

## **xSeries Withdrawn Products Reference (xREF)**

including

**IBM @server™**

**IntelliStation™ / xSeries™ / BladeCenter™**

March 25, 2003



# IBM IntelliStation® E Pro (6204) - withdrawn

IBM® Type-model	Processor	L2 GHz <sup>1</sup>	cache	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6204-10U	Pentium® 4	1.6GHz	256KB	128MB	40GB <sup>2</sup> 7200	None	CD-ROM	NVIDIA™ Quadro2 EX 32MB	4x3	Windows® 2000	Oct 2001
6204-20U	Pentium 4	1.8GHz	256KB	128MB	40GB 7200	None	CD-ROM	NVIDIA Quadro2 EX 32MB	4x3	Windows 2000	Oct 2001
6204-30U	Pentium 4	2.0GHz	256KB	128MB	40GB 7200	None	CD-ROM	NVIDIA Quadro2 EX 32MB	4x3	Windows 2000	Oct 2001

Positioning	<i>Compelling combination of price, performance and design</i>		<b>Desktop</b>			
Processor	<b>Intel® Pentium 4 at 1.6, 1.8, 2.0GHz with 400MHz frontside bus</b>		<b>Small Form Factor</b>		Bay ① 3.5", SL 1", access, std diskette Bay ② 5.25", HH 1.6", access, std CD-ROM Bay ③ 3.5", SL 1", no access, std disk	
L2 cache	<b>256KB</b> std and max / ECC / full speed		Slot 1: Low Profile, 32-bit AGP 4X (1.5v) - used		Slot 2: Low Profile, 32-bit PCI 2.2 (5v)	
Implementation	Processor and L2 cache in FC-PGA2 in mPGA478 socket		Slot 3: Low Profile, 32-bit PCI 2.2 (5v)		Slot 4: Low Profile, 32-bit PCI 2.2 (5v)	
SMP support	No SMP support		<ul style="list-style-type: none"> <li>Stealth black color</li> <li>14.2" W X 16.2" D X 4.1" H</li> <li>360mm W X 412mm D X 104mm H</li> <li>20.0 to 22.0 lb (9.1 to 10.0 kg)</li> <li>Bays 1 and 2/3 flip up (latched and pivoting)</li> <li>Toolless rails for disk mounting</li> <li>Toolless cover removal</li> <li>Toolless AGP and PCI slots</li> <li>Support for 100 lb monitor on top</li> </ul>			
Memory - std/max	<b>128MB / 1GB</b> max <sup>13</sup>					
Memory - sockets	Two 168-pin gold plated DIMM sockets / one socket used					
Memory - type	<b>133MHz SDRAM</b> / Error Checking and Correcting (ECC) DIMMs and ECC memory controller / industry std / unbuffered / PC133-compliant / CAS Latency 2 (CL2)					
Graphics controller	<ul style="list-style-type: none"> <li><b>NVIDIA Quadro2 EX</b> (entry 3D) / AGP 4X adapter / NV11GL GPU / 32MB std and max 166MHz SDRAM / 350MHz RAMDAC / one analog DB-15 connector</li> </ul>					
SCSI disk controller	None					
Disk	ATA-100, 7200 rpm, 8.7 ms average read seek, S.M.A.R.T. <sup>5</sup>					
Disk controller	Enhanced IDE / ATA-100 / integrated in I/O Controller Hub (ICH2)					
Diskette drive	3.5" 1.44MB diskette drive					
CD-ROM	<i>Some models:</i> 48X-20X <sup>6</sup> CD-ROM / bootable					
DVD-ROM	Option					
Cables	Two EIDE 80-conductor cables (one 1-drop cable to CD, one 1-drop cable to disk)					
Rack support	None				<b>SECURITY</b> <ul style="list-style-type: none"> <li>Optional U-bolt support via knockout</li> <li>Cover key lock (on rear)</li> <li>Secure fixed DASD</li> <li>Power-on password</li> <li>Administrator password</li> <li>Boot sequence control</li> <li>Boot without keyboard or mouse</li> <li>Diskette boot inhibit and write-protect</li> <li>Diskette, disk, serial port, parallel port I/O control</li> <li>Secure access openings</li> <li>Secure removable media</li> <li>VPD stored in EEPROM</li> <li>Write protection control for EEPROM</li> <li>Barcode labels on most components</li> </ul>	
Chipset	<b>Intel 845 chipset</b> / 82845 Memory Controller Hub (MCH) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82802 Firmware Hub / National® 87360 Super I/O for diskette, parallel, serial, keyboard, mouse					
Ports	<i>Front:</i> None <i>Back:</i> two 9-pin serial, parallel, two USB (Ver 1.1), keyboard, mouse, ethernet, monitor					
Audio	Integrated digital audio / SoundMAX® 3.0 with SPX™ / software-based audio (done by processor and ICH2) / AC '97 interface / ADI1887 codec (analog mixing, Analog-to-Digital and Digital-to-Analog conversion)					
Audio connectors	<i>Back:</i> microphone jack, line-in, line-out					
Speakers	One internal speaker for business audio					
Ethernet	10/100 ethernet on planar / ICH2 (MAC layer) with Intel 82562ETPHY (physical layer) / supports PXE and Wake on LAN® / Intel Pro/100VE Desktop Connection					
Security chip	None (so no cover tamper detect switch)					
Keyboard / mouse	104-key (rubber dome) keyboard / IBM 3-button mouse					
Cooling fans	Two or three variable speed fans (power supply, fansink, some have third fan)					
Power supply	160 watts with variable speed fan / universal / manual switch					
<b>Preload with Windows 2000<sup>17</sup></b>			<b>Options</b>		<b>LIMITED WARRANTY<sup>3</sup></b> <ul style="list-style-type: none"> <li>➤ <b>3 year parts and labor</b></li> <li>➤ <b>International Warranty Service<sup>3</sup></b></li> <li>➤ <b>On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time</b></li> <li>➤ <b>3 year on site warranty service upgrade options:<sup>7</sup></b> <ul style="list-style-type: none"> <li>• <b>4 hour response, Mon-Fri 8-5</b> (ServicePac® part number 41L2735)</li> <li>• <b>4 hour response, 7 day x 24 hr</b> (ServicePac part number 41L2741)</li> </ul> </li> <li>➤ <b>Post warranty maintenance services available</b></li> <li>➤ <b>24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></b></li> </ul>	
Microsoft® Windows® 2000 Professional			128MB SDRAM PC133 CL2 ECC UDIMM 10K0044			
- Lotus® SmartSuite® Millennium license			256MB SDRAM PC133 CL2 ECC UDIMM 10K0046			
- Lotus Notes® Client license			512MB SDRAM PC133 CL2 ECC UDIMM 10K0048			
- Disk-to-Disk Recovery (in Service Partition)			20GB IDE Disk ATA-100 (7200 rpm) 19K4461			
❖ Device Drivers and Diagnostics CD-ROM			40GB IDE Disk ATA-100 (7200 rpm) 22P7157			
❖ Software Selections CD-ROM			60GB IDE Disk ATA-100 (7200 rpm) 09N4207			
			80GB IDE Disk ATA-100 (7200 rpm) 09N4208			
			PCI Ultra160 SCSI Adapter 19K4646			
			IBM 16X Max <sup>6</sup> DVD-ROM Drive (black) 22P6950			
			16X/10X/40X Max <sup>6</sup> CD-RW internal (blk) 24P3626			
			8X/4X/32X/8X Max <sup>6,19</sup> CD-RW/DVD-ROM Combo drive (black) 10K3790			
			IBM DVD-RAM/DVD-R Drive (black) 22P6959			
			Zip Drive 250MB (white/black) 00N8078			
			IBM P96 19" (17.9" v.i.s.) Monitor (black) 655163N			
			IBM P275 21" (19.8" v.i.s.) Monitor (blk) 6652U3N			
			IBM T540 15" Flat Panel Monitor (black) 9511AG4			
			IBM T560 15" Flat Panel Monitor (black) 6656HG2			
			IBM Wireless keyboard and mouse (blk) 22P5170			
			Spaceball 3D Input Device 33L3252			
			IBM 1394 Firewire Adapter 19K5790			

See footnotes for important warranty information

US models announced September 18, 2001; withdrawn effective April 2002 or July 2002

(6204) © IBM Corp. July 2002

# IBM IntelliStation® E Pro (6204) - February 2002 - withdrawn

IBM® Type-model	Processor	GHz <sup>1</sup>	L2 cache	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date	
6204-40U	Pentium® 4	2.0GHz	512KB	256MB	40GB <sup>2</sup> 7200	None	CD-ROM	NVIDIA™ Quadro4 64MB	4x3	Windows® 2000	Mar 2002	
6204-41U	Pentium 4	2.0GHz	512KB	256MB	40GB 7200	None	CD-ROM	Millennium G450 DVI-I 32MB	4x3	Windows 2000	Mar 2002	
6204-43U	Pentium 4	2.0GHz	512KB	256MB	18.2GB 10K 29160LP		CD-ROM	Millennium G450 DVI-I 32MB	4x3	Windows 2000	Mar 2002	
6204-50U	Pentium 4	2.2GHz	512KB	256MB	40GB <sup>2</sup> 7200	None	CD-ROM	NVIDIA Quadro4 64MB	4x3	Windows 2000	Mar 2002	
6204-51U	Pentium 4	2.2GHz	512KB	256MB	40GB 7200	None	CD-ROM	Millennium G450 DVI-I 32MB	4x3	Windows 2000	Mar 2002	
Positioning		<i>Compelling combination of price, performance and design</i>						<b>Desktop</b>				
Processor		<b>Intel® Pentium 4 at 2.0 or 2.2GHz with 400MHz frontside bus</b>						<b>Small Form Factor</b>				
L2 cache		512KB std and max / ECC / full speed										
Implementation		Processor and L2 cache in FC-PGA2 in mPGA478 socket										
SMP support		No SMP support										
Memory - std/max		256MB / 1GB max <sup>13</sup>								Bay ① 3.5", SL 1", access, std diskette Bay ② 5.25", HH 1.6", access, std CD-ROM Bay ③ 3.5", SL 1", no access, std disk		
Memory - sockets		Two 168-pin gold plated DIMM sockets / one socket used								Slot 1: Low Profile, 32-bit AGP 4X (1.5v) - used Slot 2: Low Profile, 32-bit PCI 2.2 (5v) - SCSI (some) Slot 3: Low Profile, 32-bit PCI 2.2 (5v) Slot 4: Low Profile, 32-bit PCI 2.2 (5v)		
Memory - type		133MHz SDRAM / Error Checking and Correcting (ECC) DIMMs and ECC memory controller / industry std / unbuffered / PC133-compliant / CAS Latency 2 (CL2)								<ul style="list-style-type: none"> <li>Stealth black color</li> <li>14.2" W X 16.2" D X 4.1" H</li> <li>360mm W X 412mm D X 104mm H</li> <li>20.0 to 22.0 lb (9.1 to 10.0 kg)</li> <li>Bays 1 and 2/3 flip up (latched and pivoting)</li> <li>Toolless rails for disk mounting</li> <li>Toolless cover removal</li> <li>Toolless AGP and PCI slots</li> <li>Support for 100 lb monitor on top</li> </ul>		
Graphics controller (one of following)		<ul style="list-style-type: none"> <li><b>Matrox® Millennium G450 DVI-I</b> (high-perf 2D) / AGP 4X adapter / MGA G450F GPU / 32MB 150MHz DDR-SDRAM / dual RAMDAC [360/232MHz] / dual head support / one DVI-I connector (ships with one cable with two DB-15 analog conns)</li> <li><b>NVIDIA Quadro4 200NVS</b> (high-perf 2D) / AGP 4X adapter / NV17LT 250MHz GPU / 64MB 166MHz SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / LFH60 connector for std cable with two DB-15 analog</li> </ul>										
SCSI disk controller		<b>SCSI model: Adaptec® 29160LP / single channel Wide Ultra160 SCSI</b> (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support <b>SCSI models:</b> One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector										
SCSI connectors		Enhanced IDE / ATA-100 / integrated in I/O Controller Hub (ICH2) / two connectors on planar										
Disk controller		<b>SCSI model:</b> One 1-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (connected to CD-ROM) <b>EIDE models:</b> Two EIDE 80-conductor cables (one 1-drop cable to CD, one 1-drop cable to disk)										
Cables		<b>SCSI model:</b> 18.2GB Ultra160 SCSI / 10000 rpm / 4.9 ms read seek / S.M.A.R.T. <sup>5</sup> <b>EIDE models:</b> 40GB EIDE / ATA-100 / 7200 rpm / 9.0 ms read seek / S.M.A.R.T.										
Disk												
Diskette drive		3.5" 1.44MB diskette drive								<b>SECURITY</b>		
CD-ROM		48X-20X <sup>6</sup> CD-ROM / bootable										
Rack support		None								<ul style="list-style-type: none"> <li>Optional U-bolt support via knockout</li> <li>Cover key lock (on rear)</li> <li>Secure fixed DASD</li> <li>Power-on password</li> <li>Administrator password</li> <li>Boot sequence control</li> <li>Boot without keyboard or mouse</li> <li>Diskette boot inhibit and write-protect</li> <li>Diskette, disk, serial port, parallel port I/O control</li> <li>Secure access openings</li> <li>Secure removable media</li> <li>VPD stored in EEPROM</li> <li>Write protection control for EEPROM</li> <li>Barcode labels on most components</li> </ul>		
Chipset		<b>Intel 845 chipset</b> / 82845 Memory Controller Hub (MCH) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82802 Firmware Hub / National® 87360 Super I/O for diskette, parallel, serial, keyboard, mouse								<ul style="list-style-type: none"> <li>Maximum internal EIDE disk capacity<sup>13</sup>: 80GB (1 disk x 80GB 7200 rpm)</li> <li>Maximum internal SCSI disk capacity<sup>13</sup>: 36.4GB (1 disk x 36.4GB 10000 rpm)</li> </ul>		
Ports		<b>Front:</b> two USB (Ver 1.1) <b>Back:</b> two 9-pin serial, parallel, two USB (Ver 1.1), keyboard, mouse, ethernet, monitor										
Audio		Integrated digital audio / SoundMAX® 3.0 with SPX™ / software-based audio (done by processor and ICH2) / AC '97 interface / ADI1887 codec (analog mixing, Analog-to-Digital and Digital-to-Analog conversion)										
Audio connectors		<b>Back:</b> microphone jack, line-in, line-out										
Speakers		One internal speaker for business audio										
Ethernet		10/100 ethernet on planar / ICH2 (MAC layer) with Intel 82562ETPHY (physical layer) / supports PXE and Wake on LAN® / Intel Pro/100VE Desktop Connection										
Security chip		None (so no cover tamper detect switch)										
Keyboard / mouse		104-key (rubber dome) keyboard / IBM 3-button mouse										
Cooling fans		Two or three variable speed fans (power supply, fansink, some have third fan)										
Power supply		160 watts with variable speed fan / universal / manual switch										
<b>Preload with Windows 2000<sup>17</sup></b>		<b>Options</b>								<b>LIMITED WARRANTY<sup>3</sup></b>		
Microsoft® Windows® 2000 Professional		128MB SDRAM PC133 CL2 ECC UDIMM 10K0044								<ul style="list-style-type: none"> <li>3 year parts and labor</li> <li>International Warranty Service<sup>3</sup></li> <li>On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time</li> <li>3 year on site warranty service upgrade options:<sup>7</sup> <ul style="list-style-type: none"> <li>4 hour response, Mon-Fri 8-5 (ServicePac® part number 41L2735)</li> <li>4 hour response, 7 day x 24 hr (ServicePac part number 41L2741)</li> </ul> </li> <li>Post warranty maintenance services available</li> <li>24x<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></li> </ul>		
- Lotus® SmartSuite® Millennium license		256MB SDRAM PC133 CL2 ECC UDIMM 10K0046										
- Lotus Notes® Client license		512MB SDRAM PC133 CL2 ECC UDIMM 10K0048										
- Disk-to-Disk Recovery (in Service Partition)		20GB IDE Disk ATA-100 (7200 rpm) 19K4461										
◇ Device Drivers and Diagnostics CD-ROM		40GB IDE Disk ATA-100 (7200 rpm) 22P7157										
◇ Software Selections CD-ROM		60GB IDE Disk ATA-100 (7200 rpm) 09N4207										
		80GB IDE Disk ATA-100 (7200 rpm) 09N4208										
		PCI Ultra160 SCSI Adapter 19K4646										
		IBM 16X Max <sup>6</sup> DVD-ROM Drive (black) 22P6950										
		16X/10X/40X Max <sup>6</sup> CD-RW internal (blk) 24P3626										
		8X/4X/32X/8X Max <sup>6,19</sup> CD-RW/DVD-ROM Combo drive (black) 10K3790										
		IBM DVD-RAM/DVD-R Drive (black) 22P6959										
		Zip Drive 250MB (white/black) 00N8078										
		IBM P96 19" (17.9" v.i.s.) Monitor (black) 655163N										
		IBM P275 21" (19.8" v.i.s.) Monitor (blk) 6652U3N										
		IBM T540 15" Flat Panel Monitor (black) 9511AG4										
		IBM T560 15" Flat Panel Monitor (black) 6656HG2										
		IBM Wireless keyboard and mouse (blk) 22P5170										
		Spaceball 3D Input Device 33L3252										
		Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>										
<ul style="list-style-type: none"> <li>Configuration/Setup Utility invoked by pressing F1 at startup</li> <li>Universal Manageability Services enabled</li> <li>LANClient Control Manager™ enabled</li> <li>Common Information Model (CIM) 2.2</li> <li>PC 2001-compliant</li> <li>Advanced Power Management 1.2</li> <li>Advanced Configuration and Power Interface (ACPI) 1.0b</li> <li>System Management BIOS</li> <li>DMI 2.0-compliant</li> <li>Wired for Management 2.0-compliant</li> </ul>												

See footnotes for important warranty information

US models announced February 5, 2002; withdrawn effective October 2002

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# IBM IntelliStation® E Pro (6204) - June 2002 - withdrawn

IBM® Type-model	Processor	GHz <sup>1</sup>	L2 cache	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6204-45U	Pentium® 4	2.0GHz	512KB	256MB	40GB <sup>2</sup> 7200	None	CD-ROM	NVIDIA™ Quadro4 64MB	4x3	Windows® XP Pro	Jun 02
6204-46U	Pentium 4	2.0GHz	512KB	256MB	40GB 7200	None	CD-ROM	Millennium G450 DVI-I 32MB	4x3	Windows XP Pro	Jun 02
6204-48U	Pentium 4	2.0GHz	512KB	256MB	18.2GB 10K 29160LP		CD-ROM	Millennium G450 DVI-I 32MB	4x3	Windows XP Pro	Jun 02
6204-55U	Pentium 4	2.2GHz	512KB	256MB	40GB 7200	None	CD-ROM	NVIDIA Quadro4 64MB	4x3	Windows XP Pro	Jun 02
6204-56U	Pentium 4	2.2GHz	512KB	256MB	40GB 7200	None	CD-ROM	Millennium G450 DVI-I 32MB	4x3	Windows XP Pro	Jun 02

Positioning	<i>Compelling combination of price, performance and design</i>							<b>Desktop</b>			
Processor	<b>Intel® Pentium 4 at 2.0 or 2.2GHz with 400MHz frontside bus</b>							<b>Small Form Factor</b>			
L2 cache	512KB std and max / ECC / full speed										
Implementation	Processor and L2 cache in FC-PGA2 in mPGA478 socket										
SMP support	No SMP support										
Memory - std/max	<b>256MB / 1GB max<sup>13</sup></b>									Bay ① 3.5", SL 1", access, std diskette	
Memory - sockets	Two 168-pin gold plated DIMM sockets / one socket used									Bay ② 5.25", HH 1.6", access, std CD-ROM	
Memory - type	<b>133MHz SDRAM</b> / Error Checking and Correcting (ECC) DIMMs and ECC memory controller / industry std / unbuffered / PC133-compliant / CAS Latency 2 (CL2)									Bay ③ 3.5", SL 1", no access, std disk	
Graphics controller (one of following)	<ul style="list-style-type: none"> <li>• <b>Matrox® Millennium G450 DVI-I</b> (high-perf 2D) / AGP 4X adapter / MGA G450F GPU / 32MB 150MHz DDR-SDRAM / dual RAMDAC [360/232MHz] / dual head support / one DVI-I connector (ships with one cable with two DB-15 analog conns)</li> <li>• <b>NVIDIA Quadro4 200NVS</b> (high-perf 2D) / AGP 4X adapter / NV17LT 250MHz GPU / 64MB 166MHz SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / LFH60 connector for std cable with two DB-15 analog</li> </ul>									Slot 1: Low Profile, 32-bit AGP 4X (1.5v) - used Slot 2: Low Profile, 32-bit PCI 2.2 (5v) - SCSI (some) Slot 3: Low Profile, 32-bit PCI 2.2 (5v) Slot 4: Low Profile, 32-bit PCI 2.2 (5v)	
SCSI disk controller	<b>SCSI model: Adaptec® 29160LP / single channel Wide Ultra160 SCSI</b> (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support									<ul style="list-style-type: none"> <li>• Stealth black color</li> <li>• 14.2" W X 16.2" D X 4.1" H</li> <li>• 360mm W X 412mm D X 104mm H</li> <li>• 20.0 to 22.0 lb (9.1 to 10.0 kg)</li> <li>• Bays 1 and 2/3 flip up (latched and pivoting)</li> <li>• Toolless rails for disk mounting</li> <li>• Toolless cover removal</li> <li>• Toolless AGP and PCI slots</li> <li>• Support for 100 lb monitor on top</li> </ul>	
SCSI connectors	<b>SCSI models:</b> One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector										
Disk controller	Enhanced IDE / ATA-100 / integrated in I/O Controller Hub (ICH2) / two connectors on planar										
Cables	<b>SCSI model:</b> One 1-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (connected to CD-ROM)										
Disk	<b>EIDE models:</b> Two EIDE 80-conductor cables (one 1-drop cable to CD, one 1-drop cable to disk)										
Diskette drive	3.5" 1.44MB diskette drive										
CD-ROM	48X-20X <sup>6</sup> CD-ROM / bootable										
Rack support	None										
Chipset	<b>Intel 845 chipset</b> / 82845 Memory Controller Hub (MCH) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82802 Firmware Hub / National® 87360 Super I/O for diskette, parallel, serial, keyboard, mouse									<b>SECURITY</b>	
Ports	<b>Front:</b> two USB (Ver 1.1) <b>Back:</b> two 9-pin serial, parallel, two USB (Ver 1.1), keyboard, mouse, ethernet, monitor									<ul style="list-style-type: none"> <li>• Optional U-bolt support via knockout</li> <li>• Cover key lock (on rear)</li> <li>• Secure fixed DASD</li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit and write-protect</li> <li>• Diskette, disk, serial port, parallel port I/O control</li> <li>• Secure access openings</li> <li>• Secure removable media</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Barcode labels on most components</li> </ul>	
Audio	Integrated digital audio / SoundMAX® 3.0 with SPX™ / software-based audio (done by processor and ICH2) / AC '97 interface / ADI1887 codec (analog mixing, Analog-to-Digital and Digital-to-Analog conversion)										
Audio connectors	<b>Back:</b> microphone jack, line-in, line-out										
Speakers	One internal speaker for business audio										
Ethernet	10/100 ethernet on planar / ICH2 (MAC layer) with Intel 82562ETPHY (physical layer) / supports PXE and Wake on LAN® / Intel Pro/100VE Desktop Connection										
Security chip	None (so no cover tamper detect switch)									<ul style="list-style-type: none"> <li>• <i>Maximum internal EIDE disk capacity<sup>13</sup>:</i> 80GB (1 disk x 80GB 7200 rpm)</li> <li>• <i>Maximum internal SCSI disk capacity<sup>13</sup>:</i> 36.4GB (1 disk x 36.4GB 10000 rpm)</li> </ul>	
Keyboard / mouse	104-key (rubber dome) keyboard / IBM 3-button mouse										
Cooling fans	Two or three variable speed fans (power supply, fansink, some have third fan)										
Power supply	160 watts with variable speed fan / universal / manual switch										
<b>Preload with Windows XP Professional<sup>17</sup></b>			<b>Options</b>								
Microsoft® Windows® XP Professional			128MB SDRAM PC133 CL2 ECC UDIMM			10K0044					
- Lotus® SmartSuite® Millennium license			256MB SDRAM PC133 CL2 ECC UDIMM			10K0046					
- Lotus Notes® Client license			512MB SDRAM PC133 CL2 ECC UDIMM			10K0048					
- Disk-to-Disk Recovery (in Service Partition)			20GB IDE Disk ATA-100 (7200 rpm)			19K4461					
✦ Device Drivers and Diagnostics CD-ROM			40GB IDE Disk ATA-100 (7200 rpm)			22P7157					
✦ Software Selections CD-ROM			60GB IDE Disk ATA-100 (7200 rpm)			09N4207					
			80GB IDE Disk ATA-100 (7200 rpm)			09N4208					
			PCI Ultra160 SCSI Adapter			19K4646					
			IBM 16X Max <sup>6</sup> DVD-ROM Drive (black)			22P6950					
			24X/10X/40X Max <sup>6</sup> CD-RW internal (blk)			24P6965					
			8X/4X/32X/8X Max <sup>6,19</sup> CD-RW/DVD-ROM								
			Combo drive (black)			10K3790					
			IBM DVD-RAM/DVD-R Drive (black)			22P6959					
			Zip Drive 250MB (white/black)			00N8078					
			IBM P96 19" (17.9" v.i.s.) Monitor (black)			655163N					
			IBM P275 21" (19.8" v.i.s.) Monitor (blk)			6652U3N					
			IBM T545 15.1" Flat Panel Monitor (black)			6653HG2					
			IBM T560 15" Flat Panel Monitor (black)			6656HG2					
			IBM Wireless keyboard and mouse (blk)			22P5170					
			Spaceball 3D Input Device			33L3252					
			Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>								
<ul style="list-style-type: none"> <li>• Configuration/Setup Utility invoked by pressing F1 at startup</li> <li>• Universal Manageability Services enabled</li> <li>• LANClient Control Manager™ enabled</li> <li>• Common Information Model (CIM) 2.2</li> <li>• PC 2001-compliant</li> <li>• Advanced Power Management 1.2</li> <li>• Advanced Configuration and Power Interface (ACPI) 1.0b</li> <li>• System Management BIOS</li> <li>• DMI 2.0-compliant</li> <li>• Wired for Management 2.0-compliant</li> </ul>											
			<b>LIMITED WARRANTY<sup>3</sup></b>								
			<ul style="list-style-type: none"> <li>⇒ <b>3 year parts and labor</b></li> <li>⇒ <b>International Warranty Service<sup>3</sup></b></li> <li>⇒ <b>On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time</b></li> <li>⇒ <b>3 year on site warranty service upgrade options:<sup>7</sup></b> <ul style="list-style-type: none"> <li>• <b>4 hour response, Mon-Fri 8-5</b> (ServicePac® part number 41L2735)</li> <li>• <b>4 hour response, 7 day x 24 hr</b> (ServicePac part number 41L2741)</li> </ul> </li> <li>⇒ <b>Post warranty maintenance services available</b></li> <li>⇒ <b>24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support<sup>3</sup></b></li> </ul>								

See footnotes for important warranty information

US models announced June 4, 2002; withdrawn effective October 2002

# IBM IntelliStation® E Pro (6214) - withdrawn

IBM® Type-model	Processor	GHz <sup>1</sup>	L2 cache	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date	
6214-10U	Pentium® 4	1.6GHz	256KB	128MB	40GB <sup>2</sup> EIDE	7200	None	CD-ROM Millennium G450 16MB	6x7	Windows® 2000	Oct 2001	
6214-20U	Pentium 4	1.8GHz	256KB	128MB	40GB EIDE	7200	None	CD-ROM Millennium G450 16MB	6x7	Windows 2000	Oct 2001	
6214-23U	Pentium 4	1.8GHz	256KB	128MB	18.2G SCSI	10K	29160LP	CD-ROM Quadro2 Pro 64MB	6x7	Windows 2000	Oct 2001	
6214-30U	Pentium 4	2.0GHz	256KB	128MB	40GB EIDE	7200	None	CD-ROM Millennium G450 16MB	6x7	Windows 2000	Oct 2001	
6214-33U	Pentium 4	2.0GHz	256KB	256MB	18.2G SCSI	10K	29160LP	CD-ROM Quadro2 Pro 64MB	6x7	Windows 2000	Oct 2001	
Positioning	<i>Compelling combination of price, performance and design</i>							<b>Mini-tower</b>				
Processor	<b>Intel® Pentium 4 at 1.6, 1.8, 2.0GHz with 400MHz frontside bus</b>							<ul style="list-style-type: none"> <li>Stealth black color</li> <li>H 18.5" x W 6.5" x D 20.0"</li> <li>H 470mm x W 165mm x D 508mm</li> <li>35 to 43 pounds (15.9 to 19.5kg)</li> <li>Metal cage for disk bays 5,6,7 rotates out of chassis</li> <li>Two front stabilizing feet</li> <li>Handle grip on top</li> <li>Toolless cover removal</li> <li>Toolless AGP and PCI slots</li> <li>Removable left side panel</li> </ul>				
L2 cache	<b>256KB</b> std and max / ECC / full speed							<ul style="list-style-type: none"> <li>Bay ① 5.25", HH 1.6", access, CD-ROM</li> <li>Bay ② 5.25", HH 1.6", access, open</li> <li>Bay ③ 3.5", SL 1", access, diskette</li> <li>Bay ④ 3.5", SL 1", access, open</li> <li>Bay ⑤ 3.5", SL 1", no access, open</li> <li>Bay ⑥ 3.5", SL 1", no access, open</li> <li>Bay ⑦ 3.5", SL 1", no access, disk</li> </ul>				
Implementation	Processor and L2 cache in FC-PGA2 in mPGA478 socket							<ul style="list-style-type: none"> <li>Slot 1: fullsize, AGP 4X, 25 watt (3.3v) - used by graphics</li> <li>Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v)</li> <li>Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v)</li> <li>Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - used by SCSI adapter (some models)</li> <li>Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v)**</li> <li>Slot 6: fullsize, 32-bit 33MHz, PCI 2.2 (5v)**</li> </ul>				
SMP support	No SMP support							<ul style="list-style-type: none"> <li>** on two-slot PCI extender board</li> </ul>				
Memory - std/max	<b>128MB</b> or <b>256MB</b> / 1.5GB max <sup>13</sup>							<b>SECURITY</b> <ul style="list-style-type: none"> <li>Optional U-bolt support via knockout</li> <li>Cover key lock (on side)</li> <li>Secure fixed DASD</li> <li>Power-on password</li> <li>Administrator password</li> <li>Boot sequence control</li> <li>Boot without keyboard or mouse</li> <li>Diskette boot inhibit and write-protect</li> <li>Diskette, disk, serial port, parallel port I/O control</li> <li>Secure access openings</li> <li>Secure removable media</li> <li>VPD stored in EEPROM</li> <li>Write protection control for EEPROM</li> <li>Barcode labels on most components</li> </ul>				
Memory - sockets	Three 168-pin gold plated DIMM sockets / one socket used											
Memory - type	<b>133MHz SDRAM</b> / Error Checking and Correcting (ECC) DIMMs and ECC memory controller / industry std / unbuffered / PC133-compliant / CAS Latency 2 (CL2)											
Graphics controller (one of following)	<ul style="list-style-type: none"> <li><b>Matrox® Millennium G450</b> (performance 2D) / AGP 4X adapter / MGA G450F GPU / 16MB 150MHz SDRAM / dual RAMDAC [360/232MHz] / dual head: 2048x1536x16M at 70Hz and 1600x1200x16M at 85Hz / two DB-15 connectors</li> <li><b>NVIDIA™ Quadro2 Pro</b> (advanced 3D) / AGP 4X adapter / NV15GL 250MHz GPU / 64MB 200MHz DDR-SDRAM / 350MHz RAMDAC / single head: 2048x1535x16M at 75Hz / DB-15 and DVI-I connectors (same image if both used)</li> </ul>											
SCSI disk controller	<i>SCSI models:</i> <b>Adaptec® 29160LP / single channel Wide Ultra160 SCSI</b> (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support											
SCSI connectors	<i>SCSI models:</i> One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector											
IDE disk controller	Enhanced IDE / ATA-100 / integrated in I/O Controller Hub (ICH2)											
Cables	<i>SCSI models:</i> One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (connected to CD-ROM)											
Disk - features	<i>EIDE models:</i> Two EIDE cables (one 2-drop cable to CD-ROM, one 2-drop cable to EIDE disk)											
CD-ROM / diskette	<i>SCSI models:</i> 18.2GB Ultra160 SCSI / 10K rpm / 5.2 ms read seek / S.M.A.R.T. <sup>5</sup>											
Rack support	<i>EIDE models:</i> 40GB EIDE / ATA-100 / 7200 rpm / 8.7 ms read seek / S.M.A.R.T.											
Chipset	4U <sup>4</sup> rack mount support via tower-to-rack kit option											
Ports	<b>Intel 845 chipset</b> / 82845 Memory Controller Hub (MCH) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82802 Firmware Hub / National® 87360 Super I/O for diskette, parallel, serial, keyboard, mouse											
Audio	Integrated digital audio / SoundMAX® 3.0 with SPX™ / software-based audio (done by processor and ICH2) / AC '97 interface / ADI1887 codec											
Audio connectors	<i>Back:</i> microphone jack, line-in, line-out											
Speakers	One internal speaker for business audio											
Ethernet	10/100 ethernet on planar / ICH2 (MAC layer) with Intel 82562ETPHY (physical layer) / supports PXE and Wake on LAN® / Intel Pro/100VE Desktop Connection											
Security chip	None (so no cover tamper detect switch)											
Keyboard / mouse	104-key (rubber dome) keyboard / IBM 3-button mouse											
Cooling fans	Three variable speed cooling fans (power supply, processor fansink, rear)											
Power supply	340 watts with variable speed fan / universal / auto-sensing											
<b>Preload with Windows 2000<sup>17</sup></b>			<b>Options</b>				<b>LIMITED WARRANTY<sup>3</sup></b> <ul style="list-style-type: none"> <li>⇒ 3 year parts and labor</li> <li>⇒ International Warranty Service<sup>3</sup></li> <li>⇒ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time</li> <li>⇒ 3 year on site warranty service upgrade options:<sup>7</sup> <ul style="list-style-type: none"> <li>• 4 hour response, Mon-Fri 8-5 (ServicePac® part number 41L2735)</li> <li>• 4 hour response, 7 day x 24 hr (ServicePac part number 41L2741)</li> </ul> </li> <li>⇒ Post warranty maintenance services available</li> <li>⇒ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></li> </ul>					
<ul style="list-style-type: none"> <li>Microsoft® Windows® 2000 Professional</li> <li>- Lotus® SmartSuite® Millennium license</li> <li>- Lotus Notes® Client license</li> <li>- Disk-to-Disk Recovery (in Service Partition)</li> <li>◆ Device Drivers and Diagnostics CD-ROM</li> <li>◆ Software Selections CD-ROM</li> </ul>			<ul style="list-style-type: none"> <li>128MB SDRAM PC133 CL2 ECC UDIMM 10K0044</li> <li>256MB SDRAM PC133 CL2 ECC UDIMM 10K0046</li> <li>512MB SDRAM PC133 CL2 ECC UDIMM 10K0048</li> <li>60GB IDE Disk ATA-100 (7200 rpm) 09N4207</li> <li>80GB IDE Disk ATA-100 (7200 rpm) 09N4208</li> <li>PCI Ultra160 SCSI Adapter 19K4646</li> <li>18.2GB 15K rpm Ultra160 SCSI disk 19K0658</li> <li>36.4GB 10K rpm Ultra160 SCSI disk 00N8209</li> <li>IBM 16X Max® DVD-ROM Drive (black) 22P6950</li> <li>12X/8X/32X Max<sup>6</sup> CD-RW internal (black) 10K3785</li> <li>16X/10X/40X Max<sup>6</sup> CD-RW internal (blk) 24P3626</li> <li>8X/4X/32X/8X Max<sup>6,19</sup> CD-RW/DVD-ROM Combo drive (black) 10K3790</li> <li>IBM DVD-RAM/DVD-R Drive (black) 22P6959</li> <li>Zip Drive 250MB (white/black) 00N8078</li> <li>IBM P96 19" (17.9" v.i.s.) Monitor (black) 655163N</li> <li>IBM P275 21" (19.8" v.i.s.) Monitor (blk) 6652U3N</li> <li>IBM T540 15" Flat Panel Monitor (black) 9511AG4</li> <li>IBM T560 15" Flat Panel Monitor (black) 6656HG2</li> <li>IBM Wireless keyboard and mouse (blk) 22P5170</li> <li>Spaceball 3D Input Device 33L3252</li> <li>IBM rack mount kit 09N4300</li> </ul>									
<ul style="list-style-type: none"> <li>• <i>Maximum internal EIDE disk capacity<sup>13</sup>:</i> 240GB (3 disk x 80GB 7200 rpm)</li> <li>• <i>Maximum internal SCSI disk capacity<sup>13</sup>:</i> 145.6GB (4 disks x 36.4GB)</li> <li>• Configuration/Setup Utility invoked by pressing F1 at startup</li> <li>• Universal Manageability Services enabled</li> <li>• LANClient Control Manager™ enabled</li> <li>• Common Information Model (CIM) 2.2</li> <li>• PC2001-compliant</li> <li>• Advanced Power Management 1.2</li> <li>• Advanced Configuration and Power Interface (ACPI) 1.0b</li> <li>• System Management BIOS</li> <li>• DMI 2.0-compliant</li> <li>• Wired for Management 2.0-compliant</li> </ul>												

See footnotes for important warranty information

US models announced September 18, 2001; withdrawn effective April 2002 or July 2002

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# IBM IntelliStation® E Pro (6214) - Fall 2001 - withdrawn

IBM® Type-model	Processor	GHz <sup>1</sup>	L2 cache	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6214-77U	Pentium® 4	1.6GHz	256KB	128MB	40GB <sup>2</sup> EIDE 7200	None	CD-ROM	NVIDIA™ Vanta 16MB	6x7	Windows® 2000	Nov 2001
6214-88U	Pentium 4	1.8GHz	256KB	128MB	40GB EIDE 7200	None	CD-ROM	NVIDIA Vanta 16MB	6x7	Windows 2000	Nov 2001

Positioning	<i>Compelling combination of price, performance and design</i>							<b>Mini-tower</b>		
Processor	<b>Intel® Pentium 4 at 1.6, 1.8GHz with 400MHz frontside bus</b>							<ul style="list-style-type: none"> <li>Stealth black color</li> <li>H 18.5" x W 6.5" x D 20.0"</li> <li>H 470mm x W 165mm x D 508mm</li> <li>35 to 43 pounds (15.9 to 19.5kg)</li> <li>Metal cage for disk bays 5,6,7 rotates out of chassis</li> <li>Two front stabilizing feet</li> <li>Handle grip on top</li> <li>Toolless cover removal</li> <li>Toolless AGP and PCI slots</li> <li>Removable left side panel</li> </ul>		
L2 cache	<b>256KB</b> std and max / ECC / full speed							Bay ① 5.25", HH 1.6", access, CD-ROM Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, diskette Bay ④ 3.5", SL 1", access, open Bay ⑤ 3.5", SL 1", no access, open Bay ⑥ 3.5", SL 1", no access, open Bay ⑦ 3.5", SL 1", no access, disk		
Implementation	Processor and L2 cache in FC-PGA2 in mPGA478 socket							Slot 1: fullsize, AGP 4X, 25 watt (3.3v) - used by graphics Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v)** Slot 6: fullsize, 32-bit 33MHz, PCI 2.2 (5v)** ** on two-slot PCI extender board		
SMP support	No SMP support									
Memory - std/max	<b>128MB / 1.5GB</b> max <sup>13</sup>									
Memory - sockets	Three 168-pin gold plated DIMM sockets / one socket used									
Memory - type	<b>133MHz SDRAM / non-parity</b> / industry std / unbuffered / PC133-compliant / CAS Latency 2 (CL2) / does support optional Error Checking and Correcting (ECC) DIMMs									
Graphics controller	<ul style="list-style-type: none"> <li><b>NVIDIA Vanta</b> (2D and 3D) / AGP 4X adapter / TNT2 Vanta GPU / <b>16MB</b> std and max 125MHz SDRAM / 250MHz RAMDAC / one analog DB-15 connector</li> </ul>									
SCSI disk controller	None									
SCSI connectors	None									
IDE disk controller	Enhanced IDE / ATA-100 / integrated in I/O Controller Hub (ICH2)									
Cables	Two EIDE cables (one 2-drop cable to CD-ROM, one 2-drop cable to EIDE disk)									
Disk - features	40GB EIDE / ATA-100 / 7200 rpm / 8.7 ms read seek / S.M.A.R.T. <sup>5</sup>									
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM, bootable, IDE / 3.5" 1.44MB diskette drive									
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option									
Chipset	<b>Intel 845 chipset</b> / 82845 Memory Controller Hub (MCH) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82802 Firmware Hub / National® 87360 Super I/O for diskette, parallel, serial, keyboard, mouse									
Ports	<b>Front:</b> None <b>Back:</b> two 9-pin serial, parallel, two USB (Ver 1.1), keyboard, mouse, ethernet, monitor							<b>SECURITY</b> <ul style="list-style-type: none"> <li>Optional U-bolt support via knockout</li> <li>Cover key lock (on side)</li> <li>Secure fixed DASH</li> <li>Power-on password</li> <li>Administrator password</li> <li>Boot sequence control</li> <li>Boot without keyboard or mouse</li> <li>Diskette boot inhibit and write-protect</li> <li>Diskette, disk, serial port, parallel port I/O control</li> <li>Secure access openings</li> <li>Secure removable media</li> <li>VPD stored in EEPROM</li> <li>Write protection control for EEPROM</li> <li>Barcode labels on most components</li> </ul>		
Audio	Integrated digital audio / SoundMAX® 3.0 with SPX™ / software-based audio (done by processor and ICH2) / AC '97 interface / ADI1887 codec									
Audio connectors	<b>Back:</b> microphone jack, line-in, line-out									
Speakers	One internal speaker for business audio									
Ethernet	10/100 ethernet on planar / ICH2 (MAC layer) with Intel 82562ETPHY (physical layer) / supports PXE and Wake on LAN® / Intel Pro/100VE Desktop Connection									
Security chip	None (so no cover tamper detect switch)									
Keyboard / mouse	104-key (rubber dome) keyboard / IBM 3-button mouse									
Cooling fans	Three variable speed cooling fans (power supply, processor fansink, rear)									
Power supply	340 watts with variable speed fan / universal / auto-sensing									
<b>Preload with Windows 2000<sup>17</sup></b>			<b>Options</b>							
Microsoft® Windows® 2000 Professional			64MB SDRAM 133MHz CL2 NP DIMM				10K0055			
- Lotus® SmartSuite® Millennium license			128MB SDRAM 133MHz CL2 NP DIMM				10K0057			
- Lotus Notes® Client license			256MB SDRAM 133MHz CL2 NP DIMM				10K0059			
- Disk-to-Disk Recovery (in Service Partition)			512MB SDRAM 133MHz CL2 NP DIMM				10K0061			
◇ Device Drivers and Diagnostics CD-ROM			128MB SDRAM PC133 CL2 ECC UDIMM				10K0044			
◇ Software Selections CD-ROM			256MB SDRAM PC133 CL2 ECC UDIMM				10K0046			
			512MB SDRAM PC133 CL2 ECC UDIMM				10K0048			
			60GB IDE Disk ATA-100 (7200 rpm)				09N4207			
			80GB IDE Disk ATA-100 (7200 rpm)				09N4208			
			PCI Ultra160 SCSI Adapter				19K4646			
			18.2GB 15K rpm Ultra160 SCSI disk				19K0658			
			36.4GB 10K rpm Ultra160 SCSI disk				00N8209			
			IBM 16X Max <sup>6</sup> DVD-ROM Drive (black)				22P6950			
			12X/8X/32X Max <sup>6</sup> CD-RW internal (black)				10K3785			
			16X/10X/40X Max <sup>6</sup> CD-RW internal (blk)				24P3626			
			8X/4X/32X/8X Max <sup>6,19</sup> CD-RW/DVD-ROM							
			Combo drive (black)				10K3790			
			IBM DVD-RAM/DVD-R Drive (black)				22P6959			
			Zip Drive 250MB (white/black)				00N8078			
			IBM P96 19" (17.9" v.i.s.) Monitor (black)				655163N			
			IBM P275 21" (19.8" v.i.s.) Monitor (blk)				6652U3N			
			IBM T540 15" Flat Panel Monitor (black)				9511AG4			
			IBM T560 15" Flat Panel Monitor (black)				6656HG2			
			IBM Wireless keyboard and mouse (blk)				22P5170			
			Spaceball 3D Input Device				33L3252			
			IBM rack mount kit				09N4300			
<ul style="list-style-type: none"> <li>Maximum internal EIDE disk capacity<sup>13</sup>: 240GB (3 disk x 80GB 7200 rpm)</li> <li>Maximum internal SCSI disk capacity<sup>13</sup>: 145.6GB (4 disks x 36.4GB)</li> <li>Configuration/Setup Utility invoked by pressing F1 at startup</li> <li>Universal Manageability Services enabled</li> <li>LANClient Control Manager™ enabled</li> <li>Common Information Model (CIM) 2.2</li> <li>PC2001-compliant</li> <li>Advanced Power Management 1.2</li> <li>Advanced Configuration and Power Interface (ACPI) 1.0b</li> <li>System Management BIOS</li> <li>DMI 2.0-compliant</li> <li>Wired for Management 2.0-compliant</li> </ul>										
<b>LIMITED WARRANTY<sup>3</sup></b>										
<ul style="list-style-type: none"> <li>3 year parts and labor</li> <li>International Warranty Service<sup>3</sup></li> <li>On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time</li> <li>3 year on site warranty service upgrade options:<sup>7</sup> <ul style="list-style-type: none"> <li>4 hour response, Mon-Fri 8-5 (ServicePac® part number 41L2735)</li> <li>4 hour response, 7 day x 24 hr (ServicePac part number 41L2741)</li> </ul> </li> <li>Post warranty maintenance services available</li> <li>24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></li> </ul>										

See footnotes for important warranty information  
 US models announced November 6, 2001  
 US models withdrawn effective July 2002

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IBM® Type-model	Processor	GHz <sup>1</sup>	L2 cache	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6214-40U	Pentium® 4	2.0GHz	512KB	256MB ECC	40GB <sup>2</sup> 7200	None	CD NVIDIA™ Quadro4	64MB	6x7	Windows® 2000	Mar2002
6214-41U	Pentium 4	2.0GHz	512KB	256MB ECC	40GB 7200	None	CD Millennium G450 DVI-I	32MB	6x7	Windows 2000	Mar 2002
6214-43U	Pentium 4	2.0GHz	512KB	256MB ECC	18.2GB 10K	29160LP	CD ATI® Fire GL8800™.11	128MB	6x7	Windows 2000	Mar 2002
6214-91U	Pentium 4	2.0GHz	512KB	128MB NP	40GB 7200	None	CD NVIDIA Vanta	16MB	6x7	Windows 2000	Mar 2002
6214-50U	Pentium 4	2.2GHz	512KB	256MB ECC	40GB 7200	None	CD NVIDIA Quadro4	64MB	6x7	Windows 2000	Mar 2002
6214-51U	Pentium 4	2.2GHz	512KB	256MB ECC	40GB 7200	None	CD Millennium G450 DVI-I	32MB	6x7	Windows 2000	Mar 2002
6214-53U	Pentium 4	2.2GHz	512KB	256MB ECC	18.2GB 10K	29160LP	CD ATI Fire GL8800	128MB	6x7	Windows 2000	Mar 2002
Positioning	<i>Compelling combination of price, performance and design</i>							<b>Mini-tower</b>			
Processor	<b>Intel® Pentium 4 at 2.0 or 2.2GHz with 400MHz frontside bus</b>							<ul style="list-style-type: none"> <li>Stealth black color</li> <li>H 18.5" x W 6.5" x D 20.0"</li> <li>H 470mm x W 165mm x D 508mm</li> <li>35 to 43 pounds (15.9 to 19.5kg)</li> <li>Metal cage for disk bays 5,6,7 rotates out of chassis</li> <li>Two front stabilizing feet</li> <li>Handle grip on top</li> <li>Toolless cover removal</li> <li>Toolless AGP and PCI slots</li> <li>Removable left side panel</li> </ul>			
L2 cache	512KB std and max / ECC / full speed										
Implementation	Processor and L2 cache in FC-PGA2 in mPGA478 socket										
SMP support	No SMP support										
Memory - std/max	<b>128MB or 256MB / 1.5GB max<sup>13</sup></b>										
Memory - sockets	Three 168-pin gold plated DIMM sockets / one socket used										
Memory - type	<b>133MHz SDRAM</b> / Error Checking and Correcting (ECC) DIMMs and ECC memory controller [except 6214-91U uses non-parity DIMMs] / industry std / unbuffered / PC133-compliant / CAS Latency 2 (CL2)										
Graphics controller (one of following)	<ul style="list-style-type: none"> <li><b>NVIDIA Vanta</b> (2D and 3D) / AGP 4X adapter / TNT2 Vanta GPU / 16MB std and max 125MHz SDRAM / 250MHz RAMDAC / one analog DB-15 connector</li> <li><b>Matrox® Millennium G450 DVI-I</b> (high-perf 2D) / AGP 4X adapter / MGA G450F GPU / 32MB 150MHz DDR-SDRAM / dual RAMDAC [360/232MHz] / dual head support / one DVI-I connector (ships with one cable with two DB-15 analog conns)</li> <li><b>NVIDIA Quadro4 200NVs</b> (high-perf 2D) / AGP 4X adapter / NV17LT 250MHz GPU / 64MB 166MHz SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / LFH60 connector for std cable with two DB-15 analog</li> <li><b>ATI Fire GL8800™</b> (advanced 3D) / AGP 4X adapter / Radeon™ 8800 GPU / 128MB 300MHz DDR-SGRAM / dual RAMDAC [400/165MHz] / dual head support / one DB-15 analog and one DVI-I conrtr (ships with one DVI-I to DB-15 cable)</li> </ul>							Bay ① 5.25", HH 1.6", access, CD-ROM Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, diskette Bay ④ 3.5", SL 1", access, open Bay ⑤ 3.5", SL 1", no access, disk Bay ⑥ 3.5", SL 1", no access, open Bay ⑦ 3.5", SL 1", no access, open  Slot 1: fullsize, AGP 4X, 25 watt (3.3v) - used by graphics Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - SCSI (some) Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v)** Slot 6: fullsize, 32-bit 33MHz, PCI 2.2 (5v)** ** on two-slot PCI extender board			
SCSI disk controller	SCSI <i>model</i> : <b>Adaptec® 29160LP / single channel Wide Ultra160 SCSI</b> (LVD160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support										
SCSI connectors	SCSI <i>models</i> : One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector										
Disk controller	Enhanced IDE / ATA-100 / integrated in I/O Controller Hub (ICH2) / two connectors on planar										
Cables	SCSI <i>model</i> : One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (connected to CD-ROM)										
Disk	EIDE <i>models</i> : Two EIDE 80-conductor cables (one 2-drop cable to CD, one 2-drop cable to disk) SCSI <i>models</i> : 18.2GB Ultra160 SCSI / 10000 rpm / 4.9 ms read seek / SMART <sup>5</sup> EIDE <i>models</i> : 40GB EIDE / ATA-100 / 7200 rpm / 9.0 ms read seek / SMART										
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM, bootable, IDE / 3.5" 1.44MB diskette drive										
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option										
Chipset	<b>Intel 845 chipset</b> / 82845 Memory Controller Hub (MCH) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82802 Firmware Hub / National® 87360 Super I/O for diskette, parallel, serial, keyboard, mouse										
Ports	<i>Back</i> : two 9-pin serial, parallel, two USB (Ver 1.1), keyboard, mouse, ethernet, monitor; <i>Front</i> : two USB (Ver 1.1)										
Audio	Integrated digital audio / SoundMAX® 3.0 with SPX™ / software-based audio (done by processor and ICH2) / AC '97 interface / ADI1887 codec										
Audio connectors	<i>Back</i> : microphone jack, line-in, line-out										
Speakers	One internal speaker for business audio										
Ethernet	10/100 ethernet on planar / ICH2 (MAC layer) with Intel 82562ETPHY (physical layer) / supports PXE and Wake on LAN® / Intel Pro/100VE Desktop Connection										
Security chip	None (so no cover tamper detect switch)										
Keyboard / mouse	104-key (rubber dome) keyboard / IBM 3-button mouse										
Cooling fans	Three variable speed cooling fans (power supply, processor fansink, rear)										
Power supply	340 watts with variable speed fan / universal / auto-sensing										
<b>Preload with Windows 2000<sup>17</sup></b>			<b>Options</b>								
Microsoft® Windows® 2000 Professional			128MB SDRAM 133MHz CL2 NP DIMM*			10K0057					
- Lotus® SmartSuite® Millennium license			256MB SDRAM 133MHz CL2 NP DIMM*			10K0059					
- Lotus Notes® Client license			512MB SDRAM 133MHz CL2 NP DIMM*			10K0061					
- Disk-to-Disk Recovery (in Service Partition)			128MB SDRAM PC133 CL2 ECC UDIMM			10K0044					
◇ Device Drivers and Diagnostics CD-ROM			256MB SDRAM PC133 CL2 ECC UDIMM			10K0046					
◇ Software Selections CD-ROM			512MB SDRAM PC133 CL2 ECC UDIMM			10K0048					
<ul style="list-style-type: none"> <li>Configuration/Setup Utility invoked by pressing F1 at startup</li> <li>Universal Manageability Services enabled</li> <li>LANClient Control Manager™ enabled</li> <li>Common Information Model (CIM) 2.2</li> <li>PC 2001-compliant</li> <li>Advanced Configuration and Power Interface (ACPI) 1.0b</li> <li>System Management BIOS</li> <li>DMI 2.0-compliant</li> <li>Wired for Management 2.0-compliant</li> </ul>			80GB IDE Disk ATA-100 (7200 rpm)			09N4208					
			PCI Ultra160 SCSI Adapter			19K4646					
			36.4GB 10K rpm Ultra160 SCSI disk			00N8209					
			IBM 16X Max <sup>6</sup> DVD-ROM Drive (black)			22P6950					
			12X/8X/32X Max <sup>6</sup> CD-RW internal (black)			10K3785					
			16X/10X/40X Max <sup>6</sup> CD-RW internal (blk)			24P3626					
			8X/4X/32X/8X Max <sup>6,19</sup> CD-RW/DVD-ROM Combo drive (black)			10K3790					
			IBM DVD-RAM/DVD-R Drive (black)			22P6959					
			IBM T560 15" Flat Panel Monitor (black)			6656HG2					
			IBM rack mount kit			09N4300					
			Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>								
<b>LIMITED WARRANTY<sup>3</sup></b>											
⇒ <b>3 year parts and labor</b>											
⇒ <b>International Warranty Service<sup>3</sup></b>											
⇒ <b>On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time</b>											
⇒ <b>3 year on site warranty service upgrade options:<sup>7</sup></b>											
• <b>4 hour response, Mon-Fri 8-5</b> (ServicePac® part number 41L2735)											
• <b>4 hour response, 7 day x 24 hr</b> (ServicePac part number 41L2741)											
⇒ <b>Post warranty maintenance services available</b>											
⇒ <b>24x7<sup>12</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></b>											

See footnotes for important warranty information \*Non-parity memory for Model 91U only  
US models announced February 5, 2002; withdrawn effective February 28, 2003



IBM® Type-model	Processor	GHz <sup>1</sup>	L2 cache	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6214-45U	Pentium® 4	2.0GHz	512KB	256MB ECC	40GB <sup>2</sup> 7200	None	CD NVIDIA™ Quadro4	64MB	6x7	Windows® XP Pro	Jun 02
6214-46U	Pentium 4	2.0GHz	512KB	256MB ECC	40GB 7200	None	CD Millennium G450 DVI-I	32MB	6x7	Windows XP Pro	Jun 02
6214-48U	Pentium 4	2.0GHz	512KB	256MB ECC	18.2GB 10K	29160LP	CD ATI® Fire GL8800™.11	128MB	6x7	Windows XP Pro	Jun 02
6214-96U	Pentium 4	2.0GHz	512KB	128MB NP	40GB 7200	None	CD NVIDIA Vanta	16MB	6x7	Windows XP Pro	Jun 02
6214-55U	Pentium 4	2.2GHz	512KB	256MB ECC	40GB 7200	None	CD NVIDIA Quadro4	64MB	6x7	Windows XP Pro	Jun 02
6214-56U	Pentium 4	2.2GHz	512KB	256MB ECC	40GB 7200	None	CD Millennium G450 DVI-I	32MB	6x7	Windows XP Pro	Jun 02
6214-58U	Pentium 4	2.2GHz	512KB	256MB ECC	18.2GB 10K	29160LP	CD ATI Fire GL8800	128MB	6x7	Windows XP Pro	Jun 02
Positioning	<i>Compelling combination of price, performance and design</i>							<b>Mini-tower</b>			
Processor	<b>Intel® Pentium 4 at 2.0 or 2.2GHz with 400MHz frontside bus</b>							<ul style="list-style-type: none"> <li>Stealth black color</li> <li>H 18.5" x W 6.5" x D 20.0"</li> <li>H 470mm x W 165mm x D 508mm</li> <li>35 to 43 pounds (15.9 to 19.5kg)</li> <li>Metal cage for disk bays 5,6,7 rotates out of chassis</li> <li>Two front stabilizing feet</li> <li>Handle grip on top</li> <li>Toolless cover removal</li> <li>Toolless AGP and PCI slots</li> <li>Removable left side panel</li> </ul>			
L2 cache	<b>512KB</b> std and max / ECC / full speed							Bay ① 5.25", HH 1.6", access, CD-ROM Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, diskette Bay ④ 3.5", SL 1", access, open Bay ⑤ 3.5", SL 1", no access, disk Bay ⑥ 3.5", SL 1", no access, open Bay ⑦ 3.5", SL 1", no access, open			
Implementation	Processor and L2 cache in FC-PGA2 in mPGA478 socket							Slot 1: fullsize, AGP 4X, 25 watt (3.3v) - used by graphics Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - SCSI (some) Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v)** Slot 6: fullsize, 32-bit 33MHz, PCI 2.2 (5v)** ** on two-slot PCI extender board			
SMP support	No SMP support										
Memory - std/max	<b>128MB</b> or <b>256MB</b> / 1.5GB max <sup>13</sup>										
Memory - sockets	Three 168-pin gold plated DIMM sockets / one socket used										
Memory - type	<b>133MHz SDRAM</b> / Error Checking and Correcting (ECC) DIMMs and ECC memory controller [except 6214-96U uses non-parity DIMMs] / industry std / unbuffered / PC133-compliant / CAS Latency 2 (CL2)										
Graphics controller (one of following)	<ul style="list-style-type: none"> <li><b>NVIDIA Vanta</b> (2D and 3D) / AGP 4X adapter / TNT2 Vanta GPU / 16MB std and max 125MHz SDRAM / 250MHz RAMDAC / one analog DB-15 connector</li> <li><b>Matrox® Millennium G450 DVI-I</b> (high-perf 2D) / AGP 4X adapter / MGA G450F GPU / 32MB 150MHz DDR-SDRAM / dual RAMDAC [360/232MHz] / dual head support / one DVI-I connector (ships with one cable with two DB-15 analog conns)</li> <li><b>NVIDIA Quadro4 200NVs</b> (high-perf 2D) / AGP 4X adapter / NV17LT 250MHz GPU / 64MB 166MHz SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / LFH60 connector for std cable with two DB-15 analog</li> <li><b>ATI Fire GL8800™</b> (advanced 3D) / AGP 4X adapter / Radeon™ 8800 GPU / 128MB 300MHz DDR-SGRAM / dual RAMDAC [400/165MHz] / dual head support / one DB-15 analog and one DVI-I conrtr (ships with one DVI-I to DB-15 cable)</li> </ul>										
SCSI disk controller	SCSI <i>model</i> : <b>Adaptec® 29160LP / single channel Wide Ultra160 SCSI</b> (LVD160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support										
SCSI connectors	SCSI <i>models</i> : One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector										
Disk controller	Enhanced IDE / ATA-100 / integrated in I/O Controller Hub (ICH2) / two connectors on planar										
Cables	SCSI <i>model</i> : One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (connected to CD-ROM)										
Disk	EIDE <i>models</i> : Two EIDE 80-conductor cables (one 2-drop cable to CD, one 2-drop cable to disk) SCSI <i>models</i> : 18.2GB Ultra160 SCSI / 10000 rpm / 4.9 ms read seek / SMART <sup>5</sup> EIDE <i>models</i> : 40GB EIDE / ATA-100 / 7200 rpm / 9.0 ms read seek / SMART										
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM, bootable, IDE / 3.5" 1.44MB diskette drive										
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option										
Chipset	<b>Intel 845 chipset</b> / 82845 Memory Controller Hub (MCH) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82802 Firmware Hub / National® 87360 Super I/O for diskette, parallel, serial, keyboard, mouse										
Ports	<i>Back</i> : two 9-pin serial, parallel, two USB (Ver 1.1), keyboard, mouse, ethernet, monitor; <i>Front</i> : two USB (Ver 1.1)										
Audio	Integrated digital audio / SoundMAX® 3.0 with SPX™ / software-based audio (done by processor and ICH2) / AC '97 interface / ADI1887 codec										
Audio connectors	<i>Back</i> : microphone jack, line-in, line-out										
Speakers	One internal speaker for business audio										
Ethernet	10/100 ethernet on planar / ICH2 (MAC layer) with Intel 82562ETPHY (physical layer) / supports PXE and Wake on LAN® / Intel Pro/100VE Desktop Connection										
Security chip	None (so no cover tamper detect switch)										
Keyboard / mouse	104-key (rubber dome) keyboard / IBM 3-button mouse										
Cooling fans	Three variable speed cooling fans (power supply, processor fansink, rear)										
Power supply	340 watts with variable speed fan / universal / auto-sensing										
<b>Preload with Windows XP Professional<sup>17</sup></b>			<b>Options</b>								
Microsoft® Windows® XP Professional			128MB SDRAM 133MHz CL2 NP DIMM*			10K0057					
- Lotus® SmartSuite® Millennium license			256MB SDRAM 133MHz CL2 NP DIMM*			10K0059					
- Lotus Notes® Client license			512MB SDRAM 133MHz CL2 NP DIMM*			10K0061					
- Disk-to-Disk Recovery (in Service Partition)			128MB SDRAM PC133 CL2 ECC UDIMM			10K0044					
◇ Device Drivers and Diagnostics CD-ROM			256MB SDRAM PC133 CL2 ECC UDIMM			10K0046					
◇ Software Selections CD-ROM			512MB SDRAM PC133 CL2 ECC UDIMM			10K0048					
<ul style="list-style-type: none"> <li>Configuration/Setup Utility invoked by pressing F1 at startup</li> <li>Universal Manageability Services enabled</li> <li>LANClient Control Manager™ enabled</li> <li>Common Information Model (CIM) 2.2</li> <li>PC 2001-compliant</li> <li>Advanced Configuration and Power Interface (ACPI) 1.0b</li> <li>System Management BIOS</li> <li>DMI 2.0-compliant</li> <li>Wired for Management 2.0-compliant</li> </ul>			80GB IDE Disk ATA-100 (7200 rpm)			09N4208					
			PCI Ultra160 SCSI Adapter			19K4646					
			36.4GB 10K rpm Ultra160 SCSI disk			00N8209					
			IBM 16X Max <sup>6</sup> DVD-ROM Drive (black)			22P6950					
			24X/10X/40X Max <sup>6</sup> CD-RW internal (blk)			24P6965					
			8X/4X/32X/8X Max <sup>6,19</sup> CD-RW/DVD-ROM Combo drive (black)			10K3790					
			IBM DVD-RAM/DVD-R Drive (black)			22P6959					
			IBM T560 15" Flat Panel Monitor (black)			6656HG2					
			IBM P275 21" (19.8" v.i.s.) Monitor (blk)			6652U3N					
			IBM Rack Mount Kit			09N4300					
			Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>								
<b>LIMITED WARRANTY<sup>3</sup></b>											
⇒ <b>3 year parts and labor</b>											
⇒ <b>International Warranty Service<sup>3</sup></b>											
⇒ <b>On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time</b>											
⇒ <b>3 year on site warranty service upgrade options:<sup>7</sup></b>											
• <b>4 hour response, Mon-Fri 8-5</b> (ServicePac® part number 41L2735)											
• <b>4 hour response, 7 day x 24 hr</b> (ServicePac part number 41L2741)											
⇒ <b>Post warranty maintenance services available</b>											
⇒ <b>24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support</b>											

See footnotes for important warranty information \* Non-parity memory for Model 96U only  
 ⚡ US models announced June 4, 2002; withdrawn effective February 28, 2003



# IBM IntelliStation® E Pro (6836) - withdrawn

IBM® Type-model	Processor	MHz <sup>1</sup>	Memory	Disk	SCSI adapter	CD-ROM <sup>6</sup>	Graphics adapter and memory	Slots x bays	Ethernet	Preload <sup>17</sup>	Available date
6836-10U	Pentium® III	800	64MB	15GB EIDE	None	48X-20X	Millennium G450 16MB	4x4	10/100	2000 or NT	Oct 2000
6836-21U	Pentium III	866	128MB	15GB EIDE	None	48X-20X	Millennium G450 16MB	4x4	10/100	2000 or NT	Oct 2000
6836-22U	Pentium III	866	128MB	9.1GB SCSI	29160LP	48X-20X	Millennium G450 16MB	4x4	10/100	2000 or NT	Oct 2000
6836-31U	Pentium III	933	128MB	15GB EIDE	None	48X-20X	Millennium G450 16MB	4x4	10/100	2000 or NT	Oct 2000
6836-35U	Pentium III	933	128MB	15GB EIDE	None	48X-20X	NVIDIA GeForce2 MX 32MB	4x4	10/100	2000 or NT	Oct 2000
6836-36U	Pentium III	933	128MB	9.1GB SCSI	29160LP	48X-20X	NVIDIA GeForce2 MX 32MB	4x4	10/100	2000 or NT	Oct 2000
6836-41U	Pentium III	1.0GHz	128MB	15GB EIDE	None	48X-20X	Millennium G450 16MB	4x4	10/100	2000 or NT	Oct 2000
6836-1PU	Pentium III	800	128MB	None	None	48X-20X	Millennium G450 16MB	4x4	10/100	2000 or NT	Oct 2000
6836-2PU	Pentium III	866	128MB	None	None	48X-20X	Millennium G450 16MB	4x4	10/100	2000 or NT	Oct 2000

Intel® processor **Pentium® III 800EB, 866, 933MHz<sup>1</sup> or 1.0GHz<sup>1</sup> with 133MHz Front Side Bus**  
 L2 cache **256KB** std and max / ECC / at processor speed  
 Implementation Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA) / motherboard contains one Intel PGA370 socket, three DIMM sockets, three PCI slots, one AGP slot, and integrated ethernet  
 SMP support No SMP support

Memory - std / max **64MB or 128MB** std / 1.5GB max<sup>13</sup>  
 Memory - sockets **3** sockets / 2 available / ECC (Error Checking and Correcting) DIMMs and ECC memory controller / PC133-compliant /  
 Memory - features **SDRAM / 133MHz** / three 168-pin gold-plated DIMM 3.3 v sockets / supports unbuffered SDRAM ECC DIMMs

Graphics controller (one of following)
 

- **Matrox® Millennium G450** (high-performance 2D) / AGP 4X adapter / Matrox MGA G450C GPU / 16MB std and max 166MHz SDRAM / two DB-15 connectors (dual monitor capable)
- **NVIDIA™ GeForce2 MX** (advanced 3D) / AGP 4X adapter / NV11 GPU / 32MB std and max 166MHz SDRAM / one DB-15 connector

SCSI disk controller *SCSI models:* **Adaptec® 29160LP / single channel Wide Ultra160 SCSI** (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support  
 SCSI connectors *SCSI models:* One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector  
 IDE disk controller Enhanced IDE busmaster / ATA-66 support (ATA-100 on later models) / two connectors on planar  
 Cables *SCSI models:* One 3-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (connected to CD-ROM)  
*EIDE models:* Two EIDE cables (one 2-drop cable to CD-ROM, one 1-drop cable to EIDE disk)

Disk - features *EIDE models:* 15GB EIDE / ATA-100 / 7200 rpm / 8.7 ms read seek / S.M.A.R.T.<sup>5</sup>  
*SCSI models:* 9.1GB Ultra160 SCSI / 7200 rpm / 7.5 ms read seek / S.M.A.R.T.

Rack support None  
 Architecture / chipsets **VIA® Apollo Pro133A chip set** / VT82C694X North Bridge (memory controller, PCI 2.2 32-bit 33MHz controller, AGP 4X) / VIA VT82C686A or 686B South Bridge (IDE ATA-66 [686B is ATA-100], USB, diskette, par, serial, kybd, mouse)

100/10Mbps ethernet Intel 82559 / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit 33MHz PCI bus / support for Wake on LAN®

CD-ROM / diskette 48X-20X<sup>6</sup> CD-ROM / CAV (ATAPI) / bootable / IDE: 3.5" 1.44MB diskette drive

External ports *Serial:* Two 9 pin; *Parallel:* One (EPP, ECP) / IEEE 1284; *USB:* Two (Ver 1.1); keyboard, mouse, audio line in, audio line out, microphone in, MIDI

Systems mgmt Monitoring and alerting of memory, thermal, fans, and voltage faults / support for Wake on LAN, Alert on LAN™ 2, PXE

Keyboard / mouse IBM 104-key keyboard / IBM ScrollPoint® II mouse  
 Cooling fans Two (800MHz models) or three (other models) cooling fans (power supply, front, rear) / not redundant or hot-swap / fans have two speeds

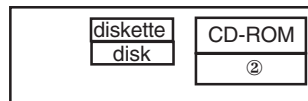
Power supply 155 watts / universal / auto sensing

### SECURITY

- Cover key lock (in rear)
- Cover tamper detect switch
- Secure fixed DASD
- Power-on password
- Administrator password
- Boot sequence control
- Boot without keyboard or mouse
- Diskette boot inhibit and write-protect
- Diskette, disk, serial port, parallel port I/O control
- Secure access openings
- Secure removable media
- VPD stored in EEPROM
- Write protection control for EEPROM
- Barcode labels on most components
- IBM Security Solutions

Slot 1: fullsize, AGP 4X, 25 watt (3.3v) - used by std graphics adpr  
 Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - Alert on LAN 2 support  
 Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - used by SCSI (some)  
 Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v)

Bay ① 5.25", HH 1.6", access, CD-ROM  
 Bay ② 5.25", HH 1.6" access, open  
 Bay ③ 3.5", SL 1", access, std diskette  
 Bay ④ 3.5", SL 1", no access, std disk



- Stealth black color
- Bay 1 and 2 in cage flips up
- Bay 3 and 4 in cage flips up
- ◇ H 5.52" x W 16.73" x D 16.73"
- ◇ H140mm x W425mm x D425mm
- ◇ 23 to 25 pounds (10.5 to 11.4kg)

### Windows 2000 Professional Preload<sup>17</sup>

- Microsoft® Windows® 2000 Professional
- Free license for Lotus® SmartSuite® Millennium
- Free license for Lotus Notes® Client
- ◇ Device Drivers and Diagnostics CD-ROM
- ◇ Software Selections CD-ROM
- ◇ Windows 2000 Product Recovery CD-ROM
- ◇ Windows NT 4.0 (SP6) Product Recovery CD
- ◇ Disk-to-Disk Recovery (Windows 2000 or NT 4.0 SP6 in hidden service partition)

### Options

- 64MB SDRAM ECC 133MHz unbuffered DIMM 33L3079
- 128MB SDRAM ECC 133MHz unbuffered DIMM 33L3081
- 256MB SDRAM ECC 133MHz unbuffered DIMM 33L3083
- 512MB SDRAM ECC 133MHz unbuffered DIMM 33L3085
- IBM 20.4GB ATA-100 EIDE HDD 19K4461
- IBM 30GB ATA-100 EIDE HDD 00N8203
- IBM 9.1GB 7200rpm Ultra160 SCSI HDD 00N8204
- IBM 18.2GB 7200rpm Ultra160 SCSI HDD 00N8205
- IBM 36.4GB 7200rpm Ultra160 SCSI HDD 00N8206
- IBM 9.1GB 10K Ultra160 SCSI HDD 00N8207
- IBM 18.2GB 10K Ultra160 SCSI HDD 00N8208
- IBM 36.4GB 10K Ultra160 SCSI HDD 00N8209
- IBM 9.4GB DVD-RAM (black) 10K3561
- IBM IDE 8X/4X/32X<sup>6</sup> CD-Rewritable (black) 33L5020
- IBM 250MB Zip Drive (black) 00N8078
- IBM P96 Color Monitor (black) 655163N

- *Maximum internal SCSI disk capacity<sup>13</sup>* 72.8GB (2 disks x 36.4GB)
- Removable top cover
- Configuration/Setup Utility (in flash memory) invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A
- Adv Config Power Interface (ACPI) 1.0
- ISO 9241-3 capable
- Universal Manageability Services enabled
- LANClient Control Manager™ enabled
- SMART Reaction™.5 II
- PC99-compliant
- DMI 2.0-compliant
- Common Information Model (CIM) 2.2

### LIMITED WARRANTY\*<sup>3</sup>

- ↔ **3 year parts and labor**
- ↔ **International Warranty Service<sup>3</sup>**
- ↔ **On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time**
- ↔ **3 year on site warranty service upgrade options:<sup>7</sup>**
  - 4 hour response, 7 day x 24 hr
- ↔ **Post warranty maintenance services available**
- ↔ **24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support**

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227

US models announced October 10, 2000

US models withdrawn from marketing effective May 2001 or October 2001 or January 2002

No warranties are expressed or implied in this summary (6836) © IBM Corp. December 2001

# IBM IntelliStation® E Pro (6846) - withdrawn

IBM® Type-model	Processor	MHz <sup>1</sup>	Memory	Disk	SCSI adapter	CD-ROM <sup>6</sup>	Graphics adapter and memory	Slots x bays Ethernet	Preload <sup>17</sup>	Available date
6846-11U	Pentium® III	800	128MB	15GB EIDE	None	48X-20X	Millennium G450 16MB	6x7 10/100	2000 or NT	Oct 2000
6846-21U	Pentium III	866	128MB	15GB EIDE	None	48X-20X	Millennium G450 16MB	6x7 10/100	2000 or NT	Oct 2000
6846-22U	Pentium III	866	128MB	9.1GB SCSI	29160LP	48X-20X	Millennium G450 16MB	6x7 10/100	2000 or NT	Oct 2000
6846-26U	Pentium III	866	128MB	9.1GB SCSI	29160LP	48X-20X	NVIDIA GeForce2 MX 32MB	6x7 10/100	2000 or NT	Oct 2000
6846-31U	Pentium III	933	128MB	15GB EIDE	None	48X-20X	Millennium G450 16MB	6x7 10/100	2000 or NT	Oct 2000
6846-35U	Pentium III	933	128MB	15GB EIDE	None	48X-20X	NVIDIA GeForce2 MX 32MB	6x7 10/100	2000 or NT	Oct 2000
6846-37U	Pentium III	933	256MB	9.1GB SCSI	29160LP	48X-20X	NVIDIA GeForce2 MX 32MB	6x7 10/100	2000 or NT	Oct 2000
6846-47U	Pentium III	1.0GHz	256MB	9.1GB SCSI	29160LP	48X-20X	NVIDIA GeForce2 MX 32MB	6x7 10/100	2000 or NT	Oct 2000
6846-3PU	Pentium III	866	256MB	None	None	48X-20X	Millennium G450 16MB	6x7 10/100	2000 or NT	Oct 2000

Intel® processor **Pentium® III 800EB, 866, 933MHz<sup>1</sup> or 1.0GHz<sup>1</sup> with 133MHz Front Side Bus**  
 L2 cache **256KB** std and max / ECC / at processor speed  
 Implementation Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA) / motherboard contains one Intel PGA370 socket, three DIMM sockets, three PCI slots, connector for two-slot PCI extender board, one AGP slot, and integrated ethernet  
 SMP support No SMP support

Memory - std / max **128MB or 256MB** std / 1.5GB max<sup>13</sup>  
 Memory - sockets **3** sockets / 2 available / ECC (Error Checking and Correcting) DIMMs and ECC memory controller / PC133-compliant /  
 Memory - features **SDRAM / 133MHz** / three 168-pin gold-plated DIMM 3.3 v sockets / supports unbuffered SDRAM ECC DIMMs

Graphics controller (one of following)
 

- **Matrox® Millennium G450** (high-performance 2D) / AGP 4X adapter / Matrox MGA G450C GPU / 16MB std and max 166MHz SDRAM / two DB-15 connectors (dual monitor capable)
- **NVIDIA™ GeForce2 MX** (advanced 3D) / AGP 4X adapter / NV11 GPU / 32MB std and max 166MHz SDRAM / one DB-15 connector

SCSI disk controller *SCSI models:* **Adaptec® 29160LP / single channel Wide Ultra160 SCSI** (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support  
 SCSI connectors *SCSI models:* One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector  
 IDE disk controller Enhanced IDE busmaster / ATA-66 support (ATA-100 on later models) / two connectors on planar  
 Cables *SCSI models:* One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (connected to CD-ROM)  
*EIDE models:* Two EIDE cables (one 2-drop cable to CD-ROM, one 2-drop cable to EIDE disk)

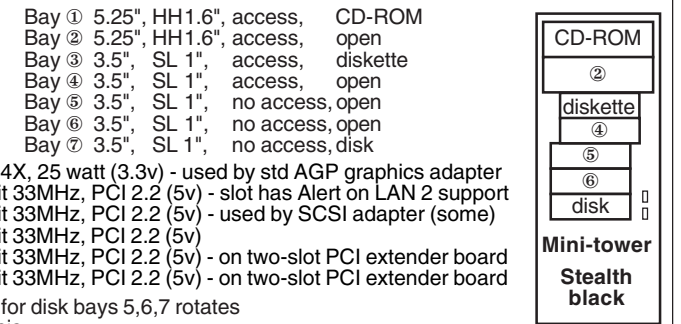
Disk - features *EIDE models:* 15GB EIDE / ATA-100 / 7200 rpm / 8.7 ms read seek / S.M.A.R.T.<sup>5</sup>  
*SCSI models:* 9.1GB Ultra160 SCSI / 7200 rpm / 7.5 ms read seek / S.M.A.R.T.

