e response <sup>7</sup> time 7 day coverage, e response <sup>7</sup> time 8M Start Up Sup	ervice <sup>3</sup> ervice <sup>3</sup> ervice <sup>3</sup> everage ge e options 4 hour 2 hour port port e <sup>14</sup> , fax, port

All trademarks are the property of their respective owners • = Hot Swap; \* = Slot or bay may be occupied by ethernet adapter or disk in some models \*\* = Slot occupied by ServeRAID adapter

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IBM <sup>⊚</sup> Type-model Process	sor Memory Disk 1	Disk Fape controller	Mechanical		Hot-swap disk bays	ethernet	Available date
8478-10X Celeron™ 6 8478-11X Celeron 66 8478-12X Celeron 66	667/66 128MB None N 17/66 64MB 15GB N 17/66 64MB 15GB T 1800/133 128MB None N 800/133 64MB 15GB N 866/133 128MB None N	None Ultra160, EIDE None EIDE Fape EIDE None Ultra160, EIDE None EIDE None Ultra160, EIDE	Mini Tower Mini Tower Mini Tower Mini Tower Mini Tower Mini Tower	5 slots x 7 bays 5 slots x 7 bays	None None None None None None None	10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet	Oct 2000 Oct 2000 Oct 2000 Oct 2000 Oct 2000 Oct 2000
Intel <sup>®</sup> processor L2 cache Implementation	Motherboard contains one I two-slot PCI extender board	nax / ECC / at processo 2 cache in Flip-Chip Pin Intel PGA370 socket, or	r speed; Pentit Grid Array (FC ne integrated V	<i>um III:</i> <b>256KB</b> st C-PGA) RM, three DIMM	td and max /	ECC / at process	or speed
SMP support Memory - std / max Memory - sockets Memory - features Memory - support	No SMP support 64MB or 128MB std / 1.5G 3 sockets / 2 available / EC SDRAM / 133MHz / three 1 Supports unbuffered SDRA	C (Error Checking and 68-pin gold-plated DIM				roller	
SCSI disk controller SCSI connectors RAID support IDE disk controller Cables Disk - features Tape drive	Some models: Adaptec 29 64-bit 33MHz PCI adapter SCSI models: One 68-pin i Supports optional PCI RAII Enhanced IDE busmaster SCSI models: one 5-drop E EIDE models: two 2-drop E Some models: 15GB EIDE	9160LP / single chann (in a 32-bit slot) / one c internal SCSI connecto D adapters / ATA-66 support (ATA- 16-bit LVD SCSI cable, EIDE cables (one cable	channel with up r / one 0.8mm -100 on later m one 2-drop Ell to CD-ROM, ( 8.7 ms average	o to 15 device s VHDCI 68-pin e nodels) / two co DE cable (conn one cable to Ell	upport external SCS nnectors on ected to CD DE disk)	SI connector planar -ROM)	
Rack support Architecture / chipsets	4U <sup>4</sup> rack mount support via VIA <sup>®</sup> Apollo Pro133A chip AGP 4X) / VIA VT82C686A keyboard, mouse)	set / VT82C694X Nort	h Bridge (memo	ory controller, P 86B is ATA-100]	CI 2.2 32-bit , USB, diske	t 33MHz controller ette, parallel, serial	3
CD-ROM / diskette External ports Diagnostics	Intel 82559 / on planar / 10 48X-20X <sup>6</sup> CD-ROM / CAV ( <i>Serial:</i> Two 9 pin; <i>Parallel:</i> audio line in, audio line out POST and server diagnosti Monitoring and alerting of r eXecution Environment (P2)	(ATAPI) / bootable / IDI One (EPP, ECP) / IEEI t, microphone in c programs are stored o memory, thermal, or vo	E Diskett E 1284; USB: T on the IBM Enh	<i>te:</i> 3.5" 1.44MB Гwo (Ver 1.1); k nanced Diagnos	diskette driv eyboard, DE tics CD	ve 3-15 analog video	, mouse,
Graphics controller	SVGA / S3 Savage4 LT / A 60Hz to 85Hz vertical refre			d max / DPMS	and DDC2B	-compliant /	
Security	Cover key lock / U-Bolt sup chassis intrusion protection			uence control / n III 800MHz/25	-		ouse / 21P9539
Software	ServerGuide™ (CD-based installation and configuratio and APC PowerChute Plus (system hardware mgmt so	on tool), Norton AntiViru s / includes IBM Directo	S Pentiun us™, 64MB S or 128MB ies 256MB	n III 866MHz/25 SDRAM ECC 1 SDRAM ECC 1 SDRAM ECC 1 SDRAM ECC 1	6KB Proc U 33MHz unbu 33MHz unbu 33MHz unbu	og Iffered DIMM uffered DIMM uffered DIMM	10K3818 33L3079 33L3081 33L3083
Keyboard / mouse Cooling fans Power supply	IBM 101-key keyboard / IBI Three cooling fans (power s not redundant or hot-swap 330 watts / universal / auto Automatic Server Restart ( <i>k</i> hot-swap / cooling fan in po	supply, front, rear) / / fans have two speeds switch / ASR) / not redundant or	IBM 4L IBM 20 IBM 30 IBM 9.1 IBM 18 IBM 18 IBM 3.1 IBM 18	SDRAM ECC 1 Jx20D Tower-to 0.4GB ATA-100 IGB ATA-100 E IGB 7200rpm U .2GB 7200rpm I .4GB 7200rpm I IGB 10K Ultra16 .2GB 10K Ultra1 .4GB 10K Ultra1	-Rack Kit EIDE HDD IDE HDD Itra160 SCS Ultra160 SCS Ultra160 SCS 00 SCSI HDI 160 SCSI HDI	I HDD SI HDD SI HDD D DD	33L3085 09N4300 19K4461 00N8203 00N8204 00N8205 00N8205 00N8206 00N8207 00N8208 00N8209
Slot 1: fullsize, 32-bit Slot 2: fullsize, 32-bit Slot 3: fullsize, 32-bit Slot 4: fullsize, 32-bit Slot 5: fullsize, 32-bit Slot 5: fullsize, 32-bit Bay 3 Bay 4 Bay 3 Bay 3	X, 25 watt (3.3v) - used by s 33MHz, PCI 2.2 (5v) 33MHz, PCI 2.2 (5v) - slot h 33MHz, PCI 2.2 (5v) - slot h 33MHz, PCI 2.2 (5v) - on tw 33MHz, PCI 2.2 (5v) - on tw 5.25", HH1.6", access, Oper 3.5", SL 1", access, oper 3.5", SL	A Alert on LAN 2 supp by SCSI adapter ro-slot PCI extender boa ro-slot PCI extender boa ROM n or tape ette n - Removable la n - Configuration (some) - RCSISelect ro SCSISelect ro CTRL+A - Adv Config F - ISO 9241-3 o	adptr ort ard <i>hternal SCSI dis</i> disks x 36.4GE eft side panel h/Setup Utility ( oked by pressin hear startup by Power Interface	sk capacity: 3) in flash ng F1 at pressing (ACPI) 1.0	LIM 3 year part Internation 1st year: o Mon throu next busin 2 nd/3rd ye call 1-800- On site wa (in eligible • 24 hr / 7 average • 9 hour o excludin day resp > IBM Serve > 24 hour / 7 electronic, support (w	ITED WARRAN its / 1 year labor was hal Warranty Servi on site, 8 am throu- gh Fri excluding h less day response har: parts exchang 772-2227 Irranty upgrade op locations): day coverage, 4 h response <sup>7</sup> time (2 coverage, Mon thro ng holidays, next h ponse <sup>7</sup> time (21P20 r Start Up Support	FY arranty <sup>3</sup> ce <sup>3</sup> gh 5 pm, iolidays, time e only, tions nour 1P2021) pugh Fri pusiness D22) tax,

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#### IBM @server xSeries 200 (Spring 2001)

IBM <sup>®</sup> Type-model Proces	sor Memory	Disk Tape	Disk controller	Mechanical	Slots x bays	Hot-swap disk bays	ethernet	Available date
8478-20X Celeron™ 8478-21X Celeron 7 8478-22X Celeron 7 8478-60X Pentium <sup>®</sup> I 8478-61X Pentium II 8478-70X Pentium III 8478-71X Pentium III	33/66 64MB 33/66 64MB II 933/133 128MB 933/133 64MB I 1GHz <sup>1</sup> /133 128MB	20.4GB None 15GB Tape None None 15GB None None None	e EIDE	Mini Tower Mini Tower Mini Tower Mini Tower Mini Tower	5 slots x 7 bays 5 slots x 7 bays 5 slots x 7 bays 5 slots x 7 bays 5 slots x 7 bays	None None None None None None	10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet	Mar 2001 Mar 2001 Mar 2001 Mar 2001 Mar 2001
Intel® processor L2 cache Implementation SMP support	Pentium III: 256KB	std and max / E std and max / E sor and L2 cach is one Intel PG	ECC / at processor s ECC / at processor s le in Flip-Chip Pin G A370 socket, one in	speed speed Grid Array (Fo tegrated VR	C-PGA) M, three DIMM :			
Memory - std / max Memory - sockets Memory - features Memory - support	64MB or 128MB std 3 sockets / 2 availab SDRAM / 133MHz / Supports unbuffered	le / ECC (Error three 168-pin g	old-plated DIMM 3.				roller	
SCSI disk controller SCSI connectors RAID support IDE disk controller Cables Disk - features Tape drive	Some models: Adap 64-bit 33MHz PCI a <i>SCSI models</i> : One P Enhanced IDE busn <i>SCSI models</i> : one 5 <i>EIDE models</i> : two 2 <i>Some models</i> : 20.40 <i>Model 22X</i> : 10/20	dapter (in a 32 68-pin internal CI RAID adapt haster / ATA-66 5-drop 16-bit L\ -drop EIDE cal 6B EIDE / ATA-	bit slot) / one chan SCSI connector / o ers S support (ATA-100 /D SCSI cable, one oles (one cable to	nel with up t ne 0.8mm V on later mo 2-drop EID CD-ROM, or	o 15 device sup HDCI 68-pin ex dels) / two conr E cable (connec ne cable to EIDE	port ternal SCS tectors on ted to CD disk)	6I connector planar -ROM)	
Rack support Architecture / chipsets	4U <sup>4</sup> rack mount supp VIA <sup>®</sup> Apollo Pro133 AGP 4X) / VIA VT82	A chip set / V	82C694X North Br	idge (memor ), USB, diske	y controller, PCI ette, parallel, ser	2.2 32-bit ial, keyboa	33MHz controller ard, mouse)	,
100/10Mbps ethernet CD-ROM / diskette External ports Diagnostics Systems mgmt	Intel 82559 / on plan 48X-20X <sup>6</sup> CD-ROM <i>Serial:</i> Two 9 pin; <i>P</i> audio line in; audio POST and server di Monitoring and alert eXecution Environm	/ CAV (ATAPI) arallel: One (Ef ine out; microp agnostic progra ing of memory	/ bootable / IDE PP, ECP) / IEEE 12 hone in ms stored on IBM B	<i>Diskette</i> 84; <i>USB:</i> Tv Enhanced Di	: 3.5" 1.44MB di /o (Ver 1.1); key agnostics CD	skette driv board, DE	/e 3-15 analog video	; mouse;
Graphics controller	SVGA / S3 Savage 60Hz to 85Hz vertic	LT / AGP 4X al refresh / ana	adapter / 8MB SDR llog 15-pin D-Sub c	AM std and connector	max / DPMS an	d DDC2B	-compliant /	
Security	Cover key lock / U-E chassis intrusion pr		ower-on password		nce control / op III 933MHz/256k			nouse / 10K3819
Software	ServerGuide™ (CD installation and cont and APC PowerChu (system hardware m	iguration tool), ite Plus / includ	Norton AntiVirus™ es IBM Director	64MB SI 128MB S 256MB S	III 1GHz/256KB DRAM ECC 133 DRAM ECC 133 DRAM ECC 133 DRAM ECC 133	MHz unbu 3MHz unbu 3MHz unbu	uffered DIMM	10K0051 33L3079 33L3081 33L3083 33L3085
Keyboard / mouse Cooling fans Power supply	IBM 101-key keyboa Three cooling fans ( not redundant or hot 330 watts / universa Automatic Server Re hot-swap / cooling fa	power supply, f -swap / fans ha I / auto switch / estart (ASR) / n	ront, rear) / ave two speeds ot redundant or	IBM 4Ux IBM 20.4 IBM 30G IBM 9.10 IBM 18.2 IBM 36.4 IBM 9.10 IBM 18.2	20D Tower-to-F GB ATA-100 EID B ATA-100 EID B 7200rpm Ultra GB 7200rpm Ult GB 7200rpm Ult B 10K Ultra160 GB 10K Ultra160 GB 10K Ultra160	ack Kit DE HDD E HDD a160 SCSI ra160 SCS ra160 SCS SCSI HDD SCSI HDD SCSI HDD	HDD SI HDD SI HDD J D	09N4300 19K4461 00N8203 00N8204 00N8205 00N8206 00N8207 00N8208 00N8209
Slot 1: fullsize, 32-bit Slot 2: fullsize, 32-bit Slot 3: fullsize, 32-bit Slot 4: fullsize, 32-bit Slot 5: fullsize, 32-bit CD-ROM	33MHz, PCI 2.2 (5v) 33MHz, PCI 2.2 (5v) 33MHz, PCI 2.2 (5v) 33MHz, PCI 2.2 (5v) 5.25", HH1.6", acces 5.25", HH1.6", acces 3.5", SL 1", acces 3.5", SL 1", acces 3.5", SL 1", acces	- slot has Alert - used by SCS - on two-slot P - on tw	on LAN 2 support I adapter Cl extender board Cl extender board 145.6GB (4 disk - Removable left s - Configuration/Se memory) invoked startup	al SCSI disk s x 36.4GB) ide panel tup Utility (in I by pressing startup by p er Interface (	<i>capacity:</i> flash F1 at ressing ACPI) 1.0	3 year part Internation 1st year: o Mon throug next busin 2nd/3rd ye call 1-800-7 On site wa in eligible 9 9 hour c excludir day resp 24 hr / 7 average BM Servel BM Syster 24 hour / 7 selectronic, support (w	rranty upgrade op locations): overage, Mon thr og holidays, next l onse <sup>7</sup> time (21P2 day coverage, 4 1 day coverage, 4 1 response <sup>7</sup> time (2 r Start Up Suppor	arranty <sup>3</sup> ice <sup>3</sup> gh 5 pm, holidays, t time e only, otions ough Fri business 221) hour t1P2022) t

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IBM <sup>®</sup> Type-model Qnty x	Processor	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot-swap disk bays	ethernet	Available date
8645-21X 1 x Pentiu 8645-22X 1 x Pentiu 8645-2AX 1 x Pentiu 8645-31X 1 x Pentiu 8645-32X 1 x Pentiu 8645-3AX 1 x Pentiu 8645-41X 1 x Pentiu 8645-42X 1 x Pentiu 8645-4AX 1 x Pentiu	m III 800/133 m III 800/133 m III 866/133 m III 866/133 m III 866/133 m III 933/133 m III 933/133		18.2GB None 18.2GB None None 18.2GB	Ultra160 Ultra160 Ultra160 Ultra160 Ultra160	Mini Tower Mini Tower Mini Tower Mini Tower Mini Tower Mini Tower Mini Tower	5 slots x 7 bays 5 slots x 7 bays		10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet	Oct 2000 Oct 2000 Oct 2000 Oct 2000 Oct 2000 Oct 2000 Oct 2000 Oct 2000 Oct 2000
Intel <sup>®</sup> processor(s) L2 cache Implementation SMP support	Motherboard co one empty), for	I max / E0 ontains tw ur DIMM :	CC / at pro vo Intel Po sockets, f	ocessor spe GA370 soc ive PCI slot	eed / process kets (one use ts, and integr	or and L2 cache ed and one with te ated subsystems	erminator), two	in Grid Array (FC-PG o VRM sockets (one ) socket (370-pin ZII	used and
Memory - std / max Memory - sockets Memory - features Memory - support		vailable / <b>/Hz</b> / four	r 168-ṗin g	gold-plated		ting) DIMMs and It sockets / PC13		controller	
SCSI disk controller SCSI connectors RAID support IDE disk controller Cables Disk - features	One 68-pin into Supports optio Enhanced IDE Non hot-swap Hot-swap mod All: one 2-drop	ernal con nal PCI F busmast <i>models:</i> { <i>lels:</i> 2 o IDE cab	nector / n RAID adap er / Ultra 5-drop 16 2-drop 16 ble (one d	to external pters DMA/33 (A -bit LVD So -bit LVD So rop to CD-	SCSI connect ATA-33) supp CSI cable CSI cable (pl ROM)		tor on planar o SCSI backp	on planar / 64-bit 33 lane)	MHz PCI 2.1
Rack support Bus slots (see below) Architecture / chipsets	4U <sup>4</sup> rack moun PCI 2.1 (33MH 32-bit PCI (two ServerWorks®	t support z) / dual p PCI slots	via tower beer PCI / s, graphics et III LE c	-to-rack kit ′ 64-bit PCI s, ethernet, <b>:hip set</b> / N	option (three PCI sl South Bridge IB6635 North	ots, SCSI controll e, USB)	er) / 36566 South B		
100/10Mbps ethernet CD-ROM / diskette External ports Diagnostics Systems mgmt cntrl	Wake on LAN® 48X-20X <sup>6</sup> CD-F <i>Serial:</i> Two 9 p Diagnostic LEE Two ADM1024	<sup>®</sup> / suppor ROM / C <i>I</i> bin; <i>Paral</i> Ds / error I chips / r	rts Wake AV (ATAP <i>lel:</i> One ( LEDs for nonitors p	on LAN via I) / bootabl EPP, ECP) processor processor t	optional ada le / IDE / IEEE 1284 (s), DIMM(s) emperature,	pter with 3-wire o <i>Diskette:</i> 3.5" 1. ; <i>USB:</i> Two (Ver , Voltage Regula fan speeds, and	cable to plana 44MB diskett 1.1); keyboar tor Module(s) voltage /	r	eo, mouse
Graphics controller	SVGA / S3 Sav	vage4 LT	/ on plan	ar / 8MB S	DRAM std ar		CI / DPMS an	d DDC2B compliant	/
Security	Cover key lock	c / U-Bolt	support /	power-on	password / b	oot sequence co	ntrol / operation	on without kybd and	mouse
Software	ServerGuide™ installation and Application Se plus five client PowerChute P hardware mgm	d configur rver R5 (\ licenses¹ lus / inclu	ration too Windows <sup>19</sup> , Norton udes Netfi	l), Lotus® D NT or Linu AntiVirus™ inity Directo	Domino <sup>®</sup> ix version) /, and APC or (system	Pentium III 800M Pentium III 866M Pentium III 933M 128MB SDRAM 256MB SDRAM	Hz/256KB Pr Hz/256KB Pr Hz/256KB Pr ECC DIMM 1 ECC DIMM 1	oc Upg oc Upg 33MHz RDIMM 33MHz RDIMM	09N7585 21P9539 10K3818 10K3819 33L3142 33L3144
BIOS Keyboard / mouse Cooling fans Power supply	2MB in Flash E IBM 101 key ke Three cooling f not redundant / 330 watts / univ Automatic Serv cooling fan in p	eyboard / ians (pow / variable versal / au /er Resta	er supply speed fro uto switch rt (ASR) /	, front, rear ont and rea i /	) / r fans	IBM 36.4GB 10k IBM 9.1GB 15K IBM 18.2GB 15k	CC DIMM 1330 wer-to-Rack I (Ultra160 SCS (Ultra160 SCSI (Ultra160 SCSI (Ultra160 SCSI	MHz RDIMM Kit SI HDD (not hot-swap SI HDD (not hot-swap	
CD-ROM algo 2 black CD-ROM Bay 2 Bay 3 Bay 4 Bay 4 Bay 5 Bay 5 Bay 6 Bay 7 Bay 7	33MHz, PCI 2.1 33MHz, PCI 2.1 33MHz, PCI 2.1 33MHz, PCI 2.1 5.25", HH1.6", 5.25", HH1.6", 3.5", SL 1", 3.5", SL 1", 3.5", SL 1", 3.5", SL 1", 3.5", SL 1",	1 (5v) 1 (2 1 (5v) 1 (5v) 1 (2 1 (5v) 1 (5	45.6GB (4 CD-ROM open (no d diskette open open open std disk rotate out oling s	<ul> <li>disks x 36</li> <li>Remov</li> <li>Config memory</li> <li>Config</li> <li>ScSIS</li> <li>CTRL+</li> <li>Diagno</li> <li>F2 at s</li> <li>Alt+F1</li> <li>partitio</li> <li>Adv Co</li> </ul>	vable left side uration/Setup y) invoked by elect near sta A ostics (PC-Do tartup at startup fo n	e panel b Utility (in flash y pressing F1 at artup by pressing octor) by pressing r optional system nterface (ACPI) 1	<ul> <li>Intern</li> <li>⇒ Intern</li> <li>⇒ 1st ye Mon t</li> <li>&gt; 2nd/3 call 1-</li> <li>⇒ 2nd/3 call 1-</li> <li>⇒ 0 n sii</li> <li>(in eli,</li> <li>• 24</li> <li>ave</li> <li>• 9h</li> <li>exc day</li> <li>⇒ IBM S</li> <li>⇒ IBM S</li> <li>⇒ IBM S</li> <li>⇒ 24 ho</li> <li>electr suppo</li> </ul>	LIMITED WARRAM r parts / 1 year labor v lational Warranty Ser ear: on site, 8 am thro hrough Fri excluding ousiness day response rd year: parts exchar 800-772-2227 te warranty upgrade of gible locations): hr / 7 day coverage, 4 erage response <sup>7</sup> time our coverage, Mon the cluding holidays, nex y response <sup>7</sup> time ierver Start Up Suppo systemXtra <sup>®,16</sup> ur / 7 day telephone <sup>13</sup> onic, and Internet ort (www.pc.ibm.com r reseller warranty/se	warranty <sup>3</sup> vice <sup>3</sup> pugh 5 pm, I holidays, se time oge only, options 4 hour hrough Fri t business ort 4, fax,