Rack support 4U<sup>4</sup> rack mount support via tower-to-rack kit option  
 Architecture / chipsets **VIA® Apollo Pro133A chip set** / VT82C694X North Bridge (memory controller, PCI 2.2 32-bit 33MHz controller, AGP 4X) / VIA VT82C686A or 686B South Bridge (IDE ATA-66 [686B is ATA-100], USB, diskette, par, serial, kybd, mouse)

100/10Mbps ethernet Intel 82559 / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit 33MHz PCI bus / support for Wake on LAN®  
 CD-ROM / diskette 48X-20X<sup>6</sup> CD-ROM / CAV (ATAPI) / bootable / IDE<sup>7</sup> 3.5" 1.44MB diskette drive  
 External ports *Serial:* Two 9 pin; *Parallel:* One (EPP, ECP) / IEEE 1284; *USB:* Two (Ver 1.1); keyboard, mouse, audio line in, audio line out, microphone in, MIDI  
 Systems mgmt Monitoring and alerting of memory, thermal, fans, and voltage faults / support for Wake on LAN, Alert on LAN™ 2, PXE

Keyboard / mouse IBM 104-key keyboard / IBM ScrollPoint® II mouse  
 Cooling fans Three (800 and 866MHz models) or four (other models) cooling fans (power supply, disks, rear, middle) / not redundant or hot-swap / fans have two speeds  
 Power supply 300 watts / universal / auto sensing

- SECURITY**
- Cover key lock (in rear)
  - Cover tamper detect switch
  - Secure fixed DASD
  - Power-on password
  - Administrator password
  - Boot sequence control
  - Boot without keyboard or mouse
  - Diskette boot inhibit and write-protect
  - Diskette, disk, serial port, parallel port I/O control
  - Secure access openings
  - Secure removable media
  - VPD stored in EEPROM
  - Write protection control for EEPROM
  - Barcode labels on most components
  - IBM Security Solutions



**Windows 2000 Professional Preload<sup>17</sup>**  
 Microsoft® Windows® 2000 Professional  
 - Free license for Lotus® SmartSuite® Millennium  
 - Free license for Lotus Notes® Client  
 ♦ Device Drivers and Diagnostics CD-ROM  
 ♦ Software Selections CD-ROM  
 ♦ Windows 2000 Product Recovery CD-ROM  
 ♦ Windows NT 4.0 (SP6) Prod Recovery CD-ROM  
 ♦ Disk-to-Disk Recovery (Windows 2000 or NT 4.0 SP6 in hidden service partition)

Slot 1: fullsize, AGP 4X, 25 watt (3.3v) - used by std AGP graphics adapter  
 Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - slot has Alert on LAN 2 support  
 Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - used by SCSI adapter (some)  
 Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v)  
 Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - on two-slot PCI extender board  
 Slot 6: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - on two-slot PCI extender board  
 ♦ Metal cage for disk bays 5,6,7 rotates out of chassis  
 ♦ Two front stabilizing feet  
 ♦ 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)

**Options**  
 64MB SDRAM ECC 133MHz unbuffered DIMM 33L3079  
 128MB SDRAM ECC 133MHz unbuffered DIMM 33L3081  
 256MB SDRAM ECC 133MHz unbuffered DIMM 33L3083  
 512MB SDRAM ECC 133MHz unbuffered DIMM 33L3085  
 IBM 4Ux20D Tower-to-Rack Kit 09N4300  
 IBM 20.4GB ATA-100 EIDE HDD 19K4461  
 IBM 30GB ATA-100 EIDE HDD 00N8203  
 IBM 9.1GB 7200rpm Ultra160 SCSI HDD 00N8204  
 IBM 18.2GB 7200rpm Ultra160 SCSI HDD 00N8205  
 IBM 36.4GB 7200rpm Ultra160 SCSI HDD 00N8206  
 IBM 9.1GB 10K Ultra160 SCSI HDD 00N8207  
 IBM 18.2GB 10K Ultra160 SCSI HDD 00N8208  
 IBM 36.4GB 10K Ultra160 SCSI HDD 00N8209  
 IBM 9.4GB DVD-RAM (black) 10K3561  
 IBM IDE 8X/4X/32X CD-Rewritable (black) 33L5020  
 IBM 250MB Zip Drive (black) 00N8078  
 IBM P96 Color Monitor (black) 655163N

• *Maximum internal SCSI disk capacity:* 145.6GB (4 disks x 36.4GB)  
 • Removable left side panel  
 • Configuration/Setup Utility (in flash memory) invoked by pressing F1 at startup  
 • SCSISelect near startup by pressing CTRL+A  
 • Adv Config Power Interface (ACPI) 1.0  
 • Universal Manageability Services enabled  
 • LANClient Control Manager™ enabled  
 • DMI 2.0-compliant

**LIMITED WARRANTY\*<sup>3</sup>**  
 ⇨ **3 year parts and labor**  
 ⇨ **International Warranty Service<sup>3</sup>**  
 ⇨ **On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time**  
 ⇨ **3 year on site warranty service upgrade option:<sup>7</sup>**  
 • **4 hour response, 7 day x 24 hr**  
 ⇨ **Post warranty maintenance services available**  
 ⇨ **24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support**

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227  
 No warranties are expressed or implied in this summary  
 US models announced October 10, 2000  
 US models withdrawn from marketing effective May 2001 or October 2001 or January 2002  
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# IBM IntelliStation® E Pro (6867) - withdrawn

Type-model	Standard disk (rpm) ms seek <sup>9</sup> / disk interface CD-ROM / interface	Intel® Processor MHz <sup>1</sup>	Write-back L2 cache standard	Rambus memory; std MB / type; devices / type	SVGA controller; AGP; memory (MB) std / max	Bus slots P=PCI avail Total A=AGP avail bays	Chip set Ethernet Preload <sup>17</sup>	Available date	
<b>Desktop; 5 slot x 4 bay - US Models</b>									
⌘ 6867-12U	13.5GB <sup>2</sup> std (7200) 9.0ms / EIDE / ATA-66 48X-20X <sup>6</sup> CD-ROM / EIDE	Pentium® III 600EB/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=3 AGP=0	3 used 1 empty	820 ethernet NT 4.0	Dec 1999
⌘ 6867-13U	9.1GB std (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 48X-20X CD-ROM / EIDE	Pentium III 600EB/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=2 AGP=0	3 used 1 empty	820 ethernet, SCSI NT 4.0	Dec 1999
⌘ 6867-15U	9.1GB std (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 48X-20X CD-ROM / EIDE	Pentium III 600EB/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	IBM Fire GL1 <sup>11</sup> AGP 2X adapter 32/32MB SGRAM	PCI=2 AGP=0	3 used 1 empty	820 ethernet, SCSI NT 4.0	Dec 1999
⌘ 6867-17U	13.5GB std (7200) 9.0ms / EIDE / ATA-66 48X-20X CD-ROM / EIDE	Pentium III 600EB/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Appian Gemini AGP 2X adpr / 16MB dual display ports	PCI=3 AGP=0	3 used 1 empty	820 ethernet NT 4.0	Jan 2000
⌘ 6867-30U	13.5GB std (7200) 9.0ms / EIDE / ATA-66 48X-20X CD-ROM / EIDE	Pentium III 667/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=3 AGP=0	3 used 1 empty	820 ethernet NT 4.0	Dec 1999
⌘ 6867-32U	9.1GB std (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 48X-20X CD-ROM / EIDE	Pentium III 667/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=2 AGP=0	3 used 1 empty	820 ethernet, SCSI NT 4.0	Dec 1999
⌘ 6867-34U	13.5GB std (7200) 9.0ms / EIDE / ATA-66 48X-20X CD-ROM / EIDE	Pentium III 667/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	IBM Fire GL1 <sup>11</sup> AGP 2X adapter 32/32MB SGRAM	PCI=3 AGP=0	3 used 1 empty	820 ethernet NT 4.0	Dec 1999
⌘ 6867-35U	9.1GB std (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 48X-20X CD-ROM / EIDE	Pentium III 667/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	IBM Fire GL1 <sup>11</sup> AGP 2X adapter 32/32MB SGRAM	PCI=2 AGP=0	3 used 1 empty	820 ethernet, SCSI NT 4.0	Dec 1999
⌘ 6867-37U	9.1GB std (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 48X-20X CD-ROM / EIDE	Pentium III 667/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Appian Gemini AGP 2X adpr / 16MB dual display ports	PCI=2 AGP=0	3 used 1 empty	820 ethernet, SCSI NT 4.0	Jan 2000
⌘ 6867-40U	13.5GB std (7200) 9.0ms / EIDE / ATA-66 48X-20X CD-ROM / EIDE	Pentium III 733/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=3 AGP=0	3 used 1 empty	820 ethernet NT 4.0	Dec 1999
⌘ 6867-41U	13.5GB std (7200) 9.0ms / EIDE / ATA-66 48X-20X CD-ROM / EIDE	Pentium III 733/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=3 AGP=0	3 used 1 empty	820 ethernet Windows 2000	Feb 2000
⌘ 6867-45U	9.1GB std (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 48X-20X CD-ROM / EIDE	Pentium III 733/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	IBM Fire GL1 <sup>11</sup> AGP 2X adapter 32/32MB SGRAM	PCI=2 AGP=0	3 used 1 empty	820 ethernet, SCSI NT 4.0	Dec 1999
⌘ 6867-19U for AAP	<i>no disk</i> 48X-20X CD-ROM / EIDE	Pentium III 600EB/133 MHz	256KB full spd	0MB RDRAM	None	PCI=3 AGP=1	1 used 3 empty	820 ethernet No OS	Dec 1999
⌘ 6867-39U for AAP	<i>no disk</i> 48X-20X CD-ROM / EIDE	Pentium III 667/133 MHz	256KB full spd	0MB RDRAM	None	PCI=3 AGP=1	1 used 3 empty	820 ethernet No OS	Dec 1999
⌘ 6867-49U for AAP	<i>no disk</i> 48X-20X CD-ROM / EIDE	Pentium III 733/133 MHz	256KB full spd	0MB RDRAM	None	PCI=3 AGP=1	1 used 3 empty	820 ethernet No OS	Dec 1999

<p><b>Windows NT Preload<sup>17</sup></b>          Windows NT® Workstation 4.0 (SP5)          ConfigSafe for Windows NT          Norton AntiVirus for IBM (OEM Version)          Other utilities, drivers, and applications          - Free license for Lotus® SmartSuite®          Millennium          - Free license for Lotus Notes Client          ♦ Software Selections CD-ROM          ♦ Windows NT Product Recovery CD-ROM          ♦ Device Drivers and Diagnostic CD-ROM          - C: is 2GB as FAT16          - Remainder of disk is unformatted</p> <p><b>Windows 2000 Professional Preload<sup>17</sup></b>          Microsoft® Windows® 2000 Professional          - Free license for Lotus® SmartSuite®          Millennium          ♦ Software Selections CD-ROM          ♦ Windows 2000 Product Recovery          CD-ROM (includes drivers and          diagnostics)          - C: is FAT32 of entire disk</p>	<p><b>Options</b>          64MB 700MHz ECC RDRAM (4 Dev) 33L3105          128MB 700MHz ECC RDRAM (8 Dev) 33L3107          256MB 700MHz ECC RDRAM (16 Dev) 33L3109          64MB 800MHz ECC RDRAM (4 Dev) 20L0274          128MB 800MHz ECC RDRAM (8 Dev) 20L0275          256MB 800MHz ECC RDRAM (16 Dev) 20L0277          IBM 10.1GB 7,200 rpm EIDE disk 33L4958          IBM 13.5GB 7,200 rpm EIDE disk 33L5043          IBM 20.4GB 7,200 rpm EIDE disk 33L5044          IBM 9.1GB 7,200 rpm Wide Ultra2 SCSI disk 20L0553          IBM 18.2GB 7,200 rpm Wide Ultra2 SCSI disk 20L0554          IBM 9.1GB 10,000 rpm Wide Ultra2 SCSI disk 20L0539          IBM 9.1GB 10,000 rpm Wide Ultra2 SCSI disk 00N8071          IBM 18.2GB 10,000 rpm Wide Ultra2 SCSI disk 00N8072          IBM IDE DVD-ROM (Black) 33L5003          IBM IDE Rewritable CD-ROM (Black) 33L5005          Radip Access II Keyboard (Black) 33L3174          Desktop Floor Stand 33L5136</p> <p>Visit <a href="http://www.ibm.com/options">www.ibm.com/options</a> for a complete list of compatible options</p> <p><b>Software Selections CD-ROM<sup>7</sup></b>          All models ship with a CD with various          appls, utilities, and customization features</p> <p>↔ 13.5GB EIDE disk is ATA-66 (up to 66MB/sec) and SMART<sup>15</sup> III</p>	<p><b>WARRANTY SERVICE SUPPORT<sup>3</sup></b>          ↔ 3 year parts and labor warranty          ↔ International Warranty Service<sup>3</sup>          ↔ On site, 8 am through 5 pm,          Mon through Fri excluding          holidays, next business day          response time          ↔ On site warranty upgrade option:          • 4 hour response<sup>14</sup>, 7 day x 24 hr          ↔ Post warranty on site options:          • Next day response<sup>14</sup>, Mon-Fri 8-5          • 4 hour response<sup>14</sup>, 7 day x 24 hr          ↔ IBM SystemXtra®          ↔ 24 hour x 7 day telephone,          electronic, and Internet support</p>
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# IBM IntelliStation® E Pro (6867) - withdrawn

<b>IBM® IntelliStation® E Pro</b>		<b>Desktop</b>	
Type-model	<b>6867-xxx</b>		
Processor(s)	<b>Intel® Pentium® III 600EB, 667, or 733MHz<sup>1</sup> with 133MHz system bus</b>		
Implementation	Processor and L2 cache in Single Edge Cartridge (SECC2) in Intel Slot 1 CPU connector / motherboard has one Slot 1		
Processor upgrade	Enabled for Slot 1 Intel upgrade processors		
Avail / withdrawn date	Dec 1999 or Jan 2000 or Feb 2000 / June 2000 and Nov 2000	Bay ① 5.25", HH 1.6", access, open or CD-ROM	Bay ② 3.5", SL 1", access, open
L2 cache	<b>256KB</b> std and max / full speed / ECC support / integrated in SECC2 / 8-way set associative / write-back	Bay ③ 3.5", SL 1", no acc, open or std disk, rails	Bay ④ 3.5", SL 1", access, std diskette
Memory - std / max	<b>128MB std / 512MB max<sup>13</sup></b> (memory controller max is 1GB)	Slot 1: fullsize, 32-bit PCI 2.2 (5v)* - ethernet adapter	Slot 2: fullsize, 32-bit PCI 2.2 (5v) - SCSI (some mdl's)
Mem - architecture	Single <b>RDRAM (Rambus)</b> channel / 32 devices max / <b>ECC</b>	Slot 3: halfsize, 32-bit PCI 2.2 (5v)	Slot 4: halfsize, 32-bit PCI 2.2 (5v)
Mem - sockets used	Two 184-pin gold-plated RIMM sockets	Slot: fullsize, 32-bit AGP 4X - on planar, not riser	
Mem - sockets used	One socket used by RIMM / one socket used by CRIMM		
Mem - type (support)	ECC (memory controller is ECC) / non-parity not supported		
Memory - supported	ECC RDRAM / PC700, PC800 RIMM (no PC600 support)		
Graphics controller (Performance 2D)	<i>Some models</i> <b>Matrox® Millennium G400</b> / AGP 4X adapter / 16MB std / 16MB max / 166MHz SGRAM / sideband addressing / 250 MHz RAMDAC / 256-bit DualBus chip / max 2D resolution of 2048x1536 / supports 1280x1024x16.7million at 100 Hz	* Slot 1 has Alert on LAN support with compatible LAN adapter	
Graphics controller (Advanced 3D)	<i>Some models</i> <b>IBM Fire GL1</b> / AGP 2X adapter / 32MB std / 32MB max / SGRAM / sideband-capable / 250MHz RAMDAC / split transactions	- Optional Floor Stand and Bottom Cover (33L5136)	
Graphics controller (Dual displays)	<i>Some models</i> <b>Appian Gemini</b> / AGP 2X adapter / 16MB std / 16MB max two controllers with two DB-15 ports for multiple monitors	- CD-ROM/disk (Bay 1-3) in flip out cage	
Disk	None (AAP models), one EIDE, or one Wide Ultra2 SCSI / SMART <sup>5</sup>	- All systems stealth black color	
SCSI controller	<i>SCSI models only:</i> <b>Adaptec® AHA-2940U2B</b> / single channel Wide Ultra2 SCSI adapter / PCI adapter	<b>All models:</b> Maximum internal SCSI disk capacity <sup>13</sup> : 36.4GB with two 18.1GB 10000 rpm Wide Ultra2 SCSI disks	
SCSI connectors	<i>Internal:</i> 68 pin (attaches 5-drop cable to SCSI disk); <i>External:</i> 68 pin SCSI port	<b>All models:</b> Maximum internal EIDE disk capacity <sup>13</sup> : 40.8GB with two 20.4GB EIDE disks	
Cables - SCSI mod	<i>SCSI models:</i> 5-drop 16-bit LVD cable on internal connector; one 1-drop IDE ATA-33 cable (CD-ROM)		
Cables - IDE models	<i>EIDE models:</i> Two 2-drop IDE ATA-66 cable / CD-ROM uses second 1-drop IDE ATA-33 cable / no SCSI cable		
Cables - AAP models	<i>AAP models:</i> One 1-drop IDE ATA-33 cable		
EIDE disk controller	Enhanced IDE in ICH / ATA-66 and PIO modes 0-4 with 2 channel, 4 device support		
Motherboard	<b>NLX motherboard</b> / slides out without removing cables / riser contains rear I/O ports and IDE and diskette connectors	<b>SECURITY</b>	
Bus slots (see side)	PCI 2.2 (33MHz), 4X AGP (66MHz);		
Architecture	<b>Accelerated Hub Architecture</b> / 266MB/sec I/O channel / <b>Intel 820 chip set</b> / 82810 Memory Controller Hub (MCH) / 82801 I/O Controller Hub (ICH) for PCI 2.2 bus, ATA-66 EIDE, USB, Low Pin Count Interface / 82802AC Firmware Hub / NS 87360 Super I/O for diskette, parallel, serial, keyboard, mouse	<ul style="list-style-type: none"> <li>• Cover key lock</li> <li>• Cover tamper detect switch</li> <li>• Secure fixed DASD</li> <li>• Serial EEPROM with write protect</li> <li>• Power-on password</li> <li>• Setup utility password (administrator password)</li> <li>• Keyboard/mouse password</li> <li>• Wake on LAN password prompt</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit</li> <li>• Disable mouse</li> <li>• Disable external SCSI port</li> <li>• Diskette write-protect</li> <li>• Diskette I/O control</li> <li>• Hard drive I/O control</li> <li>• Serial port I/O control</li> <li>• Parallel port I/O control</li> <li>• Secure access openings (vents, louvers)</li> <li>• Secure removable media</li> <li>• Data storage for LCCM function</li> <li>• U Bolt enabled</li> <li>• Vital product data stored in on-board flash ROM</li> <li>• Write protection control circuit for flash ROM</li> </ul>	
Ports	<i>Ser:</i> Two 9 pin <i>Par:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two 4-pin USB (Vers 1.1)	<b>SYSTEMS MANAGEMENT</b>	
Diskette drive	3.5" 1.44MB diskette drive		
CD-ROM	<i>Some models:</i> 48X-20X <sup>®</sup> CD-ROM / CAV / ATAPI / bootable	<ul style="list-style-type: none"> <li>• <b>Asset ID™ (RFID)<sup>16</sup></b></li> <li>• <b>Alert on LAN™ 2</b></li> <li>• Universal Manageability Services and Universal Manageability (UM) Desktop Extensions enabled</li> <li>• LANClient Control Manager™ enabled</li> <li>• SMART Reaction™<sup>5</sup> II</li> <li>• PC 99-compliant</li> <li>• DMI 2.0-compliant</li> <li>• Common Information Model (CIM) 2.2</li> <li>• Asset Information Chip (EEPROM)</li> <li>• Wired for Management 1.1a</li> <li>• ACPI 1.04</li> <li>• Advanced Power Management 1.2</li> <li>• Wake on LAN support</li> <li>• Alternate Boot Sequence</li> <li>• RPL, DHCP, and PXE support</li> <li>• Setup on LAN, Flash on LAN</li> <li>• Wake on Alarm</li> <li>• System Management BIOS</li> <li>• Systems Migration Assistant support</li> </ul>	
Audio	SoundMAX™ integrated digital audio / software-based (done by Pentium and ICH) / AC '97 interface / ADI 1881 codec (analog mixing, A-to-D and D-to-A conversion)		
Audio connectors	Stereo line in / mic in / line out (all 3.5mm; all in back) / software volume control		
Ethernet controller	<i>Some models:</i> <b>IBM 10/100 EtherJet PCI Adapter with Alert on LAN 2</b> / 82559 / 10BaseT and 100BaseTX / RJ45 connector / Wake on LAN <sup>®</sup> / part number 34L1101		
Systems mgmt cntrl	Chip to monitor temperature, fan speed, power supply/processor voltage, cover removal / Philips® PCA9556		
Security chip	Integrated IBM Security Chip / soldered on motherboard		
Keyboard / mouse	104 key (rubber dome) / keyboard extender / <b>IBM ScrollPoint™ II mouse</b>		
Cooling fans	One fan in front		
Power supply	145 watts / universal / manual switch / Wake on LAN support / internal fan		
<b>SECURITY CHIP</b>			
<ul style="list-style-type: none"> <li>- Provides electronic digital signature and secure key storage</li> <li>- Can sign each e-mail with a digital signature (1024-bit) so receiving party can verify sender</li> <li>- Public Key Infrastructure (PKI) for more secure e-mail, web access and Internet transactions, and Secure Sockets Layer (SSL) for encryption/decryption capabilities</li> <li>- Uses User Verification Manager software available from IBM web site</li> </ul>		Dual orientation with optional stand (desktop) Configuration/Setup Utility resides in flash memory; invoked by pressing F1 key at startup ESC for fast POST F12 for network boot at startup Plug-and-Play 1.0a Desktop: 17.60"W x 17.72"D x 5.28"H 22 to 25 lbs (10 to 11.4 kg) ISO 9241-3 capable 512KB IBM BIOS in flash memory EPA ENERGY STAR-compliant (some models) PC-Doctor diagnostic software Color-coded icons for rear connectors	
Serviceability features:			
<ul style="list-style-type: none"> <li>• Metal top cover (supports a 100 pound monitor)</li> <li>• Tool-less entry</li> <li>• Cover removed by two easy-lift tabs (desktop)</li> <li>• Pivoting disk cage to access three right bays with release latch (desktop)</li> <li>• Disk installation with snap-in rails (desktop, bay 3)</li> </ul>			

# IBM IntelliStation® E Pro (6867) - Spring 2000 - withdrawn

Type-model	Standard disk (rpm) ms seek <sup>5</sup> / disk interface CD-ROM / interface	Intel® Processor MHz <sup>1</sup>	Write-back L2 cache standard	Rambus memory; std MB / type; devices / type	Graphics controller; AGP; memory (MB) std / max	Bus slots P=PCI avail Total A=AGP avail bays	Chip set Eth / SCSI Preload <sup>17</sup>	Avail- able date	
<b>Desktop; 5 slot x 4 bay - US Models</b>									
6867-52U	15.0GB <sup>2</sup> std (7200) 9.0ms / EIDE / ATA-66 48X-20X <sup>6</sup> CD-ROM / EIDE	Pentium® III 800EB/133 <sup>20</sup> MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=3 AGP=0	3 used 1 empty	820 ethernet NT 4.0	April 2000
6867-53U	9.1GB std (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 48X-20X CD-ROM / EIDE	Pentium III 800EB/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=2 AGP=0	3 used 1 empty	820 ethernet, SCSI NT 4.0	April 2000
6867-55U	9.1GB std (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 48X-20X CD-ROM / EIDE	Pentium III 800EB/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	ELSA™ Gloria II AGP 4X adapter 64/64MB SDRAM	PCI=2 AGP=0	3 used 1 empty	820 ethernet, SCSI NT 4.0	April 2000
6867-62U	15.0GB <sup>2</sup> std (7200) 9.0ms / EIDE / ATA-66 48X-20X <sup>4</sup> CD-ROM / EIDE	Pentium III 866/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=3 AGP=0	3 used 1 empty	820 ethernet NT 4.0	April 2000
6867-63U	9.1GB std (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 48X-20X CD-ROM / EIDE	Pentium III 866/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=2 AGP=0	3 used 1 empty	820 ethernet, SCSI NT 4.0	April 2000
6867-65U	9.1GB std (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 48X-20X CD-ROM / EIDE	Pentium III 866/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	ELSA Gloria II AGP 4X adapter 64/64MB SDRAM	PCI=2 AGP=0	3 used 1 empty	820 ethernet, SCSI NT 4.0	April 2000
6867-59U for AAP	<i>no disk</i> 48X-20X CD-ROM / EIDE	Pentium III 800EB/133 MHz	256KB full spd	0MB RDRAM	None	PCI=3 AGP=1	1 used 3 empty	820 ethernet No OS	April 2000
6867-69U for AAP	<i>no disk</i> 48X-20X CD-ROM / EIDE	Pentium III 866/133 MHz	256KB full spd	0MB RDRAM	None	PCI=3 AGP=1	1 used 3 empty	820 ethernet No OS	April 2000
6867-72U	15.0GB <sup>2</sup> std (7200) 9.0ms / EIDE / ATA-66 48X-20X <sup>4</sup> CD-ROM / EIDE	Pentium III 933/133 MHz	256KB full spd	128MB / PC700 8D / RDRAM ECC	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=3 AGP=0	3 used 1 empty	820 ethernet NT 4.0	June 2000
6867-78U	15.0GB <sup>2</sup> std (7200) 9.0ms / EIDE / ATA-66 48X-20X <sup>4</sup> CD-ROM / EIDE	Pentium III 933/133 MHz	256KB full spd	256MB / PC700 RDRAM ECC 2 x 128MB 8D	Millennium G400 AGP 4X adapter 16/16MB WRAM	PCI=3 AGP=0	3 used 1 empty	820 ethernet NT 4.0 and <b>Rational Suite Enterprise Studio software</b> 30-day temporary license	August 2000

Windows NT Preload <sup>17</sup>	Options	WARRANTY SERVICE SUPPORT <sup>3</sup>
Windows NT® Workstation 4.0 (SP5) ConfigSafe for Windows NT Norton AntiVirus for IBM (OEM Version) Other utilities, drivers, and applications - Free license for Lotus® SmartSuite® Millennium - Free license for Lotus Notes Client ⇨ Software Selections CD-ROM ⇨ Windows NT Product Recovery CD-ROM ⇨ Device Drivers and Diagnostic CD-ROM - C: is 2GB as FAT16 - Remainder of disk is unformatted	64MB 700MHz ECC RDRAM (4 Dev) 33L3105 128MB 700MHz ECC RDRAM (8 Dev) 33L3107 256MB 700MHz ECC RDRAM (16 Dev) 33L3109 64MB 800MHz ECC RDRAM (4 Dev) 20L0274 128MB 800MHz ECC RDRAM (8 Dev) 20L0275 256MB 800MHz ECC RDRAM (16 Dev) 20L0277 IBM 10.1GB 7,200 rpm EIDE disk 33L4958 IBM 13.5GB 7,200 rpm EIDE disk 33L5043 IBM 20.4GB 7,200 rpm EIDE disk 33L5044 IBM 9.1GB 7,200 rpm Wide Ultra2 SCSI disk 20L0553 IBM 18.2GB 7,200 rpm Wide Ultra2 SCSI disk 20L0554 IBM 9.1GB 10,000 rpm Wide Ultra2 SCSI disk 20L0539 IBM 9.1GB 10,000 rpm Wide Ultra2 SCSI disk 00N8071 IBM 18.2GB 10,000 rpm Wide Ultra2 SCSI disk 00N8072 IBM IDE DVD-ROM (Black) 33L5003 IBM IDE Rewritable CD-ROM (Black) 33L5005 Rapid Access II Keyboard (Black) 33L3174 Desktop Floor Stand 33L5136	⇨ 3 year parts and labor warranty ⇨ International Warranty Service <sup>3</sup> ⇨ On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time ⇨ On site warranty upgrade option: • 4 hour response <sup>14</sup> , 7 day x 24 hr ⇨ Post warranty on site options: • Next day response <sup>14</sup> , Mon-Fri 8-5 • 4 hour response <sup>14</sup> , 7 day x 24 hr ⇨ IBM SystemXtra® ⇨ 24 hour x 7 day telephone, electronic, and Internet support
<b>Software Selections CD-ROM<sup>17</sup></b> All models ship with a CD with various appls, utilities, and customization features	Visit <a href="http://www.ibm.com/options">www.ibm.com/options</a> for a complete list of compatible options	
⇨ 15.0GB EIDE disk is ATA-66 (up to 66MB/sec) and SMART <sup>5</sup> III		

All trademarks are the property of their respective owners  
 Models announced January 25, June 6, or August 14, 2000  
 Models withdrawn from marketing effective November 2000 or May 2001

No warranties are expressed or implied in this summary  
 (6867S - Page 1 of 2) © IBM Corp. May 2001

# IBM IntelliStation® E Pro (6867) - Spring 2000 - withdrawn

IBM® IntelliStation® E Pro		Desktop
Type-model	<b>6867-xxx</b>	 <p>Bay ① 5.25", HH 1.6", access, CD-ROM            Bay ② 3.5", SL 1", access, open            Bay ③ 3.5", SL 1", no acc, open or std disk, rails            Bay ④ 3.5", SL 1", access, std diskette</p> <p>Slot 1: fullsize, 32-bit PCI 2.2 (5v)* - ethernet adapter            Slot 2: fullsize, 32-bit PCI 2.2 (5v)            Slot 3: halfsize, 32-bit PCI 2.2 (5v) - SCSI (some mdl's)            Slot 4: halfsize, 32-bit PCI 2.2 (5v)            Slot: fullsize, 32-bit AGP 4X - on planar, not riser</p> <p>* Slot 1 has Alert on LAN support with compatible LAN adapter</p> <p>- Optional Floor Stand and Bottom Cover (33L5136)            - CD-ROM/disk (Bay 1-3) in flip out cage            - All systems stealth black color</p> <p><b>All models:</b> Maximum internal SCSI disk capacity<sup>13</sup>:            36.4GB with two 18.1GB 10000 rpm Wide Ultra2 SCSI disks  <b>All models:</b> Maximum internal EIDE disk capacity<sup>13</sup>:            40.8GB with two 20.4GB EIDE disks</p>
Processor(s) Implementation	<b>Intel® Pentium® III 800EB, 866, or 933MHz<sup>1</sup> with 133MHz system bus</b> Processor and L2 cache in Single Edge Cartridge (SECC2) in Intel Slot 1 CPU connector / motherboard has one Slot 1	
Processor upgrade Avail / withdrawn date	Enabled for Slot 1 Intel upgrade processors April 00 or June 00 or August 00 / November 00 or May 01	
L2 cache	<b>256KB</b> std and max / full speed / ECC support / integrated in SECC2 / 8-way set associative / write-back	
Memory - std / max Mem - architecture	<b>128MB std</b> / 512MB max <sup>13</sup> (memory controller max is 1GB) Single <b>RDRAM (Rambus®)</b> channel / 32 devices max / <b>ECC</b>	
Mem - sockets used	Two 184-pin gold-plated RIMM sockets	
Mem - sockets used	One socket used by RIMM / one socket used by CRIMM (except model 78U contains two 128MB RIMMs)	
Mem - type (support)	ECC (memory controller is ECC) / non-parity not supported	
Memory - supported	ECC RDRAM / PC700, PC800 RIMM (no PC600 support)	
Graphics controller (Performance 2D)	<i>Some models</i> <b>Matrox® Millennium G400</b> / AGP 4X adapter / 16MB std / 16MB max / 166MHz SGRAM / sideband addressing / 250 MHz RAMDAC / 256-bit DualBus chip / max 2D resolution of 2048x1536 / supports 1280x1024x16.7million at 100 Hz	
Graphics controller (Advanced 3D)	<i>Some models</i> <b>ELSA Gloria II</b> / AGP 4X adapter / 64MB 128-bit 110MHz SDRAM std and max / 350MHz RAMDAC / 2048x1536 at 75Hz / NVIDIA™ Quadro controller / 256-bit QuadPipe rendering engine	
SCSI controller	<i>SCSI models only:</i> <b>Adaptec® AHA-2940U2B</b> / single channel Wide Ultra2 SCSI adapter / PCI adapter	
SCSI connectors	<i>Internal:</i> 68 pin (attaches 5-drop cable to SCSI disk); <i>External:</i> 68 pin SCSI port	
Cables - SCSI mod	<i>SCSI models:</i> 5-drop 16-bit LVD cable on internal connector; one 1-drop IDE ATA-33 cable (CD-ROM)	
Cables - IDE models	<i>EIDE models:</i> Two 2-drop IDE ATA-66 cable / CD-ROM uses second 1-drop IDE ATA-33 cable / no SCSI cable	
Cables - AAP models	<i>AAP models:</i> One 1-drop IDE ATA-33 cable	
EIDE disk controller	Enhanced IDE in ICH / ATA-66 and PIO modes 0-4 with 2 channel, 4 device support	
Motherboard	<b>NLX motherboard</b> / slides out without removing cables / riser contains rear I/O ports and IDE and diskette connectors	
Bus slots (see side) Architecture	PCI 2.2 (33MHz), 4X AGP (66MHz); <b>Accelerated Hub Architecture</b> / 266MB/sec I/O channel / <b>Intel 820 chip set</b> / 82810 Memory Controller Hub (MCH) / 82801 I/O Controller Hub (ICH) for PCI 2.2 bus, ATA-66 EIDE, USB, Low Pin Count Interface / 82802AC Firmware Hub / NS 87360 Super I/O for diskette, parallel, serial, keyboard, mouse	
Ports	<i>Ser:</i> Two 9 pin <i>Par:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two 4-pin USB (Vers 1.1)	
Diskette drive	3.5" 1.44MB diskette drive	
CD-ROM	<i>All models:</i> 48X-20X <sup>6</sup> CD-ROM / CAV / ATAPI / bootable	
Audio	SoundMAX™ integrated digital audio / software-based (done by Pentium and ICH) / AC '97 interface / ADI 1881 codec (analog mixing, A-to-D and D-to-A conversion)	
Audio connectors	Stereo line in / mic in / line out (all 3.5mm; all in back) / software volume control	
Ethernet controller	<i>All models:</i> <b>IBM 10/100 EtherJet PCI Adapter with Alert on LAN 2</b> / 82559 / 10BaseT and 100BaseTX / RJ45 connector / Wake on LAN® / part number 34L1101	
Systems mgmt cntrl	Chip to monitor temperature, fan speed, power supply/processor voltage, cover removal / Philips® PCA9556	
Security chip	Integrated IBM Security Chip / soldered on motherboard	
Keyboard / mouse	104 key (rubber dome) / keyboard extender / <b>IBM ScrollPoint™ II mouse</b>	
Cooling fans	One fan in front	
Power supply	145 watts / universal / manual switch / Wake on LAN support / internal fan	
<p><b>SECURITY CHIP</b></p> <ul style="list-style-type: none"> <li>- Provides electronic digital signature and secure key storage</li> <li>- Can sign each e-mail with a digital signature (1024-bit) so receiving party can verify sender</li> <li>- Public Key Infrastructure (PKI) for more secure e-mail, web access and Internet transactions, and Secure Sockets Layer (SSL) for encryption/decryption capabilities</li> <li>- Uses User Verification Manager software available from IBM web site</li> </ul> <p>Serviceability features:</p> <ul style="list-style-type: none"> <li>• Metal top cover (supports a 100 pound monitor)</li> <li>• Tool-less entry</li> <li>• Cover removed by two easy-lift tabs (desktop)</li> <li>• Pivoting disk cage to access three right bays with release latch (desktop)</li> <li>• Disk installation with snap-in rails (desktop, bay 3)</li> </ul>		<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>• Cover key lock</li> <li>• Cover tamper detect switch</li> <li>• Secure fixed DASD</li> <li>• Serial EEPROM with write protect</li> <li>• Power-on password</li> <li>• Setup utility password (administrator password)</li> <li>• Keyboard/mouse password</li> <li>• Wake on LAN password prompt</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit</li> <li>• Disable mouse</li> <li>• Disable external SCSI port</li> <li>• Diskette write-protect</li> <li>• Diskette I/O control</li> <li>• Hard drive I/O control</li> <li>• Serial port I/O control</li> <li>• Parallel port I/O control</li> <li>• Secure access openings (vents, louvers)</li> <li>• Secure removable media</li> <li>• Data storage for LCCM function</li> <li>• U Bolt enabled</li> <li>• Vital product data stored in on-board flash ROM</li> <li>• Write protection control circuit for flash ROM</li> </ul> <p><b>SYSTEMS MANAGEMENT</b></p> <ul style="list-style-type: none"> <li>• <b>Asset ID™ (RFID)<sup>16</sup></b></li> <li>• <b>Alert on LAN™ 2</b></li> <li>• Universal Manageability Services and Universal Manageability (UM) Desktop Extensions enabled</li> <li>• LANClient Control Manager™ enabled</li> <li>• SMART Reaction™<sup>5</sup> II</li> <li>• PC 99-compliant</li> <li>• DMI 2.0-compliant</li> <li>• Common Information Model (CIM) 2.2</li> <li>• Asset Information Chip (EEPROM)</li> <li>• Wired for Management 1.1a</li> <li>• ACPI 1.04</li> <li>• Advanced Power Management 1.2</li> <li>• Wake on LAN<sup>14</sup> support</li> <li>• Alternate Boot Sequence</li> <li>• RPL, DHCP, and PXE support</li> <li>• Setup on LAN, Flash on LAN</li> <li>• Wake on Alarm</li> <li>• System Management BIOS</li> <li>• Systems Migration Assistant support</li> </ul>



# IBM IntelliStation® E Pro models (6893) - withdrawn

Type-model	Standard disk (rpm) ms seek / disk interface CD-ROM <sup>2</sup> /interface	CPU MHz <sup>1</sup> / Upgrade	Write-back L2 cache std / max KB / KB	Memory in MB; std / max 100MHz	SVGA controller; memory std / max	Bus slots P=PCI avail PCI/ISA=avail A=AGP avail	Total bays	Chipset Ethernet Preload <sup>17</sup>	Available date
<b>5 slot x 4 bay; PCI/ISA/AGP; Stealth Gray</b>									
ⓧ 6893-10U	6.4GB <sup>2</sup> std (7200) 9.5ms / EIDE / ATA-33 32X-14X <sup>6</sup> CD-ROM / EIDE	Pentium® II 350/100 MHz	Pent II 400MHz, 450MHz	512/512 175MHz in SEC	64 / 768 SDRAM ECC	Millennium II AGP adapter 8 / 16 WRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	June 1998
ⓧ 6893-11U	4.5GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	Pentium II 350/100 MHz	Pent II 400MHz, 450MHz	512/512 200MHz in SEC	64/768 SDRAM ECC	Millennium II AGP Adapter 8 / 16 WRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	June 1998
ⓧ 6893-12U	6.4GB std (7200) 9.5ms / EIDE / ATA-33 32X-14X CD-ROM / EIDE	Pentium II 400/100 MHz	Pent II 450MHz, 450MHz	512/512 200MHz in SEC	64 / 768 SDRAM ECC	Millennium II AGP Adapter 8 / 16 WRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	June 1998
ⓧ 6893-14U	4.5GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	Pentium II 400/100 MHz	Pent II 450MHz	512/512 200MHz in SEC	128/768 SDRAM ECC	PERMEDIA 2A AGP Adapter 8/8M SGRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	June 1998
ⓧ 6893-18U for AAP	<i>no disk</i> 32X-14X CD-ROM / EIDE	Pentium II 400/100 MHz	Pent II 450MHz	512/512 200MHz in SEC	64 / 768 SDRAM ECC	<i>None</i>	4 bays 2 used 2 empty	440BX Ethernet Open OS	June 1998
ⓧ 6893-41U	6.4GB std (7200) 9.5ms / EIDE / ATA-33 32X-14X CD-ROM / EIDE	Pentium II 450/100 MHz	None	512/512 225MHz in SEC	64 / 768 SDRAM ECC	Millennm G200 AGP-2x Adapter 8/16M SGRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	Sept 1998
ⓧ 6893-42U	4.5GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	Pentium II 450/100 MHz	None	512/512 225MHz in SEC	64 / 768 SDRAM ECC	Millennm G200 AGP-2x Adapter 8/16M SGRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	Sept 1998
ⓧ 6893-43U	10.1GB std (7200) 9.5ms / EIDE / ATA-33 32X-14X CD-ROM / EIDE	Pentium II 450/100 MHz	None	512/512 225MHz in SEC	128 / 768 SDRAM ECC	Millennm G200 AGP-2x Adapter 8/16M SGRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	Sept 1998
ⓧ 6893-44U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	Pentium II 450/100 MHz	None	512/512 225MHz in SEC	128/768 SDRAM ECC	Millennm G200 AGP-2x Adapter 8/16M SGRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	Sept 1998
ⓧ 6893-48U for AAP	<i>no disk</i> 32X-14X CD-ROM / EIDE	Pentium II 450/100 MHz	None	512/512 225MHz in SEC	64 / 768 SDRAM ECC	<i>None</i>	4 bays 2 used 2 empty	440BX Ethernet Open OS	Sept 1998
ⓧ 6893-17U for AAP	<i>no disk</i> 32X-14X CD-ROM / EIDE	Pentium II 350/100 MHz	Pent II 400MHz, 450MHz	512/512 175MHz in SEC	64 / 768 SDRAM ECC	<i>None</i>	4 bays 2 used 2 empty	440BX Ethernet Open OS	Sept 1998
ⓧ 6893-60U	6.4GB <sup>2</sup> std (7200) 9.5ms / EIDE / ATA-33 32X-14X <sup>4</sup> CD-ROM / EIDE	Pentium II 350/100 MHz	Pent II 400MHz, 450MHz	512/512 175MHz in SEC	64 / 768 SDRAM ECC	Millennm G200 AGP-2x Adapter 8/16M SGRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	Nov 1998
ⓧ 6893-61U	4.5GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	Pentium II 350/100 MHz	Pent II 400MHz, 450MHz	512/512 175MHz in SEC	64 / 768 SDRAM ECC	Millennm G200 AGP-2x Adapter 8/16M SGRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	Nov 1998
ⓧ 6893-62U	6.4GB std (7200) 9.5ms / EIDE / ATA-33 32X-14X CD-ROM / EIDE	Pentium II 400/100 MHz	Pent II 450MHz	512/512 200MHz in SEC	64 / 768 SDRAM ECC	Millennm G200 AGP-2x Adapter 8/16M SGRAM	4 bays 3 used 1 empty	440BX Ethernet Windows NT 4.0	Nov 1998

Windows NT Preload <sup>17</sup>	Supported Memory and Options	Ready to Configure CD-ROM
Windows NT® Workstation 4.0 (SP3) Internet Explorer 4.0 install icon IBM Welcome Center Device drivers for each subsystem Ready to install: - ConfigSafe for Windows NT 4.0 - Norton AntiVirus for Windows NT - DMI Service Provider - DMI BIOS Instrumentation - IBM PC System Monitor Instrumentation - IBM AssetCare Serial Number Information IBM RTC CD-ROM Setup Utility IBM Utilities for Windows 95/NT 4.0 - Hummingbird "Try and Buy" Suite CD-ROM - Ready to Configure CD-ROM - Free license for Lotus SmartSuite 97 CD-ROM - IBM ViaVoice 98 Office Edition CD-ROM - Windows NT Workstation 4.0 CD-ROM - IBM Diagnostics CD-ROM - Access to IBM HomePage Creator C: is 2GB as FAT16 Remainder is unformatted	32MB SDRAM ECC DIMM 100MHz 64MB SDRAM ECC DIMM 100MHz 128MB SDRAM ECC DIMM 100MHz 256 MB SDRAM ECC DIMM Registered IBM Netfinity 400MHz Pentium II/512KB IBM Netfinity 450MHz Pentium II/512KB Matrox Millennium G200 Graphics Adap Matrox Millennium II AGP Graphics Adap PERMEDIA 2A Graphics Accelerator 4.2GB EIDE Deskstar 5 (ATA-33) 6.4GB EIDE Deskstar 5 (ATA-33) 6.4GB 7200 rpm EIDE disk 8.4GB Deskstar 9.1GB 7200 rpm EIDE disk 10.1GB 7200 rpm EIDE disk IBM Ultrastar 2ES 2.1GB WU SCSI IBM Ultrastar 2ES 4.3GB WU SCSI 4.5GB Wide Ultra SCSI (7200 rpm) 9.1GB Wide Ultra SCSI (7200 rpm) 10/100 PCI EtherJet Adapter WOL Auto Wake Token-Ring ISA Adapter PCI Token Ring Adapter WOL	All models ship with a CD with drivers for Windows® 95, 98, and NT 3.51 and 4.0 and various utilities. Includes: - Intel LANDesk® Client Manager - ConfigSafe - IBM Systems Management Tools  <b>WARRANTY SERVICE SUPPORT<sup>3</sup></b> ⇨ 3 year parts warranty ⇨ 1 year labor warranty ⇨ International Warranty Service <sup>3</sup> ⇨ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time ⇨ 2nd/3rd year: parts exchange only, call 1-800-772-2227 ⇨ On site warranty upgrade options: • Next day response <sup>7</sup> , Mon-Fri 8-5 • 4 hour response <sup>7</sup> , 7 day x 24 hr ⇨ Post warranty: on site options above ⇨ IBM SystemXtra® ⇨ 24 hour / 7 day telephone, electronic, Internet (www.pc.ibm.com) support

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No warranties are expressed or implied in this summary  
(IS698 - Page 1 of 2) © IBM Corp. July 1999

# IBM IntelliStation® E Pro (6893) - withdrawn

<b>IBM® IntelliStation® E Pro</b>		<b>Desktop</b>	
Type-model	<b>6893-xxx</b>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">diskette</div> <div style="border: 1px solid black; display: inline-block; padding: 2px; margin-left: 10px;">CD-ROM</div>	
Processor	<b>Intel® Pentium® II 350/100, 400/100, or 450/100MHz<sup>1</sup></b>	<div style="border: 1px solid black; display: inline-block; padding: 2px;">②</div>	
Implementation	Processor and L2 cache in Single Edge Cartridge (SEC) in Intel Slot 1 CPU connector / motherboard has one Slot 1	<div style="border: 1px solid black; display: inline-block; padding: 2px;">disk</div>	
Processor upgrade	No SMP / Pentium II 400/100MHz or Pentium II 450/100MHz	Bay ① 5.25", HH 1.6", access, CD-ROM Bay ② 5.25** SL 1", access, open Bay ③ 3.5", SL 1", no access, open or std disk Bay ④ 3.5", SL 1", access, std diskette	
Avail / withdr date	Sept 1998 or Nov 1998 / Nov 98, Mar 99, or Jun 99	** Brackets to convert to 3.5" available from AirSpeed with part number 01K5873 from 919-304-5000	
L2 cache	<b>512KB std / 512KB max / ECC / half speed of CPU / integrated in SEC / 4 way set associative / write-back</b>	Slot 1: fullsize, 16-bit ISA Slot 2: fullsize, 16-bit ISA or 32 bit PCI 2.1 (5v) Slot 3: halfsize, 32-bit PCI 2.1 (5v) - SCSI adptr (some) Slot 4: halfsize, 32-bit PCI 2.1 (5v) Slot 5: fullsize, 32-bit AGP-2x - on motherboard, not riser <i>All systems stealth gray color</i>	
Memory - std / max	<b>64 or 128MB / 768MB max<sup>13</sup> / SDRAM / 100MHz / ECC / 3.3 volt</b>		
Mem - total sockets	Three 168 pin gold-plated DIMM sockets / industry standard		
Mem - sockets used	One DIMM used / PC100-compliant / hardware scrubbing ECC		
Mem - type (support)	Non-parity or ECC (memory controller is Error Checking Correcting)		
Memory - supported	32, 64, 128 or 256MB ECC SDRAM DIMMs / only 256MB DIMMs are registered (buffered); can not mix registered with non-registered		
Graphics controller	AAP models may include: <b>Matrox® Millennium II (2D), Matrox Millennium G200 (2D/value 3D), Intergraph Intense 3D Pro 3400 (fast 3D), Intergraph Intense 3D Pro 3400 Geometry Accelerator (fastest 3D), 3DIabs® PERMEDIA® 2A (value 3D), or Appian J Pro (two connectors on adapter for multi-monitor)</b>		
Graphics - type	<b>Millennium II / AGP-1x 266MB/s adpt</b>	<b>Millennium G200 / AGP-2x 533MB/s adpt</b>	<b>PERMEDIA 2A / AGP-1x 266MB/s adpt</b>
Graphics - memory	8MB std / 16MB max / WRAM	8MB std / 16MB max 128-bit SGRAM	8MB std/max / 90MHz SGRAM
Graphics - features	Sideband / split transatns 250MHz 64-bit RAMDAC / 16.7M colors Max resolution of 1920 x 1200	Sideband / split transactions 250 MHz RAMDAC / 16.7M colors Max 2D resolution of 1920x1200	Sideband / split transactions 230MHz RAMDAC / 16.7 mil colors Max resolution of 1600x1200
Disk	<i>Vary:</i> None (AAP), one EIDE disk (Ultra DMA/33), or one Wide Ultra SCSI disk / all disks SMART <sup>9</sup> and SMART Reaction™ Enhanced IDE busmaster on planar (PIIX4E) / 32-bit PCI 2.1 / Ultra DMA/33 and PIO modes 3, 4 / 2 IDE conn on riser <i>SCSI models:</i> Adaptec® AHA-2940UW UltraSCSI / PCI adapter supports one channel for 15 devices / 16-bit int, 8-bit int, and 16-bit ext connectors		
Disk controller	<i>SCSI models:</i> Three drop 16-bit SCSI cable <i>All:</i> One 2 drop IDE cable and one 1 drop IDE cable (1 drop cable attaches to CD)		
Disk cable(s)			
Motherboard	<b>NLX motherboard</b> / slides out w/o removing cables or adapters riser contains rear I/O ports and IDE and diskette connectors PCI 2.1 (33MHz), AGP-2x (66MHz), and ISA slots (see side)		
Bus slots	<b>Intel 440BX AGPset / PIIX4E</b> for EIDE, ISA Bridge, USB / <b>AGP-2x</b> SMC FDC37C673 Super I/O for diskette, par, ser, kybd, mouse		
Architecture			
Serial/parallel ports	<i>Ser:</i> Two 9 pin / 115Kbps / 16550A / non-DMA / <i>Par:</i> One (EPP, ECP) / IEEE 1284 Two USB ports / 1.5MB/sec (12Mbps) max speed		
Universal Serial Bus			
Diskette drive	3.5" 1.44MB diskette drive		
CD-ROM	32X-14X <sup>4</sup> speed CD-ROM / CAV / ATAPI / bootable		
Audio	Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker		
Audio connectors	Stereo line in / mic in / line out (all in back) / software volume control		
Ethernet controller	<b>Intel EtherExpress PRO/100B</b> / PCI 82558 ethernet chip on planar / PCI bus 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN <sup>®</sup> / <b>Alert on LAN</b> LANClient Control Manager™ enabled / Wake on LAN / Setup on LAN / Flash on LAN / Hybrid RPL / DHCP/BOOTP / software image download		
LCCM	National Semiconductor <sup>®</sup> <b>LM80</b> compatible chip / monitors temperature, front fan speed and optional disk fan A, voltage (processor/pwr supply), cover removal		
Systems mgmt cntrl			
Keyboard / Mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse		
Cooling fans	Two or three fans (pwr supply, processor, a third may be installed in disk area A)		
Power supply	145 watts / universal / manual switch / Wake on LAN support		
<div style="border: 1px solid black; padding: 5px;"> <p><b>All models:</b> Maximum internal SCSI disk capacity<sup>13</sup>: 18.2GB with two 9.1GB 7200 rpm Wide Ultra SCSI disks</p> <p><b>All models:</b> Maximum internal EIDE disk capacity<sup>13</sup>: 20.2GB with two 10.1GB EIDE disks</p> </div>			
<b>Alert on LAN™</b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off <b>Asset ID™ (RFID)<sup>16</sup></b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; theft protection <b>SMART Reaction™</b> - automatic backup of disk <b>PC 97 compliant</b> <b>DMI 2.0 compliant</b> with DMI manageability chip; includes MIF browser with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software <b>Wired for Management 1.1a</b> <b>Adv Config and Power Interface (ACPI) 1.0</b> PC-Doctor diagnostic software		Dual orientation with optional stand The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST Plug-and-Play 1.0a Vital Product Data support Desktop: 17.72"W x 17.72"D x 5.02" H; 450mm W x 450mm D x 128mm H; 22 to 25 lbs (10 to 11.4 kg) Advanced Power Mgmt 1.2 ISO 9241-3 capable Several hardcopy publications 256KB IBM BIOS in flash memory Power management features: - Configurable levels for system, CPU, disk, and monitor including powering system and/or display off - Wake Up on Ring (via modem) from off state - Wake Up on Alarm (scheduled time) from off state - Wake on LAN (from LAN) from off state - PCI Wake Up (supported PCI devices)	
<b>SECURITY</b>			
<ul style="list-style-type: none"> <li>- Chassis intrusion protection</li> <li>- Cover key lock</li> <li>- U-Bolt support</li> <li>- Secure fixed disk</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Admin password</li> <li>- Keyboard/mouse password</li> <li>- Wake on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard/mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write protect</li> <li>- Diskette and disk I/O control</li> <li>- Serial/parallel I/O control</li> <li>- Secure access openings (louvers)</li> <li>- Secure removable media</li> <li>- Data storage for LCCM function</li> <li>- Vital Product Data stored in EEPROM</li> <li>- Write protect control circuit for EEPROM</li> <li>- Barcode labels on most components</li> </ul>			
Remotely readable DMI-compliant: - System EEPROM on motherboard (info and serial no for CPU, system unit, planar, power supply, empty fields); also can read/write with external RF unit - EEPROMs on DIMMs (component info, serial no) - Disk firmware (component info, serial no)			
Chassis enhancements: - Cover removed by two easy-lift tabs - Cover includes metal plate and connecting tabs for easier removal - Pivoting disk cage to access three right bays - Segmented cooling (power supply fan cools power supply and DASD bays; fan in front cools motherboard, processor, DIMMs, and adapters) - Metal monitor support bar to support monitor without sagging			

# IBM IntelliStation® E Pro - Spring 1999 (6893) - withdrawn

Type-model	Standard disk (rpm) ms seek / disk interface CD-ROM <sup>5</sup> /interface	CPU MHz <sup>1</sup>	Write-back L2 cache std / max KB / KB	Memory in MB; std / max <sup>13</sup> 100MHz	SVGA controller; memory std / max	Bus slots P=PCI avail PCI/ISA=avail A=AGP avail	Total bays	Chipset Ethernet Preload <sup>17</sup>	Available date
<b>5 slot x 4 bay; PCI/ISA/AGP; Stealth Gray</b>									
6893-71U	6.8GB <sup>2</sup> std (7200) 9.0ms / EIDE / ATA-33 40X-17X <sup>6</sup> CD-ROM / EIDE	Pentium® III 500/100 MHz	512 / 512 half speed in SEC	64 / 768 SDRAM ECC	Millennium G200 AGP 2X adapter 8 / 16MB SGRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	May 1999
6893-74U	13.5GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium III 550/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	Millennium G200 AGP 2X adapter 8 / 16MB SGRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	May 1999
6893-76U	13.5GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium III 550/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	IBM Fire GL1 <sup>11</sup> AGP 2X Adapter 32/32MB SGRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	May 1999
6893-77U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	Pentium III 550/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	IBM Fire GL1 AGP 2X Adapter 32/32MB SGRAM	PCI=1 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	May 1999
6893-78U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	Pentium III 550/100 MHz	512 / 512 half speed in SEC	64 / 768 SDRAM ECC	<i>None</i>	PCI=2 PCI/ISA=1 ISA=1; AGP=1	4 bays 2 used 2 empty	440BX Ethernet Open OS	May 1999
6893-80U	6.8GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium® III 450/100 MHz	512 / 512 half speed in SEC	64 / 768 SDRAM ECC	Millennium G400 AGP 2X adapter 16/16MB SGRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	July 1999
6893-81U	6.8GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium III 500/100 MHz	512 / 512 half speed in SEC	64 / 768 SDRAM ECC	Millennium G400 AGP 2X adapter 16/16MB SGRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	July 1999
6893-82U	13.5GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium III 500/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	Millennium G400 AGP 2X adapter 16/16MB SGRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	July 1999
6893-84U	13.5GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium III 550/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	Millennium G400 AGP 2X adapter 16/16MB SGRAM	PCI=1 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	July 1999
6893-85U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	Pentium III 550/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	Millennium G400 AGP 2X adapter 16/16MB SGRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	July 1999
6893-86U	6.8GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium III 500/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	Appian J Pro PCI Adapter 16/16MB SGRAM	PCI=2 PCI/ISA=0 ISA=1; AGP=1	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	July 1999
6893-87U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	Pentium III 450/100 MHz	512 / 512 half speed in SEC	0 / 768 SDRAM ECC	<i>None</i>	PCI=2 PCI/ISA=1 ISA=1; AGP=1	4 bays 2 used 2 empty	440BX Ethernet Open OS	July 1999
6893-88U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	Pentium III 500/100 MHz	512 / 512 half speed in SEC	0 / 768 SDRAM ECC	<i>None</i>	PCI=2 PCI/ISA=1 ISA=1; AGP=1	4 bays 2 used 2 empty	440BX Ethernet Open OS	July 1999
6893-89U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	Pentium III 550/100 MHz	512 / 512 half speed in SEC	0 / 768 SDRAM ECC	<i>None</i>	PCI=2 PCI/ISA=1 ISA=1; AGP=1	4 bays 2 used 2 empty	440BX Ethernet Open OS	July 1999

Windows NT Preload <sup>17</sup>	Supported Memory and Options	Ready to Configure CD-ROM
Windows NT® Workstation 4.0 (SP4) Internet Explorer 4.0 install icon IBM Welcome Center Device drivers for each subsystem Ready to install: - ConfigSafe® - Norton AntiVirus (OEM Version) - DMI Service Provider - DMI BIOS Instrumentation - IBM PC System Monitor Instrumentation - IBM AssetCare Serial Number Information - IBM Universal Management Agent IBM RTC CD-ROM Setup Utility IBM Utilities for Windows 95/NT 4.0 - Hummingbird "Try and Buy" Suite CD-ROM - Ready to Configure CD-ROM - Free license for Lotus SmartSuite 97 CD-ROM - IBM ViaVoice 98 Office Edition CD-ROM - Windows NT Workstation 4.0 CD-ROM - Service Pack 4 CD-ROM - IBM Diagnostics CD-ROM - Access to IBM HomePage Creator	32MB SDRAM ECC DIMM 100MHz 64MB SDRAM ECC DIMM 100MHz 128MB SDRAM ECC DIMM 100MHz 256MB SDRAM ECC RDIMM Registered Matrox Millennium G200 Graphics Adap IBM Fire GL1 Graphics Accelerator 6.8GB EIDE 7200 rpm 13.5GB EIDE 7200 rpm 20.4GB EIDE 7200 rpm 9.1GB Wide Ultra SCSI (7200 rpm) 18.2GB Wide Ultra SCSI (7200 rpm) 9.1GB 10000 rpm Wide Ultra2 SCSI SL 10/100 PCI EtherJet Adapter WOL Auto Wake Token-Ring ISA Adapter PCI Token Ring Adapter WOL 2X/4X/24X <sup>6</sup> CD-RW Drive  C: is 2GB as FAT16 Remainder is unformatted	All models ship with a CD with drivers for Windows® 98 and Windows NT 4.0 and various utilities. Includes: - Intel LANDesk® Client Manager - ConfigSafe - IBM Universal Management Agent™  <b>WARRANTY SERVICE SUPPORT<sup>3</sup></b> ⇨ 3 year parts warranty ⇨ 1 year labor warranty ⇨ International Warranty Service <sup>3</sup> ⇨ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time ⇨ 2nd/3rd year: parts exchange only, call 1-800-772-2227 ⇨ On site warranty upgrade options: • Next day response <sup>7</sup> , Mon-Fri 8-5 • 4 hour response <sup>7</sup> , 7 day x 24 hr ⇨ Post warranty: on site options above ⇨ IBM SystemXtra® ⇨ 24 hour / 7 day telephone, electronic, Internet (www.pc.ibm.com) support
Ethernet = Intel® 10/100 ethernet chip; 10BaseT and 100BaseTX; Alert on LAN™ RTC CD = ReadyTo Configure CD-ROM Wide Ultra SCSI = Adaptec® AHA-2940UW PCI Adapter; single channel Wide Ultra SCSI Ⓜ = Models announced June 22, 1999 ✕ = Withdrawn from marketing		

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No warranties are expressed or implied in this summary  
(6893S - Page 1 of 2) © IBM Corp. May 2000



# IBM IntelliStation® E Pro - Spring 1999 (6893) - withdrawn

<b>IBM® IntelliStation® E Pro</b>		<b>Desktop</b>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">diskette</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">CD-ROM</div>
Type-model	<b>6893-xxx</b>	- Optional black Floor Stand (02K2734) avail at 919-304-5000	<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">②</div>
Processor Implementation	<b>Intel® Pentium® III 450, 500, or 550MHz<sup>1</sup> / 100MHz front side bus</b> Processor and L2 cache in Single Edge Cartridge (SEC) in Intel Slot 1 CPU connector / motherboard has one Slot 1	- CD-ROM/disk in cage that flips out	<div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">disk</div>
Processor upgrade	No SMP	Bay ① 5.25", HH 1.6", access, CD-ROM	
Avail / withdrawn date	May 1999 or July 1999 / Sept 99, Nov 99, Feb 00, or May 00	Bay ② 5.25** SL 1", access, open	
L2 cache	<b>512KB std / 512KB max / ECC / half speed of CPU / integrated in SEC / 4 way set associative / write-back</b>	Bay ③ 3.5", SL 1", no access, open or std disk	
Memory - std / max Mem - total sockets	<b>64 or 128MB / 768MB max<sup>13</sup> / SDRAM / 100MHz / ECC / 3.3 volt</b>	Bay ④ 3.5", SL 1", access, std diskette	
Mem - sockets used	Three 168 pin gold-plated DIMM sockets / industry standard	** Brackets to convert to 3.5" available from AirSpeed with part number 01K5873 from 919-304-5000	
Mem - type (support)	One DIMM used / PC100-compliant / hardware scrubbing ECC	Slot 1: fullsize, 16-bit ISA	
Memory - supported	Non-parity or ECC (memory controller is Error Checking Correcting) 32, 64, 128 or 256MB ECC SDRAM DIMMs / only 256MB DIMMs are registered (buffered); can not mix registered with non-register	Slot 2: fullsize, 16-bit ISA or 32 bit PCI 2.1 (5v) - Appian	
Graphics controller	<b>Matrox® Millennium G200-D or G400</b> (performance 2D), <b>IBM Fire GL1<sup>11</sup></b> (performance 2D/3D), or <b>Appian Graphics® Jeronimo Pro</b> (2D multiple display)	Slot 3: halfsize, 32-bit PCI 2.1 (5v) - SCSI adptr (some)	
	<b>Millennium G200-D</b> / AGP 2X adapter / sideband-capable 8MB std / 16 MB max 128-bit SGRAM 250MHz RAMDAC / 16.7 million colors	Slot 4: halfsize, 32-bit PCI 2.1 (5v)	
	<b>Millennium G400</b> / AGP 2X adapter / sideband addressing 16MB std / 16MB max / 166MHz SGRAM / 250MHz RAMDAC / 256-bit DualBus chip / max 2D resolution of 2048x1536 / supports 1280x1024x16.7 million at 100Hz	Slot 5: fullsize, 32-bit AGP-2x - on motherboard, not riser* *used by AGP graphics adapter (most models)	
	<b>IBM Fire GL1</b> / AGP 2X adapter / sideband-capable 32MB std / 32MB max / 256-bit 100MHz SGRAM 2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B		
	<b>Appian Graphics Jeronimo Pro</b> / 32-bit PCI adapter / 16MB std / 16MB max / 125MHz SGRAM / 250MHz RAMDAC two controllers with two ports for multiple monitor support / max resolution of 1280x1024 at 85Hz with 16.7 million colors max resolution of 1600x1200 at 85Hz with 65,536 colors		
Disk	<i>Vary:</i> None (AAP), one EIDE disk (Ultra DMA/33), or one Wide Ultra SCSI disk / all disks SMART <sup>®</sup> and SMART Reaction <sup>™</sup>		
Disk controller	Enhanced IDE busmaster on planar (PIIX4E) / 32-bit PCI 2.1 / Ultra DMA/33 and PIO modes 3, 4 / two IDE conn on riser <i>SCSI models:</i> Adaptec® AHA-2940UW UltraSCSI / PCI adapter supports one channel for 15 devices / 16-bit int, 8-bit int, and 16-bit ext connectors		
Disk cable(s)	<i>SCSI models:</i> Three drop 16-bit SCSI cable <i>All:</i> One 2 drop IDE cable and one 1 drop IDE cable (1 drop cable attaches to CD)		
Motherboard	<b>NLX motherboard</b> / slides out w/o removing cables or adapters riser contains rear I/O ports and IDE and diskette connectors		
Bus slots	PCI 2.1 (33MHz), AGP 2X (66MHz), and ISA slots (see side)		
Architecture	<b>Intel 440BX AGPset / PIIX4E</b> for EIDE, ISA Bridge, USB / <b>AGP 2X</b> SMC FDC37C673 Super I/O for diskette, par, ser, kybd, mouse		
Serial/parallel ports	<i>Ser:</i> Two 9 pin / 115Kbps / 16550A / non-DMA / <i>Par:</i> One (EPP, ECP) / IEEE 1284		
Universal Serial Bus	Two USB ports / 1.5MB/sec (12Mbps) max speed		
Diskette drive	3.5" 1.44MB diskette drive		
CD-ROM	40X-17X <sup>4</sup> speed CD-ROM / CAV / ATAPI / bootable		
Audio	Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker		
Audio connectors	Stereo line in / mic in / line out (all in back) / software volume control		
Ethernet controller	<b>Intel EtherExpress PRO/100B</b> / PCI 82558 ethernet chip on planar / PCI bus 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN <sup>®</sup> / <b>Alert on LAN</b>		
LCCM	LANClient Control Manager <sup>™</sup> enabled / Wake on LAN / Setup on LAN / Flash on LAN / Hybrid RPL / DHCP/BOOTP / software image download		
Systems mgmt cntrl	National Semiconductor <sup>®</sup> LM80-compatible chip / monitors temperature, front fan speed and optional disk fan A, voltage (processor/pwr supply), cover removal		
Keyboard / mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse		
Cooling fans	Two or three fans (pwr supply, processor, a third may be installed in disk area A)		
Power supply	145 watts / universal / manual switch / Wake on LAN support		
<b>All models:</b> Maximum internal SCSI disk capacity <sup>13</sup> : 18.2GB with two 9.1GB 7200 rpm Wide Ultra SCSI disks			
<b>All models:</b> Maximum internal EIDE disk capacity <sup>13</sup> : 40.8GB with two 20.4GB EIDE disks			
		<i>All systems stealth gray color</i>	
<b>Alert on LAN<sup>™</sup></b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off			
<b>Asset ID<sup>™</sup> (RFID)<sup>16</sup></b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; theft protection			
<b>SMART Reaction<sup>™</sup></b> - automatic backup of disk			
<b>PC 98-compliant</b>			
<b>DMI 2.0-compliant</b> with DMI manageability chip; includes MIF browser with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software			
<b>Wired for Management 1.1a</b>			
<b>Adv Config and Power Interface (ACPI) 1.0</b>			
<b>PC-Doctor diagnostic software</b>			
<b>Universal Management Agent<sup>™</sup> (UMA) and UMA Plus-enabled</b>			
Dual orientation with optional stand The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST Plug-and-Play 1.0a Vital Product Data support Desktop: 17.72"W x 17.72"D x 5.02" H; 450mm W x 450mm D x 128mm H; 22 to 25 lbs (10 to 11.4 kg)			
Advanced Power Mgmt 1.2 ISO 9241-3 capable Several hardcopy publications 256KB IBM BIOS in flash memory Power management features:			
- Configurable levels for system, CPU, disk, and monitor including powering system and/or display off			
- Wake Up on Ring (via modem) from off state			
- Wake Up on Alarm (scheduled time) from off state			
- Wake on LAN (from LAN) from off state			
- PCI Wake Up (supported PCI devices)			
		<b>SECURITY</b>	
		- Chassis intrusion protection	
		- Cover key lock	
		- Secure fixed disk	
		- Serial EEPROM with write protect	
		- Power-on password	
		- Setup utility password (admin password)	
		- Keyboard/mouse password	
		- Wake on LAN password prompt	
		- Boot sequence control	
		- Boot without keyboard/mouse	
		- Diskette boot inhibit	
		- Disable mouse	
		- Disable external SCSI port	
		- Diskette write protect	
		- Diskette and disk I/O control	
		- Serial/parallel I/O control	
		- Secure access openings (louvers)	
		- Secure removable media	
		- Data storage for LCCM function	
		- U-Bolt enabled	
		- Vital Product Data stored in EEPROM	
		- Write protect control circuit for EEPROM	
		- Barcode labels on most components	
		- Remotely readable DMI-compliant:	
		- System EEPROM on motherboard (info and serial no for CPU, system unit, planar, power supply, empty fields); also can read/write with external RF unit	
		- EEPROMs on DIMMs (component info, serial no)	
		- Disk firmware (component info, serial no)	
		Chassis enhancements:	
		- Cover removed by two easy-lift tabs	
		- Cover includes metal plate and connecting tabs for easier removal	
		- Pivoting disk cage to access three right bays	
		- Segmented cooling (power supply fan cools power supply and DASD bays; fan in front cools motherboard, processor, DIMMs, and adapters)	
		- Metal monitor support bar to support monitor without sagging	

**IBM IntelliStation® E Pro - Summer 1999 (6893) - withdrawn**

Type-model	Standard disk (rpm) ms seek / disk interface CD-ROM <sup>5</sup> / interface	Intel® Processor MHz <sup>1</sup>	Write-back L2 cache std / max KB / KB	Memory in MB; std / max <sup>13</sup> 100MHz	SVGA controller; memory std / max	Bus slots P=PCI avail PCI/ISA=avail A=AGP avail	Total bays	Chipset Ethernet Preload <sup>17</sup>	Available date
<b>5 slot x 4 bay; PCI/ISA/AGP; Stealth Black</b>									
ⓧ 6893-91U	13.5GB <sup>2</sup> std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium® III 550/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	Appian J Pro PCI Adapter 16/16MB SGRAM	PCI=1 PCI/ISA=1 ISA=1; AGP=1	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Aug 1999
ⓧ 6893-94U	13.5GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium III 600/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	Millennium G400 AGP 2X Adapter 16/16MB SGRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Aug 1999
ⓧ 6893-95U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	Pentium III 600/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	Millennium G400 AGP 2X adapter 16/16MB SGRAM	PCI=1 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Aug 1999
ⓧ 6893-96U	13.5GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium III 600/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	IBM Fire GL1 <sup>11</sup> AGP 2X Adapter 32/32MB SGRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Aug 1999
ⓧ 6893-97U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	Pentium III 600/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	IBM Fire GL1 AGP 2X adapter 32/32MB SGRAM	PCI=1 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Aug 1999
ⓧ 6893-98U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	Pentium III 600/100 MHz	512 / 512 half speed in SEC	0 / 768 SDRAM ECC	<i>None</i>	PCI=2 PCI/ISA=1 ISA=1; AGP=1	4 bays 2 used 2 empty	440BX Ethernet Open OS	Aug 1999

<p><b>Windows NT Preload<sup>17</sup></b></p> <p>Windows NT® Workstation 4.0 (SP4) Internet Explorer 4.0 install icon IBM Welcome Center Device drivers for each subsystem Ready to install: - ConfigSafe® - Norton AntiVirus (OEM Version) - DMI Service Provider - DMI BIOS Instrumentation - IBM PC System Monitor Instrumentation - CoSession® Remote 32 - IBM Universal Management Agent IBM RTC CD-ROM Setup Utility IBM Utilities for Windows 95/NT 4.0 - Hummingbird "Try and Buy" Suite CD-ROM - Ready to Configure CD-ROM - Free license for Lotus SmartSuite 97 CD-ROM - IBM ViaVoice 98 Office Edition CD-ROM - LANDesk® Client Manager CD-ROM - Windows NT Workstation 4.0 CD-ROM - Service Pack 4 CD-ROM - IBM Diagnostics CD-ROM - Access to IBM HomePage Creator</p>	<p><b>Supported Memory and Options</b></p> <p>32MB SDRAM ECC DIMM 100MHz 01K1133 64MB SDRAM ECC DIMM 100MHz 01K1130 128MB SDRAM ECC DIMM 100MHz 01K1131 256MB SDRAM ECC RDIMM Registered 01K1132 6.8GB EIDE 7200 rpm 33L5045 13.5GB EIDE 7200 rpm 33L5043 20.4GB EIDE 7200 rpm 33L5044 9.1GB Wide Ultra SCSI (7200 rpm) 20L0553 18.2GB Wide Ultra SCSI (7200 rpm) 20L0554 9.1GB 10000 rpm Wide Ultra2 SCSI SL 20L0539 10/100 PCI EtherJet Adapter WOL 34L0201 Auto Wake Token-Ring ISA Adapter 55H6760 PCI Token Ring Adapter WOL 34L0701 2X/4X/24X<sup>6</sup> CD-RW Drive 33L5005</p> <p>C: is 2GB as FAT16 Remainder is unformatted</p>	<p><b>Ready to Configure CD-ROM<sup>17</sup></b></p> <p>All models ship with a CD with drivers for Windows® 98 and Windows NT 4.0 and various utilities. Includes: - Intel LANDesk® Client Manager - ConfigSafe - IBM Universal Management Agent™</p> <p><b>WARRANTY SERVICE SUPPORT<sup>3</sup></b></p> <p>⇒ <b>3 year parts warranty</b> ⇒ <b>1 year labor warranty</b> ⇒ <b>International Warranty Service<sup>3</sup></b> ⇒ <b>1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time</b> ⇒ <b>2nd/3rd year: parts exchange only, call 1-800-772-2227</b> ⇒ <b>On site warranty upgrade options:</b> • Next day response<sup>7</sup>, Mon-Fri 8-5 • 4 hour response<sup>7</sup>, 7 day x 24 hr ⇒ <b>Post warranty: on site options above</b> ⇒ <b>IBM SystemXtra®</b> ⇒ <b>24 hour / 7 day telephone, electronic, Internet (www.pc.ibm.com) support</b></p>
<p>Ethernet = Intel® 10/100 ethernet chip; 10BaseT and 100BaseTX; Alert on LAN™ RTC CD = ReadyTo Configure CD-ROM Wide Ultra SCSI = Adaptec® AHA-2940UW PCI Adapter; single channel Wide Ultra SCSI ⓧ = Models announced August 3, 1999</p>		

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ⓧ = Withdrawn from marketing

No warranties are expressed or implied in this summary  
(6893R - Page 1 of 2) © IBM Corp. June 2000

# IBM IntelliStation® E Pro - Summer 1999 (6893) - withdrawn

<b>IBM® IntelliStation® E Pro</b>		<b>Desktop</b>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">diskette</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">CD-ROM</div>
Type-model	<b>6893-xxx</b>	- Optional black Floor Stand (02K2734) avail at 919-304-5000	<div style="border: 1px solid black; padding: 2px; display: inline-block;">②</div>
Processor Implementation	<b>Intel® Pentium® III 550 or 600MHz<sup>1</sup> / 100MHz front side bus</b> Processor and L2 cache in Single Edge Cartridge (SEC) in Intel Slot 1 CPU connector / motherboard has one Slot 1	- CD-ROM/disk in cage that flips out	<div style="border: 1px solid black; padding: 2px; display: inline-block;">disk</div>
Processor upgrade	No SMP	Bay ① 5.25", HH 1.6", access, CD-ROM	
Avail / withdrawn date	August 1999 / withdrawn June 2000	Bay ② 5.25** SL 1", access, open	
L2 cache	<b>512KB std / 512KB max / ECC / half speed of CPU / integrated in SEC / 4 way set associative / write-back</b>	Bay ③ 3.5", SL 1", no access, open or std disk	
Memory - std / max	<b>64 or 128MB / 768MB max<sup>13</sup> / SDRAM / 100MHz / ECC / 3.3 volt</b>	Bay ④ 3.5", SL 1", access, std diskette	
Mem - total sockets	Three 168 pin gold-plated DIMM sockets / industry standard	** Brackets to convert to 3.5" available from AirSpeed with part number 01K5873 from 919-304-5000	
Mem - sockets used	One DIMM used / PC100-compliant / hardware scrubbing ECC	Slot 1: fullsize, 16-bit ISA	
Mem - type (support)	Non-parity or ECC (memory controller is Error Checking Correcting)	Slot 2: fullsize, 16-bit ISA or 32 bit PCI 2.1 (5v) - Appian	
Memory - supported	32, 64, 128 or 256MB ECC SDRAM DIMMs / only 256MB DIMMs are registered (buffered); can not mix registered with non-register	Slot 3: halfsize, 32-bit PCI 2.1 (5v) - SCSI adptr (some)	
Graphics controller	<b>Matrox® Millennium G400</b> (performance 2D), <b>IBM Fire GL1<sup>11</sup></b> (performance 2D/3D), or <b>Appian Graphics® Jeronimo Pro</b> (2D multiple display)	Slot 4: halfsize, 32-bit PCI 2.1 (5v)	
	<b>IBM Fire GL1</b> / AGP 2X adapter / sideband-capable 32MB std / 32MB max / 256-bit 100MHz SGRAM 2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B	Slot 5: fullsize, 32-bit AGP-2x - on motherboard, not riser* *used by AGP graphics adapter (most models)	
	<b>Millennium G400</b> / AGP 2X adapter / sideband addressing 16MB std / 16MB max / 166MHz SGRAM / 250MHz RAMDAC / 256-bit Dual Bus chip / max 2D resolution of 2048x1536 / supports 1280x1024x16.7 million at 100Hz	<b>Appian Graphics Jeronimo Pro</b> / 32-bit PCI adapter / 16MB std / 16MB max / 125MHz SGRAM / 250MHz RAMDAC two controllers with two ports for multiple monitor support / max resolution of 1280x1024 at 85Hz with 16.7 million colors max resolution of 1600x1200 at 85Hz with 65,536 colors	
Disk	<i>Vary:</i> None (AAP), one EIDE disk (Ultra DMA/33), or one Wide Ultra SCSI disk / all disks SMART <sup>®</sup> and SMART Reaction <sup>™</sup>		
Disk controller	Enhanced IDE busmaster on planar (PIIX4E) / 32-bit PCI 2.1 / Ultra DMA/33 and PIO modes 3, 4 / two IDE conn on riser <i>SCSI models:</i> Adaptec® AHA-2940UW UltraSCSI / PCI adapter supports one channel for 15 devices / 16-bit int, 8-bit int, and 16-bit ext connectors		
Disk cable(s)	<i>SCSI models:</i> Three drop 16-bit SCSI cable <i>All:</i> One 2 drop IDE cable and one 1 drop IDE cable (1 drop cable attaches to CD)		
Motherboard	<b>NLX motherboard</b> / slides out w/o removing cables or adapters riser contains rear I/O ports and IDE and diskette connectors		
Bus slots	PCI 2.1 (33MHz), AGP 2X (66MHz), and ISA slots (see side)		
Architecture	<b>Intel 440BX AGPset / PIIX4E</b> for EIDE, ISA Bridge, USB / <b>AGP 2X</b> SMC FDC37C673 Super I/O for diskette, par, ser, kybd, mouse		
Serial/parallel ports	<i>Ser:</i> Two 9 pin / 115Kbps / 16550A / non-DMA / <i>Par:</i> One (EPP, ECP) / IEEE 1284		
Universal Serial Bus	Two USB ports / 1.5MB/sec (12Mbps) max speed		
Diskette drive	3.5" 1.44MB diskette drive		
CD-ROM	40X-17X <sup>4</sup> speed CD-ROM / CAV / ATAPI / bootable		
Audio	Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker		
Audio connectors	Stereo line in / mic in / line out (all in back) / software volume control		
Ethernet controller	<b>Intel EtherExpress PRO/100B</b> / PCI 82558 ethernet chip on planar / PCI bus 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN <sup>®</sup> / <b>Alert on LAN</b>		
LCCM	LANClient Control Manager <sup>™</sup> enabled / Wake on LAN / Setup on LAN / Flash on LAN / Hybrid RPL / DHCP/BOOTP / software image download		
Systems mgmt cntrl	National Semiconductor <sup>®</sup> LM80-compatible chip / monitors temperature, front fan speed and optional disk fan A, voltage (processor/pwr supply), cover removal		
Keyboard / mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse		
Cooling fans	Two or three fans (pwr supply, processor, a third may be installed in disk area A)		
Power supply	145 watts / universal / manual switch / Wake on LAN support		
<b>All models:</b> Maximum internal SCSI disk capacity <sup>13</sup> : 18.2GB with two 9.1GB 7200 rpm Wide Ultra SCSI disks			
<b>All models:</b> Maximum internal EIDE disk capacity <sup>13</sup> : 40.8GB with two 20.4GB EIDE disks			
		<i>All systems stealth black color</i>	
<b>Alert on LAN<sup>™</sup></b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off			
<b>Asset ID<sup>™</sup> (RFID)<sup>16</sup></b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; theft protection			
<b>SMART Reaction<sup>™</sup></b> - automatic backup of disk			
<b>PC 98-compliant</b>			
<b>DMI 2.0-compliant</b> with DMI manageability chip; includes MIF browser with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software			
<b>Wired for Management 1.1a</b>			
<b>Adv Config and Power Interface (ACPI) 1.0</b>			
<b>PC-Doctor diagnostic software</b>			
<b>Universal Management Agent<sup>™</sup> (UMA) and UMA Plus-enabled</b>			
Dual orientation with optional stand The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST Plug-and-Play 1.0a Vital Product Data support Desktop: 17.72"W x 17.72"D x 5.02" H; 450mm W x 450mm D x 128mm H; 22 to 25 lbs (10 to 11.4 kg)			
Advanced Power Mgmt 1.2 ISO 9241-3 capable Several hardcopy publications 256KB IBM BIOS in flash memory Power management features:			
- Configurable levels for system, CPU, disk, and monitor including powering system and/or display off			
- Wake Up on Ring (via modem) from off state			
- Wake Up on Alarm (scheduled time) from off state			
- Wake on LAN (from LAN) from off state			
- PCI Wake Up (supported PCI devices)			
		<b>SECURITY</b>	
		- Chassis intrusion protection	
		- Cover key lock	
		- Secure fixed disk	
		- Serial EEPROM with write protect	
		- Power-on password	
		- Setup utility password (admin password)	
		- Keyboard/mouse password	
		- Wake on LAN password prompt	
		- Boot sequence control	
		- Boot without keyboard/mouse	
		- Diskette boot inhibit	
		- Disable mouse	
		- Disable external SCSI port	
		- Diskette write protect	
		- Diskette and disk I/O control	
		- Serial/parallel I/O control	
		- Secure access openings (louvers)	
		- Secure removable media	
		- Data storage for LCCM function	
		- U-Bolt enabled	
		- Vital Product Data stored in EEPROM	
		- Write protect control circuit for EEPROM	
		- Barcode labels on most components	
		Remotely readable DMI-compliant:	
		- System EEPROM on motherboard (info and serial no for CPU, system unit, planar, power supply, empty fields); also can read/write with external RF unit	
		- EEPROMs on DIMMs (component info, serial no)	
		- Disk firmware (component info, serial no)	
		Chassis enhancements:	
		- Cover removed by two easy-lift tabs	
		- Cover includes metal plate and connecting tabs for easier removal	
		- Pivoting disk cage to access three right bays	
		- Segmented cooling (power supply fan cools power supply and DASD bays; fan in front cools motherboard, processor, DIMMs, and adapters)	
		- Metal monitor support bar to support monitor without sagging	



# IBM IntelliStation® E Pro models - Winter 1999 (6893) - withdrawn

Type-model	Standard disk (rpm) ms seek / disk interface CD-ROM <sup>5</sup> /interface	CPU MHz <sup>1</sup>	Write-back L2 cache std / max KB / KB	Memory in MB; std / max <sup>13</sup> 100MHz	SVGA controller; memory std / max	Bus slots P=PCI avail PCI/ISA=avail A=AGP avail	Total bays	Chipset Ethernet Preload <sup>17</sup>	Available date
<b>5 slot x 4 bay; PCI/ISA/AGP; Stealth Gray</b>									
∞ 6893-50U	13.5GB <sup>2</sup> std (7200) 9.0ms / EIDE / ATA-33 40X-17X <sup>6</sup> CD-ROM / EIDE	Pentium® III 450/100 MHz	512 / 512 half speed in SEC	64 / 768 SDRAM ECC	Millennium G200 AGP-2x adapter 8 / 16 WRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Mar 1999
∞ 6893-52U	13.5GB <sup>2</sup> std (7200) 9.0ms / EIDE / ATA-33 40X-17X <sup>6</sup> CD-ROM / EIDE	Pentium III 500/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	Millennium G200 AGP-2x adapter 8 / 16 WRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Mar 1999
∞ 6893-53U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	Pentium III 500/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	IBM Fire GL1 <sup>11</sup> AGP-2x Adapter 32/32MB SGRAM	PCI=1 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Mar 1999
∞ 6893-54U	4.5GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	Pentium III 450/100 MHz	512 / 512 half speed in SEC	64 / 768 SDRAM ECC	Millennium G200 AGP-2x Adapter 8 / 16 WRAM	PCI=1 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Mar 1999
∞ 6893-56U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	Pentium III 500/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	Millennium G200 AGP-2x Adapter 8 / 16 WRAM	PCI=1 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Mar 1999
∞ 6893-57U	13.5GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	Pentium III 500/100 MHz	512 / 512 half speed in SEC	128 / 768 SDRAM ECC	IBM Fire GL1 AGP-2x Adapter 32/32MB SGRAM	PCI=2 PCI/ISA=1 ISA=1; AGP=0	4 bays 3 used 1 empty	440BX Ethernet NT 4.0	Mar 1999
∞ 6893-58U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	Pentium III 500/100 MHz	512 / 512 half speed in SEC	64 / 768 SDRAM ECC	<i>None</i>	PCI=2 PCI/ISA=1 ISA=1; AGP=1	4 bays 2 used 2 empty	440BX Ethernet Open OS	Mar 1999
∞ 6893-59U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	Pentium III 450/100 MHz	512 / 512 half speed in SEC	64 / 768 SDRAM ECC	<i>None</i>	PCI=2 PCI/ISA=1 ISA=1; AGP=1	4 bays 2 used 2 empty	440BX Ethernet Open OS	Mar 1999

Windows NT Preload <sup>17</sup>	Supported Memory and Options	Ready to Configure CD-ROM <sup>17</sup>
Windows NT® Workstation 4.0 (SP4) Internet Explorer 4.0 install icon IBM Welcome Center Device drivers for each subsystem Ready to install: - ConfigSafe® - Norton AntiVirus (OEM Version) - DMI Service Provider - DMI BIOS Instrumentation - IBM PC System Monitor Instrumentation - IBM AssetCare Serial Number Information - IBM Universal Management Agent IBM RTC CD-ROM Setup Utility IBM Utilities for Windows 95/NT 4.0 - Hummingbird "Try and Buy" Suite CD-ROM - Ready to Configure CD-ROM - Free license for Lotus SmartSuite 97 CD-ROM - IBM ViaVoice 98 Office Edition CD-ROM - Windows NT Workstation 4.0 CD-ROM - Service Pack 4 CD-ROM - IBM Diagnostics CD-ROM - Access to IBM HomePage Creator  C: is 2GB as FAT16 Remainder is unformatted	32MB SDRAM ECC DIMM 100MHz 64MB SDRAM ECC DIMM 100MHz 128MB SDRAM ECC DIMM 100MHz 256MB SDRAM ECC DIMM Registered Matrox Millennium G200 Graphics Adap IBM Fire GL1 Graphics Accelerator 13.5GB EIDE 7200 rpm 20.4GB EIDE 7200 rpm 9.1GB Wide Ultra SCSI (7200 rpm) 18.2GB Wide Ultra SCSI (7200 rpm) 9.1GB 10000 rpm Wide Ultra2 SCSI SL 10/100 PCI EtherJet Adapter WOL Auto Wake Token-Ring ISA Adapter PCI Token Ring Adapter WOL	All models ship with a CD with drivers for Windows® 95, 98, and NT 3.51 and 4.0 and various utilities. Includes: - Intel LANDesk® Client Manager - ConfigSafe - IBM Universal Management Agent  <div style="border: 1px solid black; padding: 5px;"> <p align="center"><b>WARRANTY SERVICE SUPPORT<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>⇒ 3 year parts warranty</li> <li>⇒ 1 year labor warranty</li> <li>⇒ International Warranty Service<sup>3</sup></li> <li>⇒ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time</li> <li>⇒ 2nd/3rd year: parts exchange only, call 1-800-772-2227</li> <li>⇒ On site warranty upgrade options: • Next day response<sup>7</sup>, Mon-Fri 8-5 • 4 hour response<sup>7</sup>, 7 day x 24 hr</li> <li>⇒ Post warranty: on site options above</li> <li>⇒ IBM SystemXtra®</li> <li>⇒ 24 hour / 7 day telephone, electronic, Internet (www.pc.ibm.com) support</li> </ul> </div>
Ethernet = Intel® 10/100 ethernet chip; 10BaseT and 100BaseTX; Alert on LAN™ RTC CD = ReadyTo Configure CD-ROM Wide Ultra SCSI = Adaptec® AHA-2940UW PCI Adapter; single channel Wide Ultra SCSI ∞ = Withdrawn from marketing		

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(6893 - Page 1 of 2) © IBM Corp. January 2000

# IBM IntelliStation® E Pro - Winter 1999 (6893) - withdrawn

<b>IBM® IntelliStation® E Pro</b>		<b>Desktop</b>	<div style="border: 1px solid black; padding: 2px; display: inline-block;">diskette</div> <div style="border: 1px solid black; padding: 2px; display: inline-block; margin-left: 10px;">CD-ROM</div>
Type-model	<b>6893-xxx</b>	- Optional black Floor Stand (02K2734) avail at 919-304-5000	<div style="border: 1px solid black; padding: 2px; display: inline-block;">②</div>
Processor	<b>Intel® Pentium® III 450/100 or 500/100MHz<sup>1</sup></b>	- CD-ROM/disk in cage that flips out	<div style="border: 1px solid black; padding: 2px; display: inline-block;">disk</div>
Implementation	Processor and L2 cache in Single Edge Cartridge (SEC) in Intel Slot 1 CPU connector / motherboard has one Slot 1	Bay ① 5.25", HH 1.6", access, CD-ROM	
Processor upgrade	No SMP	Bay ② 5.25** SL 1", access, open	
Avail / withdrawn date	March 1999 / withdrawn June or Sept or Nov 1999 or Jan 2000	Bay ③ 3.5", SL 1", no access, open or std disk	
L2 cache	<b>512KB std / 512KB max / ECC / half speed of CPU / integrated in SEC / 4 way set associative / write-back</b>	Bay ④ 3.5", SL 1", access, std diskette	
Memory - std / max	<b>64 or 128MB / 768MB max<sup>13</sup> / SDRAM / 100MHz / ECC / 3.3 volt</b>	** Brackets to convert to 3.5" available from AirSpeed with part number 01K5873 from 919-304-5000	
Mem - total sockets	Three 168 pin gold-plated DIMM sockets / industry standard	Slot 1: fullsize, 16-bit ISA	
Mem - sockets used	One DIMM used / PC100-compliant / hardware scrubbing ECC	Slot 2: fullsize, 16-bit ISA or 32 bit PCI 2.1 (5v)	
Mem - type (support)	Non-parity or ECC (memory controller is Error Checking Correcting)	Slot 3: halfsize, 32-bit PCI 2.1 (5v)- SCSI adptr (some)	
Memory - supported	32, 64, 128 or 256MB ECC SDRAM DIMMs / only 256MB DIMMs are registered (buffered); can not mix registered with non-register	Slot 4: halfsize, 32-bit PCI 2.1 (5v)	
Graphics controller	<b>Matrox® Millennium G200-D (2D/value 3D) or IBM Fire GL1 (advanced 3D)</b>		
Graphics - type	<b>Millennium G200-D / AGP-2x 533MB/s adapter</b>	<b>IBM Fire GL1 / AGP-2x adapter / sideband-capable / split transactions</b>	
Graphics - memory	8MB std / 16MB max 128-bit SGRAM	32MB std / 32MB max / 256-bit, 2-way interleaved, 100MHz SGRAM	
Graphics - features	Sideband / split transactions 250 MHz RAMDAC / 16.7M colors Max 2D resolution of 1920x1200	2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B Max resolution of 1600x1200 at 85Hz or 1920x1200 at 75Hz Optimized for multiprocessor environments	
Disk	Vary: None (AAP), one EIDE disk (Ultra DMA/33), or one Wide Ultra SCSI disk / all disks SMART <sup>5</sup> and SMART Reaction <sup>TM</sup>		
Disk controller	Enhanced IDE busmaster on planar (PIIX4E) / 32-bit PCI 2.1 / Ultra DMA/33 and PIO modes 3, 4 / two IDE conn on riser <i>SCSI models:</i> Adaptec® AHA-2940UW UltraSCSI / PCI adapter supports one channel for 15 devices / 16-bit int, 8-bit int, and 16-bit ext connectors		
Disk cable(s)	<i>SCSI models:</i> Three drop 16-bit SCSI cable <i>All:</i> One 2 drop IDE cable and one 1 drop IDE cable (1 drop cable attaches to CD)		
Motherboard	<b>NLX motherboard</b> / slides out w/o removing cables or adapters riser contains rear I/O ports and IDE and diskette connectors		
Bus slots	PCI 2.1 (33MHz), AGP-2x (66MHz), and ISA slots (see side)		
Architecture	<b>Intel 440BX AGPset / PIIX4E</b> for EIDE, ISA Bridge, USB / <b>AGP-2x</b> SMC FDC37C673 Super I/O for diskette, par, ser, kybd, mouse		
Serial/parallel ports	<i>Ser:</i> Two 9 pin / 115Kbps / 16550A / non-DMA / <i>Par:</i> One (EPP, ECP) / IEEE 1284		
Universal Serial Bus	Two USB ports / 1.5MB/sec (12Mbps) max speed		
Diskette drive	3.5" 1.44MB diskette drive		
CD-ROM	40X-17X <sup>6</sup> speed CD-ROM / CAV / ATAPI / bootable		
Audio	Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker		
Audio connectors	Stereo line in / mic in / line out (all in back) / software volume control		
Ethernet controller	<b>Intel EtherExpress PRO/100B</b> / PCI 82558 ethernet chip on planar / PCI bus 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN <sup>®</sup> / <b>Alert on LAN</b>		
LCCM	LANClient Control Manager <sup>TM</sup> enabled / Wake on LAN / Setup on LAN / Flash on LAN / Hybrid RPL / DHCP/BOOTP / software image download		
Systems mgmt cntrl	National Semiconductor <sup>®</sup> LM80-compatible chip / monitors temperature, front fan speed and optional disk fan A, voltage (processor/pwr supply), cover removal		
Keyboard / Mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse		
Cooling fans	Two or three fans (pwr supply, processor, a third may be installed in disk area A)		
Power supply	145 watts / universal / manual switch / Wake on LAN support		
<b>All models:</b> Maximum internal SCSI disk capacity <sup>13</sup> : 18.2GB with two 9.1GB 7200 rpm Wide Ultra SCSI disks <b>All models:</b> Maximum internal EIDE disk capacity <sup>13</sup> : 27GB with two 13.5GB EIDE disks		<i>All systems stealth gray color</i>	
<b>Alert on LAN<sup>TM</sup></b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off <b>Asset ID<sup>TM</sup> (RFID)<sup>16</sup></b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; theft protection <b>SMART Reaction<sup>TM</sup></b> - automatic backup of disk <b>PC 97 compliant</b> <b>DMI 2.0 compliant</b> with DMI manageability chip; includes MIF browser with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software <b>Wired for Management 1.1a</b> <b>Adv Config and Power Interface (ACPI) 1.0</b> PC-Doctor diagnostic software		Dual orientation with optional stand The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST Plug-and-Play 1.0a Vital Product Data support Desktop: 17.72"W x 17.72"D x 5.02" H; 450mm W x 450mm D x 128mm H; 22 to 25 lbs (10 to 11.4 kg) Advanced Power Mgmt 1.2 ISO 9241-3 capable Several hardcopy publications 256KB IBM BIOS in flash memory Power management features: - Configurable levels for system, CPU, disk, and monitor including powering system and/or display off - Wake Up on Ring (via modem) from off state - Wake Up on Alarm (scheduled time) from off state - Wake on LAN (from LAN) from off state - PCI Wake Up (supported PCI devices)	
		<b>SECURITY</b> <ul style="list-style-type: none"> <li>- Chassis intrusion protection</li> <li>- Cover key lock</li> <li>- Secure fixed disk</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Setup utility password (admin password)</li> <li>- Keyboard/mouse password</li> <li>- Wake on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard/mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write protect</li> <li>- Diskette and disk I/O control</li> <li>- Serial/parallel I/O control</li> <li>- Secure access openings (louvers)</li> <li>- Secure removable media</li> <li>- Data storage for LCCM function</li> <li>- U-Bolt enabled</li> <li>- Vital Product Data stored in EEPROM</li> <li>- Write protect control circuit for EEPROM</li> <li>- Barcode labels on most components</li> <li>- Remotely readable DMI-compliant:</li> <li>- System EEPROM on motherboard (info and serial no for CPU, system unit, planar, power supply, empty fields); also can read/write with external RF unit</li> <li>- EEPROMs on DIMMs (component info, serial no)</li> <li>- Disk firmware (component info, serial no)</li> </ul> Chassis enhancements: <ul style="list-style-type: none"> <li>- Cover removed by two easy-lift tabs</li> <li>- Cover includes metal plate and connecting tabs for easier removal</li> <li>- Pivoting disk cage to access three right bays</li> <li>- Segmented cooling (power supply fan cools power supply and DASD bays; fan in front cools motherboard, processor, DIMMs, and adapters)</li> <li>- Metal monitor support bar to support monitor without sagging</li> </ul>	

IBM® Type-model	Processor	L2 cache	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Ethernet	Preload <sup>17</sup>	Available date
6229-10U	Pentium® 4	2.0 512KB	256MB	40.0GB <sup>2</sup> EIDE 7.2K	None	CD	Millennium G450 DVI-I 32MB	6x7	10/100	2000	Feb 2002
6229-12U	Pentium 4	2.0 512KB	256MB	40.0GB EIDE 7.2K	None	CD	NVIDIA™ Quadro4 64MB	6x7	10/100	2000	Feb 2002
6229-13U	Pentium 4	2.0 512KB	512MB	18.2GB Ultra160 10K	29160LP	CD	NVIDIA Quadro4 64MB	6x7	10/100	2000	Feb 2002
6229-15U	Pentium 4	2.0 512KB	512MB	18.2GB Ultra160 10K	29160LP	CD	ATI® Fire GL8800™.11 128MB	6x7	10/100	2000	Feb 2002
6229-16U	Pentium 4	2.0 512KB	512MB	18.2GB Ultra160 10K	29160LP	CD	Wildcat III 6110 208MB	6x7	10/100	2000	Feb 2002
6229-20U	Pentium 4	2.2 512KB	256MB	40.0GB EIDE 7.2K	None	CD	Millennium G450 DVI-I 32MB	6x7	10/100	2000	Feb 2002
6229-22U	Pentium 4	2.2 512KB	256MB	40.0GB EIDE 7.2K	None	CD	NVIDIA Quadro2 Pro 64MB	6x7	10/100	2000	Feb 2002
6229-23U	Pentium 4	2.2 512KB	512MB	18.2GB Ultra160 10K	29160LP	CD	NVIDIA Quadro4 64MB	6x7	10/100	2000	Feb 2002
6229-25U	Pentium 4	2.2 512KB	512MB	18.2GB Ultra160 10K	29160LP	CD	ATI Fire GL8800 128MB	6x7	10/100	2000	Feb 2002
6229-26U	Pentium 4	2.2 512KB	512MB	18.2GB Ultra160 10K	29160LP	CD	Wildcat III 6110 208MB	6x7	10/100	2000	Feb 2002

Processor **Intel® Pentium® 4 at 2.0 or 2.2GHz with 400MHz frontside bus**  
 L2 cache **512KB** std and max / at processor speed  
 Implementation Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains one Intel mPGA478B socket (with Pentium 4 FC-PGA2 and heat sink), four RIMM sockets, five PCI slots, one AGP slot, integrated ethernet, and 850 chip with heat sink  
 SMP support No SMP support

Memory - std / max **256 or 512MB std / 2GB max<sup>13</sup> / dual RDRAM (Rambus) channels / 32 devices max each channel / 256MB models: Two 4D 128MB PC800 RIMMs; 512MB models: Two 8D 256MB PC800 RIMMs / ECC memory controller and RIMMs / four 184-pin gold-plated RIMM sockets (two per channel) / two RIMMs installed (one per channel) / CRIMMs in two sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be installed in pairs across channels / mixing speeds will have all RIMMs operate at slowest**  
 Memory - features

Graphics controller (one of following)
 

- **Matrox® Millennium G450 DVI-I** (high-perf 2D) / AGP 4X adapter / MGA G450F GPU / 32MB 150MHz DDR-SDRAM / dual RAMDAC [360/232MHz] / dual head support / one DVI-I connector (ships with one cable with two DB-15 analog conns)
- **NVIDIA Quadro4 200NVS** (high-perf 2D) / AGP 4X adapter / NV17LT 250MHz GPU / 64MB 166MHz SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / LFH60 connector for std cable with two DB-15 analog
- **ATI Fire GL8800™** (advanced 3D) / AGP 4X adapter / Radeon™ 8800 GPU / 128MB 300MHz DDR-SGRAM / dual RAMDAC [400/165MHz] / dual head support / one DB-15 analog and one DVI-I connt (ships with one DVI-I to DB-15 cable)
- **3DLabs Wildcat III™ 6110** (extreme 3D) / AGP 4X Pro 50 adapter / 208MB total DDR-SDRAM (64MB frame buffer, 128MB texture buffer, 16MB direct burst) / dual RAMDAC [320/300MHz] / dual head support (up to two digital or analog monitors) / two DVI-I connectors (ships with two DVI-I to analog DB-15 cables for analog monitor attachment)

IDE disk controller Enhanced IDE busmaster / ATA-100 / two connectors on planar  
 SCSI disk controller **SCSI models: Adaptec® 29160LP / Ultra160 SCSI (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot)**  
 SCSI connectors **SCSI models: One 68-pin internal / one 0.8mm VHDCI 68-pin external connector**  
 Cables **SCSI models: One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable**  
 EIDE models: Two EIDE cables (one 2-drop cable to CD-ROM, one 2-drop cable to EIDE disk)  
 Disk - features **EIDE models: 40.0GB EIDE / ATA-100 / 7200 rpm / 9 ms read seek / S.M.A.R.T.<sup>5</sup>**  
**SCSI models: 18.2GB Ultra160 SCSI / 10K rpm / 4.9 ms read seek / S.M.A.R.T.**

Rack support 4U<sup>4</sup> rack mount support via tower-to-rack kit option  
 Architecture / chipset **Intel 850 chipset / MCH (Memory Controller Hub) / I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / Firmware Hub / SMC LPC47M142 Super I/O off LPC interface**

10/100Mbps ethernet Intel 82562EM / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 port / LAN Connect Interface / controller in ICH2 and 82562EM / support for Wake on LAN®, Alert on LAN™, PXE  
 CD-ROM / diskette 48X-20X<sup>6</sup> CD-ROM, CAV (ATAPI), bootable / 3.5" 1.44MB diskette drive

Audio Soft audio AC '97 v2.1 controller via ICH2 (AD1885) / internal speaker (use of audio line out requires powered speakers)  
 Rear ports Two 9-pin serial, four USB (Vers 1.1) [two in front], parallel, keyboard, mouse, ethernet, audio line in, audio line out, mic in  
 Systems mgmt Monitoring and alerting of thermal, fans, and voltage faults

Keyboard / mouse IBM 104-key keyboard / IBM three button mouse  
 Cooling fans Three variable speed fans (pwr supp, rear, processor) / not redund or hot-swap  
 Power supply 340 watts / universal / auto sensing

	Bay ① 5.25", HH 1.6", access, open Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, diskette Bay ④ 3.5", SL 1", access, open Bay ⑤ 3.5", SL 1", no access, disk Bay ⑥ 3.5", SL 1", no access, open Bay ⑦ 3.5", SL 1", no access, open	CD-ROM ↗ Metal cage for disk bays 5,6,7 rotates out of chassis ↗ Two front stabilizing feet ↗ Handle grip on top ↗ H 18.5" x W 6.5" x D 20.0" ↗ 36 to 42 pounds (16.4 to 19.1kg) • <b>Maximum internal disk capacity<sup>13</sup>:</b> SCSI: 293GB (4 disks x 73.4GB) EIDE: 180GB (3 disks x 60GB) • Removable left side panel • BIOS Setup Utility - F1 at startup • SCSISelect via CTRL+A at prompt • Product Recovery Pgm - F11 at startup • Adv Config Power Interface (ACPI) 1.0
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Slot 1: fullsize, AGP 4X (1.5v)  
 - used by std AGP graphics adapter  
 Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v)  
 - N/A on models with 6110 graphics  
 Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v)  
 Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v)  
 Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v)  
 Slot 6: fullsize, 32-bit 33MHz, PCI 2.2 (5v)  
 - used by SCSI adapter (some)

128MB PC 800 ECC RDRAM RIMM (4 Dev) 33L3350 256MB PC 800 ECC RDRAM RIMM (8 Dev) 33L3352 512MB PC 800 ECC RDRAM RIMM (16 Dev) 33L3254 IBM 36.4GB 15K rpm Ultra160 SCSI HDD 06P5766 IBM 73.4GB 10K Ultra160 SCSI HDD 06P5752 IBM 60.0GB 7.2K rpm ATA-100 EIDE HDD 09N4207 IBM IDE 40X/12X/40X Max <sup>6</sup> CD-RW (black) 22P6976 IBM CD-RW/DVD-ROM <sup>6,19</sup> Combo (black) 10K3790 IBM 4Ux20D Tower-to-Rack Kit 09N4300 IBM P97 19" (18.0" viewable) Monitor (black) 6651U3N IBM P275 21" (19.8" viewable) Monitor (black) 6652U3N IBM T860 18.1" Flat Panel Monitor (black) 9494HBO Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>	<p style="text-align: center;"><b>PRELOAD<sup>17</sup></b></p> Microsoft® Windows® 2000 Professional - Free license for Lotus® SmartSuite® - Free license for Lotus Notes® Client ↗ Device Drivers and Diagnostics CD ↗ Software Selections CD-ROM ↗ Windows 2000 Product Recovery CD • Disk-to-Disk Recovery (Windows 2000 in hidden service partition)
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- SECURITY**
- Cover key lock
  - Cover tamper detect switch
  - Secure fixed DASD
  - Power-on password
  - Administrator password
  - Keyboard/mouse password
  - Boot sequence control
  - Boot without keyboard or mouse
  - Diskette boot inhibit and write-protect
  - Disable mouse
  - Diskette, disk, serial port, parallel port I/O control
  - Secure access openings
  - VPD stored in EEPROM
  - Write protection control for EEPROM
  - IBM Security Solutions

- LIMITED WARRANTY<sup>3</sup>**
- ↔ 3 year parts and labor
  - ↔ International Warranty Service<sup>3</sup>
  - ↔ On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time
  - ↔ 3 year on site warranty service upgrade options:<sup>7</sup>
    - 4 hour response, Mon-Fri 9-5 (ServicePac® part number 41L2735)
    - 4 hour response, 7 day x 24 hr (ServicePac part number 41L2741)
  - ↔ Post warranty maint services avail
  - ↔ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>



IBM® Type-model	Processor	L2 cache	FSB MHz	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6229-30U	Pentium® 4	2.4 512KB	533	256MB	40.0GB <sup>2</sup> EIDE 7.2K	None	CD	Millennium G450 DVI-I 32MB	6x7	XP Pro	Jun 2002
6229-32U	Pentium 4	2.4 512KB	533	256MB	40.0GB EIDE 7.2K	None	CD	Quadro4 200NVS 64MB	6x7	XP Pro	Jun 2002
6229-33U	Pentium 4	2.4 512KB	533	512MB	18.2GB Ultra160 10K	29160LP	CD	Quadro4 200NVS 64MB	6x7	XP Pro	Jun 2002
6229-35U	Pentium 4	2.4 512KB	533	512MB	18.2GB Ultra160 10K	29160LP	CD	ATI® Fire GL8800™.11 128MB	6x7	XP Pro	Jun 2002
6229-36U	Pentium 4	2.4 512KB	533	512MB	18.2GB Ultra160 10K	29160LP	CD	Wildcat III™ 6110 208MB	6x7	XP Pro	Jun 2002
6229-37U	Pentium 4	2.4 512KB	533	512MB	18.2GB Ultra160 10K	29160LP	CD	Quadro4 900XGL 128MB	6x7	XP Pro	Jun 2002

Processor **Intel® Pentium® 4 at 2.4GHz with 533MHz frontside bus (FSB)**  
 L2 cache **512KB** std and max / at processor speed  
 Implementation Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains one Intel mPGA478B socket (with Pentium 4 FC-PGA2 and heat sink), four RIMM sockets, five PCI slots, one AGP slot, integrated ethernet, and 850 chip with heat sink  
 SMP support No SMP support

Memory - std / max **256 or 512MB std / 2GB max / dual RDRAM (Rambus) channels / 32 devices max each channel /**  
 Memory - features **256MB models:** Two 4D 128MB PC800 RIMMs; **512MB models:** Two 8D 256MB PC800 RIMMs / **ECC memory controller and RIMMs /** four 184-pin gold-plated RIMM sockets (two per channel) / two RIMMs installed (one per channel) / CRIMMs in two sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be installed in pairs across channels / mixing speeds will have all RIMMs operate at slowest

Graphics controller (one of following)
 

- **Matrox® Millennium G450 DVI-I** (high-perf 2D) / AGP 4X adapter / MGA G450F GPU / 32MB 150MHz DDR-SDRAM / dual RAMDAC [360/232MHz] / dual head support / one DVI-I connector (ships with one cable with two DB-15 analog conns)
- **NVIDIA™ Quadro4 200NVS** (high-perf 2D) / AGP 4X adapter / NV17LT 250MHz GPU / 64MB 166MHz SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / LFH60 connector for std cable with two DB-15 analog
- **ATI Fire GL8800™** (advanced 3D) / AGP 4X adapter / Radeon™ 8800 GPU / 128MB 300MHz DDR-SGRAM / dual RAMDAC [400/165MHz] / dual head support / one DB-15 analog and one DVI-I conntr (ships with one DVI-I to DB-15 cable)
- **3DLabs Wildcat III™ 6110** (extreme 3D) / AGP 4X Pro 50 adapter / 208MB total DDR-SDRAM (64MB frame buffer, 128MB texture buffer, 16MB direct burst) / dual RAMDAC [320/300MHz] / dual head support (up to two digital or analog monitors) / two DVI-I connectors (ships with two DVI-I to analog DB-15 cables for analog monitor attachment)
- **NVIDIA Quadro4 900XGL** (extreme 3D) / AGP 4X adapter / NV25GL 300MHz GPU / 128MB 325MHz DDR-SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / two DVI-I connectors (ships with two DVI-I to DB-15 dongles)

IDE disk controller Enhanced IDE busmaster / ATA-100 / two connectors on planar  
 SCSI disk controller **SCSI models:** Adaptec® 29160LP / Ultra160 SCSI (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot)  
 SCSI connectors **SCSI models:** One 68-pin internal / one 0.8mm VHDCI 68-pin external connector  
 Cables **SCSI models:** One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable  
**EIDE models:** Two EIDE cables (one 2-drop cable to CD-ROM, one 2-drop cable to EIDE disk)  
 Disk - features **EIDE models:** 40.0GB EIDE / ATA-100 / 7200 rpm / 9 ms read seek / S.M.A.R.T.<sup>5</sup>  
**SCSI models:** 18.2GB Ultra160 SCSI / 10K rpm / 4.9 ms read seek / S.M.A.R.T.

Rack support 4U<sup>4</sup> rack mount support via tower-to-rack kit option  
 Architecture / chipset **Intel 850 chipset** / MCH (Memory Controller Hub) / I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / Firmware Hub / SMC LPC47M142 Super I/O off LPC interface

10/100Mbps ethernet Intel 82562EM / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 port / LAN Connect Interface / controller in ICH2 and 82562EM / support for Wake on LAN®, Alert on LAN™, PXE  
 CD-ROM / diskette 48X-20X<sup>6</sup> CD-ROM, CAV (ATAPI), bootable / 3.5" 1.44MB diskette drive  
 Audio Soft audio AC '97 v2.1 controller via ICH2 (AD1885) / internal speaker (use of audio line out requires powered speakers)  
 Rear ports Two 9-pin serial, four USB (Vers 1.1) [two in front], parallel, keyboard, mouse, ethernet, audio line in, audio line out, mic in  
 Systems mgmt Monitoring and alerting of thermal, fans, and voltage faults

Keyboard / mouse IBM 104-key keyboard / IBM three button mouse  
 Cooling fans Three variable speed fans (pwr supp, rear, processor) / not redund or hot-swap  
 Power supply 340 watts / universal / auto sensing

**SECURITY**

- Cover key lock
- Cover tamper detect switch
- Secure fixed DASD
- Power-on password
- Administrator password
- Keyboard/mouse password
- Boot sequence control
- Boot without keyboard or mouse
- Diskette boot inhibit and write-protect
- Disable mouse
- Diskette, disk, serial port, parallel port I/O control
- Secure access openings
- VPD stored in EEPROM
- Write protection control for EEPROM
- IBM Security Solutions

	Bay ① 5.25", HH 1.6", access, CD-ROM Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, diskette Bay ④ 3.5", SL 1", access, open Bay ⑤ 3.5", SL 1", no access, disk Bay ⑥ 3.5", SL 1", no access, open Bay ⑦ 3.5", SL 1", no access, open  Slot 1: fullsize, AGP 4X (1.5v) - used by std AGP graphics adapter Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - N/A on models with 6110 graphics Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 6: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - used by SCSI adapter (some)	Metal cage for disk bays 5,6,7 rotates out of chassis Two front stabilizing feet Handle grip on top H 18.5" x W 6.5" x D 20.0" 36 to 42 pounds (16.4 to 19.1kg)  • <b>Maximum internal disk capacity:</b> <b>SCSI:</b> 293GB (4 disks x 73.4GB) <b>EIDE:</b> 180GB (3 disks x 60GB) • Removable left side panel • BIOS Setup Utility - F1 at startup • SCSISelect via CTRL+A at prompt • Product Recovery Program via F11 at startup • Adv Config Power Interface (ACPI) 1.0
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**LIMITED WARRANTY<sup>3</sup>**

- ↔ **3 year parts and labor**
- ↔ **International Warranty Service<sup>3</sup>**
- ↔ **On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time**
- ↔ **3 year on site warranty service upgrade options:<sup>7</sup>**
  - **4 hour response, Mon-Fri 9-5** (ServicePac® part number 41L2735)
  - **4 hour response, 7 day x 24 hr** (ServicePac part number 41L2741)
- ↔ **Post warranty maint services avail**
- ↔ **24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>**

128MB PC800 4D ECC RDRAM RIMM - 40ns	31P8431
256MB PC800 8D ECC RDRAM RIMM - 40ns	31P8433
512MB PC800 16D ECC RDRAM RIMM - 40ns	31P8435
IBM 36.4GB 15K rpm Ultra160 SCSI HDD	06P5766
IBM 73.4GB 10K Ultra160 SCSI HDD	06P5752
IBM 60.0GB 7.2K rpm ATA-100 EIDE HDD	09N4207
IBM IDE 40X/12X/40X Max <sup>6</sup> CD-RW (black)	22P6976
IBM CD-RW/DVD-ROM <sup>6,19</sup> Combo (black)	10K3790
IBM 4Ux20D Tower-to-Rack Kit	09N4300
IBM P97 19" (18.0" viewable) Monitor (black)	6651U3N
IBM T860 18.1" Flat Panel Monitor (black)	9494HB0
Spaceball 3D Input Device	33L3252
IBM Radial Arm Flat Panel Mount	19K4464
Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>	

**PRELOAD<sup>17</sup>**

Microsoft® Windows® XP Professional  
 - Free license for Lotus® SmartSuite®  
 - Free license for Lotus Notes® Client  
 Device Drivers and Diagnostics CD  
 Windows XP Pro Product Recovery CD  
 Disk-to-Disk Recovery (Windows XP Pro in hidden service partition)

**IBM IntelliStation® M Pro (6229) - September 2002 - withdrawn xREF by eServer Field Skills Enablement Team**

IBM® Type-model	Processor	GHz <sup>1</sup>	L2 cache	FSB MHz	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6229-40U	Pentium® 4	2.67	512KB	533	256MB	40.0GB <sup>2</sup> EIDE 7.2K	None	CD	Millennium G450 DVI-I 32MB	6x7	XP Pro	Sep 2002
6229-42U	Pentium 4	2.67	512KB	533	256MB	40.0GB EIDE 7.2K	None	CD	Quadro4 200NVS 64MB	6x7	XP Pro	Sep 2002
6229-45U	Pentium 4	2.67	512KB	533	512MB	18.2GB Ultra160 10K	29160LP	CD	ATI® Fire GL8800™.11 128MB	6x7	XP Pro	Sep 2002
6229-47U	Pentium 4	2.67	512KB	533	512MB	18.2GB Ultra160 10K	29160LP	CD	Quadro4 900XGL 128MB	6x7	XP Pro	Sep 2002
6229-53U	Pentium 4	2.8	512KB	533	512MB	18.2GB Ultra160 10K	29160LP	CD	Quadro4 200NVS 64MB	6x7	XP Pro	Sep 2002
6229-56U	Pentium 4	2.8	512KB	533	512MB	18.2GB Ultra160 10K	29160LP	CD	Wildcat III™ 6110 208MB	6x7	XP Pro	Sep 2002
6229-57U	Pentium 4	2.8	512KB	533	512MB	18.2GB Ultra160 10K	29160LP	CD	Quadro4 900XGL 128MB	6x7	XP Pro	Sep 2002

Processor **Intel® Pentium® 4 at 2.67 or 2.8GHz with 533MHz frontside bus (FSB)**  
 L2 cache **512KB** std and max / at processor speed  
 Implementation Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains one Intel mPGA478B socket (with Pentium 4 FC-PGA2 and heat sink), four RIMM sockets, five PCI slots, one AGP slot, integrated ethernet, and 850 chip with heat sink  
 SMP support No SMP support

Memory - std / max **256 or 512MB std / 2GB max<sup>13</sup> / dual RDRAM (Rambus) channels / 32 devices max each channel / 256MB models: Two 4D 128MB PC800 RIMMs; 512MB models: Two 8D 256MB PC800 RIMMs / ECC memory controller and RIMMs / four 184-pin gold-plated RIMM sockets (two per channel) / two RIMMs installed (one per channel) / CRIMMs in two sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be installed in pairs across channels / mixing speeds will have all RIMMs operate at slowest**  
 Memory - features

Graphics controller (one of following)
 

- **Matrox® Millennium G450 DVI-I** (high-perf 2D) / AGP 4X adapter / MGA G450F GPU / 32MB 150MHz DDR-SDRAM / dual RAMDAC [360/232MHz] / dual head support / one DVI-I connector (ships with one cable with two DB-15 analog conns)
- **NVIDIA™ Quadro4 200NVS** (high-perf 2D) / AGP 4X adapter / NV17LT 250MHz GPU / 64MB 166MHz SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / LFH60 connector for std cable with two DB-15 analog
- **ATI Fire GL8800™** (advanced 3D) / AGP 4X adapter / Radeon™ 8800 GPU / 128MB 300MHz DDR-SGRAM / dual RAMDAC [400/165MHz] / dual head support / one DB-15 analog and one DVI-I conntr (ships with one DVI-I to DB-15 cable)
- **3DLabs Wildcat III™ 6110** (extreme 3D) / AGP 4X Pro 50 adapter / 208MB total DDR-SDRAM (64MB frame buffer, 128MB texture buffer, 16MB direct burst) / dual RAMDAC [320/300MHz] / dual head support (up to two digital or analog monitors) / two DVI-I connectors (ships with two DVI-I to analog DB-15 cables for analog monitor attachment)
- **NVIDIA Quadro4 900XGL** (extreme 3D) / AGP 4X adapter / NV25GL 300MHz GPU / 128MB 325MHz DDR-SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / two DVI-I connectors (ships with two DVI-I to DB-15 dongles)

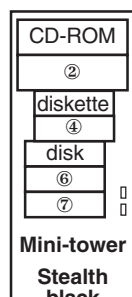
IDE disk controller Enhanced IDE busmaster / ATA-100 / two connectors on planar  
 SCSI disk controller **SCSI models:** Adaptec® 29160LP / Ultra160 SCSI (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot)  
 SCSI connectors **SCSI models:** One 68-pin internal / one 0.8mm VHDCI 68-pin external connector  
 Cables **SCSI models:** One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable  
**EIDE models:** Two EIDE cables (one 2-drop cable to CD-ROM, one 2-drop cable to EIDE disk)  
 Disk - features **EIDE models:** 40.0GB EIDE / ATA-100 / 7200 rpm / 9 ms read seek / S.M.A.R.T.<sup>5</sup>  
**SCSI models:** 18.2GB Ultra160 SCSI / 10K rpm / 4.9 ms read seek / S.M.A.R.T.

Rack support 4U<sup>4</sup> rack mount support via tower-to-rack kit option  
 Architecture / chipset **Intel 850 chipset** / MCH (Memory Controller Hub) / I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / Firmware Hub / SMC LPC47M142 Super I/O off LPC interface

10/100Mbps ethernet Intel 82562EM / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 port / LAN Connect Interface / controller in ICH2 and 82562EM / support for Wake on LAN®, Alert on LAN™, PXE

CD-ROM / diskette 48X-20X<sup>6</sup> CD-ROM, CAV (ATAPI), bootable / 3.5" 1.44MB diskette drive  
 Audio Soft audio AC '97 v2.1 controller via ICH2 (AD1885) / internal speaker (use of audio line out requires powered speakers)  
 Rear ports Two 9-pin serial, four USB (Vers 1.1) [two in front], parallel, keyboard, mouse, ethernet, audio line in, audio line out, mic in  
 Systems mgmt Monitoring and alerting of thermal, fans, and voltage faults

Keyboard / mouse IBM 104-key keyboard / IBM three-button mouse  
 Cooling fans Three variable speed fans (pwr supp, rear, processor) / not redud or hot-swap  
 Power supply 340 watts / universal / auto sensing

 <p>Bay ① 5.25", HH 1.6", access, CD-ROM          Bay ② 5.25", HH 1.6", access, open          Bay ③ 3.5", SL 1", access, diskette          Bay ④ 3.5", SL 1", access, open          Bay ⑤ 3.5", SL 1", no access, disk          Bay ⑥ 3.5", SL 1", no access, open          Bay ⑦ 3.5", SL 1", no access, open</p> <p>Slot 1: fullsize, AGP 4X (1.5v)          - used by std AGP graphics adapter          Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v)          - N/A on models with 6110 graphics          Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v)          Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v)          Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v)          Slot 6: fullsize, 32-bit 33MHz, PCI 2.2 (5v)          - used by SCSI adapter (some)</p>	<p>➤ Metal cage for disk bays 5,6,7 rotates out of chassis          ➤ Two front stabilizing feet          ➤ Handle grip on top          ➤ H 18.5" x W 6.5" x D 20.0"          ➤ 36 to 42 pounds (16.4 to 19.1kg)</p> <p>• <b>Maximum internal disk capacity<sup>13</sup>:</b>  <b>SCSI:</b> 293GB (4 disks x 73.4GB)  <b>EIDE:</b> 180GB (3 disks x 60GB)          • Removable left side panel          • BIOS Setup Utility - F1 at startup          • SCSISelect via CTRL+A at prompt          • Product Recovery Program via F11 at startup          • Adv Config Power Interface (ACPI) 1.0</p>	<p style="text-align: center;"><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>• Cover key lock</li> <li>• Cover tamper detect switch</li> <li>• Secure fixed DASD</li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Keyboard/mouse password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit and write-protect</li> <li>• Diskable mouse</li> <li>• Diskette, disk, serial port, parallel port I/O control</li> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• IBM Security Solutions</li> </ul> <p style="text-align: center;"><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>➤ 3 year parts and labor</li> <li>➤ International Warranty Service<sup>3</sup></li> <li>➤ On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time</li> <li>➤ On site service upgrade options (in eligible locations):<sup>7</sup> <ul style="list-style-type: none"> <li>• 3 year IOR 9x5, 4 hour response (ServicePac® part number 41L2735)</li> <li>• Other ServicePac options at <a href="http://ibm.com/services/its/us/source/wamomxeu.pdf">ibm.com/services/its/us/source/wamomxeu.pdf</a></li> </ul> </li> <li>➤ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></li> </ul>
<p>128MB PC800 4D ECC RDRAM RIMM - 40ns 31P8431          256MB PC800 8D ECC RDRAM RIMM - 40ns 31P8433          512MB PC800 16D ECC RDRAM RIMM - 40ns 31P8435          IBM 36.4GB 15K rpm Ultra160 SCSI HDD 06P5766          IBM 73.4GB 10K Ultra160 SCSI HDD 06P5752          IBM 60.0GB 7.2K rpm ATA-100 EIDE HDD 09N4207          IBM IDE 40X/12X/40X Max<sup>6</sup> CD-RW (black) 22P6976          IBM CD-RW/DVD-ROM<sup>6,19</sup> Combo (black) 10K3790          IBM 4Ux20D Tower-to-Rack Kit 09N4300          IBM P97 19" (18.0" viewable) Monitor (black) 6651U3N          IBM T860 18.1" Flat Panel Monitor (black) 9494HB0          IBM Radial Arm Flat Panel Mount 19K4464          Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a></p>	<p style="text-align: center;"><b>PRELOAD<sup>17</sup></b></p> <p>Microsoft® Windows® XP Professional - Free license for Lotus® SmartSuite®          - Free license for Lotus Notes® Client          ➤ Device Drivers and Diagnostics CD          ➤ Windows XP Pro Product Recovery CD          • Disk-to-Disk Recovery (Windows XP Pro in hidden service partition)</p>	



# IBM IntelliStation® M Pro (6849) - withdrawn

IBM® Type-model	Processor	GHz <sup>1</sup>	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays Ethernet	Preload <sup>17</sup>	Available date
6849-10U	Pentium® 4	1.4	256MB	20.4GB <sup>2</sup> EIDE 7.2K	None	48X-20X <sup>6</sup>	Millennium G450 16MB	6x7 10/100	2000 or NT	Nov 2000
6849-11U	Pentium 4	1.4	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	Millennium G450 16MB	6x7 10/100	2000 or NT	Nov 2000
6849-12U	Pentium 4	1.4	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	NVIDIA™ Quadro2 MXR 32M	6x7 10/100	2000 or NT	Nov 2000
6849-13U	Pentium 4	1.4	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	IBM Fire GL2 64MB	6x7 10/100	2000 or NT	Nov 2000
6849-20U	Pentium 4	1.5	256MB	20.4GB EIDE 7.2K	None	48X-20X	Millennium G450 16MB	6x7 10/100	2000 or NT	Nov 2000
6849-21U	Pentium 4	1.5	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	Millennium G450 16MB	6x7 10/100	2000 or NT	Nov 2000
6849-22U	Pentium 4	1.5	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	NVIDIA Quadro2 MXR 32MB	6x7 10/100	2000 or NT	Nov 2000
6849-23U	Pentium 4	1.5	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	IBM Fire GL2 64MB	6x7 10/100	2000 or NT	Nov 2000
6849-1PU	Pentium 4	1.4	256MB	None	None	48X-20X	Millennium G450 16MB	6x7 10/100	2000 or NT	Nov 2000
6849-2PU	Pentium 4	1.5	256MB	None	None	48X-20X	Millennium G450 16MB	6x7 10/100	2000 or NT	Nov 2000

Intel® processor	<b>Pentium® 4 at 1.4 or 1.5GHz<sup>1</sup> with 400MHz Front Side Bus</b>									
L2 cache	256KB std and max / at processor speed									
Implementation	Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains one Intel PGA423 socket (with Pentium 4 and heat sink), four RIMM sockets, five PCI slots, one AGP slot, integrated ethernet, and 850 chip w/ heat sink									
SMP support	No SMP support									
Memory - std / max	<b>256 or 512MB std / 2GB max<sup>13</sup> / dual RDRAM (Rambus) channels / 32 devices max each channel /</b>									
Memory - features	<b>256MB models:</b> Two 8D 128MB PC600 RIMMs; <b>512MB models:</b> Two 16D 256MB PC600 RIMMs <b>ECC memory controller and RIMMs /</b> four 184-pin gold-plated RIMM sockets (two per channel) / two RIMMs installed (one per channel) / CRIMMs in two sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be installed in pairs across channels / mixing speeds will have all RIMMs operate at slowest									
Graphics controller (one of following)	<ul style="list-style-type: none"> <li>• <b>Matrox® Millennium G450</b> (high-performance 2D) / AGP 4X adapter / MGA G450C GPU / 16MB 150MHz SDRAM / dual RAMDAC [360/232MHz] / dual head: 2048x1536x16M at 70Hz and 1600x1200x16M at 85Hz / two DB-15 connectors</li> <li>• <b>NVIDIA Quadro2 MXR</b> (advanced 3D) / AGP 4X adapter / NV11GL GPU / 32MB std and max 183MHz SDRAM / DB-15 and DVI-I connectors (dual monitor capable)</li> <li>• <b>IBM Fire GL2</b> (extreme 3D) / AGP 4X adapter / 64MB std and max 120MHz DDR-SGRAM / DB-15 and DVI-D connectors (single head; same image if both used)</li> </ul>									
IDE disk controller	Enhanced IDE busmaster / ATA-100 / two connectors on planar							<b>SECURITY</b>		
SCSI disk controller	SCSI models: Adaptec® 29160LP / Ultra160 SCSI (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel 15 dev									
SCSI connectors	SCSI models: One 68-pin internal / one 0.8mm VHDCI 68-pin external connector							<ul style="list-style-type: none"> <li>• Cover key lock</li> <li>• Cover tamper detect switch</li> <li>• Secure fixed DASD</li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Keyboard/mouse password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit and write-protect</li> <li>• Disable mouse</li> <li>• Diskette, disk, serial port, parallel port I/O control</li> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Barcode labels on most components</li> <li>• IBM Security Solutions</li> </ul>		
Cables	SCSI models: One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable EIDE models: Two EIDE cables (one 2-drop cable to CD-ROM, one 2-drop cable to EIDE disk)									
Disk - features	EIDE models: 20.4GB EIDE / ATA-100 / 7200 rpm / 9 ms read seek / S.M.A.R.T. <sup>5</sup> SCSI models: 18.2GB Ultra160 SCSI / 10K rpm / 5.5 ms read seek / S.M.A.R.T.							<ul style="list-style-type: none"> <li>• Diskette, disk, serial port, parallel port I/O control</li> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Barcode labels on most components</li> <li>• IBM Security Solutions</li> </ul>		
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option									
Chipset	Intel <b>850 chip set</b> / MCH (Memory Controller Hub) / I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / Firmware Hub / SMC LPC47M102 Super I/O off LPC interface							<ul style="list-style-type: none"> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Barcode labels on most components</li> <li>• IBM Security Solutions</li> </ul>		
100/10Mbps ethernet	Intel 82562EM / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 port / LAN Connect Interface / controller in ICH2 and 82562EM / support for Wake on LAN®, Alert on LAN™, Preboot eXecution Envir (PXE)									
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM / CAV (ATAPI) / bootable / 3.5" 1.44MB diskette drive							<ul style="list-style-type: none"> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Barcode labels on most components</li> <li>• IBM Security Solutions</li> </ul>		
Audio	Soft audio AC '97 v2.1 controller via ICH2 (powered speakers required)									
External ports	Serial: Two 9 pin; Parallel: One (EPP, ECP) / IEEE 1284; USB: Two (Ver 1.1); kybd, mouse, audio line in, audio line out, microphone in							<ul style="list-style-type: none"> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Barcode labels on most components</li> <li>• IBM Security Solutions</li> </ul>		
Systems mgmt	Monitoring and alerting of thermal, fans, and voltage faults									
Keyboard / mouse	IBM 104-key keyboard / IBM three button mouse							<ul style="list-style-type: none"> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Barcode labels on most components</li> <li>• IBM Security Solutions</li> </ul>		
Cooling fans	Three variable speed fans (power supply, rear, processor) / not redundant or hot-swap									
Power supply	340 watts / universal / auto sensing							<ul style="list-style-type: none"> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Barcode labels on most components</li> <li>• IBM Security Solutions</li> </ul>		
<b>Preload with Windows 2000 Professional<sup>17</sup></b>										
Microsoft® Windows® 2000 Professional - Free license for Lotus® SmartSuite® Millennium - Free license for Lotus Notes® Client ♦ Device Drivers and Diagnostics CD-ROM ♦ Software Selections CD-ROM ♦ Windows 2000 Product Recovery CD-ROM ♦ Windows NT 4.0 (SP6) Product Recovery CD ♦ Disk-to-Disk Recovery (Windows 2000 or NT 4.0 SP6 in hidden service partition)								Bay ① 5.25", HH1.6", access, CD-ROM Bay ② 5.25", HH1.6", access, open Bay ③ 3.5", SL 1", access, diskette Bay ④ 3.5", SL 1", access, open Bay ⑤ 3.5", SL 1", no access, open Bay ⑥ 3.5", SL 1", no access, open Bay ⑦ 3.5", SL 1", no access, disk		
<b>Options</b>										
64MB PC600 ECC RDRAM RIMM (4 Dev) 33L3093 128MB PC600 ECC RDRAM RIMM (8 Dev) 33L3095 256MB PC600 ECC RDRAM RIMM (16 Dev) 33L3097 64MB PC800 ECC RDRAM RIMM (4 Dev) 20L0274 128MB PC800 ECC RDRAM RIMM (8 Dev) 20L0275 256MB PC800 ECC RDRAM RIMM (16 Dev) 20L0277 IBM 4Ux20D Tower-to-Rack Kit 09N4300 IBM 30GB ATA-100 EIDE HDD 00N8203 IBM 18.2GB 7200rpm Ultra160 SCSI HDD 00N8205 IBM 36.4GB 7200rpm Ultra160 SCSI HDD 00N8206 IBM 36.4GB 10K Ultra160 SCSI HDD 00N8209 IBM 18.2GB 15K Ultra160 SCSI HDD 19K0658 IBM 9.4GB DVD-RAM (black) 10K3561 IBM IDE 8X/4X/32X <sup>6</sup> CD-Rewritable (black) 33L5020 IBM 250MB Zip Drive (black) 00N8078 IBM P96 Color Monitor (black) 655163N								<b>Mini-tower</b> <b>Stealth black</b>		
<b>LIMITED WARRANTY*<sup>3</sup></b>										

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227  
 US models announced November 21, 2000  
 US models withdrawn effective October 2001 or January 2002

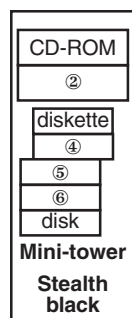
No warranties are expressed or implied in this summary  
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# IBM IntelliStation® M Pro (6849) - Spring 2001 - withdrawn

IBM® Type-model	Processor	GHz <sup>1</sup>	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays Ethernet	Preload <sup>17</sup>	Available date
6849-30U	Pentium® 4	1.7	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	Millennium G450	16MB 6x7 10/100	2000 or NT	May 2001
6849-31U	Pentium 4	1.7	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	Millennium G450	16MB 6x7 10/100	2000 or NT	May 2001
6849-32U	Pentium 4	1.7	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	NVIDIA™ Quadro2 MXR	32MB 6x7 10/100	2000 or NT	May 2001
6849-33U	Pentium 4	1.7	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	ATI® Fire GL2 <sup>11</sup>	64MB 6x7 10/100	2000 or NT	May 2001
6849-34U	Pentium 4	1.7	512MB	18.2GB Ultra160 10K	29160LP	48X-20X	ATI Fire GL4	128MB 6x7 10/100	2000 or NT	Jun 2001

Processor	<b>Intel® Pentium® 4 1.7GHz<sup>1</sup> with 400MHz Front Side Bus</b>										
L2 cache	256KB std and max / at processor speed										
Implementation	Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains one Intel PGA423 socket (with Pentium 4 and heat sink), four RIMM sockets, five PCI slots, one AGP slot, integrated ethernet, and 850 chip with heat sink										
SMP support	No SMP support										
Memory - std / max	<b>256 or 512MB std / 2GB max<sup>13</sup> / dual RDRAM (Rambus) channels / 32 devices max each channel /</b>										
Memory - features	<b>256MB models:</b> Two 8D 128MB PC800 RIMMs; <b>512MB models:</b> Two 16D 256MB PC800 RIMMs / <b>ECC memory controller and RIMMs</b> / four 184-pin gold-plated RIMM sockets (two per channel) / two RIMMs installed (one per channel) / CRIMMs in two sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be installed in pairs across channels / mixing speeds will have all RIMMs operate at slowest										
Graphics controller (one of following)	<ul style="list-style-type: none"> <li>• <b>Matrox® Millennium G450</b> (high-performance 2D) / AGP 4X adapter / MGA G450C GPU / 16MB 150MHz SDRAM / dual RAMDAC [360/232MHz] / dual head: 2048x1536x16M at 70Hz and 1600x1200x16M at 85Hz / two DB-15 connectors</li> <li>• <b>NVIDIA Quadro2 MXR</b> (advanced 3D) / AGP 4X adapter / NV11GL GPU / 32MB 183MHz SDRAM / dual RAMDAC [350/150MHz] / dual head: 2048x1536x16M at 75Hz and 1280x1024x16M at 85Hz / DB-15 and DVI-I conn</li> <li>• <b>ATI Fire GL2<sup>11</sup></b> (extreme 3D) / AGP 4X adapter / IBM GT1000-RT1000 GPUs / 64MB 120MHz DDR-SGRAM / 300MHz RAMDAC / single head: 1920x1200x16M at 76Hz / DB-15 and DVI-D connectors (same image if both used)</li> <li>• <b>ATI Fire GL4</b> (extreme 3D) / AGP 4X adapter / IBM GT1000-RT1000 GPUs / 128MB 120MHz DDR-SGRAM / dual RAMDAC [300/135MHz] / dual head: 1920x1200x16M at 76Hz and 1280x1024x16M at 75Hz / two DVI-I w/ DB-15 dongles</li> </ul>										
IDE disk controller	Enhanced IDE busmaster / ATA-100 / two connectors on planar										
SCSI disk controller	<i>SCSI models:</i> Adaptec® 29160LP / Ultra160 SCSI (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot)										
SCSI connectors	<i>SCSI models:</i> One 68-pin internal / one 0.8mm VHDCI 68-pin external connector										
Cables	<i>SCSI models:</i> One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable										
Disk - features	<i>EIDE models:</i> Two EIDE cables (one 2-drop cable to CD-ROM, one 2-drop cable to EIDE disk) <i>EIDE models:</i> 40.0GB EIDE / ATA-100 / 7200 rpm / 9 ms read seek / S.M.A.R.T. <sup>5</sup> <i>SCSI models:</i> 18.2GB Ultra160 SCSI / 10K rpm / 5.5 ms read seek / S.M.A.R.T.										
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option										
Architecture / chipset	<b>Intel 850 chip set</b> / MCH (Memory Controller Hub) / I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / Firmware Hub / SMC LPC47M102 Super I/O off LPC interface										
10/100 Mbps ethernet	Intel 82562EM / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 port / LAN Connect Interface / controller in ICH2 and 82562EM / support for Wake on LAN®, Alert on LAN™, Preboot eXecution Envir (PXE)										
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM / CAV (ATAPI) / bootable / 3.5" 1.44MB diskette drive										
Audio	Soft audio AC '97 v2.1 controller via ICH2 / internal speaker (use of audio line out requires powered speakers)										
External ports	<i>Serial:</i> Two 9 pin; <i>Parallel:</i> One (EPP, ECP) / IEEE 1284; <i>USB:</i> Two; keyboard, mouse, audio line in/line out, mic in										
Systems mgmt	Monitoring and alerting of thermal, fans, and voltage faults										
Keyboard / mouse	IBM 104-key keyboard / IBM three button mouse										
Cooling fans	Three variable speed fans (power supply, rear, processor) / not redundant or hot-swap										
Power supply	340 watts / universal / auto sensing										

 <p>Bay ① 5.25", HH 1.6", access, CD-ROM Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, diskette Bay ④ 3.5", SL 1", access, open Bay ⑤ 3.5", SL 1", no access, open Bay ⑥ 3.5", SL 1", no access, open Bay ⑦ 3.5", SL 1", no access, disk</p> <p>Slot 1: fullsize, AGP 4X Pro50 (1.5v) - used by std AGP graphics adapter Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - not available on models with GL4 Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v) Slot 6: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - used by SCSI adapter (some)</p>	<ul style="list-style-type: none"> <li>◇ Metal cage for disk bays 5,6,7 rotates out of chassis</li> <li>◇ Two front stabilizing feet</li> <li>◇ Handle grip on top</li> <li>◇ H 18.5" x W 6.5" x D 20.0"</li> <li>◇ 36 to 42 pounds (16.4 to 19.1kg)</li> </ul>	<p><b>PRELOAD<sup>17</sup></b></p> <p>Microsoft® Windows® 2000 Professional - Free license for Lotus® SmartSuite® - Free license for Lotus Notes® Client ◇ Device Drivers and Diagnostics CD ◇ Software Selections CD-ROM ◇ Windows 2000 Product Recovery CD ◇ NT 4.0 (SP6) Product Recovery CD ◇ Disk-to-Disk Recovery (Windows 2000 or NT 4.0 SP6 in hidden service partition)</p>																																		
	<p><b>OPTIONS</b></p> <table border="0"> <tr><td>64MB PC600 ECC RDRAM RIMM (4 Dev)</td><td>33L3093</td></tr> <tr><td>128MB PC600 ECC RDRAM RIMM (8 Dev)</td><td>33L3095</td></tr> <tr><td>256MB PC600 ECC RDRAM RIMM (16 Dev)</td><td>33L3097</td></tr> <tr><td>64MB PC800 ECC RDRAM RIMM (4 Dev)</td><td>20L0274</td></tr> <tr><td>128MB PC800 ECC RDRAM RIMM (8 Dev)</td><td>20L0275</td></tr> <tr><td>256MB PC800 ECC RDRAM RIMM (16 Dev)</td><td>20L0277</td></tr> <tr><td>512MB PC800 ECC RDRAM RIMM (16 Dev)</td><td>33L3254</td></tr> <tr><td>IBM 18.2GB 7.2K rpm Ultra160 SCSI HDD</td><td>00N8205</td></tr> <tr><td>IBM 36.4GB 7.2K rpm Ultra160 SCSI HDD</td><td>00N8206</td></tr> <tr><td>IBM 36.4GB 10K Ultra160 SCSI HDD</td><td>00N8209</td></tr> <tr><td>IBM 18.2GB 15K Ultra160 SCSI HDD</td><td>19K0658</td></tr> <tr><td>IBM 40.0GB 7.2K rpm ATA-100 EIDE HDD</td><td>22P7157</td></tr> <tr><td>IBM 9.4GB DVD-RAM (black)</td><td>10K3561</td></tr> <tr><td>IBM IDE 8X/4X/32X<sup>6</sup> CD-Rewritable (black)</td><td>33L5020</td></tr> <tr><td>IBM 250MB Zip Drive (black)</td><td>00N8078</td></tr> <tr><td>IBM 4Ux20D Tower-to-Rack Kit</td><td>09N4300</td></tr> <tr><td>IBM P260 Color Monitor (black)</td><td>655263N</td></tr> </table>	64MB PC600 ECC RDRAM RIMM (4 Dev)	33L3093	128MB PC600 ECC RDRAM RIMM (8 Dev)	33L3095	256MB PC600 ECC RDRAM RIMM (16 Dev)	33L3097	64MB PC800 ECC RDRAM RIMM (4 Dev)	20L0274	128MB PC800 ECC RDRAM RIMM (8 Dev)	20L0275	256MB PC800 ECC RDRAM RIMM (16 Dev)	20L0277	512MB PC800 ECC RDRAM RIMM (16 Dev)	33L3254	IBM 18.2GB 7.2K rpm Ultra160 SCSI HDD	00N8205	IBM 36.4GB 7.2K rpm Ultra160 SCSI HDD	00N8206	IBM 36.4GB 10K Ultra160 SCSI HDD	00N8209	IBM 18.2GB 15K Ultra160 SCSI HDD	19K0658	IBM 40.0GB 7.2K rpm ATA-100 EIDE HDD	22P7157	IBM 9.4GB DVD-RAM (black)	10K3561	IBM IDE 8X/4X/32X <sup>6</sup> CD-Rewritable (black)	33L5020	IBM 250MB Zip Drive (black)	00N8078	IBM 4Ux20D Tower-to-Rack Kit	09N4300	IBM P260 Color Monitor (black)	655263N	<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>• Cover key lock</li> <li>• Cover tamper detect switch</li> <li>• Secure fixed DASD</li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Keyboard/mouse password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit and write-protect</li> <li>• Disable mouse</li> <li>• Diskette, disk, serial port, parallel port I/O control</li> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• IBM Security Solutions</li> </ul>
64MB PC600 ECC RDRAM RIMM (4 Dev)	33L3093																																			
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\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227

US models announced April 24, 2001  
US models withdrawn effective April 2002

No warranties are expressed or implied in this summary (6849S) © IBM Corp. April 2002

# IBM IntelliStation® M Pro (6849) - Summer 2001 - withdrawn

IBM® Type-model	Processor	GHz <sup>1</sup>	Memory	Disk and rpm	SCSI adapter	CD-ROM	Graphics adapter and memory	Slots x bays	Ethernet	Preload <sup>17</sup>	Available date
6849-40U	Pentium® 4	1.8	256MB	40.0GB <sup>2</sup> EIDE 7.2K	None	CD	Millennium G450 16MB	6x7	10/100	2000 or NT	Aug 2001
6849-41U	Pentium 4	1.8	512MB	18.2GB Ultra160 10K	29160LP	CD	Millennium G450 16MB	6x7	10/100	2000 or NT	Aug 2001
6849-42U	Pentium 4	1.8	512MB	18.2GB Ultra160 10K	29160LP	CD	NVIDIA™ Quadro2 Pro 64MB	6x7	10/100	2000 or NT	Aug 2001
6849-44U	Pentium 4	1.8	512MB	18.2GB Ultra160 10K	29160LP	CD	ATI® Fire GL4™ 11 128MB	6x7	10/100	2000 or NT	Aug 2001
6849-50U	Pentium 4	2.0	256MB	40.0GB EIDE 7.2K	None	CD	Millennium G450 16MB	6x7	10/100	2000 or NT	Sep 2001
6849-51U	Pentium 4	2.0	512MB	18.2GB Ultra160 10K	29160LP	CD	Millennium G450 16MB	6x7	10/100	2000 or NT	Sep 2001
6849-52U	Pentium 4	2.0	512MB	18.2GB Ultra160 10K	29160LP	CD	NVIDIA™ Quadro2 Pro 64MB	6x7	10/100	2000 or NT	Sep 2001
6849-54U	Pentium 4	2.0	512MB	18.2GB Ultra160 10K	29160LP	CD	ATI® Fire GL4 128MB	6x7	10/100	2000 or NT	Sep 2001

Processor **Intel® Pentium® 4 at 1.8 or 2.0GHz with 400MHz frontside bus**  
 L2 cache **256KB** std and max / at processor speed  
 Implementation Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains one Intel PGA423 socket (with Pentium 4 and heat sink), four RIMM sockets, five PCI slots, one AGP slot, integrated ethernet, and 850 chip with heat sink  
 SMP support No SMP support

Memory - std / max **256 or 512MB std / 2GB max<sup>13</sup> / dual RDRAM (Rambus) channels / 32 devices max each channel /**  
 Memory - features **256MB models:** Two 8D 128MB PC800 RIMMs; **512MB models:** Two 16D 256MB PC800 RIMMs / **ECC memory controller and RIMMs** / four 184-pin gold-plated RIMM sockets (two per channel) / two RIMMs installed (one per channel) / CRIMMs in two sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be installed in pairs across channels / mixing speeds will have all RIMMs operate at slowest

Graphics controller (one of following)
 

- **Matrox® Millennium G450** (high-performance 2D) / AGP 4X adapter / MGA G450C GPU / 16MB 150MHz SDRAM / dual RAMDAC [360/232MHz] / dual head: 2048x1536x16M at 70Hz and 1600x1200x16M at 85Hz / two DB-15 connectors
- **NVIDIA Quadro2 Pro** (advanced 3D) / AGP 4X adapter / NV15GL 250MHz GPU / 64MB 200MHz DDR-SDRAM / 350MHz RAMDAC / single head: 1600x1200x16M at 85Hz / DB-15 and DVI-I connectors (same image if both used)
- **ATI Fire GL4** (extreme 3D) / AGP 4X Pro 50 adapter / IBM GT1000-RT1000 GPUs / 128MB 150MHz DDR-SGRAM / dual RAMDAC [300/135MHz] / dual head: 1920x1200x16M at 76Hz and 1280x1024x16M at 75Hz / two DVI-I w/ DB-15 dongles

IDE disk controller Enhanced IDE busmaster / ATA-100 / two connectors on planar  
 SCSI disk controller **SCSI models:** Adaptec® 29160LP / Ultra160 SCSI (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot)  
 SCSI connectors **SCSI models:** One 68-pin internal / one 0.8mm VHDCI 68-pin external connector  
 Cables **SCSI models:** One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable  
**EIDE models:** Two EIDE cables (one 2-drop cable to CD-ROM, one 2-drop cable to EIDE disk)  
 Disk - features **EIDE models:** 40.0GB EIDE / ATA-100 / 7200 rpm / 9 ms read seek / S.M.A.R.T.<sup>5</sup>  
**SCSI models:** 18.2GB Ultra160 SCSI / 10K rpm / 5.5 ms read seek / S.M.A.R.T.

Rack support 4U<sup>4</sup> rack mount support via tower-to-rack kit option  
 Architecture / chipset **Intel 850 chipset** / MCH (Memory Controller Hub) / I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / Firmware Hub / SMC LPC47M102 Super I/O off LPC interface

10/100Mbps ethernet Intel 82562EM / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 port / LAN Connect Interface / controller in ICH2 and 82562EM / support for Wake on LAN®, Alert on LAN™, PXE  
 CD-ROM / diskette 48X-20X<sup>6</sup> CD-ROM, CAV (ATAPI), bootable / 3.5" 1.44MB diskette drive  
 Audio Soft audio AC '97 v2.1 controller via ICH2 / internal speaker (use of audio line out requires powered speakers)  
 Rear ports Two 9-pin serial; two USB (Vers 1.1), parallel, keyboard, mouse, ethernet, audio line in, audio line out, mic in  
 Systems mgmt Monitoring and alerting of thermal, fans, and voltage faults

Keyboard / mouse IBM 104-key keyboard / IBM three button mouse  
 Cooling fans Three variable speed fans (power supply, rear, processor) / not redundant or hot-swap  
 Power supply 340 watts / universal / auto sensing

<p><b>Mini-tower</b> <b>Stealth black</b></p>	<p>Bay ① 5.25", HH 1.6", access, CD-ROM                  Bay ② 5.25", HH 1.6", access, open                  Bay ③ 3.5", SL 1", access, diskette                  Bay ④ 3.5", SL 1", access, open                  Bay ⑤ 3.5", SL 1", no access, open                  Bay ⑥ 3.5", SL 1", no access, open                  Bay ⑦ 3.5", SL 1", no access, disk</p> <p>Slot 1: fullsize, AGP 4X (1.5v)                  - used by std AGP graphics adapter                  Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v)                  - not available on models with GL4                  Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v)                  Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v)                  Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v)                  Slot 6: fullsize, 32-bit 33MHz, PCI 2.2 (5v)                  - used by SCSI adapter (some)</p>	<ul style="list-style-type: none"> <li>◇ Metal cage for disk bays 5,6,7 rotates out of chassis</li> <li>◇ Two front stabilizing feet</li> <li>◇ Handle grip on top</li> <li>◇ H 18.5" x W 6.5" x D 20.0"</li> <li>◇ 36 to 42 pounds (16.4 to 19.1kg)</li> </ul> <p>• <b>Maximum internal SCSI disk capacity<sup>13</sup>:</b>                  182GB (5 disks x 36.4GB)                  • Removable left side panel                  • BIOS Setup Utility - F1 at startup                  • SCSISelect via CTRL+A at prompt                  • Product Recovery Pgm - F11 at startup                  • Adv Config Power Interface (ACPI) 1.0                  • LANClient Control Manager™ enabled</p>	<p><b>PRELOAD<sup>17</sup></b>                  Microsoft® Windows® 2000 Professional                  - Free license for Lotus® SmartSuite®                  - Free license for Lotus Notes® Client                  ◇ Device Drivers and Diagnostics CD                  ◇ Software Selections CD-ROM                  ◇ Windows 2000 Product Recovery CD                  ◇ NT 4.0 (SP6) Product Recovery CD                  ◇ Disk-to-Disk Recovery (Windows 2000 or NT 4.0 SP6 in hidden service partition)</p>
<p><b>OPTIONS</b></p> <p>64MB PC 800 ECC RDRAM RIMM (4 Dev) 20L0274                  128MB PC 800 ECC RDRAM RIMM (8 Dev) 20L0275                  256MB PC 800 ECC RDRAM RIMM (16 Dev) 20L0277                  64MB PC 800 ECC RDRAM RIMM (2 Dev) 33L3348                  128MB PC 800 ECC RDRAM RIMM (4 Dev) 33L3350                  256MB PC 800 ECC RDRAM RIMM (8 Dev) 33L3352                  512MB PC 800 ECC RDRAM RIMM (16 Dev) 33L3254                  IBM 18.2GB 7.2K rpm Ultra160 SCSI HDD 00N8205                  IBM 36.4GB 7.2K rpm Ultra160 SCSI HDD 00N8206                  IBM 36.4GB 10K Ultra160 SCSI HDD 00N8209                  IBM 18.2GB 15K Ultra160 SCSI HDD 19K0658                  IBM 40.0GB 7.2K rpm ATA-100 EIDE HDD 22P7157                  IBM IDE 12X/8X/32X Max<sup>6</sup> CD-RW (black) 10K3785                  IBM 20/40GB 8mm SCSI Tape Drive (black) 01K1325                  IBM 250MB Zip Drive (black) 00N8078                  IBM 4Ux20D Tower-to-Rack Kit 09N4300                  IBM P260 Color Monitor (black) 655263N</p>	<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>• Cover key lock</li> <li>• Cover tamper detect switch</li> <li>• Secure fixed DASD</li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Keyboard/mouse password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit and write-protect</li> <li>• Disable mouse</li> <li>• Diskette, disk, serial port, parallel port I/O control</li> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• IBM Security Solutions</li> </ul>	<p><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>⇨ <b>3 year parts and labor</b></li> <li>⇨ <b>International Warranty Service<sup>3</sup></b></li> <li>⇨ <b>On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time</b></li> <li>⇨ <b>3 year on site warranty service upgrade options:<sup>7</sup></b> <ul style="list-style-type: none"> <li>• <b>4 hour response, Mon-Fri 9-5</b> (ServicePac® part number 41L2735)</li> <li>• <b>4 hour response, 7 day x 24 hr</b> (ServicePac part number 41L2741)</li> </ul> </li> <li>⇨ <b>Post warranty maintenance services available</b></li> <li>⇨ <b>24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></b></li> </ul>	

See footnotes for important warranty information  
 US models announced on July 31, 2001 or August 28, 2001  
 US models withdrawn effective April 2002 or July 2002



# IBM IntelliStation® M Pro (6850) - withdrawn

IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk and rpm	Disk controllers	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6850-10U	1 x Xeon 1.5	256KB	256MB	40GB <sup>2</sup> EIDE 7.2K	Ultra160, EIDE	CD	Millennium G450 16MB	6x9	2000	Aug 2001
6850-20U	1 x Xeon 1.7	256KB	256MB	40GB EIDE 7.2K	Ultra160, EIDE	CD	Millennium G450 16MB	6x9	2000	Aug 2001
6850-21U	1 x Xeon 1.7	256KB	256MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	Millennium G450 16MB	6x9	2000	Aug 2001
6850-22U	1 x Xeon 1.7	256KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	NVIDIA™ Quadro2 Pro 64MB	6x9	2000	Aug 2001
6850-25U	1 x Xeon 1.7	256KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	ATI® Fire GL4™, 11 128 MB	6x9	2000	Aug 2001
Positioning	<i>Ultimate workstation performance and scalability</i>									
Processor	<b>1 x Intel® Xeon™ 1.5 or 1.7GHz<sup>1</sup> with 400MHz frontside bus</b>									
L2 cache	256KB L2 cache / on die of Xeon / at processor speed / no L3 cache									
Implementation	Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains two Intel Socket-603 sockets, one memory card connector, five PCI slots, one AGP Pro slot, integrated ethernet and SCSI, and 860 chipset									
SMP support	<b>2-way SMP</b> via identical processor									
Memory	<b>256 or 512MB std / 4GB max<sup>13</sup> / PC800 ECC Rambus</b> / two or four RDRAM (Rambus) channels / 32 devices max each channel / 8 slot memory card with four RDRAM channels and max of 8x512MB=4GB / each 82803 Memory Repeater Hub (MRH-R) converts each channel into two channels (2x2=4 channels total) / <b>ECC</b> memory controller and RIMMs / 184-pin gold-plated RIMM sockets / supports PC800 RIMMs only / all installed RIMMs must be installed in pairs across channels / 2.5v									
Graphics controller (one of following)	<ul style="list-style-type: none"> <li>• <b>Matrox® Millennium G450</b> (high-perf 2D) / AGP 4X adapter / Matrox MGA G450C GPU / 16MB 150MHz SDRAM / dual RAMDAC [360/232MHz] / dual head: 2048x1536x16M at 70Hz and 1600x1200x16M at 85Hz / two DB-15 connectors</li> <li>• <b>NVIDIA Quadro2 Pro</b> (advanced 3D) / AGP 4X adapter / NV15GL 250MHz GPU / 64MB 200MHz DDR-SDRAM / 350MHz RAMDAC / single head: 1600x1200x16M at 85Hz / DB-15 and DVI-I connectors (same image if both used)</li> <li>• <b>ATI Fire GL4</b> (extreme 3D) / AGP 4X Pro 50 adapter / IBM GT1000-RT1000 GPUs / 128MB 150MHz DDR-SGRAM / dual RAMDAC [300/135MHz] / dual head: 1920x1200x16M at 76Hz and 1280x1024x16M at 75Hz / two DVI-I w/ DB-15 dongles</li> </ul>									
SCSI controller	<b>Adaptec® AIC-7899</b> / dual channel Ultra 160 SCSI controller (160MB/sec) / on planar / 64-bit PCI bus									
SCSI connectors	<b>Internal Port A:</b> 68 pin (attaches 6-drop 16-bit LVD cable to SCSI disk [cable std on SCSI models, not EIDE models]); <b>External Port B:</b> 68-pin SCSI port on rear (connected by 1-drop 16-bit LVD cable to conn on planar [cable on all models])									
IDE cables	<b>EIDE and SCSI models:</b> one 2-drop IDE ATA-33 cable (for CD-ROM); <b>EIDE models:</b> one 2-drop ATA-66/100 cable (to disk)									
EIDE controller	Enhanced IDE / ATA-100 with two channel support / integrated in I/O Controller Hub (ICH2)									
Disk - features	<b>SCSI models:</b> 18.2GB Ultra160 / 10K rpm / 5.5 ms read seek; <b>EIDE:</b> 40GB / 7200 rpm / 8.7 ms read seek; <b>All:</b> S.M.A.R.T. <sup>5</sup>									
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option									
Chipset	<b>Intel 860 chipset</b> / 82860 MCH (Memory Controller Hub) / two 82803AA Memory Repeater Hubs (MRH-R) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82806AA 64-bit PCI controller (P64H) / 82802 Firmware Hub / Winbond® Super I/O off LPC interface									
10/100 Mbps ethernet	Intel 82550 / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 port / LAN Connect Interface / controller in ICH2 and 82550 / support for Wake on LAN®, Alert on LAN™, Preboot eXecution Envir (PXE)									
CD-ROM / diskette	<b>CD-ROM:</b> 48X-20X® / CAV (ATAPI) / bootable; <b>Diskette:</b> 3.5" 1.44MB drive									
Audio	Soft audio AC '97 v2.1 controller via ICH2 / ADI 1885 codec / internal mono speaker (use of audio line out requires powered speakers)									
External rear ports	<b>Serial:</b> two 9-pin; <b>Parallel:</b> one (EPP, ECP) / IEEE 1284; <b>USB:</b> two; keyboard, mouse, audio line in, audio line out, mic in									
Systems mgmt	Monitoring and alerting of thermal, fans, voltage faults, and chassis intrusion									
Keyboard / mouse	IBM 104-key keyboard (black) / IBM three-button mouse (black)									
Cooling fans	Five variable speed fans (two for processors, one for chassis, one for PCI cards, one in power supply) / not redundant or hot-swap									
Power supply	480 watts / universal / auto sensing									
					Bay ① 5.25", HH 1.6", access, open Bay ② 5.25", HH 1.6", access, std CD-ROM Bay ③ 3.5", SL 1", access, diskette Bay ④ 3.5", SL 1", no access, open (disk only) Bay ⑤ 3.5", SL 1", no access, open (disk only) Bay ⑥ 3.5", SL 1", no access, open (disk only) Bay ⑦ 3.5", SL 1", no access, open (disk only) Bay ⑧ 3.5", SL 1", no access, open (disk only) Bay ⑨ 3.5", SL 1", no access, std disk (disk only)				<ul style="list-style-type: none"> <li>• Mini tower</li> <li>• Stealth black color</li> <li>• Swinging door covers bays 1 to 3</li> </ul>	
	Slot 1: full, 32-bit 4X AGP (universal) - used by AGP adapter Slot 2: full, 32-bit 33MHz PCI 2.2 (5v) - not available with Fire GL4 model Slot 3: full, 32-bit 33MHz PCI 2.2 (5v) Slot 4: full, 32-bit 33MHz PCI 2.2 (5v) Slot 5: full 64-bit 66MHz PCI 2.2 (3.3v) Slot 6: full, 64-bit 66MHz PCI 2.2 (3.3v)									
	<b>OPTIONS</b> Xeon 1.5GHz/256KB Proc Upgrade 24P8401 Xeon 1.7GHz/256KB Proc Upgrade 24P8402 64MB PC800 ECC RDRAM RIMM (4 Dev) 20L0274 128MB PC800 ECC RDRAM RIMM (8 Dev) 20L0275 256MB PC800 ECC RDRAM RIMM (16 Dev) 20L0277 512MB PC800 ECC RDRAM RIMM (16 Dev) 33L3254 IBM 36.4GB 10K Ultra160 SCSI HDD 00N8209 IBM 73.4GB 10K Ultra160 SCSI HDD 06P5752 IBM 18.2GB 15K Ultra160 SCSI HDD 19K0658 IBM 40.0GB 7.2K rpm ATA-100 EIDE HDD 22P7157 IBM 9.4GB DVD-RAM (black) 10K3561 IBM 12X/8X/14-32x Max <sup>6</sup> CD-RW IDE (black) 10K3785 IBM 4Ux20D Tower-to-Rack Kit 10L7006 IBM P260 Color Monitor (black) 655263N IBM T540 15" TFT Flat Panel Monitor (black) 9511AG4				<ul style="list-style-type: none"> <li>• <b>Maximum internal disk capacity<sup>13</sup>:</b> SCSI: 218.4GB (6 disks x 36.4GB) EIDE: 120GB (3 disks x 40GB)</li> <li>• H 17.3" x W 8.6" x D 23.7"</li> <li>• H 440mm" x W 217mm x D 603mm</li> <li>• 59 pounds max (26.8kg)</li> <li>• Removable left side panel</li> <li>• Configuration Manager at startup</li> <li>• SCSISelect via CTRL+A at prompt</li> <li>• Adv Config Power Interface (ACPI) 1.1-compliant</li> <li>• Wired for Manageability (WfM) 2.0-compliant</li> <li>• SMBIOS 2.3-compliant</li> <li>• PC99A-compliant</li> </ul>					
	<b>LIMITED WARRANTY<sup>3</sup></b> <ul style="list-style-type: none"> <li>⇒ <b>3 year parts and labor</b></li> <li>⇒ <b>International Warranty Service<sup>3</sup></b></li> <li>⇒ <b>On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time</b></li> <li>⇒ <b>3 year on site warranty service upgrade options:<sup>7</sup></b> <ul style="list-style-type: none"> <li>• <b>4 hour response, Mon-Fri 9-5</b> (ServicePac® part number 41L2735)</li> <li>• <b>4 hour response, 7 day x 24 hr</b> (ServicePac part number 41L2741)</li> </ul> </li> <li>⇒ <b>24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></b></li> </ul>									

See footnotes for important warranty information  
 US models announced July 31, 2001  
 US models withdrawn effective April 2002 or July 2002

(6850) © IBM Corp. July 2002



# IBM IntelliStation® M Pro (6850) - Fall 2001 - withdrawn

IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk and rpm	Disk controllers	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date																																																							
6850-30U	1 x Xeon 2.0	256KB	256MB	40GB <sup>2</sup> EIDE 7.2K	Ultra160, EIDE	CD	Millennium G450 16MB	6x9	2000	Oct 2001																																																							
6850-31U	1 x Xeon 2.0	256KB	256MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	Millennium G450 16MB	6x9	2000	Oct 2001																																																							
6850-32U	1 x Xeon 2.0	256KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	NVIDIA™ Quadro2 Pro 64MB	6x9	2000	Oct 2001																																																							
6850-35U	1 x Xeon 2.0	256KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	ATI® Fire GL4™, 11 128 MB	6x9	2000	Oct 2001																																																							
Positioning	<i>Ultimate workstation performance and scalability</i>																																																																
Processor	<b>1 x Intel® Xeon™ 2.0GHz<sup>1</sup> with 400MHz Front Side Bus</b>																																																																
L2 cache	256KB L2 cache / on die of Xeon / at processor speed / no L3 cache																																																																
Implementation	Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains two Intel Socket-603 sockets, one memory card connector, five PCI slots, one AGP Pro slot, integrated ethernet and SCSI, and 860 chipset																																																																
SMP support	<b>2-way SMP</b> via identical processor																																																																
Memory	<b>256 or 512MB std / 4GB max<sup>13</sup> / PC800 ECC Rambus</b> / two or four RDRAM (Rambus) channels / 32 devices max each channel / 8 slot memory card with four RDRAM channels and max of 8x512MB=4GB / each 82803 Memory Repeater Hub (MRH-R) converts each channel into two channels (2x2=4 channels total) / <b>ECC</b> memory controller and RIMMs / 184-pin gold-plated RIMM sockets / supports PC800 RIMMs only / all installed RIMMs must be installed in pairs across channels / 2.5v																																																																
Graphics controller (one of following)	<ul style="list-style-type: none"> <li>• <b>Matrox® Millennium G450</b> (high-perf 2D) / AGP 4X adapter / Matrox MGA G450C GPU / 16MB 150MHz SDRAM / dual RAMDAC [360/232MHz] / dual head: 2048x1536x16M at 70Hz and 1600x1200x16M at 85Hz / two DB-15 connectors</li> <li>• <b>NVIDIA Quadro2 Pro</b> (advanced 3D) / AGP 4X adapter / NV15GL 250MHz GPU / 64MB 200MHz DDR-SDRAM / 350MHz RAMDAC / single head: 1600x1200x16M at 85Hz / DB-15 and DVI-I connectors (same image if both used)</li> <li>• <b>ATI Fire GL4</b> (extreme 3D) / AGP 4X Pro 50 adapter / IBM GT1000-RT1000 GPUs / 128MB 150MHz DDR-SGRAM / dual RAMDAC [300/135MHz] / dual head: 1920x1200x16M at 76Hz and 1280x1024x16M at 75Hz / two DVI-I w/ DB-15 dongles</li> </ul>																																																																
SCSI controller	<b>Adaptec® AIC-7899</b> / dual channel Ultra 160 SCSI controller (160MB/sec) / on planar / 64-bit PCI bus																																																																
SCSI connectors	<b>Internal Port A:</b> 68 pin (attaches 6-drop 16-bit LVD cable to SCSI disk [cable std on SCSI models, not EIDE models]); <b>External Port B:</b> 68-pin SCSI port on rear (connected by 1-drop 16-bit LVD cable to conn on planar [cable on all models])																																																																
IDE cables	<b>EIDE and SCSI models:</b> one 2-drop IDE ATA-33 cable (for CD-ROM); <b>EIDE models:</b> one 2-drop ATA-66/100 cable (to disk)																																																																
EIDE controller	Enhanced IDE / ATA-100 with two channel support / integrated in I/O Controller Hub (ICH2)																																																																
Disk - features	<b>SCSI models:</b> 18.2GB Ultra160 / 10K rpm / 5.5 ms read seek; <b>EIDE:</b> 40GB / 7200 rpm / 8.7 ms read seek; <b>All:</b> S.M.A.R.T. <sup>5</sup>																																																																
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option																																																																
Chipset	<b>Intel 860 chipset</b> / 82860 MCH (Memory Controller Hub) / two 82803AA Memory Repeater Hubs (MRH-R) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82806AA 64-bit PCI controller (P64H) / 82802 Firmware Hub / Winbond® Super I/O off LPC interface																																																																
Ethernet	10/100 ethernet on planar / Intel 82550 / 10BaseT, 100BaseTX / full duplex / RJ-45 port / LAN Connect Interface / controller in ICH2 and 82550 / support for Wake on LAN®, Alert on LAN™, Preboot eXecution Envir (PXE)																																																																
CD-ROM / diskette	<b>CD-ROM:</b> 48X-20X <sup>6</sup> / CAV (ATAPI) / bootable; <b>Diskette:</b> 3.5" 1.44MB drive																																																																
Audio	Soft audio AC '97 v2.1 controller via ICH2 / ADI 1885 codec / internal mono speaker (use of audio line out requires powered speakers)																																																																
External rear ports	<b>Serial:</b> two 9-pin; <b>Parallel:</b> one (EPP, ECP) / IEEE 1284; <b>USB:</b> two; keyboard, mouse, audio line in, audio line out, mic in																																																																
Systems mgmt	Monitoring and alerting of thermal, fans, voltage faults, and chassis intrusion																																																																
Keyboard / mouse	IBM 104-key keyboard (black) / IBM three-button mouse (black)																																																																
Cooling fans	Five variable speed fans (two for processors, one for chassis, one for PCI cards, one in power supply) / not redundant or hot-swap																																																																
Power supply	480 watts / universal / auto sensing																																																																
	 <table border="0" style="margin-left: 20px;"> <tr> <td>Bay ①</td> <td>5.25", HH</td> <td>1.6"</td> <td>access,</td> <td>open</td> <td>• Mini tower</td> </tr> <tr> <td>Bay ②</td> <td>5.25", HH</td> <td>1.6"</td> <td>access,</td> <td>std CD-ROM</td> <td>• Stealth black color</td> </tr> <tr> <td>Bay ③</td> <td>3.5", SL</td> <td>1"</td> <td>access,</td> <td>diskette</td> <td>• Swinging door covers</td> </tr> <tr> <td>Bay ④</td> <td>3.5", SL</td> <td>1"</td> <td>no access,</td> <td>open (disk only)</td> <td>bays 1 to 3</td> </tr> <tr> <td>Bay ⑤</td> <td>3.5", SL</td> <td>1"</td> <td>no access,</td> <td>open (disk only)</td> <td></td> </tr> <tr> <td>Bay ⑥</td> <td>3.5", SL</td> <td>1"</td> <td>no access,</td> <td>open (disk only)</td> <td></td> </tr> <tr> <td>Bay ⑦</td> <td>3.5", SL</td> <td>1"</td> <td>no access,</td> <td>open (disk only)</td> <td></td> </tr> <tr> <td>Bay ⑧</td> <td>3.5", SL</td> <td>1"</td> <td>no access,</td> <td>open (disk only)</td> <td></td> </tr> <tr> <td>Bay ⑨</td> <td>3.5", SL</td> <td>1"</td> <td>no access,</td> <td>std disk (disk only)</td> <td></td> </tr> </table> <p>Slot 1: full, 32-bit 4X AGP (universal) - used by AGP adapter            Slot 2: full, 32-bit 33MHz PCI 2.2 (5v) - not available with Fire GL4 model            Slot 3: full, 32-bit 33MHz PCI 2.2 (5v)            Slot 4: full, 32-bit 33MHz PCI 2.2 (5v)            Slot 5: full 64-bit 66MHz PCI 2.2 (3.3v)            Slot 6: full, 64-bit 66MHz PCI 2.2 (3.3v)</p>											Bay ①	5.25", HH	1.6"	access,	open	• Mini tower	Bay ②	5.25", HH	1.6"	access,	std CD-ROM	• Stealth black color	Bay ③	3.5", SL	1"	access,	diskette	• Swinging door covers	Bay ④	3.5", SL	1"	no access,	open (disk only)	bays 1 to 3	Bay ⑤	3.5", SL	1"	no access,	open (disk only)		Bay ⑥	3.5", SL	1"	no access,	open (disk only)		Bay ⑦	3.5", SL	1"	no access,	open (disk only)		Bay ⑧	3.5", SL	1"	no access,	open (disk only)		Bay ⑨	3.5", SL	1"	no access,	std disk (disk only)	
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	<p style="text-align: center;"><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>• Cover key lock</li> <li>• Cover tamper detect switch</li> <li>• Secure fixed DASD</li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Keyboard/mouse password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit and write-protect</li> <li>• Disable mouse</li> <li>• Disk, serial port I/O control</li> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Optional U-bolt support</li> </ul>																																																																
	<p style="text-align: center;"><b>PRELOAD<sup>17</sup></b></p> <p>Microsoft® Windows® 2000 Professional            - License for Lotus® SmartSuite®            - License for Lotus Notes® Client            ♦ Device Drivers and Diagnostics CD            ♦ Software Selections CD-ROM            ♦ Disk-to-Disk Recovery (Windows 2000 in hidden service partition)</p>																																																																
	<p style="text-align: center;"><b>LIMITED WARRANTY*<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>↔ <b>3 year parts and labor</b></li> <li>↔ <b>International Warranty Service<sup>3</sup></b></li> <li>↔ <b>On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time</b></li> <li>↔ <b>3 year on site warranty service upgrade options<sup>7</sup>:</b> <ul style="list-style-type: none"> <li>• <b>4 hour response, Mon-Fri 9-5</b> (ServicePac® part number 41L2737)</li> <li>• <b>4 hour response, 7 day x 24 hr</b> (ServicePac part number 30L9186)</li> </ul> </li> <li>↔ <b>24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support</b></li> </ul>																																																																

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227  
 US models announced September 25, 2001  
 US models withdrawn effective April 2002

No warranties are expressed or implied in this summary  
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IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk and rpm	Disk controllers	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6850-40U	1 x Xeon 2.0	512KB	512MB	40GB <sup>2</sup> EIDE 7.2K	Ultra160, EIDE	CD	Millennium G450 DVI-I 32MB	6x9	2000	Feb 2002
6850-42U	1 x Xeon 2.0	512KB	512MB	40GB EIDE 7.2K	Ultra160, EIDE	CD	NVIDIA™ Quadro4 64MB	6x9	2000	Feb 2002
6850-43U	1 x Xeon 2.0	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	NVIDIA Quadro4 64MB	6x9	2000	Feb 2002
6850-45U	1 x Xeon 2.0	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	ATI® Fire GL8800™, 11 128MB	6x9	2000	Feb 2002
6850-46U	1 x Xeon 2.0	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	Wildcat III™ 6110 208MB	6x9	2000	Feb 2002
6850-50U	1 x Xeon 2.2	512KB	512MB	40GB EIDE 7.2K	Ultra160, EIDE	CD	Millennium G450 DVI-I 32MB	6x9	2000	Feb 2002
6850-52U	1 x Xeon 2.2	512KB	512MB	40GB EIDE 7.2K	Ultra160, EIDE	CD	NVIDIA Quadro4 64MB	6x9	2000	Feb 2002
6850-53U	1 x Xeon 2.2	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	NVIDIA Quadro4 64MB	6x9	2000	Feb 2002
6850-55U	1 x Xeon 2.2	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	ATI Fire GL8800 128MB	6x9	2000	Feb 2002
6850-56U	1 x Xeon 2.2	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	Wildcat III 6110 208MB	6x9	2000	Feb 2002

Processor **1 x Intel® Xeon™ 2.0 or 2.2GHz<sup>1</sup> with 400MHz frontside bus** / supports Hyper-Threading technology  
 L2 cache **512KB** / on die of Xeon / at processor speed / no L3 cache  
 Implementation Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains two Intel Socket-603 sockets, one memory card connector, five PCI slots, one AGP Pro slot, integrated ethernet and SCSI, and 860 chipset  
 SMP support **2-way SMP** via identical processor *Positioning: Ultimate workstation performance and scalability*

Memory **512MB std / 4GB max<sup>13</sup> / PC800 ECC Rambus** / two or four RDRAM (Rambus) channels / 32 devices max each channel / 8 slot memory card with four RDRAM channels and max of 8x512MB=4GB / each 82803 Memory Repeater Hub (MRH-R) converts each channel into two channels (2x2=4 channels total) / **ECC** memory controller and RIMMs / 184-pin gold-plated RIMM sockets / supports PC800 RIMMs only / RIMMs must be installed in pairs across channels

Graphics controller (one of following) **• Matrox® Millennium G450 DVI-I** (high-perf 2D) / AGP 4X adapter / MGA G450F GPU / 32MB 150MHz DDR-SDRAM / dual RAMDAC [360/232MHz] / dual head support / one DVI-I connector (ships with one cable with two DB-15 analog conns)  
**• NVIDIA Quadro4 200NVs** (high-perf 2D) / AGP 4X adapter / NV17LT 250MHz GPU / 64MB 166MHz SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / LFH60 connector for std cable with two DB-15 analog  
**• ATI Fire GL8800™** (advanced 3D) / AGP 4X adapter / Radeon™ 8800 GPU / 128MB 300MHz DDR-SGRAM / dual RAMDAC [400/165MHz] / dual head support / one DB-15 analog and one DVI-I conntr (ships with one DVI-I to DB-15 cable)  
**• 3DLabs Wildcat III™ 6110** (extreme 3D) / AGP 4X Pro 50 adapter / 208MB total DDR-SDRAM (64MB frame buffer, 128MB texture buffer, 16MB direct burst) / dual RAMDAC [320/300MHz] / dual head support (up to two digital or analog monitors) / two DVI-I connectors (ships with two DVI-I to analog DB-15 cables for analog monitor attachment)

SCSI controller **Adaptec® AIC-7899** / dual channel Ultra160 SCSI controller (160MB/sec) / on planar / 64-bit PCI bus  
 SCSI connectors **Internal Port A:** 68 pin (attaches 6-drop 16-bit LVD cable to SCSI disk [cable std on SCSI models, not EIDE models]); **External Port B:** 68-pin SCSI port on rear (connected by 1-drop 16-bit LVD cable to conn on planar [cable on all models])  
 IDE cables **EIDE and SCSI models:** one 2-drop IDE ATA-33 cable (for CD-ROM); **EIDE models:** one 2-drop ATA-66/100 cable (to disk)  
 EIDE controller Enhanced IDE / ATA-100 with two channel support / integrated in I/O Controller Hub (ICH2)  
 Disk - features **SCSI models:** 18.2GB Ultra160 / 10K rpm / 4.9 ms read seek; **EIDE:** 40GB / 7200 rpm / 9.0 ms read seek; **All:** S.M.A.R.T.<sup>5</sup>

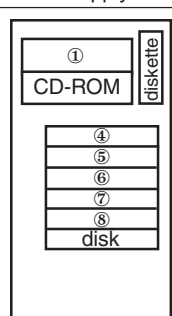
Rack support 4U<sup>4</sup> rack mount support via tower-to-rack kit option  
 Chipset **Intel 860 chipset** / 82860 MCH (Memory Controller Hub) / two 82803AA Memory Repeater Hubs (MRH-R) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82806AA 64-bit PCI controller (P64H) / 82802 Firmware Hub / Winbond® Super I/O off LPC interface

10/100 ethernet Intel 82550 / on planar / full duplex / LAN Connect Interface / RJ-45 port / controller in ICH2 and 82550 / support for Wake on LAN®, Alert on LAN™, PXE  
 CD-ROM / diskette **CD-ROM:** 48X-20X<sup>6</sup> / CAV (ATAPI) / bootable; **Diskette:** 3.5" 1.44MB drive  
 Audio **Soft audio AC '97 v2.1** controller via ICH2 / ADI 1885 codec / internal mono speaker (use of audio line out requires powered speakers)  
 External rear ports **Serial:** two 9-pin; **Parallel:** one (EPP, ECP) / IEEE 1284; **USB:** two; keyboard, mouse, audio line in, audio line out, mic in  
 Monitoring and alerting of thermal, fans, voltage faults, and chassis intrusion

- SECURITY**
- Cover key lock
  - Cover tamper detect switch
  - Secure fixed DASD
  - Power-on password
  - Administrator password
  - Keyboard/mouse password
  - Boot sequence control
  - Boot without keyboard or mouse
  - Diskette boot inhibit and write-protect
  - Disable mouse
  - Disk, serial port I/O control
  - Secure access openings
  - VPD stored in EEPROM
  - Write protection control for EEPROM
  - Optional U-bolt support

Systems mgmt IBM 104-key keyboard (black) / IBM three-button mouse (black)  
 Keyboard / mouse Five variable speed fans (two for processors, one for PCI cards, one in power supply) / not redundant or hot-swap  
 Cooling fans  
 Power supply 480 watts / universal / auto sensing

- PRELOAD<sup>17</sup>**
- Microsoft® Windows® 2000 Professional - License for Lotus® SmartSuite®
  - License for Lotus Notes® Client
  - Device Drivers and Diagnostics CD
  - Software Selections CD-ROM
  - Disk-to-Disk Recovery (Windows 2000 in hidden service partition)



- Bay ① 5.25", HH 1.6", access, open
- Bay ② 5.25", HH 1.6", access, std CD-ROM
- Bay ③ 3.5", SL 1", access, diskette
- Bay ④ 3.5", SL 1", no access, open (disk only)
- Bay ⑤ 3.5", SL 1", no access, open (disk only)
- Bay ⑥ 3.5", SL 1", no access, open (disk only)
- Bay ⑦ 3.5", SL 1", no access, open (disk only)
- Bay ⑧ 3.5", SL 1", no access, open (disk only)
- Bay ⑨ 3.5", SL 1", no access, std disk (disk only)

- Slot 1: full, 32-bit 4X AGP (universal) - used by AGP adapter
- Slot 2: full, 32-bit 33MHz PCI 2.2 (5v) - not available with Wildcat III models
- Slot 3: full, 32-bit 33MHz PCI 2.2 (5v)
- Slot 4: full, 32-bit 33MHz PCI 2.2 (5v)
- Slot 5: full 64-bit 66MHz PCI 2.2 (3.3v)
- Slot 6: full, 64-bit 66MHz PCI 2.2 (3.3v)

- **Mini tower**
- **Stealth black color**
- **Swinging door covers** bays 1 to 3
- **Maximum internal disk capacity<sup>13</sup>:**  
 SCSI: 440.4GB (6 disks x 73.4GB)  
 EIDE: 180GB (3 disks x 60GB)
- H 17.3" x W 8.6" x D 23.7"
- H 440mm" x W 217mm x D 603mm
- 59 pounds max (26.8kg)
- Removable left side panel
- Configuration Manager at startup
- SCSISelect via CTRL+A at prompt
- Adv Config Power Interface (ACPI) 1.1-compliant
- Wired for Manageability (WfM) 2.0-compliant
- SMBIOS 2.3-compliant
- PC99A-compliant

- LIMITED WARRANTY<sup>3</sup>**
- ⇒ **3 year parts and labor**
  - ⇒ **International Warranty Service<sup>3</sup>**
  - ⇒ **On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time**
  - ⇒ **3 year on site warranty service upgrade options<sup>7</sup>:**
    - **4 hour response, Mon-Fri 9-5** (ServicePac® part number 41L2735)
    - **4 hour response, 7 day x 24 hr** (ServicePac part number 41L2741)
  - ⇒ **24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>**

Xeon 2.0GHz/512KB L2 Cache Proc Upgrade	25P2653
Xeon 2.2GHz/512KB L2 Cache Proc Upgrade	32P8586
64MB PC800 ECC RDRAM RIMM (4 Dev)	20L0274
128MB PC800 ECC RDRAM RIMM (8 Dev)	20L0275
256MB PC800 ECC RDRAM RIMM (16 Dev)	20L0277
512MB PC800 ECC RDRAM RIMM (16 Dev)	33L3254
IBM 73.4GB 10K Ultra160 SCSI HDD	06P5752
IBM 9.4GB DVD-RAM (black)	10K3561
IBM IDE 40X/12X/40X Max <sup>6</sup> CD-RW (black)	22P6976
IBM 4Ux20D Tower-to-Rack Kit	10L7006
IBM P275 (21.0" viewable) Color Monitor (black)	6552U3N
IBM T750 17" TFT Flat Panel Monitor (black)	6657HG2
Other options at <a href="http://ibm.com/us/pc/accessories">ibm.com/us/pc/accessories</a>	



IBM® Type-model Qty x Processor	L2 cache	Memory	Disk and rpm	Disk controllers	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6850-60U 1 x Xeon 2.4	512KB	512MB	40GB <sup>2</sup> EIDE 7.2K	Ultra160, EIDE	CD	Millennium G450 DVI-I 32MB	6x9	XP Pro	Jun 2002
6850-62U 1 x Xeon 2.4	512KB	512MB	40GB EIDE 7.2K	Ultra160, EIDE	CD	Quadro4 200NVS 64MB	6x9	XP Pro	Jun 2002
6850-63U 1 x Xeon 2.4	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	Quadro4 200NVS 64MB	6x9	XP Pro	Jun 2002
6850-65U 1 x Xeon 2.4	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	ATI® Fire GL8800™, 11 128MB	6x9	XP Pro	Jun 2002
6850-66U 1 x Xeon 2.4	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	Wildcat III™ 6110 208MB	6x9	XP Pro	Jun 2002
6850-67U 1 x Xeon 2.4	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	Quadro4 900XGL 128MB	6x9	XP Pro	Jun 2002
Positioning Processor	<i>Ultimate workstation performance and scalability</i>								
L2 cache Implementation	<b>1 x Intel® Xeon™ 2.4GHz<sup>1</sup> with 400MHz frontside bus</b> / supports Hyper-Threading technology								
SMP support	<b>512KB</b> / on die of Xeon / at processor speed / no L3 cache Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains two Intel Socket-603 sockets, one memory card connector, five PCI slots, one AGP Pro slot, integrated ethernet and SCSI, and 860 chipset								
Memory	<b>2-way SMP</b> via identical processor								
Graphics controller (one of following)	<b>512MB std / 4GB max<sup>13</sup> / PC800 ECC Rambus</b> / two or four RDRAM (Rambus) channels / 32 devices max each channel / 8 slot memory card with four RDRAM channels and max of 8x512MB=4GB / each 82803 Memory Repeater Hub (MRH-R) converts each channel into two channels (2x2=4 channels total) / <b>ECC</b> memory controller and RIMMs / 184-pin gold-plated RIMM sockets / supports PC800 RIMMs only / RIMMs must be installed in pairs across channels								
SCSI controller	<ul style="list-style-type: none"> <li>• <b>Matrox® Millennium G450 DVI-I</b> (high-perf 2D) / AGP 4X adapter / MGA G450F GPU / 32MB 150MHz DDR-SDRAM / dual RAMDAC [360/232MHz] / dual head support / one DVI-I connector (ships with one cable with two DB-15 analog conns)</li> <li>• <b>NVIDIA™ Quadro4 200NVS</b> (high-perf 2D) / AGP 4X adapter / NV17LT 250MHz GPU / 64MB 166MHz SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / LFH60 connector for std cable with two DB-15 analog</li> <li>• <b>ATI Fire GL8800™</b> (advanced 3D) / AGP 4X adapter / Radeon™ 8800 GPU / 128MB 300MHz DDR-SGRAM / dual RAMDAC [400/165MHz] / dual head support / one DB-15 analog and one DVI-I conntr (ships with one DVI-I to DB-15 cable)</li> <li>• <b>3DLabs Wildcat III™ 6110</b> (extreme 3D) / AGP 4X Pro 50 adapter / 208MB total DDR-SDRAM (64MB frame buffer, 128MB texture buffer, 16MB direct burst) / dual RAMDAC [320/300MHz] / dual head support (up to two digital or analog monitors) / two DVI-I connectors (ships with two DVI-I to analog DB-15 cables for analog monitor attachment)</li> <li>• <b>NVIDIA Quadro4 900XGL</b> (extreme 3D) / AGP 4X adapter / NV25GL 300MHz GPU / 128MB 325MHz DDR-SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / two DVI-I connectors (ships with two DVI-I to DB-15 dongles)</li> </ul>								
SCSI connectors	<b>Adaptec® AIC-7899</b> / dual channel Ultra160 SCSI controller (160MB/sec) / on planar / 64-bit PCI bus								
IDE cables	<i>Internal Port A:</i> 68 pin (attaches 6-drop 16-bit LVD cable to SCSI disk [cable std on SCSI models, not EIDE models]);								
EIDE controller	<i>External Port B:</i> 68-pin SCSI port on rear (connected by 1-drop 16-bit LVD cable to conn on planar [cable on all models])								
Disk - features	<i>EIDE and SCSI models:</i> one 2-drop IDE ATA-33 cable (for CD-ROM); <i>EIDE models:</i> one 2-drop ATA-66/100 cable (to disk) <i>Enhanced IDE / ATA-100</i> with two channel support / integrated in I/O Controller Hub (ICH2)								
Rack support	<i>SCSI models:</i> 18.2GB Ultra160 / 10K rpm / 4.9 ms read seek; <i>EIDE:</i> 40GB / 7200 rpm / 9.0 ms read seek; <i>All:</i> S.M.A.R.T. <sup>5</sup>								
Chipset	4U <sup>4</sup> rack mount support via tower-to-rack kit option								
10/100 ethernet	<b>Intel 82550</b> / on planar / full duplex / LAN Connect Interface / RJ-45 port / controller in ICH2 and 82550 / support for Wake on LAN®, Alert on LAN™, PXE								
CD-ROM / diskette	<b>Intel 860 chipset</b> / 82860 MCH (Memory Controller Hub) / two 82803AA Memory Repeater Hubs (MRH-R) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82806AA 64-bit PCI controller (P64H) / 82802 Firmware Hub / Winbond® Super I/O off LPC interface								
Audio	<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>• Cover key lock</li> <li>• Cover tamper detect switch</li> <li>• Secure fixed DASD</li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Keyboard/mouse password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit and write-protect</li> <li>• Disable mouse</li> <li>• Disk, serial port I/O control</li> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Optional U-bolt support</li> </ul>								
External rear ports	<p><b>PRELOAD<sup>17</sup></b></p> <ul style="list-style-type: none"> <li>Microsoft® Windows® XP Professional</li> <li>- License for Lotus® SmartSuite®</li> <li>- License for Lotus Notes® Client</li> <li>◆ Device Drivers and Diagnostics CD</li> <li>◆ Software Selections CD-ROM</li> <li>◆ Disk-to-Disk Recovery (Windows XP Pro in hidden service partition)</li> </ul>								
Systems mgmt	Intel 82550 / on planar / full duplex / LAN Connect Interface / RJ-45 port / controller in ICH2 and 82550 / support for Wake on LAN®, Alert on LAN™, PXE								
Keyboard / mouse	<p><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>⇒ <b>3 year parts and labor</b></li> <li>⇒ <b>International Warranty Service<sup>3</sup></b></li> <li>⇒ <b>On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time</b></li> <li>⇒ <b>3 year on site warranty service upgrade options<sup>5</sup>:</b> <ul style="list-style-type: none"> <li>• <b>4 hour response, Mon-Fri 9-5</b> (ServicePac® part number 41L2735)</li> <li>• <b>4 hour response, 7 day x 24 hr</b> (ServicePac part number 41L2741)</li> </ul> </li> <li>⇒ <b>24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></b></li> </ul>								
Cooling fans	<p><b>CD-ROM:</b> 48X-20X<sup>6</sup> / CAV (ATAPI) / bootable; <i>Diskette:</i> 3.5" 1.44MB drive</p> <p><b>Audio:</b> Soft audio AC '97 v2.1 controller via ICH2 / ADI 1885 codec / internal mono speaker (use of audio line out requires powered speakers)</p> <p><b>Serial:</b> two 9-pin; <b>Parallel:</b> one (EPP, ECP) / IEEE 1284; <b>USB:</b> two; keyboard, mouse, audio line in, audio line out, mic in</p> <p>Monitoring and alerting of thermal, fans, voltage faults, and chassis intrusion</p>								
Power supply	<p>IBM 104-key keyboard (black) / IBM three-button mouse (black)</p> <p>Five variable speed fans (two for processors, one for chassis, one for PCI cards, one in power supply) / not redundant or hot-swap</p> <p>480 watts / universal / auto sensing</p>								
	<p>Bay ① 5.25", HH 1.6", access, open</p> <p>Bay ② 5.25", HH 1.6", access, std CD-ROM</p> <p>Bay ③ 3.5", SL 1", access, diskette</p> <p>Bay ④ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑤ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑥ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑦ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑧ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑨ 3.5", SL 1", no access, std disk (disk only)</p> <p>Slot 1: full, 32-bit 4X AGP (universal) - used by AGP adapter</p> <p>Slot 2: full, 32-bit 33MHz PCI 2.2 (5v) - not available with Wildcat III models</p> <p>Slot 3: full, 32-bit 33MHz PCI 2.2 (5v)</p> <p>Slot 4: full, 32-bit 33MHz PCI 2.2 (5v)</p> <p>Slot 5: full 64-bit 66MHz PCI 2.2 (3.3v)</p> <p>Slot 6: full, 64-bit 66MHz PCI 2.2 (3.3v)</p> <p>• <b>Maximum internal disk capacity<sup>13</sup>:</b></p> <p>SCSI: 440.4GB (6 disks x 73.4GB)</p> <p>EIDE: 180GB (3 disks x 60GB)</p> <p>• H 17.3" x W 8.6" x D 23.7"</p> <p>• H 440mm" x W 217mm x D 603mm</p> <p>• 59 pounds max (26.8kg)</p> <p>• Removable left side panel</p> <p>• Configuration Manager at startup</p> <p>• SCSISelect via CTRL+A at prompt</p> <p>• Adv Config Power Interface (ACPI) 1.1-compliant</p> <p>• SMBIOS 2.3-compliant</p> <p>• PC99A-compliant</p>								
	<p>Xeon 2.4GHz/512KB Proc Upgrade 24P7456</p> <p>128MB PC800 ECC RDRAM RIMM (8 Dev) 20L0275</p> <p>128MB PC800 ECC RDRAM RIMM (4 Dev) 33L3350</p> <p>256MB PC800 ECC RDRAM RIMM (16 Dev) 20L0277</p> <p>256MB PC800 ECC RDRAM RIMM (8 Dev) 33L3352</p> <p>512MB PC800 ECC RDRAM RIMM (16 Dev) 33L3254</p> <p>IBM 73.4GB 10K Ultra160 SCSI HDD 06P5752</p> <p>IBM 9.4GB DVD-RAM (black) 10K3561</p> <p>IBM IDE 40X/12X/40X Max<sup>6</sup> CD-RW (black) 22P6976</p> <p>IBM 4Ux20D Tower-to-Rack Kit 10L7006</p> <p>IBM P275 (21.0" viewable) Color Monitor (black) 6552U3N</p> <p>IBM T750 17" TFT Flat Panel Monitor (black) 6657HG2</p> <p>Other options at <a href="http://ibm.com/us/pc/accessories">ibm.com/us/pc/accessories</a></p>								

See footnotes for important warranty information  
US models announced May 7, 2002; withdrawn January 31, 2003.