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#### IBM @server xSeries 220 (Spring 2001)

IBM◎ Type-model	Qnty x Processor	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot-swap disk bays	ethernet	Available date
8645-52X	1 x Pentium <sup>®</sup> III 1GHz <sup>1</sup> /13 1 x Pentium III 1GHz/133 1 x Pentium III 1GHz/133	128MB	None 18.2GB None	Ultra160 Ultra160 Ultra160	Mini Tower	5 slots x 7 bays 5 slots x 7 bays 5 slots x 7 bays	None	10/100 ethernet 10/100 ethernet 10/100 ethernet	Mar 2001 Mar 2001 Mar 2001

Intel <sup>®</sup> processor(s) L2 cache Implementation SMP support	one empty), four DIMM sockets, five PCI slots, and integr	ed and one with terminator), two VRM sockets (one used and					
Memory - std / max Memory - sockets Memory - features Memory - support	128MB std / 4GB max 4 sockets / 3 available / ECC (Error Checking and Correc SDRAM / 133MHz / four 168-pin gold-plated DIMM 3.3 vo Supports registered SDRAM ECC DIMMs	ting) DIMMs and ECC memory controller					
SCSI disk controller SCSI connectors RAID support IDE disk controller Cables Disk - features	Adaptec® AHA-7892 / single channel Wide Ultra160 SCSI controller (160MB/sec) / on planar / 64-bit 33MHz PCI 2.1         One 68-pin internal connector / no external SCSI connector         Supports optional PCI RAID adapters         Enhanced IDE busmaster / Ultra DMA/33 (ATA-33) support / one connector on planar         Non hot-swap models: 5-drop 16-bit LVD SCSI cable         Hot-swap models:       2-drop 16-bit LVD SCSI cable (planar connector to SCSI backplane)         All: one 2-drop IDE cable (one drop to CD-ROM)         Some models:       18.2GB Wide Ultra160 SCSI / 10K rpm / 5.2ms average read seek time						
,	4U <sup>4</sup> rack mount support via tower-to-rack kit option PCI 2.1 (33MHz) / dual peer PCI / 64-bit PCI (three PCI sl 32-bit PCI (two PCI slots, graphics, ethernet, South Bridge ServerWorks® ServerSet III LE chip set / NB6635 North ISA bus for Super I/O National Semiconductor® PC97317	e, USB) Bridge 3.0LE / IB6566 South Bridge for IDE, USB,					
100/10Mbps ethernet CD-ROM / diskette External ports Diagnostics Systems mgmt cntrl	Intel 82559 / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit 33MHz PCI bus / RJ-45 connector / no support for Wake on LAN® / supports Wake on LAN via optional adapter with 3-wire cable to planar 48X-20X <sup>6</sup> CD-ROM / CAV (ATAPI) / bootable / IDE <i>Diskette:</i> 3.5" 1.44MB diskette drive <i>Serial:</i> Two 9 pin; <i>Parallel:</i> One (EPP, ECP) / IEEE 1284; <i>USB:</i> Two (Ver 1.1); keyboard, DB-15 analog video, mouse Diagnostic LEDs / error LEDs for processor(s), DIMM(s), Voltage Regulator Module(s), and fan connectors Two ADM1024 chips / monitors processor temperature, fan speeds, and voltage / support for optional Remote Supervisor Adapter (provides continuous health monitoring and control)						
Graphics controller	SVGA / S3 Savage4 LT / on planar / 8MB SDRAM std ar 60Hz to 160Hz vertical refresh; 16.7 million colors at 160						
Security	Cover key lock / U-Bolt support / power-on password / b	oot sequence control / operation without kybd and mouse					
Software	ServerGuide™ (CD-based automated network OS installation and configuration tool), IBM Director (system hardware mgmt software) and many utilities, Norton AntiVirus™, APC PowerChute Plus	Pentium III 1GHz/256KB Proc Upg         10K0051           128MB SDRAM ECC DIMM 133MHz RDIMM         33L3142           256MB SDRAM ECC DIMM 133MHz RDIMM         33L3144           512MB SDRAM ECC DIMM 133MHz RDIMM         33L3144					
BIOS Keyboard / mouse Cooling fans Power supply	2MB in Flash EEPROM IBM 101 key keyboard / IBM Enhanced mouse Three cooling fans (power supply, front, rear) / not redundant / variable speed front and rear fans 330 watts / universal / auto switch / Automatic Server Restart (ASR) /no redundancy / cooling fan in power supply	1GB SDRAM ECC DIMM 133MHz RDIMM33L3152IBM 9.1GB 10K Ultra160 SCSI HDD (not hot-swap)00N8207IBM 18.2GB 10K Ultra160 SCSI HDD (not hot-swap)00N8208IBM 36.4GB 10K Ultra160 SCSI HDD (not hot-swap)00N8209IBM 9.1GB 15K Ultra160 SCSI Hot-Swap HDD19K0655IBM 18.2GB 15K Ultra160 SCSI Hot-Swap HDD19K0656IBM 36.4GB 10K-4 Ultra160 SCSI Hot-Swap HDD37L7206IBM 36.4GB 10K-4 Ultra160 SCSI Hot-Swap HDD37L7206IBM Remote Supervisor Adapter (PCI adapter)09N7585IBM 4Ux20D Tower-to-Rack Kit09N4300IBM Netfinity ServeRAID-4L Ultra160 SCSI Controller37L6091					
Slot 1: fullsize, 32-bit Slot 2: fullsize, 32-bit		LIMITED WARRANTY					
Slot 3: fullsize, 64-bit Slot 4: fullsize, 64-bit Slot 5: fullsize, 64-bit CD-ROM Bay 1 Bay 2	33MHz, PCI 2.1 (5v)         33MHz, PCI 2.1 (5v)         33MHz, PCI 2.1 (5v)         33MHz, PCI 2.1 (5v)         145.6GB (4 disks x 36.4GB)         5.25", HH1.6", access, CD-ROM         5.25", HH1.6", access, open (no disk)         3.5", SL 1", access, open         3.5", SL 1", access, open	<ul> <li>Ist year: on site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time</li> <li>2nd/3rd year: parts exchange only, call 1-800-772-2227</li> <li>On site warranty upgrade options</li> </ul>					
diskette ④ Bay ⑤ Bay ⑦ Bay ⑦	3.5", SL 1", access, open 3.5", SL 1", access, open 3.5", SL 1", access, open 3.5", SL 1", access, std disk startup	(in eligible locations): Utility (in flash • 24 br / 7 day coverage 4 bour					

Diagnostics (PC-Doctor) by pressing F2 at startup

Adv Config Power Interface (ACPI) 1.0
ISO 9241-3 capable

- Alt+F1 at startup for optional system

Metal cage for disk bays 5,6,7 rotate out of - SCSISelect near startup by pressing

\_

CTRL+A

partition

-	On site warranty upgrade options
	(in eligible locations):
	• 24 br / 7 day covorage 4 hour

- average response<sup>7</sup> time (21P2022)
- 9 hour coverage, Mon through Fri excluding holidays, next business day response<sup>7</sup> time (21P2023)
- IBM Server Start Up Support
- IBM SystemXtra<sup>®,1</sup>
- 24 hour / 7 day telephone<sup>14</sup>, fax, electronic, and Internet support (www.pc.ibm.com)
- IBM or rèseller warranty/sérvice

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Four stabilizing feet

chassis for easy access for cabling backplane or working with disks

Handle grip on top
 H 18.5" x W 6.5" x D 20.0"
 H 470mm x W 165mm x D 508mm

35 to 43 pounds (15.9 to 19.5kg)

= Hot Swap bays in some models

 $\Box$ 

6 •

Mini-tower

Stealth

black

disk

IBM®				SCSI			Hot -swap		Available
Type-model	Qnty x Processor	Memory	Disk	controller	Mechanical	Slots x bays	disk bays	ethernet	date
	x Pentium <sup>®</sup> III 1GHz <sup>1</sup> 133 x Pentium III 1GHz/133	128MB 128MB		2 x Ultra16 2 x Ultra16		5 slots x 10 bays 5 slots x 10 bays		10/100 ethernet 10/100 ethernet	

Intel <sup>®</sup> processor(s) L2 cache Implementation SMP support Processor upgrades	1 x Pentium <sup>®</sup> III 1GHz <sup>1</sup> with 133MHz Front Side Bus 256KB std and max / ECC / at processor speed / processor and Motherboard contains two Intel Slot 1 connectors for SECC2 ca one VRM socket (one VRM integrated), four DIMM sockets, PC 2-way SMP via second identical processor / upgrade via SEC Models with 800EB and 866MHz can not upgrade to 933MHz	irtridges (open Slot 1 I slots, and integrate	used by terminator), ed subsystems					
Memory - std / max Memory - sockets Memory - features	128MB std / 4GB max 4 sockets / 3 available / ECC (all have Error Checking and Co SDRAM / 133MHz / four 168-pin gold-plated sockets / PC133-							
SCSI channels	Adaptec® AHA-7899 / dual channel Wide Ultra160 SCSI controller (LVD 160MB/sec) / Ultra 160/m / on planar / 64-bit PCI / supports IBM ServeRAID adapters (no hardware RAID standard) Two internal 16-bit channels / both internal (no external) SCSI Channel A: 16-bit 68-pin LVD cable from controller to backplane Channel B: 16-bit 68-pin interface (not used) e Single Primary IDE (ROSB4) South Bridge / one connector on planar / one 1 drop IDE cable (CD-ROM) None standard / supports 7200-10000 rpm disks / 1 backplane Six hot-swap / 80-pin SCA-2 connectors / common tray with EXP200 and later							
Systems like Netfinity and xSeries systems         Mechanical Rack support       Tower or EIA 19" Rack (5U <sup>4</sup> ) Rack systems supported in IBM NetfinityRacks / kit available to convert tower to rack (no rack to tower conversion)         Bus slots (see below)PCI 2.1 (33MHz) / dual peer PCI / 64-bit PCI (three PCI slots, SCSI controller) / 32-bit PCI (two PCI slots, graphics, ethernet, South Bridge) / no hot-swap slots         Chip set       ServerWorks® ServerSet III™ LE chip set / NB6635 North Bridge 3.0LE / IB6566 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)         Bays / available       (See diagram below): 10 bays / three 5.25" HH bays (1 used by CD-ROM) / one diskette bay / six hot-swap bays								
10/100 ethernet       AMD® Am79C975 / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 connector / 3 front LEDs         CD-ROM / diskette       40X-17X <sup>6</sup> CD-ROM / multisession / IDE interface / 1.6" HH / bootable; <i>Diskette:</i> 3.5" 1.44MB diskette drive / dust cover         Serial / parallel / USB       Serial: Three 9-pin (one for Mgmt Processor)       Parallel: One (EPP, ECP) / IEEE 1284       USB: Two ports (Version 1.1)         Graphics controller       SVGA / PCI 2.1 bus / S3® Savage4 (on planar) / 8MB SDRAM std/max / 1280x1024 at 16M colors at 100Hz / DDC2B								
Security	Power-on password / administrator password / system owner's power button, and reset button (tower only) / unattended boot / password, read-only or read/write access, dial back) / unattend	selectable boot / sys						
Systems mgmt Diagnostics Software	Systems mgmt       Netfinity Advanced System Mgmt Processor / on planar / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supplies         Diagnostics       Diagnostics LED Panel (under cover) / Light-Path Diagnostics™ provides an LED map to failing component / system board error LEDs / diagnostics in ROM by pressing F2 at startup for PC-Doctor         Software       ServerGuide™ (CD-ROM installation and configuration utilities), Lotus® Domino® Application Server R5 (Windows NT or Linux version) plus five client licenses™, AntiVirus software, Dep Ch and PD PD (Ch and PD PD)							
Keyboard / mouse Power supply	<i>Tower only:</i> IBM 101-key keyboard / IBM mouse (both black) <i>Std:</i> one 250 watt hot-swap; <i>Max:</i> three 250 watt hot-swap with optional Exp Kit 37L6881 / redundant with two power supplies / worldwide / voltage-sensing / auto-restart / fans in each power supply	128MB SDRAM EC 256MB SDRAM EC 512MB SDRAM EC 1GB SDRAM ECC Netfinity 5Ux24D To	C DIMM 133MHz RDÍMM II         33L3123           C DIMM 133MHz RDIMM II         33L3125           C DIMM 133MHz RDIMM II         33L3127           DIMM 133MHz RDIMM II         33L3127           DIMM 133MHz RDIMM II         33L3127					
Fans Prerequisites	Two (fan in rear, blower in front) / not hot-swap / PFA / fan failure signals Diagnostic LED and Mgmt Processor / fan in each power supply Monitor, disk, network operating system, keybd/mouse (rack)	Netfinity Media Bay Hot-Swap Power S 18.2GB 15K rpm U						
Slot 2: fullsize, 32-b Slot 3: fullsize, 64-b Slot 4: fullsize, 64-b Slot 5: fullsize, 64-b	bit 33MHz PCI 2.1 (5v), Bus A bit 33MHz PCI 2.1 (5v), Bus A bit 33MHz PCI 2.1 (5v), Bus B bit 33MHz PCI 3.1 (5v), Bus B bit 3.1 (5v), B	ts (no screws) ces (CD-ROM, nap in and out	LIMITED WARRANTY Sear parts and labor warranty <sup>3</sup> International Warranty Service <sup>3</sup> On site warranty all 3 years All cities in all states					
5.25" HH 5.25" HH CD-ROM	<ul> <li>2 3.5", SL 1", access, hot swap</li> <li>2 3.5", SL 1", access, hot swap</li> <li>2 3.5", SL 1", access, hot swap</li> <li>3 5.5", SL 1", access, hot swap</li> <li>3 5.5", SL 1", access, hot swap</li> <li>3 5.5", SL 1", access, hot swap</li> <li>2 3.5", SL 1", access, hot swap</li> <li>3 5.5", SL 1", access, hot swap</li> <li>3 5.25", HH 1.6" access, open</li> <li>9 5.25", HH 1.6" access, open</li> <li>9 5.25", HH 1.6" access, open</li> <li>9 5.25", HH 1.6" access, cD-ROM</li> <li>9 5.25", HH 1.6" access, CD-ROM</li> <li>s 2 through 7 support 6 SL disks</li> <li>HH hot-swap disks via SCA-2</li> <li>nectors; Bays 8 and 9 support 3.5"</li> <li>s via Media Bay Conversion Kit</li> <li>pressing F1 at startup</li> <li>CTRL+A</li> <li>Operator Information Pan</li> <li>Predictive failure analysis</li> <li>memory, processors, VR</li> <li>and fans in conjunction w</li> <li>Director can alert the sys</li> <li>of an imminent component</li> <li>Tower: H 16.8" x W 8.6"</li> <li>Stealth black color</li> <li>All non-hot-swaps bays u</li> <li>(In the system)</li> </ul>	el (in front) con disk options, Ms, power supplies, ith Netfinity tem administrator nt failure x D 26.0" D 24.8"	<ul> <li>8 am - 5 pm, Mon- Fri coverage</li> <li>Next business day average response time</li> <li>On site warranty upgrade options:         <ul> <li>24 hr / 7 day coverage, 4 hour average response<sup>7</sup> time</li> <li>24 hr / 7 day coverage, 2 hour average response<sup>7</sup> time</li> <li>24 hr / 7 day coverage, 2 hour average response<sup>7</sup> time</li> <li>IBM Server Start Up Support</li> </ul> </li> <li>IBM SystemXtra<sup>®,16</sup></li> <li>24 hour / 7 day telephone<sup>14</sup>, fax, electronic, and Internet (www.pc.ibm.com) support</li> <li>IBM or reseller warranty/service</li> </ul>					