No warranties are expressed or implied in this summary  
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IBM® Type-model Qty x Processor	L2 cache	Memory	Disk and rpm	Disk controllers	CD-ROM	Graphics adapter and memory	Slots x bays	Preload <sup>17</sup>	Available date
6850-70U 1 x Xeon 2.8	512KB	512MB	40GB <sup>2</sup> EIDE 7.2K	Ultra160, EIDE	CD	Millennium G450 DVI-I 32MB	6x9	XP Pro	Sep 2002
6850-72U 1 x Xeon 2.8	512KB	512MB	40GB EIDE 7.2K	Ultra160, EIDE	CD	Quadro4 200NVS 64MB	6x9	XP Pro	Sep 2002
6850-73U 1 x Xeon 2.8	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	Quadro4 200NVS 64MB	6x9	XP Pro	Sep 2002
6850-75U 1 x Xeon 2.8	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	ATI® Fire GL8800™, 11 128MB	6x9	XP Pro	Sep 2002
6850-76U 1 x Xeon 2.8	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	Wildcat III™ 6110 208MB	6x9	XP Pro	Sep 2002
6850-77U 1 x Xeon 2.8	512KB	512MB	18.2GB Ultra 160 10K	Ultra160, EIDE	CD	Quadro4 900XGL 128MB	6x9	XP Pro	Sep 2002
Positioning Processor	<i>Ultimate workstation performance and scalability</i>								
L2 cache Implementation	<b>1 x Intel® Xeon™ 2.8GHz<sup>1</sup> with 400MHz frontside bus</b> / supports Hyper-Threading technology								
SMP support	<b>512KB</b> / on die of Xeon / at processor speed / no L3 cache Processor and L2 cache in Pin Grid Array (PGA) / motherboard contains two Intel Socket-603 sockets, one memory card connector, five PCI slots, one AGP Pro slot, integrated ethernet and SCSI, and 860 chipset								
Memory	<b>2-way SMP</b> via identical processor								
Graphics controller (one of following)	<b>512MB std / 4GB max<sup>13</sup> / PC800 ECC Rambus</b> / two or four RDRAM (Rambus) channels / 32 devices max each channel / 8 slot memory card with four RDRAM channels and max of 8x512MB=4GB / each 82803 Memory Repeater Hub (MRH-R) converts each channel into two channels (2x2=4 channels total) / <b>ECC</b> memory controller and RIMMs / 184-pin gold-plated RIMM sockets / supports PC800 RIMMs only / RIMMs must be installed in pairs across channels								
SCSI controller	<ul style="list-style-type: none"> <li>• <b>Matrox® Millennium G450 DVI-I</b> (high-perf 2D) / AGP 4X adapter / MGA G450F GPU / 32MB 150MHz DDR-SDRAM / dual RAMDAC [360/232MHz] / dual head support / one DVI-I connector (ships with one cable with two DB-15 analog conns)</li> <li>• <b>NVIDIA™ Quadro4 200NVS</b> (high-perf 2D) / AGP 4X adapter / NV17LT 250MHz GPU / 64MB 166MHz SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / LFH60 connector for std cable with two DB-15 analog</li> <li>• <b>ATI Fire GL8800™</b> (advanced 3D) / AGP 4X adapter / Radeon™ 8800 GPU / 128MB 300MHz DDR-SGRAM / dual RAMDAC [400/165MHz] / dual head support / one DB-15 analog and one DVI-I conntr (ships with one DVI-I to DB-15 cable)</li> <li>• <b>3DLabs Wildcat III™ 6110</b> (extreme 3D) / AGP 4X Pro 50 adapter / 208MB total DDR-SDRAM (64MB frame buffer, 128MB texture buffer, 16MB direct burst) / dual RAMDAC [320/300MHz] / dual head support (up to two digital or analog monitors) / two DVI-I connectors (ships with two DVI-I to analog DB-15 cables for analog monitor attachment)</li> <li>• <b>NVIDIA Quadro4 900XGL</b> (extreme 3D) / AGP 4X adapter / NV25GL 300MHz GPU / 128MB 325MHz DDR-SDRAM / dual 350MHz RAMDACs / dual head: 2048x1536x16M each monitor / two DVI-I connectors (ships with two DVI-I to DB-15 dongles)</li> </ul>								
SCSI connectors	<b>Adaptec® AIC-7899</b> / dual channel Ultra160 SCSI controller (160MB/sec) / on planar / 64-bit PCI bus								
IDE cables	<i>Internal Port A:</i> 68 pin (attaches 6-drop 16-bit LVD cable to SCSI disk [cable std on SCSI models, not EIDE models]);								
EIDE controller	<i>External Port B:</i> 68-pin SCSI port on rear (connected by 1-drop 16-bit LVD cable to conn on planar [cable on all models])								
Disk - features	<i>EIDE and SCSI models:</i> one 2-drop IDE ATA-33 cable (for CD-ROM); <i>EIDE models:</i> one 2-drop ATA-66/100 cable (to disk) Enhanced IDE / ATA-100 with two channel support / integrated in I/O Controller Hub (ICH2)								
Rack support	<i>SCSI models:</i> 18.2GB Ultra160 / 10K rpm / 4.9 ms read seek; <i>EIDE:</i> 40GB / 7200 rpm / 9.0 ms read seek; <i>All:</i> S.M.A.R.T. <sup>5</sup>								
Chipset	4U <sup>4</sup> rack mount support via tower-to-rack kit option								
10/100 ethernet	<b>Intel 82550</b> / on planar / full duplex / LAN Connect Interface / RJ-45 port / controller in ICH2 and 82550 / support for Wake on LAN®, Alert on LAN™, PXE								
CD-ROM / diskette	<b>Intel 860 chipset</b> / 82860 MCH (Memory Controller Hub) / two 82803AA Memory Repeater Hubs (MRH-R) / 82801BA I/O Controller Hub (ICH2) for PCI 2.2 bus, ATA-100 EIDE, ethernet MAC, USB, Low Pin Count Interface / 82806AA 64-bit PCI controller (P64H) / 82802 Firmware Hub / Winbond® Super I/O off LPC interface								
Audio	<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>• Cover key lock</li> <li>• Cover tamper detect switch</li> <li>• Secure fixed DASD</li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Keyboard/mouse password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit and write-protect</li> <li>• Disable mouse</li> <li>• Disk, serial port I/O control</li> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> <li>• Optional U-bolt support</li> </ul>								
External rear ports	<p><b>PRELOAD<sup>17</sup></b></p> <p>Microsoft® Windows® XP Professional          - License for Lotus® SmartSuite®          - License for Lotus Notes® Client          ♦ Device Drivers and Diagnostics CD          ♦ Software Selections CD-ROM          ♦ Disk-to-Disk Recovery (Windows XP Pro in hidden service partition)</p>								
Systems mgmt	<p><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>↻ <b>3 year parts and labor</b></li> <li>↻ <b>International Warranty Service<sup>3</sup></b></li> <li>↻ <b>On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time</b></li> <li>↻ <b>On site service upgrade options (in eligible locations):<sup>9</sup></b> <ul style="list-style-type: none"> <li>• <b>3 year IOR 9x5, 4 hour response</b> (ServicePac® part number 41L2735)</li> <li>• <b>Other ServicePac options at <a href="http://ibm.com/services/its/us/source/wamomxeu.pdf">ibm.com/services/its/us/source/wamomxeu.pdf</a></b></li> </ul> </li> <li>↻ <b>24x7<sup>12</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></b></li> </ul>								
Keyboard / mouse	Monitoring and alerting of thermal, fans, voltage faults, and chassis intrusion								
Cooling fans	IBM 104-key keyboard (black) / IBM three-button mouse (black)								
Power supply	Five variable speed fans (two for processors, one for chassis, one for PCI cards, one in power supply) / not redundant or hot-swap								
	480 watts / universal / auto sensing								
	 <p>Bay ① 5.25", HH 1.6", access, open</p> <p>Bay ② 5.25", HH 1.6", access, std CD-ROM</p> <p>Bay ③ 3.5", SL 1", access, diskette</p> <p>Bay ④ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑤ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑥ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑦ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑧ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑨ 3.5", SL 1", no access, std disk (only)</p> <p>Slot 1: full, 32-bit 4X AGP (universal) - used by AGP adapter</p> <p>Slot 2: full, 32-bit 33MHz PCI 2.2 (5v) - not available with Wildcat III models</p> <p>Slot 3: full, 32-bit 33MHz PCI 2.2 (5v)</p> <p>Slot 4: full, 32-bit 33MHz PCI 2.2 (5v)</p> <p>Slot 5: full 64-bit 66MHz PCI 2.2 (3.3v)</p> <p>Slot 6: full, 64-bit 66MHz PCI 2.2 (3.3v)</p> <ul style="list-style-type: none"> <li>• Mini tower</li> <li>• Stealth black color</li> <li>• Swinging door covers bays 1 to 3</li> </ul>								
Xeon 2.8GHz/512KB Proc Upgrade	24P7470								
128MB PC800 4D ECC RDRAM RIMM - 40ns	31P8431								
256MB PC800 8D ECC RDRAM RIMM - 40ns	31P8433								
512MB PC800 16D ECC RDRAM RIMM - 40ns	31P8435								
IBM 80GB 7200 rpm EIDE ATA-100 HDD	09N4226								
IBM 73.4GB 10K Ultra160 SCSI HDD	06P5752								
IBM IDE 40X/12X/40X Max® CD-RW (black)	22P6976								
IBM 4Ux20D Tower-to-Rack Kit	10L7006								
Gigabit Pro/1000 T Desktop Adapter by Intel	22P6501								
IBM P275 (21.0" viewable) Color Monitor (black)	6552U3N								
IBM T750 17" TFT Flat Panel Monitor (black)	6657HG2								
Other options at <a href="http://ibm.com/us/pc/accessories">ibm.com/us/pc/accessories</a>	<ul style="list-style-type: none"> <li>• <i>Maximum internal disk capacity<sup>13</sup>:</i></li> <li>• SCSI: 440.4GB (6 disks x 73.4GB)</li> <li>• EIDE: 180GB (3 disks x 60GB)</li> <li>• H 17.3" x W 8.6" x D 23.7"</li> <li>• H 440mm" x W 217mm x D 603mm</li> <li>• 59 pounds max (26.8kg)</li> <li>• Removable left side panel</li> <li>• Configuration Manager at startup</li> <li>• SCSISelect via CTRL+A at prompt</li> <li>• Adv Config Power Interface (ACPI) 1.1-compliant</li> <li>• SMBIOS 2.3-compliant</li> <li>• PC99A-compliant</li> </ul>								

See footnotes for important warranty information  
 US models announced September 10, 2002; withdrawn effective January 31, 2003

No warranties are expressed or implied in this summary  
 (6850S) © IBM Corp. September 2002

# IBM IntelliStation® M Pro (6868) - withdrawn

Type-model	Disk / rpm / interface CD-ROM <sup>6</sup>	Intel® Processor MHz <sup>1</sup> ; 2-way SMP support	Write-back L2 cache standard	Rambus memory; std MB / type; devices / type	SVGA controller; AGP Pro50 slot; memory std / max or positioning	Total bus slots available	Total bays	Ethernet / SCSI Chip set Preload <sup>17</sup>	Available date
<b>Mini Tower; 6 slot x 7 bay; Stealth Black - US models</b>									
6868-10U	13.5GB <sup>2</sup> 7200 EIDE 48X-20X <sup>6</sup> CD-ROM	Pentium® III 600EB/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Millennium G400 AGP 4X; 16 / 16 MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet 840 / NT 4.0	Dec 1999
6868-11U	9.1GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 600EB/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Appian Gemini dual display ports	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Jan 2000
6868-12U	9.1GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 600EB/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Dec 1999
6868-13U	13.5GB 7200 EIDE 48X-20X CD-ROM	Pentium III 600EB/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Appian Gemini dual display ports	PCI=4 AGP 50=0	3 used 4 empty	ethernet 840 / NT 4.0	Jan 2000
6868-14U	13.5GB 7200 EIDE 48X-20X CD-ROM	Pentium III 600EB/133	256KB full spd	128MB / PC600 Two 4D RIMMs	IBM Fire GL 1 <sup>11</sup> AGP 2X; 32 / 32 MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Dec 1999
6868-15U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 600EB/133	256KB full spd	256MB / PC600 Two 8D RIMMs	IBM Fire GL1 AGP 2X; 32 / 32 MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Dec 1999
6868-20U	13.5GB 7200 EIDE 48X-20X CD-ROM	Pentium III 667/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet 840 / NT 4.0	Dec 1999
6868-21U	9.1GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 667/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Appian Gemini dual display ports	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Jan 2000
6868-22U	9.1GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 667/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Dec 1999
6868-23U	13.5GB 7200 EIDE 48X-20X CD-ROM	Pentium III 667/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Appian Gemini dual display ports	PCI=4 AGP 50=0	3 used 4 empty	ethernet 840 / NT 4.0	Dec 1999
6868-25U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 667/133	256KB full spd	256MB / PC600 Two 8D RIMMs	IBM Fire GL 1 AGP 2X; 32 / 32 MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Dec 1999
6868-27U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 667/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Wildcat 4110 AGP 2X; 128/128MB	PCI=2 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Jan 2000
6868-30U	13.5GB 7200 EIDE 48X-20X CD-ROM	Pentium III 733/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet 840 / NT 4.0	Dec 1999
6868-31U	9.1GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 733/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / W2000	Feb 2000
6868-32U	9.1GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 733/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Dec 1999
6868-35U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 733/133	256KB full spd	256MB / PC600 Two 8D RIMMs	IBM Fire GL 1 AGP 2X; 32 / 32 MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Dec 1999
6868-37U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 733/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Wildcat 4110 AGP 2X; 128/128MB	PCI=2 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Jan 2000
6868-91U	9.1GB 7200 Ultra2 18.2GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 600EB/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=3 AGP 50=0	4 used 3 empty	ethernet / SCSI 840 / NT 4.0	Feb 2000
6868-18U for AAP	no disk 48X-20X CD-ROM	Pentium III 600EB/133	256KB full spd	None	None	PCI=4 AGP 50=1	2 used 5 empty	ethernet 840 / No OS	Dec 1999
6868-28U for AAP	no disk 48X-20X CD-ROM	Pentium III 667/133	256KB full spd	None	None	PCI=4 AGP 50=1	2 used 5 empty	ethernet 840 / No OS	Dec 1999
6868-39U for AAP	no disk 48X-20X CD-ROM	Pentium III 733/133	256KB full spd	None	None	PCI=4 AGP 50=1	2 used 5 empty	ethernet 840 / No OS	Dec 1999

<p><b>Windows NT Preload<sup>17</sup></b></p> <p>Windows NT® Workstation 4.0 (SP5) ConfigSafe for Windows NT Access IBM Other utilities, drivers, and applications - Free license for Lotus® Smart® Millennium - Free license for Lotus Notes® Client ◇ Software Selections CD-ROM - Norton AntiVirus™ (OEM edition) - CoSession Remote 32 - IBM Update Connector™ - IBM Internet Connection - IBM Universal Manageability Services - IBM UM Desktop Extensions - PC-Doctor ◇ Windows NT Product Recovery CD-ROM ◇ Device Drivers and Diagnostics CD-ROM - C: is 2GB as FAT16 - Remainder of disk is unformatted</p> <p>↪ 13.5GB EIDE ATA-66 is 9.0ms, SMART<sup>5</sup> III ↪ 9.1GB Ultra2 SCSI 7200 rpm disk is 7.5ms ↪ 9.1GB Ultra2 SCSI 10K rpm disk is 6.0ms ↪ 18.2GB Ultra2 SCSI 7200 rpm is 7.5ms</p>	<p><b>Options</b></p> <p>600EB Second Proc for M Pro 6868 33L5121 667MHz Second Proc for M Pro 6868 00N7951 733MHz Second Proc for M Pro 6868 00N7952 64MB 600MHz ECC RDRAM (4 Dev) 33L3093 128MB 600MHz ECC RDRAM (8 Dev) 33L3095 256MB 600MHz ECC RDRAM (16 Dev) 33L3097 64MB 800MHz ECC RDRAM (4 Dev) 20L0274 128MB 800MHz ECC RDRAM (8 Dev) 20L0275 256MB 800MHz ECC RDRAM (16 Dev) 20L0277 IBM IDE DVD-ROM (black) 33L5003 IBM IDE ReWritable CD-RW (black) 33L5005 20.4GB 7200 rpm EIDE disk 33L5044 18.2GB 7200 rpm Wide Ultra2 SCSI 20L0554 18.2GB 10000 rpm Wide Ultra2 SCSI 00N8072 T55D Stealth Black Color Monitor 9513DG0 T85D Stealth Black Color Monitor 9519DG0 IBM 20/40GB 8mm SCSI tape drive (blk) 01K1325 IBM 10/20GB SCSI tape backup (black) 01K1319 IBM 12/24GB DDS3 SCSI tape (black) 01K1282 IBM 20/40GB DDS/4mm tape (SCSI, blk) 00N7991 Mounting Kit (vendor 972-595-1436) CIS-CAMZPR</p> <p>Visit <a href="http://www.ibm.com/options">www.ibm.com/options</a> for a complete list of compatible options</p>	<p><b>WARRANTY SERVICE SUPPORT<sup>3</sup></b></p> <p>↪ 3 year parts and labor warranty ↪ International Warranty Service<sup>3</sup> ↪ On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time ↪ On site warranty upgrade option: • 4 hour response<sup>14</sup>, 7 day x 24 hr ↪ Post warranty on site options: • Next day response<sup>14</sup>, Mon-Fri 8-5 • 4 hour response<sup>14</sup>, 7 day x 24 hr ↪ IBM SystemXtra<sup>10</sup> ↪ 24 hour x 7 day telephone, electronic, and internet support</p> <p><b>Windows 2000 Professional Preload<sup>17</sup></b> Microsoft® Windows® 2000 Professional - Free license for SmartSuite® Millennium ◇ Software Selections CD-ROM ◇ Windows 2000 Product Recovery CD (includes drivers and diagnostics) - C: is FAT32 of entire disk</p>
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# IBM IntelliStation® M Pro (6868) - withdrawn

IBM® IntelliStation® M Pro							
Type	<b>6868</b>						
Processor(s)	<b>One or two Intel® Pentium® III 600EB<sup>20</sup>, 667, or 733MHz<sup>1</sup> / 133MHz Front Side Bus</b>						
Implementation	Processor and L2 cache in Single Edge Contact (SECC2) in protective metal case / SECC2 plugged into Intel® Slot 1						
Processor upgrade	<b>2-way SMP</b> via identical processor / upgrade via second SECC2 into second motherboard Slot 1 connector / MPS 1.4						
L2 cache	<b>256KB</b> std / 256KB max / ECC / at processor speed / 8-way set associative / write-back / integrated in SECC2						
Avail / withdrawn date	December 1999 or January 2000 or February 2000 / June 2000 or November 2000						
Mem - std / max / type	<b>128 or 256MB std</b> / 2GB max <sup>13</sup> / <b>dual RDRAM (Rambus) channels</b> / 32 devices max each channel / ECC memory controller and RIMMs / four 184-pin gold-plated RIMM sockets (two per channel) /						
Memory - features	two RIMMs installed (one per channel) / CRIMMs in two sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be same speed (PC600 or PC800) and installed in pairs across channels						
Graphics controller	<b>Matrox® Millennium G400</b> (performance 2D), <b>IBM Fire GL1<sup>11</sup></b> (advanced 3D), <b>Appian® Gemini</b> (2D multiple display), or <b>Intense3D® Wildcat 4110 AGP Adapter</b> (extreme 3D)						
	<table border="1"> <tr> <td><b>IBM Fire GL1</b> / AGP 2X adapter / sideband-capable 32MB std / 32MB max / 256-bit 100MHz SGRAM 2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B</td> <td><b>Appian Gemini</b> / AGP 2X adapter / 16MB std / 16MB max / 110MHz SGRAM / 270MHz RAMDAC / 1280x1024x24bpp at 85Hz two controllers with two DB-15 ports for multiple monitor support</td> </tr> <tr> <td colspan="2"><b>Intense3D Wildcat 4110 AGP Adapter</b> / AGP 2X adapter / 64MB 128-bit 143MHz SDRAM (frame buffer) and 64MB 64-bit 143MHz SDRAM (texture memory) / 2D and 3D engine / DB-15 and DVI-I ports (same image if both used)</td> </tr> </table>	<b>IBM Fire GL1</b> / AGP 2X adapter / sideband-capable 32MB std / 32MB max / 256-bit 100MHz SGRAM 2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B	<b>Appian Gemini</b> / AGP 2X adapter / 16MB std / 16MB max / 110MHz SGRAM / 270MHz RAMDAC / 1280x1024x24bpp at 85Hz two controllers with two DB-15 ports for multiple monitor support	<b>Intense3D Wildcat 4110 AGP Adapter</b> / AGP 2X adapter / 64MB 128-bit 143MHz SDRAM (frame buffer) and 64MB 64-bit 143MHz SDRAM (texture memory) / 2D and 3D engine / DB-15 and DVI-I ports (same image if both used)			
<b>IBM Fire GL1</b> / AGP 2X adapter / sideband-capable 32MB std / 32MB max / 256-bit 100MHz SGRAM 2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B	<b>Appian Gemini</b> / AGP 2X adapter / 16MB std / 16MB max / 110MHz SGRAM / 270MHz RAMDAC / 1280x1024x24bpp at 85Hz two controllers with two DB-15 ports for multiple monitor support						
<b>Intense3D Wildcat 4110 AGP Adapter</b> / AGP 2X adapter / 64MB 128-bit 143MHz SDRAM (frame buffer) and 64MB 64-bit 143MHz SDRAM (texture memory) / 2D and 3D engine / DB-15 and DVI-I ports (same image if both used)							
Architecture (chipset)	<b>Intel 840 chip set / Accelerated Hub Architecture</b> / 266MB/sec I/O channel / 82840 Memory Controller Hub (MCH) / 82801AA I/O Controller Hub (ICH) for PCI 2.2 bus, ATA-66 EIDE, USB, Low Pin Count Interface / 82802AC Firmware Hub / SMSC 47B272 SIO LPC Super I/O for diskette, parallel, serial, keyboard, mouse						
Form factor / bus	ATX / slots on planar (no riser) / PCI 2.2 (33MHz), Accelerated Graphics Port 2.0 (66MHz; AGP 4X; 1GB/sec) / see below						
Rack mountable	Rack mountable via optional mounting kit						
Disk	None (AAP models), one EIDE, or one or two Wide Ultra2 SCSI / SMART <sup>5</sup>						
SCSI controller	<i>SCSI models only:</i> <b>Adaptec® AHA-2940U2B</b> / single channel Wide Ultra2 SCSI adapter / PCI adapter						
SCSI connectors	<i>Internal:</i> 68 pin (attaches 5 drop cable to SCSI disk); <i>External:</i> 68 pin SCSI port						
Cables - SCSI mod	<i>SCSI models:</i> 5 drop 16-bit LVD cable on internal connector; one 1 drop IDE ATA-33 cable (CD-ROM)						
Cables - IDE models	<i>EIDE models:</i> Two 2 drop IDE ATA-66 cable / CD-ROM uses second 1 drop IDE ATA-33 cable / no SCSI cable						
Cables - AAP models	<i>AAP models:</i> One 1 drop IDE ATA-33 cable						
EIDE disk controller	Enhanced IDE / ATA-66 and PIO modes 0-4 with 2 channel, 4 device support / integrated in I/O Controller Hub (ICH)						
CD-ROM / diskette	<b>48X-20X<sup>6</sup> CD-ROM</b> , CAV (ATAPI), bootable / 3.5" 1.44MB diskette drive						
Ethernet controller	<b>Intel EtherExpress™ PRO/100 / 82559</b> ethernet chip on planar / PCI bus / 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN 2						
Systems mgmt cntrl	Temperature sensors, fan-speed monitor, chassis-intrusion detector, power supply and CPU voltage monitor, and power-switch bypass / AD1025						
Audio	SoundMAX™ integrated digital audio / software-based (done by Pentium and ICH) / AC '97 interface / AD1881 codec (analog mixing, A-to-D and D-to-A conversion)						
Audio connectors	Line in with active pre-amp / mic in / line out (all 3.5mm; all in back)						
Audio features	Internal speaker with automatic jack sense switching / software volume control						
Microphone	None						
Serial / parallel / USB	<i>Ser:</i> One 9 pin <i>Par:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two ports (Vers 1.1)						
Security chip	Integrated IBM Security Chip / soldered on motherboard						
Keyboard / mouse	104 key keyboard / keyboard extender / <b>IBM ScrollPoint™ II mouse</b>						
Power supply	330 watts / universal / auto-sensing / Wake on LAN						
	<table border="1"> <tr> <td>  </td> <td>           Bay ① 5.25", HH 1.6", access, std CD-ROM            Bay ② 5.25", HH 1.6", access, open            Bay ③ 3.5", SL 1", access, open            Bay ④ 3.5", SL 1", access, std diskette            Bay ⑤ 3.5", HH 1.6", no access, open (disk only)            Bay ⑥ 3.5", HH 1.6", no access, open (disk only) - used by 2nd disk in model 91x            Bay ⑦ 3.5", HH 1.6", no access, std disk (disk only)            Slot 1: fullsize, 32-bit <b>AGP Pro50</b> (universal) - used by AGP graphics adapter            Slot 2: fullsize, 32-bit PCI 2.2 (5v) - not usable with AGP Pro50 adapter in AGP slot or            Slot 3: fullsize, 32-bit PCI 2.2 (5v) in models with Intense3D Wildcat            Slot 4: fullsize, 32-bit PCI 2.2 (5v) - occupied by Canopus DVRRaptor in model 91x            Slot 5: fullsize, 32-bit PCI 2.2 (5v)            Slot 6: fullsize, 32-bit PCI 2.2 (5v) - occupied by SCSI adapter in SCSI disk models         </td> </tr> </table>		Bay ① 5.25", HH 1.6", access, std CD-ROM Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, open Bay ④ 3.5", SL 1", access, std diskette Bay ⑤ 3.5", HH 1.6", no access, open (disk only) Bay ⑥ 3.5", HH 1.6", no access, open (disk only) - used by 2nd disk in model 91x Bay ⑦ 3.5", HH 1.6", no access, std disk (disk only) Slot 1: fullsize, 32-bit <b>AGP Pro50</b> (universal) - used by AGP graphics adapter Slot 2: fullsize, 32-bit PCI 2.2 (5v) - not usable with AGP Pro50 adapter in AGP slot or Slot 3: fullsize, 32-bit PCI 2.2 (5v) in models with Intense3D Wildcat Slot 4: fullsize, 32-bit PCI 2.2 (5v) - occupied by Canopus DVRRaptor in model 91x Slot 5: fullsize, 32-bit PCI 2.2 (5v) Slot 6: fullsize, 32-bit PCI 2.2 (5v) - occupied by SCSI adapter in SCSI disk models				
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	<table border="1"> <tr> <td> <b>SECURITY CHIP</b>            - Provides electronic digital signature and secure key storage            - Can sign each e-mail with a digital signature (1024-bit) so receiving party can verify sender            - Public Key Infrastructure (PKI) for more secure e-mail, web access and Internet transactions, and Secure Sockets Layer (SSL) for encryption/decryption capabilities            - Uses User Verification Manager software available from IBM web site         </td> <td> <b>OTHER STANDARD FEATURES</b>            The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST            Plug-and-Play 1.0a            ISO 9241-3 capable            Vital Product Data support (type, model, serial, id) 7.9"W x 18.1"D x 19.4"H; 45 lbs max (shipped)            200 mm W x 460 mm D x 492 mm H; 17.3 kg            Several hardcopy publications            four stabilizing feet            512KB BIOS (Flash over LAN support)            Supplier's Declaration available            Three fans (one in front, one in rear, one in power supply)         </td> <td> <b>SECURITY</b>            - Cover key lock (in rear)            - Cover tamper detect switch            - Secure fixed DASD            - Serial EEPROM with write protect            - Power-on password            - Administrator password            - Keyboard/mouse password            - Wake Up on LAN password prompt            - Boot sequence control            - Boot without keyboard or mouse            - Diskette boot inhibit            - Disable mouse            - Disable external SCSI port            - Diskette write-protect            - Diskette, disk, serial port, parallel port I/O control            - Secure access openings            - Secure removable media            - VPD stored in EEPROM            - Write protection control for EEPROM            - Barcode labels on most components            - IBM Security Solutions    <i>Maximum internal SCSI disk capacity<sup>13</sup>:</i>            91GB (5 x 18.2GB (7200 or 10K rpm);  <i>Maximum internal EIDE disk capacity<sup>13</sup>:</i>            61.2GB (3 x 20.4GB 7200 rpm)         </td> </tr> <tr> <td colspan="3"> <b>SYSTEMS MANAGEMENT</b>            • <b>Asset ID™ (RFID)<sup>16</sup></b>            • <b>Alert on LAN™ 2</b>            • Universal Manageability Services and Universal Manageability (UM) Desktop Extensions enabled            • LANClient Control Manager™ enabled            • SMART Reaction™.15 II            • <b>PC 99-compliant</b>            • DMI 2.0-compliant            • Common Information Model (CIM) 2.2            • Asset Information Chip (EEPROM)            • <b>Wired for Management 2.0</b>            • ACPI 1.0            • Advanced Power Management 1.2            • Wake on LAN support            • Alternate Boot Sequence            • RPL, DHCP, and PXE 2.0support            • Setup on LAN, Flash on LAN            • Wake on Alarm            • System Management BIOS Version 2.3            • Systems Migration Assistant support         </td> </tr> </table>	<b>SECURITY CHIP</b> - Provides electronic digital signature and secure key storage - Can sign each e-mail with a digital signature (1024-bit) so receiving party can verify sender - Public Key Infrastructure (PKI) for more secure e-mail, web access and Internet transactions, and Secure Sockets Layer (SSL) for encryption/decryption capabilities - Uses User Verification Manager software available from IBM web site	<b>OTHER STANDARD FEATURES</b> The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST Plug-and-Play 1.0a ISO 9241-3 capable Vital Product Data support (type, model, serial, id) 7.9"W x 18.1"D x 19.4"H; 45 lbs max (shipped) 200 mm W x 460 mm D x 492 mm H; 17.3 kg Several hardcopy publications four stabilizing feet 512KB BIOS (Flash over LAN support) Supplier's Declaration available Three fans (one in front, one in rear, one in power supply)	<b>SECURITY</b> - Cover key lock (in rear) - Cover tamper detect switch - Secure fixed DASD - Serial EEPROM with write protect - Power-on password - Administrator password - Keyboard/mouse password - Wake Up on LAN password prompt - Boot sequence control - Boot without keyboard or mouse - Diskette boot inhibit - Disable mouse - Disable external SCSI port - Diskette write-protect - Diskette, disk, serial port, parallel port I/O control - Secure access openings - Secure removable media - VPD stored in EEPROM - Write protection control for EEPROM - Barcode labels on most components - IBM Security Solutions  <i>Maximum internal SCSI disk capacity<sup>13</sup>:</i> 91GB (5 x 18.2GB (7200 or 10K rpm); <i>Maximum internal EIDE disk capacity<sup>13</sup>:</i> 61.2GB (3 x 20.4GB 7200 rpm)	<b>SYSTEMS MANAGEMENT</b> • <b>Asset ID™ (RFID)<sup>16</sup></b> • <b>Alert on LAN™ 2</b> • Universal Manageability Services and Universal Manageability (UM) Desktop Extensions enabled • LANClient Control Manager™ enabled • SMART Reaction™.15 II • <b>PC 99-compliant</b> • DMI 2.0-compliant • Common Information Model (CIM) 2.2 • Asset Information Chip (EEPROM) • <b>Wired for Management 2.0</b> • ACPI 1.0 • Advanced Power Management 1.2 • Wake on LAN support • Alternate Boot Sequence • RPL, DHCP, and PXE 2.0support • Setup on LAN, Flash on LAN • Wake on Alarm • System Management BIOS Version 2.3 • Systems Migration Assistant support		
<b>SECURITY CHIP</b> - Provides electronic digital signature and secure key storage - Can sign each e-mail with a digital signature (1024-bit) so receiving party can verify sender - Public Key Infrastructure (PKI) for more secure e-mail, web access and Internet transactions, and Secure Sockets Layer (SSL) for encryption/decryption capabilities - Uses User Verification Manager software available from IBM web site	<b>OTHER STANDARD FEATURES</b> The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST Plug-and-Play 1.0a ISO 9241-3 capable Vital Product Data support (type, model, serial, id) 7.9"W x 18.1"D x 19.4"H; 45 lbs max (shipped) 200 mm W x 460 mm D x 492 mm H; 17.3 kg Several hardcopy publications four stabilizing feet 512KB BIOS (Flash over LAN support) Supplier's Declaration available Three fans (one in front, one in rear, one in power supply)	<b>SECURITY</b> - Cover key lock (in rear) - Cover tamper detect switch - Secure fixed DASD - Serial EEPROM with write protect - Power-on password - Administrator password - Keyboard/mouse password - Wake Up on LAN password prompt - Boot sequence control - Boot without keyboard or mouse - Diskette boot inhibit - Disable mouse - Disable external SCSI port - Diskette write-protect - Diskette, disk, serial port, parallel port I/O control - Secure access openings - Secure removable media - VPD stored in EEPROM - Write protection control for EEPROM - Barcode labels on most components - IBM Security Solutions  <i>Maximum internal SCSI disk capacity<sup>13</sup>:</i> 91GB (5 x 18.2GB (7200 or 10K rpm); <i>Maximum internal EIDE disk capacity<sup>13</sup>:</i> 61.2GB (3 x 20.4GB 7200 rpm)					
<b>SYSTEMS MANAGEMENT</b> • <b>Asset ID™ (RFID)<sup>16</sup></b> • <b>Alert on LAN™ 2</b> • Universal Manageability Services and Universal Manageability (UM) Desktop Extensions enabled • LANClient Control Manager™ enabled • SMART Reaction™.15 II • <b>PC 99-compliant</b> • DMI 2.0-compliant • Common Information Model (CIM) 2.2 • Asset Information Chip (EEPROM) • <b>Wired for Management 2.0</b> • ACPI 1.0 • Advanced Power Management 1.2 • Wake on LAN support • Alternate Boot Sequence • RPL, DHCP, and PXE 2.0support • Setup on LAN, Flash on LAN • Wake on Alarm • System Management BIOS Version 2.3 • Systems Migration Assistant support							



# IBM IntelliStation® M Pro (6868) - Spring 2000 - withdrawn

Type-model	Disk / rpm / interface CD-ROM <sup>6</sup>	Intel® Processor MHz <sup>1</sup> ; 2-way SMP support	Write-back L2 cache standard	Rambus memory; std MB / type; devices / type	SVGA controller; AGP Pro50 slot; memory std / max or positioning	Total bus slots available	Total bays	Ethernet / SCSI Chip set Preload <sup>17</sup>	Available date
<b>Mini Tower; 6 slot x 7 bay; Stealth Black - US models</b>									
6868-36U	9.1GB <sup>2</sup> 7200 Ultra2 48X-20X <sup>6</sup> CD-ROM	Pentium® III 733/133	256KB full spd	256MB / PC600 Two 8D RIMMs	ELSA™ GLoria II AGP 4X; 64 / 64MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Apr 2000
6868-40U	15.0GB 7200 EIDE 48X-20X CD-ROM	Pentium III 800EB/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=5 AGP 50=0	3 used 4 empty	ethernet 840 / NT 4.0	Apr 2000
6868-42U	9.1GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 800EB/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Apr 2000
6868-46U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 800EB/133	256KB full spd	256MB / PC600 Two 8D RIMMs	ELSA GLoria II AGP 4X; 64 / 64MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Apr 2000
6868-47U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 800EB/133	256KB full spd	512MB / PC600 Two 16D RIMMs	Wildcat 4110 AGP 2X; 128/128MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Apr 2000
6868-92U	9.1GB 7200 Ultra2 18.2GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 733/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Millenium G400 AGP 4X; 16 / 16MB	PCI=3 AGP 50=0	4 used 3 empty	ethernet / SCSI 840 / NT 4.0	Apr 2000
6868-52U	9.1GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 866/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Apr 2000
6868-56U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 866/133	256KB full spd	512MB / PC600 Two 16D RIMMs	ELSA GLoria II AGP 4X; 64 / 64MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Apr 2000
6868-57U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 866/133	256KB full spd	512MB / PC600 Two 16D RIMMs	Wildcat 4110 AGP 2X; 128/128MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Apr 2000
6868-49U for AAP	no disk 48X-20X CD-ROM	Pentium III 800EB/133	256KB full spd	None	None	PCI=5 AGP 50=1	2 used 5 empty	ethernet 840 / No OS	Apr 2000
6868-59U for AAP	no disk 48X-20X CD-ROM	Pentium III 866/133	256KB full spd	None	None	PCI=5 AGP 50=1	2 used 5 empty	ethernet 840 / No OS	Apr 2000
6868-50U	15.0GB 7200 EIDE 48X-20X <sup>4</sup> CD-ROM	Pentium III 866/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Jun 2000
6868-60U	15.0GB 7200 EIDE 48X-20X CD-ROM	Pentium III 933/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=5 AGP 50=0	3 used 4 empty	ethernet 840 / NT 4.0	Jun 2000
6868-62U	9.1GB 7200 Ultra2 48X-20X CD-ROM	Pentium III 933/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Jun 2000
6868-66U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 933/133	256KB full spd	512MB / PC600 Two 16D RIMMs	ELSA GLoria II AGP 4X; 64 / 64MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Jun 2000
6868-67U	9.1GB 10K Ultra2 48X-20X CD-ROM	Pentium III 933/133	256KB full spd	512MB / PC600 Two 16D RIMMs	Wildcat 4110 AGP 2X; 128/128MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / NT 4.0	Jun 2000
6868-93U	15.0GB 7200 EIDE 30.0GB 7200 EIDE 48X-20X CD-ROM	Pentium III 733/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Millennium G400 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	4 used 3 empty	ethernet 840 / NT 4.0	Aug 2000
6868-94U	9.1GB 7200 Ultra2 36.4GB 10K Ultra160 48X-20X CD-ROM	Pentium III 933/133	256KB full spd	128MB / PC600 Two 4D RIMMs	Millenium G400 AGP 4X; 16 / 16MB	PCI=3 AGP 50=0	4 used 3 empty	ethernet / SCSI 840 / NT 4.0	Aug 2000

Windows NT Preload <sup>17</sup>	Options	WARRANTY SERVICE SUPPORT* <sup>3</sup>
Windows NT® Workstation 4.0 (SP5)	733MHz Second Processor for M Pro 6868	00N7952
ConfigSafe for Windows NT	800EB MHz Second Proc for M Pro 6868	10K3802
Access IBM	866MHz Second Processor for M Pro6868	10K3813
Other utilities, drivers, and applications	933MHz Second Processor for M Pro6868	10K3814
- Free license for Lotus® Smart® Millennium	64MB 600MHz ECC RDRAM (4 Dev)	33L3093
- Free license for Lotus Notes® Client	128MB 600MHz ECC RDRAM (8 Dev)	33L3095
Software Selections CD-ROM	256MB 600MHz ECC RDRAM (16 Dev)	33L3097
- Norton AntiVirus™ (OEM edition)	64MB 800MHz ECC RDRAM (4 Dev)	20L0274
- CoSession Remote 32	128MB 800MHz ECC RDRAM (8 Dev)	20L0275
- IBM Update Connector™	256MB 800MHz ECC RDRAM (16 Dev)	20L0277
- IBM Internet Connection	IBM IDE DVD-ROM (black)	33L5003
- IBM Universal Manageability Services	IBM IDE ReWritable CD-RW (black)	33L5005
- IBM UM Desktop Extensions	30GB 7200 rpm ATA-100 EIDE disk	00N8203
- PC-Doctor	18.2GB 7200 rpm Wide Ultra2 SCSI disk	20L0554
Windows NT Product Recovery CD-ROM	18.2GB 10000 rpm Ultra160 SCSI	00N8208
Device Drivers and Diagnostics CD-ROM	36.4GB 10000 rpm Ultra160 SCSI	00N8209
	T55A LCD TFT Stealth Blk Color Monitor	9513AW1
	T56A LCD TFT Stealth Blk Color Monitor	9493AG1
	T55D LCD TFT Stealth Blk Color Monitor	9513DG0
	T85A LCD TFT Stealth Blk Color Monitor	9519AG1
	T85D LCD TFT Stealth Blk Color Monitor	9519DG0
	IBM 20/40GB 8mm SCSI tape drive (blk)	01K1325
	IBM 10/20GB SCSI tape backup (black)	09N4042
	IBM 12/24GB DDS3 SCSI tape (black)	09N4041
	IBM 20/40GB DDS/4mm tape (SCSI, blk)	00N7991
	Mounting Kit (vendor at 972-647-1565)	CIS-CAMZPR
↪ 15.0 and 30GB EIDE ATA-66 is 9.0ms, SMART <sup>5</sup> III	Visit <a href="http://www.ibm.com/options">www.ibm.com/options</a> for a complete list of compatible options	
↪ 9.1GB Ultra2 SCSI 7200 rpm disk is 7.5ms		
↪ 9.1GB Ultra2 SCSI 10K rpm disk is 6.0ms		
↪ 18.2GB Ultra2 SCSI 7200 rpm is 7.5ms		
↪ 36.4GB Ultra160 SCSI 10K rpm disk is 5.5ms		

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227

US models announced on March 20, June 6, or August 14, 2000

⌘ US models withdrawn from marketing effective November 2000 or May 2001 or October 2001

No warranties are expressed or implied in this summary

(6868S - Page 1 of 2) © IBM Corp. October 2001

# IBM IntelliStation® M Pro (6868) - Spring 2000 - withdrawn

## IBM® IntelliStation® M Pro

Type	<b>6868</b>															
Processor(s)	<b>One or two Intel® Pentium® III 733, 800EB, 866, or 933MHz<sup>1</sup> / 133MHz Front Side Bus</b>															
Implementation	Processor and L2 cache in Single Edge Contact (SECC2) in protective metal case / SECC2 plugged into Intel® Slot 1															
Processor upgrade	<b>2-way SMP</b> via identical processor / upgrade via second SECC2 into second motherboard Slot 1 connector / MPS 1.4															
L2 cache	<b>256KB</b> std and max / ECC / at processor speed / 8-way set associative / write-back / integrated in SECC2															
Avail / withdrawn date	April 2000 or June 2000 or August 2000 / November 2000 or April 2001 or May 2001															
Mem - std / max / type	<b>128 or 256 or 512MB std</b> / 2GB max <sup>13</sup> / <b>dual RDRAM (Rambus) channels</b> / 32 devices max each channel / ECC memory controller and RIMMs / four 184-pin gold-plated RIMM sockets (two per channel) /															
Memory - features	two RIMMs installed (one per channel) / CRIMMs in two sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be same speed (PC600 or PC800) and installed in pairs across channels															
Graphics controller	<b>Matrox® Millennium G400</b> (performance 2D), <b>ELSA™ Gloria II</b> (advanced 3D), or <b>Intense3D® Wildcat 4110 AGP Adapter</b> (extreme 3D)															
	<b>Millennium G400</b> / AGP 4X adapter / sideband addressing / 16MB std / 16MB max / 166MHz SGRAM / 250MHz RAMDAC / 256-bit DualBus chip / max 2D resolution of 2048x1536 / supports 1280x1024x16.7 million at 100Hz	<b>ELSA GLoria II</b> / AGP 4X adapter / 64MB 128-bit 110MHz SDRAM std and max / 350MHz RAMDAC / 2048x1536 at 75Hz / NVIDIA™ Quadro controller / 256-bit QuadPipe rendering engine														
	<b>Intense3D Wildcat 4110 AGP Adapter</b> / AGP 2X adapter / 64MB 128-bit 143MHz SDRAM (frame buffer) and 64MB 64-bit 143MHz SDRAM (texture memory) / 2D and 3D engine / DB-15 and DVI-I ports (same image if both used)															
Architecture (chipset)	<b>Intel 840 chip set / Accelerated Hub Architecture</b> / 266MB/sec I/O channel / 82840 Memory Controller Hub (MCH) / 82801AA I/O Controller Hub (ICH) for PCI 2.2 bus, ATA-66 EIDE, USB, Low Pin Count Interface / 82802AC Firmware Hub / SMSC 47B272 SIO LPC Super I/O for diskette, parallel, serial, keyboard, mouse															
Form factor / bus	ATX / slots on planar (no riser) / PCI 2.2 (33MHz), Accelerated Graphics Port 2.0 (66MHz; AGP 4X; 1GB/sec) / see below															
Rack mountable	Rack mountable via optional mounting kit															
Disk	None (AAP models), one EIDE <sup>1</sup> , or one or two Wide Ultra2 SCSI / SMART <sup>5</sup>															
SCSI controller	SCSI models only: <b>Adaptec® AHA-2940U2B</b> / single channel Wide Ultra2 SCSI adapter / PCI adapter															
SCSI connectors	<i>Internal</i> : 68 pin (attaches 5 drop cable to SCSI disk); <i>External</i> : 68 pin SCSI port															
Cables - SCSI mod	SCSI models: 5 drop 16-bit LVD cable on internal connector; one 1 drop IDE ATA-33 cable (CD-ROM)															
Cables - IDE models	EIDE models: Two 2 drop IDE ATA-66 cable / CD-ROM uses second 1 drop IDE ATA-33 cable / no SCSI cable															
Cables - AAP models	AAP models: One 1 drop IDE ATA-33 cable															
EIDE disk controller	Enhanced IDE / ATA-66 and PIO modes 0-4 with 2 channel, 4 device support / integrated in I/O Controller Hub (ICH)															
CD-ROM / diskette	<b>48X-20X<sup>6</sup> CD-ROM</b> , CAV (ATAPI), bootable / 3.5" 1.44MB diskette drive															
Ethernet controller	<b>Intel EtherExpress™ PRO/100 / 82559</b> ethernet chip on planar / PCI bus / 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN 2															
Systems mgmt cntrl	Temperature sensors, fan-speed monitor, chassis-intrusion detector, power supply and CPU voltage monitor, and power-switch bypass / AD1025															
Audio	SoundMAX™ integrated digital audio / software-based (done by Pentium and ICH) / AC '97 interface / AD1881 codec (analog mixing, A-to-D and D-to-A conversion) / Line in with active pre-amp / mic in / line out (all 3.5mm; all in back)															
Audio connectors	Internal speaker with automatic jack sense switching / software volume control															
Audio features	None															
Microphone	None															
Serial / parallel / USB	<i>Ser</i> : One 9 pin <i>Par</i> : One (EPP, ECP) / IEEE 1284 <i>USB</i> : Two ports (Vers 1.1)															
Security chip	Integrated IBM Security Chip / soldered on motherboard															
Keyboard / mouse	104 key keyboard / keyboard extender / <b>IBM ScrollPoint™ II mouse</b>															
Power supply	330 watts / universal / auto-sensing / Wake on LAN															
	<table border="1"> <tr> <td>CD-ROM</td> <td>Bay ① 5.25", HH 1.6", access, std CD-ROM</td> </tr> <tr> <td></td> <td>Bay ② 5.25", HH 1.6", access, open</td> </tr> <tr> <td></td> <td>Bay ③ 3.5", SL 1", access, open</td> </tr> <tr> <td></td> <td>Bay ④ 3.5", SL 1", access, std diskette</td> </tr> <tr> <td></td> <td>Bay ⑤ 3.5", HH 1.6", no access, open (disk only)</td> </tr> <tr> <td>diskette</td> <td>Bay ⑥ 3.5", HH 1.6", no access, open (disk only) - used by 2nd disk in mod 92/93/94x</td> </tr> <tr> <td></td> <td>Bay ⑦ 3.5", HH 1.6", no access, std disk (disk only)</td> </tr> </table>	CD-ROM	Bay ① 5.25", HH 1.6", access, std CD-ROM		Bay ② 5.25", HH 1.6", access, open		Bay ③ 3.5", SL 1", access, open		Bay ④ 3.5", SL 1", access, std diskette		Bay ⑤ 3.5", HH 1.6", no access, open (disk only)	diskette	Bay ⑥ 3.5", HH 1.6", no access, open (disk only) - used by 2nd disk in mod 92/93/94x		Bay ⑦ 3.5", HH 1.6", no access, std disk (disk only)	<p>Slot 1: fullsize, 32-bit <b>AGP Pro50</b> (universal) - used by AGP graphics adapter</p> <p>Slot 2: fullsize, 32-bit PCI 2.2 (5v) - not usable with AGP Pro50 adapter in AGP slot or in models with Intense3D Wildcat</p> <p>Slot 3: fullsize, 32-bit PCI 2.2 (5v)</p> <p>Slot 4: fullsize, 32-bit PCI 2.2 (5v)</p> <p>Slot 5: fullsize, 32-bit PCI 2.2 (5v) - occupied by Canopus DVRRaptor in model 92/93/94x</p> <p>Slot 6: fullsize, 32-bit PCI 2.2 (5v) - occupied by SCSI adapter in SCSI disk models</p>
CD-ROM	Bay ① 5.25", HH 1.6", access, std CD-ROM															
	Bay ② 5.25", HH 1.6", access, open															
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diskette	Bay ⑥ 3.5", HH 1.6", no access, open (disk only) - used by 2nd disk in mod 92/93/94x															
	Bay ⑦ 3.5", HH 1.6", no access, std disk (disk only)															
		<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>- Cover key lock (in rear)</li> <li>- Cover tamper detect switch</li> <li>- Secure fixed DASH</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Administrator password</li> <li>- Keyboard/mouse password</li> <li>- Wake Up on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard or mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write-protect</li> <li>- Diskette, disk, serial port, parallel port I/O control</li> <li>- Secure access openings</li> <li>- Secure removable media</li> <li>- VPD stored in EEPROM</li> <li>- Write protection control for EEPROM</li> <li>- Barcode labels on most components</li> <li>- IBM Security Solutions</li> </ul> <p><i>Maximum internal SCSI disk capacity<sup>13</sup></i>: 91GB (5 x 18.2GB (7200 or 10K rpm);</p> <p><i>Maximum internal EIDE disk capacity<sup>13</sup></i>: 61.2GB (3 x 20.4GB 7200 rpm)</p> <p><b>SYSTEMS MANAGEMENT</b></p> <ul style="list-style-type: none"> <li>• <b>Asset ID™ (RFID)<sup>16</sup></b></li> <li>• <b>Alert on LAN™ 2</b></li> <li>• Universal Manageability Services and Universal Manageability (UM) Desktop Extensions enabled</li> <li>• LANClient Control Manager™ enabled</li> <li>• SMART Reaction™.5 II</li> <li>• <b>PC 99-compliant</b></li> <li>• DMI 2.0-compliant</li> <li>• Common Information Model (CIM) 2.2</li> <li>• Asset Information Chip (EEPROM)</li> <li>• <b>Wired for Management 2.0</b></li> <li>• ACPI 1.0</li> <li>• Advanced Power Management 1.2</li> <li>• Wake on LAN support</li> <li>• Alternate Boot Sequence</li> <li>• RPL, DHCP, and PXE 2.0support</li> <li>• Setup on LAN, Flash on LAN</li> <li>• Wake on Alarm</li> <li>• System Management BIOS Version 2.3</li> <li>• Systems Migration Assistant support</li> </ul>														
	<p><b>SECURITY CHIP</b></p> <ul style="list-style-type: none"> <li>- Provides electronic digital signature and secure key storage</li> <li>- Can sign each e-mail with a digital signature (1024-bit) so receiving party can verify sender</li> <li>- Public Key Infrastructure (PKI) for more secure e-mail, web access and Internet transactions, and Secure Sockets Layer (SSL) for encryption/decryption capabilities</li> <li>- Uses User Verification Manager software available from IBM web site</li> </ul>	<p><b>OTHER STANDARD FEATURES</b></p> <p>The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST</p> <p>Plug-and-Play 1.0a</p> <p>ISO 9241-3 capable</p> <p>Vital Product Data support (type, model, serial, id)</p> <p>7.9"W x 18.1"D x 19.4"H; 45 lbs max (shipped)</p> <p>200 mm W x 460 mm D x 492 mm H; 17.3 kg</p> <p>Several hardcopy publications</p> <p>Four stabilizing feet</p> <p>512KB BIOS (Flash over LAN support)</p> <p>Supplier's Declaration available</p> <p>Three fans (one in front, one in rear, one in power supply)</p>														

# IBM IntelliStation® M Pro (6868) - Fall 2000 - withdrawn

Type-model	Disk / rpm / interface CD-ROM <sup>6</sup>	Intel® Processor MHz <sup>1</sup> ; 2-way SMP support	Write-back L2 cache standard	Rambus memory; std MB / type; devices / type	SVGA controller; AGP Pro50 slot; memory std / max	Total bus slots available	Total bays	Ethernet / SCSI Chip set Preload <sup>17</sup>	Avail- able date
<b>Mini Tower; 6 slot x 7 bay; Stealth Black - US models</b>									
6868-4AU	15.0GB <sup>2</sup> 7200 EIDE 48X-20X <sup>6</sup> CD-ROM	Pentium® III 800EB/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=5 AGP 50=0	3 used 4 empty	ethernet 840 / 2000 or NT	Oct 2000
6868-4BU	9.1GB 10K Ultra160 48X-20X CD-ROM	Pentium III 800EB/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-4CU	9.1GB 10K Ultra160 48X-20X CD-ROM	Pentium III 800EB/133	256KB full spd	256MB / PC600 Two 8D RIMMs	NVIDIA Quadro2 MXR AGP 4X; 32 / 32MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-4DU	9.1GB 10K Ultra160 48X-20X CD-ROM	Pentium III 800EB/133	256KB full spd	512MB / PC600 Two 16D RIMMs	Wildcat 4110 AGP 2X; 128/128MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-5AU	15.0GB 7200 EIDE 48X-20X CD-ROM	Pentium III 866/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=5 AGP 50=0	3 used 4 empty	ethernet 840 / 2000 or NT	Oct 2000
6868-5BU	9.1GB 10K Ultra160 48X-20X CD-ROM	Pentium III 866/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-5CU	9.1GB 10K Ultra160 48X-20X CD-ROM	Pentium III 866/133	256KB full spd	512MB / PC600 Two 16D RIMMs	NVIDIA Quadro2 MXR AGP 4X; 32 / 32MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-5DU	9.1GB 10K Ultra160 48X-20X CD-ROM	Pentium III 866/133	256KB full spd	512MB / PC600 Two 16D RIMMs	Wildcat 4110 AGP 2X; 128/128MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-6AU	20.4GB 7200 EIDE 48X-20X CD-ROM	Pentium III 933/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=5 AGP 50=0	3 used 4 empty	ethernet 840 / 2000 or NT	Oct 2000
6868-6BU	18.2GB 10K Ultra160 48X-20X CD-ROM	Pentium III 933/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-6CU	18.2GB 10K Ultra160 48X-20X CD-ROM	Pentium III 933/133	256KB full spd	512MB / PC600 Two 16D RIMMs	NVIDIA Quadro2 MXR AGP 4X; 32 / 32MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-6DU	18.2GB 10K Ultra160 48X-20X <sup>4</sup> CD-ROM	Pentium III 933/133	256KB full spd	512MB / PC600 Two 16D RIMMs	Wildcat 4110 AGP 2X; 128/128MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-70U	20.4GB 7200 EIDE 48X-20X CD-ROM	Pentium III 1.0GHz/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=5 AGP 50=0	3 used 4 empty	ethernet 840 / 2000 or NT	Oct 2000
6868-72U	18.2GB 10K Ultra160 48X-20X CD-ROM	Pentium III 1.0GHz/133	256KB full spd	512MB / PC600 Two 16D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-76U	18.2GB 10K Ultra160 48X-20X CD-ROM	Pentium III 1.0GHz/133	256KB full spd	512MB / PC600 Two 16D RIMMs	NVIDIA Quadro2 MXR AGP 4X; 32 / 32MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-77U	18.2GB 10K Ultra160 48X-20X CD-ROM	Pentium III 1.0GHz/133	256KB full spd	512MB / PC600 Two 16D RIMMs	Wildcat 4110 AGP 2X; 128/128MB	PCI=3 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-78U	18.2GB 10K Ultra160 48X-20X CD-ROM	Pentium III 1.0GHz/133	256KB full spd	512MB / PC600 Two 16D RIMMs	IBM Fire GL2 AGP 4X; 64 / 64MB	PCI=4 AGP 50=0	3 used 4 empty	ethernet / SCSI 840 / 2000 or NT	Oct 2000
6868-5RU	no disk 48X-20X CD-ROM	Pentium III 866/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=5 AGP 50=0	2 used 5 empty	ethernet 840 / no OS	Oct 2000
6868-6RU	no disk 48X-20X CD-ROM	Pentium III 933/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=5 AGP 50=0	2 used 5 empty	ethernet 840 / no OS	Oct 2000
6868-7PU	no disk 48X-20X CD-ROM	Pentium III 1.0GHz/133	256KB full spd	256MB / PC600 Two 8D RIMMs	Millennium G450 AGP 4X; 16 / 16MB	PCI=5 AGP 50=0	2 used 5 empty	ethernet 840 / no OS	Oct 2000

Windows 2000 Professional Preload <sup>17</sup>	Options	WARRANTY SERVICE SUPPORT <sup>*3</sup>
Windows 2000 Professional - Free license for Lotus® SmartSuite® Millennium - Free license for Lotus Notes® Client ⇨ Device Drivers and Diagnostics CD-ROM ⇨ Software Selections CD-ROM ⇨ Windows 2000 Product Recovery CD-ROM ⇨ Windows NT 4.0 (SP6) Product Recovery CD-ROM	800EB MHz Second Proc for M Pro 6868 866MHz Second Processor for M Pro6868 933MHz Second Processor for M Pro6868 1GHZ Second Processor for M Pro 6868 64MB 600MHz ECC RDRAM (4 Dev) 128MB 600MHz ECC RDRAM (8 Dev) 256MB 600MHz ECC RDRAM (16 Dev) 64MB 800MHz ECC RDRAM (4 Dev) 128MB 800MHz ECC RDRAM (8 Dev) 256MB 800MHz ECC RDRAM (16 Dev) IBM IDE 8X DVD-ROM (black) IBM DVD-RAM (black) IBM IDE ReWritable CD-RW (black) 20.4GB 7200 rpm ATA-100 EIDE disk 30GB 7200 rpm ATA-100 EIDE disk 36.4GB 7200 rpm Ultra160 SCSI 36.4GB 10000 rpm Ultra160 SCSI T54A LCD TFT Stealth Blk Color Monitor T55D LCD TFT Stealth Blk Color Monitor T56A LCD TFT Stealth Blk Color Monitor T85A LCD TFT Stealth Blk Color Monitor T86D LCD TFT Stealth Blk Color Monitor IBM 20/40GB 8mm SCSI tape drive (blk) IBM 10/20GB SCSI tape backup (black) IBM 12/24GB DDS3 SCSI tape (black) IBM 20/40GB DDS/4mm tape (SCSI, blk) Mounting Kit (vendor at 972-647-1565)	⇨ 3 year parts and labor warranty ⇨ International Warranty Service <sup>3</sup> ⇨ On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time ⇨ On site warranty service upgrade option: • 4 hour response, 7 day x 24 hr <sup>14</sup> ⇨ Post warranty maintenance services available ⇨ 24 hour x 7 day telephone, electronic, and Internet support
⇨ 15.0 and 20.4GB EIDE disks are ATA-66, 9.0ms average read seek time, SMART <sup>5</sup> III ⇨ 9.1GB Ultra160 SCSI 10000 rpm disk is 6.0ms average read seek time, SMART <sup>5</sup> ⇨ 18.2GB Ultra160 SCSI 10000 rpm is 5.5ms average read seek time, SMART <sup>5</sup>		
Visit <a href="http://www.ibm.com/options">www.ibm.com/options</a> for a complete list of compatible options		

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227  
 US models announced October 10, 2000  
 US models withdrawn from marketing effective May 2001 or October 2001

No warranties are expressed or implied in this summary  
 (6868F - Page 1 of 2) © IBM Corp. October 2001



# IBM IntelliStation® M Pro (6868) - Fall 2000 - withdrawn

## IBM® IntelliStation® M Pro

Type	<b>6868</b>															
Processor(s)	<b>One or two Intel® Pentium® III 800EB, 866, 933MHz<sup>1</sup> or 1.0B GHz<sup>1</sup> / 133MHz Front Side Bus</b>															
Implementation	Processor and L2 cache in Single Edge Contact (SECC2) in protective metal case / SECC2 plugged into Intel® Slot 1															
Processor upgrade	<b>2-way SMP</b> via identical processor / upgrade via second SECC2 into second motherboard Slot 1 connector / MPS 1.4															
L2 cache	<b>256KB</b> std and max / ECC / at processor speed / 8-way set associative / write-back / integrated in SECC2															
Avail / withdrawn date	October 2000 / May 2001 or October 2001															
Mem - std / max / type	<b>256 or 512MB std</b> / 2GB max <sup>13</sup> / <b>dual RDRAM (Rambus) channels</b> / 32 devices max each channel / ECC memory controller and RIMMs / four 184-pin gold-plated RIMM sockets (two per channel) /															
Memory - features	two RIMMs installed (one per channel) / CRIMMs in two sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be same speed (PC600 or PC800) and installed in pairs across channels															
Graphics controller (one of following)	<ul style="list-style-type: none"> <li>• <b>Matrox® Millennium G450</b> (high-performance 2D) / AGP 4X adapter / Matrox MGA G450C GPU / 16MB std and max 166MHz SDRAM / two DB-15 connectors (dual monitor capable)</li> <li>• <b>NVIDIA™ Quadro2 MXR</b> (advanced 3D) / AGP 4X adapter / NV11GL GPU / 32MB std and max 183MHz SDRAM / DB-15 and DVI-I connectors (dual monitor capable)</li> <li>• <b>IBM Fire GL2</b> (extreme 3D) / AGP 4X adapter / 64MB std and max 120MHz DDR-SGRAM / DB-15 and DVI-I connectors (single head; same image if both used)</li> <li>• <b>Intense3D® Wildcat 4110 AGP Adapter</b> (extreme 3D) / AGP 2X adapter / 64MB 128-bit 143MHz SDRAM (frame buffer) and 64MB 64-bit 143MHz SDRAM (texture memory) / DB-15 and DVI-I ports (single head; same image if both used)</li> </ul>															
Architecture (chipset)	<b>Intel 840 chip set / Accelerated Hub Architecture</b> / 266MB/sec I/O channel / 82840 Memory Controller Hub (MCH) / 82801AA I/O Controller Hub (ICH) for PCI 2.2 bus, ATA-66 EIDE, USB, Low Pin Count Interface / 82802AC Firmware Hub / SMSC 47B272 SIO LPC Super I/O for diskette, parallel, serial, keyboard, mouse															
Form factor / bus	ATX / slots on planar (no riser) / PCI 2.2 (33MHz), Accelerated Graphics Port 2.0 (66MHz; AGP 4X; 1GB/sec) / see below															
Rack mountable	Rack mountable via optional mounting kit															
Disk	None (AAP models), one ATA-66 EIDE, or one Wide Ultra160 SCSI / SMART <sup>5</sup>															
SCSI controller	<i>SCSI models only:</i> <b>Adaptec® 29160LP</b> / single channel Wide Ultra160 SCSI adapter (LVD 160MB/sec) / PCI adapter															
SCSI connectors	<i>Internal:</i> 68-pin (attaches 5 drop cable to SCSI disk); <i>External:</i> 68-pin SCSI port															
Cables - SCSI mod	<i>SCSI models:</i> 5 drop 16-bit LVD cable on internal connector; one 1-drop IDE ATA-33 cable (CD-ROM)															
Cables - IDE models	<i>EIDE models:</i> Two 2-drop IDE ATA-66 cables / CD-ROM uses second 1-drop IDE ATA-33 cable / no SCSI cable															
Cables - AAP models	<i>AAP models:</i> One 1 drop IDE ATA-33 cable															
EIDE disk controller	Enhanced IDE / ATA-66 and PIO modes 0-4 with 2 channel, 4 device support / integrated in I/O Controller Hub (ICH)															
CD-ROM / diskette	<b>48X-20X<sup>6</sup> CD-ROM</b> , CAV (ATAPI), bootable / 3.5" 1.44MB diskette drive															
Ethernet controller	<b>Intel EtherExpress™ PRO/100 / 82559</b> ethernet chip on planar / PCI bus / 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN 2															
Systems mgmt cntrl	Temperature sensors, fan-speed monitor, chassis-intrusion detector, power supply and CPU voltage monitor, and power-switch bypass / AD1025															
Audio	SoundMAX™ integrated digital audio / software-based (done by Pentium and ICH) / AC '97 interface / AD1881 codec (analog mixing, A-to-D and D-to-A conversion)															
Audio connectors	Line in with active pre-amp / mic in / line out (all 3.5mm; all in back)															
Audio features	Internal speaker with automatic jack sense switching / software volume control															
Microphone	None															
Serial/parallel/USB	<i>Ser:</i> One 9 pin <i>Par:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two ports (Vers 1.1)															
Security chip	Integrated IBM Security Chip / soldered on motherboard															
Keyboard / mouse	104 key keyboard / keyboard extender / <b>IBM ScrollPoint™ II mouse</b>															
Fans	Three (one in front, one in rear, one in power supply)															
Power supply	330 watts / universal / auto-sensing / Wake on LAN															
	<table border="1"> <tr> <td>CD-ROM</td> <td>Bay ① 5.25", HH 1.6", access, std CD-ROM</td> </tr> <tr> <td>②</td> <td>Bay ② 5.25", HH 1.6", access, open</td> </tr> <tr> <td>③</td> <td>Bay ③ 3.5", SL 1", access, open</td> </tr> <tr> <td>diskette</td> <td>Bay ④ 3.5", SL 1", access, std diskette</td> </tr> <tr> <td>⑤</td> <td>Bay ⑤ 3.5", HH 1.6", no access, open (disk only)</td> </tr> <tr> <td>⑥</td> <td>Bay ⑥ 3.5", HH 1.6", no access, open (disk only)</td> </tr> <tr> <td>disk</td> <td>Bay ⑦ 3.5", HH 1.6", no access, std disk (disk only)</td> </tr> </table>	CD-ROM	Bay ① 5.25", HH 1.6", access, std CD-ROM	②	Bay ② 5.25", HH 1.6", access, open	③	Bay ③ 3.5", SL 1", access, open	diskette	Bay ④ 3.5", SL 1", access, std diskette	⑤	Bay ⑤ 3.5", HH 1.6", no access, open (disk only)	⑥	Bay ⑥ 3.5", HH 1.6", no access, open (disk only)	disk	Bay ⑦ 3.5", HH 1.6", no access, std disk (disk only)	<p>Slot 1: fullsize, 32-bit <b>AGP Pro50</b> (universal) - used by AGP graphics adapter</p> <p>Slot 2: fullsize, 32-bit PCI 2.2 (5v) - not usable with AGP Pro50 adapter in AGP slot or in models with Intense3D Wildcat</p> <p>Slot 3: fullsize, 32-bit PCI 2.2 (5v)</p> <p>Slot 4: fullsize, 32-bit PCI 2.2 (5v)</p> <p>Slot 5: fullsize, 32-bit PCI 2.2 (5v)</p> <p>Slot 6: fullsize, 32-bit PCI 2.2 (5v) - occupied by SCSI adapter in SCSI disk models</p>
CD-ROM	Bay ① 5.25", HH 1.6", access, std CD-ROM															
②	Bay ② 5.25", HH 1.6", access, open															
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⑥	Bay ⑥ 3.5", HH 1.6", no access, open (disk only)															
disk	Bay ⑦ 3.5", HH 1.6", no access, std disk (disk only)															
Mini tower; Stealth black color																
<b>SECURITY CHIP</b>	<ul style="list-style-type: none"> <li>- Provides electronic digital signature and secure key storage</li> <li>- Can sign each e-mail with a digital signature (1024-bit) so receiving party can verify sender</li> <li>- Public Key Infrastructure (PKI) for more secure e-mail, web access and Internet transactions, and Secure Sockets Layer (SSL) for encryption/decryption capabilities</li> <li>- Uses User Verification Manager software available from IBM web site</li> </ul>															
<b>OTHER STANDARD FEATURES</b>	<p>The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST</p> <p>Plug-and-Play 1.0a</p> <p>ISO 9241-3 capable</p> <p>Vital Product Data support (type, model, serial, id)</p> <p>7.9"W x 18.1"D x 19.4"H; 45 lbs max (shipped)</p> <p>200 mm W x 460 mm D x 492 mm H; 17.3 kg</p> <p>Several hardcopy publications</p> <p>Four stabilizing feet</p> <p>512KB BIOS (Flash over LAN support)</p> <p>Supplier's Declaration available</p> <p>Three fans (one in front, one in rear, one in power supply)</p>															
<b>SECURITY</b>	<ul style="list-style-type: none"> <li>- Cover key lock (in rear)</li> <li>- Cover tamper detect switch</li> <li>- Secure fixed DASD</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Administrator password</li> <li>- Keyboard/mouse password</li> <li>- Wake Up on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard or mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write-protect</li> <li>- Diskette, disk, serial port, parallel port I/O control</li> <li>- Secure access openings</li> <li>- Secure removable media</li> <li>- VPD stored in EEPROM</li> <li>- Write protection control for EEPROM</li> <li>- Barcode labels on most components</li> <li>- IBM Security Solutions</li> </ul> <p><i>Maximum internal SCSI disk capacity<sup>13</sup>:</i> 182GB (5 x 36.4GB (7200 or 10K rpm));</p> <p><i>Maximum internal EIDE disk capacity<sup>13</sup>:</i> 90GB (3 x 30GB 7200 rpm)</p>															
<b>SYSTEMS MANAGEMENT</b>	<ul style="list-style-type: none"> <li>• <b>Asset ID™ (RFID)<sup>16</sup></b></li> <li>• <b>Alert on LAN™ 2</b></li> <li>• Universal Manageability Services enabled</li> <li>• LANClient Control Manager™ enabled</li> <li>• SMART Reaction™.5 II</li> <li>• <b>PC 99-compliant</b></li> <li>• DMI 2.0-compliant</li> <li>• Common Information Model (CIM) 2.2</li> <li>• Asset Information Chip (EEPROM)</li> <li>• <b>Wired for Management 2.0</b></li> <li>• ACPI 1.0</li> <li>• Advanced Power Management 1.2</li> <li>• Wake on LAN support</li> <li>• Alternate Boot Sequence</li> <li>• RPL, DHCP, and PXE 2.0 support</li> <li>• Setup on LAN, Flash on LAN</li> <li>• Wake on Alarm</li> <li>• System Management BIOS Version 2.3</li> <li>• Systems Migration Assistant support</li> </ul>															

# IBM IntelliStation® M Pro models (6888) - withdrawn

Type-model	Diskette drive Disk: std-max internal ms seek / disk interface CD-ROM <sup>6</sup> / interface	CPU MHz <sup>1</sup> / Upgrade	Write-thru L2 cache std / max KB / KB	Memory in MB; std / max all 60 ns	SVGA controller; memory std / max	Five total bus slots; P=PCI avail I=ISA avail	Total bays	Std features	Estimated Reseller Price*	Available date
<b>5 slot x 5 bay; PCI/ISA; Stealth Gray</b>										
⌘ 6888-28U for Auth Assembler Program	1.44 MB diskette <i>no disk</i> EIDE	Pentium® II 266/66 MHz	enabled for future upgrades	512/512 133 MHz in SEC Non-parity	32 / 512 EDO ECC	None	PCI=0 PCI/ISA=3 ISA=2	5 bays 1 used 4 empty Total=5	UU//L/A/Eth RTC CD	\$2639 May 1997
⌘ 6888-22U	1.44 MB diskette 4.3 GB std - 27.2 GB max 10 ms / <b>Wide Ultra SCSI</b> 16 x CD-ROM / EIDE	Pentium II 266/66 MHz	enabled for future upgrades	512/512 133 MHz in SEC Non-parity	64 / 512 EDO ECC	Matrox® Millennium PCI Adapter 4 / 8 WRAM	PCI=0 PCI/ISA=1 ISA=2 Total=5	5 bays 3 used 2 empty	UU//L/A/Eth Windows NT 4.0 RTC CD	3051 ⚡ May 1997
⌘ 6888-26U	1.44 MB diskette 4.3 GB std - 27.2 GB max 10 ms / <b>Wide Ultra SCSI</b> 16 x CD-ROM / EIDE	Pentium II 266/66 MHz	enabled for future upgrades	512/512 133 MHz in SEC Non-parity	128/512 EDO ECC	Intergraph® Intense 3D 16 MB SDRAM 4 MB SGRAM	PCI=0 PCI/ISA=1 ISA=2 Total=5	5 bays 3 used 2 empty	UU//L/A/Eth Windows NT 4.0 RTC CD	5650 May 1997
⌘ 6888-36U	1.44 MB diskette 4.3 GB std - 27.2 GB max 10 ms / <b>Wide Ultra SCSI</b> 16 x CD-ROM / EIDE	Pentium II 300/66 MHz	enabled for future upgrades	512/512 133 MHz in SEC <b>ECC</b>	128/512 EDO	Intergraph Intense 3D 16 MB SDRAM 4 MB SGRAM	PCI=0 PCI/ISA=1 ISA=2 Total=5	5 bays 3 used 2 empty	UU//L/A/Eth Windows NT 4.0 RTC CD	6102 July 1997

### Windows NT Preload<sup>17</sup>

Windows® NT Workstation 4.0  
ConfigSafe for Windows NT 4.0  
DMI for Windows NT  
DMI for Windows NT BIOS Instrumentation  
IBM AntiVirus for Windows NT  
IBM PC System Monitor for Windows NT  
IBM Product Registration  
IBM Utilities for NT 4.0  
Online Books  
Device Drivers for each subsystem  
- Hummingbird "Try and Buy" Suite CD-ROM  
Exceed 5.1.3  
Exceed 3D 5.1.3  
NFS Maestro Solo 5.1.3  
- Intel LANDesk 3.0 for Windows NT CD-ROM  
- Ready to Configure CD-ROM  
- Free license for Lotus SmartSuite 97 CD-ROM  
- Windows NT Workstation 4.0 CD-ROM  
- Access to IBM HomePage Creator

### Supported Memory and Options

16 MB EDO ECC Au 60 ns 3.3v 76H0278  
32 MB EDO ECC Au 60 ns 3.3v 76H0279  
64 MB EDO ECC Au 60 ns 3.3v 76H0280  
128 MB EDO ECC Au 60 ns 3.3v 76H0281  
256 MB EDO ECC Au 60 ns 3.3v 76H0269  
16 x max speed CD-ROM 76H6110  
Infrared dongle 75H7987  
Adaptec AHA-2940 Ultra Wide SCSI 76H3579  
RF Mouse (wireless) 12J3614  
Stealth Gray P70 Monitor 6554-6E3  
Stealth Gray P200 Monitor 6555-7E3  
Stealth Gray P201 Monitor 6555-8E3  
Stealth Gray 9516 TFT LCD Monitor 9516-A23

### Ready to Configure CD-ROM

All models ship with a CD with drivers for OS/2, Windows 95, and Windows NT and various utilities.  
ConfigSafe for Windows NT 4.0 (and Win 95)  
CoSession Remote 32 for Windows 95/NT 4.0  
CoSession Remote Host for Win 95  
CoSession Remote Viewer for Win 95  
Crystal Audio for Windows NT (and Win 95, OS/2)  
DMI for Windows NT (and Win 95, OS/2)  
DMI for Windows NT BIOS Instrumentation (and Win 95, OS/2)  
IBM AntiVirus for Windows NT (and Win 95, OS/2)  
CPU Thermal Monitor for Windows NT 4.0  
IBM IDE Disk Monitor for Windows 95/NT (and OS/2)  
IBM PC QAPLUS/PRO Diagnostics  
IBM PC QAPLUS/WIN-WIN Diagnostics  
IBM PC Supplemental Diagnostics  
IBM Product Registration  
IBM Utilities for Windows 95/NT 4.0  
Intel Ethernet Driver  
Intergraph 3D Graphics for Windows NT 3.51, 4.0  
Matrox Millennium Graphics Drivers  
S3-V2 Graphics for Windows 95/NT/OS/2  
Online Books  
TME 10 NetFinity for Windows NT (and Win 95, OS/2)  
Bus Mastering IDE/SMART for Windows NT  
IBM PC System Monitor for OS/2  
Infrared for Win 95, OS/2  
Infrared Mode Selection for Windows 95  
Infrared PDA Connect for Windows 95  
Busmastering IDE/SMART for OS/2  
IBM Diskette Factory for RTC  
IBM RTC CD-ROM Setup Utility  
RTC CD Overview Help Files

### Open Bay

Open bay model contains no hard disk. No preload or operating system license is included.  
- Hummingbird "Try and Buy" Suite CD-ROM  
Exceed 5.1.3  
Exceed 3D 5.1.3  
NFS Maestro Solo 5.1.3  
- Intel LANDesk 3.0 for Windows NT CD-ROM  
- Ready to Configure CD-ROM  
- Free license for Lotus SmartSuite 97 CD-ROM (via 800 number)

### WARRANTY SERVICE SUPPORT

- ⚡ 3 year parts warranty
- ⚡ 1 year labor warranty
- ⚡ International warranty
- ⚡ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time
- ⚡ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ⚡ On site warranty upgrade options:
  - ① Next day, on site, Mon-Fri 8-5
  - ② Same day, on site, 7 day x 24 hr
- ⚡ Post warranty: on site options above
- ⚡ 24 hour / 7 day telephone, bulletin board, fax, electronic, Internet (<http://www.pc.ibm.com>) support

A = CS4236 FM synthesis audio chip  
W95 = Windows 95 OS/2.1 preinstalled  
Eth = Intel 10/100 ethernet chip; 10BaseT and 100BaseTX  
I = Infrared port to 115 Kbps (requires Infrared cable 75H7987)  
L = LAN Client Control Manager (LCCM) enabled  
NT4 = Windows NT Workstation 4.0 preinstalled  
RTC CD = ReadyTo Configure CD-ROM  
UU = Two Universal Serial Bus (USB) port  
Wide Ultra SCSI = Adaptec AHA-2940UW UltraSCSI PCI Adapter

⚡ 16 x CD-ROM can use PIO Mode 4 (16.6), Multi-Word DMA 1 (13.33), or Single-Word DMA 2 (8.33); PIO Mode 0 (3.3 MB/sec) used on preload; bootable; CAV; ATAPI

Ⓜ Models announced July 15, 1997

⚡ Price decrease effective January 21, 1998

⌘ Withdrawn effective January 27, 1998 or August 21, 1998

All trademarks are the property of their respective owners

No warranties are expressed or implied in this summary

\* Prices are estimated reseller prices and subject to change without notice; actual prices may vary

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# IBM IntelliStation M Pro (6888) - withdrawn

IBM® IntelliStation™ M Pro		
Type (code name)	<b>6888-xxx</b>	
Processor / MHz	<b>Pentium® II 266/66 MHz<sup>1</sup> or 300/66 MHz</b> (Klamath) / MMX technology / 16 KB ins + 16 KB data L1 cache	
Implementation	Processor and L2 cache in <b>Single Edge Contact (SEC)</b> cartridge in protective metal case / SEC plugged into Intel Slot 1	
Processor upgrade(s)	Enabled for future upgrade via SEC into motherboard Intel® Slot 1 CPU connector	
VRM	Voltage Regulator Module built into SEC (no socket)	
Available date	May 1997 for 266 MHz; July 1997 for 300 MHz (□□□□□□□□ □□□□□□ 1998 □□□ □□□□□□ 1998)	
L2 cache - features	<b>512 KB std</b> / 512 KB max / integrated in SEC / 8.5 ns / write-through / direct mapped / 4 way set associative / pipelined burst synchronous / 1/2 processor frequency bus / non-parity for 266 MHz; ECC for 300 MHz	
Memory - std / max	<b>32, 64, or 128 MB std</b> / 512 MB max <sup>13</sup> (60 ns / ind std / 64 bit) / Error Check and Correcting memory controller	
Mem - total sockets	Three 168 pin gold-plated DIMM sockets / 3.3 volt	
Mem - sockets used	<b>32 or 64 MB models:</b> 1 DIMM used; <b>128 MB model:</b> two 64 MB DIMMs used / <b>EDO ECC DIMMs standard</b>	
Mem - type (support)	EDO non-parity or EDO ECC / 16, 32, 64, 128 MB EDO non-parity DIMM or 16, 32, 64, 128, 256 MB EDO ECC DIMM	
Memory - supported	Mixing ECC/non-parity gives non-parity / processor can only cache 512 MB although 3 x 256 = 768 MB physically installed	
Graphics controller	<b>Matrox® MGA Millennium, Intergraph® Intense 3D Pro1000/T</b> , (or none on Model 28U for Authorized Assembler Program)	
Graphics - type	<b>Matrox / MGA Millennium</b> / SVGA 64 bit acceltr / PCI adapter	<b>Intergraph / Intense 3D</b> / 3D accelerator / PCI adapter
Graphics - memory	4 MB std / 8 MB max (WRAM 20 ns) / 220 MHz RAMDAC	16 MB SDRAM buffer and 4 MB SGRAM texture memory
Graphics - features	VESA DPMS, DDC1, DDC2B, Auto Refresh Rate Utility On the fly resolution and color depth switching Hardware zoom / virtual desktop / panlock / DirectDraw Hardware accelerated 3D gouraud shading and Z buffering	VESA DPMS, DDC2B / onboard VGA / OpenGL / fogging 810,000 3D triangles per second / 24 bit double buffering Color space conversion / alpha blending / 32 bit textures 24 or 32 bit Z buffer / optional hardware geometry accelertn
Disk	<i>Models vary:</i> Diskless or one Wide Ultra SCSI disk (10 ms / 5400 rpm) / SMART <sup>5</sup> and PFA	
SCSI disk controller	<b>Adaptec® AHA-2940UW UltraSCSI</b> / PCI adapter supports one channel and 15 devices / 16 bit int, 8 bit int, and 16 bit ext connectors	
SCSI cable	4 drop 16 bit 68 pin SCSI cable standard / one drop to std SCSI disk	
EIDE disk controller	Enhanced IDE busmaster / PIO modes 0 to 4 or DMA Modes 0 to 2 / two connectors on planar / one 2 drop cable standard	
CD-ROM	<b>16 x max CD-ROM CAV (ATAPI)</b> / bootable	<i>Maximum internal SCSI disk capacity<sup>13</sup>:</i> 27.2 GB (9.1 GB in bays 2 and 3 plus 4.51 GB in bays 4 and 5)
Bus slots	PCI 2.1 (33 MHz) and ISA slots (see below)	
Architecture	IntelDublin LPX motherboard with Intel Natoma <b>440FX PCIset</b> / PIIX3 for EIDE, ISA Bridge, USB National Semiconductor® PC87307 Super I/O for diskette, parallel, serial, GPIO, keyboard, mouse, infrared	
Serial / parallel ports	<i>Serial:</i> one 9 pin / 115 Kbps max speed / 16550A / non-DMA; <i>Parallel:</i> One bidirectional (EPP, ECP) / IEEE 1284	
Universal Serial Bus	Two USB ports / 1.5 MB/sec (12 Mbps) max speed	
Infrared	Infrared port (on back) requiring optional Infrared Dongle; part number 75H7987 / IrDA-2 / 115 Kbps	
Diskette drive	3.5" 1.44 MB / 3 drop cable (cable supports 3.5" 1.44 MB, 5.25" 1.2 MB, and tape)	
CD-ROM	<i>Some models:</i> 16 x max speed CD-ROM CAV (ATAPI) / bootable (CD-ROM standard only in Audio model)	
Audio	Crystal CS4236 chip on planar / ISA bus / FM Synthesis / connectors for stereo line out, mic in / no hardware volume cont	
Ethernet controller	<b>Intel 10/100 PCI 82557</b> ethernet chip on planar / 10BaseT and 100BaseTX / PCI bus / RJ45 UTP connector / Wake-on-LAN	
Wake-on-LAN	Supported on all models; requires compliant Ethernet or Token-Ring LAN Adapter	
LCCM	<b>LAN Client Control Manager enabled / Wake-on-LAN / Setup-on-LAN / Flash-on-LAN / Hybrid RPL / DHCP/BOOTP</b>	
Systems mgmt cntrl	<b>National Semiconductor® LM78 compatible / hardware chip to monitor temperature, voltage, system cover removal</b>	
Preloaded software	<i>Models vary:</i> ① Open Bay, ② Windows NT Workstation 4.0 / Disk-based models include <b>Easy Tools</b> (many utilities) preloaded All include Ready to Configure CD-ROM (device drivers and utilities) All include a free license for Lotus® SmartSuite 97 CD-ROM (via 800 number)	
Keyboard / mouse	104 key (rubber dome) keyboard / IBM 3 button mouse	<ol style="list-style-type: none"> <li>Cover key lock</li> <li>U-Bolt support</li> <li>Diskette write inhibit</li> <li>Serial/parallel port inhibit</li> <li>Power-on password</li> <li>Administrator passwd □□□□□□□□</li> <li>Boot sequence control</li> <li>Boot w/o keyboard/mouse/diskette</li> <li>Disk disable, 10. Diskette disable</li> <li>Unattended start-up (network)</li> <li>Sliding front door lock</li> <li>Secure removable media</li> <li>Mouse disable</li> <li>Wake-up on LAN (Dual Mode)</li> </ol>
Power supply	200 watts / universal / manual switch / Wake-on-LAN support	
	 <p>Bay ① 3.5", SL 1", access, std diskette  = PCMCIA front access; but not supported</p> <p>Bay ② 5.25", HH 1.6", access, open or CD-ROM</p> <p>Bay ③ 5.25", HH 1.6", access, open</p> <p>Bay ④ 3.5", SL 1", no access, open or std disk</p> <p>Bay ⑤ 3.5", SL 1", no access, open (disk only)</p>	
Stealth gray color	Slot 1: 16 bit ISA (half) or 32 bit PCI (full) 2.1 (3.3v/5v) - PCI UltraSCSI Adapter	
Base Cover and Floor Stand standard	Slot 2: 16 bit ISA (full; half on 300) or 32 bit PCI (full; half on 300) 2.1 (3.3v/5v)	
	Slot 3: 16 bit ISA (full) or 32 bit PCI (full) 2.1 (3.3v/5v) - PCI Graphics Adapter	
	Slot 4: halfsize, 16 bit ISA	
	Slot 5: halfsize, 16 bit ISA	
<b>MATROX MILLENNIUM GRAPHICS MODES</b>		
<b>Resolution</b>	<b>Frame Rate Hz (non-interlaced)</b>	<b>Memory required</b>
640 x 480	60 to 200 Hz	4 MB
800 x 600	60 to 200 Hz	4 MB
1024 x 768	60 to 120 Hz	4 MB
1280 x 1024	60 to 110 Hz	4 MB
1600 x 1200	60 to 85 Hz	4 MB
1600 x 1200	60 to 85 Hz	8 MB
<b>INTERGRAPH INTENSE 3D GRAPHICS MODES</b>		
640 x 480	60, 72, 75, 85	N/A
800 x 600	60, 72, 75, 85	N/A
1024 x 768	60, 70, 75, 85	N/A
1152 x 864	60, 70, 75, 85	N/A
1280 x 960	60, 75	N/A
1280 x 1024	60, 75	N/A
<b>OTHER STANDARD FEATURES</b>		
Dual orientation with standard stand		
The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST		
Plug-and-Play 1.0A; Vital Product Data support		
16.5"W x 18.3"D x 6.3" H; 28 lbs (12.7 kg)		
Advanced Power Mgmt 1.2; ISO 9241-3 capable		
Several hardcopy publications		
256 KB AMIä BIOS in flash memory		
Support for DMI technology (includes MIF browser) with DMI Service Layer 1.1, DMI BIOS 2.0, and DMI software; <b>DMI 1.1 compliant</b> (not DMI 2.0)		
<b>Laser-etched 22 digit serial numbers on processor and memory (on later systems)</b>		
Power and System management features:		
- Three configurable levels for system, CPU, and monitor including powering system and/or display off		
- Wake Up on Ring (via modem) from off state		
- Wake Up on Alarm (scheduled time) from off state		
- Wake-on-LAN (from LAN) from off state		
<b>WARRANTY SERVICE SUPPORT<sup>3</sup></b>		
⇨ <b>3 year parts warranty</b>		
⇨ <b>1 year labor warranty</b>		
⇨ <b>International warranty</b>		
⇨ <b>1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time</b>		
⇨ <b>2nd/3rd year: parts exchange only, call 1-800-772-2227</b>		
⇨ <b>On site warranty upgrade options:</b>		
① Next day, on site, Mon-Fri 8-5		
② Same day, on site, 7 day x 24 hr		
⇨ <b>Post warranty: on site options above</b>		
⇨ <b>IBM SystemCare Program</b>		
⇨ <b>24 hour / 7 day telephone, electronic, and Internet support (http://www.pc.ibm.com)</b>		



# IBM IntelliStation® M Pro models - Spring 1998 (6889) - withdrawn

Type-model	Std disk (rpm) ms seek / disk interface CD-ROM / interface	CPU MHz <sup>1</sup> / Upgrade	Write-back L2 cache std / max KB / KB	Memory in MB; std / max 100MHz	SVGA controller; memory std / max	Bus slots P=PCI avail PCI/ISA=av A=AGP av	Total bays	Std features Preload	Avail date	
<b>6 slot x 6 bay; PCI/ISA/AGP; Stealth Gray</b>										
ⓧ 6889-10U	6.4GB <sup>2</sup> std (7200) 9.5ms / EIDE / ATA-33 32X-14X <sup>6</sup> CD-ROM / EIDE	1 x Pentium® II 350/100	SMP via 2nd Pent II	512/512 175MHz in SEC	64 / 1G SDRAM ECC	Millennium II AGP adapter 8 / 16 WRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	May 1998
ⓧ 6889-11U	9.1GB <sup>8</sup> std (7200) 9.5ms / EIDE / ATA-33 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz in SEC	64 / 1G SDRAM ECC	Millennium II AGP Adapter 8 / 16 WRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	May 1998
ⓧ 6889-13U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz in SEC	64 / 1G SDRAM ECC	Millennium II AGP Adapter 8 / 16 WRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	May 1998
ⓧ 6889-14U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz in SEC	128/1G SDRAM ECC	Intense 3400 PCI Adapter 32/32 SDRAM	PCI=3 PCI/ISA=1 AGP=1	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	May 1998
ⓧ 6889-15U	9.1GB std (7200) 9.5ms / EIDE / ATA-33 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz in SEC	128/1G SDRAM ECC	PERMEDIA 2A AGP Adapter 8/8M SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	July 1998
ⓧ 6889-16U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz in SEC	128/1G SDRAM ECC	PERMEDIA 2A AGP Adapter 8/8M SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	July 1998
ⓧ 6889-18U for AAP	<i>no disk</i> 32X-14X CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 350/100	SMP via 2nd Pent II	512/512 175MHz ECC	64 / 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX A/Eth	AAP May 1998
ⓧ 6889-19U for AAP	<i>no disk</i> 32X-14X CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz ECC	64 / 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX A/Eth	AAP May 1998
ⓧ 6889-50U for AAP	<i>no disk</i> 32X-14X CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	<i>No CPU</i>	SMP via 2nd Pent II	512/512 <i>varies</i> ECC	0 / 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX A/Eth	AAP Jun 1998
ⓧ 6889-24U	4.5GB std (7200) 9ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz in SEC	128/1G SDRAM ECC	Millennium II AGP Adapter 8 / 16 WRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	July 1998
ⓧ 6889-25U	4.5GB std (7200) 9ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	<b>SMP via 2 x</b> Pentium II 400/100	<i>None</i>	512/512 200MHz in SEC	128/1G SDRAM ECC	Millennium II AGP Adapter 8 / 16 WRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	July 1998
ⓧ 6889-27U	9.1GB std (10K) 8.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz in SEC	256/1G RDIMM ECC	Intense 3400 <b>+ Geo Acceler</b> 32/32 SDRAM	PCI=2 PCI/ISA=1 AGP=1	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	July 1998
ⓧ 6889-29U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz in SEC	256/1G RDIMM ECC	Millennium II AGP Adapter 8 / 16 WRAM	PCI=3 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	July 1998
ⓧ 6889-30U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz in SEC	256/1G RDIMM ECC	Intense 3400 PCI Adapter 32/32 SDRAM	PCI=4 PCI/ISA=1 AGP=1	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	July 1998
ⓧ 6889-90U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512/512 200MHz in SEC	256/1G SDRAM ECC	Millennium II AGP Adapter 8 / 16 WRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX A/Eth Windows NT 4.0	July 1998

**Web Design Bundle**

## Windows NT Preload<sup>17</sup>

Windows NT® Workstation 4.0 (SP3)  
Windows Internet Explorer 4.0 install icon  
Ready to install:  
- ConfigSafe for Windows NT 4.0  
- IBM AntiVirus for Windows NT  
- DMI Service Provider  
- DMI BIOS Instrumentation  
- IBM PC System Monitor Instrumentation  
- IBM AssetCare Serial Number Information  
IBM RTC CD-ROM Setup Utility  
IBM Utilities for Windows 95/NT 4.0  
- Hummingbird "Try and Buy" Suite CD-ROM  
- Intel LANdesk 3.0 for Windows NT CD-ROM  
- Ready to Configure CD-ROM  
- Free license for Lotus SmartSuite CD-ROM  
- Windows NT Workstation 4.0 CD-ROM  
- Access to IBM HomePage Creator

## Supported Memory and Options

32MB SDRAM ECC DIMM 100MHz 01K1133  
64MB SDRAM ECC DIMM 100MHz 01K1130  
128MB SDRAM ECC DIMM 100MHz 01K1131  
256MB SDRAM ECC DIMM (registered) 01K1132  
Adaptec ARO-1130 CA-B PCI RAIDport Adap1681100  
IBM Netfinity 350MHz Pentium II 10L5883  
IBM Netfinity 400MHz Pentium II 10L5884  
Matrox Millennium II AGP Graphics Ad 02K3459  
Intergraph Intense 3D Pro 3400 02K3460  
Intergraph Intense 3D Pro 3400 GA 02K3461  
Geometry Accelerator