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L2 cache         256KB std and max / ECC / at processor speed / processor / concertors for SC2 carticizes (cash Std et al. Stringle Edge Cash)           SMP support         20090 SMP support         20090 SMP support         20090 SMP support         20090 SMP support           SMP support         255KB and A GB max           Memory - souther         500KB and A GB max         255KB and A GB max         255KB and A GB max         255KB and A GB max           SCSI classo         500KB and A GB max         255KB and A HA-7597 / dud A channel Wide UHMX 32 voit Social (LVD 80MK/scc) / on planar / 64 bit PCI / two channels (no internalione external) / supports localization         255K channels         255K channels         255K channels         255K channels         255K channels         255K channels         268K channel Wide UHMX social (LVD 80MK/scc) / on planar / 64 bit PCI / two channels (no internalione external) / supports localization         276K channels (LVD 80MK/scc) / on planar / 64 bit PCI / two channels (LVD 80MK/scc) / on planar / 64 bit PCI / two channels (LVD 80MK/scc) / on planar / 100 bit PC anticipies (LVD 80MK/scc) / on planar / 100 bit PC anticipies (LVD 80MK/scc) / on planar / 100 bit PC anticipies (LVD 80MK/scc) / on planar / 100 bit PC anticipies (LVD 80MK/scc) / on planar / 100 bit PC anticipies (LVD 80MK/scc) / on planar / 100 bit PC anticipies (LVD 80MK/scc) / on planar / 100 bit PC anticipies (LVD 80MK/scc) / on planar / 100 bit PC anticipies (LVD 80MK/scc) / on planar / 100 bit PC anticipies (LVD 80MK/scc) / on planar / 100 bit PC anticipies (LVD 80MK/scc) / on planar / 100 bit	IBM® Type-model Qnty x	Processor	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot -swap disk bays	ethernet	Availa d
L2 cache         256KB std and max / ECC / at processor speed / processor / Carturges (speed Std 1 used by terminator), Processor / Complex contains worlined Std 1 CeU connector           SNP support         256KB std and max / ECC / at processor / Carturges (speed Std 1 used by terminator), Processor / Carturges (speed Std 1 used by terminator), Proc										
Memory - seckets         A seckets / 3 available / ECC / (all have Error Checking and Correcting (ECC) memory controller) / non-interfeaved BDRAM / 133MHz / (our 133M	Implementation	256KB std and Processor Con two VRM sock	I max / EC <i>nplex</i> cont ets (one u	C / at p ains two sed), for	rocessor spee Intel Slot 1 c ur DIMM sock	ed / processor onnectors for ets, and Relia	SECC2 cartridges ince CNB3.0LE No	(open Slot 1 orth Bridge	used by terminator	·),
64-bit PC1 / two channels (one internal/one external) / supports IBM ServeRAID address in bardware RAID standard)         SCS1 channel & 16-bit B-pin LVD address from controller to backplane         SCS1 channel & 16-bit B-pin LVD address (SC) nor-LVD addre for optional SCS1 devices in open 5.25° bys         Die controller / colb         Disk - capacity         None standard / supports IBM Units / Towork (GU)         Rack systems supported in IBM MetrinityRacks / kit available to convert ower to rack (nor rack to tower conversion)         Bus slots (see below)         PC12 / (130/HZ) / dual per PC1 / Active PC1 with th 5-add (SLS) (CRS) (LE) / SCM Bit (SCRS) (LE) / SCM Bit (SC	Memory - std / max Memory - sockets Memory - features Memory - support	4 sockets / 3 a SDRAM / 133	vailable / <b>MHz</b> / four	<sup>.</sup> 168-pir	n gold-plated	DIMM 3.3 vol	t sockets / PC133-		ontroller) / non-inter	leaved
Rack support         Rack systems supported in IBM NetfinityRacks / kit available to convert tower to rack (no rack to tower conversion)           Bus slots (see below)         PCI 2 (13MHz) / dual peer PCI / Active PCI" with hot-swap PCI slots (no replace, hot upganeic, hot upganeic, hot upganeic, hot upganeic)           Chip set         Service Processor and Super I/O National Semiconductor® PCG7317/UL (diskette, parallel, serial, keyboard, mouse)           Bays / available         AMD® Am79075 / on planar / 10BaseT, 10BE interface / 16 <sup>4</sup> HI / bootable;         Diskette bay / six hot-swap bays           Other Am790775 / on planar / 10BaseT, 10BE interface / 16 <sup>4</sup> HI / bootable;         Diskette bay / six hot-swap bays           OLPROM / disk tel for / ACID21 bits / Sam finde 30 (on planar) / 10BE interface / 16 <sup>4</sup> HI / bootable;         Diskette bay / six hot-swap bays           Security         Power-on password / administrator password / system owner's name / hinged and lockable front door to cover disk bays, power only / unattended boot / system owner's name / hinged and lockable front door to cover disk bays, power only a mailer owner / log hinge and lockable front door to cover disk bays, and autor ecovery functions / monitors themperature, fans, and power supplies           Diagnostics         Diagnostics         Diagnostics in ROM by pressing PC at startup for PC-Dodor           Stot 1: fullizes, 23-bit PC (21 (5W), Hot-swap, Bus B         Max three 250 wat hot-swap; Max three 250 wat hot-swap / six disket, tay asset, network / log SIAH bot-swap SL HDD 198(333062 second)           Stot 1: fullizes, 23-bit PC (21 (5W), Hot-swap, Bus B         T	SCSI channels Extra SCSI cable	64-bit PCI / two SCSI Channel SCSI Channel Includes a term Single Primary one 1 drop IDE None standard	c channels A: 16-bit B: 16-bit inated 2-c IDE (ROS cable (Cl d / suppor	s (one in 68-pin L 68-pin ir drop 16- SB4) Sor D-ROM) ts 7200-	Iternal/one ext VD cable from hterface (hard bit Ultra SCSI uth Bridge / or -15000 rpm di	ernal) / suppo n controller to wired) to exte non-LVD cat ne connector sks / 1 backp	orts IBM ServeRAI backplane rnal SCSI port (.8n ole for optional SCS on planar / lane	D adápters ( nm VHDCI c SI devices in <i>All</i> 218	no hardware RAID s opnector) open 5.25" bays <i>models:</i> Max int dis 3.4GB <sup>2</sup> with six 36.4	sk capaci GB SL dis
CD-ROM / diskette 40X-17X° CD-ROM / multisession / IDE interface / 1.6' HH / botable; Diskette: 3.5' 1.44MB diskette drive / dust cover Serial / parallel / USB serial / 28E / Two Ports SVGA / PCI 2.1 bus / S3' Trio64 3D (on planar) / 4MB SGRAM std/max / up to 1280x1024 at 64K colors at 85Hz / DDC2B Security Power-on password / administrator password / system owner's name / hinged and lockable front door to cover disk bays, power button, and reset button (tower only) / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended boot / selectable boot / systems mgmt security (user log-in posstos LED Panel (under cover) / Liph/Path Diagnostics <sup>™</sup> provides remote console and mgmt / allows diagnostic, reset POST, and auto recovery functions / monitors temperature, fans, and power supplies Diagnostics Software Software Software Software Software, and APC PowerChute Plus / includes Netfinity Director, others Std: two 250 watt hot-swap; Max: three 250 watt hot-swap / fan failure signals Diagnostic LED and Mgmt Processor / power supply fans Stot 1: fullsize, 32-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-swap, Bus B Stot 5: fullsize, 64-bit PCI 21 (5V), Hot-	Mechanical Rack support Bus slots (see below) Chip set Bays / available	Rack systems PCI 2.1 (33MH 64-bit PCI (thre ServerWorks® Service Proces	supported z) / dual p e hot-swa <b>ServerSe</b> ssor and S	`in IBM eer PCI p PCI s et <b>3.0LE</b> uper I/C	/ Active PCI <sup>⊤</sup> lots, SCSI cor chip set / Nc National Ser	M with hot-sw htroller) / 32-b orth Bridge (Cl niconductor®	vap PCI slots (hot it PCI (two PCI slot NB3.0LE) / South E PC97317VUL (disl	replace, hot ts, graphics, Bridge (ROS kette, paralle	upgrade, hot expan ethernet, South Brid B4) for IDE, USB, IS I, serial, keyboard, I	sion) / lge) A bus for nouse)
power button, and reset button (tower only) / unattended boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode         Systems mgmt       Integrated Advanced System Mgmt Processor / on planar / provides remote console and mgmt / allows diagnostic, reset POST, and auto recovery functions / monitors temperature, fans, and power supplies         Diagnostics       Daignostics LED Panel (under cover) / Light-Path Diagnostics <sup>14</sup> provides an LED map to failing component / systembard         Software       ServerGuide <sup>14</sup> (CD-ROM inder cover) / Light-Path Diagnostics <sup>14</sup> provides an LED map to failing component / systembard         Keyboard / mouse       Tower only: IBM 101-key keyboard / IBM mouse (both black) Std: two 250 watt hot-swap; / redundant with two power supplies       256MB SDRAM ECC DIMM 133MHz (registered) 331.3062         Yeyboard       Tower only: IBM 101-key keyboard / IBM mouse (both black) Std: two 250 watt hot-swap; Max: three 250 watt hot-swap; / redundant with two power supplies       256MB SDRAM ECC DIMM 133MHz (registered) 331.3062         Fans       Three redundant, hot-swap, Bus B       Std 1: fullsize, 46-bit PCI 2.1 (5V), Bus A       3. Removable, easy release left/top side panel         Stot 1: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B       Stot 5: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B       3. Removable, easy release left/top side panel         Stot 5: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B       Stot 5: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B       Scie Removable, easy release left/top side panel         Stot	CD-ROM / diskette	40X-17X <sup>6</sup> CD-F Serial: Three S	ROM / mu 9-pin (one	ltisessio for Mgm	n / IDE interfa nt Processor)	/ ce / 1.6" HH / <i>Parallel:</i> Or	bootable; <i>Diskette</i> ne (EPP, ECP) / IE	<i>e:</i> 3.5" 1.44N EE 1284 <i>U</i>	IB diskette drive / de <i>SB:</i> Two ports	
POST, and auto recovery functions / monitors température, fans, and power supplies         Diagnostics       POST, and auto recovery functions / monitors température, fans, and power supplies         Software       Diagnostics LED Panel (under cover) / Light-Path Diagnostics' monitors température, fans, and power supplies       Diagnostics in ROM by pressing F2 at starup for PC-Doctor         Software       ServerGuide™ (CD-ROM installation and configuration vultities), Lotus® Domino® Application Server R5 (Windows NT or Linux version) plus five client licenses®, AntiVirus software, and APC PowerChute Plus / includes Netfinity Director, other PC-Doctor       Pentium III GHz/133MHz/256KB Proc Upg       19K4640         Reyboard / mouse       Tower only: IBM 101-key keyboard / IBM mouse (both black)       Std: two 250 wait hot-swap; Max: three z50 wait hot-swap / redundant with two power supplies / worldwide / woltage-sensing / auto-restart / fans in each power supply       Three redundant, hot-swap fas / easy removal / PFA / fan failure signals Diagnostic LED and Mgmt Processor / power supply fans       Std: 1: fullsize, 32-bit PCI 2.1 (5V), Hot-swap, Bus B Slot 3: fullsize, 43-bit PCI 2.1 (5V), Hot-swap, Bus B ay @ 3.5", SL 1", access, hot swap Bay @ 3.5", SL 1	Security	power button, a	and reset	button (1	tower only) / u	nattended bo	ot / selectable boo			
Keyboard / mouse Power supply       Tower only: IBM 101-key keyboard / IBM mouse (both black) Std: two 250 watt hot-swap; Max: three 250 watt hot-swap / redundant with two power supplies / worldwide / voltage-sensing / auto-restart / fans in each power supply       256MB SDRAM ECC DIMM 133MHz (registered) 33L3060 512MB SDRAM ECC DIMM 133MHz (registered) 33L3060 70 Situ 22AD Tower-to-Rack Kit Wetfinity 50W Hot-swap Redundant PW Supply 33L376 50 SI to 5: fullsize, 64-bit PCI 2.1 (5V), Bus A Slot 3: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B Slot 5: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B Slot 5: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B Bay © 3.5", SL 1", access, hot swap Bay © 5.25", HH 1.6" access, open Bay © 5.25", HH 1.6" a		POST, and au Daignostics L error LEDs / dia ServerGuide™ Linux version) p	to recover <b>ED Panel</b> agnostics i (CD-RON plus five cl	y function (under n ROM 1 installa ient lice	ons / monitors cover) / Light- by pressing F2 ation and config nses <sup>19</sup> , AntiVir	s temperature Path Diagnos at startup for guration utilitie us software,	e, ḟans, and power tics™ provides an l PC-Doctor es), Lotus <sup>®</sup> Domino Pentium III 1G	supplies LED map to t <sup>®</sup> Application Hz/133MHz/2	ailing component / s Server R5 (Window 256KB Proc Upg	s NT or 19K46
FansThree redundant, hot-swap fans / easy removal / PFA / fan failure signals Diagnostic LED and Mgmt Processor / power supply fans36.4GB 10K-4 Ultra160 SCSI Hot-swap SL HDD 37L7206 9.16B 15K-rpm Ultra160 SCSI Hot-swap SL HDD 19K0655 18.2GB 15K-rpm Ultra160 SCSI Hot-swap SL HDD 19K0656Slot 1: fullsize, 32-bit PCI 2.1 (5v), Bus A Slot 3: fullsize, 64-bit PCI 2.1 (5v), Hot-swap, Bus B Slot 4: fullsize, 64-bit PCI 2.1 (5v), Hot-swap, Bus B Slot 5: fullsize, 64-bit PCI 2.1 (5v), Hot-swap, Bus B Slot 5: fullsize, 64-bit PCI 2.1 (5v), Hot-swap, Bus B Slot 5: fullsize, 64-bit PCI 2.1 (5v), Hot-swap, Bus B Bay ② 3.5", SL 1", access, hot swap Bay ③ 3.5", SL 1", access, hot swap Bay ④ 5.25", HH 1.6" access, open Bay ④ 5.25", HH 1.6" access,	Keyboard / mouse Power supply	Tower only: IB Std: two 250 w redundant with	BM 101-ke vatt hot-sw h <b>two pow</b>	y keybo ap; <i>Max</i> <b>/er supp</b>	ard / IBM mou three 250 was blies / worldwid	se (both black tt hot-swap / de /	256MB SDRAI 512MB SDRAI 1GB SDRAM E Netfinity 5Ux24	M ECC DIMN M ECC DIMN ECC DIMM 1 4D Tower-to-	1 133MHz (registere 1 133MHz (registere 33MHz (registered) Rack Kit	d) 33L30 d) 33L30 33L30 37L68
<ul> <li>Slot 2: fullsize, 32-bit PCI 2.1 (5V), Bus A</li> <li>Slot 3: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B</li> <li>Slot 4: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B</li> <li>Slot 5: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B</li> <li>Slot 5: fullsize, 64-bit PCI 2.1 (5V), Hot-swap, Bus B</li> <li>Bay ① 3.5", SL 1", access, diskette</li> <li>Bay ② 3.5", SL 1", access, hot swap</li> <li>Bay ③ 5.25", HH 1.6" access, open</li> <li>Bay ④ 5.25", HH 1.6" access, open</li> <li>Bay ⑤ 5.25", HH 1.6" access, open</li> <li>Bay ⑤ 5.25", HH 1.6" access, open</li> <li>Bay ⑤ 5.25", HH 5.25", HH 5.25", HH 5.25', Th 6.25', Th 6.25', Th 6.25', Th 6.25', Th 6.25', Th 6.25', Th 6.25'</li></ul>	Fans	fan failure sign	als Diagno				36.4GB 10K-4 9.1GB 15K-rpr	Ultra160 SC n Ultra160 S	SI Hot-swap SL HDI CSI Hot-swap SL HI	Ó 37L72 DD19K06
Rack or Tower (tower shown above)	Slot 2: fullsize, 32-bit Slot 3: fullsize, 64-bit Slot 4: fullsize, 64-bit Slot 5: fullsize, 64-bit <u>5.25° HH</u> <u>5.25° HH</u>	t PCI 2.1 (5v), E t PCI 2.1 (5v), H t PCI 2.1 (5v), H t PCI 2.1 (5v), H t PCI 2.1 (5v), H 0 3.5", SL 1", 0 3.5", SL 11, 0 5.25", HH 1.6 0 5.25", HH 1.6 0 5.25", HH 1.6 1 5	Bus A Hot-swap, Hot-swap, dot-swap, access, ac	Bus B diskette hot swa hot swa hot swa hot swa CD-ROI open open . disks	<ul> <li>Quick reliver and several several</li></ul>	ease adapter system enable tape drives) to crews ation/Setup Ut F1 at startup ect near startu Information Fe failure analy processors, 1 in conjunctior can alert the ninent compo I 16.8" x W 16.8 2.7 pounds lack color	slots (no screws) as devices (CD-RO as ap in and out ility invoked by up by pressing Panel (in front) rsis on disk options /RMs, power supp to with Netfinity system administra nent failure 6" x D 26.0" " x D 24.8"	M, 3 ye a 3 ye inte on a All a 8 ar resp on (in a 24 BIM a BIM a 24 elect	ear parts and labor v rnational Warranty 3 site warranty all 3 y cities in all states n - 5 pm, Mon- Fri c t business day aver sonse time site warranty upgrad eligible locations): 4 hr / 7 day coveragy verage response <sup>7</sup> tin 5 Server Start Up Su SystemXtra <sup>®,16</sup> lour / 7 day telephoi tronic, and Internet	varranty <sup>3</sup> Service <sup>3</sup> ears overage age de option e, 4 hour ne e, 2 hour he pport ne <sup>14</sup> , fax,

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IBM <sup>®</sup> Type-model Qnty x Pro	L2 cessor cache Memory	ECC Disk	SCSI controller	Mechanical	Slots x bays	Hot-swap disk bays		Available date
8665-61Y 1 x Xeon 70 8665-71Y 1 x Xeon 70 8665-81Y 1 x Xeon 90 8665-6RY 1 x Xeon 70 8665-7RY 1 x Xeon 70 8665-8RY 1 x Xeon 90	00/1002MB512MB00/1002MB512MB00/1001MB512MB00/1002MB512MB	Chipkill None Chipkill None Chipkill None Chipkill None		Tower Tower 8U⁴ rack 8U rack	6 slots x 14 b 6 slots x 14 b 6 slots x 14 b 6 slots x 14 b 6 slots x 14 b	ays (10 hs) ays (10 hs) ays (10 hs) ays (10 hs) ays (10 hs)	10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet	Mar 2001 Apr 2001 Mar 2001 Mar 2001
Processor(s) L2 cache Implementation Processor upgrade(s)	1 x Intel® Pentium® III 1MB or 2MB / full spee Each processor with E 4-way SMP / to four ide	d CC L2 cache integ	grated in Single	e Edge Con	tact (SEC) ca	tridge in Int	el Slot 2	
Mechanical	Each processor has on VRM slots (all removab					x PCI slots,	four Intel Slot 2 s	lots, four
Mem - std / max / type Memory - sockets Memory - support	512MB std / 16GB <sup>13</sup> m chip) / Chipkill performe One Memory Board std SDRAM / 100MHz / six supports registered SI	ed by memory con I and max / 16 so tteen 168-pin gold	troller and firm ckets / 12 avai -plated DIMM	ware lable (four 3.3 volt soc	- 128MB DIMMs :kets / PC100-	standard)	/ 4-way memory ir	nterleave
SCSI controller SCSI channels Cache / bus Connectors and cabling Additional cables	Channel B: 68-pin inte 16-bit LVD cable on se to connect both backpl two-drop 16-bit LVD S0	channels (LVDS 3 32-bit 33MHz / con n VHDCI external rmal connector on cond backplane c anes into a single CSI cable included	80MB/sec) / ea ntroller on Inpu SCSI connecto power backpla connector left u channel 10-ba t to support de	it/Output Be or ane with 16 nconnected ay configura vices in two	bard boot LVD cable d at other end ation) / b left bays	e to one hot (requires U		eater Card
Mechanical Rack / conversion Architecture / chip set	EIA 19" rack (8U <sup>4</sup> ) or the Rack systems support ServerWorks® Server (Frontside Bus interfact three peer PCI 2.1 bus	ed in IBM NetBAY Set III HE / CNB2 e from PCI bus to es (A: 64-bit 66M	20HE North Bri North Bridge) IHz, B: 64-bit 3	dge (PCI 2 / OSB4 So 33MHz, C:	.2 and memor outh Bridge (E 32-bit 33MHz)	y controller IDE, ISA Br / NS PC97	) / CIOB I/O Bridg idge, USB, SMBus 317VUL Super I/0	ge s, IOAPIC) /
Active™ PCI slots Bays	4 hot-swap PCI slots <sup>1</sup> Active PCI via hot rep 14 bays total: 10 hot-s	<sup>o</sup> with power and a lace, hot upgrade	attention indicate, hot expansion	ator lights ( on (see belo	optical sensors	control po	wer to slot) /	
Ethernet controller CD-ROM / diskette drv Ports Graphics controller	AMD <sup>®</sup> Am79C975 / on	PCI Bus C / 10Ba D-ROM / IDE (AT/ ne for Mgmt Proce	aseT, 100Base API) / 1.6" HH / essor); <i>Paralle</i>	eTX / full di bootable; I: One 25-p	uplex / RJ-45 o Diskette drive bin; USB: Two	connector / : 3.5" 1.44 I Ver 1.1; Ke	3 LEDs MB diskette drive , eyboard; Mouse; R	S485 mgmt
Security	Power-on password / a mgmt security (user log	dministrator pass g-in password, rea	word / selectat ad-only or read	ole boot / s /write acce	ecure mode (c ss, dial back)	lisables key unattended	board and mouse d start mode	) / systems
Systems management Diagnostics Software	Advanced System Mg on planar / provides rei power on/off system / r power supply Light-Path Diagnostic failing part (under top c ServerGuide™ (CD-RC Norton AntiVirus, APC includes IBM Director™	mote console and nonitors temperati s <sup>™</sup> <b>Panel</b> providin over) / Information DM installation and PowerChute Plus	mgmt / ure, disks, fans ng LED map to n LED Panel in I configuration	s, 25 51 10 20 front Ne utilities), Pe	66MB SDRAM 2MB SDRAM 6B SDRAM 10 6B SDRAM 10 etfinity® 250W entium III Xeor entium III Xeor	100MHz EC 100MHz EC 0MHz ECC 0MHz ECC Hot-Swap F 700MHz/1 700MHz/2	CC DIMM (registe CC DIMM (registe CC DIMM (registe DIMM (register) <b>Kit</b> (4x512MB) Redund Power Su MB Proc Upg II MB Proc Upg II MB Proc Upg II	r) 33L3115 r) 33L3117 33L3119 33L3147
Keyboard / mouse Power supply Fans	Tower only: IBM 101- Std: two 250 watt hot-s three provide N+1 redu universal (voltage sens Four logical fans / seve disk area, 2 in slot area PFA / fan failure signal	key keyboard / IB wap; <i>Max:</i> four 2 ndancy for typical ing) / fans in each en hot-swap redu a, 2 in CPU area) / s Diagnostic LED	50 watt hot-swa config / tool-fre power supply i <b>ndant fans</b> (3 / variable spee and Mgmt	h black) ap / IB e install / IB / PFA IB in IB	etfinity 8Ux24E etfinity 8Ux24E M PCI Fast/W M ServeRAID	0 Tower-to-I 0 Rack-to-To de Ultra LV 4M Ultra16 4H Ultra16	Rack Kit ower Kit /D Adapter 0 SCSI Controller 0 SCSI Controller	37L6859 37L6860 33L5000 37L6080
		23 lbs Slot 1: to 123 lbs Slot 2: Slot 3: Slot 4: ponents Slot 5: dicate Slot 6: tions claration Stat 5: pata Stat startu S Stat 2: Slot 4: Slot 5: Claration Statu S Setup Startu S Setup S	full.64-bit 66MH	Hz 3.3v PCI Hz 5v PCI, , Hz 5v	, not hot, Bus hot swap, Bus hot swap, Bus hot swap, Bus pressing F1 at ) by pressing Select Utility Us from top erts generated r IBM (s),VRM(s), ins	A A A A A A A A A A A A A A	MITED WARRA In parts and labor vi- national Warranty ite warranty all 3 y ites in all states - 5 pm, Mon- Fri c business day aver onse time ite warranty upgra nr / 7 day coveragi- rage response? tim hr / 7 day coveragi- rage response? tim leligible locations) Server Start Up Su SystemXtra <sup>®,16</sup> bur / 7 day telepho ronic, and Internet v.pc.ibm.com) supor	warranty <sup>3</sup> Service <sup>3</sup> ears overage rage de options: e, 4 hour ne (30L9187) e, 2 hour ne (31L2723) upport ne <sup>14</sup> , fax,