## WARRANTY SERVICE SUPPORT

- ↪ 3 year parts warranty<sup>3</sup>
- ↪ 1 year labor warranty
- ↪ International Warranty Service<sup>3</sup>
- ↪ 1st year: on site, 8 am - 5 pm,  
Mon - Fri coverage,  
2nd business day response time
- ↪ 2nd/3rd year: parts exchange only,  
call 1-800-772-2227
- ↪ On site warranty upgrade options:
  - Next day response<sup>14</sup>, Mon-Fri 8-5
  - 4 hour response<sup>14</sup>, 7 day x 24 hr
- ↪ Post warranty: on site options above
- ↪ IBM SystemXtra®
- ↪ 24 hour / 7 day telephone, electronic,  
Internet (www.pc.ibm.com) support

A = CS4235 FM synthesis audio chip  
Eth = Intel 10/100 ethernet chip; 10BaseT and 100BaseTX; Alert on LAN  
RDIMM = Registered DIMM  
Wide Ultra SCSI = Adaptec AHA-7895; dual channel Wide Ultra SCSI  
Models announced April 15 or July 21, 1998  
ⓧ = Withdrawn from marketing

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# IBM IntelliStation® M Pro - Spring 1998 (6889) - withdrawn

## IBM® IntelliStation® M Pro

Type	<b>6889</b>		
Processor(s)	<b>One or two Intel® Pentium® II 350/100MHz or 400/100MHz<sup>1</sup> / MMX™ technology / 16KB ins + 16KB data L1 cache</b>		
Implementation	<b>Processor and L2 cache in Single Edge Contact (SEC) cartridge in protective metal case / SEC plugged into Intel Slot 1</b>		
Processor upgrade	<b>SMP via second identical processor / upgrade via SEC into motherboard Intel® Slot 1 CPU connector / MPS 1.4</b>		
L2 cache	<b>512KB std / 512KB max / ECC / 1/2 speed of processor / 4 way set associative / write-back / integrated in SEC</b>		
Avail / withdrawn date	<b>May 1998 or July 1998 / withdrawn effective November 1998 or March 1999 or June 1999</b>		
Mem - std / max / type	<b>OMB (AAP), 64MB, 128MB, or 256MB std / 1GB max / Error Checking and Correction (ECC)</b>		
Memory - sockets	4 sockets / 3 available (all have Error Checking and Correcting memory controller) / Model 90U uses two 128MB DIMMs		
Memory - features	<b>SDRAM / 100MHz / four 168 pin gold-plated DIMM 3.3 volt sockets / PC100-compliant / hardware scrubbing of ECC errors</b>		
Memory - support	Supports SDRAM ECC DIMMs (32,64,128,256MB) / only 256MB DIMMs are registered (buffered); can not mix reg/non-reg		
Graphics controller	<b>Matrox® Millennium II (2D), 3Dlabs® PERMEDIA® 2A (entry 3D), Intergraph® Intense 3D Pro 3400 (advanced 3D, or Intergraph Intense 3D Pro 3400/Geometry Accelerator (ultimate 3D))</b>		
Graphics - type	<b>Millennium II / AGP-1x 266MB/s adaptor</b>	<b>PERMEDIA 2A / AGP-1x 266MB/s adaptor</b>	<b>Intense 3D Pro 3400 / PCI adaptor</b>
Graphics - memory	8MB std / 16MB max / WRAM	8MB std/max / 90MHz SGRAM	16MB frame buffer and 16M texture mem
Graphics - features	Baseline / no sideband or split transatsns 250MHz 64-bit RAMDAC / 16.7M colors Max resolution of 1920 x 1200	Sideband / split transactions 230MHz RAMDAC / 16.7 mil colors Max resolution of 1600x1200	32MB std / 32MB max / 170 MHz SDRAM Optional or std Geo Accelerator available Max resolution of 1280x1024 at 85Hz
Architecture - chip set	<b>Intel 440BX AGPset / PIIX4E for EIDE (Ultra DMA/33), ISA Bridge, USB / Adaptec® AHA-7895</b>		
Bus slots	National Semiconductor <b>PC87307 Super I/O</b> for diskette, parallel, serial, keyboard, mouse PCI 2.1 (33MHz), Accelerated Graphics Port (66MHz; AGP-2x; 533MB/sec), and ISA slots (8.33MHz) / see below		
Disk	None (AAP models), one EIDE (Ultra DMA/33), or one Wide Ultra SCSI / SMART		
SCSI controller	<b>Adaptec® AHA-7895 / dual channel Wide Ultra SCSI controller / on motherboard / PCI 2.1</b>		
SCSI connectors	<i>Channel A:</i> 68 pin (attaches 4 drop cable to SCSI disk); <i>Channel B:</i> 50 pin and 68 pin / 68 pin cable std to external SCSI port (all mod)		
RAID option	Supports Adaptec ARO™-1130 PCI RAIDport™ adaptor (RAID 0,1) / installs in PCI slot / uses 7895 controller and connectrs		
Cables - SCSI and IDE	<i>SCSI and AAP models:</i> 4 drop 16-bit cable on Chan A; 16-bit cable to ext port on Chan B; one 2 drop IDE cable (CD-ROM) <i>EIDE models:</i> Two 2 drop IDE cables (one for disk; one for CD-ROM) and SCSI cable to external SCSI port		
EIDE disk controller	Enhanced IDE busmaster (PIIX4E) / Ultra DMA/33 (ATA-33) support / two connectors on planar		
CD-ROM	<b>32X-14X<sup>2</sup> CD-ROM / CAV (ATAPI) / bootable</b>		<b>SECURITY</b> <ul style="list-style-type: none"> <li>- Chassis-intrusion detection</li> <li>- Cover key lock (in rear)</li> <li>- U-Bolt support</li> <li>- Power-on password</li> <li>- Admin passd (in security EEPROM)</li> <li>- Boot sequence control (in security EEPROM on motherboard)</li> <li>- Diskette boot inhibit</li> <li>- Boot without keyboard/mouse/diskette</li> <li>- Diskette write protect</li> <li>- Diskette and disk I/O control</li> <li>- Serial/parallel I/O control</li> <li>- Unattended start-up (network)</li> <li>- Secure removable media</li> <li>- Wake-up on LAN (Dual Mode)</li> <li>- Mouse disable</li> <li>- Barcode labels on most components</li> </ul>
Diskette drive	3.5" 1.44MB diskette drive / 1 drop cable		
Ethernet controller	<b>Intel EtherExpress PRO/100B / PCI 82558 ethernet chip on planar / PCI bus</b>		
LCCM support	10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN / Alert on LAN LANClient Control Manager™ enabled / Wake on LAN® / Setup over LAN / Hybrid RPL / DHCP/BOOTP / software image download		
Systems mgmt cntrl	<b>National Semiconductor® LM81 compatible / hardware chip to monitor temperature, fan speeds, voltage, system cover removal / I2C</b>		
Audio	Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker		
Audio connectors	Stereo line in / mic in / line out (all in back) / software volume control		
Microphone	<b>Headset with microphone</b>		
Serial / parallel / USB	<i>Ser:</i> Two 9 pin / 115Kbps <i>Par:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two ports		
Preloaded software <sup>7</sup>	<b>N/A</b> (if no disk AAP model), or <b>Windows NT Workstation 4.0 (SP3)</b> All include Ready to Configure CD-ROM (device drivers and utilities) All include Windows NT Workstation 4.0 CD-ROM		
Keyboard / Mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse		
Power supply	330 watts / universal / auto-sensing / Wake on LAN		
	Bay ① 5.25", HH 1.6", access, std CD-ROM Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, open Bay ④ 3.5", SL 1", access, std diskette Bay ⑤ 3.5", SL 1", no access, open (disk only) ] or Half Bay ⑥ 3.5", SL 1", no access, std disk (disk only) Height		Remotely readable DMI-compliant: <ul style="list-style-type: none"> <li>- System EEPROM on motherboard (info and serial no for CPU, riser, system unit, CD-ROM, diskette, empty blank fields); also can read/write with external RF unit</li> <li>- EEPROMs on DIMMs (component info, serial no)</li> <li>- Disk firmware (component info, serial no)</li> </ul>
Mini tower; Stealth gray color	Slot 1: fullsize, 32-bit AGP (3.3v) - used by AGP graphics adapter (some models) Slot 2: fullsize, 32-bit PCI 2.1 (3.3v/5v) - supports optional Adaptec RAIDport Slot 3: fullsize, 32-bit PCI 2.1 (3.3v/5v) - used by PCI graphics adptr (some models) Slot 4: fullsize, 32-bit PCI 2.1 (3.3v/5v) - used by Geometry Accelerator (some mdl) Slot 5: fullsize, 32-bit PCI 2.1 (3.3v/5v) Slot 6: fullsize, 16-bit ISA or 32-bit PCI 2.1 (3.3v/5v)		
<b>Alert on LAN™</b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off <b>Asset ID (RFID)<sup>5</sup></b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; theft protection <b>SMART Reaction™</b> - automatic backup of disk <b>PC 97 compliant</b> <b>DMI 2.0 compliant</b> with DMI manageability chip <b>Wired for Management 1.1a</b> <b>Adv Config and Power Interface (ACPI) 1.0</b> <b>IBM Performance Enhancement Program</b> - initially distributed via Internet	<b>OTHER STANDARD FEATURES</b> The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST Advanced Power Mgmt 1.2 Support for DMI technology (includes MIF browser) with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software; DMI 2.0 compliant Plug-and-Play 1.0a ISO 9241-3 capable Vital Product Data support (type, model, serial, id) 7.87"W x 17.52"D x 19.37"H; 38 lbs max (shipped) 200 mm W x 445 mm D x 492 mm H; 17.3 kg Several hardcopy publications; four stabilizing feet 512KB IBM BIOS (Flash over LAN support) Supplier's Declaration available Four fans (three in system and one in power supply)		<b>Maximum internal SCSI disk capacity:</b> 63.7GB (3 x 18.2GB (7200 rpm) plus 1 x 9.1GB (7200 rpm)); if no CD-ROM <b>Maximum internal EIDE disk capacity:</b> 27.3GB (3 x 9.1GB) <b>Power management features:</b> <ul style="list-style-type: none"> <li>- Configurable levels for system, CPU, and monitor including powering system and/or display off</li> <li>- Wake Up on Ring (via modem) from off state</li> <li>- Wake Up on Alarm (scheduled time) from off state</li> <li>- Wake-on-LAN from off state</li> <li>- PCI Wake Up from supported PCI devices</li> </ul>

# IBM IntelliStation® M Pro models - Fall 1998 (6889) - withdrawn

Type-model	Std disk (rpm) ms seek / disk interface CD-ROM / interface	Intel® Processor MHz' / Upgrade		Write-back L2 cache std / max KB / KB	Memory in MB; std / max 100MHz	SVGA controller; memory std / max	Bus slots P=PCI avail PCI/ISA=av A=AGP av	Total bays	Chip set Ethernet Preload	Available date
<b>6 slot x 6 bay; PCI/ISA/AGP; Stealth Gray</b>										
ⓧ 6889-41U	10.1GB² std (7200) 9.5ms / EIDE 32X-14X CD-ROM / EIDE	1 x Pentium® II 450/100	SMP via 2nd Pent II	512 / 512 225MHz in SEC	128/ 1G SDRAM ECC	Millennm G200 AGP Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Sept 1998
ⓧ 6889-42U	4.5GB std (7200) 9ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 450/100	SMP via 2nd Pent II	512 / 512 225MHz in SEC	128/ 1G SDRAM ECC	Millennm G200 AGP Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Sept 1998
ⓧ 6889-43U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 450/100	SMP via 2nd Pent II	512 / 512 225MHz in SEC	128/ 1G SDRAM ECC	Millennm G200 AGP Adapter 32/32 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Sept 1998
ⓧ 6889-44U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 450/100	SMP via 2nd Pent II	512 / 512 225MHz in SEC	128/ 1G SDRAM ECC	Intense 3400 PCI Adapter 8 / 16 SDRAM	PCI=3 PCI/ISA=1 AGP=1	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Sept 1998
ⓧ 6889-45U	9.1GB std (10000) 8.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	<b>SMP via 2 x</b> Pentium II 450/100	None	512 / 512 225MHz in SEC	256/ 1G RDIMM ECC	Millennm G200 AGP Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Sept 1998
ⓧ 6889-46U	9.1GB std (10000) 8.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 450/100	SMP via 2nd Pent II	512 / 512 225MHz in SEC	256/ 1G RDIMM ECC	Intense 3400 <b>+ Geo Accel</b> 32/32 SDRAM	PCI=2 PCI/ISA=1 AGP=1	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Sept 1998
ⓧ 6889-48U for AAP	<i>no disk</i> 32X-14X CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 450/100	via 2nd Pent II	512 / 512 225MHz in SEC	128 / 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX Ethernet Open OS	Sept 1998
ⓧ 6889-60U	6.4GB std (7200) 9.5ms / EIDE / ATA-33 32X-14X CD-ROM / EIDE	1 x Pentium II 350/100	SMP via 2nd Pent II	512 / 512 175MHz in SEC	64 / 1G SDRAM ECC	Millennm G200 AGP adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Nov 1998
ⓧ 6889-61U	9.1GB std (7200) 9.5ms / EIDE / ATA-33 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512 / 512 200MHz in SEC	64 / 1G SDRAM ECC	Millennm G200 AGP Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Nov 1998
ⓧ 6889-63U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512 / 512 200MHz in SEC	64 / 1G SDRAM ECC	Millennm G200 AGP Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Nov 1998
ⓧ 6889-64U	4.5GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512 / 512 200MHz in SEC	128/ 1G SDRAM ECC	Millennm G200 AGP Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Nov 1998
ⓧ 6889-65U	4.5GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	<b>SMP via 2 x</b> Pentium II 400/100	None	512 / 512 200MHz in SEC	128/ 1G SDRAM ECC	Millennm G200 AGP Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Nov 1998
ⓧ 6889-69U	9.1GB std (7200) 7.5ms / <b>Wide Ultra SCSI</b> 32X-14X CD-ROM / EIDE	1 x Pentium II 400/100	SMP via 2nd Pent II	512 / 512 200MHz in SEC	256/ 1G RDIMM ECC	Millennm G200 AGP Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Nov 1998

<p><b>Windows NT Preload<sup>17</sup></b></p> <p>Windows NT® Workstation 4.0 (SP3) Internet Explorer 4.0 install icon IBM Welcome Center Device drivers for each subsystem Ready to install:</p> <ul style="list-style-type: none"> <li>- ConfigSafe for Windows NT 4.0</li> <li>- Norton AntiVirus for Windows NT</li> <li>- DMI Service Provider</li> <li>- DMI BIOS Instrumentation</li> <li>- IBM PC System Monitor Instrumentation</li> <li>- IBM AssetCare Serial Number Information</li> <li>IBM RTC CD-ROM Setup Utility</li> <li>IBM Utilities for Windows 95/NT 4.0</li> <li>- Hummingbird "Try and Buy" Suite CD-ROM</li> <li>- Ready to Configure CD-ROM</li> <li>- Free license for Lotus SmartSuite 97 CD-ROM</li> <li>- IBM ViaVoice 98 Office Edition CD-ROM</li> <li>- Windows NT Workstation 4.0 CD-ROM</li> <li>- IBM Diagnostics CD-ROM</li> <li>- Access to IBM HomePage Creator</li> </ul> <p>C: is 2GB as FAT16 Remainder is unformatted</p>	<p><b>Ready to Configure CD-ROM</b></p> <p>All models ship with a CD with drivers for Windows® 95, 98, and NT 3.51 and 4.0 and various utilities. Includes:</p> <ul style="list-style-type: none"> <li>- Intel LANDesk® Client Manager</li> <li>- ConfigSafe</li> <li>- IBM Systems Management Tools</li> </ul> <p><b>Supported Memory and Options</b></p> <table border="0"> <tr> <td>32MB SDRAM ECC DIMM 100MHz</td> <td>01K1133</td> </tr> <tr> <td>64MB SDRAM ECC DIMM 100MHz</td> <td>01K1130</td> </tr> <tr> <td>128MB SDRAM ECC DIMM 100MHz</td> <td>01K1131</td> </tr> <tr> <td>256 MB SDRAM ECC DIMM Registered</td> <td>01K1132</td> </tr> <tr> <td>Adaptec ARO™-1130 CA-B PCI RAIDport</td> <td>1681100</td> </tr> <tr> <td>IBM Netfinity 400MHz Pentium II/512KB</td> <td>10L5884</td> </tr> <tr> <td>IBM Netfinity 450MHz Pentium II/512KB</td> <td>10L5900</td> </tr> <tr> <td>Matrox Millennium G200</td> <td>10L7127</td> </tr> <tr> <td>Intergraph Intense 3D Pro 3400</td> <td>02K3460</td> </tr> <tr> <td>Intergraph Intense 3D Pro 3400 GA</td> <td>02K3461</td> </tr> <tr> <td>Geometry Accelerator</td> <td></td> </tr> <tr> <td>10/100 PCI EtherJet Adapter WOL</td> <td>08L2565</td> </tr> <tr> <td>Auto Wake Token-Ring ISA Adapter</td> <td>55H6760</td> </tr> <tr> <td>PCI Token Ring Adapter WOL</td> <td>86H1880</td> </tr> <tr> <td>10.1GB 10000 rpm EIDE disk</td> <td>20L0548</td> </tr> </table>	32MB SDRAM ECC DIMM 100MHz	01K1133	64MB SDRAM ECC DIMM 100MHz	01K1130	128MB SDRAM ECC DIMM 100MHz	01K1131	256 MB SDRAM ECC DIMM Registered	01K1132	Adaptec ARO™-1130 CA-B PCI RAIDport	1681100	IBM Netfinity 400MHz Pentium II/512KB	10L5884	IBM Netfinity 450MHz Pentium II/512KB	10L5900	Matrox Millennium G200	10L7127	Intergraph Intense 3D Pro 3400	02K3460	Intergraph Intense 3D Pro 3400 GA	02K3461	Geometry Accelerator		10/100 PCI EtherJet Adapter WOL	08L2565	Auto Wake Token-Ring ISA Adapter	55H6760	PCI Token Ring Adapter WOL	86H1880	10.1GB 10000 rpm EIDE disk	20L0548	<p><b>Authorized Assembler Program models</b></p> <p>AAP models contain no hard disk or graphics adapter. No preload or operating system license is included.</p> <ul style="list-style-type: none"> <li>- Hummingbird "Try and Buy" Suite CD-ROM</li> <li>- Ready to Configure CD-ROM</li> <li>- Free license for Lotus SmartSuite CD-ROM (via 800 number)</li> </ul>
32MB SDRAM ECC DIMM 100MHz	01K1133																															
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<p>Ethernet = Intel® 10/100 ethernet chip; 10BaseT and 100BaseTX; Alert on LAN NT4 = Windows NT Workstation 4.0 preinstalled RDIMM = Registered DIMM Wide Ultra SCSI = Adaptec AHA-7895; dual channel Wide Ultra SCSI</p> <p>ⓧ&lt; = Withdrawn from marketing</p>		<p><b>WARRANTY SERVICE SUPPORT<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>↪ 3 year parts warranty</li> <li>↪ 1 year labor warranty</li> <li>↪ International Warranty Service<sup>3</sup></li> <li>↪ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time</li> <li>↪ 2nd/3rd year: parts exchange only, call 1-800-772-2227</li> <li>↪ On site warranty upgrade options: <ul style="list-style-type: none"> <li>• Next day response<sup>14</sup>, Mon-Fri 8-5</li> <li>• 4 hour response<sup>14</sup>, 7 day x 24 hr</li> </ul> </li> <li>↪ Post warranty: on site options above</li> <li>↪ IBM SystemXtra®</li> <li>↪ 24 hour / 7 day telephone, electronic, Internet (www.pc.ibm.com) support</li> </ul>																														



# IBM IntelliStation® M Pro - Fall 1998 (6889) - withdrawn

## IBM® IntelliStation® M Pro

Type	<b>6889</b>	
Processor(s)	<b>One or two Intel® Pentium® II 450/100MHz<sup>1</sup> / MMX™ technology / 16KB ins + 16KB data L1 cache</b>	
Implementation	Processor and L2 cache in <b>Single Edge Contact (SEC)</b> cartridge in protective metal case / SEC plugged into Intel Slot 1	
Processor upgrade	<b>SMP</b> via second identical processor / upgrade via SEC into motherboard Intel® Slot 1 CPU connector / MPS 1.4	
L2 cache	<b>512KB</b> std / 512KB max / ECC / half speed of processor / 4 way set associative / write-back / integrated in SEC	
Avail / withdrawn date	September 1998 or November 1998 / withdrawn March 1999 or June 1999	
Mem - std / max / type	<b>64MB, 128MB, or 256MB std / 1GB max<sup>13</sup> / Error Checking and Correction (ECC)</b>	
Memory - sockets	4 sockets / 3 available (all have Error Checking and Correcting memory controller)	
Memory - features	<b>SDRAM / 100MHz</b> / four 168 pin gold-plated DIMM 3.3 volt sockets / PC100-compliant / hardware scrubbing of ECC errors	
Memory - support	Supports SDRAM ECC DIMMs (32,64,128,256MB) / only 256MB DIMMs are registered (buffered); can not mix reg/non-reg	
Graphics controller	<b>Matrox® Millennium G200 (2D), Intergraph® Intense 3D Pro 3400 (advanced 3D), or Intergraph Intense 3D Pro 3400 and Geometry Accelerator (ultimate 3D)</b>	
Graphics - type	<b>Matrox Millennium G200</b> / AGP-2x 533MB/sec adapter	<b>Intense 3D Pro 3400</b> / PCI adapter / 32MB std / 32MB max
Graphics - memory	8MB std / 16MB max / 142MHz, 128-bit SGRAM	16MB frame buffer (125MHz SDRAM) and
Graphics - features	Sideband addressing / split transactions 250 MHz RAMDAC / MGA-G200 128-bit DualBus chip Max 2D resolution of 1920x1200 in 24-bit color at 80Hz	16MB texture memory (SGRAM) Optional or std PCI geometry accelerator (3D Pro 3400 GA) Max resolution of 1280x1024 at 16.7 million colors at 85Hz
Architecture - chip set	<b>Intel 440BX</b> AGPset / <b>PIIX4E</b> for EIDE (Ultra DMA/33), ISA Bridge, USB / <b>Adaptec® AHA-7895</b>	
Bus slots	National Semiconductor <b>PC87307 Super I/O</b> for diskette, parallel, serial, keyboard, mouse PCI 2.1 (33MHz), Accelerated Graphics Port (66MHz; AGP-2x; 533MB/sec), and ISA slots (8.33MHz) / see below	
Disk	None (AAP models), one EIDE (Ultra DMA/33), or one Wide Ultra SCSI / SMART <sup>5</sup>	
SCSI controller	<b>Adaptec® AHA-7895 / dual channel Wide Ultra SCSI controller</b> / on motherboard / PCI 2.1	
SCSI connectors	<b>Channel A:</b> 68 pin (attaches 4 drop cable to SCSI disk); <b>Channel B:</b> 50 pin and 68 pin / 68 pin cable std to external SCSI port (all mod)	
RAID option	Supports Adaptec ARO™-1130 CA-B PCI RAIDport™ adapter (RAID 0,1) / installs in PCI slot / uses 7895 controller and connectors	
Cables - SCSI and IDE	<b>SCSI and AAP models:</b> 4 drop 16-bit cable on Chan A; 16-bit cable to ext port on Chan B; one 2 drop IDE cable (CD-ROM)	
EIDE disk controller	<b>EIDE models:</b> Two 2 drop IDE cables (one for disk; one for CD-ROM) and SCSI cable to external SCSI port Enhanced IDE busmaster (PIIX4E) / Ultra DMA/33 (ATA-33) support / two connectors on planar	
CD-ROM	<b>32X-14X<sup>6</sup> CD-ROM</b> / CAV (ATAPI) / bootable	
Diskette drive	3.5" 1.44MB diskette drive / 1 drop cable	
Ethernet controller	<b>Intel EtherExpress PRO/100B</b> / PCI 82558 ethernet chip on planar / PCI bus 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN	
LCCM support	LANClient Control Manager™ enabled / Wake on LAN / Setup over LAN / Hybrid RPL / DHCP/BOOTP / software image download	
Systems mgmt cntrl	National Semiconductor® LM81 compatible / <b>hardware chip to monitor temperature, fan speeds, voltage, system cover removal / I2C</b>	
Audio	Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker	
Audio connectors	Stereo line in / mic in / line out (all in back) / software volume control	
Microphone	<b>Headset with microphone</b> (noise canceling for ViaVoice application)	
Serial/parallel/USB	<b>Ser:</b> Two 9 pin / 115Kbps <b>Par:</b> One (EPP, ECP) / IEEE 1284 <b>USB:</b> Two ports	
Keyboard / Mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse	
Power supply	330 watts / universal / auto-sensing / Wake on LAN	
	 <p>Bay ① 5.25", HH 1.6", access, std CD-ROM          Bay ② 5.25", HH 1.6", access, open          Bay ③ 3.5", SL 1", access, open          Bay ④ 3.5", SL 1", access, std diskette          Bay ⑤ 3.5", SL 1", no access, open (disk only)          Bay ⑥ 3.5", SL 1", no access, std disk (disk only) ] or Half Height</p> <p>Slot 1: fullsize, 32-bit AGP (3.3v) - used by AGP graphics adapter (some models)          Slot 2: fullsize, 32-bit PCI 2.1 (5v) - supports optional Adaptec RAIDport          Slot 3: fullsize, 32-bit PCI 2.1 (5v) - used by PCI graphics adptr (some models)          Slot 4: fullsize, 32-bit PCI 2.1 (5v) - used by Geo Accelerator (some models)          Slot 5: fullsize, 32-bit PCI 2.1 (5v)          Slot 6: fullsize, 16-bit ISA or 32-bit PCI 2.1 (5v)</p>	<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>- Cover key lock (in rear)</li> <li>- Cover tamper detect switch</li> <li>- Secure fixed DASD</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Administrator password</li> <li>- Keyboard/mouse password</li> <li>- Wake Up on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard or mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write-protect</li> <li>- Diskette, disk, serial port, parallel port I/O control</li> <li>- Secure access openings</li> <li>- Secure removable media</li> <li>- VPD stored in EEPROM</li> <li>- Write protection control for EEPROM</li> <li>- Barcode labels on most components</li> </ul> <p>Remotely readable DMI-compliant:</p> <ul style="list-style-type: none"> <li>- System EEPROM on motherboard (info and serial no for CPU, riser, system unit, CD-ROM, diskette, empty blank fields); also can read/write with external RF unit</li> <li>- EEPROMs on DIMMs (component info, serial no)</li> <li>- Disk firmware (compnt info, serial no)</li> </ul>
<b>Alert on LAN™</b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off	<p><b>OTHER STANDARD FEATURES</b></p> <p>The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST          Advanced Power Mgmt 1.2          Support for DMI technology (includes MIF browser) with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software; DMI 2.0 compliant          Plug-and-Play 1.0a          ISO 9241-3 capable          Vital Product Data support (type, model, serial, id)          7.87"W x 17.52"D x 19.37"H; 38 lbs max (shipped)          200 mm W x 445 mm D x 492 mm H; 17.3 kg          Several hardcopy publications; four stabilizing feet          512KB IBM BIOS (Flash over LAN support)          Supplier's Declaration available          Four fans (three in system and one in power supply)</p>	
<b>Asset ID (RFID)<sup>16</sup></b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; theft protection		
<b>SMART Reaction™</b> - automatic backup of disk		
<b>PC 98 compliant</b>		
<b>DMI 2.0 compliant</b> with DMI manageability chip		
<b>Wired for Management 1.1a</b>		
<b>Adv Config and Power Interface (ACPI) 1.0</b>		
		<p><b>Maximum internal SCSI disk capacity<sup>13</sup>:</b> 63.7GB (3 x 18.2GB (7200 rpm) plus 1 x 9.1GB (7200 rpm)); if no CD-ROM</p> <p><b>Maximum internal EIDE disk capacity:</b> 30.3GB (3 x 10.1GB)</p> <p>Power management features:</p> <ul style="list-style-type: none"> <li>- Configurable levels for system, CPU, and monitor including powering system and/or display off</li> <li>- Wake Up on Ring (via modem) from off state</li> <li>- Wake Up on Alarm (scheduled time) from off state</li> <li>- Wake-on-LAN from off state</li> <li>- PCI Wake Up from supported PCI devices</li> </ul>

# IBM IntelliStation® M Pro (6889) - Spring 1999 - withdrawn

Type-model	Std disk (rpm) ms seek / disk interface CD-ROM / interface	Intel® Processor MHz' / Upgrade	Write-back L2 cache std / max KB / KB	Memory in MB; std / max 100MHz	SVGA controller; memory std / max	Bus slots P=PCI avail PCI/ISA=av A=AGP av	Total bays	Chip set Ethernet Preload <sup>17</sup>	Available date	
<b>6 slot x 6 bay; PCI/ISA/AGP; Stealth Black</b>										
6889-72U	13.5GB <sup>2</sup> std (7200) 9.0ms / EIDE 40X-17X <sup>6</sup> CD-ROM / EIDE	1 x Pentium® III 550/100	SMP via 2nd Pent III	512/512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G200 AGP 2X Adapter 8 / 16MB SGRAM AGP=0	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	May 1999
6889-73U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 550/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G200 AGP 2X Adapter 8 / 16MB SGRAM AGP=0	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	May 1999
6889-75U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 550/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	IBM Fire GL1 <sup>11</sup> AGP 2X Adapter 32/32MB SGRAM AGP=0	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	May 1999
6889-76U	9.1GB std (10K) 5.4ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 550/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	256/ 1G RDIMM ECC	IBM Fire GL1 AGP 2X Adapter 32/32MB SGRAM AGP=0	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	May 1999
6889-78U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	1 x Pentium III 550/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX Ethernet Open OS	May 1999
6889-80U	13.5GB std (7200) 9.0ms / EIDE 40X-17X CD-ROM / EIDE	1 x Pentium III 500/100	SMP via 2nd Pent III	512/512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G400 AGP 2X Adapter 16/16MB SGRAM AGP=0	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	July 1999
6889-81U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 500/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G400 AGP 2X Adapter 16/16MB SGRAM AGP=0	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	July 1999
6889-82U	13.5GB std (7200) 9.0ms / EIDE 40X-17X CD-ROM / EIDE	1 x Pentium III 550/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G400 AGP 2X Adapter 16/16MB SGRAM AGP=0	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	July 1999
6889-83U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 550/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G400 AGP 2X Adapter 16/16MB SGRAM AGP=0	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	July 1999
6889-84U	9.1GB std (10K) 5.4ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	<b>SMP via 2x</b> Pentium III 550/100	<i>None</i>	512/512 half speed in SEC	256/ 1G RDIMM ECC	Millennium G400 AGP 2X Adapter 16/16MB SGRAM AGP=0	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	July 1999
6889-85U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 550/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Appian J Pro PCI Adapter 16/16MB SGRAM AGP=1	PCI=3 PCI/ISA=1 AGP=1	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	July 1999
6889-86U	13.5GB std (7200) 9.0ms / EIDE 40X-17X CD-ROM / EIDE	1 x Pentium III 500/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Appian J Pro PCI Adapter 16/16MB SGRAM AGP=1	PCI=3 PCI/ISA=1 AGP=1	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	July 1999
6889-87U	9.1GB std (10K) 5.4ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 550/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	256/ 1G RDIMM ECC	Wildcat 4000 RA Wildcat 4000 GA 80/80MB SDRAM AGP=0	PCI=3 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	July 1999
6889-88U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	1 x Pentium III 450/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	0 / 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX Ethernet Open OS	July 1999
6889-89U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	1 x Pentium III 500/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	0 / 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX Ethernet Open OS	July 1999
6889-8AU for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	1 x Pentium III 550/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	0 / 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX Ethernet Open OS	July 1999

## Windows NT Preload<sup>17</sup>

Windows NT® Workstation 4.0 (SP4)  
Internet Explorer 4.0 install icon  
IBM Welcome Center  
Device drivers for each subsystem  
Ready to install:  
- ConfigSafe®  
- Norton AntiVirus™ (OEM version)  
- DMI Service Provider  
- DMI BIOS Instrumentation  
- IBM PC System Monitor Instrumentation  
- IBM AssetCare Serial Number Information  
CD-ROM discs:  
◊ Hummingbird "Try and Buy" Suite CD-ROM  
◊ Ready to Configure CD-ROM  
◊ Free license for Lotus SmartSuite 97 CD-ROM  
◊ IBM ViaVoice™ 98 Office Edition CD-ROM  
◊ Windows NT Workstation 4.0 CD-ROM  
◊ IBM Diagnostics CD-ROM (PC-Doctor)  
◊ Access to IBM HomePage Creator



C: is 2GB as FAT16  
Remainder is unformatted

## Authorized Assembler Program models

AAP models contain no disk or graphics adapter.  
No preload or operating system license is included.  
- Hummingbird "Try and Buy" Suite CD-ROM  
- Ready to Configure CD-ROM  
- Free license for Lotus SmartSuite CD-ROM (via 800 number)

## Supported Memory and Options

32MB SDRAM ECC DIMM 100MHz	01K1133
64MB SDRAM ECC DIMM 100MHz	01K1130
128MB SDRAM ECC DIMM 100MHz	01K1131
256MB SDRAM ECC DIMM Registered	01K1132
Adaptec ARO™-1130 CA-B PCI RAIDport	1681100
100MB IDE Zip Drive	20L0544
IBM Fire GL1 (3D graphics accelerator)	33L5032
2X/4X/24X <sup>6</sup> CD-RW IDE Drive	33L5005
550MHz Pentium III Second Processor	33L5112

RDIMM = Registered DIMM  
 = Announced June 22, 1999  
 = Withdrawn from marketing

## WARRANTY SERVICE SUPPORT\*<sup>3</sup>

- ↔ 3 year parts warranty
- ↔ 1 year labor warranty
- ↔ International Warranty Service<sup>3</sup>
- ↔ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time
- ↔ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ↔ On site warranty service upgrade options:
  - Next day response, Mon-Fri 8-5<sup>14</sup>
  - 4 hour response, 7 day x 24 hr<sup>14</sup>
- ↔ Post warranty maintenance services available
- ↔ 24 hour / 7 day telephone, electronic, and Internet support

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227

No warranties are expressed or implied in this summary (6889S - Page 1 of 2) © IBM Corp. October 2001

# IBM IntelliStation® M Pro (6889) - Spring 1999 - withdrawn

<b>IBM® IntelliStation® M Pro</b>				
Type	<b>6889</b>			
Processor(s)	<b>One Intel® Pentium® III 450, 500, or 550MHz<sup>1</sup></b> / 100MHz Front Side Bus			
Implementation	Processor and L2 cache in <b>Single Edge Contact (SEC)</b> cartridge in protective metal case / SEC plugged into Intel Slot 1			
Processor upgrade	<b>SMP</b> via second identical processor / upgrade via SEC into motherboard Intel® Slot 1 CPU connector / MPS 1.4			
L2 cache	<b>512KB</b> std / 512KB max / ECC / half speed of processor / 4 way set associative / write-back / integrated in SEC			
Avail / withdrawn date	May 1999 or July 1999 / November 1999 or February 2000 or May 2000			
Mem - std / max / type	<b>128MB or 256MB std / 1GB max<sup>13</sup> / Error Checking and Correction (ECC)</b>			
Memory - sockets	4 sockets / 3 available (all have Error Checking and Correcting memory controller)			
Memory - features	<b>SDRAM / 100MHz</b> / four 168 pin gold-plated DIMM 3.3 volt sockets / PC100-compliant / hardware scrubbing of ECC errors			
Memory - support	Supports SDRAM ECC DIMMs (32,64,128, 256MB) / only 256MB DIMMs are registered (buffered); can not mix reg/non-reg			
Graphics controller	<b>Matrox® Millennium G200-D or G400</b> (performance 2D), <b>IBM Fire GL1<sup>11</sup></b> (performance 2D/3D), <b>Appian Graphics® J Pro</b> (2D multiple display), or <b>Intense3D® Wildcat 4000 RA w/ Geo Acceleratr GA</b> (extreme 3D)			
	<table border="1"> <tr> <td><b>IBM Fire GL1</b> / AGP 2X adapter / sideband-capable 32MB std / 32MB max / 256-bit 100MHz SGRAM 2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B</td> <td><b>Appian Graphics Jeronimo Pro</b> / 32-bit PCI adapter / 16MB std / 16MB max / 125MHz SGRAM / 250MHz RAMDAC / two controllers with two ports for multiple monitor support</td> </tr> </table>	<b>IBM Fire GL1</b> / AGP 2X adapter / sideband-capable 32MB std / 32MB max / 256-bit 100MHz SGRAM 2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B	<b>Appian Graphics Jeronimo Pro</b> / 32-bit PCI adapter / 16MB std / 16MB max / 125MHz SGRAM / 250MHz RAMDAC / two controllers with two ports for multiple monitor support	
<b>IBM Fire GL1</b> / AGP 2X adapter / sideband-capable 32MB std / 32MB max / 256-bit 100MHz SGRAM 2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B	<b>Appian Graphics Jeronimo Pro</b> / 32-bit PCI adapter / 16MB std / 16MB max / 125MHz SGRAM / 250MHz RAMDAC / two controllers with two ports for multiple monitor support			
	<b>Intense3D Wildcat 4000 RA</b> / 32-bit 33MHz PCI 2.1 adapter / 16MB 128-bit 143MHz SDRAM (frame buffer) and 64MB 128-bit 143MHz SDRAM (texture memory) / 2D and 3D engine / <b>Intergraph 3D Wildcat 4000 Geometry Accelerator (GA)</b> / AGP 2X adapter (requires 4000 RA) / max of 1280x1024 at 85Hz			
Architecture - chip set	<b>Intel 440BX</b> AGPset / <b>PIIX4E</b> for EIDE (Ultra DMA/33), ISA Bridge, USB / <b>Adaptec® AHA-7895</b> / National Semiconductor PC87307 Super I/O for diskette, parallel, serial, keyboard, mouse			
Bus slots	PCI 2.1 (33MHz), Accelerated Graphics Port (66MHz; AGP 2X; 533MB/sec), and ISA slots (8.33MHz) / see below			
Disk	None (AAP models), one EIDE (Ultra DMA/33), or one Wide Ultra SCSI / SMART <sup>5</sup>			
SCSI controller	<b>Adaptec® AHA-7895 / dual channel Wide Ultra SCSI controller</b> / on motherboard / PCI 2.1			
SCSI connectors	<i>Channel A:</i> 68 pin (attaches 4 drop cable to SCSI disk); <i>Channel B:</i> 50 pin and 68 pin / 68 pin cable std to external SCSI port (all mod)			
RAID option	Supports Adaptec ARO™-1130 CA-B PCI RAIDport™ adapter (RAID 0,1) / installs in PCI slot / uses 7895 controller and connectors			
Cables - SCSI and IDE	<i>SCSI and AAP models:</i> 4 drop 16-bit cable on Chan A; 16-bit cable to ext port on Chan B; one 2 drop IDE cable (CD-ROM) <i>EIDE models:</i> Two 2 drop IDE cables (one for disk; one for CD-ROM) and SCSI cable to external SCSI port			
EIDE disk controller	Enhanced IDE busmaster (PIIX4E) / Ultra DMA/33 (ATA-33) support / two connectors on planar			
CD-ROM	<b>40X-17X<sup>6</sup> CD-ROM</b> / CAV (ATAPI) / bootable			
Diskette drive	3.5" 1.44MB diskette drive / 1 drop cable			
Ethernet controller	<b>Intel EtherExpress PRO/100B</b> / PCI 82558 ethernet chip on planar / PCI bus / 10BaseTX and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN			
LCCM support	LANClient Control Manager™ enabled / Wake on LAN / Setup over LAN / Hybrid RPL / DHCP/BOOTP / software image download			
Systems mgmt cntrl	National Semiconductor® LM81-compatible / <b>hardware chip to monitor temperature, fan speeds, voltage, system cover removal / I2C</b>			
Audio	Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker			
Audio connectors	Stereo line in / mic in / line out (all in back) / software volume control			
Microphone	<b>Headset with microphone</b> (noise canceling for ViaVoice application)			
Serial/parallel/USB	<i>Ser:</i> Two 9 pin / 115Kbps <i>Par:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two ports			
Keyboard / mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse			
Power supply	330 watts / universal / auto-sensing / Wake on LAN			
	<table border="1"> <tr> <td> </td> <td>           Bay ① 5.25", HH 1.6", access, std CD-ROM            Bay ② 5.25", HH 1.6", access, open            Bay ③ 3.5", SL 1", access, open            Bay ④ 3.5", SL 1", access, std diskette            Bay ⑤ 3.5", SL 1", no access, open (disk only)            Bay ⑥ 3.5", SL 1", no access, std disk (disk only)         </td> <td>           ] or Half Height         </td> </tr> </table> <p>Slot 1: halfsize, 32-bit AGP (3.3v) - used by AGP graphics adapter (most models)          Slot 2: fullsize, 32-bit PCI 2.1 (5v) - supports optional Adaptec RAIDport - used by Appian or Wildcat in some models          Slot 3: fullsize, 32-bit PCI 2.1 (5v)          Slot 4: fullsize, 32-bit PCI 2.1 (5v)          Slot 5: fullsize, 32-bit PCI 2.1 (5v)          Slot 6: fullsize, 16-bit ISA or 32-bit PCI 2.1 (5v)</p>		Bay ① 5.25", HH 1.6", access, std CD-ROM Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, open Bay ④ 3.5", SL 1", access, std diskette Bay ⑤ 3.5", SL 1", no access, open (disk only) Bay ⑥ 3.5", SL 1", no access, std disk (disk only)	] or Half Height
	Bay ① 5.25", HH 1.6", access, std CD-ROM Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, open Bay ④ 3.5", SL 1", access, std diskette Bay ⑤ 3.5", SL 1", no access, open (disk only) Bay ⑥ 3.5", SL 1", no access, std disk (disk only)	] or Half Height		
	<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>- Cover key lock (in rear)</li> <li>- Cover tamper detect switch</li> <li>- Secure fixed DASD</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Administrator password</li> <li>- Keyboard/mouse password</li> <li>- Wake Up on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard or mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write-protect</li> <li>- Diskette, disk, serial port, parallel port I/O control</li> <li>- Secure access openings</li> <li>- Secure removable media</li> <li>- VPD stored in EEPROM</li> <li>- Write protection control for EEPROM</li> <li>- Barcode labels on most components</li> </ul> <p>Remotely readable DMI-compliant:</p> <ul style="list-style-type: none"> <li>- System EEPROM on motherboard (info and serial no for CPU, riser, system unit, CD-ROM, diskette, empty blank fields); also can read/write with external RF unit</li> <li>- EEPROMs on DIMMs (component info, serial no)</li> <li>- Disk firmware (compnt info, serial no)</li> </ul>			
<b>Alert on LAN™</b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off	<b>OTHER STANDARD FEATURES</b>	<i>Maximum internal SCSI disk capacity<sup>13</sup>:</i> 72.8GB (4 x 18.2GB (7200 rpm); 91GB if remove CD-ROM)		
<b>Asset ID (RFID)<sup>16</sup></b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; theft protection	The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST	<i>Maximum internal EIDE disk capacity<sup>13</sup>:</i> 61.2GB (3 x 20.4GB)		
<b>SMART Reaction™</b> - automatic backup of disk	Advanced Power Mgmt 1.2	Power management features:		
<b>PC 98-compliant</b>	Support for DMI technology (includes MIF browser) with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software; DMI 2.0 compliant	- Configurable levels for system, CPU, and monitor including powering system and/or display off		
<b>DMI 2.0-compliant</b> with DMI manageability chip	Plug-and-Play 1.0a	- Wake Up on Ring (via modem) from off state		
<b>Wired for Management 1.1a</b>	ISO 9241-3 capable	- Wake Up on Alarm (scheduled time) from off state		
<b>Adv Config and Power Interface (ACPI) 1.0</b>	Vital Product Data support (type, model, serial, id)	- Wake on LAN from off state		
<b>Universal Management Agent (UMA) and UMA Plus-enabled</b>	7.87"W x 17.52"D x 19.37"H; 38 lbs max (shipped) 200 mm W x 445 mm D x 492 mm H; 17.3 kg Several hardcopy publications; four stabilizing feet 512KB IBM BIOS (Flash over LAN support) Supplier's Declaration available Four fans (three in system and one in power supply)	- PCI Wake Up from supported PCI devices		



# IBM IntelliStation® M Pro - Summer 1999 (6889) - withdrawn

Type-model	Std disk (rpm) ms seek / disk interface CD-ROM <sup>6</sup> / interface	Intel® Processor MHz <sup>1</sup> / Upgrade	Write-back L2 cache std / max KB / KB	Memory in MB; std / max 100MHz	SVGA controller; memory std / max	Bus slots P=PCI avail PCI/ISA=av A=AGP av	Total bays	Chip set Ethernet Preload <sup>17</sup>	Available date	
<b>6 slot x 6 bay; PCI/ISA/AGP; Stealth Black</b>										
⌘ 6889-91U	13.5GB <sup>2</sup> std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	1 x Pentium III 550/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Appian J Pro PCI Adapter 16/16MB SGRAM	PCI=3 PCI/ISA=1 AGP=1	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Aug 1999
⌘ 6889-92U	13.5GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	1 x Pentium III 600/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G400 AGP 2X Adapter 16/16MB SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Aug 1999
⌘ 6889-93U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 600/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G400 AGP 2X Adapter 16/16MB SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Aug 1999
⌘ 6889-94U	9.1GB std (10K) 5.4ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 600/100	SMP via 2nd Pent III	512/512 half speed in SEC	256/ 1G RDIMM ECC	Millennium G400 AGP 2X Adapter 16/16MB SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Aug 1999
⌘ 6889-95U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 600/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	256/ 1G RDIMM ECC	IBM Fire GL1 <sup>11</sup> AGP 2X Adapter 32/32MB SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Aug 1999
⌘ 6889-96U	13.5GB std (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM / EIDE	1 x Pentium III 600/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	IBM Fire GL1 AGP 2X Adapter 32/32MB SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Aug 1999
⌘ 6889-97U	9.1GB std (10K) 5.4ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 600/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	256/ 1G RDIMM ECC	Wildcat 4000 RA Wildcat 4000 GA 80/80MB SDRAM	PCI=3 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Aug 1999
⌘ 6889-98U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	1 x Pentium III 600/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	0 / 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX Ethernet Open OS	Aug 1999
⌘ 6889-99U	9.1GB std (10K) 5.4ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 600/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	256/ 1G RDIMM ECC	IBM Fire GL1 AGP 2X Adapter 32/32MB SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Oct 1999
⌘ 6889-9AU	9.1GB std (10K) 5.4ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	<b>SMP via 2x</b> Pentium III 600/100	None	512/512 half speed in SEC	512/ 1G RDIMM ECC	Millennium G400 AGP 2X Adapter 16/16MB SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Oct 1999

## Windows NT Preload<sup>17</sup>

Windows NT® Workstation 4.0 (SP4)  
Internet Explorer 4.0 install icon  
IBM Welcome Center

Device drivers for each subsystem  
Ready to install:

- ConfigSafe®
- Norton AntiVirus™ (OEM version)
- DMI Service Provider
- DMI BIOS Instrumentation
- IBM PC System Monitor Instrumentation
- CoSession Remote® 32

CD-ROM discs:

- ⌘ Hummingbird "Try and Buy" Suite CD-ROM
- ⌘ Ready to Configure CD-ROM
- ⌘ Free license for Lotus SmartSuite 97 CD-ROM
- ⌘ IBM ViaVoice™ 98 Office Edition CD-ROM
- ⌘ LANDesk® Client Manager CD-ROM
- ⌘ Windows NT Workstation 4.0 CD-ROM
- ⌘ IBM Diagnostics CD-ROM (PC-Doctor)
- ⌘ Access to IBM HomePage Creator

C: is 2GB as FAT16  
Remainder is unformatted

## Authorized Assembler Program models

AAP models contain no disk or graphics adapter.  
No preload or operating system license is included.

- Hummingbird "Try and Buy" Suite CD-ROM
- Ready to Configure CD-ROM
- Free license for Lotus SmartSuite CD-ROM (via 800 number)

## Supported Memory and Options

32MB SDRAM ECC DIMM 100MHz	01K1133
64MB SDRAM ECC DIMM 100MHz	01K1130
128MB SDRAM ECC DIMM 100MHz	01K1131
256MB SDRAM ECC DIMM Registered	01K1132
Adaptec ARO™-1130 CA-B PCI RAIDport	1681100
100MB IDE Zip Drive	20L0544
2X/4X/24X CD-RW IDE Drive	33L5005
550MHz Pentium III Second Processor	33L5112
600MHz Pentium III Second Processor	33L5106

RDIMM = Registered DIMM  
⌘ = Announced August 3, 1999  
⌘ = Withdrawn from marketing

## WARRANTY SERVICE SUPPORT<sup>3</sup>

- ⌘ 3 year parts warranty
- ⌘ 1 year labor warranty
- ⌘ International Warranty Service<sup>3</sup>
- ⌘ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time
- ⌘ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ⌘ On site warranty upgrade options:
  - Next day response<sup>14</sup>, Mon-Fri 8-5
  - 4 hour response<sup>14</sup>, 7 day x 24 hr
- ⌘ Post warranty: on site options above
- ⌘ IBM SystemXtra®
- ⌘ 24 hour / 7 day telephone, electronic, Internet (www.pc.ibm.com) support

# IBM IntelliStation® M Pro - Summer 1999 (6889) - withdrawn

## IBM® IntelliStation® M Pro

Type	<b>6889</b>													
Processor(s)	<b>One or two Intel® Pentium® III 550 or 600MHz<sup>1</sup> / 100MHz Front Side Bus</b>													
Implementation	Processor and L2 cache in <b>Single Edge Contact (SEC)</b> cartridge in protective metal case / SEC plugged into Intel Slot 1													
Processor upgrade	<b>SMP</b> via second identical processor / upgrade via SEC into motherboard Intel® Slot 1 CPU connector / MPS 1.4													
L2 cache	<b>512KB</b> std / 512KB max / ECC / half speed of processor / 4 way set associative / write-back / integrated in SEC													
Avail / withdrawn date	August 1999 / Model 91U withdrawn May 2000; others in June 2000													
Mem - std / max / type	<b>128MB or 256MB or 512MB std / 1GB max<sup>13</sup> / Error Checking and Correction (ECC)</b>													
Memory - sockets	4 sockets / 3 available (all have Error Checking and Correcting memory controller)													
Memory - features	<b>SDRAM / 100MHz</b> / four 168 pin gold-plated DIMM 3.3 volt sockets / PC100-compliant / hardware scrubbing of ECC errors													
Memory - support	Supports SDRAM ECC DIMMs (32,64,128, 256MB) / only 256MB DIMMs are registered (buffered); can not mix reg/non-reg													
Graphics controller	<b>Matrox® Millennium G400</b> (performance 2D), <b>IBM Fire GL1<sup>11</sup></b> (advanced 3D), <b>Appian Graphics® J Pro</b> (2D multiple display), or <b>Intense3D® Wildcat 4000 RA w/ Geo Accelerator GA</b> (precision 3D)													
	<b>IBM Fire GL1</b> / AGP 2X adapter / sideband-capable 32MB std / 32MB max / 256-bit 100MHz SGRAM 2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B	<b>Appian Graphics Jeronimo Pro</b> / 32-bit PCI adapter / 16MB std / 16MB max / 125MHz SGRAM / 250MHz RAMDAC / two controllers with two ports for multiple monitor support												
	<b>Intense3D Wildcat 4000 RA</b> / 32-bit 33MHz PCI 2.1 adapter / 16MB 128-bit 143MHz SDRAM (frame buffer) and 64MB 128-bit 143MHz SDRAM (texture memory) / 2D and 3D engine / <b>Intergraph 3D Wildcat 4000 Geometry Accelerator (GA)</b> / AGP 2X adapter (requires 4000 RA) / max of 1280x1024 at 85Hz													
Architecture - chip set	<b>Intel 440BX</b> AGPset / <b>PIIX4E</b> for EIDE (Ultra DMA/33), ISA Bridge, USB / <b>Adaptec® AHA-7895</b> / National Semiconductor PC87307 Super I/O for diskette, parallel, serial, keyboard, mouse													
Bus slots	PCI 2.1 (33MHz), Accelerated Graphics Port (66MHz; AGP 2X; 533MB/sec), and ISA slots (8.33MHz) / see below													
Disk	None (AAP models), one EIDE (Ultra DMA/33), or one Wide Ultra SCSI / SMART <sup>5</sup>													
SCSI controller	<b>Adaptec® AHA-7895 / dual channel Wide Ultra SCSI controller</b> / on motherboard / PCI 2.1													
SCSI connectors	<b>Channel A:</b> 68 pin (attaches 4 drop cable to SCSI disk); <b>Channel B:</b> 50 pin and 68 pin / 68 pin cable std to external SCSI port (all mod)													
RAID option	Supports Adaptec ARO™-1130 CA-B PCI RAIDport™ adapter (RAID 0,1) / installs in PCI slot / uses 7895 controller and connectors													
Cables - SCSI and IDE	<b>SCSI and AAP models:</b> 4 drop 16-bit cable on Chan A; 16-bit cable to ext port on Chan B; one 2 drop IDE cable (CD-ROM) <b>EIDE models:</b> Two 2 drop IDE cables (one for disk; one for CD-ROM) and SCSI cable to external SCSI port													
EIDE disk controller	Enhanced IDE busmaster (PIIX4E) / Ultra DMA/33 (ATA-33) support / two connectors on planar													
CD-ROM	<b>40X-17X<sup>6</sup> CD-ROM</b> / CAV (ATAPI) / bootable													
Diskette drive	3.5" 1.44MB diskette drive / 1 drop cable													
Ethernet controller	<b>Intel EtherExpress PRO/100B</b> / PCI 82558 ethernet chip on planar / PCI bus / 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN													
LCCM support	LANClient Control Manager™ enabled / Wake on LAN / Setup over LAN / Hybrid RPL / DHCP/BOOTP / software image download													
Systems mgmt cntrl	National Semiconductor® LM811-compatible / <b>hardware chip to monitor temperature, fan speeds, voltage, system cover removal / I2C</b>													
Audio	Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker													
Audio connectors	Stereo line in / mic in / line out (all in back) / software volume control													
Microphone	<b>Headset with microphone</b> (noise canceling for ViaVoice application)													
Serial/parallel/USB	<b>Ser:</b> Two 9 pin / 115Kbps <b>Par:</b> One (EPP, ECP) / IEEE 1284 <b>USB:</b> Two ports													
Keyboard / mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse													
Power supply	330 watts / universal / auto-sensing / Wake on LAN													
	<table border="1"> <tr> <td>CD-ROM</td> <td>Bay ① 5.25", HH 1.6", access, std CD-ROM</td> </tr> <tr> <td>②</td> <td>Bay ② 5.25", HH 1.6", access, open</td> </tr> <tr> <td>③</td> <td>Bay ③ 3.5", SL 1", access, open</td> </tr> <tr> <td>diskette</td> <td>Bay ④ 3.5", SL 1", access, std diskette</td> </tr> <tr> <td>⑤</td> <td>Bay ⑤ 3.5", SL 1", no access, open (disk only)</td> </tr> <tr> <td>disk</td> <td>Bay ⑥ 3.5", SL 1", no access, std disk (disk only)</td> </tr> </table>	CD-ROM	Bay ① 5.25", HH 1.6", access, std CD-ROM	②	Bay ② 5.25", HH 1.6", access, open	③	Bay ③ 3.5", SL 1", access, open	diskette	Bay ④ 3.5", SL 1", access, std diskette	⑤	Bay ⑤ 3.5", SL 1", no access, open (disk only)	disk	Bay ⑥ 3.5", SL 1", no access, std disk (disk only)	<p>or Half Height</p> <p>Slot 1: halfsize, 32-bit AGP (3.3v) - used by AGP graphics adapter (most models)</p> <p>Slot 2: fullsize, 32-bit PCI 2.1 (5v) - supports optional Adaptec RAIDport - used by Appian or Wildcat in some models</p> <p>Slot 3: fullsize, 32-bit PCI 2.1 (5v)</p> <p>Slot 4: fullsize, 32-bit PCI 2.1 (5v)</p> <p>Slot 5: fullsize, 32-bit PCI 2.1 (5v)</p> <p>Slot 6: fullsize, 16-bit ISA or 32-bit PCI 2.1 (5v)</p>
CD-ROM	Bay ① 5.25", HH 1.6", access, std CD-ROM													
②	Bay ② 5.25", HH 1.6", access, open													
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⑤	Bay ⑤ 3.5", SL 1", no access, open (disk only)													
disk	Bay ⑥ 3.5", SL 1", no access, std disk (disk only)													
		<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>- Cover key lock (in rear)</li> <li>- Cover tamper detect switch</li> <li>- Secure fixed DASD</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Administrator password</li> <li>- Keyboard/mouse password</li> <li>- Wake Up on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard or mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write-protect</li> <li>- Diskette, disk, serial port, parallel port I/O control</li> <li>- Secure access openings</li> <li>- Secure removable media</li> <li>- VPD stored in EEPROM</li> <li>- Write protection control for EEPROM</li> <li>- Barcode labels on most components</li> </ul> <p>Remotely readable DMI-compliant:</p> <ul style="list-style-type: none"> <li>- System EEPROM on motherboard (info and serial no for CPU, riser, system unit, CD-ROM, diskette, empty blank fields); also can read/write with external RF unit</li> <li>- EEPROMs on DIMMs (component info, serial no)</li> <li>- Disk firmware (compnt info, serial no)</li> </ul>												
<b>Alert on LAN™</b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off														
<b>Asset ID (RFID)<sup>16</sup></b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; theft protection														
<b>SMART Reaction™</b> - automatic backup of disk														
<b>PC 98-compliant</b>														
<b>DMI 2.0-compliant</b> with DMI manageability chip														
<b>Wired for Management 1.1a</b>														
<b>Adv Config and Power Interface (ACPI) 1.0</b>														
<b>Universal Management Agent (UMA) and UMA Plus-enabled</b>														
	<p><b>OTHER STANDARD FEATURES</b></p> <p>The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST</p> <p>Advanced Power Mgmt 1.2</p> <p>Support for DMI technology (includes MIF browser) with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software; DMI 2.0 compliant</p> <p>Plug-and-Play 1.0a</p> <p>ISO 9241-3 capable</p> <p>Vital Product Data support (type, model, serial, id)</p> <p>7.87"W x 17.52"D x 19.37"H; 38 lbs max (shipped)</p> <p>200 mm W x 445 mm D x 492 mm H; 17.3 kg</p> <p>Several hardcopy publications; four stabilizing feet</p> <p>512KB IBM BIOS (Flash over LAN support)</p> <p>Supplier's Declaration available</p> <p>Four fans (three in system and one in power supply)</p>	<p><b>Maximum internal SCSI disk capacity<sup>13</sup>:</b> 72.8GB (4 x 18.2GB (7200 rpm); 91GB if remove CD-ROM</p> <p><b>Maximum internal EIDE disk capacity<sup>13</sup>:</b> 61.2GB (3 x 20.4GB)</p> <p>Power management features:</p> <ul style="list-style-type: none"> <li>- Configurable levels for system, CPU, and monitor including powering system and/or display off</li> <li>- Wake Up on Ring (via modem) from off state</li> <li>- Wake Up on Alarm (scheduled time) from off state</li> <li>- Wake on LAN from off state</li> <li>- PCI Wake Up from supported PCI devices</li> </ul>												

# IBM IntelliStation® M Pro models - Winter 1999 (6889) - withdrawn

Type-model	Std disk (rpm) ms seek / disk interface CD-ROM <sup>6</sup> / interface	Intel® Processor MHz <sup>1</sup> / Upgrade	Write-back L2 cache std / max KB / KB	Memory in MB; std / max 100MHz	SVGA controller; memory std / max	Bus slots P=PCI avail PCI/ISA=av A=AGP av	Total bays	Chip set Ethernet Preload <sup>17</sup>	Available date	
<b>6 slot x 6 bay; PCI/ISA/AGP; Stealth Gray</b>										
⌘ 6889-51U	13.5GB <sup>2</sup> std (7200) 9.0ms / EIDE 40X-17X <sup>6</sup> CD-ROM / EIDE	1 x Pentium® III 500/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G200 AGP-2x Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Mar 1999
⌘ 6889-52U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 500/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G200 AGP-2x Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Mar 1999
⌘ 6889-53U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 500/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	256/ 1G RDIMM ECC	Millennium G200 AGP-2x Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Mar 1999
⌘ 6889-54U	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 500/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	IBM Fire GL1 <sup>11</sup> AGP-2x Adapter 32/32 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Mar 1999
⌘ 6889-55U	9.1GB std (10000) 5.4ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	<b>SMP via 2 x</b> Pentium III 500/100	None via 2nd Pent III	512 / 512 half speed in SEC	256/ 1G RDIMM ECC	Millennium G200 AGP-2x Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Mar 1999
⌘ 6889-56U	9.1GB std (10000) 5.4ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 500/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	256/ 1G RDIMM ECC	IBM Fire GL1 AGP-2x Adapter 32/32 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Mar 1999
⌘ 6889-57U	13.5GB std (7200) 9.0ms / EIDE 40X-17X CD-ROM / EIDE	1 x Pentium III 450/100	SMP via 2nd Pent III	512/512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G200 AGP-2x Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 2 used 4 empty	440BX Ethernet Windows NT 4.0	Mar 1999
⌘ 6889-5EU	9.1GB std (7200) 7.0ms / <b>Wide Ultra SCSI</b> 40X-17X CD-ROM / EIDE	1 x Pentium III 450/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	Millennium G200 AGP-2x Adapter 8 / 16 SGRAM	PCI=4 PCI/ISA=1 AGP=0	6 bays 3 used 3 empty	440BX Ethernet Windows NT 4.0	Mar 1999
⌘ 6889-58U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	1 x Pentium III 500/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX Ethernet Open OS	Mar 1999
⌘ 6889-59U for AAP	<i>no disk</i> 40X-17X CD-ROM / EIDE	1 x Pentium III 450/100	SMP via 2nd Pent III	512 / 512 half speed in SEC	128/ 1G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	6 bays 2 used 4 empty	440BX Ethernet Open OS	Mar 1999

<p><b>Windows NT Preload<sup>17</sup></b></p> <p>Windows NT® Workstation 4.0 (SP3) Internet Explorer 4.0 install icon IBM Welcome Center Device drivers for each subsystem Ready to install: - ConfigSafe® - Norton AntiVirus™ (OEM version) - DMI Service Provider - DMI BIOS Instrumentation - IBM PC System Monitor Instrumentation - IBM AssetCare Serial Number Information - IBM RTC CD-ROM Setup Utility - IBM Utilities for Windows 95/NT 4.0 - Hummingbird "Try and Buy" Suite CD-ROM - Ready to Configure CD-ROM - Free license for Lotus SmartSuite 97 CD-ROM - IBM ViaVoice 98 Office Edition CD-ROM - Windows NT Workstation 4.0 CD-ROM - IBM Diagnostics CD-ROM - Access to IBM HomePage Creator</p> <p>C: is 2GB as FAT16 Remainder is unformatted</p>	<p><b>Ready to Configure CD-ROM</b></p> <p>All models ship with a CD with drivers for Windows® 95, 98, and NT 3.51 and 4.0 and various utilities. Includes: - Intel LANDesk® Client Manager - ConfigSafe - IBM Universal Management Agent™</p> <p><b>Supported Memory and Options</b></p> <table border="0"> <tr><td>32MB SDRAM ECC DIMM 100MHz</td><td>01K1133</td></tr> <tr><td>64MB SDRAM ECC DIMM 100MHz</td><td>01K1130</td></tr> <tr><td>128MB SDRAM ECC DIMM 100MHz</td><td>01K1131</td></tr> <tr><td>256MB SDRAM ECC DIMM Registered</td><td>01K1132</td></tr> <tr><td>Adaptec ARO™-1130 CA-B PCI RAIDport</td><td>1681100</td></tr> <tr><td>Matrox Millennium G200</td><td>10L7127</td></tr> <tr><td>IBM Fire GL1 (3D graphics accelerator)</td><td>33L5032</td></tr> <tr><td>10/100 PCI EtherJet Adapter WOL</td><td>08L2565</td></tr> <tr><td>Auto Wake Token-Ring ISA Adapter</td><td>55H6760</td></tr> <tr><td>PCI Token Ring Adapter WOL</td><td>86H1880</td></tr> <tr><td>13.5GB 7200 rpm EIDE disk</td><td>33L5043</td></tr> <tr><td>20.5GB 7200 rpm EIDE disk</td><td>33L5044</td></tr> <tr><td>9.1GB Ultra Wide SCSI 7200 rpm</td><td>20L0553</td></tr> <tr><td>18.2GB Ultra Wide SCSI 7200 rpm</td><td>20L0554</td></tr> <tr><td>9.1GB Ultra2 Wide SCSI 10K rpm SL20L0539</td><td></td></tr> <tr><td>500MHz Pentium III Second Processor</td><td>36L9673</td></tr> </table>	32MB SDRAM ECC DIMM 100MHz	01K1133	64MB SDRAM ECC DIMM 100MHz	01K1130	128MB SDRAM ECC DIMM 100MHz	01K1131	256MB SDRAM ECC DIMM Registered	01K1132	Adaptec ARO™-1130 CA-B PCI RAIDport	1681100	Matrox Millennium G200	10L7127	IBM Fire GL1 (3D graphics accelerator)	33L5032	10/100 PCI EtherJet Adapter WOL	08L2565	Auto Wake Token-Ring ISA Adapter	55H6760	PCI Token Ring Adapter WOL	86H1880	13.5GB 7200 rpm EIDE disk	33L5043	20.5GB 7200 rpm EIDE disk	33L5044	9.1GB Ultra Wide SCSI 7200 rpm	20L0553	18.2GB Ultra Wide SCSI 7200 rpm	20L0554	9.1GB Ultra2 Wide SCSI 10K rpm SL20L0539		500MHz Pentium III Second Processor	36L9673	<p><b>Authorized Assembler Program models</b></p> <p>AAP models contain no hard disk or graphics adapter. No preload or operating system license is included. - Hummingbird "Try and Buy" Suite CD-ROM - Ready to Configure CD-ROM - Free license for Lotus SmartSuite CD-ROM (via 800 number)</p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p align="center"><b>WARRANTY SERVICE SUPPORT<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>↪ 3 year parts warranty</li> <li>↪ 1 year labor warranty</li> <li>↪ International Warranty Service<sup>3</sup></li> <li>↪ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time</li> <li>↪ 2nd/3rd year: parts exchange only, call 1-800-772-2227</li> <li>↪ On site warranty upgrade options: <ul style="list-style-type: none"> <li>• Next day response<sup>14</sup>, Mon-Fri 8-5</li> <li>• 4 hour response<sup>14</sup>, 7 day x 24 hr</li> </ul> </li> <li>↪ Post warranty: on site options above</li> <li>↪ IBM SystemXtra®</li> <li>↪ 24 hour / 7 day telephone, electronic, Internet (www.pc.ibm.com) support</li> </ul> </div>
32MB SDRAM ECC DIMM 100MHz	01K1133																																	
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<p>Ethernet = Intel 10/100 ethernet chip; 10BaseT and 100BaseTX; Alert on LAN NT4 = Windows NT Workstation 4.0 preinstalled RDIMM = Registered DIMM Wide Ultra SCSI = Adaptec AHA-7895; dual channel Wide Ultra SCSI ⌘ = Withdrawn from marketing (systems announced March 1, 1999)</p>																																		



# IBM IntelliStation® M Pro - Winter 1999 (6889) - withdrawn

## IBM® IntelliStation® M Pro

Type	<b>6889</b>													
Processor(s)	<b>One or two Intel® Pentium® III 450/100 or 500/100MHz<sup>1</sup></b>													
Implementation	Processor and L2 cache in <b>Single Edge Contact (SEC)</b> cartridge in protective metal case / SEC plugged into Intel Slot 1													
Processor upgrade	<b>SMP</b> via second identical processor / upgrade via SEC into motherboard Intel® Slot 1 CPU connector / MPS 1.4													
L2 cache	<b>512KB</b> std / 512KB max / ECC / half speed of processor / 4 way set associative / write-back / integrated in SEC													
Avail / withdrawn date	March 1999 / Models 58U and 59U withdrawn September 1999, all others withdrawn November 1999													
Mem - std / max / type	<b>128MB or 256MB std / 1GB max<sup>13</sup> / Error Checking and Correction (ECC)</b>													
Memory - sockets	4 sockets / 3 available (all have Error Checking and Correcting memory controller)													
Memory - features	<b>SDRAM / 100MHz</b> / four 168 pin gold-plated DIMM 3.3 volt sockets / PC100-compliant / hardware scrubbing of ECC errors													
Memory - support	Supports SDRAM ECC DIMMs (32,64,128, 256MB) / only 256MB DIMMs are registered (buffered); can not mix reg/non-reg													
Graphics controller	<b>Matrox® Millennium G200-D</b> (2D/value 3D) or <b>IBM Fire GL1</b> (advanced 3D)													
Graphics - type	<b>Matrox Millennium G200-D</b> / AGP 2X 533MB/sec adptr	<b>IBM Fire GL1</b> / AGP 2X adap / sideband-capable / split transactns												
Graphics - memory	8MB std / 16MB max / 142MHz, 128-bit SGRAM	32MB std / 32MB max / 256-bit, 2-way interleaved, 100MHz SGRAM												
Graphics - features	Sideband addressing / split transactions 250 MHz RAMDAC / MGA-G200 128-bit DualBus chip Max 2D resolution of 1920x1200 in 24-bit color at 80Hz	2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B Max resolution of 1600x1200 at 85Hz or 1920x1200 at 75Hz Optimized for multiprocessor environments												
Architecture - chip set	<b>Intel 440BX</b> AGPset / <b>PIIX4E</b> for EIDE (Ultra DMA/33), ISA Bridge, USB / <b>Adaptec® AHA-7895</b>													
Bus slots	National Semiconductor <b>PC87307 Super I/O</b> for diskette, parallel, serial, keyboard, mouse PCI 2.1 (33MHz), Accelerated Graphics Port (66MHz; AGP-2x; 533MB/sec), and ISA slots (8.33MHz) / see below													
Disk	None (AAP models), one EIDE (Ultra DMA/33), or one Wide Ultra SCSI / SMART <sup>5</sup>													
SCSI controller	<b>Adaptec® AHA-7895 / dual channel Wide Ultra SCSI controller</b> / on motherboard / PCI 2.1													
SCSI connectors	<i>Channel A:</i> 68 pin (attaches 4 drop cable to SCSI disk); <i>Channel B:</i> 50 pin and 68 pin / 68 pin cable std to external SCSI port (all mod)													
RAID option	Supports Adaptec ARO™-1130 CA-B PCI RAIDport™ adapter (RAID 0,1) / installs in PCI slot / uses 7895 controller and connects													
Cables - SCSI and IDE	<i>SCSI and AAP models:</i> 4 drop 16-bit cable on Chan A; 16-bit cable to ext port on Chan B; one 2 drop IDE cable (CD-ROM)													
EIDE disk controller	<i>EIDE models:</i> Two 2 drop IDE cables (one for disk; one for CD-ROM) and SCSI cable to external SCSI port													
CD-ROM	<b>40X-17X<sup>6</sup> CD-ROM</b> / CAV (ATAPI) / bootable													
Diskette drive	3.5" 1.44MB diskette drive / 1 drop cable													
Ethernet controller	<b>Intel EtherExpress PRO/100B</b> / PCI 82558 ethernet chip on planar / PCI bus													
LCCM support	10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN													
Systems mgmt cntrl	LANClient Control Manager™ enabled / Wake on LAN / Setup over LAN / Hybrid RPL / DHCP/BOOTP / software image download													
Audio	National Semiconductor® LM81 compatible / <b>hardware chip to monitor temperature, fan speeds, voltage, system cover removal / I2C</b>													
Audio connectors	Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker													
Microphone	Stereo line in / mic in / line out (all in back) / software volume control													
Serial/parallel/USB	<b>Headset with microphone</b> (noise canceling for ViaVoice application) <i>Ser:</i> Two 9 pin / 115Kbps <i>Par:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two ports													
Keyboard / Mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse													
Power supply	330 watts / universal / auto-sensing / Wake on LAN													
	<b>SECURITY</b>													
	<ul style="list-style-type: none"> <li>- Cover key lock (in rear)</li> <li>- Cover tamper detect switch</li> <li>- Secure fixed DASD</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Administrator password</li> <li>- Keyboard/mouse password</li> <li>- Wake Up on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard or mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write-protect</li> <li>- Diskette, disk, serial port, parallel port I/O control</li> <li>- Secure access openings</li> <li>- Secure removable media</li> <li>- VPD stored in EEPROM</li> <li>- Write protection control for EEPROM</li> <li>- Barcode labels on most components</li> </ul>													
	Remotely readable DMI-compliant:													
	<ul style="list-style-type: none"> <li>- System EEPROM on motherboard (info and serial no for CPU, riser, system unit, CD-ROM, diskette, empty blank fields); also can read/write with external RF unit</li> <li>- EEPROMs on DIMMs (component info, serial no)</li> <li>- Disk firmware (compnt info, serial no)</li> </ul>													
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">CD-ROM</td> <td style="width: 15%; text-align: center;">②</td> <td style="width: 15%; text-align: center;">③</td> <td style="width: 15%; text-align: center;">diskette</td> <td style="width: 15%; text-align: center;">⑤</td> <td style="width: 15%; text-align: center;">disk</td> </tr> <tr> <td colspan="6" style="text-align: center;">Mini tower; Stealth gray color</td> </tr> </table>		CD-ROM	②	③	diskette	⑤	disk	Mini tower; Stealth gray color					
CD-ROM	②	③	diskette	⑤	disk									
Mini tower; Stealth gray color														
	Bay ① 5.25", HH 1.6", access, std CD-ROM Bay ② 5.25", HH 1.6", access, open Bay ③ 3.5", SL 1", access, open Bay ④ 3.5", SL 1", access, std diskette Bay ⑤ 3.5", SL 1", no access, open (disk only) Bay ⑥ 3.5", SL 1", no access, std disk (disk only)	or Half Height Slot 1: fullsize, 32-bit AGP (3.3v) - used by AGP graphics adapter Slot 2: fullsize, 32-bit PCI 2.1 (5v) - supports optional Adaptec RAIDport Slot 3: fullsize, 32-bit PCI 2.1 (5v) Slot 4: fullsize, 32-bit PCI 2.1 (5v) Slot 5: fullsize, 32-bit PCI 2.1 (5v) Slot 6: fullsize, 16-bit ISA or 32-bit PCI 2.1 (5v)												
<b>Alert on LAN™</b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off	<b>OTHER STANDARD FEATURES</b>													
<b>Asset ID (RFID)<sup>16</sup></b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; theft protection	The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST													
<b>SMART Reaction™</b> - automatic backup of disk	Advanced Power Mgmt 1.2													
<b>PC 98 compliant</b>	Support for DMI technology (includes MIF browser) with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software; DMI 2.0 compliant													
<b>DMI 2.0 compliant</b> with DMI manageability chip	Plug-and-Play 1.0a													
<b>Wired for Management 1.1a</b>	ISO 9241-3 capable													
<b>Adv Config and Power Interface (ACPI) 1.0</b>	Vital Product Data support (type, model, serial, id)													
	7.87"W x 17.52"D x 19.37"H; 38 lbs max (shipped)													
	200 mm W x 445 mm D x 492 mm H; 17.3 kg													
	Several hardcopy publications; four stabilizing feet													
	512KB IBM BIOS (Flash over LAN support)													
	Supplier's Declaration available													
	Four fans (three in system and one in power supply)													
	<b>Maximum internal SCSI disk capacity<sup>13</sup>:</b> 81.9GB (3 x 18.2GB (7200 rpm) plus 1 x 9.1GB (7200 rpm)); if no CD-ROM <b>Maximum internal EIDE disk capacity<sup>13</sup>:</b> 40.5GB (3 x 13.5GB)													
	Power management features:													
	<ul style="list-style-type: none"> <li>- Configurable levels for system, CPU, and monitor including powering system and/or display off</li> <li>- Wake Up on Ring (via modem) from off state</li> <li>- Wake Up on Alarm (scheduled time) from off state</li> <li>- Wake-on-LAN from off state</li> <li>- PCI Wake Up from supported PCI devices</li> </ul>													

# IBM IntelliStation® Z Pro models (6865) - withdrawn

Type-model	Standard disk (rpm) ms seek / disk interface CD-ROM	Intel® Processor MHz¹ / Upgrade	Write-back L2 cache std / max KB / KB	Memory in MB; std/max¹³ 100MHz	SVGA controller; memory std / max (MB)	Bus slots P=PCI avail PCI/ISA=av A=AGP av	Total bays	Chipset Preload¹⁷	Available date	
<b>7 slot x 7 bay; PCI/ISA/AGP; Stealth Gray</b>										
⌘ 6865-20U	4.5GB² (7200) 7.5ms / <b>Ultra Wide SCSI</b> 32X-14X⁴ CD-ROM	1 x Xeon™ 450/100	SMP via 2nd Xeon	512/512 450MHz in SEC	128/ 2G SDRAM ECC	Millennium G200 AGP adapter 8/16MB WRAM	PCI=4 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0	Oct 1998
⌘ 6865-21U	9.1GB (10K) 5.4ms / <b>Wide Ultra2 SCSI</b> 32X-14X CD-ROM	1 x Xeon 450/100	SMP via 2nd Xeon	512/512 450MHz in SEC	256/ 2G SDRAM ECC	Millennium G200 AGP adapter 8/16MB WRAM	PCI=4 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0	Oct 1998
⌘ 6865-22U	9.1GB (10K) 5.4ms / <b>Wide Ultra2 SCSI</b> 32X-14X CD-ROM	<b>SMP via 2 x</b> Xeon 450/100	None	512/512 450MHz in SEC	256/ 2G SDRAM ECC	Millennium G200 AGP adapter 8/16MB WRAM	PCI=4 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0	Oct 1998
⌘ 6865-25U	9.1GB (10K) 5.4ms / <b>Wide Ultra2 SCSI</b> 32X-14X CD-ROM	1 x Xeon 450/100	SMP via 2nd Xeon	512/512 450MHz in SEC	256/ 2G SDRAM ECC	3D Pro 3400 PCI adapter 32/32 MSGRAM	PCI=3 PCI/ISA=1 AGP=1	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0	Oct 1998
⌘ 6865-26U	9.1GB (10K) 5.4ms / <b>Wide Ultra2 SCSI</b> 32X-14X CD-ROM	1 x Xeon 450/100	SMP via 2nd Xeon	512/512 450MHz in SEC	256/ 2G SDRAM ECC	3D Pro 3400 <b>+ Geo Acceler</b> 32/32M SGRAM	PCI=2 PCI/ISA=1 AGP=1	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0	Oct 1998
⌘ 6865-27U	9.1GB (10K) 5.4ms / <b>Wide Ultra2 SCSI</b> 32X-14X CD-ROM	<b>SMP via 2 x</b> Xeon 450/100	None	512/512 450MHz in SEC	256/ 2G SDRAM ECC	3D Pro 3400 <b>+ Geo Acceler</b> 32/32M SGRAM	PCI=2 PCI/ISA=1 AGP=1	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0	Oct 1998
⌘ 6865-28U for AAP	<i>no disk</i> 32X-14X CD-ROM	1 x Xeon 450/100	SMP via 2nd Xeon	512/512 450MHz in SEC	256/ 2G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=1	7 bays 2 used 5 empty	440GX Ethernet <i>No OS</i>	Oct 1998
IBM 450MHz Xeon Processor Upgrade			20L0240	128MB 100MHz ECC SDRAM DIMM (registered)			20L0256			
6.4GB Deskstar EIDE disk			01K1279	256MB 100MHz ECC SDRAM DIMM (registered)			01K1132			
6.4GB 7200 rpm EIDE disk			01K1329	512MB 100MHz ECC SDRAM DIMM (registered)			20L0257			
8.4GB Deskstar EIDE disk			01K1316	Matrox Millennium G200 AGP Graphics Adapter			10L7127			
9.1GB 7200 rpm EIDE disk			01K1330	Intergraph Intense 3D Pro 3400 Graphics Adapter			02K3460			
10.1GB 7200 rpm GXP EIDE disk			20L0548	Intergraph Intense 3D 3400 Geometry Accelerator			02K3461			
4.5GB 7200 rpm Wide Ultra SCSI disk			01K1327	<b>All models:</b> Maximum internal SCSI disk capacity¹³: 81.9GB via the following configurations: Four 18.2GB 10K rpm Wide Ultra2 SCSI disks + One 9.1GB 10K rpm Wide Ultra2 SCSI disks						
9.1GB 7200 rpm Wide Ultra SCSI disk			01K1328							
18.2GB 7200 rpm Wide Ultra SCSI disk			01K1323							
9.1GB 10000 rpm Wide Ultra2 SCSI disk			20L0539							
18.2GB 10000 rpm Wide Ultra2 SCSI disk			20L0540							
<b>Windows NT Preload¹⁷</b>		<b>Ready to Configure CD-ROM</b>								
Windows NT® Workstation 4.0 (SP3) Internet Explorer 4.0 IBM Welcome Center - IBM Utilities - Online Books Ready to install: - ConfigSafe for Windows NT 4.0 - IBM Universal Management Agent - IBM Manageability Tools - DMI Service Provider - DMI BIOS Instrumentation - IBM PC System Monitor Instrumentation - IBM AssetCare Serial Number Information - Norton AntiVirus™ for Windows NT - Hummingbird "Try and Buy" Suite CD-ROM - Ready to Configure CD-ROM - Free license for Lotus SmartSuite® CD-ROM - Product Recovery CD-ROM (preloads only) - IBM ViaVoice 98 Office CD-ROM - IBM Diagnostics CD-ROM - Access to IBM HomePage Creator  C: is 2GB as FAT16 Remainder is unformatted		All models ship with a CD with drivers for Windows® 95, Windows 98 and Windows NT and various utilities. Includes: - IBM Universal Management Agent - IBM Global Network Dialer - ConfigSafe for NT 4.0 - Client Services for Netfinity - PC-Doctor for Windows NT 2.0.136 - Tivoli Lightweight Client Framework 1.2 - Diskette Factory - Device drivers for each subsystem - Utilities and applications on NT preload - Intel LANDesk® Client Manager 3.0  <b>Authorized Assembler Program models</b>  AAP model(s) contain no hard disk. No preload or operating system license is included. - Hummingbird "Try and Buy" Suite CD-ROM - Ready to Configure CD-ROM - IBM ViaVoice 98 Office CD-ROM - Free license for Lotus SmartSuite CD-ROM (via 800 number) - IBM Enhanced Diagnostics CD-ROM								
Eth = Intel 10/100 ethernet chip; 10BaseT and 100BaseTX; Alert on LAN NT4 = Windows NT Workstation 4.0 preinstalled All models have Wide Ultra2 SCSI Adaptec AHA-2940U2W PCI Adapter; single channel SpeedFlex™ ⌘ Withdrawn from marketing										

**WARRANTY SERVICE SUPPORT³**

- ↪ 3 year parts warranty
- ↪ 1 year labor warranty
- ↪ International Warranty Service³
- ↪ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time
- ↪ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ↪ On site warranty upgrade options:
  - Next day response⁹ Mon-Fri 8-5
  - 4 hour response⁷, 7 day x 24 hr
- ↪ Post warranty: on site options above
- ↪ IBM SystemXtra®
- ↪ 24 hour / 7 day telephone, electronic, Internet (www.pc.ibm.com) support

# IBM IntelliStation® Z Pro (6865) - withdrawn

## IBM® IntelliStation® Z Pro

Type	<b>6865</b>	
Processor / MHz	<b>One or two Intel® Pentium® II Xeon™ 450/100MHz<sup>1</sup> / 16 KB instruction + 16 KB data L1 cache</b>	
Implementation	<b>Processor and L2 cache in Single Edge Contact (SEC) cartridge in protective metal case / SEC plugged into Intel Slot 2</b>	
Processor upgrade	<b>SMP via second identical processor / upgrade via SEC into motherboard Intel Slot 2 CPU connector / MPS 1.4</b>	
L2 cache	<b>512 KB std / 512 KB max / ECC / full speed of processor / 4 way set associative / write-back / integrated in SEC</b>	
Avail / withdrawn date	<b>October 1998 / withdrawn March 1999 or June 1999</b>	
Mem - std / max / type	<b>128MB or 256MB std / 2GB max<sup>13</sup> / Error Checking and Correction (ECC)</b>	
Memory - sockets	<b>4 sockets / 3 available (all have Error Checking and Correcting memory controller)</b>	
Memory - features	<b>SDRAM / 100 MHz / four 168 pin gold-plated DIMM 3.3 volt sockets / PC100-compliant / hardware scrubbing of ECC errors</b>	
Memory - support	<b>Supports registered SDRAM ECC DIMMs only (128, 256, 512MB)</b>	
Graphics controller	<b>Matrox® Millennium G200 (2D and value 3D), Intergraph® Intense 3D Pro 3400 (advanced 3D), or Intergraph Intense 3D Pro 3400 with Geometry and Lighting Accelerator (GA) (ultimate 3D)</b>	
Graphics - type	<b>Matrox Millennium G200 / AGP-2x 533MB/sec adapter</b>	<b>Intense 3D Pro 3400 / PCI adapter / 32MB std / 32MB max</b>
Graphics - memory	<b>8MB std / 16MB max / 142MHz, 128-bit SGRAM</b>	<b>16MB frame buffer (125MHz SDRAM) and</b>
Graphics - features	<b>Sideband addressing / split transactions 250 MHz RAMDAC / MGA-G200 128-bit DualBus chip Max 2D resolution of 1920x1200 in 24-bit color at 80Hz</b>	<b>16MB texture memory (SGRAM) Optional or std geometry accelerator (3D Pro 3400 GA) Max resolution of 1280x1024 at 16.7 million colors at 85Hz</b>
Architecture - chip set	<b>Intel 440GX AGPset / PIIX4E for EIDE (Ultra DMA/33), ISA Bridge, USB (82443GX PAC, 82371EB, 82093AA APIC) National Semiconductor® PC87307A Super I/O for diskette, parallel, serial, keyboard, mouse</b>	
Bus slots	<b>PCI 2.1 (33MHz, 32-bit), Accelerated Graphics Port (66MHz; AGP-2x; 533MB/sec), and ISA slots (8.33MHz) / see below</b>	
Disk	<b>None (AAP model) or one Wide Ultra or Ultra2 SCSI / SMART<sup>5</sup></b>	
SCSI controller	<b>Adaptec® AHA-2940U2W / PCI adapter / Wide Ultra2 SCSI / single channel with SpeedFlex™ (allows two electronically isolated SCSI bus segments; an Ultra2 80MB/sec and a Ultra 40MB/sec segment) / supports 15 devices on all 4 connectors</b>	
SCSI connectors	<b>Internal: ① 68-pin High-Density Ultra2 (used by 5 drop LVD cable to SCSI disk), ② 68-pin High-Density Ultra, ③ 50-pin High-Density Ultra; External: ④ 68-pin High-Density Ultra2 (on back of adapter) / only use Ultra devices on Port B</b>	
Cables	<b>SCSI: 5 drop Internal 16 bit LVD cable on port A; IDE: one 2 drop IDE cable (one drop to CD-ROM)</b>	
EIDE disk controller	<b>Enhanced IDE busmaster (PIIX4E) / Ultra DMA/33 (ATA-33) support / two connectors on planar</b>	
CD-ROM	<b>32X-14X<sup>6</sup> CD-ROM / CAV (ATAPI) / bootable / 128KB buffer / 80ms average seek</b>	<p style="text-align: center;"><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>- Cover key lock (in rear)</li> <li>- Cover tamper detect switch</li> <li>- Secure fixed disk</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Administrator password</li> <li>- Keyboard/mouse password</li> <li>- Wake-Up on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard or mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write-protect</li> <li>- Diskette I/O control</li> <li>- Hard disk I/O control</li> <li>- Serial/parallel port I/O control</li> <li>- Secure access openings</li> <li>- Secure removable media</li> <li>- VPD stored in EEPROM</li> <li>- Write protection for EEPROM</li> </ul> <p>Remotely readable DMI-compliant:</p> <ul style="list-style-type: none"> <li>- System EEPROM on motherboard (info and serial no for CPU, riser, system unit, CD-ROM, diskette, empty blank fields); also can read/write with external RF unit</li> <li>- EEPROMs on DIMMs (component info, serial no)</li> <li>- Disk firmware (component info, serial no)</li> </ul>
Diskette drive	<b>3.5" 1.44 MB diskette drive / 1 drop cable</b>	
Ethernet controller	<b>Intel EtherExpress PRO/100B / PCI 82558 ethernet chip on planar / PCI bus 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN</b>	
LCCM support	<b>LANClient Control Manager™ enabled / Wake on LAN / Setup over LAN / Hybrid RPL / DHCP/BOOTP / software image download</b>	
Systems mgmt cntrl	<b>LM81 compatible (Analog Devices® ADM9240) / hardware chip to monitor temperature, fan speeds, voltage, system cover removal / I<sup>2</sup>C</b>	
Audio	<b>Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker</b>	
Audio connectors	<b>Stereo line in / mic in / line out (all in back) / software volume control</b>	
Microphone	<b>Headset with noise canceling microphone</b>	
Serial / parallel / USB	<b>Ser: Two 9 pin / 115 Kbps Par: One (EPP, ECP) / IEEE 1284 USB: Two ports</b>	
Keyboard / Mouse	<b>104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse</b>	
Power supply	<b>330 watts / universal / auto-sensing / Wake on LAN</b>	
 <p>Mini tower; Stealth gray color</p>	<p>Bay ① 5.25", HH 1.6", access, std CD-ROM</p> <p>Bay ② 5.25", HH 1.6", access, open</p> <p>Bay ③ 3.5", SL 1", access, open</p> <p>Bay ④ 3.5", SL 1", access, std diskette</p> <p>Bay ⑤ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑥ 3.5", SL 1", no access, open (disk only)</p> <p>Bay ⑦ 3.5", SL 1", no access, std disk (disk only)</p> <p>any two bays can be Half Height</p> <p>Slot 1: fullsize, 32 bit AGP (3.3v) - used by AGP graphics adapter (some models)</p> <p>Slot 2: fullsize, 32 bit PCI 2.1 (5v)</p> <p>Slot 3: fullsize, 32 bit PCI 2.1 (5v) - used by SCSI adapter</p> <p>Slot 4: fullsize, 32 bit PCI 2.1 (5v)</p> <p>Slot 5: fullsize, 32 bit PCI 2.1 (5v) - used by geometry accelerator (some models)</p> <p>Slot 6: fullsize, 32 bit PCI 2.1 (5v) - used by PCI graphics adapter (some models)</p> <p>Slot 7: fullsize, 16 bit ISA or 32 bit PCI 2.1 (5v)</p>	<p>Power management features:</p> <ul style="list-style-type: none"> <li>- Configurable levels for system, CPU, and monitor including powering system and/or display off</li> <li>- Wake Up on Ring (via modem) from off state</li> <li>- Wake Up on Alarm (scheduled time) from off state</li> <li>- Wake-on-LAN from off state</li> <li>- PCI Wake Up from supported PCI devices</li> </ul> <p>Four variable speed fans (three in system (two in front; one in back) and one in power supply)</p>
<p><b>Alert on LAN™</b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off</p> <p><b>Asset ID™.16 (RFID)</b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; supports theft protection</p> <p><b>SMART Reaction™</b> - automatic backup of disk</p> <p><b>PC 97 compliant</b></p> <p><b>DMI 2.0 compliant</b> with DMI manageability chip</p> <p><b>Wired for Management 1.1a</b></p> <p><b>Adv Config and Power Interface (ACPI) 1.04</b></p>	<p>The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST</p> <p>Advanced Power Mgmt 1.2</p> <p>Support for DMI technology (includes MIF browser) with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software; DMI 2.0 compliant</p> <p>Plug-and-Play 1.0a</p> <p>ISO 9241-3 capable</p> <p>Vital Product Data support (type, model, serial, id) 7.87"W x 18.10"D x 19.37"H; 45 lbs max (shipped)</p> <p>200 mm W x 460 mm D x 492 mm H; 20.4 kg</p> <p>Several hardcopy publications; four stabilizing feet</p> <p>512 KB SurePath BIOS (Flash over LAN support)</p> <p>Supplier's Declaration available</p> <p>Boot support for LS120, ZIP, CD-ROM, or DVD</p>	



# IBM IntelliStation® Z Pro - 1999 (6865) - withdrawn

Type-model	Standard disk (rpm) ms seek / disk interface CD-ROM	Intel® Processor MHz¹ / Upgrade	L2 cache Per CPU std / max KB / KB	Memory in MB; std/max¹³ 100MHz	SVGA controller; memory std / max (MB)	Bus slots P=PCI avail PCI/ISA=av A=AGP av	Total bays	Chipset Ethernet Preload¹⁷	Available date
<b>7 slot x 7 bay; PCI/ISA/AGP; Stealth Black</b>									
ⓧ 6865-30U	9.1GB² (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 40X-17X CD-ROM	1 x Pentium® III Xeon™ 500/100	SMP via 2nd Proc	512 / 512 full speed in SEC	128/ 2G SDRAM ECC	Millennium G200 AGP 2X adapter 8/16MB WRAM	PCI=4 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0
ⓧ 6865-36U	9.1GB (10K) 6.0ms / <b>Wide Ultra2 SCSI</b> 40X-17X CD-ROM	1 x Pentium III Xeon 500/100	SMP via 2nd Proc	512 / 512 full speed in SEC	256/ 2G SDRAM ECC	Wildcat 4000 RA Wildcat 4000 GA 88/88MB SDRAM	PCI=3 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0
ⓧ 6865-38U for AAP	<i>no disk</i> <b>Wide Ultra2 SCSI</b> 40X-17X CD-ROM	1 x Pentium III Xeon 500/100	SMP via 2nd Proc	512 / 512 full speed in SEC	256/ 2G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=0	7 bays 2 used 5 empty	440GX Ethernet Windows NT 4.0
ⓧ 6865-40U	9.1GB (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 40X-17X CD-ROM	1 x Pentium III Xeon 550/100	SMP via 2nd Proc	512 / 512 full speed in SEC	128/ 2G SDRAM ECC	Millennium G200 AGP 2X adapter 8/16MB WRAM	PCI=4 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0
ⓧ 6865-43U	13.5GB (7200) 9.0ms / EIDE / ATA-33 40X-17X CD-ROM	<b>SMP via 2 x</b> Pentium III Xeon 550/100	None	512 / 512 full speed in SEC	256/ 2G SDRAM ECC	Millennium G200 AGP 2X adapter 8/16MB WRAM	PCI=5 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0
ⓧ 6865-45U	9.1GB (10K) 6.0ms / <b>Wide Ultra2 SCSI</b> 40X-17X CD-ROM	1 x Pentium III Xeon 550/100	SMP via 2nd Proc	512 / 512 full speed in SEC	256/ 2G SDRAM ECC	IBM Fire GL1¹¹ AGP 2X adapter 32/32MB SGRAM	PCI=4 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0
ⓧ 6865-46U	9.1GB (10K) 6.0ms / <b>Wide Ultra2 SCSI</b> 40X-17X CD-ROM	1 x Pentium III Xeon 550/100	SMP via 2nd Proc	512 / 512 full speed in SEC	256/ 2G SDRAM ECC	Wildcat 4000 RA Wildcat 4000 GA 88/88MB SDRAM	PCI=3 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0
ⓧ 6865-48U for AAP	<i>no disk</i> <b>Wide Ultra2 SCSI</b> 40X-17X CD-ROM	1 x Pentium III Xeon 550/100	SMP via 2nd Proc	512 / 512 full speed in SEC	256/ 2G SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=0	7 bays 2 used 5 empty	440GX Ethernet Windows NT 4.0
ⓧ 6865-41U	9.1GB (7200) 7.5ms / <b>Wide Ultra2 SCSI</b> 40X-17X CD-ROM	1 x Pentium III Xeon 550/100	SMP via 2nd Proc	512 / 512 full speed in SEC	128/ 2G SDRAM ECC	Millennium G400 AGP 2X adapter 16/16MB WRAM	PCI=4 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0
ⓧ 6865-42U	9.1GB (10K) 6.0ms / <b>Wide Ultra2 SCSI</b> 40X-17X CD-ROM	<b>SMP via 2 x</b> Pentium III Xeon 550/100	None	512 / 512 full speed in SEC	256/ 2G SDRAM ECC	Millennium G400 AGP 2X adapter 16/16MB WRAM	PCI=4 PCI/ISA=1 AGP=0	7 bays 3 used 4 empty	440GX Ethernet Windows NT 4.0
ⓧ 6865-49U for AAP	<i>no disk</i> <b>Wide Ultra2 SCSI</b> 40X-17X CD-ROM	1 x Pentium III Xeon 550/100	SMP via 2nd Proc	512/512 full speed in SEC	0 / 2GB SDRAM ECC	<i>None</i>	PCI=4 PCI/ISA=1 AGP=0	7 bays 2 used 5 empty	440GX Ethernet Windows NT 4.0

IBM 500MHz/512KB L2 Pentium III Second Processor	33L5059
IBM 550MHz/512KB L2 Pentium III Second Processor	33L5060
6.4GB 7200 rpm EIDE disk	01K1329
9.1GB 7200 rpm EIDE disk	01K1330
10.1GB 7200 rpm EIDE disk	33L4958
13.5GB 7200 rpm EIDE disk	33L5043
9.1GB 7200 rpm Wide Ultra2 SCSI disk	20L0553
18.2GB 7200 rpm Wide Ultra2 SCSI disk	20L0554
9.1GB 10000 rpm Wide Ultra2 SCSI disk	20L0539
18.2GB 10000 rpm Wide Ultra2 SCSI disk	20L0540

128MB 100MHz ECC SDRAM DIMM (registered)	20L0256
256MB 100MHz ECC SDRAM DIMM (registered)	01K1132
512MB 100MHz ECC SDRAM DIMM (registered)	20L0257
Matrox Millennium G400 AGP Graphics Adapter	33L5137
IBM Fire GL1 Graphics Adapter	33L5032

**All models:** Maximum internal SCSI disk capacity¹³:  
91.0GB via the following configuration:  
Five 18.2GB 10K rpm Wide Ultra2 SCSI disks

**Windows NT Preload¹⁷**  
Windows NT® Workstation 4.0 (SP4)  
IBM Welcome Center  
Ready to install:  
- ConfigSafe®  
- IBM Universal Management Agent™  
- IBM Manageability Tools  
- DMI Service Provider  
- DMI BIOS Instrumentation  
- IBM PC System Monitor Instrumentation  
- IBM AssetCare Serial Number Information  
- Norton AntiVirus™ for Windows NT  
- Hummingbird "Try and Buy" Suite CD-ROM  
- Ready to Configure CD-ROM  
- Free license for Lotus SmartSuite® CD-ROM  
- Product Recovery CD-ROM (preloads only)  
- IBM ViaVoice 98 Office CD-ROM  
- IBM Diagnostics CD-ROM  
- Access to IBM HomePage Creator  
C: is 2GB as FAT16  
Remainder is unformatted

**Ready to Configure CD-ROM**  
All models ship with a CD with drivers for Windows® 98 and Windows NT and various utilities.  
Includes:  
- IBM Global Network Dialer  
- ConfigSafe for NT 4.0  
- Client Services for Netfinity  
- PC-Doctor for Windows NT 2.0.136  
- Tivoli Lightweight Client Framework 1.2  
- Device drivers for each subsystem  
- Utilities and applications on NT preload  
- Intel LANdesk® Client Manager 3.0  
**Authorized Assembler Program models**  
AAP model(s) contain no hard disk.  
No preload or operating system license is included.  
- Hummingbird "Try and Buy" Suite CD-ROM  
- Ready to Configure CD-ROM  
- IBM ViaVoice 98 Office CD-ROM  
- Free license for Lotus SmartSuite CD-ROM  
- IBM Enhanced Diagnostics CD-ROM

**WARRANTY SERVICE SUPPORT³**  
↪ 3 year parts warranty  
↪ 1 year labor warranty  
↪ International Warranty Service³  
↪ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time  
↪ 2nd/3rd year: parts exchange only, call 1-800-772-2227  
↪ On site warranty upgrade options:  
• Next day response¹⁴ Mon-Fri 8-5  
• 4 hour response⁷, 7 day x 24 hr  
↪ Post warranty: on site options above  
↪ IBM SystemXtra®  
↪ 24 hour / 7 day telephone, electronic, Internet (www.pc.ibm.com) support

Ethernet = Intel 10/100 ethernet chip; 10BaseT and 100BaseTX; Alert on LAN  
All models (except 43U) have Wide Ultra2 SCSI Adaptec AHA-2940U2W PCI Adapter  
ⓧ = Models announced September 14, 1999  
ⓧ = Withdrawn from marketing

# IBM IntelliStation® Z Pro - 1999 (6865) - withdrawn

## IBM® IntelliStation® Z Pro

Type	<b>6865</b>	
Processor / MHz	<b>One or two Intel® Pentium® III Xeon™ 500 or 550MHz<sup>1</sup> / 100MHz front side bus</b>	
Implementation	Processor and L2 cache in <b>Single Edge Contact (SEC)</b> cartridge in protective metal case / SEC plugged into Intel Slot 2	
Processor upgrade	<b>SMP</b> via second identical processor / upgrade via SEC into motherboard Intel Slot 2 CPU connector / MPS 1.4	
L2 cache	<b>512KB</b> std / 512KB max / ECC / full speed of processor / 4 way set associative / write-back / integrated in SEC	
Avail / withdrawn date	March 1999 or May 1999 or July or September 1999 / September 1999 or November 1999 or February 2000 or May 2000	
Mem - std / max / type	<b>128MB or 256MB std / 2GB max<sup>13</sup> / Error Checking and Correction (ECC)</b>	
Memory - sockets	4 sockets / 3 available (all have Error Checking and Correcting memory controller)	
Memory - features	<b>SDRAM / 100MHz</b> / four 168 pin gold-plated DIMM 3.3 volt sockets / PC100-compliant / hardware scrubbing of ECC errors	
Memory - support	Supports registered SDRAM ECC DIMMs only (128, 256, 512MB)	
Graphics controller	<b>Millennium G200-D or G400</b> (performance 2D), <b>IBM Fire GL1</b> (perform 2D/3D), or <b>Intergraph 3D Wildcat 4000 RA w/ Geometry Accelerator GA</b> (extreme 3D)	<b>Intergraph® 3D Wildcat 4000 RA</b> / 32-bit 33MHz PCI 2.1 adapter / 16MB 128-bit 143MHz SDRAM (frame buffer) and 64MB 128-bit 143MHz SDRAM (texture memory) / 2D and 3D engine
	<b>Matrox® Millennium G200-D</b> / AGP 2X adp / 8MB std / 16MB max / 142MHz SGRAM / Sideband addressing / split transactions / 250MHz RAMDAC / 128-bit DualBus chip / Max 2D resolution of 1920x1200 in 24-bit color at 80Hz	<b>IBM Fire GL1</b> / AGP 2X adapter / Sideband-capable / split transactions / 32MB std / 32MB max / SGRAM / 250MHz RAMDAC / Max resolution of 1600x1200 at 85Hz or 1920x1200 at 75Hz
	<b>Matrox Millennium G400</b> / AGP 2X adapter / 16MB std / 16MB max / 166MHz SGRAM / sideband addressing / 250MHz RAMDAC / 256-bit DualBus chip / max 2D resolution of 2048x1536 / supports 1280x1024x16.7 million at 100Hz	
Architecture - chip set	<b>Intel 440GX</b> AGPset / <b>PIIX4E</b> for EIDE (Ultra DMA/33), ISA Bridge, USB (82443GX PAC, 82371EB, 82093AA APIC) National Semiconductor® PC87307A Super I/O for diskette, parallel, serial, keyboard, mouse	
Bus slots	PCI 2.1 (33MHz, 32-bit), Accelerated Graphics Port (66MHz; AGP 2X; 533MB/sec), and ISA slots (8MHz) / see below	
Disk	None (AAP model), one EIDE, or one Ultra2 SCSI / SMART <sup>5</sup>	
SCSI controller	<i>Some models:</i> <b>Adaptec® AHA-2940U2W</b> / PCI adapter / Wide Ultra2 SCSI / single channel with SpeedFlex™ (allows two isolated SCSI bus segments; an Ultra2 80MB/sec and a Ultra 40MB/sec segment) / supports 15 devices on all 4 connectors	
SCSI connectors	<i>Internal:</i> ① 68-pin High-Density Ultra2 (used by 5 drop LVD cable to SCSI disk), ② 68-pin High-Density Ultra, ③ 50-pin High-Density Ultra; <i>External:</i> ④ 68-pin High-Density Ultra2 (on back of adapter) / only use Ultra devices on Port B	
Cables	<i>SCSI:</i> 5 drop Internal 16-bit LVD cable on port A; <i>IDE:</i> one 2 drop IDE cable (one drop to CD-ROM)	
EIDE disk controller	Enhanced IDE busmaster (PIIX4E) / Ultra DMA/33 (ATA-33) support / two connectors on planar	
CD-ROM	<b>40X-17X® CD-ROM</b> / CAV (ATAPI) / bootable / 128KB buffer / 90ms avg access	<p style="text-align: center;"><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>- Cover key lock (in rear)</li> <li>- Cover tamper detect switch</li> <li>- Secure fixed disk</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Administrator password</li> <li>- Keyboard/mouse password</li> <li>- Wake-Up on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard or mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write-protect</li> <li>- Diskette I/O control</li> <li>- Hard disk I/O control</li> <li>- Serial/parallel port I/O control</li> <li>- Secure access openings</li> <li>- Secure removable media</li> <li>- VPD stored in EEPROM</li> <li>- Write protection for EEPROM</li> </ul>
Diskette drive	3.5" 1.44MB diskette drive / 1 drop cable	
Ethernet controller	<b>Intel EtherExpress PRO/100B</b> / PCI 82558 ethernet chip on planar / PCI bus 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN	
LCCM support	LANClient Control Manager® enabled / Wake on LAN / Setup over LAN / Hybrid RPL / DHCP/BOOTP / software image download	
Systems mgmt cntrl	LM81-compatible (Analog Devices ADM9240) / <b>hardware chip to monitor temperature, fan speeds, voltage, system cover removal</b> / I <sup>2</sup> C	
Audio	Crystal CS4235 chip on planar / stereo / ISA bus / FM Synthesis / int speaker	
Audio connectors	Stereo line in / mic in / line out (all in back) / software volume control	
Microphone	<b>Headset with noise canceling microphone</b>	
Serial / parallel / USB	<i>Ser:</i> Two 9 pin / 115 Kbps <i>Par:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two ports	
Keyboard / mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse	
Cooling fans	Four variable speed fans (two in front, one in back, one in power supply)	
Power supply	330 watts / universal / auto-sensing / Wake on LAN	
	 <p>Bay ① 5.25", HH 1.6", access, std CD-ROM            Bay ② 5.25", HH 1.6", access, open            Bay ③ 3.5", SL 1", access, open            Bay ④ 3.5", SL 1", access, std diskette            Bay ⑤ 3.5", SL 1", no access, open (disk only)            Bay ⑥ 3.5", SL 1", no access, open (disk only)            Bay ⑦ 3.5", SL 1", no access, std disk (disk only) ] any two bays can be Half Height</p> <p>Slot 1: fullsize, 32-bit AGP (3.3v) - used by AGP graphics adapter            Slot 2: fullsize, 32-bit PCI 2.1 (5v) - used by Wildcat 4000 RA adapter (some models)            Slot 3: fullsize, 32-bit PCI 2.1 (5v) - used by SCSI adapter (some models)            Slot 4: fullsize, 32-bit PCI 2.1 (5v)            Slot 5: fullsize, 32-bit PCI 2.1 (5v)            Slot 6: fullsize, 32-bit PCI 2.1 (5v)            Slot 7: fullsize, 16-bit ISA or 32 bit PCI 2.1 (5v)</p>	<p>Remotely readable DMI-compliant:</p> <ul style="list-style-type: none"> <li>- System EEPROM on motherboard (info and serial no for CPU, riser, system unit, CD-ROM, diskette, empty blank fields); also can read/write with external RF unit</li> <li>- EEPROMs on DIMMs (component info, serial no)</li> <li>- Disk firmware (component info, serial no)</li> </ul> <p>Power management features:</p> <ul style="list-style-type: none"> <li>- Configurable levels for system, CPU, and monitor including powering system and/or display off</li> <li>- Wake Up on Ring (via modem) from off state</li> <li>- Wake Up on Alarm (scheduled time) from off state</li> <li>- Wake-on-LAN from off state</li> <li>- PCI Wake Up from supported PCI devices</li> </ul> <p>Four variable speed fans (three in system (two in front; one in back) and one in power supply)</p>
<b>Alert on LAN™</b> - provides local or remote monitoring; immediate notification of system events such as chassis intrusion, disconnect, start up errors, even if powered off	The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST	
<b>Asset ID™.16 (RFID)</b> - uses radio frequency (RF) technology for deployment, inventory, and security; includes EEPROM that can be accessed via DMI software through network or an external RF link such as hand-held RF read/write units; supports theft protection	Advanced Power Mgmt 1.2	
<b>SMART Reaction™</b> - automatic backup of disk	Support for DMI technology (includes MIF browser) with DMI Service Layer 2.0, DMI BIOS 2.1, and DMI software; DMI 2.0 compliant	
<b>PC 97 compliant</b>	Plug-and-Play 1.0a	
<b>DMI 2.0 compliant</b> with DMI manageability chip	ISO 9241-3 capable	
<b>Wired for Management 1.1a</b>	Vital Product Data support (type, model, serial, id) 7.87"W x 18.10"D x 19.37"H; 45 lbs max (shipped)	
<b>Adv Config and Power Interface (ACPI) 1.04</b>	200 mm W x 460 mm D x 492 mm H; 20.4 kg	
<b>Universal Management Agent support</b>	Several hardcopy publications; four stabilizing feet 512KB SurePath BIOS (Flash over LAN support)	
	Supplier's Declaration available	
	Boot support for LS120, ZIP, CD-ROM, or DVD	

# IBM IntelliStation® Z Pro (6866) - withdrawn

Type-model	Standard disk (rpm) ms read seek / inter CD-ROM <sup>6</sup>	Intel® Processor MHz <sup>1</sup> ; 2-way SMP support	Write-back L2 cache standard	Rambus memory; std MB / type; memory card; devices / RIMMs	Graphics controller in AGP Pro110 slot; adapter memory std / max <sup>13</sup>	Total bus slots available	Total bays	Ethernet / SCSI Chip set Preload <sup>17</sup>	Avail- able date
<b>Mini Tower; 7 slot x 9 bay; Stealth Black - US models</b>									
6866-11U	9.1GB <sup>2</sup> (10K) 5 ms / Ultra160 48X-20X <sup>4</sup> CD-ROM	1 x Pentium® III Xeon™ 667/133	SMP via 2nd Proc	256KB full spd	256MB / PC600 4 slot mem card Two 8D RIMMs	Millennium G400 AGP 4X adapter 16/16MB SGRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-14U	9.1GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 667/133	SMP via 2nd Proc	256KB full spd	256MB / PC600 8 slot mem card Two 8D RIMMs	ELSA™ Gloria II AGP 4X adapter 64/64MB SDRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-15U	9.1GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 667/133	SMP via 2nd Proc	256KB full spd	256MB / PC600 4 slot mem card Two 8D RIMMs	IBM Fire GL1 <sup>11</sup> AGP 2X adapter 32/32MB SGRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-24U	9.1GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 733/133	SMP via 2nd Proc	256KB full spd	256MB / PC600 8 slot mem card Two 8D RIMMs	ELSA Gloria II AGP 4X adapter 64/64MB SDRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-25U	9.1GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 733/133	SMP via 2nd Proc	256KB full spd	256MB / PC600 4 slot mem card Two 8D RIMMs	IBM Fire GL1 AGP 2X adapter 32/32MB SGRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-16U	18.2GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 667/133	SMP via 2nd Proc	256KB full spd	256MB / PC600 8 slot mem card Two 8D RIMMs	Wildcat 4110 AGP 2X adapter 128/128MB SDRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-21U	9.1GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 733/133	SMP via 2nd Proc	256KB full spd	256MB / PC600 4 slot mem card Two 8D RIMMs	Millennium G400 AGP 4X adapter 16/16MB SGRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-26U	18.2GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 733/133	SMP via 2nd Proc	256KB full spd	512MB / PC600 8 slot mem card Two 16D RIMMs	Wildcat 4110 AGP 2X adapter 128/128MB SGRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-27U	18.2GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	<b>SMP via 2 x</b> Pentium III Xeon 733/133	None	256KB full spd	512MB / PC600 8 slot mem card Two 16D RIMMs	Wildcat 4110 AGP 2X adapter 128/128MB SGRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-30U	9.1GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 800EB/133	SMP via 2nd Proc	256KB full spd	256MB / PC600 4 slot mem card Two 8D RIMMs	Millennium G400 AGP 4X adapter 16/16MB SGRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-31U	18.2GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 800EB/133	SMP via 2nd Proc	256KB full spd	512MB / PC600 8 slot mem card Two 16D RIMMs	Wildcat 4110 AGP 2X adapter 128/128MB SGRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Feb 840 / NT 4.0 2000
6866-19U for AAP	<i>no disk</i> 48X-20X CD-ROM	1 x Pentium III Xeon 667/133	SMP via 2nd Proc	256KB full spd	<i>None</i> 4 slot mem card	<i>None</i>	PCI=6 AGP 110=1	2 used 7 empty	eth / SCSI Feb 840 / No OS 2000
6866-29U for AAP	<i>no disk</i> 48X-20X CD-ROM	1 x Pentium III Xeon 733/133	SMP via 2nd Proc	256KB full spd	<i>None</i> 4 slot mem card	<i>None</i>	PCI=6 AGP 110=1	2 used 7 empty	eth / SCSI Feb 840 / No OS 2000
6866-38U for AAP	<i>no disk</i> 48X-20X CD-ROM	1 x Pentium III Xeon 800EB/133	SMP via 2nd Proc	256KB full spd	<i>None</i> 4 slot mem card	<i>None</i>	PCI=6 AGP 110=1	2 used 7 empty	eth / SCSI Feb 840 / No OS 2000
6866-40U	9.1GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 866/133	SMP via 2nd Proc	256KB full spd	256MB / PC600 4 slot mem card Two 8D RIMMs	Millennium G400 AGP 4X adapter 16/16MB SGRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Apr 840 / NT 4.0 2000
6866-41U	18.2GB (10K) 5 ms / Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 866/133	SMP via 2nd Proc	256KB full spd	512MB / PC600 8 slot mem card Two 16D RIMMs	Wildcat 4110 AGP 2X adapter 128/128MB SGRAM	PCI=6 AGP 110=0	3 used 6 empty	eth / SCSI Apr 840 / NT 4.0 2000
6866-48U for AAP	<i>no disk</i> 48X-20X CD-ROM	1 x Pentium III Xeon 866/133	SMP via 2nd Proc	256KB full spd	<i>None</i> 4 slot mem card	<i>None</i>	PCI=6 AGP 110=1	2 used 7 empty	eth / SCSI Apr 840 / No OS 2000

<p><b>Windows NT Preload<sup>17</sup></b></p> <p>Windows NT® Workstation 4.0 (SP5) ConfigSafe for Windows NT Access IBM Other utilities, drivers, and applications - Free license for Lotus® SmartSuite® Millennium - Free license for Lotus Notes® Client - Software Selections CD-ROM - Norton AntiVirus™ (OEM edition) - CoSession Remote 32 - IBM Update Connector™ - IBM Internet Connection - IBM Universal Manageability Services - IBM UM Desktop Extensions - PC-Doctor - Windows NT Product Recovery CD-ROM - Device Drivers and Diagnostics CD-ROM - C: is 2GB as FAT16 - Remainder of disk is unformatted</p>	<p><b>Options</b></p> <p>Xeon Pentium III 667MHz Second Proc 10K2339 Xeon Pentium III 733MHz Second Proc 10K3800 Xeon Pentium III 800MHz Second Proc 10K3801 Xeon Pentium III 866MHz Second Proc 10K3811 64MB 600MHz ECC RDRAM (4 Dev) 33L3093 128MB 600MHz ECC RDRAM (8 Dev) 33L3095 256MB 600MHz ECC RDRAM (16 Dev) 33L3097 64MB 800MHz ECC RDRAM (4 Dev) 20L0274 128MB 800MHz ECC RDRAM (8 Dev) 20L0275 256MB 800MHz ECC RDRAM (16 Dev) 20L0277 IBM IDE 8X DVD-ROM (black) 33L5016 IBM IDE ReWritable CD-RW (black) 33L5005 250MB Internal ZIP Drive (black) 00N8078 18.2GB 7200 rpm Wide Ultra2 SCSI disk 20L0554 18.2GB 10000 rpm Wide Ultra2 SCSI 00N8072 IBM Rack Mount Kit 10L7006</p> <p>Visit <a href="http://www.ibm.com/options">www.ibm.com/options</a> for a complete list of compatible options</p>	<p><b>WARRANTY SERVICE SUPPORT<sup>3</sup></b></p> <p>↪ <b>3 year parts and labor warranty</b> ↪ <b>International Warranty Service<sup>3</sup></b> ↪ <b>On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time</b> ↪ <b>On site warranty upgrade option:</b> • <b>4 hour response<sup>14</sup>, 7 day x 24 hr</b> ↪ <b>Post warranty on site options:</b> • <b>Next day response<sup>14</sup>, Mon-Fri 8-5</b> • <b>4 hour response<sup>14</sup>, 7 day x 24 hr</b> ↪ <b>IBM SystemXtra®</b> ↪ <b>24 hour x 7 day telephone, electronic, and Internet support</b></p>
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All trademarks are the property of their respective owners  
Models announced January 25 or March 20, 2000

No warranties are expressed or implied in this summary  
(6866 - Page 1 of 2) © IBM Corp. January 2001



# IBM IntelliStation® Z Pro (6866) - withdrawn

## IBM® IntelliStation® Z Pro

Type	<b>6866</b>	
Processor(s)	<b>One or two Intel® Pentium® III Xeon™ 667, 733, or 800EB, or 866MHz / 133MHz Front Side Bus</b>	
Implementation	Processor and L2 cache in Single Edge Contact Cartridge (SECC) in protective metal case / plugged into Intel Slot 2	
Processor upgrade	<b>2-way SMP</b> via identical processor / upgrade via second SECC into second motherboard Slot 2 connector / MPS 1.4	
L2 cache	<b>256KB</b> std and max / ECC / at processor speed / 8-way set associative / write-back / integrated in SECC2	
Avail / withdrawn date	February 2000 or April 2000 / some withdrawn June 2000; others November 2000	
Memory	<b>256 or 512MB std / two or four RDRAM (Rambus) channels</b> / 32 devices max each channel / 840 supports 4GB max <sup>13</sup> <i>Some:</i> 4 slot memory card with two RDRAM channels and max of 4x256MB=1GB / C-RIMMs required in empty slots <i>Some:</i> 8 slot memory card with four RDRAM channels and max of 8x256MB=2GB) / 82803 Memory Repeater Hub (MRH-R) converts each channel into two channels (2x2=4 channels total) / C-RIMMs req in empty sockets; except channel 3 and 4 can be totally empty if channel 3 is not used ECC memory controller and RIMMs / 184-pin gold-plated RIMM sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be same speed (PC600 or PC800) and installed in pairs across channels / 2.5v	
Graphics controller	<b>Matrox® Millennium G400</b> (performance 2D), <b>IBM Fire GL1<sup>11</sup></b> or <b>ELSA™ Gloria II</b> (advanced 3D), or <b>Intense3D® Wildcat 4110 AGP Adapter</b> (extreme 3D)	
	<b>IBM Fire GL1</b> / AGP 2X adapter / sideband-capable 32MB std / 32MB max / 256-bit 100MHz SGRAM 2D and OpenGL 3D engine / 250MHz RAMDAC / DDC2B	<b>ELSA Gloria II</b> / AGP 4X adapter / 64MB 128-bit 110MHz SDRAM std and max / 350MHz RAMDAC / 2048x1536 at 75Hz / NVIDIA™ Quadro controller / 256-bit QuadPipe rendering engine
	<b>Intense3D Wildcat 4110 AGP Adapter</b> / AGP 2X adapter / 64MB 128-bit 143MHz SDRAM (frame buffer) and 64MB 64-bit 143MHz SDRAM (texture memory) / 2D and 3D engine / DB-15 and DVI-I ports (same image if both used)	
Architecture (chipset)	<b>Intel 840 chip set / Accelerated Hub Architecture</b> / 266MB/sec I/O channel / 82840 Memory Controller Hub (MCH) / 82803AA Memory Repeater Hub (MRH-R) / 82806 PCI Controller Hub (P64H) for 64-bit PCI slots and SCSI controller / 82801AA I/O Controller Hub (ICH) for 32-bit PCI slots, ATA-66 EIDE, USB, Low Pin Count interface / 82802AC Firmware Hub / NS 87363 Super I/O for diskette, parallel, serial, keyboard, mouse off Low Pin Count interface	
Form factor / bus	Extended ATX / slots on planar (no riser) / PCI and AGP Pro 1.1a (AGP Pro 110; 66MHz; AGP 4X; 1GB/sec) / see below	
Rack mountable	Rack mountable via optional mounting kit	
Disk	None (AAP models) or one Ultra160 SCSI / S.M.A.R.T. <sup>5</sup>	
SCSI controller	<b>Adaptec® AIC-7899</b> / dual channel Ultra160 SCSI controller (160MB/sec) / on planar / 64-bit PCI bus	
SCSI connectors	<i>Internal Port A:</i> 68 pin (attaches 6-drop cable to SCSI disk); <i>External Port B:</i> 68 pin SCSI port on rear (connected by 1-drop 16-bit LVD cable to connector on planar)	
IDE cables	One 2-drop IDE ATA-33 cable (for CD-ROM)	
EIDE disk controller	Enhanced IDE / ATA-66 and PIO modes 0-4 with 2 channel, 4 device support / integrated in I/O Controller Hub (ICH)	
CD-ROM / diskette	<b>48X-20X<sup>6</sup> CD-ROM</b> , CAV (ATAPI), bootable / 3.5" 1.44MB diskette drive	
Ethernet controller	<b>Intel EtherExpress™ PRO/100 / 82559</b> ethernet chip on planar / PCI bus / 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN 2	
Systems mgmt cntrl	Temperature sensors, fan-speed monitor, chassis-intrusion detector, power supply and CPU voltage monitor, and power-switch bypass / AD1025	
Audio	SoundMAX™ integrated digital audio / software-based (done by Pentium and ICH) / AC '97 interface / AD1881 codec (analog mixing, A-to-D and D-to-A conversion)	
Audio connectors	Line in with active pre-amp / mic in / line out (all 3.5mm; all in back)	
Audio features	Internal speaker with automatic jack sense switching / software volume control	
Microphone	None	
Ports	<i>MIDI/Joystick:</i> One <i>Ser:</i> Two 9-pin <i>Par:</i> One <i>USB:</i> Two ports (Vers 1.1)	
Security chip	Integrated IBM Security Chip / soldered on motherboard	
Keyboard / mouse	104 key keyboard / keyboard extender / <b>IBM ScrollPoint™ II mouse</b> (3 button)	
Power supply	490 watts / universal / auto-sensing / Wake on LAN	
	 <p>Bay ① 5.25", HH 1.6", access, open  Bay ② 5.25", HH 1.6", access, std CD-ROM  Bay ③ 3.5", SL 1", access, diskette  Bay ④ 3.5", SL 1", no access, open (disk only) [Bay 4, 5, and 6 can support two HH 1.6" disks]  Bay ⑤ 3.5", SL 1", no access, open (disk only)  Bay ⑥ 3.5", SL 1", no access, open (disk only)  Bay ⑦ 3.5", SL 1", no access, open (disk only) [Bay 7, 8, and 9 can support two HH 1.6" disks]  Bay ⑧ 3.5", SL 1", no access, open (disk only)  Bay ⑨ 3.5", SL 1", no access, std disk (disk only)</p> <p>Slot 1: full, 32-bit 4X AGP Pro 110 (universal) Slot 4: full, 32-bit 33MHz PCI 2.2 (5v)  - used by AGP graphics adapter Slot 5: full, 32-bit 33MHz PCI 2.2 (5v)  - 4110 models can not use slot 2 Slot 6: full 64-bit 66MHz PCI 2.2 (3.3v)  Slot 2: full, 32-bit 33MHz PCI 2.2 (5v) Slot 7: full, 64-bit 66MHz PCI 2.2 (3.3v)  Slot 3: full, 32-bit 33MHz PCI 2.2 (5v)</p>	<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>- Cover key lock and U-bolt support</li> <li>- Cover tamper detect switch</li> <li>- Secure fixed DASD</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Administrator password</li> <li>- Keyboard/mouse password</li> <li>- Wake Up on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard or mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write-protect</li> <li>- Diskette, disk, serial port, parallel port I/O control</li> <li>- Secure access openings</li> <li>- Secure removable media</li> <li>- VPD stored in EEPROM</li> <li>- Write protection control for EEPROM</li> <li>- Barcode labels on most components</li> <li>- IBM Security Solutions</li> </ul> <p><i>Maximum internal SCSI disk capacity<sup>13</sup>:</i>  127.4GB (6 x 18.2GB 7200 or 10K rpm and 1 x 18.2GB 7200 rpm)</p> <p><b>SYSTEMS MANAGEMENT</b></p> <ul style="list-style-type: none"> <li>• <b>Asset ID™ (RFID)<sup>16</sup></b></li> <li>• <b>Alert on LAN™ 2</b></li> <li>• Universal Manageability Services and Universal Manageability (UM) Desktop Extensions enabled</li> <li>• LANClient Control Manager™ enabled</li> <li>• SMART Reaction™.5 II</li> <li>• <b>PC 99-compliant</b></li> <li>• DMI 2.0-compliant</li> <li>• Common Information Model (CIM) 2.2</li> <li>• Asset Information Chip (EEPROM)</li> <li>• <b>Wired for Management 2.0</b></li> <li>• ACPI 1.0</li> <li>• Advanced Power Management 1.2</li> <li>• Wake on LAN support</li> <li>• Alternate Boot Sequence</li> <li>• RPL, DHCP, and PXE 2.0 support</li> <li>• Setup on LAN, Flash on LAN</li> <li>• Wake on Alarm</li> <li>• System Management BIOS Version 2.3</li> <li>• Systems Migration Assistant support</li> </ul>
	<p><b>SECURITY CHIP</b></p> <ul style="list-style-type: none"> <li>- Provides electronic digital signature and secure key storage</li> <li>- Can sign each e-mail with a digital signature (1024-bit) so receiving party can verify sender</li> <li>- Public Key Infrastructure (PKI) for more secure e-mail, web access and Internet transactions, and Secure Sockets Layer (SSL) for encryption/decryption capabilities (128-bit encryption)</li> <li>- Uses User Verification Manager software available from IBM web site</li> </ul>	<p><b>OTHER STANDARD FEATURES</b></p> <p>The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST</p> <p>ESC for fast POST; F12 for network boot at startup</p> <p>Plug-and-Play 1.0a; ISO 9241-3 capable</p> <p>Vital Product Data support (type, model, serial, id)</p> <p>8.5"W x 23.9"D x 17.3"H; 75 lbs maximum</p> <p>216 mm W x 606 mm D x 440 mm H; 34 kg max</p> <p>Several hardcopy publications</p> <p>512KB BIOS (Flash over LAN support)</p> <p>Supplier's Declaration available</p> <p>Four fans (one for adapters, two for processor/memory/disk, one in power supply)</p>

# IBM IntelliStation® Z Pro (6866) - Summer and Fall 2000 - withdrawn

Type-model	Disk rpm interface CD-ROM <sup>6</sup>	Intel® Processor MHz <sup>1</sup> ; 2-way SMP support	Rambus memory; std MB / type / memory card; qty and devices on RIMMs	Graphics controller in AGP Pro110 slot; adapter memory std	Total bus slots available	Total bays	SCSI / chip set Preload <sup>17</sup>	Avail- able date
<b>Mini Tower; 7 slot x 9 bay; Stealth Black - US models</b>								
6866-34U	9.1GB <sup>2</sup> 10K Ultra160 48X-20X CD-ROM	1 x Pentium® III Xeon™ 800/133	512MB / PC600 / 8 slot Two 16D RIMMs	ELSA™ Gloria II AGP 4X / 64MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 NT 4.0	Jun 2000
6866-44U	9.1GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 866/133	512MB / PC600 / 8 slot Two 16D RIMMs	ELSA Gloria II AGP 4X / 64MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 NT 4.0	Jun 2000
6866-50U	9.1GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 933/133	256MB / PC600 / 4 slot Two 8D RIMMs	Millennium G400 AGP 4X / 16MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 NT 4.0	Jun 2000
6866-54U	9.1GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 933/133	512MB / PC600 / 8 slot Two 16D RIMMs	ELSA Gloria II AGP 4X / 64MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 NT 4.0	Jun 2000
6866-56U	18.2GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 933/133	512MB / PC600 / 8 slot Two 16D RIMMs	Wildcat 4110 AGP 2X / 128MB	PCI=5 AGP 110=0	3 used 6 empty	SCSI / 840 NT 4.0	Jun 2000
6866-58U	18.2GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 933/133	512MB / PC600 / 8 slot Two 16D RIMMs	Wildcat 4210 AGP 2X / 256MB	PCI=4 AGP 110=0	3 used 6 empty	SCSI / 840 NT 4.0	Jun 2000
6866-5AU	9.1GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 866/133	256MB / PC600 / 4 slot Two 8D RIMMs	Millennium G450 AGP 4X / 16MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-5BU	18.2GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 866/133	512MB / PC600 / 8 slot Two 16D RIMMs	Wildcat 4110 AGP 2X / 128MB	PCI=5 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-5CU	9.1GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 866/133	512MB / PC600 / 8 slot Two 16D RIMMs	nVidia Quadro2 AGP 4X / 32MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-6AU	18.2GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 933/133	256MB / PC600 / 4 slot Two 8D RIMMs	Millennium G450 AGP 4X / 16MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-6BU	18.2GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 933/133	512MB / PC600 / 8 slot Two 16D RIMMs	nVidia Quadro2 AGP 2X / 32MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-6CU	18.2GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 933/133	512MB / PC600 / 8 slot Two 16D RIMMs	Wildcat 4110 AGP 2X / 128MB	PCI=5 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-6DU	18.2GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 933/133	512MB / PC600 / 8 slot Two 16D RIMMs	Wildcat 4210 AGP 2X / 256MB	PCI=4 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-60U	18.2GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 1.0GHz <sup>1</sup> /133	256MB / PC600 / 8 slot Two 8D RIMMs	Millennium G450 AGP 4X / 16MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-64U	18.2GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 1.0GHz/133	512MB / PC600 / 8 slot Two 16D RIMMs	nVidia Quadro2 AGP 4X / 32MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-68U	36.4GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 1.0GHz/133	512MB / PC600 / 8 slot Two 16D RIMMs	Wildcat 4210 AGP 2X / 256MB	PCI=4 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-69U	18.2GB 10K Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 1.0GHz/133	512MB / PC600 / 8 slot Two 16D RIMMs	IBM Fire GL2 AGP 4X / 64MB	PCI=6 AGP 110=0	3 used 6 empty	SCSI / 840 2000 or NT	Oct 2000
6866-4RU	<i>no disk</i> Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 866/133	256MB / PC600 / 8 slot Two 8D RIMMs	Millennium G450 AGP 4X / 16MB	PCI=6 AGP 110=0	2 used 7 empty	SCSI / 840 DOS 2K	Oct 2000
6866-5RU	<i>no disk</i> Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 933/133	256MB / PC600 / 8 slot Two 8D RIMMs	Millennium G450 AGP 4X / 16MB	PCI=6 AGP 110=0	2 used 7 empty	SCSI / 840 DOS 2K	Oct 2000
6866-6PU	<i>no disk</i> Ultra160 48X-20X CD-ROM	1 x Pentium III Xeon 1.0GHz/133	256MB / PC600 / 8 slot Two 8D RIMMs	Millennium G450 AGP 4X / 16MB	PCI=6 AGP 110=0	2 used 7 empty	SCSI / 840 DOS 2K	Oct 2000

- ⇒ 9.1GB Ultra160 SCSI 10000 rpm disk is 5ms average read seek time, SMART<sup>5</sup>
- ⇒ 18.2GB Ultra160 SCSI 10000 rpm is 5ms average read seek time, SMART
- ⇒ 18.2GB Ultra160 SCSI 10000 rpm is 5.5ms average read seek time, SMART

Windows NT Preload <sup>17</sup>	Options	WARRANTY SERVICE SUPPORT <sup>*3</sup>
Windows NT® Workstation 4.0 (SP5) ConfigSafe for Windows NT Access IBM Other utilities, drivers, and applications - Free license for Lotus® SmartSuite® Millennium - Free license for Lotus Notes® Client ◇ Software Selections CD-ROM ◇ Windows NT Product Recovery CD-ROM ◇ Device Drivers and Diagnostics CD-ROM	Xeon Pentium III 800MHz Second Proc 10K3801 Xeon Pentium III 866MHz Second Proc 10K3811 Xeon Pentium III 933MHz Second Proc 10K3812 Xeon Pentium III 1GHz Second Proc 34L5274 64MB 600MHz ECC RDRAM (4 Dev) 33L3093 128MB 600MHz ECC RDRAM (8 Dev) 33L3095 256MB 600MHz ECC RDRAM (16 Dev) 33L3097 64MB 800MHz ECC RDRAM (4 Dev) 20L0274 128MB 800MHz ECC RDRAM (8 Dev) 20L0275 256MB 800MHz ECC RDRAM (16 Dev) 20L0277 IBM IDE 9.4GB DVD-RAM (black) 10K3651 IBM IDE ReWritable CD-RW (black) 33L5005 250MB Internal ZIP Drive (black) 00N8078 18.2GB 7200 rpm Ultra160 SCSI disk 00N8205 18.2GB 10000 rpm Ultra160 SCSI 00N8208 36.4GB 7200 rpm Ultra160 SCSI 00N8206 36.4GB 10000 rpm Ultra160 SCSI 00N8209 IBM Rack Mount Kit 10L7006	⇒ 3 year parts and labor warranty ⇒ International Warranty Service <sup>3</sup> ⇒ On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time ⇒ On site warranty service upgrade options: • 4 hour response, 7 day x 24 hr <sup>7</sup> ⇒ Post warranty maintenance services available ⇒ 24 hour x 7 day telephone, electronic, and Internet support
<b>Windows 2000 Professional Preload<sup>17</sup></b> Windows 2000 Professional - Free license for Lotus® SmartSuite® Millennium - Free license for Lotus Notes® Client ◇ Device Drivers and Diagnostics CD-ROM ◇ Software Selections CD-ROM ◇ Windows 2000 Product Recovery CD-ROM ◇ Windows NT 4.0 (SP6) Product Recovery CD-ROM	Visit <a href="http://www.ibm.com/options">www.ibm.com/options</a> for a complete list of compatible options	

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227

US models announced June 6 or October 10, 2000

Models withdrawn from marketing effective November 2000 or May 2001 or October 2001

No warranties are expressed or implied in this summary

(6866R - Page 1 of 2) © IBM Corp. October 2001

# IBM IntelliStation® Z Pro (6866) - Summer and Fall 2000 - withdrawn

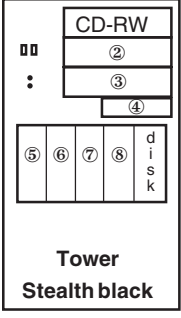
## IBM® IntelliStation® Z Pro

Type	<b>6866</b>	
Processor(s)	<b>One or two Intel® Pentium® III Xeon™ 800, 866, or 933MHz<sup>1</sup> or 1.0B GHz<sup>1</sup> / 133MHz Front Side Bus</b>	
Implementation	Processor and L2 cache in Single Edge Contact Cartridge (SECC) in protective metal case / plugged into Intel Slot 2	
Processor upgrade	<b>2-way SMP</b> via identical processor / upgrade via second SECC into second motherboard Slot 2 connector / MPS 1.4	
L2 cache	<b>256KB</b> std and max / ECC / at processor speed / 8-way set associative / write-back / integrated in SECC2	
Avail / withdrawn date	June 2000 or October 2000 / November 2000 or May 2001 or October 2001	
Memory	<b>256 or 512MB std / two or four RDRAM (Rambus) channels / 32 devices max each channel / 840 supports 4GB max<sup>13</sup></b> Some: 4 slot memory card with two RDRAM channels and max of 4x256MB=1GB / C-RIMMs required in empty slots Some: 8 slot memory card with four RDRAM channels and max of 8x256MB=2GB) / 82803 Memory Repeater Hub (MRH-R) converts each channel into two channels (2x2=4 channels total) / C-RIMMs req in empty sockets; except channel 3 and 4 can be totally empty if channel 3 is not used ECC memory controller and RIMMs / 184-pin gold-plated RIMM sockets / supports PC600 or PC800 RIMMs (not PC700) / all installed RIMMs must be same speed (PC600 or PC800) and installed in pairs across channels / 2.5v	
Graphics controller	<b>Matrox® Millennium G400 or G450</b> (performance 2D), or <b>ELSA™ Gloria II</b> or <b>nVidia™ Quadro2 MXR</b> (advanced 3D), or <b>Intense3D® Wildcat 4110 AGP Adapter</b> (extreme 3D), or <b>Intense3D Wildcat 4210 AGP Adapter</b> (extreme 3D)	
	<b>Intense3D Wildcat 4110 AGP Adapter</b> / AGP 2X adapter / 64MB 128-bit 143MHz SDRAM (frame buffer) and 64MB 64-bit 143MHz SDRAM (texture memory) / 2D and 3D engine / DB-15 and DVI-I ports (same image if both used)	<b>ELSA Gloria II</b> / AGP 4X adapter / 64MB 128-bit 110MHz SDRAM std and max / 350MHz RAMDAC / 2048x1536 at 75Hz / NVIDIA™ Quadro controller / 256-bit QuadPipe rendering engine / DB-15 analog connector
	<b>Intense3D Wildcat 4210 AGP Adapter</b> / AGP 2X adapter / 128MB 256-bit 143MHz SDRAM (frame buffer) and 128MB 128-bit 143MHz SDRAM (texture memory) / 2D and 3D engine / two DVI-I ports (dual monitor for W2000; single for NT)	
Architecture (chipset)	<b>Intel 840 chip set / Accelerated Hub Architecture</b> / 266MB/sec I/O channel / 82840 Memory Controller Hub (MCH) / 82803AA Memory Repeater Hub (MRH-R) / 82806 PCI Controller Hub (P64H) for 64-bit PCI slots and SCSI controller / 82801AA I/O Controller Hub (ICH) for 32-bit PCI slots, ATA-66 EIDE, USB, Low Pin Count interface / 82802AC Firmware Hub / NS 87363 Super I/O for diskette, parallel, serial, keyboard, mouse off Low Pin Count interface	
Form factor / bus	Extended ATX / slots on planar (no riser) / PCI and AGP Pro 1.1a (AGP Pro 110; 66MHz; AGP 4X; 1GB/sec) / see below	
Rack mountable	Rack mountable via optional mounting kit	
SCSI controller	<b>Adaptec® AIC-7899</b> / dual channel Ultra160 SCSI controller (160MB/sec) / on planar / 64-bit PCI bus	
SCSI connectors	<b>Internal Port A:</b> 68 pin (attaches 6-drop cable to SCSI disk); <b>External Port B:</b> 68 pin SCSI port on rear (connected by 1-drop 16-bit LVD cable to connector on planar)	
IDE cables	One 2-drop IDE ATA-33 cable (for CD-ROM)	
EIDE disk controller	Enhanced IDE / ATA-66 and PIO modes 0-4 with 2 channel, 4 device support / integrated in I/O Controller Hub (ICH) / S.M.A.R.T. <sup>5</sup> disks	
CD-ROM / diskette	<b>48X-20X<sup>6</sup> CD-ROM</b> , CAV (ATAPI), bootable / 3.5" 1.44MB diskette drive	
Ethernet controller	<b>Intel EtherExpress™ PRO/100 / 82559</b> ethernet chip on planar / PCI bus / 10BaseT and 100BaseTX / RJ45 UTP connector / Wake on LAN® / Alert on LAN 2	
Systems mgmt cntrl	Temperature sensors, fan-speed monitor, chassis-intrusion detector, power supply and CPU voltage monitor, and power-switch bypass / AD1025	
Audio	SoundMAX™ integrated digital audio / software-based (done by Pentium and ICH) / AC '97 interface / AD1881 codec (analog mixing, A-to-D and D-to-A conversion)	
Audio connectors	Line in with active pre-amp / mic in / line out (all 3.5mm; all in back)	
Audio features	Internal speaker with automatic jack sense switching / software volume control	
Microphone	None	
Ports	<b>MIDI/Joystick:</b> One <b>Ser:</b> Two 9-pin <b>Par:</b> One <b>USB:</b> Two ports (Vers 1.1)	
Security chip	Integrated IBM Security Chip / soldered on motherboard	
Keyboard / mouse	104 key keyboard / keyboard extender / <b>IBM ScrollPoint™ II mouse</b> (3 button)	
Power supply	490 watts / universal / auto-sensing / Wake on LAN	
	 <p>Bay ① 5.25", HH 1.6", access, open          Bay ② 5.25", HH 1.6", access, std CD-ROM          Bay ③ 3.5", SL 1", access, diskette          Bay ④ 3.5", SL 1", no access, open (disk only) [Bay 4, 5, and 6 can support two HH 1.6" disks]          Bay ⑤ 3.5", SL 1", no access, open (disk only)          Bay ⑥ 3.5", SL 1", no access, open (disk only)          Bay ⑦ 3.5", SL 1", no access, open (disk only) [Bay 7, 8, and 9 can support two HH 1.6" disks]          Bay ⑧ 3.5", SL 1", no access, open (disk only)          Bay ⑨ 3.5", SL 1", no access, std disk (disk only)</p> <p>Slot 1: full, 32-bit 4X AGP Pro 110 (universal) Slot 3: full, 32-bit 33MHz PCI 2.2 (5v)          - used by AGP graphics adapter Slot 4: full, 32-bit 33MHz PCI 2.2 (5v)          - 4110 models can not use slot 2 Slot 5: full, 32-bit 33MHz PCI 2.2 (5v)          - 4210 models can not use slot 2 or 3 Slot 6: full 64-bit 66MHz PCI 2.2 (3.3v)          Slot 2: full, 32-bit 33MHz PCI 2.2 (5v) Slot 7: full, 64-bit 66MHz PCI 2.2 (3.3v)</p>	<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>- Cover key lock and U-bolt support</li> <li>- Cover tamper detect switch</li> <li>- Secure fixed DASD</li> <li>- Serial EEPROM with write protect</li> <li>- Power-on password</li> <li>- Administrator password</li> <li>- Keyboard/mouse password</li> <li>- Wake Up on LAN password prompt</li> <li>- Boot sequence control</li> <li>- Boot without keyboard or mouse</li> <li>- Diskette boot inhibit</li> <li>- Disable mouse</li> <li>- Disable external SCSI port</li> <li>- Diskette write-protect</li> <li>- Diskette, disk, serial port, parallel port I/O control</li> <li>- Secure access openings</li> <li>- Secure removable media</li> <li>- VPD stored in EEPROM</li> <li>- Write protection control for EEPROM</li> <li>- Barcode labels on most components</li> <li>- IBM Security Solutions</li> </ul> <p><i>Maximum internal SCSI disk capacity<sup>13</sup>:</i>          254.8GB (6 x 36.4GB 7200 or 10K rpm and 1 x 36.4GB 7200 rpm)</p> <p><b>SYSTEMS MANAGEMENT</b></p> <ul style="list-style-type: none"> <li>• <b>Asset ID™ (RFID)<sup>16</sup></b></li> <li>• <b>Alert on LAN™ 2</b></li> <li>• Universal Manageability Services and Universal Manageability (UM) Desktop Extensions enabled</li> <li>• LANClient Control Manager™ enabled</li> <li>• <b>SMART Reaction™.5 II</b></li> <li>• <b>PC 99-compliant</b></li> <li>• DMI 2.0-compliant</li> <li>• Common Information Model (CIM) 2.2</li> <li>• Asset Information Chip (EEPROM)</li> <li>• <b>Wired for Management 2.0</b></li> <li>• ACPI 1.0</li> <li>• Advanced Power Management 1.2</li> <li>• Wake on LAN support</li> <li>• Alternate Boot Sequence</li> <li>• RPL, DHCP, and PXE 2.0 support</li> <li>• Setup on LAN, Flash on LAN</li> <li>• Wake on Alarm</li> <li>• System Management BIOS Version 2.3</li> <li>• Systems Migration Assistant support</li> </ul>
	<p><b>SECURITY CHIP</b></p> <ul style="list-style-type: none"> <li>- Provides electronic digital signature and secure key storage</li> <li>- Can sign each e-mail with a digital signature (1024-bit) so receiving party can verify sender</li> <li>- Public Key Infrastructure (PKI) for more secure e-mail, web access and Internet transactions, and Secure Sockets Layer (SSL) for encryption/decryption capabilities (128-bit encryption)</li> <li>- Uses User Verification Manager software available from IBM web site</li> </ul>	<p><b>OTHER STANDARD FEATURES</b></p> <p>The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST</p> <p>ESC for fast POST; F12 for network boot at startup</p> <p>Plug-and-Play 1.0a; ISO 9241-3 capable</p> <p>Vital Product Data support (type, model, serial, id)</p> <p>8.5"W x 23.9"D x 17.3"H; 75 lbs maximum</p> <p>216 mm W x 606 mm D x 440 mm H; 34 kg max</p> <p>Several hardcopy publications</p> <p>512KB BIOS (Flash over LAN support)</p> <p>Four fans (one for adapters, two for processor/memory/disk, one in power supply); five fans on I3D 4110 and 4210 models</p>



# IBM IntelliStation® Z Pro (6894) - withdrawn

IBM® Type-model Qty x Processor	L3 cache Mem	SCSI adapter CD-RW	Graphics adapter and memory	Slots x bays Preload <sup>17</sup>	Available date
6894-10X 2 x Itanium 800	2MB 2GB 18.2GB <sup>2</sup> Ultra160 10K	39160 CD-RW	Millennium G450 16MB	8x9 None	Jun 2001
6894-12X 2 x Itanium 800	2MB 2GB 36.4GB Ultra160 10K	39160 CD-RW	NVIDIA™ Quadro2 Pro 64MB	8x9 None	Jun 2001
6894-14X 2 x Itanium 800	2MB 2GB 18.2GB Ultra160 10K	39160 CD-RW	Millennium G450 16MB	8x9 Windows® XP 64-bit	Oct 2001
6894-16X 2 x Itanium 800	2MB 2GB 36.4GB Ultra160 10K	39160 CD-RW	NVIDIA Quadro2 Pro 64MB	8x9 Windows XP 64-bit	Oct 2001
Processor	<b>2 x Intel® Itanium™ 800MHz<sup>1</sup> with 266MHz frontside bus</b> (double pumped 133MHz)				
L1 and L2 cache	32KB L1 cache / 96KB L2 cache / on die of Itanium / at processor speed				
L3 cache	<b>2MB L3 cache</b> / inside Itanium cartridge / at processor speed				
Implementation	One Processor Board with two Socket M 418-pin LIF sockets / both sockets used by Itanium PAC418 (418-pin array cartridge) processor and caches / each Itanium powered by one Power Pod on Processor Board / systemboard contains one Processor Board slot, two Memory Board slots, seven PCI slots, one AGP slot, one I/O Board slot, and 460GX chip set				
SMP support	2-way SMP via identical processor / all models ship with both processors				
Memory - std / max	<b>2GB std</b> / 16GB max <sup>13</sup> / registered SDRAM PC100 3.3v / Error Checking and Correction (ECC) controller and DIMMs				
Memory - features	Two Memory Boards standard each with eight 168-pin DIMM sockets / ships standard with four DIMMs on one Memory Board for four-way interleaving / must install four identical DIMMs at a time / adding DIMMs on second Memory Board enables Card to Card (C2C) interleaving				
Graphics controller (one of following)	<ul style="list-style-type: none"> <li>• <b>Matrox® Millennium G450</b> (high-perf 2D) / AGP 4X adapter / Matrox MGA G450C GPU / 16MB 150MHz SDRAM / dual RAMDAC [300/136MHz] / dual head: 1920x1440x16M at 75Hz and 1280x1024x16M at 75Hz / two DB-15 connectors</li> <li>• <b>NVIDIA Quadro2 Pro</b> (advanced 3D) / AGP 4X adapter / NV15GL 250MHz GPU / 64MB 200MHz DDR-SDRAM / 350MHz RAMDAC / single head: 1600x1200x16M at 85Hz / DB-15 and DVI-I connectors (same image if both used)</li> </ul>				
IDE disk controller	Enhanced IDE busmaster / ATA-33 / controller in IFB (I/O Firmware Bridge) off the PXB / two connectors on planar				
SCSI disk controller	Adaptec® ASC-39160 / Ultra160 SCSI (LVD 160MB/sec) / two channel / 64-bit 66MHz PCI adapter				
SCSI connectors	Two 68-pin internal (Channel A and B) / one 50-pin internal (Chan A) / two 0.8mm VHDCI 68-pin external (Chan A and B)				
Cables	One 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (attached to CD-RW), and one 2-drop EIDE (unconnected)				
Disk - features	18.2 or 36.4GB Ultra160 SCSI / 10K rpm / 5.5 ms read seek / S.M.A.R.T. <sup>5</sup>				
Rack support	None				
Architecture / chipset	<b>Intel 460GX chip set</b> / 82460GX includes 82461GX System Address Controller (SAC), 82462GX System Data Controller (SDC), 82463 Memory Address Controller (MAC), 82464GX Memory Data Controller (MDC), 82465GX Graphics eXpansion Bus (GXB), 82466GX Wide eXpansion Bus (WXB), 82467NX PCI eXpansion Bus (PXB), 82468GX I/O Firmware Bridge (IFB), 82802AC Firmware Hub (FWH), 82064AA Programmable Interrupt Device (PID)				
I/O Board and ports	I/O Board in proprietary connector / contains controllers for hardware monitor (ADM1024e), 10/100 ethernet, audio, USB (Version 1.1), two channel IDE, chassis intrusion, LPC47M142 Super I/O (serial, keyboard, mouse, USB)				
Rear external ports	Serial (9-pin), keyboard, mouse, two USB, ethernet (RJ-45), two disabled audio ports (no parallel port)				
Front ports	Two USB, audio line in, audio line out				
Ethernet	Intel 82559 10/100 ethernet / support for Wake on LAN®, Alert on LAN™ 2, Preboot eXecution Environment (PXE)				
CD-RW / diskette	12X/8X/32X <sup>6</sup> CD-RW / no diskette drive support				
Audio	Soft audio AC '97 v2.1 controller / Cirrus Logic CS4281 PCI audio-codec controller and CS4297A stereo audio codec				
Systems mgmt	Monitoring and alerting of thermal, fans, and voltage faults				
Keyboard / mouse	IBM 104-key keyboard / IBM three-button mouse				
Cooling fans	Four cooling zones / 6 fans / processor zone with two 120mm fans / memory zone with one 80mm fan / I/O zone with one 92mm fan and one 60mm fan / exhaust zone with one 80mm fans / variable speed fans / not redundant or hot-swap				
Power supply	800 watts / swings out from right side on door / universal / auto sensing / two internal 80mm fans				

 <p>Bay ① 5.25", HH 1.6", access, CD-RW            Bay ② 5.25", HH 1.6", access, open            Bay ③ 5.25", HH 1.6", access, open            Bay ④ 3.5", SL 1", access, open            Bay ⑤ 3.5", SL 1", no access, open            Bay ⑥ 3.5", SL 1", no access, open            Bay ⑦ 3.5", SL 1", no access, open            Bay ⑧ 3.5", SL 1", no access, open            Bay ⑨ 3.5", SL 1", no access, disk            (Bays 5 to 9 accepts three 1.6 HH disks)</p> <p>Slot 1: fullsize, 64-bit 66MHz, PCI 2.2 (3.3v), Bus 1 via WXB            Slot 2: fullsize, 64-bit 66MHz, PCI 2.2 (3.3v), Bus 1 via WXB - used by SCSI adapter            Slot 3: fullsize, 64-bit 66MHz, PCI 2.2 (3.3v), Bus 1 via WXB            Slot 4: fullsize, 64-bit 66MHz, PCI 2.2 (3.3v), Bus 2 via WXB            Slot 5: fullsize, 64-bit 66MHz, PCI 2.2 (3.3v), Bus 2 via WXB            Slot 6: fullsize, 64-bit 33MHz, PCI 2.1 (5v), Bus 0 via PXB            Slot 7: fullsize, AGP 4X Pro110 (1.5v) via GXB - used by std AGP graphics adapter            Slot 8: fullsize, 64-bit 33MHz, PCI 2.1 (5v), Bus 0 via PXB</p>	<p><b>SOFTWARE<sup>17</sup></b></p> <ul style="list-style-type: none"> <li>- 10X/12X: No operating system or preloaded software included</li> <li>- 14X/16X: Preloaded with Microsoft® Windows® XP 64-bit Edition</li> <li>◆ 14X/16X: Microsoft Windows XP 64-bit Edition Product Recovery CD</li> <li>◆ All: Enhanced Diagnostics CD-ROM</li> <li>- All: Compatible with Linux® OS and Microsoft® Windows® XP 64-bit Edition</li> </ul>	<p><b>SECURITY</b></p> <ul style="list-style-type: none"> <li>• Cover key lock</li> <li>• Cover tamper detect switch</li> <li>• Secure fixed DASD</li> <li>• Power-on password</li> <li>• Administrator password</li> <li>• Keyboard/mouse password</li> <li>• Boot sequence control</li> <li>• Boot without keyboard or mouse</li> <li>• Diskette boot inhibit and write-protect</li> <li>• Disable mouse</li> <li>• Disk, serial port I/O control</li> <li>• Secure access openings</li> <li>• VPD stored in EEPROM</li> <li>• Write protection control for EEPROM</li> </ul>																											
	<p><b>OPTIONS</b></p> <table border="0"> <tr><td>1GB (4 x 256MB) PC100 ECC SDRAM RDIMM Kit</td><td>33L3258</td></tr> <tr><td>2GB (4 x 512MB) PC100 ECC SDRAM RDIMM Kit</td><td>33L3260</td></tr> <tr><td>4GB (4 x 1GB) PC100 ECC SDRAM RDIMM Kit</td><td>33L3262</td></tr> <tr><td>IBM IDE 12X/8X/32X Max<sup>4</sup> CD-RW (black)</td><td>10K3785</td></tr> <tr><td>IBM 18.2GB 10K Ultra160 SCSI HDD</td><td>00N8208</td></tr> <tr><td>IBM 36.4GB 10K Ultra160 SCSI HDD</td><td>00N8209</td></tr> <tr><td>IBM Netfinity Gigabit Ethernet Adapter</td><td>19K4401</td></tr> <tr><td>PCI Ultra160 SCSI Adapter (Adaptec 39160)</td><td>19K4646</td></tr> <tr><td>IBM G96 19" FST (17.9" viewable) Monitor (black)</td><td>65494AN</td></tr> <tr><td>IBM P96 19" FD (17.9" viewable) Monitor (black)</td><td>655163N</td></tr> <tr><td>IBM P260 21" FD (19.8" viewable) Monitor (black)</td><td>655263N</td></tr> <tr><td>IBM P76 17" FD (16" viewable) Monitor (black)</td><td>655063N</td></tr> <tr><td>IBM T85A 18.1" TFT Flat Panel Monitor (black)</td><td>9519AG1</td></tr> <tr><td>Radial Arm</td><td>19K4464</td></tr> </table>	1GB (4 x 256MB) PC100 ECC SDRAM RDIMM Kit	33L3258	2GB (4 x 512MB) PC100 ECC SDRAM RDIMM Kit	33L3260	4GB (4 x 1GB) PC100 ECC SDRAM RDIMM Kit	33L3262	IBM IDE 12X/8X/32X Max <sup>4</sup> CD-RW (black)	10K3785	IBM 18.2GB 10K Ultra160 SCSI HDD	00N8208	IBM 36.4GB 10K Ultra160 SCSI HDD	00N8209	IBM Netfinity Gigabit Ethernet Adapter	19K4401	PCI Ultra160 SCSI Adapter (Adaptec 39160)	19K4646	IBM G96 19" FST (17.9" viewable) Monitor (black)	65494AN	IBM P96 19" FD (17.9" viewable) Monitor (black)	655163N	IBM P260 21" FD (19.8" viewable) Monitor (black)	655263N	IBM P76 17" FD (16" viewable) Monitor (black)	655063N	IBM T85A 18.1" TFT Flat Panel Monitor (black)	9519AG1	Radial Arm	19K4464
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See footnotes for important warranty information

US models announced May 29 or October 16, 2001; withdrawn effective July 2002 or September 2002

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# IBM IntelliStation<sup>®</sup> M Pro models - Fall 1997 (6898) - withdrawn

Type-model	Disk: std (rpm) - max internal ms seek / disk interface CD-ROM <sup>®</sup> interface Controllers	CPU MHz <sup>1</sup> / Upgrade	Write-thru L2 cache std / max KB / KB	Memory in MB; std/max <sup>13</sup> 66 MHz	SVGA controller; memory std / max	Bus slots P=PCI avail I=ISA avail A=AGP av	Total bays	Std features	Estimated Reseller Price*	Avail date
<b>6 slot x 6 bay; PCI/ISA/AGP; Stealth Gray</b>										
6898-10U	4.2GB <sup>2</sup> std (5400) - 27.3G 10ms/EIDE / ATA-33 24 x CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium <sup>®</sup> II 233/66 MHz	SMP via 2nd Pent II	512/512 117MHz in SEC Non-ECC	32 / 512 SDRAM ECC	3Dlabs <sup>®</sup> PERMEDIA <sup>®</sup> 2 AGP adapter 8 / 8 SGRAM	PCI=3 PCI/ISA=1 ISA=1 AGP=0	6 bays 3 used 3 empty	440LX UU/L/A/Eth Windows NT 4.0 RTC CD	\$2499 Nov 1997
6898-11U	4.2GB std (5400) - 27.3G 10ms / EIDE / ATA-33 24 x CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 266/66 MHz	SMP via 2nd Pent II	512/512 133MHz in SEC Non-ECC	64 / 512 SDRAM ECC	3Dlabs PERMEDIA 2 AGP Adapter 8 / 8 SGRAM	PCI=3 PCI/ISA=1 ISA=1 AGP=0	6 bays 3 used 3 empty	440LX UU/L/A/Eth Windows NT 4.0 RTC CD	2797 <sup>♣</sup> Nov 1997
6898-12U	6.4GB std (5400) - 27.3G 9.5ms / EIDE / ATA-33 24 x CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 300/66 MHz	SMP via 2nd Pent II	512/512 150MHz in SEC ECC	64 / 512 SDRAM ECC	3Dlabs PERMEDIA 2 AGP Adapter 8 / 8 SGRAM	PCI=3 PCI/ISA=1 ISA=1 AGP=0	6 bays 3 used 3 empty	440LX UU/L/A/Eth Windows NT 4.0 RTC CD	3079 <sup>♣</sup> Dec 1997
6898-13U	4.5GB std (7200) - 22.7G 9ms / <b>Wide Ultra SCSI</b> 24 x CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 300/66 MHz	SMP via 2nd Pent II	512/512 150MHz in SEC Non-ECC	128/512 SDRAM ECC	3Dlabs PERMEDIA 2 AGP Adapter 8 / 8 SGRAM	PCI=3 PCI/ISA=1 ISA=1 AGP=0	6 bays 3 used 3 empty	440LX UU/L/A/Eth Windows NT 4.0 RTC CD	3616 <sup>♣</sup> Jan 1998
6898-14U	4.5GB std (7200) - 22.7G 9ms / <b>Wide Ultra SCSI</b> 24 x CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 300/66 MHz	SMP via 2nd Pent II	512/512 150MHz in SEC ECC	128/512 SDRAM ECC	Intergraph <sup>®</sup> Intense 3D/4T 16MB SDRAM 4MB SGRAM	PCI=2 PCI/ISA=1 ISA=1 AGP=1	6 bays 3 used 3 empty	440LX UU/L/A/Eth Windows NT 4.0 RTC CD	5085 <sup>♣</sup> Nov 1997
6898-18U for AAP	<i>no disk</i> 24 x CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 266/66	SMP via 2nd Pent II	512/512 133MHz Non-ECC	32/512 SDRAM ECC	<i>None</i>	PCI=3 PCI/ISA=1 ISA=1;A=1	6 bays 2 used 4 empty	440LX UU/L/A/Eth RTC CD	2740 <sup>♣</sup> Nov 1997
6898-19U for AAP	<i>no disk</i> 24 x CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 300/66	SMP via 2nd Pent II	512/512 150MHz ECC	32 / 512 SDRAM ECC	<i>None</i>	PCI=3 PCI/ISA=1 ISA=1;A=1	6 bays 2 used 4 empty	440LX UU/L/A/Eth RTC CD	2966 <sup>♣</sup> Nov 1997
6898-22U	6.4GB std (7200) - 27.3G 9.5ms / EIDE / ATA-33 24 x CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 333/66 MHz	SMP via 2nd Pent II	512/512 166MHz in SEC ECC	64 / 512 SDRAM ECC	3Dlabs PERMEDIA 2 AGP Adapter 8 / 8 SGRAM	PCI=3 PCI/ISA=1 ISA=1 AGP=0	6 bays 3 used 3 empty	440LX UU/L/A/Eth Windows NT 4.0 RTC CD	3418 <sup>♣</sup> Mar 1998
6898-24U	9.1GB <sup>2</sup> std (10,000) - 22.7G 8.2ms / <b>Wide Ultra SCSI</b> 24 x CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 333/66 MHz	SMP via 2nd Pent II	512/512 166MHz in SEC ECC	128/512 SDRAM ECC	Intergraph Intense 3D/4T 16MB SDRAM 4MB SGRAM	PCI=2 PCI/ISA=1 ISA=1 AGP=1	6 bays 3 used 3 empty	440LX UU/L/A/Eth Windows NT 4.0 RTC CD	5961 <sup>♣</sup> Mar 1998
6898-28U for AAP	<i>no disk</i> 24 x CD-ROM / EIDE EIDE / 2 x Wide Ultra SCSI	1 x Pentium II 333/66	SMP via 2nd Pent II	512/512 166MHz ECC	64 / 512 SDRAM ECC	<i>None</i>	PCI=3 PCI/ISA=1 ISA=1;A=1	6 bays 2 used 4 empty	440LX UU/L/A/Eth RTC CD	3334 <sup>♣</sup> Mar 1998

### Windows NT Preload<sup>17</sup>

Windows NT<sup>®</sup> Workstation 4.0 (SP3)  
Windows Internet Explorer 3.02  
Microsoft NetMeeting  
ConfigSafe for Windows NT 4.0  
IBM AntiVirus for Windows NT  
IBM ClientCare Setup  
- DMI Service Provider  
- DMI BIOS Instrumentation  
- IBM PC System Monitor Instrumentation  
- IBM AssetCare Serial Number Information  
IBM RTC CD-ROM Setup Utility  
IBM Product Registration  
IBM Utilities for Windows 95/NT 4.0  
Online Books  
Device drivers for each subsystem

- Hummingbird "Try and Buy" Suite CD-ROM
- Exceed 5.1.3
- Exceed 3D 5.1.3
- NFS Maestro Solo 5.1.3
- Intel LANDesk 3.0 for Windows NT CD-ROM
- Internet Explorer 4.0 CD-ROM
- Ready to Configure CD-ROM
- Free license for Lotus SmartSuite 97 CD-ROM
- Windows NT Workstation 4.0 CD-ROM
- Access to IBM HomePage Creator

### Ready to Configure CD-ROM<sup>17</sup>

All models ship with a CD with drivers for OS/2, Windows<sup>®</sup> 95, and Windows NT and various utilities.  
Includes:  
- ConfigSafe for NT 4.0  
- Client Services for Netfinity 5.0  
- IBM VoiceType Simply Speaking Gold 3.5  
- PC-Doctor for Windows NT 2.0.121  
- Tivoli Lightweight Client Framework  
- Diskette Factory  
- Device drivers for each subsystem  
- Utilities and applications on NT preload

### Supported Memory and Options

32MB SDRAM ECC DIMM	04K0073
64MB SDRAM ECC DIMM	04K0074
128MB SDRAM ECC DIMM	04K0075
256MB EDO ECC DIMM	76H0269
Adaptec ARO-1130CA PCI RAIDport	Adaptec
233MHz Pentium II	Retail
266MHz Pentium II	Retail
Netfinity 300MHz Pentium II	10L5886
Netfinity 333MHz Pentium II	01K8025
Intergraph Intense3D Pro2200/GA Geometry Accelerator	Retail

### Open Bay

Open bay model contains no hard disk. No preload or operating system license is included.  
- Hummingbird "Try and Buy" Suite CD-ROM  
- Exceed 5.1.3  
- Exceed 3D 5.1.3  
- NFS Maestro Solo 5.1.3  
- Intel LANDesk 3.0 for Windows NT CD-ROM  
- Ready to Configure CD-ROM  
- Free license for Lotus SmartSuite 97 CD-ROM (via 800 number)

### WARRANTY SERVICE SUPPORT

- ↪ 3 year parts warranty<sup>3</sup>
- ↪ 1 year labor warranty
- ↪ International Warranty Service<sup>3</sup>
- ↪ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time
- ↪ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ↪ On site warranty upgrade options<sup>14</sup>:
  - ① Next day, on site, Mon-Fri 8-5
  - ② Same day, on site, 7 day x 24 hr
- ↪ Post warranty: on site options above
- ↪ IBM SystemXtra<sup>™</sup>
- ↪ 24 hour / 7 day telephone, electronic, Internet (www.pc.ibm.com) support

A = CS4236 FM synthesis audio chip  
Eth = Intel 10/100 ethernet chip; 10BaseT and 100BaseTX  
L = LAN Client Control Manager (LCCM) enabled  
NT4 = Windows NT Workstation 4.0 preinstalled  
RTC CD = ReadyTo Configure CD-ROM  
UU = Two Universal Serial Bus (USB) port  
Wide Ultra SCSI = Adaptec AHA-7895; dual channel Wide Ultra SCSI  
♣ = Price decrease effective April 27, 1998

All trademarks are the property of their respective owners  
\* Prices are estimated reseller prices and subject to change without notice; actual prices may vary

No warranties are expressed or implied in this summary  
(IS1097 - Page 1 of 2) © IBM Corp. October 1998

# IBM IntelliStation™ M Pro - Fall 1997 (6898) - withdrawn

## IBM® IntelliStation™ M Pro

Type (code name)	<b>6898</b>		
Processor(s)	<b>Intel® Pentium® II 233/66, 266/66, 300/66, or 333MHz<sup>1</sup> / MMX™ technology / 16KB ins + 16KB data L1 cache</b>		
Implementation	Processor and L2 cache in <b>Single Edge Contact (SEC)</b> cartridge in protective metal case / SEC plugged into Intel Slot 1		
Processor upgrade	<b>SMP</b> via second identical processor / upgrade via SEC into motherboard Intel® Slot 1 CPU connector / MPS 1.4		
L2 cache	<b>512KB</b> std / 512KB max / non-ECC for 233, 266MHz; ECC for 300, 333MHz / 1/2 speed of processor / integrated in SEC		
Avail / withdrawn date	November 1997, December 1997, or January 1998 / October 1998		
Mem - std / max / type	<b>32MB, 64MB, or 128MB</b> std / 512MB max <sup>13</sup> / <b>Error Checking and Correction (ECC)</b>		
Memory - sockets	4 sockets / 3 available (all have Error Checking and Correcting memory controller)		
Memory - features	SDRAM / 66MHz / four 168 pin gold-plated DIMM 3.3 volt sockets / DIMMs can have a max height of 2.5"		
Memory - support	Supports SDRAM ECC DIMMs (32,64,128MB) or EDO ECC DIMMs (256MB) / can not mix EDO and SDRAM DIMMs		
Graphics controller	<b>3Dlabs® Permedia® 2, Intergraph® Intense 3D Pro2200/4T,</b> (or Intergraph Intense 3D Pro2200/GA for AAP models)		
Graphics - type	<b>3Dlabs / Permedia 2 / 2D/3D acc / AGP-1x 266MB/s adapter</b>	<b>Intense 3D Pro2200/4T / 2D/3D accelerator / PCI adapter</b>	
Graphics - memory	8MB std/max SGRAM / 230MHz RAMDAC / sideband address	16MB SDRAM buffer and 4MB SGRAM texture memory	
Graphics - features	VESA DPMS, DDC1, DDC2B / 64-bit OpenGL, Direct3D, 3D Studio MAX, QuickDraw 3D, DirectDraw Color space conversion / XY scaling / chroma-keying Texture mapping / 3D rendering / z buffering	VESA DPMS, DDC2B / onboard VGA / fogging OpenGL, Direct3D, QuickDraw 3D, DirectDraw Color space conversion / alpha blending / 32-bit textures Hardware accelerated 3D gouraud shading and Z buffering	
Bus slots	PCI 2.1 (33MHz), Accelerated Graphics Port (66MHz; AGP-2x; 533MB/sec), and ISA slots (8.33MHz) / see below		
Architecture - chip set	<b>Intel 440LX</b> AGPset / <b>PIIX4</b> for EIDE (Ultra DMA/33), ISA Bridge, USB / National Semiconductor PC87307 Super I/O for diskette, parallel, serial, keyboard, mouse		
Disk	<b>None, 4.2GB<sup>2</sup> or 6.4GB EIDE</b> (Ultra DMA/33), or <b>4.5GB or 9.1GB Wide Ultra SCSI / SMART<sup>5</sup></b>		
SCSI controller	<b>Adaptec® AHA-7895 / dual channel Wide UltraSCSI controller</b> / on planar / PCI 2.1		
SCSI connectors	<b>Channel A:</b> 68 pin (attaches 4 drop cable to SCSI disk); <b>Channel B:</b> 50 pin and 68 pin / 68 pin cable std to external SCSI port (all mod)		
RAID option	Supports Adaptec ARO™-1130CA PCI RAIDport™ adapter (RAID 0, 1) / installs in PCI slot / uses 7895 controller and connectors		
Cables - SCSI and IDE	<b>SCSI model:</b> 4 drop 16-bit cable on Channel A; 16-bit cable to ext port on Channel B; one 2 drop IDE cable (CD-ROM)		
EIDE disk controller	<b>EIDE and AAP models:</b> Two 2 drop IDE cables (one for disk; one for CD-ROM) and both SCSI cables Enhanced IDE busmaster (PIIX4) / Ultra DMA/33 (ATA-33) support / two connectors on planar		
CD-ROM	<b>24X<sup>6</sup> max CD-ROM / CAV</b> (ATAPI) / bootable		
Diskette drive	3.5" 1.44MB diskette drive / 1 drop cable		
Ethernet controller	<b>Intel EtherExpress PRO/100B</b> / PCI 82557 ethernet chip on planar / 10BaseT and 100BaseTX / PCI bus / RJ45 UTP connector / Wake-on-LAN		
Wake-on-LAN	Standard on all models with integrated ethernet controller		
LCCM	LAN Client Control Manager enabled / Wake-on-LAN / Setup-on-LAN / POST/BIOS update over LAN / Hybrid RPL / DHCP/BOOTP		
Systems mgmt cntrl	<b>National Semiconductor® LM78 compatible / hardware chip to monitor temperature, front fan speed, voltage, system cover removal / ISA</b>		
Audio	Crystal CS4236B chip on planar / stereo / ISA bus / FM Synthesis / int speaker		
Audio connectors	Stereo line in / mic in / line out (all in back) / software volume control		
Serial / parallel / USB	<b>Ser:</b> Two 9 pin / 115Kbps <b>Par:</b> One (EPP, ECP) / IEEE 1284 <b>USB:</b> Two ports		
Infrared	None		
Preloaded software <sup>7</sup>	<b>N/A</b> (if no disk), or <b>Windows NT® Workstation 4.0</b> All include Ready to Configure CD-ROM (device drivers and utilities) All include Windows NT Workstation 4.0 CD-ROM		
Keyboard / Mouse	104 key (rubber dome) keyboard / keyboard extender / IBM 3 button mouse		
Power supply	330 watts / universal / manual switch / Power Factor Corrected / Wake-on-LAN		
CD-ROM	Bay ① 5.25", HH 1.6", access, std CD-ROM		
②	Bay ② 5.25", HH 1.6", access, open		
③	Bay ③ 3.5", SL 1", access, open		
diskette	Bay ④ 3.5", SL 1", access, std diskette		
⑤	Bay ⑤ 3.5", SL 1", no access, open (disk only)		
disk	Bay ⑥ 3.5", SL 1", no access, std disk (disk only)		
Mini tower mechanical;	Slot 1: fullsize, 32-bit AGP (3.3v) - used by Permedia 2 adapter (some models)		
Stealth gray color	Slot 2: fullsize, 32-bit PCI 2.1 (3.3v/5v) - supports optional Adaptec RAIDport 1130CA		
	Slot 3: fullsize, 32-bit PCI 2.1 (3.3v/5v) - used by Intergraph 3D (some models)		
	Slot 4: fullsize, 32-bit PCI 2.1 (3.3v/5v)		
	Slot 5: fullsize, 16-bit ISA or 32-bit PCI 2.1 (3.3v/5v)		
	Slot 6: fullsize, 16-bit ISA		
<b>3Dlabs PERMEDIA GRAPHICS MODES (2D)</b>		<b>OTHER STANDARD FEATURES</b>	
<b>Resolution</b>	<b>Frame Rate Hz (non-interlaced)</b>	<b>Memory required</b>	<b>Max colors</b>
640x480	60 to 100Hz	N/A	16.7 mil
800x600	60 to 100Hz	N/A	16.7 mil
1024x768	60 to 100Hz	N/A	16.7 mil
1152x870	60 to 100Hz	N/A	16.7 mil
1280x1024	60 to 100Hz	N/A	16.7 mil
1600x1200	60 to 75Hz	N/A	16.7 mil
<b>INTERGRAPH GRAPHICS MODES (2D)</b>			
640x480	60 I, 60, 72, 75, 85	N/A	16.7 mil
800x600	60 I, 60, 72, 75, 85	N/A	16.7 mil
1024x768	60 I, 60, 72, 75, 85	N/A	16.7 mil
1152x864	60 I, 60, 72, 75, 85	N/A	16.7 mil
1280x960	60 I, 60, 75	N/A	16.7 mil
1280x1024	60 I, 60, 75	N/A	16.7 mil
The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST			
Plug-and-Play 1.0a			
Vital Product Data support (type, model, serial, id)			
7.87"W x 17.52"D x 19.37"H; 33 lbs			
200 mm W x 445 mm D x 492 mm H; 15 kg			
Advanced Power Mgmt 1.2; ISO 9241-3 capable			
<b>Adv Config and Power Interface (ACPI)</b> support			
Several hardcopy publications			
256KB SurePath™ BIOS (Flash over LAN support)			
Support for DMI technology (includes MIF browser)			
with DMI Service Layer 2.0, DMI BIOS 2.0, and DMI software; <b>DMI 2.0 compliant</b>			
Supplier's Declaration available			
Wired for Management 1.0 compliant			
		<i>Maximum internal SCSI disk capacity<sup>13</sup>: 22.7GB (2 x 9.1GB plus 1 x 4.5GB)</i>	
		<i>Maximum internal ESDI disk capacity<sup>13</sup>: 27.3GB (3 x 9.1GB)</i>	
Power and System management features:			
- Three configurable levels for system, CPU, and monitor including powering system and/or display off			
- Wake Up on Ring (via modem) from off state			
- Wake Up on Alarm (scheduled time) from off state			
- Wake-on-LAN from off state			
- PCI Wake Up from supported PCI devices			



# IBM IntelliStation® Z Pro models (6899) - withdrawn

Type-model	Diskette drive Disk: std-max internal ms seek / disk interface CD-ROM <sup>6</sup> /interface	CPU MHz / Upgrade	Write-back L2 cache std / max KB / KB	Memory in MB; std/max <sup>13</sup> all 60 ns	SVGA controller; memory std / max	Total bus slots; 2 or 3 used	Total bays	Std features	Retail Price <sup>1</sup>	Available date
<b>7 slot x 6 bay; PCI/ISA; Gray</b>										
⌘ 6899-10U	1.44 MB diskette 2.1 GB std - 13.2 GB max 8.5 ms / Wide Ultra SCSI 16 x CD-ROM / EIDE	1 x Pentium Pro 200/66	<i>SMP via 2nd PPro; OverDrive<sup>®</sup> in future</i>	256 / 256 in PPro	32 / 1G EDO ECC	Matrox <sup>®</sup> Millennium PCI Adap 4 / 8 WRAM	PCI=4 PCI/ISA=1 ISA=2 Total=7	6 bays 3 used 3 empty	U//CD/L/Eth Windows NT 4.0 RTC CD	\$2430 <sup>⌘</sup> Mar 1997
⌘ 6899-12U	1.44 MB diskette 4.5 GB std - 13.2 GB max 8.0 ms / Wide Ultra SCSI 16 x CD-ROM / EIDE	1 x Pentium Pro 200/66	<i>SMP via 2nd PPro; OverDrive<sup>®</sup> in future</i>	256 / 256 in PPro	64 / 1G EDO ECC	Matrox Millennium PCI Adap 4 / 8 WRAM	PCI=4 PCI/ISA=1 ISA=2 Total=7	6 bays 3 used 3 empty	U//CD/L/Eth Windows NT 4.0 RTC CD	3054 <sup>⌘</sup> Mar 1997
⌘ 6899-14U	1.44 MB diskette 4.5 GB std - 13.2 GB max 8.0 ms / Wide Ultra SCSI 16 x CD-ROM / EIDE	1 x Pentium Pro 200/66	<i>SMP via 2nd PPro; OverDrive<sup>®</sup> in future</i>	256 / 256 in PPro	64 / 1G EDO ECC	Intergraph <sup>®</sup> Intense 3D 16 MB SDRAM 4 MB SGRAM	PCI=4 PCI/ISA=1 ISA=2 Total=7	6 bays 3 used 3 empty	U//CD/L/Eth Windows NT 4.0 RTC CD	4181 <sup>⌘</sup> Mar 1997
⌘ 6899-16U	1.44 MB diskette 4.5 GB std - 13.2 GB max 8.0 ms / Wide Ultra SCSI 16 x CD-ROM / EIDE	1 x Pentium Pro 200/66	<i>SMP via 2nd PPro; OverDrive<sup>®</sup> in future</i>	256 / 256 in PPro	128 / 1G EDO ECC	Intergraph Intense 3D 16 MB SDRAM 4 MB SGRAM	PCI=4 PCI/ISA=1 ISA=2 Total=7	6 bays 3 used 3 empty	U//CD/L/Eth Windows NT 4.0 RTC CD	4803 <sup>⌘</sup> Mar 1997
⌘ 6899-17U	1.44 MB diskette 4.5 GB std - 13.2 GB max 8.0 ms / Wide Ultra SCSI 16 x CD-ROM / EIDE	1 x Pentium Pro 200/66	<i>SMP via 2nd PPro; OverDrive<sup>®</sup> in future</i>	512 / 512 in PPro	128 / 1G EDO ECC	Intergraph Intense 3D 16 MB SDRAM 4 MB SGRAM	PCI=4 PCI/ISA=1 ISA=2 Total=7	6 bays 3 used 3 empty	U//CD/L/Eth Windows NT 4.0 RTC CD	5763 <sup>⌘</sup> Mar 1997
⌘ 6899-26U	1.44 MB diskette 4.5 GB std - 13.2 GB max 8.0 ms / Wide Ultra SCSI 16 x CD-ROM / EIDE	2 x Pentium Pro 200/66	<i>OverDrive in future</i>	256 / 256 in PPro	128 / 1G EDO ECC	Intergraph Intense 3D 16 MB SDRAM 4 MB SGRAM	PCI=4 PCI/ISA=1 ISA=2 Total=7	6 bays 3 used 3 empty	U//CD/L/Eth Windows NT 4.0 RTC CD	5763 <sup>⌘</sup> Mar 1997
⌘ 6899-18U for Auth Assmblr Program	1.44 MB diskette <i>no disk</i> Wide Ultra SCSI 16 x CD-ROM / EIDE	1 x Pentium Pro 200/66	<i>SMP via 2nd PPro; OverDrive<sup>®</sup> in future</i>	256 / 256 in PPro	32 / 1G EDO ECC	<i>None</i>	PCI=4 PCI/ISA=1 ISA=2 Total=7	6 bays 2 used 4 empty	U//CD/L/Eth RTC CD	2147 <sup>⌘</sup> Mar 1997

Windows NT Workstation Preload <sup>17</sup>	Ready to Configure CD-ROM	Open Bay (18U)
<p>Windows<sup>®</sup> NT Workstation 4.0 ConfigSafe for Windows NT 4.0 DMI for Windows NT DMI for Windows NT BIOS Instrumentation IBM AntiVirus for Windows NT IBM IDE Disk Monitor for Windows 95/NT IBM PC System Monitor for Windows NT IBM Product Registration IBM Welcome Center IBM Utilities for Windows 95/NT 4.0 Online Books Device Drivers for each subsystem - Hummingbird "Try and Buy" Suite CD-ROM Exceed 5.1.3 Exceed 3D 5.1.3 NFS Maestro Solo 5.1.3 - Intel LANDesk 3.0 for Windows NT CD-ROM - Ready to Configure CD-ROM - Free license for Lotus<sup>®</sup> SmartSuite CD-ROM - Windows NT Workstation 4.0 CD-ROM</p> <p><b>Supported Memory and CPU Options</b></p> <p>16 MB EDO ECC Au 60 ns 3.3v 76H0278 32 MB EDO ECC Au 60 ns 3.3v 76H0279 64 MB EDO ECC Au 60 ns 3.3v 76H0280 128 MB EDO ECC Au 60 ns 3.3v 76H0281 256 MB EDO ECC Au 60 ns 3.3v 76H0269 SMP 200 MHz / 256 KB Upgrade 94G6175 SMP 200 MHz / 512 KB Upgrade 94G6463</p>	<p>All models ship with a CD with drivers for OS/2, Windows 95, and Windows NT and various utilities.</p> <p>ConfigSafe for Windows NT 4.0 (and Win 95) CoSession Remote 32 for Windows 95/NT 4.0 CoSession Remote Host for Win 95 CoSession Remote Viewer for Win 95 Crystal Audio for Windows NT (and Win 95, OS/2) DMI for Windows NT (and Win 95, OS/2) DMI for Windows NT BIOS Instrumentation (and Win 95, OS/2) IBM AntiVirus for Windows NT (and Win 95, OS/2) CPU Thermal Monitor for Windows NT 4.0 IBM IDE Disk Monitor for Windows 95/NT (and OS/2) IBM PC QAPLUS/PRO Diagnostics IBM PC QAPLUS/WIN-WIN Diagnostics IBM PC Supplemental Diagnostics IBM Product Registration IBM Utilities for Windows 95/NT 4.0 Intel EtherExpress Pro/100 Driver Intel Ethernet Flash Refresh Utility Intergraph 3D Graphics for Windows NT 3.51, 4.0 Matrox Millennium Graphics Drivers Multiprocessor Upgrade for Windows NT Online Books TME 10 NetFinity for Windows NT (and Win 95, OS/2) Bus Mastering IDE/SMART for Windows NT IBM PC System Monitor for OS/2 Infrared for Win 95, OS/2 Infrared Mode Selection for Windows 95 Infrared PDA Connect for Windows 95 Busmastering IDE/SMART for OS/2 IBM Diskette Factory for RTC IBM RTC CD-ROM Setup Utility RTC CD Overview Help Files</p>	<p>Open bay model contains no hard disk. No preload or operating system license is included.</p> <ul style="list-style-type: none"> <li>- Hummingbird "Try and Buy" Suite CD-ROM Exceed 5.1.3 Exceed 3D 5.1.3 NFS Maestro Solo 5.1.3</li> <li>- Intel LANDesk 3.0 for Windows NT CD-ROM</li> <li>- Ready to Configure CD-ROM</li> <li>- Free license for Lotus SmartSuite CD-ROM (via 800 number).</li> </ul>
<p><b>WARRANTY SERVICE SUPPORT<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>↔ 3 year parts warranty</li> <li>↔ 1 year labor warranty</li> <li>↔ International warranty</li> <li>↔ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time</li> <li>↔ 2nd/3rd year: parts exchange only, call 1-800-772-2227</li> <li>↔ On site warranty upgrade options<sup>14</sup>: <ul style="list-style-type: none"> <li>Ⓢ Next day, on site, Mon-Fri 8-5</li> <li>Ⓢ Same day, on site, 7 day x 24 hr</li> </ul> </li> <li>↔ Post warranty: on site options above</li> <li>↔ 24 hour / 7 day telephone, bulletin board, fax, electronic, Internet (<a href="http://www.pc.ibm.com">http://www.pc.ibm.com</a>) support</li> </ul>		
<p>256 = (italic) write-back L2 cache CD = 16 x maximum speed CD-ROM CAV (ATAPI); bootable Eth = Intel EtherExpress Pro/100B PCI Adapter I = Infrared port to 1.2 Mbps (requires Infrared cable 75H7987) L = Lan Client Control Manager (LCCM) enabled NT4 = Windows NT Workstation 4.0 preinstalled RTC CD = ReadyTo Configure CD-ROM U = One Universal Serial Bus (USB) port Wide Ultra SCSI = Adaptec AHA-2940UW UltraSCSI PCI Adapter</p> <p>↔ 16 x CD-ROM can use PIO Mode 4 (16.6), Multi-Word DMA 1 (13.33), or Single-Word DMA 2 (8.33); PIO Mode 0 (3.3 MB/sec) used on preload; bootable ↔ Stealth Gray displays are available to match the Stealth Gray of the IntelliStation Z Pro. Stealth Gray displays include the 9516 TFT LCD Color Monitor, P70 (6554-6E3), P200 (6555-7E3), and P201 (6555-8E3) Ⓢ Models announced March 18, 1997; withdrawn effective January 27, 1998 ⌘ Price decrease effective October 22, 1997</p>		