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IBM <sup>®</sup> Type-model Qnty⇒	x Processor	Memory	Disk	SCSI controller	Mechanica	Slot	s x bays	Hot -swap disk bays		ethernet	Available date
8654-11Y 1 x Pentiu 8654-31Y 1 x Pentiu 8654-41Y 1 x Pentiu 8654-51Y 1 x Pentiu	m III 866/133 m III 933/133	256MB 256MB 256MB 256MB	None None	Ultra160 Ultra160 Ultra160 Ultra160	1U rack 1U rack 1U rack 1U rack 1U rack	2 slot 2 slot	s x 4 bays s x 4 bays s x 4 bays s x 4 bays s x 4 bays	2 hot-swa 2 hot-swa 2 hot-swa 2 hot-swa 2 hot-swa	ip 2.x ip 2.x	10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet	Oct 2000 Oct 2000 Nov 2000 Nov 2000
Processor SMP support Implementation L2 cache	Intel <sup>®</sup> Pentium 2-way SMP via Processor and 256KB std and	a identical L2 cache	processe in Flip-C	or / both VRI hip Pin Grid	Vis integrate	ed on I	planar		kets / tei	rminator in empty	socket
Memory - std / max Memory - sockets Memory - features	256MB std / 4 4 sockets / 3 a SDRAM / 133	vailable		0	U V	,			33-comp	liant	
SCSI disk controller SCSI connectors RAID support IDE controller	Adaptec <sup>®</sup> AIC- Internal 68-pin No hardware f Enhanced IDE	(attaches RAID stan	1-drop ca Idard / su	able to SCSI ipports optio	backplane) nal ServeR	; no ́ex AID P	ternal SCSI CI adapter	connector (see below	')	tegrated on moth	nerboard
Architecture / chipsets Mechanical Control Panel	NB6635 North two ethernet of IB6566 South PC97317VUL	Bridge 3. controllers Bridge for (diskette, (1U <sup>4</sup> ) / ra	.0LE (the s, graphic r IDE, US parallel, ick-moun	North Bridg s controller) B, ISA bus serial, keyb t only / supp	; PCI Bus 1 for Service oard, mous orted in IBI	, 64-b Proce e) M Netf	it 33MHz, S ssor and Su inity Rack p	SCSI contro uper I/O Na products (ra	oller, two ational S ack requi	MHz, IB6566 So 64-bit PCI slots) emiconductor® ires vented front FD	/
Ethernet controllers CD-ROM / diskette Serial / parallel / USB Console interconnects	2 x Intel 8255 capability and two RJ-45 con- 24X-10X <sup>6</sup> CD-I Serial: One 9- s System-to-sys daisy chain co	9 etherne load bala nectors o <b>ROM;</b> CA' pin; Para tem interconnection erver (not	t controll ncing sup n rear / s V (ATAPI allel: Non connect c to adjace t contiguo	ers / on plan pport throug supports PXI ); bootable; e; USB: Tw sable (10 inc ent server / s bous in chain)	ar / 10Base h the conne E 2.0 Boot J IDE / 3.5" 1 vo ports (Ve h, 245mm) supports lar outage / o	eT, 100 ection Agent .44MB ersion is sta ge rac ne Ca	DBaseTX / fu of both the / no Wake ( d diskette dri 1.1); <i>Mgm</i> ndard (Keyt ck deployme ble Chain T	Ill duplex / ernet ports on LAN <sup>®</sup> su ve tt: Two RS4 poard Vide ents of dais	32-bit P( to the saupport 185 ports o Mouse sy chaine	CI bus / redundar ame LAN segments for systems main	nt / nagement cable) / n functions
Systems mgmt Diagnostics	Netfinity Adva reset, POST, a	anced Sy	rstem Mg recovery	jmt Process functions / r	<b>sor</b> / on pla nonitors ter	nar / p nperat	provides rem ture, fans, a	ind power s	supply	igmt / allows diag via PC-Doctor in I	
Graphics controller Security Software	SVGA / PCI bi 8MB SDRAM Power-on pass unattended bo security (user access, dial bi ServerGuide <sup>TM</sup> Lotus® Domino Linux version) and APC Powe	std and m sword / ac oot / selec log-in pas ack) / una (CD-ROI o <sup>®</sup> Applica plus five	ax / DDC dministra table boc ssword, r ttended s Minstallat ation Serv client lice	C2B tor password ot / systems ead-only or start mode tion and conf ver R5 (Wind enses <sup>19</sup> , Anti	d / mgmt read/write iguration uti dows NT or Virus softw	are,	128MB SDF 256MB SDF 512MB SDF 1GB SDRA 9.1GB 10K-	866/133MH 933/133MH 1GHz/133M RAM ECC I RAM ECC I RAM ECC I M ECC DIN 4 Ultra160	Iz/256KB Iz/256KB JHz/256F DIMM 13 DIMM 13 DIMM 13 JIMM 133M SCSI Ho	B Proc Upg	33L3144 33L3146 33L3152 37L7204
Keyboard / mouse Cooling fans Power supply Prerequisites	None standard Eight fans (fou and planar, tw 200 watt / uni Monitor, keybo system, one C Kit per chain c	d Ir for proc o for pow versal / au oard, mou cable Cha	essor(s) er supply ito-sensii ise, rack,	and planar, /) ng / auto-res SCSI disk,	two for disł tart suppor operating	(s) t	36.4GB 10k ServeRAID ServeRAID Netfinity Ra XSeries Cal (contains)	K-4 Ultra16 -4L Ultra16 -4M Ultra16 ick (with pe ick Front Do	0 SCSI H 0 SCSI A 60 SCSI A fforated o por Kit fechnolog akout ca	lot-Swap SL HDD Adapter Adapter door and side par gy Cable Kit	37L7206 37L6091 37L6080
Back PCL slot PCL slot PCL slot PCL slot PCL Slot #2 PCL Slot #1 P	POWER Supp Fan Fan Disk (opt)	ay 2 5.25 ay 3 3.5" ay 4 3.5" lot 1: fulls lot 2: half Stealth b H 1.72" ( 22 to 28 Setup Pr PC-Doct SCSISel PXE Bull DMI 2.1, Includes universa Predictiv modules	5", UltraSI , SL 1", , SL 1", , SL 1", , SL 1", , Size, 64-b black (1U) x W lbs (mini- or diagno- ect near let Agent Wired for rack mou two line l interracl re failure , memory : Max in	acc bit 33MHz PC bit 33MHz PC 17.3" x D 25 mum to max available by stics is availa startup by pr near startup or Manageme	ess, std Cl ess, open ess, open Cl 2.1 (5v) Cl 2.1 (5v) .7" imum config pressing F <sup>2</sup> able by prese essing CTR by pressing ent 1.1a 10v cable w vith IEC plup processor(s er supply, an ty:	D-RON for ho for ho at sta ssing F L+A CTRL ith NE g) ), volta	M t-swap disk t-swap disk nn) artup 22 at startup -+S MA plug an age regulato	d9ft a a a a a a a a a a a a a a a a a a a	3 year p Internat On site All cities 8 am - 5 Next bu respons On site • 24 hr avera • 24 hr avera (in elig IBM Ser IBM Ser 24 hour electror (www.p	TED WARRAN arts and labor wional Warranty S warranty all 3 yes in all states is in all states is in all states is in all states is in all states is manual states is manual states is a state state / 7 day coverage ge response <sup>7</sup> tim gible locations) ver Start Up Sup stemXtra <sup>®,16</sup> / 7 day telephor nic, and Internet c.ibm.com) suppreseller warranty	varranty <sup>3</sup> Gervice <sup>3</sup> ears overage age de options: e, 4 hour ne e, 2 hour ne oport ne <sup>14</sup> , fax, port

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IBM <sup>®</sup> Type-model	Qnty x Processor	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot -swap disk bays	ethernet	Available date
8656-6RY	1 x Pentium <sup>®</sup> III 1GHz/133	128MB	None	2 x Ultra16	0 3U rack	5 slots x 7 bays	3 hot-swap	10/100 ethernet	Oct 2000

Intel <sup>®</sup> processor(s) L2 cache Implementation SMP support	1 x Pentium <sup>®</sup> III 1GHz <sup>1</sup> with 133MHz Front Side Bus 256KB std and max / ECC / at processor speed / processor ar Motherboard contains two Intel Slot 1 connectors for SECC2 c one VRM socket (one VRM integrated), four DIMM sockets, PC 2-way SMP via second identical processor / upgrade via SEC	artridges (open Slot CI slots, and integrat	1 used by terminator), ed subsystems
Memory - std / max Memory - sockets Memory - features Memory - support	128MB std / 4GB max 4 sockets / 3 available / ECC / (all have Error Checking and C SDRAM / 133MHz / four 168-pin gold-plated DIMM 3.3 volt so Supports registered SDRAM ECC DIMMs only (128, 256, 512	Correcting (ECC) me ockets / PC133-com	emory controller) / non-interleaved
SCSI disk controller SCSI channels IDE controller / cable Disk - capacity Disk - bays	Adaptec <sup>®</sup> AHA-7899 / dual channel Wide Ultra160 SCSI cor 64-bit PCI / no hardware RAID standard Two internal 16-bit channels / both internal (no external) <i>SCSI Channel A</i> : 16-bit 68-pin LVD cable from controller to ba Single Primary IDE / one connector on planar / one 1 drop IDE <b>None standard</b> / supports 7200-10000 rpm disks / 1 backplan Three hot-swap / 80-pin SCA-2 connectors / common tray with	ickplane <i>Channel B.</i> cable (CD-ROM) e / SAF-TE 1.0-comj	: 16-bit 68-pin interface (not used) pliant
Mechanical Rack support Bus slots (see below) Chip set Bays / available Status LEDs	EIA 19" Rack (3U <sup>4</sup> ) x 26-inch deep Rack systems supported in IBM Netfinity Racks PCI 2.1 (33MHz) / dual peer PCI / 64-bit PCI (three PCI slots, S 32-bit PCI (two PCI slots, graphics, ethernet, South Bridge) ServerWorks® ServerSet III LE chip set / NB6635 North Bridg Service Processor and Super I/O National Semiconductor® PC (See diagram below): 7 bays / three hot-swap bays Operator Information Panel (in front) / includes power-on, dis	ge 3.0LE / IB6566 So 97317VUL (diskette	, parallel, serial, keyboard, mouse)
10/100 ethernet CD-ROM / diskette Serial / parallel / USB Graphics controller	AMD <sup>®</sup> Am79C975 / on planar / <b>10BaseT, 100BaseTX / full du</b> 24X-10X <sup>6</sup> CD-ROM / multisession / IDE interface / bootable; <i>L</i> <i>Serial:</i> Three 9-pin (one for Mgmt Processor) <i>Parallel:</i> One ( SVGA / PCI 2.1 bus / S3 <sup>®</sup> Savage4 (on planar) / 8MB SDRAM	Diskette: 3.5" 1.44MB EPP, ECP) / IEEE 1	B diskette drive 284 USB: Two ports (Version 1.1)
Security	Power-on password / administrator password / system owner's and reset button / unattended boot / selectable boot / systems read/write access, dial back) / unattended start mode		
Diagnostics Software	t Integrated Advanced System Mgmt Processor / on planar / p POST, and auto recovery functions / monitors temperature, fa Diagnostics LED Panel (under cover) / Light-Path Diagnostics board error LEDs / diagnostics in ROM by pressing F2 at startur ServerGuide™ (CD-ROM installation and configuration utilities), Linux version) plus five client licenses <sup>19</sup> , AntiVirus software, and sBIOS (remote), diagnostics (remote), and Mgmt Processor on	ans, and power supp s™ provides an LED o for PC-Doctor Lotus <sup>®</sup> Domino <sup>®</sup> App I APC PowerChute F	plies map to failing component / system plication Server R5 (Windows NT or Plus / includes Netfinity Director, others
Keyboard / mouse Power supply	None standard <i>Std:</i> one 270 watt hot-swap; <i>Max:</i> two 270 watt hot-swap / front access / redundant with two power supplies / worldwide / voltage-sensing / auto-restart / fans in each power supply	128MB SDRAM EC 256MB SDRAM EC 512MB SDRAM EC	33MHz/256KB Proc Upg 19K4640 C DIMM 133MHz (RDIMM II) 33L3123 C DIMM 133MHz (RDIMM II) 33L3125 C DIMM 133MHz (RDIMM II) 33L3127
Fans Prerequisites	Three (two in middle, one in rear) / <b>hot-swap</b> / redundant (any single fan can fail while maintaining cooling) / PFA / fan failure signals Diagnostic LED and Mgmt Processor / fan in each power supply Monitor, disk, network oper system, keyboard, mouse, rack	Netfinity 270W Hot- Netfinity 3-Pack Ultr 18.2GB 15K-rpm U 18.2GB 10K-4 Ultra	DIMM 133MHz (RDIMM II) 33L3129 Swap Redundant Pwr Supply 37L6880 a160 Hot-Swap Exp Kit 33L5050 Itra160 SCSI Hot-Swap HDD 19K0656 a160 SCSI Hot-Swap SL HDD37L7205 a160 SCSI Hot-Swap SL HDD37L7206
Slot 2: fullsize, 32-bit Slot 3: fullsize, 64-bit Slot 4: fullsize, 64-bit Slot 5: fullsize, 64-bit <u>desete</u> <u>CD-ROM</u> <u>Two 5.25" HH</u> <u>or three 3.5" SL</u> Bay (1) 3.5", SL 3.5", SL 1", Bay (2) 3.5", SL 1", Bay (3) 3.5", SL 1", Bay (3) 5.25", HH 1.6" Bay (7) 5.25", HH 1.6" Bay (7) 5.25", HH 1.6"	Predictive failure analysis memory, processors, VRM and fans in conjunction wit Director can alert the syste access, hot swap access, hot swap access* , access* port two HH devices or an optional Netfinity 3-Pack Ultra160 He	ap in and out invoked by y pressing ions on disk options, ls, power supplies, h Netfinity em administrator failure D 26.0" no screws) for ot-Swap	<ul> <li>LIMITED WARRANTY</li> <li>⇒ 3 year parts and labor warranty<sup>3</sup></li> <li>⇒ International Warranty Service<sup>3</sup></li> <li>⇒ On site warranty all 3 years</li> <li>⇒ All cities in all states</li> <li>⇒ 8 am - 5 pm, Mon- Fri coverage</li> <li>⇒ Next business day average response time</li> <li>⇒ On site warranty upgrade options:</li> <li>• 24 hr / 7 day coverage, 4 hour average response<sup>7</sup> time</li> <li>• 24 hr / 7 day coverage, 2 hour average response<sup>7</sup> time</li> <li>(in eligible locations)</li> <li>⇒ IBM Server Start Up Support</li> <li>⇒ IBM SystemXtra<sup>®,16</sup></li> <li>⇒ 24 hour / 7 day telephone<sup>14</sup>, fax, electronic, and Internet</li> <li>(www.pc.ibm.com) support</li> </ul>
	vert these two bays into three hot-swap disk bays		IBM or reseller warranty/service     are expressed or implied in this summary

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IBM <sup>®</sup> Type-model Qnty x Pr	L2 ocessor cache	Memory	Disk	SCSI controller	Slots	Bays std	Bays max	HS power supplies	Ethernet	Mechanical	Available date
8682-4RY 1 x Xeon 8682-5RY 1 x Xeon 8682-6RY 1 x Xeon	700/100 2MB	512MB 512MB 512MB	None None None	2 x Ultra 160 2 x Ultra 160 2 x Ultra 160	6 5	5 (3HS 5 (3HS 5 (3HS	8 (6HS)	1 (3 Max) 1 (3 Max) 1 (3 Max)		4U⁴ rack 4U rack 4U rack	Mar 2001 Mar 2001 Apr 2001
Processor(s) L2 cache Implementation SMP support	1 x Intel <sup>®</sup> Pent 1MB std and m Motherboard c one slot for Me 4-way SMP vi	nax / at proc contains fou emory Boa	cessor sp ur Intel SI rd, and in	eed or <b>2MB</b> s ot 2 connector itegrated subs	td and m s for SE ystems /	ax / at p CC car all VRI	processor sp ridges (four As integrate	beed th Slot 2 oc d in proces	sors	terminator), F	PCI slots,
Mem - std / max / type Memory - sockets Memory - support	512MB std / 1 chip) / Chipkill One Memory E SDRAM / 100 Supports regis	performed Board std a MHz / sixte	by memo and max / en 168-p	ory controller a 16 sockets / in gold-plated	and firmw 12 availa DIMM 3.	are ble (fou 3 volt s	r 128MB D ockets / PC	MMs stand 100-compli	ard) / 4-wa	v memory int	erleave
SCSI disk controller SCSI channels Extra SCSI cable IDE controller / cable Disk - bays	Adaptec® AH/ 64-bit PCI / no Two 16-bit cha Channel A: 16 or can attach s Includes a 16- Single Primary Hot-swap (HS)	hardware annels / bot 6-bit 68-pin standard bu bit LVD SC r IDE / one	RAID sta th interna LVD cab ulkhead L SI cable connecto	ndard I or one intern ble from contro VD cable thro for external So or on planar / c	al with or ller to ba ough pun CSI devid one 1-dro	ne exte ickplan ch out f ces via ip IDE (	rnal / e / <i>Channel</i> for external an external cable (CD-R	<i>B:</i> internal connector 0.8mm VH OM)	í 16-bit con DCI conne	nector to use ctor	
Mechanical Rack support	EIA 19" Rack Supported in IE		® Racks							-	
Architecture Slots (Active™ PCI) Chip set Bays / available Status LEDs	Three peer PC / Bus B: 64-bit (See below) 6 ServerWorks <sup>®</sup> two 16-bit link: Semiconducto (See diagram b Operator Info	66MHz (3 I hot-swap F • <b>ServerSe</b> s to 6536) r <sup>®</sup> PC9731 pelow): 5 b	PCI slots) PCI slots <sup>1</sup> et 2.0HE of / IB6566 7VUL (di ays / thre	<ul> <li>/ Bus C: 64-bi</li> <li><sup>o</sup> available / ho</li> <li>chip set / NB6</li> <li>South Bridge</li> <li>iskette, paralle</li> <li>e hot-swap dis</li> </ul>	t 33MHz ot replace 536 Nor for IDE, el, serial, k bays s	(2 PCI e, hot u th Brido USB, I keybo andard	slots, SCSI pgrade, hot ge 2.0HE / I SA bus for s ard, mouse (option for s	controller) expansion NB6555IO E Service Pro ) hree additic	Bridge 2.0 cessor and onal hot-sw	(Inter Module d Super I/O N ap disk bays)	e Bus with
10/100 ethernet CD-ROM / diskette Serial / parallel / USB Graphics controller	AMD <sup>®</sup> Am79C 48X-20X <sup>6</sup> CD-1 <i>Serial:</i> Three SVGA / PCI 2.	975 / on pla ROM / mult 9-pin (one	anar / <b>10B</b> isession / for Mgmt	aseT, 100Bas IDE interface Processor)	• eTX / fu / bootabl Parallel:	l <b>i duple</b> e; <i>Disk</i> One <i>U</i>	x / RJ-45 co cette: 3.5" 1. SB: Two po	onnector / 2 44MB diske rts (Version	front LEDs tte drive / d 1.1) Adv	lust cover <i>Sys Mgmt:</i> Tr	
Security	Power-on pass selectable boo start mode										
Systems management Diagnostics Software	Advanced Sys allows diagnos Diagnostics L (under cover) / motherboard e at startup for Pt ServerGuide <sup>TA</sup> AntiVirus softw	stic, reset, l ED Panel provides a rror LEDs / C-Doctor (installatio	POST, ar Light-Pat In LED ma diagnostion n and con	nd auto recove h Diagnostics <sup>⊤</sup> ap to failing cor cs in ROM by p figuration utilitio	ry function mponent pressing F es),	ons/mi / F2 F 12	Pentium III X Pentium III X Pentium III X Pentium III X 28MB 100N 256MB 100N	o, fans, and eon 700/100 eon 700/100 eon 900/100 1Hz SDRAM 1Hz SDRAM	power sup MHz/1MB MHz/2MB MHz/2MB ECC RDIN ECC RDIN	plies Proc Upg Proc Upg Proc Upg /IM /IM	00N7946 00N7944 19K4633 33L3113 33L3115
Keyboard / mouse Power supply	None standard Std: one 270 w front access/ cases; redunda	vatt hot-swa	ap; <i>Max:</i> th with two p	nree 270 watt h ower supplies	ot-swap	/ 2	.1GB 10K-4 8.2GB 10K-	z SDRAM E z SDRAM E Ultra160 S0 4 Ultra160 S	CC RDIMM CC RDIMM CSI Hot-Sw SCSI Hot-S	1 / <b>Kit</b> (4 x 512MB vap SL wap SL	37L7204 37L7205
Fans	Six (four for dis hot-swap / rec maintaining co and Mgmt Proc	lundant (an oling / PFA cessor / fan	y single f / fan failu in each p	an can fail whil ire signals Dia bower supply	e gnostic L	ED N	6.4GB 10K- letfinity® 3-F ServeRaid-4 letfinity 270 ServicePac®	Pack Ultra16 H Ultra 160 N Hot-Swap	0 Hot-Swaj SCSI Contr Redundar	o Exp Kit oller ht Pwr Supply	37L7206 33L5050 37L6889 37L6880 30L9186
Prerequisites Slot 1: fullsize, 32-bit Slot 2: fullsize, 64-bit Slot 3: fullsize, 64-bit Slot 5: fullsize, 64-bit Slot 6: fullsize, 64-bit Slot 6: fullsize, 64-bit <u>Diskette</u> <u>CD-ROM</u> <u>Std pwr</u> Std pwr <u>Std pwr</u> Bay @ 3.5", SL 1", Bay @ 3.5", SL 1",	66MHz PCI (3. 66MHz PCI (3. 66MHz PCI (3. 33MHz PCI (5. 33MHz PCI (5. ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	v), hot-swa 3v), hot-sw 3v), hot-sw 3v), hot-sw v), hot-swa v), hot-swa v), hot-swa v), hot-swa vap vap vap	p, Bus A vap, Bus vap, Bus p, Bus C p, Bus C	<ul> <li>⇒ Rail syste</li> <li>B to snap ir</li> <li>B ⇒ Configura</li> <li>B ⇒ Costigura</li> <li>B ⇒ CostSele</li> <li>CTRL+A</li> <li>⇒ Several h</li> <li>⇒ Predictive</li> <li>memory, and fans</li> <li>Director of</li> </ul>	m enable and out titon/Sett F1 at sta ect near Failure processa n conjun can alert ator of a 7.0" x W pounds ack colo	es CD-I withou p Utility rtup startup publica Analysi ors, poo ction w the sys n immir 19.0" > r	t screws v invoked by by pressing ations s <sup>®</sup> on disk o wer supplies th IBM tem tem tent compoles to 28.0"	skette	WARRANT year parts iternationa n site warr II cities in a a m - 5 pm lext busine On site warr 24 hr / 7 d response 24 hr / 7 d respose <sup>7</sup> tin 0-day IBM BM System 4 hour / 7 d voard, fax, 6	Y SERVICE S and labor wa I Warranty Se anty all 3 yea all states , Mon- Fri co ess day respo ranty upgrade lay coverage, 7 time lay coverage, me (in eligible Start Up Sup	rranty <sup>3</sup> vrvice <sup>3</sup> rs verage nnse time e options: 4 hour 2 hour locations) port e <sup>14</sup> , bulletin d Internet ort

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IBM <sup>®</sup> Type-model Qnty x Pro	L2 cessor cache Memory	SCSI Disk controller	Mechanical S	Hot-sw lots x bays slots	vap Hot-swap pwr supplies	Mgmt Available adapter date
8681-1RX 1 x Xeon 70 8681-2RX 1 x Xeon 70 8681-3RX 1 x Xeon 90	00/100 2MB 512MB	None2 x Wide Ultra2None2 x Wide Ultra2None2 x Wide Ultra2	8U rack 12		hs) Three redundant 2 hs) Three redundan 2 hs) Three redundan	
processor(s) L2 cache Processor upgrade(s) Features	1MB or 2MB / full spee 8-way SMP / up to eigh Standard: one Process Maximum: two Process snoop bus traffic betwee	nt Pentium III Xeon proc or Board with four Intel	essors (same s Slot 2 sockets essor bus) / re / 'Mezzanine E	speed/cache size) (one processor bu quires two Cache xp Kit' has one Pro	s) Coherency Filter Carc ocessor Board that requ	ls (reduces cache uires
Memory - std / max Memory - std DIMMs Memory - type Memory - cards	Error Checking and C	(one memory bus) / two	ry and memory cards max (se	controller (Profus cond memory bus	ion Memory Controller	
SCSI disk controller SCSI channels SCSI implementation SCSI connectors SCSI cabling IDE controller / cabling Disk - capacity Disk - bays	Two Wide Ultra2 SCSI 64-bit PCI / integrated of One 68-pin connector in One 16-bit LVD cable to Enhanced IDE controlle	nternal and one .8mm v o two bay backplane / o er in PIIX4E / one one-di ) rpm disks / converged	/sec) /HDCI connecto ne 16-bit LVD o rop IDE cable fi tray is intercha	72.8GB wi or external / each cable from controll rom IDE controller ingeable with EXP	er to external 68-pin V to CD-ROM	ot-swap SCSI disks 15 devices HDCI connector
Mechanical Rack / conversion	EIA 19" rack models ( Supported in NetBAY E	<b>8U</b> ⁴ <b>)</b> x 28" deep Interprise Racks and cu	rrent racks with	extension options	s / kit available to conv	ert rack to tower
Architecture I/O Function Card Slots (Active™ PCI)	four PCI 2.2 buses (fou 64-bit 33MHz PCI adap PIIX4E (32-bit PCI Inte 12 hot-swap PCI slots <sup>10</sup>	ter / includes controllers	⊧, 10, 13 to alló s for SVGA (32- A Bridge, USB) <b>Ind attention i</b>	w hot-swap of PC bit PCI), SCSI, an / Super I/O (NS P ndicator lights (op	l-to-PCI bridge adapte d C97317VUL on 16-bit ptical sensors control p	ISA) off PIIX4E power to slot) /
LAN adapter CD-ROM / Diskette Ports Graphics controller		D-ROM / IDE interface o 5-pin parallel / two USB	/ one keyboar	d / one mouse / or	e SVGA (all in rear)	
Security		tor passwords / mountabl Remote Management se				
Diagnostics	Netfinity Advanced Sy and RS 485 bus conne operating system, temp Light-Path Diagnostic panel with LEDs assoc	ctors / provides remote erature, disks, fans, po s™/primary indicator on ated with failing compo	console and m wer supply / NS information nents	gmt / power on/off S LM78 hardware	system / monitors por	ver status, erature, fans)
LCD information panel Software		OM installation and confi APC PowerChute Plus /	guration	Netfinity 256MB Netfinity 512MB Netfinity 1GB SE	SDRAM DIMM (regist SDRAM DIMM (regist SDRAM DIMM (register DRAM DIMM (register Memory Card (16 soc	ered) II 20L0247 ered) II 20L0249 ed) II 33L3056
Keyboard / mouse Power supplies Fans	or 550 watts at 110v / each power supply / ea Nine fans / six hot-sw front for cpu area, three	I std and max: three 750 universal (voltage sensin ch has individual power ap redundant (three far a fans in middle for men in each power supply /	ng) / fans in cord / PFA ns in nory and PFA /	Pentium III Xeor Pentium III Xeor Pentium III Xeor Netfinity 8Ux28E NetBAY3E (3U p Netfinity Mezzan Netfinity 4X Acce	ADDME2/1MB Proc L 1700MHz/2MB Proc L 1900MHz/2MB Proc L 1900MHz/2MB Proc L 20 Rack-to-Tower Conv 20 Pack-to-Tower Conv 20 Pack-tow	Jpg 10K2330 Jpg 10K2166 Jpg 19K4637 versn Kit 28L4705 36L9701 10K2337 B filters) 10K2335
<ul> <li>Tool-free top, front,</li> <li>Access adapters fro</li> <li>Access memory, pro</li> <li>Access power supplicies (PC-Doc</li> <li>Six power cords (9' and three 220v)</li> </ul>	m top bcessors, and disks from lies from rear ressing F1 at startup tor) by pressing F2 at st each) included (three 11 ROM	Slot 2: fullsize, ( Slot 3: fullsize, ( Slot 4: fullsize, ( Slot 5: fullsize, ( Slot 6: fullsize, ( Slot 6: fullsize, ( Slot 7: fullsize, ( Slot 9: fullsize, ( Slot 9: fullsize, ( Slot 10: fullsize, ( Slot 10: fullsize, ( Slot 11: fullsize, ( Slot 12: fullsize	64-bit 33MHz PC 64-bit 33MHz PC 64-bit 33MHz PC 64-bit 33MHz PC 64-bit 66MHz PC 64-bit 66MHz PC 64-bit 66MHz PC 64-bit 33MHz PC 64-bit 33MHz PC 64-bit 33MHz PC 64-bit 33MHz PC 64-bit 33MHz PC a2-bit 33MHz PC anced Remote I anced Remote I	Cl, hot-swap, Bus D Cl, hot-swap, Bus D Cl, hot-swap, Bus D Cl, hot-swap, Bus D Cl, hot-swap, Bus C Cl, hot-swap, Bus B Cl, hot-swap, Bus A Cl, hot-swap, Bus A	<ul> <li>3 year parts and</li> <li>International Wa</li> <li>On site warranty</li> <li>All cities in all st</li> <li>8 am - 5 pm, Mor</li> <li>Next business di response time</li> <li>On site warranty</li> <li>24 hr / 7 day cc average respondent</li> <li>24 hr / 7 day cc average respondent</li> <li>1BM Start Up Su</li> <li>IBM SystemXtraition</li> <li>24 hour / 7 day to electronic, and here</li> </ul>	labor warranty <sup>3</sup> rranty Service <sup>3</sup> all 3 years ates h- Fri coverage upgrade options: overage, 4 hour nse <sup>7</sup> time (30L9187) overage, 2 hour ise <sup>7</sup> time (31L2723) ations) ipport" h 16 elephone <sup>14</sup> , fax, tternet n/server) support

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- <sup>1</sup> MHz and GHz only measures internal clock speed (or bus speed where indicated), not application performance. Many factors affect application performance.
- <sup>2</sup> When referring to a hard drive capacity, GB equals one billion bytes, and TB equals one trillion bytes. Total useraccessible capacity depends on operating environment.
- <sup>3</sup> For terms and conditions or copies of IBM's limited warranty, call 1 800 772-2227 in the U.S. Limited warranty includes International Warranty Service in those countries where this product is offered. Telephone support may be subject to additional charges. For warranties including on site service, the customer may be asked diagnostic questions before a technician is sent.
- <sup>4</sup> A single "U", or rack unit, is 1.75" or 44.45mm.
- <sup>5</sup> S.M.A.R.T. stands for Self-Monitoring, Analysis and Reporting Technology.
- <sup>6</sup> Variable read rate. Actual playback speed will vary and is often less than the maximum possible.
- <sup>7</sup> Service levels are response time objectives and are not guarantees. Onsite service provided after IBM attempts to resolve the problem remotely.
- <sup>8</sup> Subject to conditions.
- <sup>9</sup> Applications may vary from retail version and may not include all documentation or functions. Not all applications available separately. Titles subject to change without notice.
- <sup>10</sup> Updated drivers and hot-swap services for certain operating systems may be required to support PCI hot-swap functions.
- <sup>13</sup> Maximum memory may require replacement of standard memory with optional maximum memory module.
- <sup>14</sup> Response time varies. May exclude some holidays.
- <sup>15</sup> Warranty and support for ServerProven solutions is provided by the manufacturer, not IBM. IBM makes no respresentations or warranties.
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<sup>19</sup> Between January 1, 2000 and December 31, 2000, these xSeries systems include license entitlement for Lotus Domino Application Server R5, five Notes Collaboration Client licenses, and five web browser Client Access licenses at no additional charge.

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March 2001 xcover.p65 Sbook.pdf PC Institute



# Personal Systems Reference IBM Netfinity Servers

March 2001 - Version 218



#### IBM Netfinity® 4500R

IBM <sup>®</sup> Netfinity <sup>®</sup> : Type-model Qnty x	Processor Me	emory Disk	SCSI controller	Mechanical	Slots x bays	Hot -swap disk bays	ethernet	Available date
8656-2RY 1 x Pentiur 8656-1RY 1 x Pentiur 8656-3RY 1 x Pentiur 8656-4RY 1 x Pentiur 8656-5RY 1 x Pentiur	n III 733/133 123 n III 800/133 123 n III 866/133 123	8MBNone8MBNone8MBNone8MBNone8MBNone	2 x Ultra16 2 x Ultra16 2 x Ultra16	50         3U rack	5 slots x 7 bay 5 slots x 7 bay	vs 3 hot-swap vs 3 hot-swap vs 3 hot-swap	10/100 ethernet 10/100 ethernet 10/100 ethernet	April 2000 May 2000 May 2000
Intel® processor(s) L2 cache Implementation SMP support	1 x Pentium® III 6 256KB std and ma Motherboard conta one VRM socket ( 2-way SMP via se	ax / ECC / at p ains two Intel S one VRM integ	rocessor spe Slot 1 connec grated), four	ed / processo ctors for SECC DIMM sockets	or and L2 cache C2 cartridges (o s, PCI slots, and	in Single Edge pen Slot 1 used integrated sub	systems	
Memory - std / max Memory - sockets Memory - features Memory - support	128MB std / 4GB 4 sockets / 3 avail SDRAM / 133MHz Supports registered	lable / <b>ECC</b> / ( z / four 168-pi	n gold-plated	I DIMM 3.3 vo	lt sockets / PC	133-compliant	controller) / non-inte	erleaved
SCSI disk controller SCSI channels IDE controller / cable Disk - capacity Disk - bays	64-bit PCI / no har Two internal 16-bit	dware RAID s t channels / bo 16-bit 68-pin L E / one conneo supports 7200	tandard oth internal (r _VD cable fro ctor on plana -10000 rpm o	no external) om controller to r / one 1 drop disks / 1 backp	o backplane <i>Cl</i> IDE cable (CD- plane / SAF-TE	<i>hannel B:</i> 16-bi ROM) 1.0-compliant	Ultra 160/m / on pla t 68-pin interface (n s like 5600, 8500R	
Mechanical Rack support Bus slots (see below) Chip set Bays / available Status LEDs	EIA 19" Rack (3U Rack systems sup PCI 2.1 (33MHz) / 32-bit PCI (two PC ServerWorks® Se	<sup>4</sup> ) x 26-inch de ported in IBM dual peer PCI 3 slots, graphi <b>rverSet III LE</b> and Super I/C w): 7 bays / t	eep Netfinity Rad / 64-bit PCI cs, ethernet, chip set / N O National Se hree hot-swa	cks (three PCI slo South Bridge) B6635 North E emiconductor® p bays	ts, SCSI contro 3ridge 3.0LE / II PC97317VUL	A/ 21 ller) / B6566 South Br (diskette, parall	<i>I models:</i> Max int di 8.4GB <sup>2</sup> with six 36.4 idge for IDE, USB, I el, serial, keyboard,	<u>GB SL disk</u> SA bus for
10/100 ethernet CD-ROM / diskette Serial / parallel / USB Graphics controller	AMD <sup>®</sup> Am79C975 24X-10X <sup>6</sup> CD-ROM <i>Serial:</i> Three 9-pir SVGA / PCI 2.1 bu	M / multisession (one for Man	n / IDE inter	ace / bootable Parallel: O	e; <i>Diskette:</i> 3.5 ne (EPP, ECP)	" 1.44MB disket / IEEE 1284		ersion 1.1) DDC2B
Security	Power-on passwor and reset button / read/write access,	unattended bo	oot / selectab	le boot / syste	ner's name / hin ems mgmt secu	iged bezel to co rity (user log-in	over disk bays, powe password, read-only	er button, y or
Systems management Diagnostics Software	POST, and auto ro Diagnostics LED board error LEDs / ServerGuide™ (CI	ecovery functi Panel (under diagnostics in D-ROM installa	ons / monito cover) / Ligh ROM by pre ation and con	rs temperatur t-Path Diagno ssing F2 at sta figuration utiliti	e, fans, and po stics™ provides artup for PC-Doo es), Lotus® Don	wer supplies an LED map to ctor nino® Applicatio	ngmt / allows diagno failing component / n Server R5 (Windov ncludes Netfinity Dire	system vs NT or
Keyboard / mouse Power supply	None standard Std: one 270 watt front access / red voltage-sensing / a	hot-swap; <i>Max</i> undant with tw	k: two 270 wa o power supp	utt hot-swap / blies / worldwid	Pentium III Pentium III Ie / Pentium III	667/133MHz/2 733/133MHz/2	56KB Proc Upg 56KB Proc Upg z/256KB Proc Upg	00N7949 00N7943 10K2338 19K4630
Fans Prerequisites	Three (two in midd (any single fan car failure signals Diag each power supply Monitor, disk, netw	n fail while mai gnostic LED ai y	intaining coo nd Mgmt Pro	ling) / PFA / fa cessor / fan i	Pentium III 128MB SD 256MB SD 512MB SD G 1GB SDRA Netfinity 27	RAM ECC DIM RAM ECC DIM RAM ECC DIM M ECC DIMM 70W Hot-Swap I	56KB Proc Upg (256KB Proc Upg M 133MHz (RDIMM M 133MHz (RDIMM I 133MHz (RDIMM I33MHz (RDIMM II) Redundant Pwr Supj Iot-Swap Exp Kit	II) 33L3125 II) 33L3127 33L3129
Slot 1: fullsize, 32-bit Slot 2: fullsize, 32-bit Slot 3: fullsize, 64-bit Slot 5: fullsize, 64-bit Slot 5: fullsize, 64-bit <u>GORADM</u> Two 5.25" HH or three 3.5" SL Bay (1) 3.5", USO.8", Bay (2) 3.5", USO.8", Bay (3) 3.5", SL 1", Bay (3) 3.5", SL 1", Bay (3) 3.5", SL 1", Bay (5) 2.55", HH 1.6", Bay (5) 2.55", HH 1.6", Bay (6) 5.25", HH 1.6", Bay (7) 5.25", HH 1.6", Bay (7) 5.25", HH 1.6", Bays 6 through 7 sup Expansion Kit to com	33MHz PCI 2.1 (5 33MHz PCI 2.1 (5 Power Supply e. access, diskette access, cD-ROM access, hot swap access, hot swap access*	/), Bus A /), Bus B /), Bus B /), Bus B /), Bus B	diskette, without s configure SCSISel CTRL+A Several 1 Predictiv memory, and fans Director of an imr Rack: H 44 to 62 Stealth b Two 5.25 devices al Netfinity 3	tape drives) to crews ation/Setup Ut F1 at startup ect near startu nardcopy pubb e failure analy processors, \ in conjunctior can alert the s ninent compo 5.25" x W 16. pounds lack color " bays use ra -Pack Ultra16	sis on disk opti /RMs, power so with Netfinity system administ nent failure 3" x D 26.0" ils (no screws)	ti $\Rightarrow$ 3 ye $\Rightarrow$ Inter $\Rightarrow$ On $\Rightarrow$ All $\Rightarrow$ 8 a $\Rightarrow$ Ne ons, $\downarrow$ pplies, $ress trator for \Rightarrow 18\Rightarrow 90-\Rightarrow 18\Rightarrow 90-\Rightarrow 24e(www.ex)$	LIMITED WARRA ear parts and labor w rnational Warranty S site warranty all 3 ye cities in all states m - 5 pm, Mon- Fri c xt business day aver ponse time site warranty upgra 4 hr / 7 day coverag verage response <sup>7</sup> tif 4 hr / 7 day coverag verage response <sup>7</sup> tin a eligible locations) day IBM Start Up Su <i>M</i> SystemXtra <sup>®,16</sup> hour / 7 day telepho ctronic, and Internet ww.pc.ibm.com) sup <i>M</i> or reseller warrant	varranty <sup>3</sup> Service <sup>3</sup> ears overage rage de options: e, 4 hour ne e, 2 hour ne pport ne <sup>14</sup> , fax, port