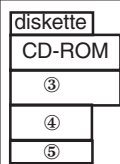
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Note 1: Dealer prices will vary; ⌘ = Withdrawn from marketing

No warranties are expressed or implied in this summary  
(IS397 - Page 1 of 2) Compiled by Roger Dodson, IBM. July 1998

# IBM IntelliStation Z Pro (6899) - withdrawn

## IBM® IntelliStation™ Z Pro

Type (code name)	6899 (Avenger)	
Processor / MHz	1 x <b>Pentium Pro 200/66 MHz</b> (P6S) or 2 x <b>Pentium Pro 200/66 MHz</b> (P6S) / thermal sensors under each processor	
L2 cache - std / max	256 KB std/max or 512 KB std/max integrated in Pentium Pro / write-back / 4 way set associative	
Processor upgrade	SMP via second Pentium Pro / add second same speed CPU to open 387 pin ZIF socket (Intel® Socket 8) and VRM	
OverDrive upgrade	Future Intel® Pentium Pro OverDrive® processor (P6T)	
Avail / withdrawn date	March 1997 / January 1998	
Mem - std / max / type	32 MB, 64 MB, or 128 MB std / 1 GB max <sup>13</sup> / <b>Error Checking and Correction (ECC)</b>	
Memory - sockets	4 sockets / 2 or 3 available (all have Error Checking and Correcting memory controller)	
Memory - features	EDO / 60 ns / four 168 pin gold-plated DIMM 3.3 volt sockets / DIMMs can have a max height of 1.2"	
Memory - support	Supports EDO ECC DIMMs (16,32,64,128, 256 MB) or EDO non-parity DIMMs (16,32,64,128 MB) / mixing ECC/NP gives NP	
Graphics controller	<b>Matrox® MGA Millennium, Intergraph® Intense 3D Pro1000/T</b> , (or none on Model 18U for Authorized Assembler Program)	
Graphics - type	<b>Matrox / MGA Millennium / SVGA 64 bit acceltr / PCI adapter</b>	<b>Intergraph / Intense 3D / 3D accelerator / PCI adapter</b>
Graph - memory	4 MB std / 8 MB max (WRAM 20 ns) / 220 MHz RAMDAC	16 MB SDRAM buffer and 4 MB SGRAM texture memory
Graph - features	VESA DPMS, DDC1, DDC2B, Auto Refresh Rate Utility On the fly resolution and color depth switching Hardware zoom / virtual desktop / panlock / DirectDraw Hardware accelerated 3D gouraud shading and Z buffering	VESA DPMS, DDC2B / onboard VGA / OpenGL / fogging 810,000 3D triangles per second / 24 bit double buffering Color space conversion / alpha blending / 32 bit textures 24 or 32 bit Z buffer / optional hardware geometry accelertn
Bus slots	PCI 2.1 (33 MHz) and ISA slots (see below) / 3 PCI slots use DEC 21152 PCI-to-PCI bridge chip	
Architecture - chip set	IBM Pulsar planar with Intel Natoma (440FX) chipset / PIIX3 for EIDE, ISA Bridge, USB / National Semiconductor PC87308 Super I/O for diskette, parallel, serial, keyboard, mouse, infrared	
Disk	<b>None, 2.1 GB Wide Ultra SCSI</b> (8.5 ms / 5400 rpm), or <b>4.5 GB Wide Ultra SCSI</b> (8.0 ms / 7200 rpm) / SMART <sup>5</sup> and PFA	
SCSI disk controller	<b>Adaptec® AHA-2940UW UltraSCSI</b> / PCI adapter supports one channel and 15 devices / 16 bit int, 8 bit int, and 16 bit ext conn.	
SCSI cable	4 drop 16 bit 68 pin cable standard / one drop to std SCSI disk	
EIDE disk controller	Enhanced IDE busmaster / PIO modes 0 to 4 or DMA Modes 0 to 2 / two connectors on planar / one 2 drop cable standard	
CD-ROM	<b>16 x max CD-ROM CAV (ATAPI) / bootable</b>	
Diskette drive	3.5" 1.44 MB diskette drive / 1 drop cable	<b>Maximum internal SCSI disk capacity<sup>13</sup>:</b> 13.2 GB (4.51 GB in bays 3 and 6 plus 2.1 GB in bays 4 and 5)
LAN Adapter	Intel EtherExpress Pro/100B Adapter with Wake-on-LAN / RJ-45 UTP connector / PCI adapter / RPL and DHCP/BOOTP	
Wake-on-LAN	Supported on all models with standard ethernet adapter	
LCCM	Lan Client Control Manager enabled / Wake-on-LAN / Setup-on-LAN / Flash-on-LAN / Hybrid RPL / DHCP/BOOTP	
Audio	Sound Blaster™ Pro compatible / wavetable synthesis / Crystal Semiconductors™ CS4236	
Audio connectors	Stereo line in / microphone in / stereo line/headphone out (all in back) / no hardware volumn control (use software)	
Serial / parallel port	<i>Serial</i> : two 9 pin / 115 Kbps max speed / 16550A / non-DMA; <i>Parallel</i> : one bidirectional (EPP, ECP) / IEEE 1284	
Universal Serial Bus	<b>One USB port</b> / 12 Mbps / supports 127 devices	
Infrared	Infrared port (on back) requiring optional Infrared Dongle cable; part number 75H7987 / IrDA 1.1 / 115 Kbps or 1.2 Mbps	
Preloaded software	<b>N/A</b> (if no disk), or <b>Windows NT Workstation 4.0</b> All include Ready to Configure CD-ROM (device drivers and utilities) All include a free license for Lotus SmartSuite CD-ROM (via 800 number) All include Windows NT Workstation 4.0 CD-ROM	1. Cover key lock, 2. U-Bolt support 3. Diskette write inhibit 4. Serial/parallel port inhibit 5. Power-on password; 6. Administrator passwd 7. Boot sequence control 8. Boot w/o keyboard/mouse/diskette 9. Disk disable, 10. Diskette disable 11. Unattended start-up (network) 12. Secure removable media; 13. Mouse disable 14. Wake-up on LAN password prompt
Keyboard / Mouse	104 key (rubber dome) keyboard / IBM 3 button mouse (400 dpi)	
Power supply	200 watts / universal / manual switch / Wake-on-LAN support	



Bay ①	3.5", SL 1", access, std diskette
Bay ②	5.25", HH 1.6", access, std CD-ROM
Bay ③	5.25", HH 1.6", access, open
Bay ④	3.5", HH 1.6", no access, open
Bay ⑤	3.5", SL 1", no access, open (disk only)
Bay ⑥	3.5", SL 1", no access, std disk (disk only) - bay in top back of system

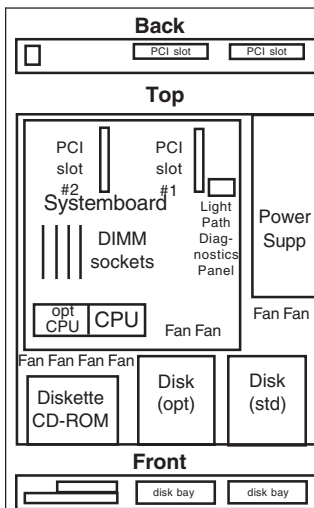
Mini tower mechanical  
Stealth gray color

Slot 1:	halfsize, 32 bit PCI 2.1 (3.3v/5v), primary - used by Adaptec SCSI adapter
Slot 2:	varies, 16 bit ISA fullsize or 32 bit PCI 2.1 halfsize (3.3v/5v), primary - used by Matrox Millennium (some models)
Slot 3:	fullsize, 16 bit ISA
Slot 4:	fullsize, 16 bit ISA
Slot 5:	fullsize, 32 bit PCI 2.1 (3.3v/5v), secondary - used by Intergraph Intense 3D (some models)
Slot 6:	fullsize, 32 bit PCI 2.1 (3.3v/5v), secondary
Slot 7:	fullsize, 32 bit PCI 2.1 (3.3v/5v), secondary - used by EtherExpress

MATROX MILLENNIUM GRAPHICS MODES				OTHER STANDARD FEATURES		WARRANTY SERVICE SUPPORT <sup>3</sup>
Resolution	Frame Rate Hz (non-interlaced)	Memory required	Max colors			
640 x 480	60 to 200 Hz	4 MB	16.7 mil	The Setup Utility resides in flash memory; invoked by pressing F1 key during memory POST Plug-and-Play 1.0a; Vital Product Data support 7.48"W x 17.13"D x 17.13"H; 28.5 lbs Advanced Power Mgmt 1.2; ISO 9241-3 capable Several hardcopy publications 256 KB SurePath™ BIOS (Flash over LAN support) Support for DMI technology (includes MIF browser) with DMI Service Layer 1.1, DMI BIOS 2.0, and DMI software Thermal sensors under each processor socket Supplier's Declaration available IntelliStation Proven program Power and System management features: - Three configurable levels for system, CPU, and monitor including powering system and/or display off - Wake Up on Ring (via modem) from off state - Wake Up on Alarm (scheduled time) from off state - Wake-on-LAN (from LAN) from off state		⇒ 3 year parts warranty
800 x 600	60 to 200 Hz	4 MB	16.7 mil			⇒ 1 year labor warranty
1024 x 768	60 to 120 Hz	4 MB	16.7 mil			⇒ International warranty
1280 x 1024	60 to 110 Hz	4 MB	16.7 mil			⇒ 1st year: on site, 8 am - 5 pm, Mon - Fri coverage, 2nd business day response time
1600 x 1200	60 to 85 Hz	4 MB	65,536			⇒ 2nd/3rd year: parts exchange only, call 1-800-772-2227
1600 x 1200	60 to 85 Hz	8 MB	16.7 mil			⇒ On site warranty upgrade options: ① Next day, on site, Mon-Fri 8-5 ② Same day, on site, 7 day x 24 hr
INTERGRAPH INTENSE 3D GRAPHICS MODES						⇒ Post warranty: on site options above
640 x 480	60, 72, 75, 85	N/A	16.7 mil			⇒ 24 hour / 7 day telephone, electronic, Internet (http://www.pc.ibm.com) support
800 x 600	60, 72, 75, 85	N/A	16.7 mil			
1024 x 768	60, 70, 75, 85	N/A	16.7 mil			
1152 x 864	60, 70, 75, 85	N/A	16.7 mil			
1280 x 960	60, 75	N/A	16.7 mil			
1280 x 1024	60, 75	N/A	16.7 mil			

# IBM IntelliStation® R Pro (6851) - withdrawn

IBM® Type-model	Qty x Processor	Memory	Disk	Disk Controller	CD	Graphics	Video in standard	Ethernet	Mech	Slots x bays	OS <sup>17</sup>	Available date
6851-10U	1 x Pentium® III 1.13GHz/133	256MB	20.4GB <sup>2</sup>	EIDE	CD	Matrox G200 MMS	NTSC	2 x 10/100	1U rack	2x4	DOS	July 2001
6851-11U	1 x Pentium III 1.13GHz/133	256MB	18.2GB	Ultra160	CD	Matrox G200 MMS	NTSC	2 x 10/100	1U rack	2x4	DOS	July 2001
6851-20U	1 x Pentium III 1.26GHz/133	256MB	20.4GB	EIDE	CD	Matrox G200 MMS	NTSC	2 x 10/100	1U rack	2x4	DOS	Aug 2001
6851-21U	1 x Pentium III 1.26GHz/133	256MB	18.2GB	Ultra160	CD	Matrox G200 MMS	NTSC	2 x 10/100	1U rack	2x4	DOS	Aug 2001
Processor Upgrade	<b>Intel® Pentium® III 1.13 or 1.26GHz<sup>1</sup> with 133MHz frontside bus</b> 1.13GHz models can be upgraded to 1.26GHz											
SMP support Implementation	<b>2-way SMP</b> via identical processor / both VRMs integrated on planar Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA2) / two Intel PGA370 sockets / terminator in empty socket											
L2 cache	<b>512KB</b> std and max / ECC / full speed											
Memory - std / max	<b>256MB</b> std / 4GB max <sup>13</sup> / Error Checking and Correcting (ECC) memory controller / 4 sockets / 3 available											
Memory - features	<b>SDRAM / 133MHz</b> / ECC registered DIMMs / 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant											
Graphics controller	<ul style="list-style-type: none"> <li>• <b>Matrox® G200 MMS / four monitor support</b> implemented via 2 proprietary LFH-60 connectors on back of adapter / two std cables attach to each LFH-60 connector/ one cable has two DB-15 analog connectors / another cable has two DB-15 analog connectors and a composite video-in RCA connector / 32-bit PCI adapter / 32MB (8MB per monitor) SGRAM / 250MHz RAMDAC / <b>integrated TV tuner</b> (CATV tuner in) / supports NTSC video standard / max of 1920x1200</li> <li>• <b>Disabled by BIOS:</b> SVGA / PCI bus / S3® Savage4Pro / 8MB SDRAM std and max / DDC2B / on planer</li> </ul>											
SCSI disk controller	<i>All:</i> Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit PCI / integrated on planar											
SCSI connectors	<i>All:</i> Internal 68-pin connector / no external SCSI connector											
IDE controller	<i>All:</i> Enhanced IDE / ATA-33 / two connectors on planar											
Cabling	<i>x0U:</i> one 2-drop IDE cable to two disk bays (one used) <i>x1U:</i> one 2-drop 16-bit LVD cable from internal 68-pin SCSI connector to SCSI disk bays (one used)											
Disk	<i>All:</i> one 1-drop IDE cable to standard CD-ROM <i>x0U:</i> 20.4GB ATA-100, 7200 rpm, 8.7ms read, S.M.A.R.T. <sup>5</sup> / <i>x1U:</i> 18.2GB Ultra160 SCSI, 10K rpm, 5.2ms read, S.M.A.R.T.											
Architecture and chipsets	<b>ServerWorks® ServerSet III LE chip set</b> / NB6635 North Bridge 3.0LE (the North Bridge has two peer PCI buses: (1) PCI Bus 0, 32-bit 33MHz, South Bridge, Super I/O, graphics, 2 x ethernet; (2) PCI Bus 1, 64-bit 33MHz, SCSI controller, two 64-bit PCI slots) / IB6566 OSB4 rev B2 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)											
Mechanical Control Panel	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door) Front indicators/switches include Power, Reset, Console Select, Power LED and Fault/info LED											
Ethernet controllers	<b>2 x Intel 82559</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / redundant ethernet capability and load balancing support through the connection of both ethernet ports to the same LAN segment / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / Wake on LAN® support											
CD-ROM / diskette	24X-10X <sup>6</sup> CD-ROM, CAV (ATAPI), bootable, IDE / 3.5" 1.44MB diskette drive											
Systems mgmt Diagnostics	<i>No support:</i> Advanced System Mgmt Processor / on planar / PowerPC 403GA™ / monitors temp, fans, and power supply <b>Light Path Diagnostics™</b> (LED lights indicate failing component) and on-board diagnostics (via PC-Doctor in BIOS)											
Audio Ports	16-bit audio / PCI adapter / microphone in / stereo line in / stereo line out / speaker out (2 watts) / joystick port (no MIDI) <i>Serial:</i> One 9-pin (jumper selectable for COM1/Mgmt Processor shared, COM2, or Mgmt Processor); <i>Parallel:</i> none; <i>USB:</i> Two ports (Version 1.1); <i>Mgmt:</i> Two RS485 ports (RJ-45) for systems mgmt											
Console interconnect	Cable Chain Technology is not implemented / output port used for attachment of keyboard and mouse via standard KVM console cable (the video connector is disabled) / KVM console cable has PS/2 mouse female connector, keyboard female connector, and DB-15 VGA connector											
Security	Power-on password / administrator password / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode											
Software	DOS 2000 license included / includes Device and Application CD-ROM and Matrox G200 CD-ROM						Pentium III 1.13GHz/133MHz/512KB Proc Upg Pentium III 1.26GHz/133MHz/512KB Proc Upg			25P2835 25P2836		
Keyboard / mouse	104-key keyboard (black) / 3-button mouse (black)						128MB SDRAM ECC DIMM 133MHz (RDIMM)			10K0018		
Cooling fans	Eight fans (four for processor(s) and planar, two for disk(s) and planar, two for power supply)						256MB SDRAM ECC DIMM 133MHz (RDIMM)			10K0020		
Power supply	200 watt / universal / auto-sensing / auto-restart support						512MB SDRAM ECC DIMM 133MHz (RDIMM)			10K0022		
KVM extender <sup>18</sup>	Monitor, keyboard, mouse, and speakers can be located 500 feet from system via a 3rd party rack mounted KVM extender / contact AMuletHotkey® at amulet-hotkey.com, Wey Technologies® at www.weych.com, Paragon® at paragonav.com						1GB SDRAM ECC DIMM 133MHz (RDIMM)			33L3326		
							40GB ATA-100 EIDE HDD (Model 10X)			22P7157		
							36.4GB 10K Ultra160 SCSI HDD (Model x1U)			00N8209		
							73.4GB 10K Ultra160 SCSI HDD (Model x1U)			06P5752		
							18.2GB 15K Ultra160 SCSI HDD (Model x1U)			19K0658		
							IBM P260 (19.8" viewable) FD Monitor (black)			655263N		



Bay ① 3.5", UltraSlim 0.8", access, std diskette  
 Bay ② 5.25", UltraSlim 0.8", access, std CD-ROM  
 Bay ③ 3.5", SL 1", access, std disk  
 Bay ④ 3.5", SL 1", access, open

Slot 1: fullsize, 64-bit 33MHz PCI 2.2 (5v) - used by graphics adptr  
 Slot 2: halfsize, 64-bit 33MHz PCI 2.2 (5v) - used by sound adapter

- ⇒ Stealth black
- ⇒ H 1.72" (1U) x W 17.3" x D 25.7"
- ⇒ 26 to 28.4 lbs (minimum to maximum configuration)
- ⇒ Setup Program is available by pressing F1 at startup
- ⇒ PC-Doctor diagnostics is available by pressing F2 at startup
- ⇒ SCSISelect near startup by pressing CTRL+A
- ⇒ PXE Bullet Agent near startup by pressing CTRL+S
- ⇒ DMI 2.1 and Wired for Management 1.1a-compliant
- ⇒ Includes rack mounting kit
- ⇒ Includes two line cords (9 ft 110v cable with NEMA plug and 9 ft universal interrack HV cable with IEC plug)
- ⇒ Predictive Failure Analysis® on processor(s), voltage regulator modules, memory, fans, power supply, and disk options

**All models:** Maximum internal disk capacity<sup>13</sup> (model dependent):  
 146.8GB with two 73.4GB SL SCSI disks or  
 80GB with two 40GB EIDE disks / supports 15K rpm SCSI disks

### LIMITED WARRANTY<sup>3</sup>

- ⇒ 3 year parts and labor
- ⇒ International Warranty Service<sup>3</sup>
- ⇒ On site warranty all 3 years
- ⇒ All cities in all states
- ⇒ 8 am-5 pm, Mon-Fri coverage
- ⇒ Next business day average response time
- ⇒ 3 year on site warranty service upgrade options:<sup>7</sup>
  - Mon-Fri coverage, 4 hour average response time
  - 24 hr x 7 day coverage, 4 hour average response time
- ⇒ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

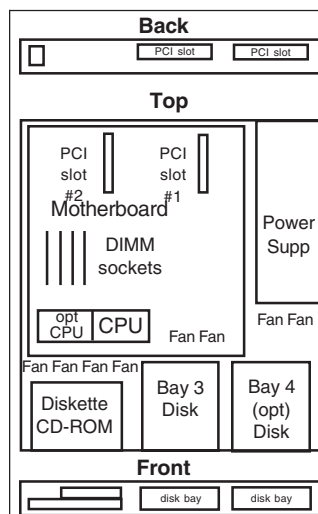
See footnotes for important warranty information  
 US models announced on June 26, 2001 or August 28, 2001; withdrawn effective April 2002 or July 2002



# IBM IntelliStation® R Pro - withdrawn

IBM® Type-model	Qty x Processor	Memory	Disk	Disk Controller	CD	Graphics	Video in standard	Ethernet	Mech	Slots x bays	OS <sup>7</sup>	Available date
8654-55X	1 x Pentium® III 1GHz <sup>1</sup> /133	256MB	20.4GB <sup>2</sup>	EIDE	CD	QuadPI/TVN	NTSC	2 x 10/100	1U <sup>4</sup> rack 2x4	DOS lics	Mar 2001	
8654-56X	1 x Pentium III 1GHz/133	256MB	18.2GB	Ultra160	CD	QuadPI/TVN	NTSC	2 x 10/100	1U rack 2x4	DOS lics	Mar 2001	

Processor SMP support Implementation L2 cache	<b>Intel® Pentium® III 1GHz with 133MHz Front Side Bus</b> <b>2-way SMP</b> via identical processor / both VRMs integrated on planar Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA) / two Intel PGA370 sockets / terminator in empty socket <b>256KB</b> std and max / ECC / full speed
Memory - std / max Memory - sockets Memory - features	<b>256MB</b> std / 4GB max <sup>13</sup> / Error Checking and Correcting (ECC) memory controller 4 sockets / 3 available <b>SDRAM / 133MHz</b> / ECC DIMMs / 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant
Graphics controller	<ul style="list-style-type: none"> <li><b>Matrox® G200 QuadPI/TVN / four monitor support</b> implemented via 2 proprietary LFH-60 connectors on back of adapter / two std cables attach to each LFH-60 connector/ one cable has two DB-15 analog connectors / another cable has two DB-15 analog connectors and a composite video-in RCA connector / 32-bit PCI adapter / 32MB (8MB per monitor) SGRAM / 250MHz RAMDAC / 128-bit DualBus / CATV tuner in / supports NTSC video standard / max resolution of 1920 x1200</li> <li><i>Disabled by BIOS / SVGA / PCI bus / S3® Savage4Pro / 8MB SDRAM std and max / DDC2B / on planar</i></li> </ul>
Architecture / chipsets	<b>ServerWorks® ServerSet III LE chip set</b> / NB6635 North Bridge 3.0LE (the North Bridge has two peer PCI buses: PCI Bus 0, 32-bit 33MHz, IB6566 South Bridge, two ethernet controllers, graphics controller); PCI Bus 1, 64-bit 33MHz, SCSI controller, two 64-bit PCI slots) / IB6566 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)
Mechanical Control Panel	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door) Front indicators/switches include Power, Reset, Console Select (not implemented) , Power LED and Fault/info LED
Disk SCSI controller SCSI connectors Cables	20GB EIDE ATA-100 7200 rpm (limited to ATA-33 by cabling) or 18.2GB Ultra160 SCSI 10K RPM / S.M.A.R.T. <sup>5</sup> <b>Adaptec® AIC-7982</b> / single channel Ultra 160 SCSI adapter (LVD 160MB/sec) / on planar <i>Internal:</i> 68 pin; <i>External:</i> None <i>SCSI models:</i> 2-drop 16-bit LVD cable from internal conn to disk; 1-drop IDE ATA-33 cable from Pri IDE conn to CD-ROM <i>EIDE models:</i> 2-drop IDE ATA-33 cable from Pri IDE conn to disk; 1-drop IDE ATA-33 cable from Sec IDE conn to CD
EIDE disk controller	Enhanced IDE / ATA-66 and PIO modes 0-4 with 2 channel, 4 device support / integrated in Reliance Open South Bridge
CD-ROM / diskette	<i>CD:</i> 24X-10X <sup>6</sup> CD-ROM; CAV (ATAPI); bootable; IDE (no analog audio output) / <i>Diskette:</i> 3.5" 1.44MB diskette drive
Ethernet controllers	<b>2 x Intel 82559</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / redundant ethernet capability and load balancing support through the connection of both ethernet ports to the same LAN segment / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / no Wake on LAN® support
Systems mgmt Diagnostics	<b>Advanced System Mgmt Processor</b> / on planar / monitors temperature, fans, and power supply <b>Light-Path Diagnostics™</b> (LED lights indicate failing component) and on-board diagnostics (via PC-Doctor in BIOS)
Audio	16-bit audio / PCI adapter / microphone in / stereo line in / stereo line out / speaker out (2 watts) / MIDI/joystick port
Ports	<i>Serial:</i> One 9-pin (jumper selectable for Com1/Mgmt Processor shared, Com2, or Mgmt Processor); <i>Parallel:</i> none; <i>USB:</i> Two ports (Version 1.1); <i>Mgmt:</i> Two RS485 ports (RJ-45) for systems mgmt
Console interconnect	Cable Chain Technology is not implemented / output port used for attachment of keyboard and mouse via standard KVM console cable (the video connector is disabled) / KVM console cable has PS/2 mouse female connector, keyboard female connector, and DB-15 VGA connector
Security	Power-on password / administrator password / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode
Software Keyboard / mouse Cooling fans Power supply	DOS 2000 license included / includes Device and Application CD-ROM and Matrox G200 CD-ROM 104-key keyboard (black) / 3-button mouse (black) 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
KVM extender <sup>18</sup>	Monitor, keyboard, mouse, and speakers can be located 250M from system via a 3rd party rack mounted KVM extender / contact AMuletHotkey® at amulet-hotkey.com, Wey Technologies® at www.weych.com, Paragon® at www.paragonav.com



- Bay ① 3.5", UltraSlim 0.8", access, std diskette
- Bay ② 5.25", UltraSlim 0.8", access, std CD-ROM
- Bay ③ 3.5", SL 1", access, disk
- Bay ④ 3.5", SL 1", access, open

Slot 1: fullsize, 64-bit 33MHz PCI 2.1 (5v) - graphics adapter  
Slot 2: halfsize, 64-bit 33MHz PCI 2.1 (5v) - sound adapter

- ❖ Stealth black
- ❖ H 1.72" (1U) x W 17.3" x D 25.7"
- ❖ 22 to 28 lbs (minimum to maximum configuration)
- ❖ Setup Program is available by pressing F1 at startup
- ❖ PC-Doctor diagnostics is available by pressing F2 at startup
- ❖ SCSISelect near startup by pressing CTRL+A
- ❖ PXE Bullet Agent near startup by pressing CTRL+S
- ❖ DMI 2.1, Wired for Management 1.1a
- ❖ Includes rack mounting kit
- ❖ Includes two line cords (9 ft 110v cable with NEMA plug and 9 ft universal interrack HV cable with IEC plug)
- ❖ Predictive Failure Analysis® on processor(s), voltage regulator modules, memory, fans, power supply, and disk options

**All models:** Max int disk capacity<sup>13</sup>:  
72.8GB with two 36.4GB SL SCSI disks

## LIMITED WARRANTY\*<sup>3</sup>

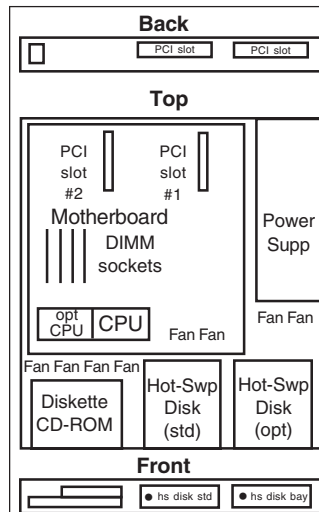
- ⇨ 3 year parts and labor warranty
- ⇨ International Warranty Service<sup>3</sup>
- ⇨ On site, 8 am through 5 pm, Mon through Fri excluding holidays, next business day response time<sup>9</sup>
- ⇨ On site warranty service upgrade options:
  - 4 hour response, 9-5 M-F<sup>14</sup> (ServicePac® part number 41L2736)
  - 4 hour response, 7 day x 24 hr<sup>14</sup> (ServicePac part number 30L9185)
- ⇨ Post warranty maintenance services available
- ⇨ 24 hour x 7 day telephone, electronic, and Internet support

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227  
US models withdrawn effective October 2001

No warranties are expressed or implied in this summary  
(8654) © IBM Corp. October 2001

IBM® Appliance Server Type-model	Qty x Processor	Memory	Disk	SCSI controller	Mechanical	Slots x bays	10/100 ethernet	Type	Windows Powered OS	Available date
8654-1YX	1 x Pentium® III 800	256MB	9.1GB <sup>2</sup> 10K	Ultra160	1U rack	2x4	2 x ethernet	Appliance Server	Preload	Nov 2000
8654-5DX	1 x Pentium III 1GHz <sup>1</sup>	256MB	18.2GB 10K	Ultra160	1U rack	2x4	2 x ethernet	Appliance Server	Preload	Jun 2001

Positioning	<i>Point solution appliance server; Microsoft® Windows®-based Web hosting appliance with plug in convenience</i>									
Processor	<b>Intel® Pentium® III 800MHz<sup>1</sup> or 1GHz<sup>1</sup> with 133MHz Front Side Bus</b>									
SMP support	<b>2-way SMP</b> via identical processor (1YX only upgrade to second 800MHz; 5DX only upgrade to second 1GHz)									
Implementation	Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA) / two Intel PGA370 sockets / terminator in empty socket									
L2 cache	<b>256KB</b> std and max / ECC / full speed									
Memory	<b>256MB</b> std / 1YX: 1GB max <sup>13</sup> ; 5DX: 2GB max <sup>13</sup> / 4 sockets / 3 available / Error Checking and Correcting (ECC) memory controller / <b>SDRAM / 133MHz</b> / ECC DIMMs / 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant									
Disk	9.1GB or 18.2GB Ultra160 SCSI / 10K rpm 10K-4 / 5.5 ms average read seek time / 2.99ms average latency									
SCSI disk controller	Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit PCI / integrated on motherboard									
SCSI connectors	Internal 68-pin (attaches 1-drop cable to SCSI backplane); no external SCSI connector									
IDE controller	Enhanced IDE / two connectors on planar / one 1-drop IDE cable to CD-ROM / ATA-66									
Chipset	<b>ServerWorks® ServerSet III LE chip set</b> / NB6635 North Bridge 3.0LE (the North Bridge has two peer PCI buses: PCI Bus 0, 32-bit 33MHz, IB6566 South Bridge, two ethernet controllers, graphics controller); PCI Bus 1, 64-bit 33MHz, SCSI controller, two 64-bit PCI slots) / IB6566 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)									
Mechanical	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door)									
Control Panel	Front indicators/switches include Power, Reset, Console Select, Power LED and Fault/info LED									
Ethernet controllers	<b>2 x Intel 82559</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / redundant ethernet capability and load balancing support through the connection of both ethernet ports to the same LAN segment / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / no Wake on LAN® support									
CD-ROM / diskette	24X-10X <sup>6</sup> CD-ROM, CAV (ATAPI), bootable, IDE / 3.5" 1.44MB diskette drive									
Rear ports	Serial: one 9-pin; Parallel: none; USB: two ports (Version 1.1); Adv Sys Mgmt: two RJ-45 ports									
Ports and cable	Keyboard, video (DB-15), and mouse port on a standard breakout cable (2 meters length on 1YX; 1 foot length on 5DX) which plugs into the console-out port									
Console interconnect	<b>5DX only:</b> supports daisy chaining via console in and out ports / system-to-system interconnect cable (10 inch, 245mm) is standard / daisy chain connection to adjacent server / supports large rack deployments of daisy chained servers / chain functions with multiple server (not contiguous in chain) outage									
Systems mgmt	<b>Integrated IBM Advanced System Management Processor</b> / on planar / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supply									
Diagnostics	<b>Light Path Diagnostics™</b> (LED lights indicate failing component) and on-board diagnostics (via PC-Doctor in BIOS)									
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B									
Security	Power-on password / administrator password / system owner's name / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode									
Software <sup>9</sup>	<b>Preloaded and optimally tuned with Windows Powered OS and appliance software stack, Microsoft Internet Information Services 5.0, Netfinity Web Server Accelerator V2, IBM Director (agent only), Universal Manageability (UM) Server Extensions, Advanced Appliance Configuration Utility</b>									
Keyboard / mouse	None standard									
Cooling fans	Eight fans (four for processor(s) and planar, two for disk(s) and planar, two for power supply)									
Power supply	200 watt / universal / auto-sensing / auto-restart support									
Prerequisites	Remote management console (client workstation), rack cabinet									
										Pentium III 800MHz/133/256KB Proc Upgrade 10K2338 Pentium III 1GHz/133/256KB Proc Upgrade 10K0053 128MB SDRAM ECC DIMM 133MHz RDIMM 33L3142 256MB SDRAM ECC DIMM 133MHz RDIMM 33L3144 512MB SDRAM ECC DIMM 133MHz RDIMM 33L3146 1GB SDRAM ECC DIMM 133MHz RDIMM 33L3152 9.1GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L7204 18.2GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L7205 36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L7206 Netfinity® Gigabit Ethernet Adapter 34L0301 Netfinity Rack (with perf door and side panels) 9306910 NetBAY 1 x 4 Console Switch 09N4290 NetBAY 2 x 8 Console Switch 09N4291



- Bay ① 3.5", UltraSlim 0.8", access, std diskette
- Bay ② 5.25", UltraSlim 0.8", access, std CD-ROM
- Bay ③ 3.5", SL 1", access, std hot-swap disk
- Bay ④ 3.5", SL 1", access, open for hot-swap disk

- Slot 1: fullsize, 64-bit 33MHz PCI 2.1 (5v)
- Slot 2: halfsize, 64-bit 33MHz PCI 2.1 (5v)

- ◇ Stealth black
- ◇ H 1.72" (1U) x W 17.3" x D 25.7"
- ◇ 44 to 62 lbs (minimum to maximum configuration)
- ◇ Setup Program is available by pressing F1 at startup
- ◇ PC-Doctor diagnostics is available by pressing F2 at startup
- ◇ SCSISelect near startup by pressing CTRL+A
- ◇ PXE Bullet Agent near startup by pressing CTRL+S
- ◇ DMI 2.1, Wired for Management 1.1a
- ◇ Includes rack mounting kit
- ◇ One line cord
- ◇ Predictive Failure Analysis® on processor(s), voltage regulator modules, memory, fans, power supply, and disk options

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

**LIMITED WARRANTY<sup>3</sup>**

- ⇨ 3 year parts and labor
- ⇨ International Warranty Service<sup>3</sup>
- ⇨ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time
- ⇨ 3 year on site warranty service upgrade options: (in eligible locations):<sup>7</sup>
  - 9 hour coverage, Mon-Fri excluding holidays, next business day response time
  - 9 hour coverage, Mon-Fri excluding holidays, 4 hour response
  - 24 hr x 7 day coverage, 4 hour response time
- ⇨ 24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support

See footnotes for important warranty information  
 • = Hot-swap but no software support  
 US models withdrawn effective December 2001 or May 2002

IBM® Appliance Server Type-model	Processor	Memory	Disk	Disk controller	Mechanical	Slots x bays	Hot-swap disk bays	10/100 ethernet	Type	Windows® Powered OS	Available date
8672-25X	Celeron™ 800MHz <sup>1</sup>	256MB	20.4GB <sup>2</sup>	EIDE	1U rack	2x4	None	2 x ethernet	Appliance Server	Preload	Jun 2001

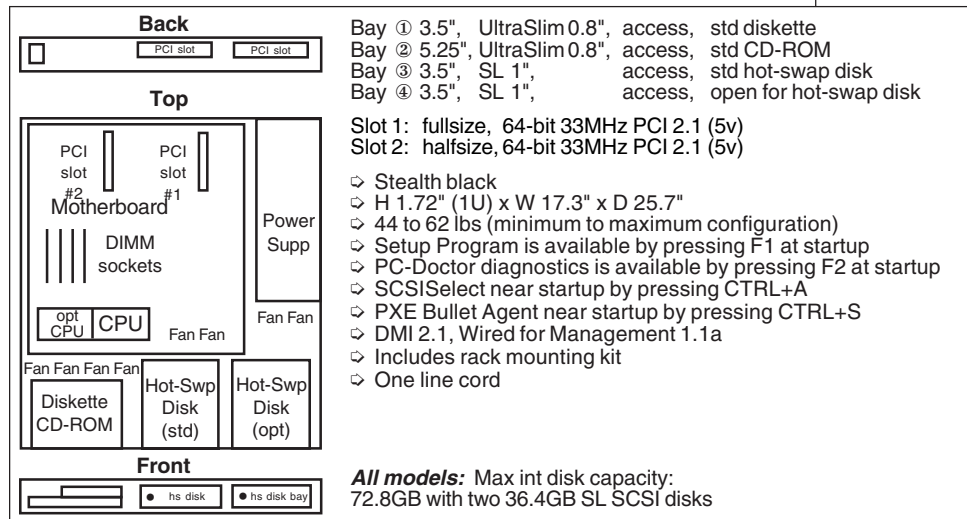
Positioning	<i>Point solution appliance server; Microsoft® Windows®-based Web hosting appliance with plug in convenience</i>																																																
Processor	<b>Intel® Celeron 800MHz<sup>1</sup> with 100MHz Front Side Bus</b>																																																
L2 cache	128KB std and max / ECC / at processor speed																																																
SMP support	<b>No SMP support</b>																																																
Processor upgrade	None supported																																																
Implementation	Motherboard contains one Intel PGA370 socket (370-pin Flip-Chip Pin Grid Array (FC-PGA)), one integrated VRM, three DIMM sockets, two PCI slots, and integrated ethernet																																																
Memory - std / max	<b>256MB</b> std / 1.5GB max <sup>13</sup>																																																
Memory - sockets	3 sockets / 2 available / <b>ECC</b> (Error Checking and Correcting) DIMMs and ECC memory controller																																																
Memory - features	<b>SDRAM / 133MHz</b> / three 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant																																																
Memory - support	Supports unbuffered SDRAM ECC DIMMs																																																
SCSI disk controller	None																																																
IDE disk controller	Enhanced IDE busmaster / ATA-100 support / two connectors on planar																																																
Cables	Two 2-drop EIDE cables (one cable to CD-ROM, one 80-conductor cable to EIDE disk bays)																																																
Disk - features	20.4GB EIDE / ATA-100 / 7200 rpm / 8.7 ms average read seek time / S.M.A.R.T. <sup>5</sup>																																																
Chipset	<b>VIA® Apollo Pro133A chip set</b> / VT82C694X North Bridge (memory controller, PCI 2.2 32-bit 33MHz controller) / VT82C686B South Bridge (IDE ATA-100, USB, diskette, serial, keyboard, mouse, ISA bus for flash BIOS)																																																
Mechanical	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door)																																																
Control Panel	Front indicators/switches include Power, Power LED, Reset, and System Error LED																																																
Ethernet controllers	<b>2 x Intel 82550</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / Alert on LAN™ 2 support / Wake on LAN® support																																																
CD-ROM / diskette	24X-10X <sup>6</sup> CD-ROM, CAV (ATAPI), bootable, IDE / 3.5" 1.44MB diskette drive																																																
Rear ports	<i>Serial</i> : one 9-pin; <i>Parallel</i> : none; <i>USB</i> : two ports (Version 1.1); <i>Mgmt</i> : none; keyboard; mouse; DB-15 graphics																																																
Console interconnects	No system-to-system interconnect cable (separate keyboard, video, mouse ports on back)																																																
Systems mgmt	WinBond® W83791D / on planar / monitors system and processor temperature, fan speed and failure, and voltages																																																
Diagnostics	Diagnostics via PC-Doctor on a standard IBM Enhanced Diagnostics CD (diskette can be created)																																																
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B / analog 15-pin D-shell																																																
Security	Power-on password / administrator password / unattended boot / selectable boot / unattended start mode																																																
Software <sup>9</sup>	<p><b>Preloaded and optimally tuned with Microsoft® Windows® 2000 for Web Hosting (Windows Powered), IBM Advanced Appliance Configuration Utility, IBM Director 2.2 with UM Services, IBM WebServer Accelerator, simple mail client for alerting, Microsoft Server Appliance Kit, Microsoft Internet Information Services 5.0, Front Page server extensions, bandwidth management by Web site</b></p>																																																
Keyboard / mouse	None standard																																																
Cooling fans	Six fans (two for processor, memory, halfsize PCI; two for left disk and fullsize PCI; two for power supply) / all variable speed / redundant cooling on single fan failure (other fans increase speed)																																																
Power supply	200 watt / universal / auto-sensing / not redundant / not hot-swap / Automatic Server Restart (ASR) support																																																
Prerequisites	Monitor, keyboard, mouse, rack with perforated door, disk (some models)																																																
	<p style="text-align: center;"><b>OPTIONS</b></p> <table border="0"> <tr> <td>128MB SDRAM ECC DIMM 133MHz</td> <td>33L3081</td> </tr> <tr> <td>256MB SDRAM ECC DIMM 133MHz</td> <td>33L3083</td> </tr> <tr> <td>512MB SDRAM ECC DIMM 133MHz</td> <td>33L3085</td> </tr> <tr> <td>20.4GB ATA-100 EIDE HDD</td> <td>19K4461</td> </tr> <tr> <td>40GB ATA-100 EIDE HDD</td> <td>22P7157</td> </tr> <tr> <td>IBM Netfinity® Rack (with perforated door/panels)</td> <td>9306910</td> </tr> <tr> <td>IBM NetBAY 42 Enterprise Rack</td> <td>930842S</td> </tr> <tr> <td>IBM Console Switch (1 x 4 port)</td> <td>09N4290</td> </tr> <tr> <td>IBM Console Switch (2 x 8 port)</td> <td>09N4291</td> </tr> <tr> <td>IBM 7 foot K/M/V Cable</td> <td>09N4293</td> </tr> <tr> <td>IBM Console Cable Set (12 foot)</td> <td>94G7447</td> </tr> <tr> <td>IBM Two-Button Mouse</td> <td>28L3673</td> </tr> <tr> <td>IBM 84-key Space Saver Cost Reduced Keybrd</td> <td>28L3644</td> </tr> <tr> <td>IBM Preferred Keyboard (black)</td> <td>28L3621</td> </tr> <tr> <td>IBM E51 (13.8" viewable) Color Monitor(black)</td> <td>633347N</td> </tr> <tr> <td>IBM Smart-UPS Model 1400RMB</td> <td>94G6674</td> </tr> <tr> <td>IBM Smart-UPS Model 3000RMB</td> <td>94G6676</td> </tr> <tr> <td>IBM T54A 15" Flat Panel Color Monitor (black)</td> <td>9511AG1</td> </tr> <tr> <td>IBM T540 15" Flat Panel Color Monitor (black)</td> <td>9511AG4</td> </tr> </table>											128MB SDRAM ECC DIMM 133MHz	33L3081	256MB SDRAM ECC DIMM 133MHz	33L3083	512MB SDRAM ECC DIMM 133MHz	33L3085	20.4GB ATA-100 EIDE HDD	19K4461	40GB ATA-100 EIDE HDD	22P7157	IBM Netfinity® Rack (with perforated door/panels)	9306910	IBM NetBAY 42 Enterprise Rack	930842S	IBM Console Switch (1 x 4 port)	09N4290	IBM Console Switch (2 x 8 port)	09N4291	IBM 7 foot K/M/V Cable	09N4293	IBM Console Cable Set (12 foot)	94G7447	IBM Two-Button Mouse	28L3673	IBM 84-key Space Saver Cost Reduced Keybrd	28L3644	IBM Preferred Keyboard (black)	28L3621	IBM E51 (13.8" viewable) Color Monitor(black)	633347N	IBM Smart-UPS Model 1400RMB	94G6674	IBM Smart-UPS Model 3000RMB	94G6676	IBM T54A 15" Flat Panel Color Monitor (black)	9511AG1	IBM T540 15" Flat Panel Color Monitor (black)	9511AG4
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	<p>Bay ① 3.5", UltraSlim 0.8", access, std diskette</p> <p>Bay ② 5.25", UltraSlim 0.8", access, std CD-ROM</p> <p>Bay ③ 3.5", SL 1", access, std disk</p> <p>Bay ④ 3.5", SL 1", access, open for disk</p> <p>Slot 1: fullsize, 32-bit 33MHz PCI 2.1 (5v)</p> <p>Slot 2: halfsize, 32-bit 33MHz PCI 2.1 (5v)</p> <ul style="list-style-type: none"> <li>⊕ Stealth black</li> <li>⊕ H 1.72" (1U) x W 17.3" x D 25.7"</li> <li>⊕ 26 to 28.4 lbs (minimum to maximum configuration)</li> <li>⊕ Setup Utility is available by pressing F1 at startup</li> <li>⊕ PXE Boot Agent Utility near startup by pressing CTRL+S</li> <li>⊕ DMI 2.1, Wired for Management (WfM) 2.0-compliant</li> <li>⊕ Includes rack mounting kit</li> <li>⊕ Vital Product Data (VPD) info in nonvolatile memory</li> <li>⊕ Predictive Failure Analysis® (PFA) on disks</li> </ul> <p><b>All models:</b> Max int disk capacity: 80GB with two 40GB EIDE disks</p>	<p style="text-align: center;"><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>⊕ 3 year parts / 1 year labor</li> <li>⊕ International Warranty Service<sup>3</sup></li> <li>⊕ 1st year: on site, 8 am-5 pm, Mon-Fri excluding holidays, next business day response time</li> <li>⊕ 2nd/3rd year: parts exchange only, call 1-800-772-2227</li> <li>⊕ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup> <ul style="list-style-type: none"> <li>• 9 hour coverage, Mon-Fri excluding holidays, next business day response time</li> <li>• 9 hour coverage, Mon-Fri excluding holidays, 4 hour response</li> <li>• 24 hr x 7 day coverage, 4 hour response time</li> </ul> </li> <li>⊕ 24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support</li> </ul>
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See footnotes for important warranty information  
US model withdrawn effective May 2002



IBM® Appliance Server		SCSI							Available	
Type-model	Qty x Processor	Memory	Disk	controller	Mechanical	Slots x bays	Type	Preload	date	
8654-1XX	1 x Pentium® III 800	256MB	9.1GB <sup>2</sup> 10K	Ultra160	1U rack	2 slots x 4 bays	Appliance Server	TurboLinux	Nov 2000	
8654-5CX	1 x Pentium III 1GHz	256MB	18.2GB 10K	Ultra160	1U rack	2 slots x 4 bays	Appliance Server	Red Hat® Linux® 6.2	Jun 2001	
Positioning		<i>Point solution appliance server; Linux®-based Web hosting appliance with plug in convenience</i>								
Processor		<b>Intel® Pentium® III 800MHz<sup>1</sup> or 1GHz<sup>1</sup> with 133MHz Front Side Bus</b>								
SMP support		<i>5CX only: 2-way SMP via identical processor (1XX supports a second processor but no Linux support)</i>								
Implementation		Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA) / two Intel PGA370 sockets / terminator in empty socket								
L2 cache		<b>256KB</b> std and max / ECC / full speed								
Memory		<b>256MB</b> std / 1XX: 1GB max <sup>13</sup> ; 5CX: 2GB max <sup>13</sup> / 4 sockets / 3 available / Error Checking and Correcting (ECC) memory controller / <b>SDRAM / 133MHz / ECC DIMMs / 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant</b>								
Disk		9.1GB or 18.2GB Ultra160 SCSI / 10K rpm 10K-4 / 5.5 ms average read seek time / 2.99ms average latency								
SCSI disk controller		Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit PCI / integrated on motherboard								
SCSI connectors		Internal 68-pin (attaches 1-drop cable to SCSI backplane); no external SCSI connector								
IDE controller		Enhanced IDE / two connectors on planar / one 1-drop IDE cable to CD-ROM / ATA-66								
Architecture / chipsets		<b>ServerWorks® ServerSet III LE chip set /</b> NB6635 North Bridge 3.0LE (the North Bridge has two peer PCI buses: PCI Bus 0, 32-bit 33MHz, IB6566 South Bridge, two ethernet controllers, graphics controller); PCI Bus 1, 64-bit 33MHz, SCSI controller, two 64-bit PCI slots) / IB6566 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)								
Mechanical		<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door)								
Control Panel		Front indicators/switches include Power, Reset, Console Select, Power LED and Fault/info LED								
Ethernet controllers		<b>2 x Intel 82559</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / redundant ethernet capability and load balancing support through the connection of both ethernet ports to the same LAN segment / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / no Wake on LAN® support								
CD-ROM / diskette		24X-10X <sup>6</sup> CD-ROM; CAV (ATAPI); bootable; IDE / 3.5" 1.44MB diskette drive								
Rear ports		<i>Serial</i> : one 9-pin; <i>Parallel</i> : none; <i>USB</i> : two ports (no support); <i>Adv Sys Mgmt</i> : two RJ-45 ports (no support)								
Ports and cable		Keyboard, video (DB-15), and mouse port on a standard breakout cable (2 meters length on 1XX; 1 foot length on 5CX) which plugs into the console-out port								
Console interconnect		<i>5CX only</i> : supports daisy chaining via console in and out ports / system-to-system interconnect cable (10 inch, 245mm) is standard / daisy chain connection to adjacent server / supports large rack deployments of daisy chained servers / chain functions with multiple server (not contiguous in chain) outage								
Systems mgmt		<i>No support under preload</i> : Integrated IBM Advanced System Management Processor / on planar / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temp, fans, and pwr supply								
Diagnostics		<b>Light Path Diagnostics™</b> (LED lights indicate failing component) and on-board diagnostics (via PC-Doctor in BIOS)								
Graphics controller		SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B								
Security		Power-on password / administrator password / system owner's name / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode								
Software <sup>9</sup>		<b>1XX: Preloaded and optimally tuned with TurboLinux® 6.05, IBM HTTP Server 1.3.12, Appliance System Management, Advanced Appliance Configuration Utility</b>						Pentium III 1GHz/133/256KB Proc Upgrade 10K0053		
		<b>5CX: Preloaded and optimally tuned with Red Hat Linux 6.2, IBM Advanced Appliance Configuration Utility 2.0, IBM Director 2.2, simple mail client for alerting, Mailing List Management, PHP Support, IBM HTTP Server, external Web page support</b>						128MB SDRAM ECC DIMM 133MHz RDIMM 33L3142		
								256MB SDRAM ECC DIMM 133MHz RDIMM 33L3144		
								512MB SDRAM ECC DIMM 133MHz RDIMM 33L3146		
								1GB SDRAM ECC DIMM 133MHz RDIMM 33L3152		
								9.1GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L7204		
								18.2GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L7205		
								36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L7206		
								Netfinity® Gigabit Ethernet Adapter 34L0301		
								Netfinity Rack (with perf door and side panels) 9306910		
								NetBay 1 x 4 Console Switch 09N4290		
								NetBay 2 x 8 Console Switch 09N4291		
Keyboard / mouse		None standard								
Cooling fans		Eight fans (four for processor(s) and planar, two for disk(s) and planar, two for power supply)								
Power supply		200 watt / universal / auto-sensing / auto-restart support								
Prerequisites		Remote management console (client workstation), rack cabinet								



**LIMITED WARRANTY<sup>3</sup>**

- ⇨ 3 year parts and labor
- ⇨ International Warranty Service<sup>3</sup>
- ⇨ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time
- ⇨ 3 year on site warranty service upgrade options: (in eligible locations):<sup>7</sup>
  - 9 hour coverage, Mon-Fri excluding holidays, next business day response time
  - 9 hour coverage, Mon-Fri excluding holidays, 4 hour response
  - 24 hr x 7 day coverage, 4 hour response time
- ⇨ 24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support

See footnotes for important warranty information  
 • = Hot-swap but no software support  
 US models withdrawn effective December 2001 or May 2002

IBM® Appliance Server Type-model	Processor	Memory	Disk	Disk controller	Mechanical	Slots x bays	Hot-swap disk bays	Type	Preload	Available date
8672-24X	Celeron™ 800MHz <sup>1</sup>	256MB	20.4GB <sup>2</sup>	EIDE	1U rack	2x4	None	Appliance Server	Red Hat® Linux® 6.2	Jun 2001

Positioning	<i>Point solution appliance server; Linux®-based Web hosting appliance with plug in convenience</i>																																															
Processor	<b>Intel® Celeron 800MHz<sup>1</sup> with 100MHz Front Side Bus</b>																																															
L2 cache	<b>128KB</b> std and max / ECC / at processor speed																																															
SMP support	<b>No SMP</b> support																																															
Processor upgrade	None supported																																															
Implementation	Motherboard contains one Intel PGA370 socket (370-pin Flip-Chip Pin Grid Array (FC-PGA)), one integrated VRM, three DIMM sockets, two PCI slots, and integrated ethernet																																															
Memory - std / max	<b>256MB</b> std / 1.5GB max <sup>13</sup>																																															
Memory - sockets	3 sockets / 2 available / <b>ECC</b> (Error Checking and Correcting) DIMMs and ECC memory controller																																															
Memory - features	<b>SDRAM / 133MHz</b> / three 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant																																															
Memory - support	Supports unbuffered SDRAM ECC DIMMs																																															
SCSI disk controller	None																																															
IDE disk controller	Enhanced IDE busmaster / ATA-100 support / two connectors on planar																																															
Cables	Two 2-drop EIDE cables (one cable to CD-ROM, one 80-conductor cable to EIDE disk bays)																																															
Disk - features	20.4GB EIDE / ATA-100 / 7200 rpm / 8.7 ms average read seek time / S.M.A.R.T. <sup>5</sup>																																															
Chipset	<b>VIA® Apollo Pro133A chip set</b> / VT82C694X North Bridge (memory controller, PCI 2.2 32-bit 33MHz controller) / VT82C686B South Bridge (IDE ATA-100, USB, diskette, serial, keyboard, mouse, ISA bus for flash BIOS)																																															
Mechanical	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door)																																															
Control Panel	Front indicators/switches include Power, Power LED, Reset, and System Error LED																																															
Ethernet controllers	<b>2 x Intel 82550</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / Alert on LAN™ 2 support / Wake on LAN® support																																															
CD-ROM / diskette	24X-10X <sup>6</sup> CD-ROM, CAV (ATAPI), bootable, IDE / 3.5" 1.44MB diskette drive																																															
Rear ports	<i>Serial</i> : one 9-pin; <i>Parallel</i> : none; <i>USB</i> : two ports (no support); <i>Mgmt</i> : none; keyboard; mouse; DB-15 graphics																																															
Console interconnects	No system-to-system interconnect cable (separate keyboard, video, mouse ports on back)																																															
Systems mgmt	WinBond® W83791D / on planar / monitors system and processor temperature, fan speed and failure, and voltages																																															
Diagnostics	Diagnostics via PC-Doctor on a standard IBM Enhanced Diagnostics CD (diskette can be created)																																															
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B / analog 15-pin D-shell																																															
Security	Power-on password / administrator password / unattended boot / selectable boot / unattended start mode																																															
Software <sup>9</sup>	<b>Preloaded and optimally tuned with Red Hat Linux 6.2, IBM Advanced Appliance Configuration Utility 2.0, IBM Director 2.2, simple mail client for alerting, Mailing List Management, PHP Support, IBM HTTP Server, external Web page support</b>																																															
Keyboard / mouse	None standard																																															
Cooling fans	Six fans (two for processor, memory, halfsize PCI; two for left disk and fullsize PCI; two for power supply) / all variable speed / redundant cooling on single fan failure (other fans increase speed)																																															
Power supply	200 watt / universal / auto-sensing / not redundant / not hot-swap / Automatic Server Restart (ASR) support																																															
Prerequisites	Monitor, keyboard, mouse, rack with perforated door, disk (some models)																																															
	<p style="text-align: center;"><b>OPTIONS</b></p> <table border="0"> <tr> <td>128MB SDRAM ECC DIMM 133MHz</td> <td>33L3081</td> </tr> <tr> <td>256MB SDRAM ECC DIMM 133MHz</td> <td>33L3083</td> </tr> <tr> <td>512MB SDRAM ECC DIMM 133MHz</td> <td>33L3085</td> </tr> <tr> <td>20.4GB ATA-100 EIDE HDD</td> <td>19K4461</td> </tr> <tr> <td>40GB ATA-100 EIDE HDD</td> <td>22P7157</td> </tr> <tr> <td>IBM Netfinity® Rack (with perforated door/panels)</td> <td>9306910</td> </tr> <tr> <td>IBM NetBAY42 Enterprise Rack</td> <td>930842S</td> </tr> <tr> <td>IBM Console Switch (1 x 4 port)</td> <td>09N4290</td> </tr> <tr> <td>IBM Console Switch (2 x 8 port)</td> <td>09N4291</td> </tr> <tr> <td>IBM 7 foot K/M/V Cable</td> <td>09N4293</td> </tr> <tr> <td>IBM Console Cable Set (12 foot)</td> <td>94G7447</td> </tr> <tr> <td>IBM Two-Button Mouse</td> <td>28L3673</td> </tr> <tr> <td>IBM 84-key Space Saver Cost Reduced Keybrd</td> <td>28L3644</td> </tr> <tr> <td>IBM Preferred Keyboard (black)</td> <td>28L3621</td> </tr> <tr> <td>IBM E51 (13.8" viewable) Color Monitor(black)</td> <td>633347N</td> </tr> <tr> <td>IBM Smart-UPS Model 1400RMB</td> <td>94G6674</td> </tr> <tr> <td>IBM Smart-UPS Model 3000RMB</td> <td>94G6676</td> </tr> <tr> <td>IBM T54A 15" Flat Panel Color Monitor (black)</td> <td>9511AG1</td> </tr> <tr> <td>IBM T540 15" Flat Panel Color Monitor (black)</td> <td>9511AG4</td> </tr> </table>										128MB SDRAM ECC DIMM 133MHz	33L3081	256MB SDRAM ECC DIMM 133MHz	33L3083	512MB SDRAM ECC DIMM 133MHz	33L3085	20.4GB ATA-100 EIDE HDD	19K4461	40GB ATA-100 EIDE HDD	22P7157	IBM Netfinity® Rack (with perforated door/panels)	9306910	IBM NetBAY42 Enterprise Rack	930842S	IBM Console Switch (1 x 4 port)	09N4290	IBM Console Switch (2 x 8 port)	09N4291	IBM 7 foot K/M/V Cable	09N4293	IBM Console Cable Set (12 foot)	94G7447	IBM Two-Button Mouse	28L3673	IBM 84-key Space Saver Cost Reduced Keybrd	28L3644	IBM Preferred Keyboard (black)	28L3621	IBM E51 (13.8" viewable) Color Monitor(black)	633347N	IBM Smart-UPS Model 1400RMB	94G6674	IBM Smart-UPS Model 3000RMB	94G6676	IBM T54A 15" Flat Panel Color Monitor (black)	9511AG1	IBM T540 15" Flat Panel Color Monitor (black)	9511AG4
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Bay ① 3.5", UltraSlim 0.8", access, std diskette

Bay ② 5.25", UltraSlim 0.8", access, std CD-ROM

Bay ③ 3.5", SL 1", access, std disk

Bay ④ 3.5", SL 1", access, open for disk

Slot 1: fullsize, 32-bit 33MHz PCI 2.1 (5v)

Slot 2: halfsize, 32-bit 33MHz PCI 2.1 (5v)

- ❖ Stealth black
- ❖ H 1.72" (1U) x W 17.3" x D 25.7"
- ❖ 26 to 28.4 lbs (minimum to maximum configuration)
- ❖ Setup Utility is available by pressing F1 at startup
- ❖ PXE Boot Agent Utility near startup by pressing CTRL+S
- ❖ DMI 2.1, Wired for Management (WfM) 2.0-compliant
- ❖ Includes rack mounting kit
- ❖ Vital Product Data (VPD) info in nonvolatile memory
- ❖ Predictive Failure Analysis® (PFA) on disks

**All models:** Max int disk capacity: 80GB with two 40GB EIDE disks

**LIMITED WARRANTY<sup>3</sup>**

- 3 year parts / 1 year labor
- International Warranty Service<sup>3</sup>
- 1st year: on site, 8 am-5 pm, Mon-Fri excluding holidays, next business day response time
- 2nd/3rd year: parts exchange only, call 1-800-772-2227
- 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hour coverage, Mon-Fri excluding holidays, next business day response time
  - 9 hour coverage, Mon-Fri excluding holidays, 4 hour response
  - 24 hr x 7 day coverage, 4 hour response time
- 24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support

See footnotes for important warranty information  
 US model withdrawn effective May 2002

IBM® Network Attached Storage (NAS) appliance	Type-model	Qty x Processor(s)	Memory	Disks	SCSI controller	Mechanical	Slots x bays (6 hot-swap)	10/100 ethernet	Windows Type	Available OS	Powered OS
8658-33Y	1 x Pentium® III 800	256MB	3 x 36.4GB Ultra160	ServerRAID-4L	Tower	5 slots x 10 bays	2 x ethernet	NAS Preload	Oct 2000		
8658-3XY	2 x Pentium III 800	1GB	6 x 36.4GB Ultra160	ServerRAID-4H	5U rack	5 slots x 10 bays	4 x ethernet	NAS Preload	Nov 2000		

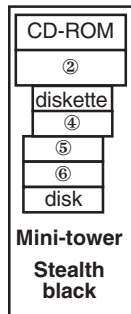
Intel® processor(s) L2 cache Implementation SMP support	<b>One or two Pentium® III 800EB MHz<sup>1</sup> with 133MHz Front Side Bus</b> <b>256KB</b> std and max / ECC / at processor speed / processor and L2 cache in Single Edge Cartridge (SECC2) Motherboard contains two Intel Slot 1 connectors for SECC2 cartridges (open Slot 1 used by terminator), one VRM socket (one VRM integrated), four DIMM sockets, PCI slots, and integrated subsystems <b>2-way SMP</b> via second identical 800MHz processor / upgrade via SECC2 into second Slot 1 CPU connector										
Memory - std / max Memory - sockets Memory - features	<b>256MB or 1GB std / 2GB max</b> (Windows Powered OS prevents addressing more than 2GB) 4 sockets / 3 available / <b>ECC</b> (all have Error Checking and Correcting (ECC) memory controller) / non-interleaved <b>SDRAM / 133MHz</b> / four 168-pin gold-plated sockets / PC133-compliant / supports registered SDRAM ECC DIMMs only										
SCSI disk controller	33Y: <b>IBM ServerRAID-4L</b> / Ultra160 SCSI (LVD 160MB/sec) / 64-bit PCI adapter / 1 channel (external/internal) / one 68-pin internal connector, one 68-pin VHDCI external connector / 16MB ECC cache / RAID 0, 1, 1E, 5E, 00, 10, 1E0, 50 / 16-bit 68-pin LVD cable from internal connector to backplane 3XY: <b>IBM ServerRAID-4H</b> / Ultra160 SCSI (LVD 160MB/sec) / 64-bit PCI adapter / 4 channels (2 external/internal, 2 external only) / two 68-pin internal connectors, four 68-pin VHDCI external connectors / 128MB ECC cache, battery-backed / RAID 0, 1, 1E, 5E, 00, 10, 1E0, 50 / 16-bit 68-pin LVD cable from internal connector to backplane All: <b>Adaptec® AHA-7899</b> / Ultra160 SCSI (LVD 160MB/sec) / 64-bit PCI / on planar / 2 channels (both internal, no external) / two 68-pin internal connectors on planar										
IDE controller / cable Disk - capacity Disk - bays	Single Primary IDE (ROSB4) South Bridge / one connector on planar / one 1-drop IDE cable (CD-ROM) Three or six 36.4GB / 7200 rpm / Ultra160 SCSI / 7.0 ms or less average read seek time / 4.17 ms latency / one backplane Six hot-swap / 80-pin SCA-2 connectors / common tray with EXP300 and later servers										
Mechanical Rack support Bus slots (see below)	<b>Tower or EIA 19" Rack (5U<sup>4</sup>)</b> Rack systems supported in IBM NetfinityRacks / kit available to convert tower to rack (no rack to tower conversion) 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	<b>ServerWorks® ServerSet III™ LE chip set</b> / 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	All: <b>AMD® Am79C975</b> / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 connector / 3 front LEDs 33Y: <b>1 x Netfinity 10/100 Ethernet Adapter 2</b> / 32-bit PCI adapter / full duplex / 82559 chip set / in Slot 1 3XY: <b>3 x Netfinity 10/100 Ethernet Adapter 2</b> / 32-bit PCI adapter / full duplex / 82559 chip set / in Slot 1, 2, 4										
CD-ROM / diskette Serial / parallel / USB Graphics controller	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 <i>Serial</i> : Three 9-pin (one for Mgmt Processor) <i>Parallel</i> : One (EPP, ECP) / IEEE 1284 <i>USB</i> : Two ports (Version 1.1) SVGA / PCI 2.1 bus / S3 <sup>8</sup> Savage4 (on planar) / 8MB SDRAM std/max / 1280x1024 at 16M colors at 100Hz / 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 start mode										
Systems mgmt	<b>Integrated Advanced System Mgmt Processor</b> / on planar / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supplies										
Diagnostics	<b>Diagnostics LED Panel</b> (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	<b>Preloaded and optimally tuned with Windows Powered OS and appliance software stack, Netfinity Director 2.12 (agent only), Universal Manageability (UM) Server Extensions, ServerRAID Manager, Advanced Appliance Configuration Utility, Columbia Data Products Open Transaction Manager, Microsoft Services for Unix 2.0</b>										
Keyboard / mouse Power supply	None 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										
Fans	Two (fan in rear, blower in front) / not hot-swap / PFA / fan failure signals Diagnostic LED and Mgmt Processor / fan in each power supply										
Prerequisites	Monitor, disk; rack model requires rack cabinet, mouse, kybd										

<p>Slot 1: fullsize, 32-bit 33MHz PCI 2.1 (5v), Bus A* Slot 2: fullsize, 32-bit 33MHz PCI 2.1 (5v), Bus A* Slot 3: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B** Slot 4: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B* Slot 5: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B</p> <p>Bay ① 3.5", SL 1", access, diskette Bay ② 3.5", SL 1", access, hot swap* Bay ③ 3.5", SL 1", access, hot swap* Bay ④ 3.5", SL 1", access, hot swap* Bay ⑤ 3.5", SL 1", access, hot swap* Bay ⑥ 3.5", SL 1", access, hot swap* Bay ⑦ 3.5", SL 1", access, hot swap* Bay ⑧ 5.25", HH 1.6" access, open Bay ⑨ 5.25", HH 1.6" access, open Bay ⑩ 5.25", HH 1.6" access, CD-ROM</p> <p>Bays 2 through 7 support 6 SL disks or 3 HH hot-swap disks via SCA-2 connectors; Bays 8 and 9 support 3.5" disks via Media Bay Conversion Kit</p> <p><b>Rack or Tower</b> (tower shown above)</p>	<ul style="list-style-type: none"> <li>➤ Removable, easy release left/top side panel</li> <li>➤ Quick release adapter slots (no screws)</li> <li>➤ Rail system enables devices (CD-ROM, diskette, tape drives) to snap in and out without screws</li> <li>➤ Configuration/Setup Utility invoked by pressing F1 at startup</li> <li>➤ SCSISelect near startup by pressing CTRL+A</li> <li>➤ Operator Information Panel (in front)</li> <li>➤ Predictive failure analysis on disk options, memory, processors, VRMs, power supplies, and fans in conjunction with Netfinity Director can alert the system administrator of an imminent component failure</li> <li>➤ Tower: H 16.8" x W 8.6" x D 26.0"</li> <li>➤ Rack: H 8.6" x W 16.8" x D 24.8"</li> <li>➤ 55.7 to 82.7 pounds</li> <li>➤ Stealth black color</li> <li>➤ All non-hot-swaps bays use rails (no screws) for devices</li> </ul>	<p><b>LIMITED WARRANTY</b></p> <ul style="list-style-type: none"> <li>➤ 3 year parts and limited 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 (in eligible locations): <ul style="list-style-type: none"> <li>• 24 hr x 7 day coverage, 4 hour response<sup>7</sup> time</li> <li>• 24 hr x 7 day coverage, 2 hour response<sup>7</sup> time</li> </ul> </li> <li>➤ IBM Server Start Up Support</li> <li>➤ 24 hour x 7 day telephone<sup>14</sup>, electronic, and Internet support</li> </ul>
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IBM® Type-model	Processor	L2 cache	Memory	Disk	Disk controller	Mechanical	Slots x bays	Hot-swap disk bays	Ethernet	Available date
8481-11X	Celeron® 850/100	128KB	128MB	20.4GB <sup>2</sup> 7200 rpm	EIDE	Mini Tower	5x7	None	10/100 ethernet	Sep 2001
8481-21X	Pentium® 1GHz/133	256KB	128MB	20.4GB 7200 rpm	EIDE	Mini Tower	5x7	None	10/100 ethernet	Sep 2001
8481-31X	Celeron 1.2GHz/100	256KB	128MB	20.4GB 7200 rpm	EIDE	Mini Tower	5x7	None	10/100 ethernet	Sep 2002
Positioning Processor	<i>Value Leader (VL); uniprocessor, entry server designed to meet small business needs and budgets</i>									
L2 cache	<b>Intel® Celeron 850MHz or 1.2GHz with 100MHz frontside bus or Intel Pentium® III 1.0GHz with 133MHz frontside bus</b> Celeron 850MHz: 128KB std and max / ECC / at processor speed Celeron 1.2GHz: 256KB std and max / ECC / at processor speed Pentium III: 256KB std and max / ECC / at processor speed									
Implementation	Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA or FC-PGA2) Motherboard contains one Intel PGA370 socket, one integrated VRM, three DIMM sockets, three PCI slots, connector for two-slot PCI extender board, one AGP slot, and integrated ethernet									
Processor upgrade SMP support	All models can be upgraded to Pentium III 1.0, 1.13, or 1.26GHz <b>No SMP support</b>									
Memory	<b>128MB standard / 1.5GB maximum</b> 3 sockets / 2 available / ECC (Error Checking and Correcting) DIMMs and ECC memory controller / PC133-compliant / <b>SDRAM / 133MHz</b> / unbuffered DIMMs (UDIMM) / CAS Latency 3 (CL3) / three 168-pin gold-plated DIMM 3.3 v sockets									
SCSI disk controller	None									
IDE disk controller	Enhanced IDE busmaster / ATA-66/100 support / two connectors on planar									
Cables	Two 2-drop EIDE cables (one cable to CD-ROM, one cable to EIDE disk)									
Disk - features	20.4GB EIDE / ATA-100 / 7200 rpm / less than 9.0 ms average read seek time / S.M.A.R.T.									
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option in an industry standard 19-inch rack									
Architecture / chipsets	<b>VIA® Apollo Pro133T chip set</b> / VT82C694T North Bridge (memory controller, PCI 2.2 32-bit 33MHz controller, AGP 4X) / VIA VT82C686B South Bridge (IDE ATA-100, USB, diskette, parallel, serial, keyboard, mouse)									
100/10Mbps ethernet	Intel 82550 / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit 33MHz PCI bus / support for Wake on LAN®									
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM, CAV (ATAPI), bootable, IDE / <i>Diskette</i> : 3.5" 1.44MB diskette drive									
Ports	<i>Back</i> : two 9-pin serial, two USB (Version 1.1), parallel, keyboard, mouse									
Audio	Integrated digital audio / AC97 interface / SoundBlaster Pro-compatible									
Audio connectors	<i>Back</i> : microphone jack, line-in, line-out, MIDI/game port									
Speaker	One internal speaker / requires externally powered speakers for stereo sound									
Diagnostics	POST and server diagnostic programs stored on IBM Enhanced Diagnostics CD									
Systems mgmt	Monitoring and alerting of memory, thermal, or voltage faults / support for Wake on LAN, Alert on LAN™ 2, PXE									
Graphics controller	SVGA / ATI Rage XL / AGP 2X adapter / 8MB SGRAM std and max / 230MHz RAMDAC / DPMS and DDC2B-compliant / 60Hz to 85Hz vertical refresh / analog 15-pin D-Sub connector									
Security	Cover key lock / U-bolt support / power-on password / boot sequence control / operation without keybd and mouse / chassis intrusion protection									
Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), IBM Director (system hardware mgmt software), and others				Pentium III 1.0GHz/256KB Proc Upg Pentium III 1.13GHz/512KB Proc Upg Pentium III 1.26GHz/512KB Proc Upg				32P0650 32P0651 32P0652	
Keyboard / mouse	IBM 101-key keyboard / IBM 2-button mouse				128MB SDRAM ECC 133MHz unbuffered DIMM 256MB SDRAM ECC 133MHz unbuffered DIMM 512MB SDRAM ECC 133MHz unbuffered DIMM				33L3081 33L3083 33L3085	
Cooling fans	Celeron: three fans (power supply, front, rear) Pentium III: four fans (power supply, front, rear, fansink) All: not redundant or hot-swap / fans full-speed except for variable-speed fan in power supply				IBM 4Ux20D Tower-to-Rack Kit IBM 40GB ATA-100 EIDE HDD IBM 80GB ATA-100 EIDE HDD				09N4300 22P7157 09N4226	
Power supply	330 watts / universal / auto switch / Automatic Server Restart (ASR) / not redundant or hot-swap / cooling fan in power supply				IBM T540 15" Flat Panel Monitor (black) IBM 12X/8X/32X <sup>6</sup> CD-RW (black) American Power Conversion Smart-UPS 1000				9511AG4 10K3785 94G3135	
Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>										

Slot fullsize, AGP 4X, 25 watt (3.3v) - used by standard AGP graphics adptr  
 Slot 1: fullsize, 32-bit 33MHz, PCI 2.2 (5v)  
 Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - slot has Alert on LAN 2 support  
 Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v)  
 Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - on two-slot PCI extender board  
 Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - on two-slot PCI extender board



- Bay ① 5.25", HH 1.6", access, CD-ROM
- Bay ② 5.25", HH 1.6", access, open
- Bay ③ 3.5", SL 1", access, diskette
- Bay ④ 3.5", SL 1", access, open
- Bay ⑤ 3.5", SL 1", access, open
- Bay ⑥ 3.5", SL 1", access, open
- Bay ⑦ 3.5", SL 1", access, disk (some)

Maximum internal IDE disk capacity:  
240GB (3 disks x 80GB)

Metal cage for disk bays 5,6,7 rotate out of chassis for easy access for cabling backplane or working with disks

- Two front stabilizing feet
- 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)

- Removable left side panel
- Configuration/Setup Utility (in flash memory) invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A (SCSI models)
- Adv Config Power Interface (ACPI) 1.0
- ISO 9241-3 capable

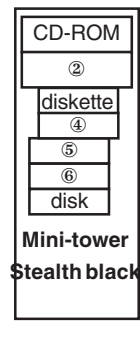
**LIMITED WARRANTY<sup>3</sup>**

- ↪ 1 year parts and labor
- ↪ International Warranty Service<sup>3</sup>
- ↪ On site, 8 am-5 pm, Mon-Fri excluding holidays, next business day response time
- ↪ On site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 1 year IOR 9x5, Next Business Day (ServicePac® part number 69P9382)
  - 1 year IOR 9x5, 4 hr ave response (ServicePac part number 69P9383)
  - 1 year IOR 24x7, 4 hr ave response (ServicePac part number 69P9384)
  - 1 year IOR 24x7, 2 hr ave response (ServicePac part number 69P9385)
  - 3 year IOR 9x5, Next Business Day (ServicePac part number 69P9509)
  - 3 year IOR 9x5, 4 hr ave response (ServicePac part number 69P9510)
  - 3 year IOR 24x7, 4 hr ave response (ServicePac part number 69P9511)
  - 3 year IOR 24x7, 2 hr ave response (ServicePac part number 69P9515)
- ↪ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

See footnotes for important warranty information  
 US models withdrawn effective June 2002 or January 2003 (previously announced August 28, 2001)

IBM® Type-model	Processor	Memory	Disk	Tape	Disk controller	Mechanical	Slots x bays	Hot-swap disk bays	ethernet	Available date
8478-10X	Celeron™ 667/66	128MB	None	None	Ultra160, EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Oct 2000
8478-11X	Celeron 667/66	64MB	15GB	None	EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Oct 2000
8478-12X	Celeron 667/66	64MB	15GB	Tape	EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Oct 2000
8478-40X	Pentium® III 800/133	128MB	None	None	Ultra160, EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Oct 2000
8478-41X	Pentium III 800/133	64MB	15GB	None	EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Oct 2000
8478-50X	Pentium III 866/133	128MB	None	None	Ultra160, EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Oct 2000
8478-51X	Pentium III 866/133	64MB	15GB	None	EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Oct 2000
Intel® processor	<b>Celeron 667MHz<sup>1</sup> with 66MHz Front Side Bus or Pentium® III 800EB or 866MHz<sup>1</sup> with 133MHz Front Side Bus</b>									
L2 cache	<i>Celeron:</i> 128KB std and max / ECC / at processor speed; <i>Pentium III:</i> 256KB std and max / ECC / at processor speed									
Implementation	All: Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA) Motherboard contains one Intel PGA370 socket, one integrated VRM, three DIMM sockets, three PCI slots, connector for two slot PCI extender board, one AGP slot, and integrated ethernet									
SMP support	<b>No SMP support</b>									
Memory - std / max	<b>64MB or 128MB</b> std / 1.5GB max									
Memory - sockets	3 sockets / 2 available / ECC (Error Checking and Correcting) DIMMs and ECC memory controller									
Memory - features	<b>SDRAM / 133MHz</b> / three 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant									
Memory - support	Supports unbuffered SDRAM ECC DIMMs									
SCSI disk controller	<i>Some models:</i> <b>Adaptec® 29160LP / single channel Wide Ultra160 SCSI</b> (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support									
SCSI connectors	<i>SCSI models:</i> One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector									
RAID support	Supports optional PCI RAID adapters									
IDE disk controller	Enhanced IDE busmaster / ATA-66 support (ATA-100 on later models) / two connectors on planar									
Cables	<i>SCSI models:</i> one 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (connected to CD-ROM) <i>EIDE models:</i> two 2-drop EIDE cables (one cable to CD-ROM, one cable to EIDE disk)									
Disk - features	<i>Some models:</i> 15GB EIDE / ATA-100 / 7200 rpm / 8.7 ms average read seek time / S.M.A.R.T.									
Tape drive	12X: 10/20GB TR5 Internal IDE Tape Drive									
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option									
Architecture / chipsets	<b>VIA® Apollo Pro133A chip set</b> / VT82C694X North Bridge (memory controller, PCI 2.2 32-bit 33MHz controller, AGP 4X) / VIA VT82C686A or 686B South Bridge (IDE ATA-66 [686B is ATA-100], USB, diskette, parallel, serial, keyboard, mouse)									
100/10Mbps ethernet	Intel 82559 / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit 33MHz PCI bus / support for Wake on LAN®									
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM / CAV (ATAPI) / bootable / IDE <i>Diskette:</i> 3.5" 1.44MB diskette drive									
External ports	<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, audio line in, audio line out, microphone in									
Diagnostics	POST and server diagnostic programs are stored on the IBM Enhanced Diagnostics CD									
Systems mgmt	Monitoring and alerting of memory, thermal, or voltage faults / support for Wake on LAN, Alert on LAN™ 2, Preboot eExecution Environment (PXE)									
Graphics controller	SVGA / S3 Savage4 LT / AGP 4X adapter / 8MB SDRAM std and max / DPMS and DDC2B-compliant / 60Hz to 85Hz vertical refresh / 15-pin D-Sub connector									
Security	Cover key lock / U-Bolt support / power-on password / boot sequence control / operation without kybd and mouse / chassis intrusion protection									
Software	<b>ServerGuide™</b> (CD-based automated network OS installation and configuration tool), Norton AntiVirus™, and APC PowerChute Plus / includes IBM Director (system hardware mgmt software) and many utilities									
Keyboard / mouse	IBM 101-key keyboard / IBM 2-button mouse									
Cooling fans	Three cooling fans (power supply, front, rear) / not redundant or hot-swap / fans have two speeds									
Power supply	330 watts / universal / auto switch / Automatic Server Restart (ASR) / not redundant or hot-swap / cooling fan in power supply									

Slot fullsize, AGP 4X, 25 watt (3.3v) - used by standard AGP graphics adptr  
 Slot 1: fullsize, 32-bit 33MHz, PCI 2.2 (5v)  
 Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - slot has Alert on LAN 2 support  
 Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - used by SCSI adapter  
 Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - on two-slot PCI extender board  
 Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - on two-slot PCI extender board



Bay ① 5.25", HH 1.6", access, CD-ROM  
 Bay ② 5.25", HH 1.6", access, open or tape  
 Bay ③ 3.5", SL 1", access, diskette  
 Bay ④ 3.5", SL 1", access, open  
 Bay ⑤ 3.5", SL 1", access, open  
 Bay ⑥ 3.5", SL 1", access, open  
 Bay ⑦ 3.5", SL 1", access, disk (some)

**Maximum internal SCSI disk capacity:**  
145.6GB (4 disks x 36.4GB)

- Removable left side panel
- Configuration/Setup Utility (in flash memory) invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A
- Adv Config Power Interface (ACPI) 1.0
- ISO 9241-3 capable

- Metal cage for disk bays 5,6,7 rotate out of chassis for easy access for cabling backplane or working with disks
- Two front stabilizing feet
- 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)

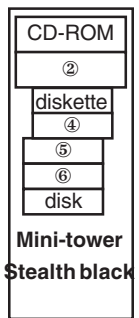
**LIMITED WARRANTY**

- ↪ 3 year parts / 1 year labor limited warranty<sup>3</sup>
- ↪ International Warranty Service<sup>3</sup>
- ↪ 1st year: on site, 8 am-5 pm, Mon-Fri excluding holidays, next business day response time
- ↪ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ↪ On site warranty upgrade options (in eligible locations):
  - 24 hr x 7 day coverage, 4 hour response<sup>7</sup> time (21P2021)
  - 9 hour coverage, Mon-Fri excluding holidays, next business day response<sup>7</sup> time (21P2022)
- ↪ IBM Server Start Up Support
- ↪ 24 hour x 7 day telephone<sup>14</sup>, electronic, and Internet support

IBM® Type-model	Processor	Memory	Disk	Tape	Disk controller	Mechanical	Slots x bays	Hot-swap disk bays	Ethernet	Available date
8478-20X	Celeron™ 733/66	128MB	None	None	Ultra160, EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Mar 2001
8478-21X	Celeron 733/66	64MB	20.4GB	None	EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Mar 2001
8478-22X	Celeron 733/66	64MB	15GB	Tape	EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Mar 2001
8478-30X	Celeron™ 800/100	128MB	None	None	Ultra160, EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	May 2001
8478-31X	Celeron 800/100	64MB	20.4GB	None	EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	May 2001
8478-60X	Pentium® III 933/133	128MB	None	None	Ultra160, EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Mar 2001
8478-61X	Pentium III 933/133	64MB	20.4GB	None	EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Mar 2001
8478-70X	Pentium III 1GHz/133	128MB	None	None	Ultra160, EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Mar 2001
8478-71X	Pentium III 1GHz/133	64MB	20.4GB	None	EIDE	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Mar 2001

Intel® processor	<b>Celeron 733MHz<sup>1</sup> with 66MHz Front Side Bus or Celeron 800MHz<sup>2</sup> with 100MHz Front Side Bus or Pentium® III 933MHz<sup>1</sup> or 1GHz with 133MHz Front Side Bus</b>									
L2 cache	Celeron: <b>128KB</b> std and max / ECC / at processor speed Pentium III: <b>256KB</b> std and max / ECC / at processor speed All: Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA) / all upgradable via options below									
Implementation	Motherboard contains one Intel PGA370 socket, one integrated VRM, three DIMM sockets, three PCI slots, connector for two slot PCI extender board, one AGP slot, and integrated ethernet									
SMP support	<b>No SMP</b> support									
Memory - std / max	<b>64MB or 128MB</b> std / 1.5GB max									
Memory - sockets	3 sockets / 2 available / ECC (Error Checking and Correcting) DIMMs and ECC memory controller									
Memory - features	<b>SDRAM / 133MHz</b> / three 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant									
Memory - support	Supports unbuffered SDRAM ECC DIMMs									
SCSI disk controller	Some models: <b>Adaptec® 29160LP / single channel Wide Ultra160 SCSI</b> (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support									
SCSI connectors	SCSI models: One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector									
RAID support	Supports optional PCI RAID adapters									
IDE disk controller	Enhanced IDE busmaster / ATA-66 support (ATA-100 on later models) / two connectors on planar									
Cables	SCSI models: one 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (connected to CD-ROM) EIDE models: two 2-drop EIDE cables (one cable to CD-ROM, one cable to EIDE disk)									
Disk - features	Some models: 15GB or 20.4GB EIDE / ATA-100 / 7200 rpm / 8.7 ms average read seek time / S.M.A.R.T.									
Tape drive	Model 22X: 10/20GB TR5 Internal IDE Tape Drive									
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option in an industry standard 19-inch rack									
Architecture / chipsets	<b>VIA® Apollo Pro133A chip set</b> / VT82C694X North Bridge (memory controller, PCI 2.2 32-bit 33MHz controller, AGP 4X) / VIA VT82C686B South Bridge (IDE ATA-100, USB, diskette, parallel, serial, keyboard, mouse)									
100/10Mbps ethernet	Intel 82559 / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit 33MHz PCI bus / support for Wake on LAN®									
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM / CAV (ATAPI) / bootable / IDE Diskette: 3.5" 1.44MB diskette drive									
External ports	Serial: Two 9 pin; Parallel: One (EPP, ECP) / IEEE 1284; USB: Two (Ver 1.1); keyboard, DB-15 analog video; mouse; audio line in; audio line out; microphone in									
Diagnostics	POST and server diagnostic programs stored on IBM Enhanced Diagnostics CD									
Systems mgmt	Monitoring and alerting of memory, thermal, or voltage faults / support for Wake on LAN, Alert on LAN™ 2, Preboot eXecution Environment (PXE)									
Graphics controller	SVG A / S3 Savage4 LT / AGP 4X adapter / 8MB SDRAM std and max / DPMS and DDC2B-compliant / 60Hz to 85Hz vertical refresh / analog 15-pin D-Sub connector									
Security	Cover key lock / U-Bolt support / power-on password / boot sequence control / operation without kybd and mouse / chassis intrusion protection									
Software	<b>ServerGuide™</b> (CD-based automated network OS installation and configuration tool), Norton AntiVirus™, and APC PowerChute Plus / includes IBM Director (system hardware mgmt software) and many utilities									
Keyboard / mouse	IBM 101-key keyboard / IBM 2-button mouse									
Cooling fans	Three cooling fans (power supply, front, rear) / not redundant or hot-swap / fans have two speeds									
Power supply	330 watts / universal / auto switch / not redundant or hot-swap / cooling fan in power supply									

- Slot fullsize, AGP 4X, 25 watt (3.3v) - used by standard AGP graphics adptr
- Slot 1: fullsize, 32-bit 33MHz, PCI 2.2 (5v)
- Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - slot has Alert on LAN 2 support
- Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - used by SCSI adapter
- Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - on two-slot PCI extender board
- Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - on two-slot PCI extender board



- Bay ① 5.25", HH 1.6", access, CD-ROM
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- Bay ⑤ 3.5", SL 1", access, open
- Bay ⑥ 3.5", SL 1", access, open
- Bay ⑦ 3.5", SL 1", access, disk (some)

Maximum internal SCSI disk capacity:  
145.6GB (4 disks x 36.4GB)

- Removable left side panel
- Configuration/Setup Utility (in flash memory) invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A
- Adv Config Power Interface (ACPI) 1.0
- ISO 9241-3 capable

- Metal cage for disk bays 5,6,7 rotate out of chassis for easy access for cabling backplane or working with disks
- Two front stabilizing feet
- 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)

**LIMITED WARRANTY<sup>3</sup>**

- ↪ 3 year parts / 1 year labor
- ↪ International Warranty Service<sup>3</sup>
- ↪ 1st year: on site, 8 am-5 pm, Mon-Fri excluding holidays, next business day response time
- ↪ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ↪ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hour coverage, Mon-Fri excluding holidays, next business day response time (ServicePac® part number 21P2021)
  - 24 hr x 7 day coverage, 4 hour response time (ServicePac part number 21P2022)
- ↪ IBM Server Start Up Support
- ↪ 24 hour x 7 day<sup>14</sup> telephone, electronic, and internet support

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227  
US models announced May 22, 2001; withdrawn effective December 2001

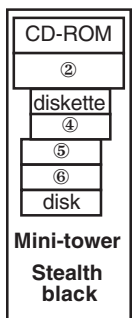
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IBM® Type-model	Processor	L2 cache	Memory	Disk	Disk controller	Mechanical	Slots x bays	Hot-swap disk bays	Ethernet	Available date
8479-10X	Celeron® 850/100	128KB	128MB	None	Ultra160, EIDE	Mini Tower	5x7	None	10/100 ethernet	Aug 2001
8479-11X	Celeron 850/100	128KB	128MB	20.4GB	EIDE	Mini Tower	5x7	None	10/100 ethernet	Aug 2001
8479-31X	Celeron 1GHz/100	128KB	128MB	20.4GB	EIDE	Mini Tower	5x7	None	10/100 ethernet	Feb 2002
8479-40X	Pentium® 1GHz/133	256KB	128MB	None	Ultra160, EIDE	Mini Tower	5x7	None	10/100 ethernet	Aug 2001
8479-41X	Pentium 1GHz/133	256KB	128MB	20.4GB	EIDE	Mini Tower	5x7	None	10/100 ethernet	Aug 2001
8479-50X	Pentium III 1.13/133	512KB	128MB	None	Ultra160, EIDE	Mini Tower	5x7	None	10/100 ethernet	Aug 2001
8479-51X	Pentium III 1.13/133	512KB	128MB	20.4GB	EIDE	Mini Tower	5x7	None	10/100 ethernet	Aug 2001
8479-60X	Pentium III 1.26/133	512KB	128MB	None	Ultra160, EIDE	Mini Tower	5x7	None	10/100 ethernet	Aug 2001
8479-61X	Pentium III 1.26/133	512KB	128MB	20.4GB	EIDE	Mini Tower	5x7	None	10/100 ethernet	Aug 2001