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= Hot Swap

S = 8656-2R4 withdrawn effective December 2000; 1RY and 3RY effective March 2001

No warranties are expressed or implied in this summary (N45)  $\,\,\odot\,$  IBM Corp. October 2000

# IBM Netfinity<sup>®</sup> 5100 (Spring 2000)

IBM <sup>®</sup> Netfinity <sup>®</sup> : Type-model Qnty	x Processor Mer	nory Disk	SCSI controller	Mechanical	Slots x bays	Hot -swap disk bays	ethernet	Available date
8658-31Y 1 x Pentiu 8658-3RY 1 x Pentiu 8658-41Y 1 x Pentiu 8658-4RY 1 x Pentiu 8658-51Y 1 x Pentiu 8658-5RY 1 x Pentiu	um III 800/133 128 um III 866/133 128 um III 866/133 128 um III 866/133 128 um III 933/133 128	BMBNoneBMBNoneBMBNoneBMBNoneBMBNoneBMBNone	2 x Ultra160 2 x Ultra160 2 x Ultra160 2 x Ultra160 2 x Ultra160 2 x Ultra160 2 x Ultra160	0 5U rack 0 Tower 0 5U rack 0 Tower	5 slots x 10 bays 5 slots x 10 bays	6 hot-swar 6 hot-swar 6 hot-swar 6 hot-swar	<ul> <li>10/100 ethernet</li> <li>10/100 ethernet</li> <li>10/100 ethernet</li> <li>10/100 ethernet</li> <li>10/100 ethernet</li> </ul>	May 2000 May 2000 May 2000 June 2000
L2 cache Implementation	1 x Pentium <sup>®</sup> III 800 256KB std and max Motherboard contain one VRM socket (on 2-way SMP via secc Models with 800EB	/ ECC / at pro is two Intel Slo e VRM integra ond identical p	cessor speed at 1 connecto ated), four DI processor / u	d / processor a rs for SECC2 MM sockets, l pgrade via SE	and L2 cache in Si cartridges (open S PCI slots, and integ ECC2 into second	Slot 1 used grated subs Slot 1 CPL	by terminator), systems J connector	
Memory - std / max Memory - sockets	128MB std / 4GB m 4 sockets / 3 availab SDRAM / 133MHz /	iax ble / ECC (all l	have Error C	hecking and (	Correcting (ECC)	memorv co	ntroller) / non-interle	aved IIMMs only
SCSI disk controller SCSI channels IDE controller / cable Disk - capacity Disk - bays	Adaptec <sup>®</sup> AHA-7899 64-bit PCI / supports Two internal 16-bit c SCSI Channel A: 16	9 / dual chann IBM ServeRA hannels / both S-bit 68-pin LV ROSB4) Soutl e (CD-ROM) pports 7200-10	<b>hel Wide Ultr</b> ID adapters internal (no D cable from h Bridge / on 0000 rpm dis	a160 SCSI co (no hardware external) controller to l e connector o ks / 1 backpla	ntroller (LVD 160 RAID standard) packplane <i>Channe</i> n planar / ne	MB/sec) / l e/ <i>B:</i> 16-bit	Jltra 160/m / on plana	ar / : used) sk capacity:
Mechanical Rack support Bus slots (see below) Chip set Bays / available	systems like 5600, 8 Tower or EIA 19" R Rack systems suppo PCI 2.1 (33MHz) / du graphics, ethernet, S ServerWorks® Serv Service Processor an	500R ack (5U⁴) orted in IBM No Jal peer PCI / ( outh Bridge) / erSet III™ LE nd Super I/O N	etfinityRacks 64-bit PCI (th no hot-swap <b>chip set</b> / NE Vational Sem	/ kit available ree PCI slots, slots 36635 North E iconductor® P	to convert tower to SCSI controller) / ridge 3.0LE / IB65 C97317VUL (diske	o rack (no r 32-bit PCI 66 South B ette, paralle	rack to tower convers (two PCI slots, ridge for IDE, USB, I	sion) SA bus for nouse)
10/100 ethernet CD-ROM / diskette Serial / parallel / USB	AMD <sup>®</sup> Am79C975 / c 40X-17X <sup>6</sup> CD-ROM /	on planar / <b>10E</b> / multisession / one for Mgmt / S3 <sup>®</sup> Savage4	BaseT, 100B / IDE interfac Processor) 4 (on planar)	aseTX / full d e / 1.6" HH / I <i>Parallel:</i> One / 8MB SDRAM	uplex / RJ-45 con pootable; <i>Diskette</i> e (EPP, ECP) / IEE I std/max / 1280x1	nector / 3 fi : 3.5" 1.44N E 1284 <i>L</i> 024 at 16M	ront LEDs //B diskette drive / du <i>JSB:</i> Two ports (Vers I colors at 100Hz / DE	ist cover sion 1.1) DC2B
,	power button, and re password, read-only	eset button (to)	ver only) / ur	attended boo	t / selectable boot			
Systems mgmt Diagnostics Software	Netfinity Advanced POST, and auto rec Diagnostics LED Pa system board error L ServerGuide™ (CD-I Linux version) plus fiv and APC PowerChut	overy function anel (under co EDs / diagnosi ROM installatio ve client licens	is / monitors over) / Light-F tics in ROM b on and config es <sup>19</sup> , AntiViru	temperature, Path Diagnosti by pressing F2 uration utilities is software,	fans, and power s cs™ provides an Ll at startup for PC-L ), Lotus <sup>®</sup> Domino <sup>®</sup> S Pentium III 800	Supplies ED map to Doctor Application	failing component / Server R5 (Windows) 56KB Proc Upg	s NT or 10K2338
Keyboard / mouse Power supply	<i>Tower only:</i> IBM 10 <sup>°</sup> <i>Std:</i> one 250 watt he with optional Exp Kit supplies / worldwide each power supply	1-key keyboaro ot-swap; <i>Max:</i> 37L6881 / rec	d / IBM mous three 250 wa lundant with	e (both black) att hot-swap two power	Pentium III 866 Pentium III 933 Pentium III 1GI 128MB SDRAM 256MB SDRAM 512MB SDRAM	8/133MHz/2 Hz/133MHz MECC DIM MECC DIM MECC DIM	56KB Proc Upg 56KB Proc Upg //256KB Upg (only 5x M 133MHz RDIMM II M 133MHz RDIMM II M 133MHz RDIMM II	33L3123 33L3125 33L3127
Fans Prerequisites	Two (fan in rear, blow fan failure signals Di fan in each power su Monitor, disk, netwo	agnostic LÉD	and Mgmt Pr	ocessor /	Netfinity 5Ux24 Netfinity 250W Netfinity Media	D Tower-to Hot-Swap Bay Conve	Redundant Pwr Supp	10K2340
Slot 2: fullsize, 32-b Slot 3: fullsize, 64-b Slot 4: fullsize, 64-b Slot 5: fullsize, 64-b Slot 5: fullsize, 64-b Bay <u>5.25" HH</u> <u>5.25" HH} <u>5.25" HH</u> <u>5.25" HH</u> <u>5.25" HH</u> <u>5.25" HH</u> <u></u></u>	② 3.5", SL 1", acc ③ 3.5", SL 1", acc ④ 3.5", SL 1", acc	), Bus A ), Bus B ), Bus B ess, diskette ess, hot swap ess, hot swap ess, hot swap ess, hot swap ess, hot swap ess, hot swap ess, open ess, open ess, CD-ROM 6 SL disks a SCA-2 support 3.5"	<ul> <li>Quick releving All systems of the system of the systems of the system of the system of the system of the system of the systems of the system of</li></ul>	ease adapter a menables de cape drives) be tion/Setup Uti F1 at startup act near startup processors, 1 in conjunctior an alert the s ninent compoi t 16.8" x W 8. 8.6" x W 16. 2.7 pounds lack color	6" x D 26.0" " x D 24.8"		LIMITED WARRA vear parts and labor v ernational Warranty 3 site warranty all 3 yr cities in all states um - 5 pm, Mon- Fri ca sponse time a site warranty upgrav 24 hr / 7 day coverage average response <sup>7</sup> tim el gible locations) -day IBM Start Up Su M SystemXtra <sup>®.16</sup> hour / 7 day telephon ectronic, and Internet ww.pc.ibm.com) sup	varranty <sup>3</sup> Service <sup>3</sup> ears overage age de options: e, 4 hour ne e, 2 hour ne pport ne <sup>14</sup> , fax,

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■ Hot Swap
 ➤ = Models 31Y and 3RY withdrawn effective December 2000

# IB所 Netfinity<sup>®</sup> 5600 (Spring 2000)

IBM® Netfinity®: Type-model Qnty x	Processor Memory Disk	SCSI controller	Mechanical		Hot -swap disk bays	ethernet	Available date
8664-41Y 1 x Pentiu 8664-4RY 1 x Pentiu 8664-51Y 1 x Pentiu 8664-5RY 1 x Pentiu 8664-6RY 1 x Pentiu 8664-6RY 1 x Pentiu 8664-71Y 1 x Pentiu 8664-7RY 1 x Pentiu	m III 733/133 256MB None m III 800/133 256MB None m III 800/133 256MB None m III 866/133 256MB None m III 866/133 256MB None m III 866/133 256MB None	2 x Wide Ultr 2 x Wide Ultr	a2 5U rack a2 Tower a2 5U rack a2 Tower a2 5U rack a2 Tower a2 Tower	5 slots x 10 bays 5 slots x 10 bays	6 hot-swap 6 hot-swap 6 hot-swap 6 hot-swap 6 hot-swap 6 hot-swap 6 hot-swap	10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet 10/100 ethernet	May 2000 May 2000
Intel <sup>®</sup> processor(s) L2 cache Implementation SMP support	1 x Pentium <sup>®</sup> III 733, 800EB, 8 256KB std and max / ECC / at <i>Processor Complex</i> contains th two VRM sockets (one used), 2-way SMP via second identit	processor spe wo Intel Slot 1 four DIMM soc	ed / processon connectors for kets, and Relia	r and L2 cache in S SECC2 cartridges ance CNB3.0LE Nor	open Slot 1 th Bridge	used by terminator	),
Memory - std / max Memory - sockets Memory - features Memory - support	256MB std / 4GB max 4 sockets / 3 available / ECC SDRAM / 133MHz / four 168- Supports registered SDRAM F	/ (all have Erro pin gold-plated	r Checking ar DIMM 3.3 vol	d Correcting (ECC) t sockets / PC133-c	memory co		leaved
SCSI disk controller SCSI channels Extra SCSI cable IDE controller / cable Disk - capacity Disk - bays	Adaptec <sup>®</sup> AHA-7897 / dual ch 64-bit PCI / two channels (one <i>SCSI Channel A</i> : 16-bit 68-pir <i>SCSI Channel B</i> : 16-bit 68-pir Includes a terminated 2-drop 1 Single Primary IDE (ROSB4) S one 1 drop IDE cable (CD-ROI <b>None standard</b> / supports 720 Six hot-swap / no trays include	internal/one ex LVD cable fro interface (hard 6-bit Ultra SCS outh Bridge / c M) 0-10000 rpm c	kternal) / support m controller to dwired) to exte non-LVD cal ne connector lisks / 1 backp	orts IBM ServeRAIE backplane rnal SCSI port (.8m ole for optional SCS on planar / lane	adápters (n m VHDCI co I devices in <i>All i</i> 218	o hardware RAID s nnector) open 5.25" bays <i>nodels:</i> Max int dis .4GB <sup>2</sup> with six 36.40	sk capacity: GB SL disks
Mechanical Rack support Bus slots (see below) Chip set Bays / available	Tower or EIA 19" Rack (5U <sup>4</sup> ) Rack systems supported in IBI PCI 2.1 (33MHz) / dual peer P 64-bit PCI (three hot-swap PCI ServerWorks® ServerSet 3.0I Service Processor and Super (See diagram below): 10 bays	M NetfinityRack Cl / <b>Active PCl</b> slots, SCSI co <b>.E chip set</b> / N /O National Se	ts / kit availabl ™ <b>with hot-sv</b> ntroller) / 32-b orth Bridge (C miconductor®	e to convert tower t vap PCI slots (hot r it PCI (two PCI slots NB3.0LE) / South B PC97317VUL (disk	o rack (no ra eplace, hot u s, graphics, e ridge (ROSB ette, parallel,	ck to tower convers upgrade, hot expan thernet, South Brid 4) for IDE, USB, IS serial, keyboard, r	sion) sion) / lge) A bus for nouse)
10/100 ethernet CD-ROM / diskette Serial / parallel / USB Graphics controller	AMD <sup>®</sup> Am79C975 / on planar / 40X-17X <sup>6</sup> CD-ROM / multisess <i>Serial:</i> Three 9-pin (one for Mg SVGA / PCI 2.1 bus / S3 <sup>®</sup> Trio	ion / IDE interfagmt Processor)	ace / 1.6" HH / <i>Parallel:</i> Or	/ bootable; <i>Diskette</i> ne (EPP, ECP) / IEE	: 3.5" 1.44MI E 1284 US	B diskette drive / du SB: Two ports	
Security	Power-on password / administ power button, and reset button password, read-only or read/w	(tower only) /	unattended bo	ot / selectable boot			
Systems mgmt Diagnostics Software	Netfinity Advanced System M POST, and auto recovery fund Daignostics LED Panel (unde error LEDs / diagnostics in ROI ServerGuide™ (CD-ROM insta Linux version) plus five client lid and APC PowerChute Plus / ir	ctions / monito er cover) / Light // by pressing F llation and conf censes <sup>19</sup> , AntiVi	s temperature -Path Diagnos 2 at startup fo iguration utilitie rus software,	, fans, and power s stics™ provides an L r PC-Doctor es), Lotus® Domino® Pentium III 733,	Supplies ED map to fa Application \$ (133MHz/256	ailing component / s Server R5 (Windows	ystemboard
Keyboard / mouse Power supply Fans	Tower only: IBM 101-key keyk Std: two 250 watt hot-swap; M redundant with two power su voltage-sensing / auto-restart / Three redundant, hot-swap far	ax: three 250 w pplies / worldw fans in each po	att hot-swap / ide / ower supply	k) Pentium III 866, Pentium III 933, 128MB SDRAM 256MB SDRAM 512MB SDRAM	(133MHz/256 (133MHz/256 I ECC DIMM I ECC DIMM I ECC DIMM	KB Proc Upg	19K4630 19K4631 d) 33L3058 d) 33L3060
	fan failure signals Diagnostic L power supply fans			Netfinity 5Ux24	D Tower-to-F		37L6858
Slot 4: fullsize, 64-bit Slot 5: fullsize, 64-bit Bay 0 Bay	t PCI 2.1 (5v), Bus A t PCI 2.1 (5v), Hot-swap, Bus B t PCI 2.1 (5v), Hot-swap, Bus B t PCI 2.1 (5v), Hot-swap, Bus B 0 3.5", SL 1", access, disket 2 3.5", SL 1", access, hot sv 0 5.25", HH 1.6" access, open 0 5.25", HH 1.6" access, open 1 5.25", HH 1.6" access, open 2 through 7 support 6 SL disks 1H hot-swap disks via SCA-2 ectors	<ul> <li>Quick re</li> <li>New rail diskette, without a</li> <li>Configue pressing</li> <li>Configue pressing</li> <li>SCSISE</li> <li>Operato</li> <li>Predictiv memory</li> <li>Manage of an im</li> <li>Tower:</li> <li>Rack: H</li> <li>Stealth I</li> <li>All non-I</li> </ul>	lease adapter system enable tape drives) to acrews ation/Setup Ut F1 at startup lect near startup r Information F re failure analy processors, in conjunction r can alert the minent compu- H 16.8" x W 8 I 8.6" x W 16.6 32.7 pounds	.6" x D 26.0" 3" x D 24.8" s use rails	A,	IMITED WARRAM ar parts and labor w national Warranty S ite warranty all 3 yei ities in all states - 5 pm, Mon- Fri co business day aver- onse time ite warranty upgrad hr / 7 day coverage erage response <sup>7</sup> tim hr / 7 day telephor tronic, and Internet w.pc.ibm.com) supp or reseller warranty	varranty <sup>3</sup> Service <sup>3</sup> ears overage age de options: a, 4 hour ne a, 2 hour ne pport ne <sup>14</sup> , fax, port

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 $\approx$  = 4xx and 5xx models withdrawn effective December 2000

## IBM Netfinity® 6000R

IBM <sup>®</sup> Netfinity <sup>®</sup> :	Rack 1 x Pentium <sup>®</sup> Xeon™ III 700MHz Open bay	Rack 1 x Pentium III Xeon 7 Open bay	700MHz	
Type - model Mechanical Disk - capacity Disk - bays Rack support Available date	8682-1RY EIA 19" Rack (4U <sup>4</sup> ) None standard / supports 7200-100 Hot-swap / 3 bays std / 6 max / 80-pir Supported in IBM NetBay® Racks May 2000			
Intel® processor(s) L2 cache Implementation SMP support	1 x Pentium III Xeon 700/100MHz <sup>1</sup> 1MB std and max / at processor spe Motherboard contains four Intel Slot one slot for Memory Board, and inte 4-way SMP via identical processors Pentium III Xeon 900MHz upgrade at	2 connectors for SECC ca grated subsystems / all VR / upgrade via SECC into S	processor speed rtridges (fourth Slot RMs integrated in pr	
Mem - std / max / type	512MB std / 16GB max / Chipkill™	multibit error correction us	sing ind std ECC DI	MMs (fixes 1 to 4-bit errors on same
Memory - sockets Memory - support	chip) / Chipkill performed by memory One Memory Board std and max / 10 SDRAM / 100MHz / sixteen 168-pin Supports registered SDRAM ECC D	6 sockets / 12 available (fo gold-plated DIMM 3.3 volt	sockets / PC100-cc	tandard) / 4-way memory interleave ompliant / requires 4 identical DIMMs
SCSI disk controller	Adaptec® AHA-7899 / dual channe		troller (LVD 160ME	3/sec) / Ultra 160/m / on planar /
SCSI channels	64-bit PCI / no hardware RAID stand Two 16-bit channels / both internal o <i>Channel A</i> : 16-bit 68-pin LVD cable or can attach standard bulkhead LVI	r one internal with one external from controller to backplar	ne / Channel B: inte	ernal 16-bit connector to use internally
Extra SCSI cable IDE controller / cable	Includes a 16-bit LVD SCSI cable fo Single Primary IDE / one connector of	r external SCSI devices via	a an external 0.8mm	VHDCI connector
Architecture Slots (Active™ PCI) Chip set	two 16-bit links to 6536) / IB6566 So Semiconductor® PC97317VUL (disk	: (3 PCI slots) / Bus C: 64-b ivailable / hot replace, hot i <b>ip set</b> / NB6536 North Brid buth Bridge for IDE, USB, icette, parallel, serial, keybo	bit 33MHz (2 PCI slo upgrade, hot expan dge 2.0HE / NB655 ISA bus for Service oard, mouse)	ots, SCSI controller) sion 5IO Bridge 2.0 (Inter Module Bus with 9 Processor and Super I/O National
Bays / available Status LEDs	(See diagram below): 5 bays / three h Operator Information Panel (in from			
10/100 ethernet CD-ROM / diskette Serial / parallel / USB Graphics controller	AMD <sup>®</sup> Am79C975 / on planar / <b>10Ba</b> 40X-17X <sup>6</sup> CD-ROM / multisession / I <i>Serial:</i> Three 9-pin (one for Mgmt Pr SVGA / PCI 2.1 bus / S3 <sup>®</sup> Savage4 (	DE interface / bootable;  D ocessor)   Parallel: One  l	<i>Diskette:</i> 3.5" 1.44MI <i>USB:</i> Two ports (Ve	B diskette drive / dust cover rsion 1.1) Adv Sys Mgmt: Two RJ-45
Security	Power-on password / administrator p selectable boot / systems mgmt sect start mode	bassword / hinged bezel to urity (user log-in password)	cover power buttor , read-only or read/	n and reset button / unattended boot / write access, dial back) / unattended
Systems management Diagnostics Software	allows diagnostic, reset, POST, and Diagnostics LED Panel (under cove motherboard error LEDs / diagnostics	auto recovery functions / m r) / Light-Path Diagnostics™ s in ROM by pressing F2 at	nonitors temp, fans, <sup>M</sup> provides an LED m startup for PC-Doct	ap to failing component /
Keyboard / mouse Power supply	None standard Std: one 270 watt hot-swap; Max: the front access / redundant with two po cases; redundancy with three in all ca	ree 270 watt hot-swap / wer supplies in most ases / auto-restart	Pentium III Xeon 700	
Fans Prerequisites	Six (four for disks, memory, PCI; two hot-swap / redundant (any single far maintaining cooling / PFA / fan failur and Mgmt Processor / fan in each po Monitor, disk, network oper system,	o for processors) / n can fail while e signals Diagnostic LED ower supply keyboard, mouse, rack	512MB 100MHz SDI 1GB 100MHz SDRA 2GB 100MHz SDRA Netfinity 270W Hot-S 36.4GB 10K-4 Ultra1	RAM ECC RDIMM 33L3117
Slot 2: fullsize, 64-bit Slot 3: fullsize, 64-bit Slot 4: fullsize, 64-bit Slot 5: fullsize, 64-bit Slot 6: fullsize, 64-bit <u>Diskette</u> <u>Bay 1 3.5", SL 1", Bay 2 3.5", SL 1", Bay 3 3.5", SL 1", Bay 3 3.5", SL 1", Bay 3 3.5", SL 1",</u>	33MHz PCI (5v), hot-swap, Bus C	<ul> <li>Rail system enables CD- to snap in and out withou</li> <li>Configuration/Setup Utili pressing F1 at startup</li> <li>SCSISelect near startup CTRL+A</li> <li>Several hardcopy public</li> <li>Predictive Failure Analys memory, processors, po and fans in conjunction v Director can alert the sy administrator of an immi failure</li> <li>Rack: H 7.0" x W 19.0"</li> <li>62 to 77 pounds</li> <li>Stealth black color</li> </ul>	-ROM and diskette ut screws ty invoked by by pressing cations sis® on disk options, ower supplies, vith IBM stem inent component x D 28.0"	<ul> <li>WARRANTY SERVICE SUPPORT</li> <li>⇒ 3 year parts and labor warranty<sup>3</sup></li> <li>⇒ International Warranty Service<sup>3</sup></li> <li>⇒ On site warranty all 3 years</li> <li>⇒ All cities in all states</li> <li>⇒ 8 am - 5 pm, Mon- Fri coverage</li> <li>⇒ Next business day response time</li> <li>⇒ On site warranty upgrade options:</li> <li>• 24 hr / 7 day coverage, 4 hour response<sup>7</sup> time</li> <li>• 24 hr / 7 day coverage, 2 hour respos<sup>7</sup> time (in eligible locations)</li> <li>⇒ 90-day IBM Start Up Support</li> <li>⇒ IBM SystemXtra<sup>8,16</sup></li> <li>⇒ 24 hour / 7 day telephone<sup>14</sup>, bulletin board, fax, electronic, and Internet (www.pc.ibm.com) support</li> </ul>
disk bays (otherwise		218.4GB <sup>2</sup> with six 36.4GB		IBM or reseller warranty/service     s are expressed or implied in this summar

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## IBM Netfinity<sup>®</sup> 7100 (Spring 2000)

IBM <sup>®</sup> Netfinity <sup>®</sup>	Tower / NetBAY3 1 x Pentium III Xeon open bay	Rack 1 x Pentium III Xeon open bay	Tower / NetBAY3 1 x Pentium III Xeon open bay	Rack 1 x Pentium III Xeon open bay
Type - model Mechanical Rack / conversion Disk - capacity / bays Planned availability			8666-41Y Tower 5 / kits available to convert rack 5 w/ trays) / 80-pin SCA-2 conner	
Intel <sup>®</sup> processor(s) L2 cache Implementation Processor upgrade(s) Mechanical	4-way SMP / to four identical upgrade to Pentium III Xeo Each processor has one VF	2 cache integrated in Single I al Pentium III Xeon™ Slot 2 (S n 900MHz supported	e Memory Board slot, six PCI slo	
Mem - std / max / type Memory - sockets Memory - features Memory - support Chipkill upgrade	One Memory Board std and SDRAM / 100MHz / sixteen Supports registered SDRA	l max / 16 sockets / 12 availa 168-pin gold-plated DIMM 3. M ECC DIMMs only (64, 128	rrecting memory controller and ble (four 64MB DIMMs standard 3 volt sockets / PC100-compliar 256, 512MB, and 1GB) hip) via Upgrade Kit 10K2169 (a	) / 4-way memory interleave nt / requires 4 identical DIMMs
Additional cable	No cache / PCI Bus C 32-bi gChannel A: one 0.8mm VH Channel B: 68-pin internal Two-drop 16-bit LVD SCSI	mels (LVDS 80MB/sec) / eac t 33MHz / controller on Input/ DCI external SCSI connector	ne with 16-bit LVD cable to hot-s rices in two left bays	swap backplane
Architecture / chip set Active PCI™ slots Bays	(Frontside Bus interface fro three peer PCI 2.1 buses (/ None standard / upgrade to 14 bays total: <b>10 hot-sw</b>	m PCI bus to North Bridge) / A: 64-bit 66MHz, B: 64-bit 33 4 Active PCI 64-bit slots (like <b>ap disk bays</b> / three 5.25" HI	OSB4 South Bridge (EIDE, ISA MHz, C: 32-bit 33MHz) / NS PC	C97317VUL Super I/O 10K2169 (also includes chipkill) " SL bay (diskette) / see below
Ethernet controller CD-ROM / diskette drv Ports Graphics controller	CD-ROM: 40X-17X <sup>6</sup> CD-RO Serial: Three 9-pin (one fo	OM / IDE (ATAPI) / 1.6" HH / b r Mgmt Processor);	One 25-pin; USB: Two Ver 1.1;	tor / 3 LEDs 14 MB diskette drive / dust cover Keyboard; Mouse; RS485 mgmt 1024x768 at 256 colors at 85Hz
Security	lock / selectable boot / secu	ire mode (disables keyboard	and top cover mechanical lock and mouse) / diskette, mouse, C or read/write access, dial back)	D-ROM disable /
Systems management Diagnostics Software	power on/off system / monit Light-Path Diagnostics™ I	ors temperature, disks, fans, <b>Panel</b> providing LED map to f istallation and configuration ut erChute Plus / includes	ailing part (under top cover) / Inf ilities), Netfinity Active PCI/Chip 64MB SDRAM 100MHz 128MB SDRAM 100MHz	ormation LED Panel in front kill Upgrade Kit 10K2169 ECC DIMM (register) 33L3067 ECC DIMM (register) 33L3113
UpgradeableEEPROM Keyboard / mouse Power supply Fans	can be upgraded <i>Tower:</i> IBM 101-key keyb <i>Std:</i> two 250 watt hot-swap; three provide N+1 redundan universal (voltage sensing) Four logical fans / <b>five hot</b> - area, 2 in CPU area) / varia	/ fans in each power supply / <b>swap fans</b> (2 in disk area, 1 i	DMs       512MB SDRAM 100MHz         1GB SDRAM 100MHz E         Netfinity 250W Hot-Swap         Pentium III Xeon 700MH         Pentium III Xeon 700MH         PFA         Pentium III Xeon 900MH         Netfinity 8Ux24D Tower         signals	Iz/2MB Proc Upg II 10K2332 Iz/2MB Proc Upg II 19K4635 -to-Rack Kit 37I 6859
	<ul> <li>⇒ Black color</li> <li>⇒ ACPI 1.0</li> <li>⇒ Orange compone and labels indicate hot-swap options</li> <li>⇒ Suppliers Declara</li> <li>⇒ Vital Product Data</li> <li>⇒ Backup BIOS</li> <li>Backup BIOS</li> <li>Backupane A: 10 SL 3.5" bays or 7 HH 3.5" bays</li> <li>Disks not supported in 5.25" bays</li> <li>Maximum internal of</li> </ul>	<ul> <li>B Ibs Slot 2: full, 64-bit 66MHz Slot 3: full, 64-bit 33MHz Slot 4: full, 64-bit 33MHz Slot 5: full, 64-bit 33MHz Slot 5: full, 64-bit 33MHz</li> <li>Slot 6: full, 64-bit 33MHz</li> <li>Removeable top cover</li> <li>Access adapters, merr</li> <li>Predictive failure analy</li> <li>by Adv System Mgmt I</li> <li>Director for DIMM(s), p</li> <li>power supply(s), disk(s</li> <li>disk capacity:</li> <li>.4GB SL hot-swap SCSI disk</li> </ul>	3.3v PCI, not hot, Bus A 5v PCI, not hot, Bus B 5v PCI, not hot, Bus B 6v All d 7 Nex resp 60 n = 24 8 an 8 an 9 Nex 10 n = 24 10 n = 24 10 n = 24 10 n	LIMITED WARRANTY ar parts and labor warranty <sup>3</sup> rnational Warranty Service <sup>3</sup> site warranty all 3 years cities in all states n - 5 pm, Mon- Fri coverage t business day average bonse time site warranty upgrade options: 4 hr / 7 day coverage, 4 hour verage response <sup>7</sup> time t hr / 7 day coverage, 2 hour verage response <sup>7</sup> time n eligible locations) Server Start Up Support SystemXtra <sup>®, 16</sup> nour / 7 day telephone <sup>14</sup> , fax, ctronic, and Internet w.pc.ibm.com) support or reseller warranty/service

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#### IBM Netfinity® 7600

ServeRAID-3HB: 32M ServeRAID-4M: 64M Adaptec AIC-7896: No Internal channel of Serv	Chipkill None Chipkill None Chipkill None Chipkill None <b>550 or 700MHz</b> <sup>1</sup> d CC L2 cache integr intical Pentium III > Xeon 900MHz sup e VRM / Processor le as a slide out St <b>ax / Chipkill</b> <sup>™</sup> mul d by memory cont and max / 16 socl teen 168-pin gold-j DRAM ECC DIMMs dapter (3 channels Cr-7896: Wide Ult de Ultra160 SCSI c	ated in Single Edge C (con™ Slot 2 (SC330) oported r Board has one Memo huttle for easy services tibit error correction us roller and firmware kets / 12 available (fou plated DIMM 3.3 volt s s only (128, 256, 512M ) or IBM ServeRAID-4	C-7896 8U rack C-7896 8U rack -7896 8U rack -7896 8U rack ide Bus ontact (SEC) cartr CPUs / ory Board slot, six ability) sing ind std ECC E rr 128MB DIMMs i cockets / PC100-c	6 slots x 14 t 6 slots x 14 t 6 slots x 14 t 6 slots x 14 t ridge in Intel Slo PCI slots, four I DIMMs (fixes 1 to standard) / 4-wa	bays (10 hs) bays (10 hs) bays (10 hs) bays (10 hs) t 2 ht 2 htel Slot 2 sl b 4-bit errors	Mar 2000 Jun 2000 Oct 2000 Oct 2000
1MB or 2MB / full speed Each processor with EC 4-way SMP / to four ide upgrade to Pentium III Each processor has one VRM slots (all removable 512MB std / 16GB <sup>13</sup> ma chip) / Chipkill performe One Memory Board std SDRAM / 100MHz / sixt supports registered SD IBM ServeRAID-3HB and AI ServeRAID-3HB and AI ServeRAID-3HB: 32N ServeRAID-3HB: 32N ServeRAID-4M: 64N Adaptec AIC-7896: No Internal channel of Serve	d CC L2 cache integr intical Pentium III X Xeon 900MHz sup e VRM / Processor le as a slide out Sf ax / ChipkilI <sup>™</sup> mul d by memory cont and max / 16 socl teen 168-pin gold-j DRAM ECC DIMMs dapter (3 channels Cc-7896: Wide Ult de Ultra160 SCSI c	ated in Single Edge C (con™ Slot 2 (SC330) oported r Board has one Memo huttle for easy services tibit error correction us roller and firmware kets / 12 available (fou plated DIMM 3.3 volt s s only (128, 256, 512M ) or IBM ServeRAID-4	ontact (SEC) carti CPUs / ory Board slot, six ability) sing ind std ECC I in 128MB DIMMs : cockets / PC100-ci	PCI slots, four I	Intel Slot 2 sl o 4-bit errors	
chip) / Chipkill performe One Memory Board std SDRAM / 100MHz / sixt supports registered SD IBM ServeRAID-3HB and AI ServeRAID-3HB and AI ServeRAID-3HB: 32N ServeRAID-4M: 64N Adaptec AIC-7896: No Internal channel of Serv	d by memory cont and max / 16 socl teen 168-pin gold-j DRAM ECC DIMMs dapter (3 channels Cc-7896: Wide Ult de Ultra160 SCSI d	roller and firmware kets / 12 available (fou plated DIMM 3.3 volt s s only (128, 256, 512M ) or IBM ServeRAID-4	ir 128MB DIMMs : ockets / PC100-c	standard) / 4-wa		on same
ServeRAID-3HB and AI ServeRAID-4M: Wic ServeRAID-3HB: 32N ServeRAID-4M: 64N Adaptec AIC-7896: No Internal channel of Serv	IC-7896: Wide Ulti de Ultra160 SCSI d				res 4 identica	
Two-drop 16-bit LVD SC Enhanced IDE controlle	MB ECC std/max b cache / PCI Bus C veRAID: 68-pin in erveRAID: two 0.8r CSI cable included er / one drop IDE ca	channels (LVDS 16ÒM 2MB mirrored battery-h aattery-backup cache / C 32-bit 33MHz / contrr nt conn (1 on -3HB, 2 mm VHDCI connectors to support devices in able from one IDE cor	/DS 80MB/sec) / dash B/sec) / each cha backup cache / PC PCI Bus B 64-bit biller on Input/Outp on -4M) with 16-b s on rear of adapt two left bays inector to CD-ROI	each channel su nnel supports 1 Cl Bus B 64-bit 3 33MHz but Board it LVD cable to l er M	upports 14 de 4 devices 33MHz hot-swap bad	evices ckplane
ServerWorks® ServerS (Frontside Bus interface three peer PCI 2.1 buse 4 hot-swap PCI slots <sup>10</sup> Active PCI via hot repl	Set III HE / CNB20 e from PCI bus to es (A: 64-bit 66MH with power and a ace, hot upgrade,	DHE North Bridge (PC North Bridge) / OSB4 Iz, B: 64-bit 33MHz, C ttention indicator lights hot expansion (see b	I 2.2 and memory South Bridge (EIE 2: 32-bit 33MHz) / a (optical sensors elow for details)	controller) / Clo DE, ISA Bridge, I NS PC97317V control power to	OB I/O Bridg USB, SMBus UL Super I/O slot) /	je s, IOAPIC)
CD-ROM: 40X-17X <sup>6</sup> CI Serial: Three 9-pin (on	D-ROM / IDE (ATA le for Mgmt Proces	PI) / 1.6" HH / bootable ssor); <i>Parallel:</i> One 25	e; <i>Diskette drive:</i> 5-pin; <i>USB:</i> Two ∖	3.5" 1.44 MB di /er 1.1; Keyboa	skette drive / rd; Mouse; R	S485 mgr
						) / system
processor) / on planar / power on/off system / m power supply Light-Path Diagnostics failing part (under top co ServerGuide <sup>TM</sup> (CD-RO Norton AntiVirus, APC F	provides remote of nonitors temperatu s <sup>™</sup> Panel providing over) / Information M installation and PowerChute Plus /	console and mgmt / re, disks, fans, g LED map to LED Panel in front configuration utilities), includes	256MB SDRAM 1 512MB SDRAM 1 1GB SDRAM 100 Netfinity 250W Ho Pentium III Xeon Pentium III Xeon Pentium III Xeon Pentium III Xeon	00MHz ECC DI 00MHz ECC DI MHz ECC DIM 550MHz/1MB P 550MHz/2MB P 700MHz/1MB P 700MHz/2MB P	MM (register MM (register) I Power Sup roc Upg II roc Upg II roc Upg II roc Upg II roc Upg II	r) 33L311 r) 33L311 33L311
Std: three 250 watt hot-s three provide N+1 redur universal (voltage sensi	swap; <i>Max:</i> four 25 indancy for typical c ing) / fans in each	50 watt hot-swap / onfig / tool-free install / power supply / PFA	Netfinity 8Ux24D IBM Netfinity NetE IBM Netfinity NetE	Rack-to-Tower   3AY3 3AY3 Caster Se	Kit	37L685 37L686 10L691 10L691 930690
PFA / fan failure signals	s Diagnostic LED a	ind Mgmt		→ 3 year parts         →         →         →	and labor wa	arranty <sup>3</sup>
" x ⇔ Black color ⇒ ACPI 1.0 ⇒ Orange comp and labels inc hot-swap opti ⇒ Suppliers Dec ⇒ Vital Product I ⇔ Backup BIOS Backplane A: 10 SL 3.5" ba or 7 HH 3.5" b	Slot 1: full Slot 2: full bonents Slot 3: full dicate Slot 4: full ons Slot 5: full claration Slot 6*: full Data * Occupied Startup; I ys S Remove SAccess a orted Predictiv Adv Sys Director	I,64-bit 66MHz 3.3v PC I,64-bit 66MHz 3.3v PC I,64-bit 33MHz 5v PCI, I,64-bit 33MHz 5v PCI, I,64-bit 33MHz 5v PCI, I,64-bit 33MHz 5v PCI, I,64-bit 33MHz 5v PCI, d by 64-bit ServeRAID <u>Diagnostics</u> (PC-Docto ritup; CTRL+A for SCS able top cover adapters, memory, CP re failure analysis: aler	I, not hot, Bus A hot swap, Bus B hot swap, Bus B hot swap, Bus B hot swap, Bus B adapter pressing F1 at r) by pressing ISelect Utility 'Us from top ts generated by or Netfinity	<ul> <li>On site warr</li> <li>All cities in a</li> <li>8 am - 5 pm,</li> <li>Next busine response tir</li> <li>On site warr</li> <li>24 hr / 7 da average re</li> <li>24 hr / 7 da average re (in eligible</li> <li>IBM Server 3</li> <li>IBM System</li> <li>24 hour / 7 oc electronic, a</li> </ul>	ranty all 3 yea all states , Mon- Fri co' ss day avera ne anty upgrad ay coverage, sponse <sup>7</sup> time locations) Start Up Sup Start Up Sup lay telephone	ars verage ige e options: 4 hour 2 hour 2 hour port e <sup>14</sup> , fax,
	None standard / hot-sw EIA 19" rack (8U <sup>4</sup> ) Rack systems supporte ServerWorks® Server3 (Frontside Bus interfact three peer PCI 2.1 bus 4 hot-swap PCI slots <sup>10</sup> Active PCI via hot repl 14 bays total: 10 hot-s AMD® Am79C975 / on <i>CD-ROM</i> : 40X-17X <sup>6</sup> CI <i>Serial</i> : Three 9-pin (on SVGA / PCI Bus C / S3 Power-on password / a mgmt security (user log Netfinity Advanced Sy processor) / on planar / power on/off system / n power supply Light-Path Diagnostic failing part (under top c ServerGuide™ (CD-RC Norton AntiVirus, APC F Netfinity Director™ and None since rack syster <i>Std</i> : three 250 watt hot-st three provide N+1 redur universal (voltage sensi Four logical fans / seve disk area, 2 in slot area PFA / fan failure signals Processor / plus fan in " x ⇔ Black color ⇒ ACPI 1.0 20 lbs ⇔ Orange comp and labels ind Notal Suppliers Dec ⇒ Vital Product ⇒ Backup BIOS Backplane A: 10 SL 3.5" ba or 7 HH 3.5" b Disks not support	None standard / hot-swap / no trays inclu         EIA 19" rack (8U <sup>4</sup> )         Rack systems supported in IBM Netfinity         ServerWorks® ServerSet III HE / CNB22         (Frontside Bus interface from PCI bus to three peer PCI 2.1 buses (A: 64-bit 66MH 4 hot-swap PCI slots <sup>10</sup> with power and a Active PCI via hot replace, hot upgrade, 14 bays total: 10 hot-swap disk bays / tl         AMD® Am79C975 / on PCI Bus C / 10Ba <i>CD-ROM</i> : 40X-17X <sup>6</sup> CD-ROM / IDE (ATA Serial: Three 9-pin (one for Mgmt Processor)         SVGA / PCI Bus C / S3® Trio-3D (on Input)         Power-on password / administrator passw         mgmt security (user log-in password, read         Netfinity Advanced System Mgmt Proceprocessor) / on planar / provides remoted power on/off system / monitors temperatu power supply         Light-Path Diagnostics <sup>TM</sup> Panel providin failing part (under top cover) / Information and Norton AntiVirus, APC PowerChute Plus / Netfinity Director <sup>TM</sup> and others         None since rack systems         Std: three 250 watt hot-swap; Max: four 25         In seven hot-swap redur         disk area, 2 in slot area, 2 in CPU area) / PFA / fan failure signals Diagnostic LED a         Processor / plus fan in each power supply         "x       Black color       Slot 1: ful         ACPI 1.0       Slot 2: ful         20 lbs       Orange components       Slot 3: ful         and labels indicate       Slot 4: ful	None standard / hot-swap / no trays included (disks ship w/ tray         EIA 19" rack (8U <sup>4</sup> )         Rack systems supported in IBM Netfinity Rack products / kits a ServerWorks® ServerSet III HE / CNB20HE North Bridge / OSB4 three peer PCI 2.1 buses (A: 64-bit 66MHz, B: 64-bit 33MHz, C 4 hot-swap PCI slots <sup>10</sup> with power and attention indicator lights Active PCI via hot replace, hot upgrade, hot expansion (see b 14 bays total: 10 hot-swap disk bays / three 5.25" HH bays (1         AMD® Am79C975 / on PCI Bus C / 10BaseT, 100BaseTX / full CD-ROM: 40X-17X° CD-ROM / IDE (ATAPI) / 1.6" HH / boatable Serial: Three 9-pin (one for Mgmt Processor); Parallel: One 25 SVGA / PCI Bus C / S3® Trio-3D (on Input/Output Board) / 4MB         Power-on password / administrator password / selectable boot / mgmt security (user log-in password, read-only or read/write act Processor) / on planar / provides remote console and mgmt / power on/off system / monitors temperature, disks, fans, power supply         Light-Path Diagnostics™ Panel providing LED map to failing part (under top cover) / Information LED Panel in front ServerGuide™ (CD-ROM installation and configuration utilities), Norton AntiVirus, APC PowerChute Plus / includes         None since rack systems Std: three 250 watt hot-swap; Max: four 250 watt hot-swap / three provide N+1 redundancy for typical config / tool-free install / universal (voltage sensing) / fans in each power supply / PFA Four logical fans / seven hot-swap redundant fans (3 in disk area, 2 in slot area, 2 in CPU area) / variable speed / PFA / fan failure signals Diagnostic LED and Mgmt Processor / plus fan in each power supply         "x       © Black color       Slot 1: full, 64-bit 33MHz 5v PCI, © Vital Product Data © Backplane A: 10 SL 3.5" bays       > Occupied by	None standard / hot-swap / no trays included (disks ship w/ trays) / 80 pin SCA-2         EIA 19" rack (8U')         Rack systems supported in IBM Netfinity Rack products / kits available to conve         ServerWorks* ServerSet III HE / CNB20HE North Bridge) / CSB4 South Bridge (EII three peer PCI 2.1 buss (A: 64-bit 66MHz, B: 64-bit 33MHz, C: 32-bit 33MHz), 4 hot-swap PCI slots**         A hot-swap PCI 2.1 buss (A: 64-bit 66MHz, B: 64-bit 33MHz, C: 32-bit 33MHz), 4 hot-swap PCI slots**         Active PCI via hot replace, hot upgrade, hot expansion (see below for details)         14 bays total: 10 hot-swap disk bays / three 5.25" HH bays (1 used by CD) / on         AMD* Am79C975 / on PCI Bus C / 10BaseT, 100BaseTX / full duplex / RJ-45 or CD-ROM: 40X-17X* CD-ROM / IDE (ATAPI) / 1.6' HH / bootable; Diskette drive:         Serial: Three 9-pin (one for Mgmt Processor); Parallel: One 25-pin; USB: Two V         SVGA / PCI Bus C / S3* Trio-3D (on Input/Output Board) / 4MB SGRAM std/max.         Power-on password / administrator password / selectable boot / secure mode (dit mgmt security (user log-in password, read-only or read/write access, dial back) / 1         processor) / on planar / provides remote console and mgmt / power supply       128MB SDRAM 1         Light-Path Diagnostics**       Panel providing LED map to failing part (under top cover) / Information LED panel in front Retrinity 80x24D         Norte since rack systems       Max: four 250 watt hot-swap / Hat weetinity Nector** and others         Norte since rack systems       Std: file/64-bit 66MHz 3.3v PCI, not hot, Bus A top swap	EIA 19* rack (8U*)         Rack systems supported in IBM Netfinity Rack products / kits available to convert rack to tower         ServerWorks* ServerSet III HE / CNB20HE North Bridge (PCI 2.2 and memory controller) / CI         (Frontside Bus interface from PCI bus to North Bridge (PCI 2.2 and memory controller) / CI         (Frontside Bus interface from PCI bus to North Bridge (PCI 2.2 and memory controller) / CI         (Frontside Bus interface from PCI 2.1 busses (A: 64-bit 66MHz, E: 64-bit 33MHz, C: 32-bit 33MHz) / NS PC97317V         4 hot-swap PCI slots <sup>10</sup> with power and attention indicator lights (optical sensors control power to Active PCI via hot replace, hot upgrade, hot expansion (see below for details)         14 bays total: 10 hot-swap disk bays / three 5.25* HH bays (1 used by CD) / one 3.5* SL bay (0         CD-ROM: 40X-17X® CD-ROM / IDE (ATAPI) / 1.6* HH / bootable: Disktet drive: 3.5* 1.44 MB di Serial: Three 9-pin (one for Mgmt Processor); Parallel: One 25-pin; USB: Two Ver 1.1; Keyboa         SVGA / PCI Bus C / S3* Trio-3D (on Input/Output Board) / 4ME SGRAM std/maz / up to 1024x76         Power-on password / administrator password, read-only or read/write access, dial back) / unattended star         Netfinity Advanced System Mgmt Processor (service right part provides remote console and mgmt / power supply         processor / on planar / provides remote console and mgmt / power on/6f system / monitors temperature, disks, fans, power supply         Note since rack systems       Max: four 250 watt hot-swap         Xdt: three 250 watt hot-swap;       Max: four 250 watt hot-swap;	None standard / hot-swap / no trays included (disks ship w/ trays) / 80 pin SCA-2 connectors / 1 backplane (b         EIA 19" rack (8U <sup>+</sup> )         Rack systems supported in IBM Netfinity Rack products / kits available to convert rack to tower or tower to ServerWorks® ServerSet III HE / CN820HE North Bridge (PCI 2.2 and memory controller) / CIOB //O BI/O Bridge (FOI 2.2 and memory controller) / CIOB //O BI/O Bridge (FOI 2.2 and memory controller) / CIOB //O BI/O Bridge (FOI 2.2 and memory controller) / CIOB //O BI/O Bridge (FOI 2.2 and memory controller) / CIOB //O BI/O BI/O BI/O BI/O BI/O BI/O BI

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S = Models 1RY, 2RY, and 3RY withdrawn effective December 2000

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## IBM Netfinity® 8500R (Spring 2000)

IBM <sup>®</sup> Netfinity <sup>®</sup> :	Rack 1 x Pentium III Xeon 700MHz open bay	Rack 1 x Pentium III Xeon 7 open bay	700MHz	
Type - model Mechanical Rack / conversion Disk - capacity Disk - bays Planned availability	None / supports 10,000 rpm disks / cor	overged tray is interchar	extension options / kit available to convert rack to tov ngeable EXP200/300 and later Netfinity systems A-2 connectors / common tray with 5600 and EXP200	
Intel® processor(s) L2 cache Processor upgrade(s) Features	Pentium III Xeon 900MHz upgrade avai Standard: one Processor Board with for Maximum: two Processor Boards (seco snoop bus traffic between two processor	ilable ur Intel Slot 2 sockets (c nd processor bus) / req buses) / 'Mezzanine Ex	peed/cache size) / two 64-bit 100MHz processor buse	
Memory - std / max Memory - std DIMMs Memory - type Memory - cards	<b>512MB</b> / 32GB 4 x 128MB DIMM PC100-compliant 3.3v registered 168-p <b>Error Checking and Correcting (ECC)</b> One Memory Card std (one memory bu 16GB max per card / second card supp	) memory and memory o s) / two cards max (sec	controller (Profusion Memory Controller MAC and DIE cond memory bus) / each card has 16 sockets /	3)
SCSI disk controller SCSI channels SCSI implementation SCSI connectors SCSI cabling IDE controller / cabling		S 80MB/sec) Card .8mm VHDCI connector Iane / one 16-bit LVD ca	All models: Maximum internal disk capacity: 72.8GB with two 36.4GB <sup>2</sup> HH Hot-swap SCSI of r external / each channel supports up to 15 devices able from controller to external 68-pin VHDCI connect om IDE controller to CD-ROM	
Architecture I/O Function Card Slots (Active PCI™)	64-bit 33MHz PCI adapter / includes co PIIX4E (32-bit PCI Intel 82371AB for E 12 hot-swap PCI slots <sup>10</sup> available with p	red`0, 4, 10, 13 to allów ntrollers for SVGA (32-b IDE, ISA Bridge, USB) / power and attention in	w hot-swap of PCI-to-PCI bridge adapters	/
LAN adapter CD-ROM / Diskette Ports Graphics controller	Two 9-pin serial / one 25-pin parallel / tw	wo USB / one keyboard	HH / bootable; <i>Diskette drive:</i> 3.5" 1.44MB / dust cove I / one mouse / one SVGA (all in rear) iRAM std/max / up to 1024x768 at 256 colors at 85Hz	ər
Security			secure rack enclosure / selectable drive-startup / keyboard -in password, read-only or read/write access, dial bac	
Systems management	and RS 485 bus connectors / provides	remote console and mg	essor) / PCI adapter / includes 10/100 ethernet, dual se mt / power on/off system / monitors power status, LM78 hardware monitor (voltage, temperature, fans)	-
Diagnostics LCD information panel Software	Light-Path Diagnostics / primary indic panel with LEDs associated with failing Intelligent front panel / two 16 charact ServerGuide <sup>TM</sup> - CD-ROM installation an AntiVirus, and APC PowerChute Plus / i IBM Director and others	components er lines of status info nd configuration utilities, ncludes	Netfinity 8500R Memory Card (16 sockets) 28L4	0247
Keyboard / mouse Power supplies Fans	None standard (since for rack) Hot-swap / redundant / std and max: th or 550 watts at 110v / universal (voltag each power supply / each has individua Nine fans / six hot-swap redundant (t front for cpu area, three fans in middle adapter area) / one fan in each power s fan failure signals Diagnostic LED and	ree 750 watt at 220v e sensing) / fans in I power cord / PFA hree fans in for memory and upply / PFA /	Pentium III Xeon 700MHz/2MB Proc Upg       10K2         Pentium III Xeon 900MHz/2MB Proc Upg       19K4         Netfinity 8Ux28D Rack-to-Tower Conversn Kit28L4       19K4         NetBAY3E (3U pedestal on bottom)       36L5         Netfinity Mezzanine Expansion Kit       10K2         Netfinity 4X Accelerator Filter (two 1MB filters)       10K2         Netfinity ServeRAID-4H Ultra160 SCSI Adapter 37L6	2166 4637 705 9701 2337 2335
Tool-free top, front,     Access adapters frot,     Access memory, pr     Access power supp <u>Diagnostics</u> (PC-Do     Six power cords (9'     and three 220v)      [Diskette]     Rack     (can convert to To     Power     Power     Power	om top occessors, and disks from front lies from rear       Slot 3: f Slot 4: f Slot 5: f         irressing F1 at startup ctor) by pressing F2 at startup each) included (three 110v       Slot 6: f Slot 7: f         •       Two 1.6" high HH 3.5" bays (both hot-swap)       Slot 10: f         •       Two 1.6" high HH 3.5" bays       Slot 10: f         •       Stot 10: f       Slot 10: f         •       Two 1.6" high HH 3.5" bays       Slot 11: f         •       Steath black color by file convert to tower) supports up to three NetBAY3 units on bottom       Slot*: f         •       Wired for Mgmt 1.1a       Pred	iulisize, 64-bit 33MHz PCI iulisize, 64-bit 33MHz PCI iulisize, 64-bit 33MHz PCI iulisize, 64-bit 33MHz PCI iulisize, 64-bit 66MHz PCI iulisize, 64-bit 66MHz PCI iulisize, 64-bit 66MHz PCI iulisize, 64-bit 33MHz PCI iulisize, 64-bit 33MHz PCI iulisize, 64-bit 33MHz PCI iulisize, 64-bit 33MHz PCI	ii, hot-swap, Bus D       3 year parts and labor warranty         ii, hot-swap, Bus D       3 year parts and labor warranty         ii, hot-swap, Bus D       international Warranty Service         ii, hot-swap, Bus B       international Warranty and Service         ii, hot-swap, Bus B       iii and I states         ii, hot-swap, Bus B       iii hot-swap, Bus A         ii, hot-swap, Bus A       iii hot-swap, Bus A         ii hot-swap, Bus A       ii hot-swap, Bus A	e ons: ur ur x, port

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- <sup>1</sup> MHz and GHz only measures internal clock speed (or bus speed where indicated), not application performance. Many factors affect application performance.
- <sup>2</sup> When referring to a hard drive capacity, GB equals one billion bytes, and TB equals one trillion bytes. Total useraccessible capacity depends on operating environment.
- <sup>3</sup> For terms and conditions or copies of IBM's limited warranty, call 1 800 772-2227 in the U.S. Limited warranty includes International Warranty Service in those countries where this product is offered. Telephone support may be subject to additional charges.
- <sup>4</sup> A single "U", or rack unit, is 1.75" or 44.45mm.
- <sup>5</sup> S.M.A.R.T. stands for Self-Monitoring, Analysis and Reporting Technology.
- <sup>6</sup> Variable read rate. Actual playback speed will vary and is often less than the maximum possible.
- <sup>7</sup> Service levels are response time objectives and are not guarantees.
- <sup>8</sup> Subject to conditions.
- <sup>9</sup> Applications may vary from retail version and may not include all documentation or functions. Not all applications available separately. Titles subject to change without notice.
- <sup>10</sup> Updated drivers and hot-swap services for certain operating systems may be required to support PCI hot-swap functions.
- <sup>11</sup> Available only on select Netfinity servers meeting predefined criteria, to include Netfinity 5500, 5500 M10, 5500 M20, 5600, 7000 M10 and 8500R only, having completed Microsoft Cluster Server certification as listed on ServerProven web site; IBM reserves the right to change the terms and conditions of the program at any time, without notice. For more details, refer to www.pc.ibm.com/ us/solutions/netfinity/999guarantee.html or see your IBM PSG sales representative.
- <sup>12</sup> Intel uses EB to designate the attributes of these processors. E stands for advanced transfer (full speed) cache and B stands for 133MHz front side bus.
- <sup>13</sup> On Netfinity 7100 and 7600, 16GB support with availability of 1GB DIMMS. Manufactured to Netfinity server standards; availability cannot be guaranteed.

- <sup>14</sup> Response time varies. May exclude some holidays. On-site service provided after IBM attempts to resolve the problem remotely.
- <sup>15</sup> Warranty and support for ServerProven solutions is provided by the manufacturer, not IBM.
- <sup>16</sup> SystemXtra is available to commercial and state and local government customers with valid credit. Leasing is based on a minimum qualifying level of \$1,000 of IBM Personal Systems Group hardware. Program is subject to change without notice. Additional terms, conditions and limitations may apply. IBM Global Financing offerings are made available through IBM Credit Corporation in the US and other IBM subsidiaries and divisions worldwide.
- <sup>17</sup> For Netfinity 5500 M20, detailed information regarding system requirements to support this processor will be provided at a later date.
- <sup>18</sup> Domino Server offer valid until December 31, 1999 and may vary by model. Check Netfinity web site for details.
- <sup>19</sup> Between January 1, 2000 and December 31, 2000, these Netfinity Servers include license entitlement for Lotus Domino Application Server R5, five Notes Collaboration Client licenses, and five web browser Client Access licenses at no additional charge.

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