Positioning Processor	<i>Uniprocessor, entry server designed to meet small business needs and budgets</i>									
L2 cache	<b>Intel® Celeron 850MHz or 1GHz with 100MHz frontside bus or Intel Pentium® III 1.0, 1.13, or 1.26GHz with 133MHz frontside bus</b>									
Implementation	<i>Celeron:</i> 128KB std and max / ECC / at processor speed <i>Pentium III:</i> 256KB or 512KB std and max / ECC / at processor speed <i>All:</i> Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA or FC-PGA2) Motherboard contains one Intel PGA370 socket, one integrated VRM, three DIMM sockets, three PCI slots, connector for two-slot PCI extender board, one AGP slot, and integrated ethernet									
Processor upgrade SMP support	All models can be upgraded to Pentium III 1.0, 1.13, or 1.26GHz <b>No SMP support</b>									
Memory	128MB standard / 1.5GB maximum 3 sockets / 2 available / ECC (Error Checking and Correcting) DIMMs and ECC memory controller / PC133-compliant / <b>SDRAM / 133MHz</b> / unbuffered DIMMs (UDIMM) / CAS Latency 3 (CL3) / three 168-pin gold-plated DIMM 3.3 v sockets									
SCSI disk controller	<i>Some models:</i> <b>Adaptec® 29160LP / single channel Wide Ultra160 SCSI</b> (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support									
SCSI connectors	<i>SCSI models:</i> One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector (not supported)									
RAID support	Supports optional PCI RAID adapters									
IDE disk controller	Enhanced IDE busmaster / ATA-66/100 support / two connectors on planar									
Cables	<i>SCSI models:</i> one 5-drop 16-bit LVD SCSI cable, one 2-drop EIDE cable (connected to CD-ROM) <i>EIDE models:</i> two 2-drop EIDE cables (one cable to CD-ROM, one cable to EIDE disk)									
Disk - features	<i>Some models:</i> 20.4GB EIDE / ATA-100 / 7200 rpm / 8.7 ms average read seek time / S.M.A.R.T.									
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option in an industry standard 19-inch rack									
Architecture / chipsets	<b>VIA® Apollo Pro133T chip set</b> / VT82C694T North Bridge (memory controller, PCI 2.2 32-bit 33MHz controller, AGP 4X) / VIA VT82C686B South Bridge (IDE ATA-100, USB, diskette, parallel, serial, keyboard, mouse)									
100/10Mbps ethernet	Intel 82550 / on planar / full duplex / 32-bit 33MHz PCI bus / support for PXE, Wake on LAN®, and Alert on LAN 2									
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM, CAV (ATAPI), bootable, IDE / <i>Diskette:</i> 3.5" 1.44MB diskette drive									
Ports	<i>Back:</i> two 9-pin serial, two USB (Version 1.1), parallel, keyboard, mouse									
Audio	Integrated digital audio / AC97 interface / SoundBlaster Pro-compatible									
Audio connectors	<i>Back:</i> microphone jack, line-in, line-out, MIDI/game port									
Speaker	One internal speaker / requires externally powered speakers for stereo sound									
Diagnostics	POST and server diagnostic programs stored on IBM Enhanced Diagnostics CD									
Systems mgmt	Monitoring and alerting of memory, thermal, or voltage faults / support for Wake on LAN, Alert on LAN™ 2, PXE									
Graphics controller	SVGA / ATI Rage XL / AGP 2X adapter / 8MB SGRAM std and max / 230MHz RAMDAC / DPMS and DDC2B-compliant / 60Hz to 85Hz vertical refresh / analog 15-pin D-Sub connector									
Security	Cover key lock / U-bolt support / power-on password / boot sequence control / operation without keybd and mouse / chassis intrusion protection									
Software	<b>ServerGuide™</b> (CD-based automated network OS installation and configuration tool), Norton AntiVirus™, and APC PowerChute Plus / includes IBM Director (system hardware mgmt software) and many utilities					Pentium III 1.0GHz/256KB Proc Upg 32P0650 Pentium III 1.13GHz-S/512KB Proc Upg 32P0651 Pentium III 1.26GHz-S/512KB Proc Upg 32P0652 128MB SDRAM ECC 133MHz unbuffered DIMM 33L3081 256MB SDRAM ECC 133MHz unbuffered DIMM 33L3083 512MB SDRAM ECC 133MHz unbuffered DIMM 33L3085				
Keyboard / mouse	IBM 101-key keyboard / IBM 2-button mouse									
Cooling fans	<i>Celeron:</i> three fans (power supply, front, rear) <i>Pentium III:</i> four fans (power supply, front, rear, fansink) <i>All:</i> not redundant or hot-swap / fans full-speed except for variable-speed fan in power supply					IBM 4Ux20D Tower-to-Rack Kit 09N4300 IBM 60GB ATA-100 EIDE HDD 09N4207 IBM 18.2GB 15K rpm Ultra160 SCSI HDD 19K0658 IBM 36.4GB 10K rpm Ultra160 SCSI HDD 00N8209 IBM 73.4GB 10K rpm Ultra160 SCSI HDD 06P5752 Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>				
Power supply	330 watts / universal / auto switch / Automatic Server Restart (ASR) / not redundant or hot-swap / cooling fan in power supply									

- Slot fullsize, AGP 4X, 25 watt (3.3v) - used by standard AGP graphics adptr
- Slot 1: fullsize, 32-bit 33MHz, PCI 2.2 (5v)
- Slot 2: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - slot has Alert on LAN 2 support
- Slot 3: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - used by SCSI adapter (some models)
- Slot 4: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - on two-slot PCI extender board
- Slot 5: fullsize, 32-bit 33MHz, PCI 2.2 (5v) - on two-slot PCI extender board



- Bay ① 5.25", HH 1.6", access, CD-ROM
  - Bay ② 5.25", HH 1.6", access, open
  - Bay ③ 3.5", SL 1", access, diskette
  - Bay ④ 3.5", SL 1", access, open
  - Bay ⑤ 3.5", SL 1", access, open
  - Bay ⑥ 3.5", SL 1", access, open
  - Bay ⑦ 3.5", SL 1", access, disk (some)
- Metal cage for disk bays 5,6,7 rotate out of chassis for easy access for cabling backplane or working with disks
- Two front stabilizing feet
  - 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)

Maximum internal IDE disk capacity: 180GB (3 disks x 60GB)  
 Maximum internal SCSI disk capacity: 293.6GB (4 disks x 73.4GB)

- Removable left side panel
- Configuration/Setup Utility (in flash memory) invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A (SCSI models)
- Adv Config Power Interface (ACPI) 1.0
- ISO 9241-3 capable

**LIMITED WARRANTY<sup>3</sup>**

- ↪ 3 year parts / 1 year labor
- ↪ International Warranty Service<sup>3</sup>
- ↪ 1st year: on site, 8 am-5 pm, Mon-Fri excluding holidays, next business day response time
- ↪ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ↪ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hour coverage, Mon-Fri excluding holidays, next business day response time (ServicePac® 21P2021)
  - 9 hour coverage, Mon-Fri excluding holidays, 4 hour response time (ServicePac 21P2023)
  - 24 hr x 7 day coverage, 4 hour response time (ServicePac 21P2022)
  - 24 hr x 7 day coverage, 2 hour response time (ServicePac 21P2094)
- ↪ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

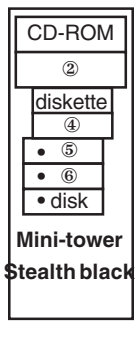
# IBM @server xSeries 220 (Spring 2001) - withdrawn

IBM® Type-model	Qty x Processor	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot-swap disk bays	Ethernet	Available date
8645-51X	1 x Pentium® III 1GHz/133	128MB	None	Ultra160	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Mar 2001
8645-52X	1 x Pentium III 1GHz/133	128MB	18.2GB	Ultra160	Mini Tower	5 slots x 7 bays	None	10/100 ethernet	Mar 2001
8645-5AX	1 x Pentium III 1GHz/133	128MB	None	Ultra160	Mini Tower	5 slots x 7 bays	3 hot-swap	10/100 ethernet	Mar 2001

Intel® processor(s) L2 cache Implementation SMP support	<b>1 x Pentium® III 1GHz with 133MHz Front Side Bus</b> <b>256KB</b> std and max / ECC / at processor speed / processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA) Motherboard contains two Intel PGA370 sockets (one used and one with terminator), two VRM sockets (one used and one empty), four DIMM sockets, five PCI slots, and integrated subsystems <b>2-way SMP</b> via second identical processor / upgrade via FC-PGA into second PGA370 socket (370-pin ZIF sockets)		
Memory - std / max Memory - sockets Memory - features Memory - support	<b>128MB</b> std / 4GB max 4 sockets / 3 available / ECC (Error Checking and Correcting) DIMMs and ECC memory controller <b>SDRAM / 133MHz</b> / four 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant Supports registered SDRAM ECC DIMMs		
SCSI disk controller SCSI connectors RAID support IDE disk controller Cables	<b>Adaptec® AHA-7892 / single channel Wide Ultra160 SCSI controller</b> (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 <i>Non hot-swap models:</i> 5-drop 16-bit LVD SCSI cable <i>Hot-swap models:</i> 2-drop 16-bit LVD SCSI cable (planar connector to SCSI backplane) <i>All:</i> one 2-drop IDE cable (one drop to CD-ROM)		
Disk - features	<i>Some models:</i> 18.2GB Wide Ultra160 SCSI / 10K rpm / 5.2ms average read seek time		
Rack support Bus slots (see below) Architecture / chipsets	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 slots, SCSI controller) / 32-bit PCI (two PCI slots, graphics, ethernet, South Bridge, USB) <b>ServerWorks® ServerSet III LE chip set</b> / NB6635 North Bridge 3.0LE / IB6566 South Bridge for IDE, USB, ISA bus for Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)		
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 / <b>support for optional Remote Supervisor Adapter</b> (provides continuous health monitoring and control)		
Graphics controller	SVGA / S3 Savage4 LT / on planar / 8MB SDRAM std and max / 32-bit PCI / DPMS and DDC2B compliant / 60Hz to 160Hz vertical refresh; 16.7 million colors at 1600x1200 / 15-pin D-Sub connector		
Security	Cover key lock / U-Bolt support / power-on password / boot sequence control / operation without kybd and mouse		
Software	<b>ServerGuide™</b> (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 128MB SDRAM ECC DIMM 133MHz RDIMM 256MB SDRAM ECC DIMM 133MHz RDIMM 512MB SDRAM ECC DIMM 133MHz RDIMM 1GB SDRAM ECC DIMM 133MHz RDIMM IBM 9.1GB 10K Ultra160 SCSI HDD (not hot-swap) IBM 18.2GB 10K Ultra160 SCSI HDD (not hot-swap) IBM 36.4GB 10K Ultra160 SCSI HDD (not hot-swap) IBM 9.1GB 15K Ultra160 SCSI Hot-Swap HDD IBM 18.2GB 15K Ultra160 SCSI Hot-Swap HDD IBM 36.4GB 10K-4 Ultra160 SCSI Hot-Swap HDD IBM Remote Supervisor Adapter (PCI adapter) IBM 4Ux20D Tower-to-Rack Kit IBM Netfinity ServeRAID-4L Ultra160 SCSI Controller	10K0051 33L3142 33L3144 33L3146 33L3152 00N8207 00N8208 00N8209 19K0655 19K0656 37L7206 09N7585 09N4300 37L6091
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		

- Slot 1: fullsize, 32-bit 33MHz, PCI 2.1 (5v)
- Slot 2: fullsize, 32-bit 33MHz, PCI 2.1 (5v)
- Slot 3: fullsize, 64-bit 33MHz, PCI 2.1 (5v)
- Slot 4: fullsize, 64-bit 33MHz, PCI 2.1 (5v)
- Slot 5: fullsize, 64-bit 33MHz, PCI 2.1 (5v)

Maximum internal SCSI disk capacity:  
145.6GB (4 disks x 36.4GB)



- Bay ① 5.25", HH1.6", access, CD-ROM
- Bay ② 5.25", HH1.6", access, open (no disk)
- Bay ③ 3.5", SL 1", access, diskette
- Bay ④ 3.5", SL 1", access, open
- Bay ⑤ 3.5", SL 1", access, open
- Bay ⑥ 3.5", SL 1", access, open
- Bay ⑦ 3.5", SL 1", access, std disk

Metal cage for disk bays 5,6,7 rotate out of chassis for easy access for cabling backplane or working with disks

- Four stabilizing feet
- 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)

- Removable left side panel
- Configuration/Setup Utility (in flash memory) invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A
- Diagnostics (PC-Doctor) by pressing F2 at startup
- Alt+F1 at startup for optional system partition
- Adv Config Power Interface (ACPI) 1.0
- ISO 9241-3 capable

### LIMITED WARRANTY<sup>3</sup>

- ↪ 3 year parts / 1 year labor
- ↪ International Warranty Service<sup>3</sup>
- ↪ 1st year: on site, 8 am-5 pm, Mon-Fri excluding holidays, next business day response time
- ↪ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ↪ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 24 hr x 7 day coverage, 4 hour average response time (ServicePac<sup>®</sup> part number 21P2022)
  - 9 hour coverage, Mon-Fri excluding holidays, next business day response time (ServicePac part number 21P2023)
- ↪ IBM Server Start Up Support
- ↪ 24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227

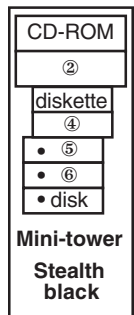
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• = Hot-swap bays in some models  
US models withdrawn effective December 2001

IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot-swap disk bays	Ethernet	Available date
8646-21X	1 x Pentium® III 1GHz/133	256KB	128MB	None	Ultra160	Mini Tower	5 slots x 7 bays	None	10/100	Aug 2001
8646-2AX	1 x Pentium III 1GHz/133	256KB	256MB	None	Ultra160	Mini Tower	5 slots x 7 bays	3 hot-swap	10/100	Aug 2001
8646-31X	1 x Pentium III 1.13/133	512KB	128MB	None	Ultra160	Mini Tower	5 slots x 7 bays	None	10/100	Aug 2001
8646-3AX	1 x Pentium III 1.13/133	512KB	256MB	None	Ultra160	Mini Tower	5 slots x 7 bays	3 hot-swap	10/100	Aug 2001
8646-41X	1 x Pentium III 1.26/133	512KB	128MB	None	Ultra160	Mini Tower	5 slots x 7 bays	None	10/100	Aug 2001
8646-4AX	1 x Pentium III 1.26/133	512KB	256MB	None	Ultra160	Mini Tower	5 slots x 7 bays	3 hot-swap	10/100	Aug 2001
8646-51X	1 x Pentium III 1.4/133	512KB	128MB	None	Ultra160	Mini Tower	5 slots x 7 bays	None	10/100	Feb 2002
8646-5AX	1 x Pentium III 1.4/133	512KB	256MB	None	Ultra160	Mini Tower	5 slots x 7 bays	3 hot-swap	10/100	Feb 2002

Positioning	<i>High-availability, dual processor capable server at a value price; leading technologies offer affordable power</i>										
Processor(s)	<b>1 x Intel® Pentium® III 1.0, 1.13, 1.26, or 1.4GHz with 133MHz frontside bus</b>										
L2 cache	<b>256KB or 512KB</b> std and max / ECC / at processor speed / processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA2)										
Implementation	Motherboard contains two Intel PGA370 sockets (one used and one with terminator), two VRM sockets (one used and one empty), four DIMM sockets, five PCI slots, and integrated subsystems										
Processor upgrade	Processor upgrades to 1.13, 1.26, or 1.4GHz supported										
SMP support	<b>2-way SMP</b> via second identical processor / upgrade via FC-PGA2 into second PGA370 socket (370-pin ZIF sockets)										
Memory - std / max	<b>128MB or 256MB</b> std / 4GB max										
Memory - sockets	4 sockets / 3 available / ECC (Error Checking and Correcting) DIMMs and ECC memory controller										
Memory - features	<b>SDRAM / 133MHz</b> / four 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant										
Memory - support	Supports registered SDRAM ECC DIMMs										
SCSI disk controller	<b>Adaptec® AHA-7892 / single channel Wide Ultra160 SCSI controller</b> (160MB/sec) / on planar / 64-bit 33MHz PCI 2.1										
SCSI connectors	One 68-pin internal connector / no external SCSI connector										
RAID support	Supports optional PCI RAID adapters										
IDE disk controller	Enhanced IDE busmaster / Ultra DMA/33 (ATA-33) support / one connector on planar										
Cables	<i>Non hot-swap models:</i> 5-drop 16-bit LVD SCSI cable <i>Hot-swap models:</i> 2-drop 16-bit LVD SCSI cable (planar connector to SCSI backplane) <i>All:</i> one 2-drop IDE cable (one drop to CD-ROM)										
Disk - features	No disk standard / only supports SCSI (not IDE) disks										
Rack support	4U <sup>4</sup> rack mount support via tower-to-rack kit option										
Bus slots (see below)	Dual peer PCI / PCI 2.1 / 32-bit 33MHz (South Bridge, ethernet, graphics, two PCI slots) / 64-bit 33MHz (three PCI slots, SCSI controller)										
Architecture / chipsets	<b>ServerWorks® ServerSet III LE chip set</b> / NB6635 North Bridge 3.0LE / IB6566 South Bridge for IDE, USB, ISA bus for Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)										
10/100 ethernet	Intel 82550 / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 connector / support for Wake on LAN®										
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM / CAV (ATAPI) / bootable / IDE <i>Diskette:</i> 3.5" 1.44MB diskette drive										
Rear ports	Two 9-pin serial, two USB (Version 1.1), parallel, keyboard, mouse, ethernet, DB-15 analog video										
Diagnostics	Diagnostic LEDs / error LEDs for processor(s), DIMM(s), Voltage Regulator Module(s), and fan connectors										
Systems mgmt cntrl	Two ADM1024 chips / monitors processor temperature, fan speeds, and voltage / <b>support for optional Remote Supervisor Adapter</b> (provides continuous health monitoring and control)										
Graphics controller	SVGA / S3 Savage4 LT / on planar / 8MB SDRAM std and max / 32-bit PCI / analog 15-pin D-Sub connector					Pentium III 1.0GHz/133MHz/256KB Proc Upg Pentium III 1.13GHz-S/133MHz/512KB Proc Upg Pentium III 1.26GHz-S/133MHz/512KB Proc Upg Pentium III 1.4GHz-S/133MHz/512KB Proc Upg					32P0650 32P0651 32P0652 25P2090
Security	Cover key lock / U-Bolt support / power-on password / boot sequence control / operation without kybd/mouse					128MB SDRAM ECC DIMM 133MHz RDIMM 256MB SDRAM ECC DIMM 133MHz RDIMM 512MB SDRAM ECC DIMM 133MHz RDIMM 1GB SDRAM ECC DIMM 133MHz RDIMM					10K0018 10K0020 10K0022 33L3326
Software	<b>ServerGuide™</b> (CD-based automated network OS installation and configuration tool), IBM Director (system hardware mgmt software) and many utilities, Norton AntiVirus™, APC PowerChute Plus					IBM 36.4GB 10K Ultra160 SCSI HDD (not hot-swap) IBM 73.2GB 10K Ultra160 SCSI HDD (not hot-swap) IBM 36.4GB 10K-4 Ultra160 SCSI Hot-Swap HDD IBM 73.2GB 10K Ultra160 SCSI Hot-Swap HDD IBM Remote Supervisor Adapter (PCI adapter) IBM 4Ux20D Tower-to-Rack Kit IBM Netfinity ServeRAID-4L Ultra160 SCSI Controller					00N8209 06P5752 37L7206 06P5756 09N7585 09N4300 37L6091
BIOS	2MB in Flash EEPROM										
Keyboard / mouse	IBM 101 key keyboard / IBM Enhanced mouse										
Cooling fans	Four cooling fans (power supply, air baffle, rear, fansink) / not redundant / variable speed front and rear fans										
Power supply	330 watts / universal / auto switch / Automatic Server Restart (ASR) / no redundancy / cooling fan in power supply										

Slot 1: fullsize, 32-bit 33MHz, PCI 2.1 (5v)	<i>Maximum internal SCSI disk capacity: 293.6GB (4 disks x 73.4GB)</i>
Slot 2: fullsize, 32-bit 33MHz, PCI 2.1 (5v)	
Slot 3: fullsize, 64-bit 33MHz, PCI 2.1 (5v)	
Slot 4: fullsize, 64-bit 33MHz, PCI 2.1 (5v)	
Slot 5: fullsize, 64-bit 33MHz, PCI 2.1 (5v)	



- Bay ① 5.25", HH 1.6", access, CD-ROM
- Bay ② 5.25", HH 1.6", access, open (no disk)
- Bay ③ 3.5", SL 1", access, diskette
- Bay ④ 3.5", SL 1", access, open
- Bay ⑤ 3.5", SL 1", access, open
- Bay ⑥ 3.5", SL 1", access, open
- Bay ⑦ 3.5", SL 1", access, std disk

Metal cage for disk bays 5,6,7 rotate out of chassis for easy access for cabling backplane or working with disks

- Four stabilizing feet
- 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)

- Removable left side panel
- Configuration/Setup Utility (in flash memory) invoked by pressing F1 at startup
- SCSI Select near startup by pressing CTRL+A
- Diagnostics (PC-Doctor) by pressing F2 at startup
- Alt+F1 at startup for optional system partition
- Adv Config Power Interface (ACPI) 1.0
- ISO 9241-3 capable

**LIMITED WARRANTY<sup>3</sup>**

- ↪ 3 year parts / 1 year labor
- ↪ International Warranty Service<sup>3</sup>
- ↪ 1st year: on site, 8 am-5 pm, Mon-Fri excluding holidays, next business day response time
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- ↪ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hour coverage, Mon-Fri excluding holidays, next business day response time (ServicePac® 21P2021)
  - 9 hour coverage, Mon-Fri excluding holidays, 4 hour response time (ServicePac 21P2023)
  - 24 hr x 7 day coverage, 4 hour response time (ServicePac 21P2022)
  - 24 hr x 7 day coverage, 2 hour response time (ServicePac 21P2094)
- ↪ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

See footnotes for important warranty information

US models announced February 12, 2002 or August 28, 2001

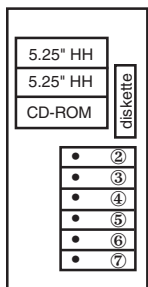
↪ US models withdrawn effective March 2002, July 2002, or January 2003

• = Hot-swap bays in some models



IBM® Type-model	Qty x Processor	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot-swap disk bays	Ethernet	Available date
8658-61Y	1 x Pentium® III 1GHz <sup>1</sup> 133	128MB	None	2 x Ultra160	Tower	5 slots x 10 bays	6 hot-swap	10/100 ethernet	Oct 2000
8658-6RY	1 x Pentium III 1GHz/133	128MB	None	2 x Ultra160	5U rack	5 slots x 10 bays	6 hot-swap	10/100 ethernet	Oct 2000

Intel® processor(s) L2 cache Implementation SMP support Processor upgrades	<b>1 x Pentium® III 1GHz<sup>1</sup> with 133MHz Front Side Bus</b> 256KB std and max / ECC / at processor speed / processor and L2 cache in Single Edge Cartridge (SECC2) Motherboard contains two Intel Slot 1 connectors for SECC2 cartridges (open Slot 1 used by terminator), one VRM socket (one VRM integrated), four DIMM sockets, PCI slots, and integrated subsystems <b>2-way SMP</b> via second identical processor / upgrade via SECC2 into second Slot 1 CPU connector Models with 800EB and 866MHz can not upgrade to 933MHz								
Memory - std / max Memory - sockets Memory - features	<b>128MB std / 4GB max</b> 4 sockets / 3 available / <b>ECC</b> (all have Error Checking and Correcting (ECC) memory controller) / non-interleaved <b>SDRAM / 133MHz</b> / four 168-pin gold-plated sockets / PC133-compliant / supports registered SDRAM ECC DIMMs only								
SCSI disk controller SCSI channels IDE controller / cable	<b>Adaptec® AHA-7899 / dual channel Wide Ultra160 SCSI controller</b> (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) <i>SCSI Channel A:</i> 16-bit 68-pin LVD cable from controller to backplane <i>Channel B:</i> 16-bit 68-pin interface (not used) Single Primary IDE (ROSB4) South Bridge / one connector on planar / one 1 drop IDE cable (CD-ROM)								
Disk - capacity Disk - bays	<b>None standard</b> / 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							<i>All models:</i> Max int disk capacity: 218.4GB <sup>2</sup> with six 36.4GB SL disks	
Mechanical Rack support Bus slots (see below) Chip set	<b>Tower or EIA 19" Rack (5U<sup>4</sup>)</b> Rack systems supported in IBM NetfinityRacks / kit available to convert tower to rack (no rack to tower conversion) 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 <b>ServerWorks® ServerSet III™ LE chip set</b> / 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 CD-ROM / diskette Serial / parallel / USB Graphics controller	AMD® Am79C975 / on planar / <b>10BaseT, 100BaseTX / full duplex</b> / RJ-45 connector / 3 front LEDs 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 <i>Serial:</i> Three 9-pin (one for Mgmt Processor) <i>Parallel:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two ports (Version 1.1) 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 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 start mode								
Systems mgmt	<b>Netfinity Advanced System Mgmt Processor</b> / on planar / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supplies / rear knockout for planar to RJ-11 cable (from optional Sys Mgmt Proc Interconnect Cable Kit)								
Diagnostics	<b>Diagnostics LED Panel</b> (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	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), AntiVirus software, APC PowerChute Plus, IBM Director, others								
Keyboard / mouse Power supply	Tower only: IBM 101-key keyboard / IBM mouse (both black) Std: one 250 watt hot-swap; Max: 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			Pentium III 1GHz/133MHz/256KB Proc Upg 19K4640 128MB SDRAM ECC DIMM 133MHz RDIMM II 33L3123 256MB SDRAM ECC DIMM 133MHz RDIMM II 33L3125 512MB SDRAM ECC DIMM 133MHz RDIMM II 33L3127 1GB SDRAM ECC DIMM 133MHz RDIMM II 33L3129 Netfinity 5Ux24D Tower-to-Rack Kit 37L6858 Netfinity 250W Hot-Swap Redundant Pwr Supply 33L3760					
Fans	Two (fan in rear, blower in front) / not hot-swap / PFA / fan failure signals Diagnostic LED and Mgmt Processor / fan in each power supply			Netfinity Media Bay Conversion Kit 10K2340 Hot-Swap Power Supply Expansion Kit (3 conn) 37L6881 18.2GB 15K rpm Ultra160 SCSI Hot-Swap HDD 19K0656 36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L7206 Sys Mgmt Proc Interconnect Cable Kit 03K9309					
Prerequisites	Monitor, disk, network operating system, keybd/mouse (rack)								

<p>Slot 1: fullsize, 32-bit 33MHz PCI 2.1 (5v), Bus A Slot 2: fullsize, 32-bit 33MHz PCI 2.1 (5v), Bus A Slot 3: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B Slot 4: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B Slot 5: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B</p>  <p>Bay ① 3.5", SL 1", access, diskette Bay ② 3.5", SL 1", access, hot swap Bay ③ 3.5", SL 1", access, hot swap Bay ④ 3.5", SL 1", access, hot swap Bay ⑤ 3.5", SL 1", access, hot swap Bay ⑥ 3.5", SL 1", access, hot swap Bay ⑦ 3.5", SL 1", access, hot swap Bay ⑧ 5.25", HH 1.6" access, open Bay ⑨ 5.25", HH 1.6" access, open Bay ⑩ 5.25", HH 1.6" access, CD-ROM</p> <p>Bays 2 through 7 support 6 SL disks or 3 HH hot-swap disks via SCA-2 connectors; Bays 8 and 9 support 3.5" disks via Media Bay Conversion Kit</p>	<ul style="list-style-type: none"> <li>➤ Removable, easy release left/top side panel</li> <li>➤ Quick release adapter slots (no screws)</li> <li>➤ Rail system enables devices (CD-ROM, diskette, tape drives) to snap in and out without screws</li> <li>➤ Configuration/Setup Utility invoked by pressing F1 at startup</li> <li>➤ SCSISelect near startup by pressing CTRL+A</li> <li>➤ Operator Information Panel (in front)</li> <li>➤ Predictive failure analysis on disk options, memory, processors, VRMs, power supplies, and fans in conjunction with Netfinity Director can alert the system administrator of an imminent component failure</li> <li>➤ Tower: H 16.8" x W 8.6" x D 26.0"</li> <li>➤ Rack: H 8.6" x W 16.8" x D 24.8"</li> <li>➤ 55.7 to 82.7 pounds</li> <li>➤ Stealth black color</li> <li>➤ All non-hot-swaps bays use rails (no screws) for devices</li> </ul>
<p><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>➤ 3 year parts and labor</li> <li>➤ <b>International Warranty Service<sup>3</sup></b></li> <li>➤ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup></li> <li>➤ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup> <ul style="list-style-type: none"> <li>• 24 hr x 7 day coverage, 4 hour response time</li> <li>• 24 hr x 7 day coverage, 2 hour response time</li> </ul> </li> <li>➤ IBM Server Start Up Support</li> <li>➤ 24 hour x 7 day<sup>14</sup> telephone, electronic, and internet support</li> </ul>	

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227  
 • = Hot-swap  
 US model withdrawn effective December 2001  
 No warranties are expressed or implied in this summary (X230) © IBM Corp. November 2001

IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk	SCSI controller	Mechanical	Slots x bays (hot-swap)	Power supply	Ethernet	Available date
8668-11X	1 x Pentium® III 1.0GHz/133	256KB	256MB	None	2 x Ultra160	Tower	5x10 (6 hot-swap)	1 pwr supp	10/100	Jul 2001
8668-1RX	1 x Pentium III 1.0GHz/133	256KB	256MB	None	2 x Ultra160	5U rack	5x10 (6 hot-swap)	1 pwr supp	10/100	Jul 2001
8668-21X	1 x Pentium III 1.13GHz/133	512KB	256MB	None	2 x Ultra160	Tower	5x10 (6 hot-swap)	1 pwr supp	10/100	Jul 2001
8668-22X	1 x Pentium III 1.13GHz/133	512KB	256MB	None	2 x Ultra160	Tower	5x10 (6 hot-swap)	2 hot-swap	10/100	Jun 2001
8668-2RX	1 x Pentium III 1.13GHz/133	512KB	256MB	None	2 x Ultra160	5U rack	5x10 (6 hot-swap)	1 pwr supp	10/100	Jul 2001
8668-2SX	1 x Pentium III 1.13GHz/133	512KB	256MB	None	2 x Ultra160	5U rack	5x10 (6 hot-swap)	2 hot-swap	10/100	Jun 2001

Positioning Processor(s) *Universal server; right blend of price and performance; easy-to-manage departmental server for hardworking businesses*  
 1 x Intel® Pentium® III 1.0 or 1.13GHz with 133MHz frontside bus / upgrade to 1.26GHz supported  
 L2 cache **256KB** or **512KB** std and max / ECC / at processor speed / processor and L2 cache in Flip Chip Pin Grid Array (FC-PGA2)  
 Implementation Motherboard contains two Intel PGA370 sockets, four DIMM sockets, five PCI slots, and integrated subsystems  
 SMP support **2-way SMP** via second identical processor / upgrade via FC-PGA2 into second PGA370 socket

Memory **256MB std / 4GB max<sup>13</sup>** / 4 sockets / 2 available / **ECC** (all have Error Checking and Correcting (ECC) memory controller) / matched pairs required / two-way interleaving / **SDRAM / 133MHz** / four 168-pin gold-plated sockets / PC133-compliant / supports registered SDRAM ECC DIMMs only

SCSI disk controller **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)

SCSI channels 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)

IDE controller / cable Single Primary IDE South Bridge / one connector on planar / one 1-drop IDE cable (CD-ROM)  
 Disk - capacity **None standard** / supports 7200-15000 rpm disks / one backplane  
 Disk - bays Six hot-swap / 80-pin SCA-2 connectors / three additional hot-swap disk bays with Kit 33L5050

Mechanical **Tower or EIA 19" Rack (5U<sup>4</sup>)**  
 Rack support Rack systems supported in IBM NetBAY™ Racks / kit available to convert tower to rack (no rack to tower conversion)  
 Bus slots (See below) three peer PCI buses / no hot-swap Active™ PCI slots  
 Chip set **ServerWorks® HE-SL chip set** / NB6576 North Bridge for CIOB and PCI A (slot, graphics, south bridge) / NB6555 Champion I/O Bridge (CIOB) for PCI Bus B (slots, ethernet) and C (slots, SCSI) / IB6566 South Bridge for IDE, USB, ISA bus for Super I/O National Semiconductor® PC97317VUL (diskette, serial, keyboard, mouse)  
 Bays (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 Intel 82550 / on planar / 10BaseT, 100BaseTX, 100BaseFX / full duplex / supports Wake on LAN® and Alert on LAN™ 2  
 CD-ROM / diskette 48X-20X<sup>6</sup> CD-ROM / multisession / IDE interface / 1.6" HH / bootable; *Diskette:* 3.5" 1.44MB diskette drive / dust cover  
 Rear ports *Serial:* three 9-pin (one disabled); *USB:* two ports (Ver 1.1); keyboard; mouse; no parallel port; *Adv Sys Mgmt:* two RJ-45  
 Graphics controller SVGA / PCI 2.2 bus / S3® Savage4 (on planar) / 8MB SDRAM std/max / 1280x1024 at 16M colors at 100Hz / 15-pin D-shell

Security Power-on password / administrator password / hinged and lockable front door to cover disk bays, power button, and reset button (tower only) / unattended boot / selectable boot

Systems mgmt Integrated system management processor (Hitachi® H8S2148) / on planar using SMBus / monitors temperature, fans, voltage, and power supplies / support for optional IBM Remote Supervisor Adapter with 20-pin connector on planar for continuous power (no external power required)

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), AntiVirus software, IBM Director, others

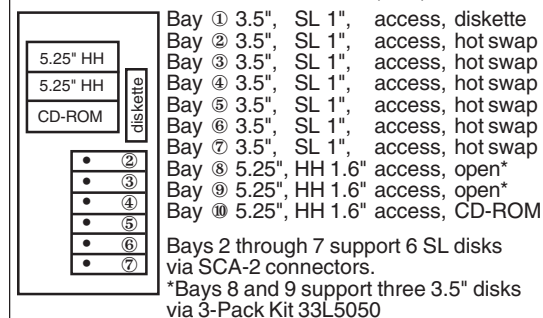
Keyboard / mouse	<i>Tower only:</i> IBM 101-key keyboard / IBM mouse (both black)	Pentium III 1GHz/133MHz/256KB Proc Upg	24P3511
Power supply	<i>Some:</i> std: one 385 watt / not hot-swap or redundant; max: three 250 watt hot-swap with optional Kit 24P3513 and requires three new 250 watt power supplies <i>Some:</i> two 250 watt hot-swap; supports third without Kit <i>All:</i> redundant with two 250 w power supplies / worldwide / voltage-sensing / auto-restart / fan in each power supply	Pentium III 1.13GHz-S/133MHz/512KB Proc Upg Pentium III 1.26GHz-S/133MHz/512KB Proc Upg 128MB SDRAM ECC DIMM 133MHz RDIMM 256MB SDRAM ECC DIMM 133MHz RDIMM 512MB SDRAM ECC DIMM 133MHz RDIMM 1GB SDRAM ECC DIMM 133MHz RDIMM 5Ux24D Tower-to-Rack Kit II	24P3512 25P2600 33L3320 33L3322 33L3324 33L3326 21P9593

Fans Two fans (front and rear), multispeed / not hot-swap / PFA / fan failure signals Diagnostic LED and mgmt processor / fan in each power supply / fan on each Pentium III processor  
 Prerequisites Monitor, disk, network operating system, keybd/mouse (rack)

**All models:** Max int disk capacity: 660.6GB<sup>2</sup> with nine 73.6GB SL disks with 3-Pack Ultra160 Hot-Swap Expansion Kit

Netfinity® 250W Hot-Swap Redundant Pwr Supply	33L3760
Netfinity Media Bay Conversion Kit	10K2340
Hot-Swap Power Conversion Kit (3 connectors)	24P3513
3-Pack Ultra160 Hot-Swap Expansion Kit	33L5050
Remote Supervisor Adapter	09N7585
36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD	37L7206
IBM T540 15" Flat Panel Monitor (black)	9511AG4

- Slot 1: fullsize, 32-bit 33MHz PCI 2.2 (5v), Bus A
- Slot 2: fullsize, 64-bit 33MHz PCI 2.2 (5v), Bus B
- Slot 3: fullsize, 64-bit 33MHz PCI 2.2 (5v), Bus B
- Slot 4: fullsize, 64-bit 66MHz PCI 2.2 (3.3v), Bus C
- Slot 5: fullsize, 64-bit 66MHz PCI 2.2 (3.3v), Bus C



- Removable, easy release left/top side panel
- Quick release adapter slots (no screws)
- Rail system enables devices (CD-ROM, diskette, tape drives) to snap in and out without screws
- Configuration/Setup Utility invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A
- Operator Information Panel (in front)
- Predictive failure analysis on disk options, memory, processors, VRMs, power supplies, and fans in conjunction with IBM Director can alert the system administrator of an imminent component failure
- Tower: H 16.8" x W 8.6" x D 26.0"
- Rack: H 8.6" x W 16.8" x D 24.8"
- 55.7 to 82.7 pounds
- Stealth black color
- All non-hot-swaps bays use rails (no screws) for devices

**LIMITED WARRANTY<sup>3</sup>**

- 3 year parts and labor
- **International Warranty Service<sup>3</sup>**
- On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>
- 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hr coverage, Mon-Fri excluding holidays, 4 hr response time
  - 24 hr x 7 day coverage, 4 hour average response time
  - 24 hr x 7 day coverage, 2 hour average response time
- 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

**Rack or Tower** (tower shown above)

See footnotes for important warranty information  
 US models announced June 26, 2001; US models withdrawn effective March 2002 or June 2002  
 • = Hot-swap



IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk	SCSI controller	Mechanical	Slots x bays (hot-swap)	Power supply	Ethernet	Available date
8668-41X	1 x Pentium® III 1.26GHz/133	512KB	256MB	None	2 x Ultra160	Tower	5x10 (6 hot-swap)	1 pwr supp	10/100	Aug 2001
8668-42X	1 x Pentium III 1.26GHz/133	512KB	256MB	None	2 x Ultra160	Tower	5x10 (6 hot-swap)	2 hot-swap	10/100	Aug 2001
8668-4RX	1 x Pentium III 1.26GHz/133	512KB	256MB	None	2 x Ultra160	5U rack	5x10 (6 hot-swap)	1 pwr supp	10/100	Aug 2001
8668-4SX	1 x Pentium III 1.26GHz/133	512KB	256MB	None	2 x Ultra160	5U rack	5x10 (6 hot-swap)	2 hot-swap	10/100	Aug 2001

Positioning Processor(s) *Universal server; right blend of price and performance; easy-to-manage departmental server for hardworking businesses*  
**1 x Intel® Pentium® III 1.26GHz-S with 133MHz frontside bus**  
 L2 cache **512KB** std and max / ECC / at processor speed / processor and L2 cache in Flip Chip Pin Grid Array (FC-PGA2)  
 Implementation Motherboard contains two Intel PGA370 sockets, four DIMM sockets, five PCI slots, and integrated subsystems  
 SMP support **2-way SMP** via second identical processor / upgrade via FC-PGA2 into second PGA370 socket

Memory **256MB std / 4GB max<sup>13</sup> / 4 sockets / 2 available / ECC** (all have Error Checking and Correcting (ECC) memory controller) / matched pairs required / two-way interleaving / **SDRAM / 133MHz** / four 168-pin gold-plated sockets / PC133-compliant / supports registered SDRAM ECC DIMMs only

SCSI disk controller **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)  
 SCSI channels 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)  
 IDE controller / cable Single Primary IDE South Bridge / one connector on planar / one 1-drop IDE cable (CD-ROM)  
 Disk - capacity **None standard** / supports 7200-15000 rpm disks / one backplane  
 Disk - bays Six hot-swap / 80-pin SCA-2 connectors / three additional hot-swap disk bays with Kit 33L5050

Mechanical **Tower or EIA 19" Rack (5U<sup>4</sup>)**  
 Rack support Rack systems supported in IBM NetBAY™ Racks / kit available to convert tower to rack (no rack to tower conversion)  
 Bus slots (See below) three peer PCI buses / no hot-swap Active™ PCI slots  
 Chip set **ServerWorks® HE-SL chip set** / NB6576 North Bridge for CIOB and PCI A (slot, graphics, south bridge) / NB6555 Champion I/O Bridge (CIOB) for PCI Bus B (slots, ethernet) and C (slots, SCSI) / IB6566 South Bridge for IDE, USB, ISA bus for Super I/O National Semiconductor® PC97317VUL (diskette, serial, keyboard, mouse)  
 Bays (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 Intel 82550 / on planar / 10BaseT, 100BaseTX, 100BaseFX / full duplex / supports Wake on LAN® and Alert on LAN™ 2  
 CD-ROM / diskette 48X-20X® CD-ROM / multisession / IDE interface / 1.6" HH / bootable; *Diskette:* 3.5" 1.44MB diskette drive / dust cover  
 Rear ports *Serial:* three 9-pin (one disabled); *USB:* two ports (Ver 1.1); keyboard; mouse; no parallel port; *Adv Sys Mgmt:* two RJ-45  
 Graphics controller SVGA / PCI 2.2 bus / S3® Savage4 (on planar) / 8MB SDRAM std/max / 1280x1024 at 16M colors at 100Hz / 15-pin D-shell

Security Power-on password / administrator password / hinged and lockable front door to cover disk bays, power button, and reset button (tower only) / unattended boot / selectable boot

Systems mgmt **IBM integrated system management processor (ISMP)** / Hitachi® H8S2148 / on planar using SMBus / monitors temperature, fans, voltage, and power supplies / support for optional IBM Remote Supervisor Adapter with 20-pin connector on planar for continuous power (no external power required)

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), AntiVirus software, IBM Director, others

Keyboard / mouse *Tower only:* IBM 101-key keyboard / IBM mouse (both black)  
 Power supply *Some:* std: one 385 watt / not hot-swap or redundant; max: three 250 watt hot-swap with optional Kit 24P3513 and requires three new 250 watt power supplies  
*Some:* two 250 watt hot-swap; supports third without Kit  
*All:* redundant with two 250 w power supplies / worldwide / voltage-sensing / auto-restart / fan in each power supply

Fans Two fans (front and rear), multispeed / not hot-swap / PFA / fan failure signals Diagnostic LED and mgmt processor / fan in each power supply / fan on each Pentium III processor  
 Prerequisites Monitor, disk, network operating system, keybd/mouse (rack)  
**All models:** Max int disk capacity: 660.6GB<sup>2</sup> with nine 73.6GB SL disks with 3-Pack Ultra160 Hot-Swap Expansion Kit

Slot 1: fullsize, 32-bit 33MHz PCI 2.2 (5v), Bus A  
 Slot 2: fullsize, 64-bit 33MHz PCI 2.2 (5v), Bus B  
 Slot 3: fullsize, 64-bit 33MHz PCI 2.2 (5v), Bus B  
 Slot 4: fullsize, 64-bit 66MHz PCI 2.2 (3.3v), Bus C  
 Slot 5: fullsize, 64-bit 66MHz PCI 2.2 (3.3v), Bus C

Bay ① 3.5", SL 1", access, diskette  
 Bay ② 3.5", SL 1", access, hot-swap  
 Bay ③ 3.5", SL 1", access, hot-swap  
 Bay ④ 3.5", SL 1", access, hot-swap  
 Bay ⑤ 3.5", SL 1", access, hot-swap  
 Bay ⑥ 3.5", SL 1", access, hot-swap  
 Bay ⑦ 3.5", SL 1", access, hot-swap  
 Bay ⑧ 5.25", HH 1.6" access, open\*  
 Bay ⑨ 5.25", HH 1.6" access, open\*  
 Bay ⑩ 5.25", HH 1.6" access, CD-ROM

Bays 2 through 7 support 6 SL disks via SCA-2 connectors.  
 \* Bays 8 and 9 support three 3.5" disks via 3-Pack Kit 33L5050

**Rack or Tower** (tower shown above)

- Removable, easy release left/top side panel
- Quick release adapter slots (no screws)
- Rail system enables devices (CD-ROM, diskette, tape drives) to snap in and out without screws
- Configuration/Setup Utility invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A
- Operator Information Panel (in front)
- Predictive failure analysis on disk options, memory, processors, VRMs, power supplies, and fans in conjunction with IBM Director can alert the system administrator of an imminent component failure
- Tower: H 16.8" x W 8.6" x D 26.0"
- Rack: H 8.6" x W 16.8" x D 24.8"
- 55.7 to 82.7 pounds
- Stealth black color
- All non-hot-swaps bays use rails (no screws) for devices

**LIMITED WARRANTY<sup>3</sup>**

- **3 year parts and labor**
- **International Warranty Service<sup>3</sup>**
- **On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>**
- **3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>**
  - 9 hr coverage, Mon-Fri excluding holidays, 4 hr response time
  - 24 hr x 7 day coverage, 4 hour average response time
  - 24 hr x 7 day coverage, 2 hour average response time
- **24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>**



IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk	SCSI controller	Mechanical	Slots x bays (hot-swap)	Power supply	Ethernet	Available date
8668-24X	1 x Pentium® III 1.13GHz	512KB	256MB	None	2 x Ultra160	Tower	5x10 (6 hot-swap)	2 hot-swap	10/100	Dec 2001
8668-2TX	1 x Pentium III 1.13GHz	512KB	256MB	None	2 x Ultra160	5U rack	5x10 (6 hot-swap)	2 hot-swap	10/100	Dec 2001
8668-44X	1 x Pentium III 1.26GHz	512KB	256MB	None	2 x Ultra160	Tower	5x10 (6 hot-swap)	2 hot-swap	10/100	Dec 2001
8668-4TX	1 x Pentium III 1.26GHz	512KB	256MB	None	2 x Ultra160	5U rack	5x10 (6 hot-swap)	2 hot-swap	10/100	Dec 2001
8668-54X	1 x Pentium III 1.4GHz	512KB	256MB	None	2 x Ultra160	Tower	5x10 (6 hot-swap)	2 hot-swap	10/100	Feb 2002
8668-5TX	1 x Pentium III 1.4GHz	512KB	256MB	None	2 x Ultra160	5U rack	5x10 (6 hot-swap)	2 hot-swap	10/100	Feb 2002

Positioning Processor(s) **1 x Intel® Pentium® III 1.13, 1.26, or 1.4GHz-S with 133MHz frontside bus** / passive heat sink  
 L2 cache **512KB** std and max / ECC / at processor speed / processor and L2 cache in Flip Chip Pin Grid Array (FC-PGA2)  
 Implementation Motherboard contains two Intel PGA370 sockets, four DIMM sockets, five PCI slots, and integrated subsystems  
 SMP support **2-way SMP** via second identical processor / upgrade via FC-PGA2 into second PGA370 socket

Memory **256MB std / 4GB max<sup>13</sup> / 4 sockets / 2 available / ECC** (all have Error Checking and Correcting (ECC) memory controller) / matched pairs required / two-way interleaving / **SDRAM / 133MHz** / four 168-pin gold-plated sockets / PC133-compliant / supports registered SDRAM ECC DIMMs only

SCSI disk controller **Adaptec® AHA-7899 / dual channel Wide Ultra160 SCSI controller** (LVD 160MB/sec) / Ultra160 / on planar / 64-bit PCI / supports IBM ServeRAID™ adapters (no hardware RAID standard)

SCSI channels 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)

IDE controller / cable Single Primary IDE South Bridge / one connector on planar / one 1-drop IDE cable (CD-ROM)

Disk - capacity **None standard** / supports 7200-15000 rpm disks / one backplane  
 Disk - bays Six hot-swap / 80-pin SCA-2 connectors / three additional hot-swap disk bays with Kit 33L5050

Mechanical **Tower or EIA 19" Rack (5U<sup>4</sup>)**  
 Rack systems supported in IBM NetBAY™ Racks / kit available to convert tower to rack (no rack to tower conversion)  
 Rack slots supported in IBM NetBAY™ Racks / kit available to convert tower to rack (no rack to tower conversion)  
 Bus slots (See below) three peer PCI buses / no hot-swap Active™ PCI slots  
 Chip set **ServerWorks® HE-SL chip set** / NB6576 North Bridge for CIOB and PCI A (slot, graphics, south bridge) / NB6555 Champion I/O Bridge (CIOB) for PCI Bus B (slots, ethernet) and C (slots, SCSI) / IB6566 South Bridge for IDE, USB, ISA bus for Super I/O National Semiconductor® PC97317VUL (diskette, serial, keyboard, mouse)

Bays (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 Intel 82550 / on planar / 10BaseT, 100BaseTX, 100BaseFX / full duplex / supports Wake on LAN® and Alert on LAN™ 2  
 CD-ROM / diskette 48X-20X CD-ROM / multisession / IDE interface / 1.6" HH / bootable; Diskette: 3.5" 1.44MB diskette drive / dust cover  
 Rear ports Serial: three 9-pin (one disabled); USB: two ports (Vers 1.1); keyboard; mouse; no parallel port; Adv Sys Mgmt: two RJ-45  
 Graphics controller SVGA / PCI 2.2 bus / S3® Savage4 (on planar) / 8MB SDRAM std/max / 1280x1024 at 16M colors at 100Hz / 15-pin D-shell

Security Power-on password / administrator password / hinged and lockable front door to cover disk bays, power button, and reset button (tower only) / unattended boot / selectable boot

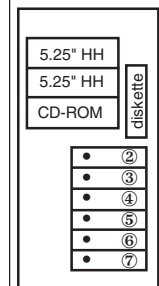
Systems mgmt **IBM integrated system management processor (ISMP)** / Hitachi® H8S2148 / on planar using SMBus / monitors temperature, fans, voltage, and power supplies / support for optional IBM Remote Supervisor Adapter with 20-pin connector on planar for continuous power (no external power required)

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), AntiVirus software, IBM Director, others	22P1997 22P1998 48P7467 33L3320 33L3322 33L3324 33L3326 06P5755 06P5756 10K2340 33L5050 33L3760 09N7585 21P9593
Keyboard / mouse	Tower only: IBM 101-key kybrd / IBM mouse (both black)	22P1997 22P1998 48P7467 33L3320 33L3322 33L3324 33L3326 06P5755 06P5756 10K2340 33L5050 33L3760 09N7585 21P9593
Power supply	Std: two 250 watt hot-swap / max: three / redundant / worldwide / voltage-sensing / auto-restart	22P1997 22P1998 48P7467 33L3320 33L3322 33L3324 33L3326 06P5755 06P5756 10K2340 33L5050 33L3760 09N7585 21P9593
Fans	Four fans (two front and two rear), multispeed / hot-swap / redundant / PFA / fan failure signals Diagnostic LED and mgmt processor / fan in each power supply	22P1997 22P1998 48P7467 33L3320 33L3322 33L3324 33L3326 06P5755 06P5756 10K2340 33L5050 33L3760 09N7585 21P9593
Prerequisites	Monitor, disk, network operating system, rack models require keyboard and mouse	22P1997 22P1998 48P7467 33L3320 33L3322 33L3324 33L3326 06P5755 06P5756 10K2340 33L5050 33L3760 09N7585 21P9593

All models: Max int disk capacity: 660.6GB<sup>2</sup> with nine 73.6GB SL disks with 3-Pack Ultra160 Hot-Swap Expansion Kit

- Slot 1: fullsize, 32-bit 33MHz PCI 2.2 (5v), Bus A
- Slot 2: fullsize, 64-bit 33MHz PCI 2.2 (5v), Bus B
- Slot 3: fullsize, 64-bit 33MHz PCI 2.2 (5v), Bus B
- Slot 4: fullsize, 64-bit 66MHz PCI 2.2 (3.3v), Bus C
- Slot 5: fullsize, 64-bit 66MHz PCI 2.2 (3.3v), Bus C



- Bay ① 3.5", SL 1", access, diskette
- Bay ② 3.5", SL 1", access, hot-swap
- Bay ③ 3.5", SL 1", access, hot-swap
- Bay ④ 3.5", SL 1", access, hot-swap
- Bay ⑤ 3.5", SL 1", access, hot-swap
- Bay ⑥ 3.5", SL 1", access, hot-swap
- Bay ⑦ 3.5", SL 1", access, hot-swap
- Bay ⑧ 5.25", HH 1.6" access, open\*\*
- Bay ⑨ 5.25", HH 1.6" access, open\*\*
- Bay ⑩ 5.25", HH 1.6" access, CD-ROM

Bays 2 through 7 support 6 SL disks via SCA-2 connectors.  
 \*\*Bays 8 and 9 support three 3.5" disks via 3-Pack Kit 33L5050

Rack or Tower (tower shown above)

- Removable, easy release left/top side panel
- Quick release adapter slots (no screws)
- Rail system enables devices (CD-ROM, diskette, tape drives) to snap in and out without screws
- Configuration/Setup Utility invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A
- Operator Information Panel (in front)
- Predictive failure analysis on disk options, memory, processors, VRMs, power supplies, and fans in conjunction with IBM Director can alert the system administrator of an imminent component failure
- Tower: H 17.3" x W 8.6" x D 27.6"
- Rack: H 8.6" x W 16.8" x D 27.1"
- 55.7 to 82.7 pounds
- Stealth black color
- All non-hot-swaps bays use rails (no screws) for devices

**LIMITED WARRANTY<sup>3</sup>**

- 3 year parts and labor
- International Warranty Service<sup>3</sup>
- On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>
- 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hour coverage, Mon-Fri excluding holidays, 4 hour average response (ServicePac® part num 21P2083)
  - 24 hr x 7 day coverage, 4 hour average response (ServicePac part number 21P2084)
  - 24 hr x 7 day coverage, 2 hour average response (ServicePac part number 21P2085)
- 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

See footnotes for important warranty information

(X232D) © IBM Corp. September 2002

• = Hot-swap  
 US models announced on November 27, 2001, or February 12, 2002  
 US models withdrawn effective June 2002 or September 2002

IBM® Type-model	Qty x Processor	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot-swap disk bays	Ethernet	Available date
8664-81Y	1 x Pentium® III 1GHz/133	256MB	None	2 x Wide Ultra2	Tower	5 slots x 10 bays	6 hot-swap	10/100 ethernet	Oct 2000
8664-8RY	1 x Pentium III 1GHz/133	256MB	None	2 x Wide Ultra2	5U rack	5 slots x 10 bays	6 hot-swap	10/100 ethernet	Oct 2000
Intel® processor(s)	<b>1 x Pentium® III 1GHz' with 133MHz Front Side Bus</b>								
L2 cache	<b>256KB</b> std and max / ECC / at processor speed / processor and L2 cache in Single Edge Cartridge (SECC2)								
Implementation	Processor Complex contains two Intel Slot 1 connectors for SECC2 cartridges (open Slot 1 used by terminator), two VRM sockets (one used), four DIMM sockets, and Reliance CNB3.0LE North Bridge								
SMP support	<b>2-way SMP</b> via second identical processor / upgrade via SECC2 into second Slot 1 CPU connector								
Memory - std / max	<b>256MB std / 4GB max</b>								
Memory - sockets	4 sockets / 3 available / <b>ECC</b> / (all have Error Checking and Correcting (ECC) memory controller) / non-interleaved								
Memory - features	<b>SDRAM / 133MHz</b> / four 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant								
Memory - support	Supports registered SDRAM ECC DIMMs only (128, 256, 512MB, and 1GB)								
SCSI disk controller	<b>Adaptec® AHA-7897 / dual channel Wide Ultra2 SCSI controller</b> (LVD 80MB/sec) / on planar / 64-bit PCI / two channels (one internal/one external) / supports IBM ServeRAID adapters (no hardware RAID standard)								
SCSI channels	<b>SCSI Channel A:</b> 16-bit 68-pin LVD cable from controller to backplane <b>SCSI Channel B:</b> 16-bit 68-pin interface (hardwired) to external SCSI port (.8mm VHDCI connector)								
Extra SCSI cable	Includes a terminated 2-drop 16-bit Ultra SCSI non-LVD cable for optional SCSI devices in open 5.25" bays								
IDE controller / cable	Single Primary IDE (ROSB4) South Bridge / one connector on planar / one 1 drop IDE cable (CD-ROM)								
Disk - capacity	<b>None standard</b> / supports 7200-15000 rpm disks / 1 backplane								
Disk - bays	Six hot-swap / no trays included (disks ship w/ trays) / 80-pin SCA-2 connectors / common tray with 8500R and EXP300								
Mechanical	<b>Tower or EIA 19" Rack (5U)</b>								
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 2.1 (33MHz) / dual peer PCI / <b>Active PCI™ with hot-swap PCI slots</b> (hot replace, hot upgrade, hot expansion) / 64-bit PCI (three hot-swap PCI slots, SCSI controller) / 32-bit PCI (two PCI slots, graphics, ethernet, South Bridge)								
Chip set	<b>ServerWorks® ServerSet 3.0LE chip set</b> / North Bridge (CNB3.0LE) / South Bridge (ROSB4) 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 / <b>10BaseT, 100BaseTX / full duplex</b> / RJ-45 connector / 3 front LEDs								
CD-ROM / diskette	40X-17X® CD-ROM / multisession / IDE interface / 1.6" HH / bootable; <i>Diskette:</i> 3.5" 1.44MB diskette drive / dust cover								
Serial / parallel / USB	<i>Serial:</i> Three 9-pin (one for Mgmt Processor) <i>Parallel:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two ports								
Graphics controller	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 start mode								
Systems mgmt	<b>Integrated Advanced System Mgmt Processor</b> / on planar / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supplies								
Diagnostics	<b>Daignostics LED Panel</b> (under cover) / Light Path Diagnostics™ provides an LED map to failing component / systemboard error LEDs / diagnostics in ROM by pressing F2 at startup for PC-Doctor								
Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), AntiVirus software, APC PowerChute Plus, IBM Director, others								
Keyboard / mouse	Tower only: IBM 101-key keyboard / IBM mouse (both black)								
Power supply	Std: two 250 watt hot-swap; Max: three 250 watt hot-swap / <b>redundant with two power supplies</b> / worldwide / voltage-sensing / auto-restart / fans in each power supply								
Fans	Three redundant, hot-swap fans / easy removal / PFA / fan failure signals Diagnostic LED and Mgmt Processor / power supply fans								
Keyboard / mouse						Pentium III 1GHz/133MHz/256KB Proc Upg		19K4640	
Power supply						128MB SDRAM ECC DIMM 133MHz (registered)		33L3058	
						256MB SDRAM ECC DIMM 133MHz (registered)		33L3060	
						512MB SDRAM ECC DIMM 133MHz (registered)		33L3062	
						1GB SDRAM ECC DIMM 133MHz (registered)		33L3064	
						Netfinity 5Ux24D Tower-to-Rack Kit		37L6858	
						Netfinity 250W Hot-Swap Redundant Pwr Supply		33L3760	
						36.4GB 10K-4 Ultra160 SCSI Hot-swap SL HDD		37L7206	
						9.1GB 15K-rpm Ultra160 SCSI Hot-swap SL HDD		19K0655	
						18.2GB 15K-rpm Ultra160 Hot-swap SL HDD		19K0656	

<p>Slot 1: fullsize, 32-bit PCI 2.1 (5v), Bus A                  Slot 2: 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</p> <p>Bay ① 3.5", SL 1", access, diskette                  Bay ② 3.5", SL 1", access, hot swap                  Bay ③ 3.5", SL 1", access, hot swap                  Bay ④ 3.5", SL 1", access, hot swap                  Bay ⑤ 3.5", SL 1", access, hot swap                  Bay ⑥ 3.5", SL 1", access, hot swap                  Bay ⑦ 3.5", SL 1", access, hot swap                  Bay ⑧ 5.25", HH 1.6" access, CD-ROM                  Bay ⑨ 5.25", HH 1.6" access, open                  Bay ⑩ 5.25", HH 1.6" access, open</p> <p>Bays 2 through 7 support 6 SL disks or 3 HH hot-swap disks via SCA-2 connectors</p> <p><b>Rack or Tower</b> (tower shown above)</p>	<ul style="list-style-type: none"> <li>➤ Removable, easy release left/top side panel</li> <li>➤ Quick release adapter slots (no screws)</li> <li>➤ New rail system enables devices (CD-ROM, diskette, tape drives) to snap in and out without screws</li> <li>➤ Configuration/Setup Utility invoked by pressing F1 at startup</li> <li>➤ SCSISelect near startup by pressing CTRL+A</li> <li>➤ Operator Information Panel (in front)</li> <li>➤ Predictive failure analysis on disk options, memory, processors, VRMs, power supplies, and fans in conjunction with Netfinity Manager can alert the system administrator of an imminent component failure</li> <li>➤ Tower: H 16.8" x W 8.6" x D 26.0"</li> <li>➤ Rack: H 8.6" x W 16.8" x D 24.8"</li> <li>➤ 55.7 to 82.7 pounds</li> <li>➤ Stealth black color</li> <li>➤ All non-hot-swaps bays use rails (no screws) for devices</li> </ul>	<p><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>➤ 3 year parts and labor</li> <li>➤ International Warranty Service<sup>3</sup></li> <li>➤ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time</li> <li>➤ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup> <ul style="list-style-type: none"> <li>• 24 hr x 7 day coverage, 4 hour response time</li> <li>• 24 hr x 7 day coverage, 2 hour response time</li> </ul> </li> <li>➤ IBM Server Start Up Support</li> <li>➤ 24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support</li> </ul>
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\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227  
 US models withdrawn effective March 2002  
 • = Hot-swap  
 No warranties are expressed or implied in this summary (X240) © IBM Corp. March 2002



IBM® Type-model	Qty x Processor	L2 cache	Memory	ECC	Disk	SCSI controller	Mechanical	Slots x bays	Ethernet	Available date
8665-61Y	1 x Pentium III Xeon 700/100	1MB	512MB	Chipkill™	None	2 x Wide Ultra2	Tower	6 x14 (10 hot-swap)	10/100	Mar 2001
8665-71Y	1 x Pentium III Xeon 700/100	2MB	512MB	Chipkill	None	2 x Wide Ultra2	Tower	6 x14 (10 hot-swap)	10/100	Mar 2001
8665-81Y	1 x Pentium III Xeon 900/100	2MB	512MB	Chipkill	None	2 x Wide Ultra2	Tower	6 x14 (10 hot-swap)	10/100	Apr 2001
8665-6RY	1 x Pentium III Xeon 700/100	1MB	512MB	Chipkill	None	2 x Wide Ultra2	8U <sup>4</sup> rack	6 x14 (10 hot-swap)	10/100	Mar 2001
8665-7RY	1 x Pentium III Xeon 700/100	2MB	512MB	Chipkill	None	2 x Wide Ultra2	8U rack	6 x14 (10 hot-swap)	10/100	Mar 2001
8665-8RY	1 x Pentium III Xeon 900/100	2MB	512MB	Chipkill	None	2 x Wide Ultra2	8U rack	6 x14 (10 hot-swap)	10/100	Apr 2001
Processor(s)	<b>1 x Intel® Pentium® III Xeon™ 700 or 900MHz with 100MHz frontside bus</b>									
L2 cache	<b>1MB or 2MB / full speed</b>									
Implementation	Each processor with ECC L2 cache integrated in Single Edge Contact (SEC) cartridge in Intel Slot 2									
Processor upgrade(s)	<b>4-way SMP</b> / to four identical Pentium III Xeon Slot 2 (SC330) processors /									
Mechanical	Each processor has one VRM / Processor Board has one Memory Board slot, six PCI slots, four Intel Slot 2 slots, four VRM slots (all removable as a slide out Shuttle for easy serviceability)									
Mem - std / max / type	<b>512MB std / 16GB<sup>13</sup> max / Chipkill™</b> multibit error correction using ind std ECC DIMMs (fixes 1 to 4-bit errors on same chip and detects 1- through 8-bit errors contained in two chips) / Chipkill performed by memory controller and firmware									
Memory - sockets	One Memory Board std and max / 16 sockets / 12 available (four 128MB DIMMs standard) / 4-way memory interleave									
Memory - support	<b>SDRAM / 100MHz</b> / sixteen 168-pin gold-plated DIMM 3.3 volt sockets / PC100-compliant / requires 4 identical DIMMs supports <b>registered</b> SDRAM ECC DIMMs only (128, 256, 512MB, and 1GB)									
SCSI controller	Adaptec® AIC-7896 / no integrated RAID controller									
SCSI channels	Two Wide Ultra2 SCSI channels (LVDS 80MB/sec) / each channel supports 15 devices / backplane supports Ultra160									
Cache / bus	No cache / PCI Bus C 32-bit 33MHz / controller on Input/Output Board									
Connectors and cabling	<i>Channel A:</i> one 0.8mm VHDCI external SCSI connector <i>Channel B:</i> 68-pin internal connector on power backplane with 16-bit LVD cable to one hot-swap backplane									
Additional cables	16-bit LVD cable on second backplane connector left unconnected at other end (requires Ultra160 SCSI Repeater Card to connect both backplanes into a single channel 10-bay configuration) / one 2-drop 16-bit LVD SCSI cable included to support devices in two left bays									
IDE controller / cabling	Enhanced IDE controller / one 1-drop IDE cable from one IDE connector to CD-ROM									
Mechanical	<b>EIA 19" rack (8U<sup>4</sup>) or tower</b>									
Rack / conversion	Rack systems supported in IBM NetBAY™ rack products / kits available to convert rack to tower or tower to rack									
Architecture / chip set	<b>ServerWorks® ServerSet III HE</b> / CNB20HE North Bridge (PCI 2.2 and memory controller) / CIOB I/O Bridge (Frontside Bus interface from PCI bus to North Bridge) / OSB4 South Bridge (EIDE, ISA Bridge, USB, SMBus, IOAPIC) / three peer PCI 2.1 buses (A: 64-bit 66MHz, B: 64-bit 33MHz, C: 32-bit 33MHz) / NS PC97317VUL Super I/O									
Active™ PCI slots	<b>4 hot-swap PCI slots<sup>10</sup></b> with power and attention indicator lights (optical sensors control power to slot) / <b>Active PCI</b> via hot replace, hot upgrade, hot expansion (see below for details)									
Bays	14 bays total: <b>10 hot-swap disk bays</b> / three 5.25" HH bays (1 used by CD) / one 3.5" SL bay (diskette)									
Ethernet controller	AMD® Am79C975 / on PCI Bus C / 10BaseT, 100BaseTX / full duplex / RJ-45 connector / 3 LEDs									
CD-ROM / diskette drv	CD-ROM: 48X-20X <sup>6</sup> CD-ROM / IDE (ATAPI) / 1.6" HH / bootable; <i>Diskette drive:</i> 3.5" 1.44 MB diskette drive / dust cover									
Rear ports	<i>Serial:</i> three 9-pin (one for Mgmt Processor); <i>Parallel:</i> one 25-pin; <i>USB:</i> two Ver 1.1; keyboard; mouse; <i>Adv Sys Mgmt:</i> two RJ-45									
Graphics controller	SVGA / PCI Bus C / S3® Trio-3D (on Input/Output Board) / 4MB SGRAM std/max / up to 1024x768 at 256 colors at 85Hz									
Security	Power-on password / administrator password / selectable boot / secure mode (disables keyboard and mouse) / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode									
Systems management	<b>Advanced System Mgmt Processor</b> (service processor) / on planar / provides remote console and mgmt / power on/off system / monitors temperature, disks, fans, power supply									
Diagnostics	<b>Light Path Diagnostics™ Panel</b> providing LED map to failing part (under top cover) / Information LED Panel in front									
Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), Norton AntiVirus, APC PowerChute Plus / includes IBM Director™ and others									
Keyboard / mouse	<i>Tower only:</i> IBM 101-key keyboard / IBM mouse (both black)									
Power supply	<i>Std:</i> two 250 watt hot-swap; <i>Max:</i> 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									
Fans	Four logical fans / <b>seven hot-swap redundant fans</b> (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									

<p>                 ◊ Tower dim: H 15.7" x W 19" x D 28"; 88 to 123 lbs                  ◊ Rack dim: H 13.8" x W 17.3" x D 27.6"; 88 to 123 lbs                  ◊ Black color                  ◊ ACPI 1.0                  ◊ Orange components and labels indicate hot-swap options                  ◊ Suppliers Declaration                  ◊ Vital Product Data                  ◊ Backup BIOS                  ◊ Setup Program is available by pressing F1 at startup; Diagnostics (PC-Doctor) by pressing F2 at startup; CTRL+A for SCSISelect Utility                  ◊ Removeable top cover                  ◊ Access adapters, memory, CPUs from top                  ◊ Predictive Failure Analysis®: alerts generated by Adv System Mgmt Processor for IBM Director for DIMM(s), processor(s), VRM(s), power supply(s), disk(s), and fans                  Disks not supported in 5.25" bays                  Maximum internal disk capacity: 364GB<sup>2</sup> with ten 36.4GB SL hot-swap SCSI disks             </p>	<p> <b>LIMITED WARRANTY<sup>3</sup></b>                  ◊ 3 year parts and labor                  ◊ International Warranty Service<sup>3</sup>                  ◊ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>                  ◊ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>                  • 24 hr x 7 day coverage, 4 hour response time (ServicePac® part number 30L9187)                  • 24 hr x 7 day coverage, 2 hour response time (ServicePac part number 31L2723)                  ◊ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup> </p>
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See footnotes for important warranty information  
 • = Hot-swap  
 US models withdrawn effective January 13, 2003



IBM® Type-model	Qty x Processor	L3 cache	Memory	ECC memory features	Disk	SCSI controller	Mechanical	Slots x bays	Hot-swap disk bays (std/max)	Ethernet	Available date
8685-11X	1 x Xeon™ MP 1.4GHz	512KB	512MB	Hot Spare/Chipkill™	None	2 x Ultra160	Tower	7 x10 (16 bays max)	6/12	Gigabit	Jun 2002
8685-1RX	1 x Xeon MP 1.4GHz	512KB	512MB	Hot Spare/Chipkill	None	2 x Ultra160	7U <sup>4</sup> rack	7 x10 (16 bays max)	6/12	Gigabit	Jun 2002
8685-21X	1 x Xeon MP 1.5GHz	512KB	1GB	Hot Spare/Chipkill	None	2 x Ultra160	Tower	7 x10 (16 bays max)	6/12	Gigabit	Jun 2002
8685-2RX	1 x Xeon MP 1.5GHz	512KB	1GB	Hot Spare/Chipkill	None	2 x Ultra160	7U rack	7 x10 (16 bays max)	6/12	Gigabit	Jun 2002
8685-31X	1 x Xeon MP 1.6GHz	1MB	1GB	Hot Spare/Chipkill	None	2 x Ultra160	Tower	7 x10 (16 bays max)	6/12	Gigabit	Jun 2002
8685-3RX	1 x Xeon MP 1.6GHz	1MB	1GB	Hot Spare/Chipkill	None	2 x Ultra160	7U rack	7 x10 (16 bays max)	6/12	Gigabit	Jun 2002
Positioning Processors	Intel Xeon Processor MP system loaded with X-Architecture™ high availability features like Hot Spare Memory technology										
L2 cache	1 x Intel® Xeon™ Processor MP 1.4, 1.5, or 1.6GHz <sup>1</sup> with 400MHz frontside bus / Hyper-Threading technology										
L3 cache	256KB / on die of processor / at processor speed										
Processor upgrade Implementation	512KB or 1MB / on die of processor / at processor speed										
Memory	4-way SMP / up to four Xeon Processors MP (same speed/cache size)										
SCSI disk controller	System board contains four Intel 603-pin micro-PGA ZIF sockets, one memory board slot, six Active™ PCI-X slots, one PCI slot, and integrated SCSI, ethernet, graphics										
SCSI connectors	Adaptec® AIC-7899 / Wide Ultra160 SCSI (LVD 160MB/sec) / two channel / 64-bit 66MHz PCI 2.2 / integrated on planar Channel B: 68-pin connector on planar to SCSI backplane (one-drop 16-bit LVD cable) / Channel A: 68-pin connector on planar for optional one-drop 16-bit LVD cable (32P8164) to rear 0.8mm VHDCI connector										
IDE controller / cabling	Enhanced IDE ATA-100 controller in CSB5 South Bridge / one one-drop IDE cable from IDE controller to CD-ROM										
Disk - capacity	None standard / supports up to 15,000 rpm disks / 80-pin SCA-2 connectors										
Disk - bays	Std: six hot-swap disk bays; max: six additional bays (via a SCSI backplane) with optional Upgrade Kit; All: Ultra320-enabled										
Mechanical Rack / conversion Architecture / chipset	EIA 19" rack (7U <sup>4</sup> ) or tower / tower models have hinged and lockable front door, side panels, casters Rack systems supported in IBM NetBAY™ racks / kit available to convert tower to rack (use NetBAY11 for rack to tower) ServerWorks® Grand Champion™ 4.0 HE / CMIC Host Bridge (Memory Controller and I/O Bridge) and five REMCs / two CIOB-X I/O Bridges (IMB bus to Host Bridge, one with two PCI-X buses C and D, other with one PCI-X bus B and ethernet and one PCI 2.2 bus for SCSI / CSB5 South Bridge (Thin IMB to Host Bridge, one PCI 2.2 bus A, EIDE, USB, SMBus, IOAPIC, LPC bus to Super I/O) / five peer PCI buses / NS PC87417 Super I/O (diskette, keyboard, mouse)										
Slots (Active™ PCI-X)	Six hot-swap PCI-X 1.0 slots <sup>10</sup> available with power and attention indicator lights (optical sensors control power to slot) / hot replace, hot upgrade, hot expansion / separated by insulative plastic dividers / 3.3 volt or universal										
Ethernet controller	10/100/1000 gigabit ethernet / Broadcom® BCM 5703 / on PCI Bus B / full duplex / Wake on LAN® / Alert Standard Format 1.0										
CD-ROM / diskette	CD-ROM: 48X-20X <sup>6</sup> CD-ROM, IDE (ATAPI), 1.6" HH, bootable / Diskette drive: 3.5" 1.44 MB diskette drive, dust cover										
Rear ports	Four USB (Vers 1.1), one serial (9-pin), keyboard (PS/2), mouse (PS/2), ethernet (RJ-45), graphics (DB-15), two RJ-45 (for integrated system management processor) / no parallel port										
Graphics controller	SVGA / ATI® Rage XL / on planar / 8MB SDRAM std/max / up to 1280x1024 at 85Hz / 32-bit 33MHz PCI 2.2 Bus A										
Security	Power-on password / administrator password / hinged and lockable front door to cover disk bays, power button, and reset button (tower only) / unattended boot / selectable boot										
Systems management	IBM integrated system management processor (ISMP) / H8S2148 / on planar / provides system and environmental monitoring such as temp, optional disks, fans, power supplies / supports optional Remote Supervisor Adapter with 20-pin connector on planar for continuous power (no external power req)										
Diagnostics	Light Path Diagnostics™ panel providing LED map to failing part (under top cover) / Information LED Panel in front										
Software	ServerGuide™ (CD-ROM installation and configuration utilities), IBM Director, and others										
Keyboard / mouse	Tower only: IBM 103-key keyboard / IBM mouse (both black)										
Power supply	Std: two 370 watt hot-swap; Max: four 370 watt hot-swap / redundant with four power supplies / tool-free install / universal (voltage sensing) / fans in each power supply / PFA										
Fans	Nine hot-swap redundant fans / plus fan in each power supply / variable speed / PFA / fan failure signals diagnostic LED										
	256MB PC1600 ECC DDR SDRAM RDIMM					33L3281					
	512MB PC1600 ECC DDR SDRAM RDIMM					33L3283					
	1GB PC1600 ECC DDR SDRAM RDIMM					33L3285					
	Xeon MP 1.4GHz/512KB L3 Cache Proc Upg					59P5111					
	Xeon MP 1.5GHz/512KB L3 Cache Proc Upg					59P5106					
	Xeon MP 1.6GHz/1MB L3 Cache Proc Upg					59P5107					
	6-pack Ultra320 Hot-Swap Expansion Kit					32P8163					
	370 watt Hot-Swap Redundant Power Supply					31P6133					
	IBM 7U x 26D Tower-to-Rack Conversion Kit III					32P1474					
	IBM External SCSI Interface Kit (for rear SCSI)					32P8164					
	Media Bay Cable Kit (2-drop SCSI to HH bays)					10K2340					
	IBM ServeRAID™-4H Ultra160 SCSI Adapter					37L6889					
	IBM 36.4GB 15K Ultra160 SCSI Hot-Swap SL					06P5768					
	IBM 73.4GB 10K Ultra160 SCSI Hot-Swap SL					06P5756					
	IBM Remote Supervisor Adapter (PCI adapter)					09N7585					
	IBM T541 15" Flat Panel Color Monitor (black)					9512AB1					
	Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>										

↻ Tower dim: H15.5" x W17.6" x D29.8"; 104 to 150 lb

↻ Rack dim: H12.0" x W17.6" x D27.7"; 104 to 150 lb

Rack or Tower				
•	•	•	•	•
Standard hot-swap disk bays				
•	•	•	•	•
Optional hot-swap disk bays				
Diskette				
CD-ROM				
HH 5.25"				
HH 5.25"				

- ↻ Black color
- ↻ ACPI 1.0
- ↻ Orange components and labels indicate hot-swap options
- ↻ Vital Product Data
- ↻ Backup BIOS
- ↻ Setup Program is available by pressing F1 at startup; Diagnostics (PC-Doctor) by pressing F2 at startup; CTRL+A for SCSISelect Utility
- ↻ Removeable top cover
- ↻ Access adapters, memory, CPUs from top
- ↻ Predictive Failure Analysis<sup>®</sup>: alerts generated by mgmt processor for IBM Director for DIMM(s), processor(s), VRM(s), power supply(s), disk(s), and fans
- ↻ Maximum internal disk capacity: 880GB<sup>2</sup> with twelve 73.4GB SL hot-swap SCSI disks

**LIMITED WARRANTY<sup>3</sup>**

- ↻ 3 year parts and labor
- ↻ International Warranty Service<sup>3</sup>
- ↻ On site, 8 am-5 pm, Mon-Fri coverage excluding holidays, next business day response time<sup>7</sup>
- ↻ 3 year on site warranty service upgrade options:<sup>7</sup>
  - Mon-Fri coverage, 4 hour response time (ServicePac<sup>®</sup> part number 41L2738)
  - 24 hr x 7 day coverage, 4 hour response time (ServicePac part number 30L9187)
  - 24 hr x 7 day coverage, 2 hour response time (ServicePac part number 31L2723)
- ↻ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

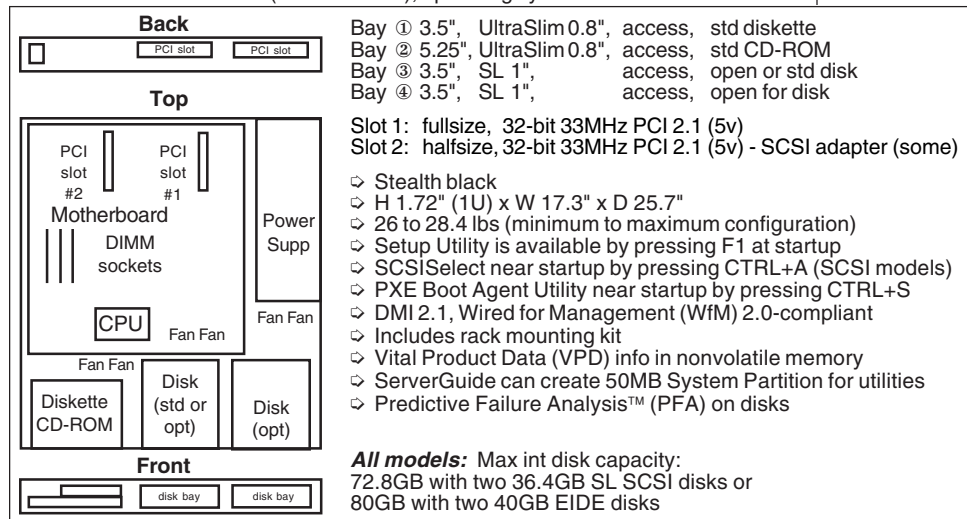
See footnotes for important warranty information (X255) © IBM Corp. August 2002

• = Hot-swap

US models announced June 11, 2002; withdrawn effective February 28, 2003

IBM® Type-model	Processor	Memory	Disk	Disk controller	Mechanical	Slots x bays	Hot-swap disk bays	Ethernet	Available date
8672-21X	Celeron™ 800/100	128MB	None	Ultra160	1U <sup>4</sup> rack	2 slots x 4 bays	None	2 x 10/100 ethernet	Jun 2001
8672-22X	Celeron 800/100	128MB	20.4GB <sup>2</sup>	EIDE ATA-100	1U rack	2 slots x 4 bays	None	2 x 10/100 ethernet	Jun 2001
8672-51X	Celeron 950/100	128MB	None	Ultra160	1U rack	2 slots x 4 bays	None	2 x 10/100 ethernet	Feb 2002
8672-52X	Celeron 950/100	128MB	20.4GB	EIDE ATA-100	1U rack	2 slots x 4 bays	None	2 x 10/100 ethernet	Feb 2002
8672-81X	Pentium® III 1GHz/133	256MB	None	Ultra160	1U rack	2 slots x 4 bays	None	2 x 10/100 ethernet	Jun 2001
8672-82X	Pentium III 1GHz/133	256MB	20.4GB	EIDE ATA-100	1U rack	2 slots x 4 bays	None	2 x 10/100 ethernet	Jun 2001

Processor	<b>Intel® Celeron 800 or 950MHz with 100MHz frontside bus or Intel Pentium® III 1GHz with 133MHz frontside bus</b>								
L2 cache	<i>Celeron:</i> 128KB std and max / ECC / at processor speed <i>Pentium III:</i> 256KB std and max / ECC / at processor speed								
SMP support	<b>No SMP</b> support								
Processor upgrade	None supported								
Implementation	Motherboard contains one Intel PGA370 socket (370-pin Flip-Chip Pin Grid Array (FC-PGA)), one integrated VRM, three DIMM sockets, two PCI slots, and integrated ethernet								
Memory - std / max	<b>128MB or 256MB</b> std / 1.5GB max <sup>13</sup>								
Memory - sockets	3 sockets / 2 available / <b>ECC</b> (Error Checking and Correcting) DIMMs and ECC memory controller								
Memory - features	<b>SDRAM / 133MHz</b> / three 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant								
Memory - support	Supports unbuffered SDRAM ECC DIMMs								
SCSI disk controller	<i>Some models:</i> <b>Adaptec® 29160LP / single channel Wide Ultra160 SCSI</b> (LVD 160MB/sec) / 64-bit 33MHz PCI adapter (in a 32-bit slot) / one channel with up to 15 device support								
SCSI connectors	<i>SCSI models:</i> One 68-pin internal SCSI connector / one 0.8mm VHDCI 68-pin external SCSI connector (not supported)								
IDE disk controller	Enhanced IDE busmaster / ATA-100 support / two connectors on planar								
Cables	<i>SCSI models:</i> one 2-drop 16-bit LVD SCSI cable, one 1-drop 40-conductor EIDE cable (connected to CD-ROM) <i>EIDE models:</i> two 2-drop EIDE cables (one cable to CD-ROM, one 80-conductor cable to EIDE disk bays)								
Disk - features	<i>EIDE:</i> 20.4GB ATA-100, 7200 rpm, 8.7ms read, S.M.A.R.T. <sup>5</sup>								
Architecture / chipsets	<b>VIA® Apollo Pro133A chip set</b> / VT82C694X North Bridge (memory controller, PCI 2.2 32-bit 33MHz controller) / VT82C686B South Bridge (IDE ATA-100, USB, diskette, serial, keyboard, mouse, ISA bus for flash BIOS)								
Mechanical	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (such as NetBAY42 SR, NetBAY42 ER)								
Control Panel	Front indicators/switches include Power, Power LED, Reset, and System Error LED								
Ethernet controllers	<b>2 x Intel 82550</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / Alert on LAN™ 2 support / Wake on LAN® support								
CD-ROM / diskette	<b>24X-10X<sup>6</sup> CD-ROM</b> ; CAV (ATAPI); bootable; IDE / 3.5" 1.44MB diskette drive								
Rear ports	<i>Serial:</i> one 9-pin; <i>Parallel:</i> none; <i>USB:</i> two ports (Version 1.1); <i>Mgmt:</i> none; keyboard; mouse; DB-15 graphics								
Console interconnects	No system-to-system interconnect cable (separate keyboard, video, mouse ports on back)								
Systems mgmt	WinBond® W83791D / on planar / monitors system and processor temperature, fan speed and failure, and voltages								
Diagnostics	Diagnostics via PC-Doctor on a standard IBM Enhanced Diagnostics CD (diskette can be created)								
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B / analog 15-pin D-shell					<b>OPTIONS</b>			
Security	Power-on password / administrator password / unattended boot / selectable boot / unattended start mode					128MB SDRAM ECC DIMM 133MHz	33L3081		
Software <sup>9</sup>	<b>ServerGuide™</b> (CD-based automated network OS installation and configuration tool), Norton AntiVirus™, and APC PowerChute Plus / includes IBM Director (system hardware mgmt software) and many utilities					256MB SDRAM ECC DIMM 133MHz	33L3083		
						512MB SDRAM ECC DIMM 133MHz	33L3085		
						40GB ATA-100 EIDE HDD	22P7157		
						18.2GB 10K Ultra160 SCSI HDD	00N8208		
						36.4GB 10K Ultra160 SCSI HDD	00N8209		
						18.2GB 15K Ultra160 SCSI HDD	19K0658		
						ServeRAID-4Lx Ultra160 SCSI Adapter	06P5740		
						ServeRAID-4Mx Ultra160 SCSI Adapter	06P5736		
						Netfinity FAST500 Host Adapter	00N6881		
						IBM FASiT500 Storage Server	35521RU		
						IBM Netfinity Gigabit Ethernet Adapter	19K4401		
						IBM NetBAY42 Standard Rack (SR)	9306420		
						IBM NetBAY42 Enterprise Rack (ER)	930842S		
						IBM T540 15" Flat Panel Color Monitor (black)	9511AG4		
						Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>			
Keyboard / mouse	None standard								
Cooling fans	Six fans (two for processor, memory, halfsize PCI; two for left disk and fullsize PCI; two for power supply) / all variable speed / redundant cooling on single fan failure (other fans increase speed)								
Power supply	200 watt / universal / auto-sensing / not redundant / not hot-swap / Automatic Server Restart (ASR) support								
Prerequisites	Monitor, keyboard, mouse, rack with perforated door, disk (some models), operating system								



**LIMITED WARRANTY<sup>3</sup>**

- ↔ 3 year parts / 1 year labor
- ↔ International Warranty Service<sup>3</sup>
- ↔ 1st year: on site, 8 am-5 pm, Mon-Fri excluding holidays, next business day response time
- ↔ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ↔ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hour coverage, Mon-Fri excluding holidays, next business day response time (ServicePac® 21P2079)
  - 9 hour coverage, Mon-Fri excluding holidays, 4 hour response time (ServicePac 21P2080)
  - 24 hr x 7 day coverage, 4 hour response time (ServicePac 21P2081)
  - 24 hr x 7 day coverage, 2 hour response time (ServicePac 21P2082)
- ↔ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

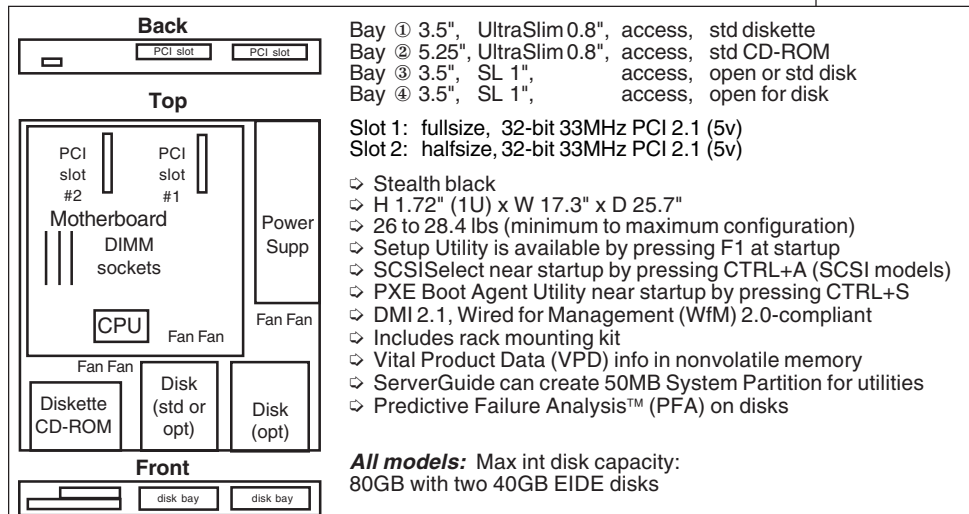
See footnotes for important warranty information  
 US models announced on May 22, 2001, or February 12, 2002  
 US models withdrawn effective May, September, or October 2002

**IBM @server™ xSeries™ 300 (DC power model) - withdrawn** xREF by eServer Field Skills Enablement Team

IBM® Type-model	Processor	Memory	Disk	Disk controller	Mechanical	Slots x bays	Hot-swap disk bays	Ethernet	Power supply	Available date
8672-2AX	Celeron™ 800Mhz <sup>1</sup>	128MB	20.4GB <sup>2</sup>	EIDE ATA-100	1U <sup>4</sup> rack	2 slots x 4 bays	None	2 x 10/100	DC power	Sept 2001

**DC power models are designed for network infrastructures requiring network equipment to support DC power environments**

Positioning	<i>A compact yet expandable ultra-thin 1U server that is remarkably affordable</i>																																																																																					
Processor	<b>Intel® Celeron 800MHz with 100MHz frontside bus</b>																																																																																					
L2 cache	<b>128KB</b> std and max / ECC / at processor speed																																																																																					
SMP support	<b>No SMP</b> support																																																																																					
Processor upgrade	None supported																																																																																					
Implementation	Motherboard contains one Intel PGA370 socket (370-pin Flip-Chip Pin Grid Array (FC-PGA)), one integrated VRM, three DIMM sockets, two PCI slots, and integrated ethernet																																																																																					
Memory - std / max	<b>128MB or 256MB</b> std / 1.5GB max <sup>13</sup>																																																																																					
Memory - sockets	3 sockets / 2 available / <b>ECC</b> (Error Checking and Correcting) DIMMs and ECC memory controller																																																																																					
Memory - features	<b>SDRAM / 133MHz</b> / three 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant																																																																																					
Memory - support	Supports unbuffered SDRAM ECC DIMMs																																																																																					
SCSI disk controller	None																																																																																					
IDE disk controller	Enhanced IDE busmaster / ATA-100 support / two connectors on planar																																																																																					
Cables	Two 2-drop EIDE cables (one cable to CD-ROM, one 80-conductor cable to EIDE disk bays)																																																																																					
Disk - features	20.4GB EIDE / ATA-100 / 7200 rpm / 8.7 ms average read seek time / S.M.A.R.T.																																																																																					
Architecture / chipsets	<b>VIA® Apollo Pro133A chip set</b> / VT82C694X North Bridge (memory controller, PCI 2.2 32-bit 33MHz controller) / VT82C686B South Bridge (IDE ATA-100, USB, diskette, serial, keyboard, mouse, ISA bus for flash BIOS)																																																																																					
Mechanical	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door)																																																																																					
Control Panel	Front indicators/switches include Power, Power LED, Reset, and System Error LED																																																																																					
Ethernet controllers	<b>2 x Intel 82550</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / Alert on LAN™ 2 support / Wake on LAN® support																																																																																					
CD-ROM / diskette	<b>24X-10X<sup>5</sup> CD-ROM</b> ; CAV (ATAPI); bootable; IDE / 3.5" 1.44MB diskette drive																																																																																					
Rear ports	<i>Serial</i> : one 9-pin; <i>Parallel</i> : none; <i>USB</i> : two ports (Version 1.1); <i>Mgmt</i> : none; keyboard; mouse; DB-15 graphics																																																																																					
Console interconnects	No system-to-system interconnect cable (separate keyboard, video, mouse ports on back)																																																																																					
Systems mgmt	WinBond® W83791D / on planar / monitors system and processor temperature, fan speed and failure, and voltages																																																																																					
Diagnostics	Diagnostics via PC-Doctor on a standard IBM Enhanced Diagnostics CD (diskette can be created)																																																																																					
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B / analog 15-pin D-shell																																																																																					
Security	Power-on password / administrator password / unattended boot / selectable boot / unattended start mode																																																																																					
Software <sup>9</sup>	<b>ServerGuide™</b> (CD-based automated network OS installation and configuration tool), Norton AntiVirus™, and APC PowerChute Plus / includes IBM Director (system hardware mgmt software) and many utilities																																																																																					
Keyboard / mouse	None standard																																																																																					
Cooling fans	Six fans (two for processor, memory, halfsize PCI; two for left disk and fullsize PCI; two for power supply) / all variable speed / redundant cooling on single fan failure (other fans increase speed)																																																																																					
Power supply	<b>200 watt (-48 to -60 V dc [direct current])</b> / auto-sensing / supports dual input sources (two power sources) / not redundant / not hot-swap / auto-restart support																																																																																					
Prerequisites	Appropriate dc power source and customer supplied wiring, monitor, keyboard, mouse, rack with perforated door, operating system																																																																																					
	<table border="0"> <thead> <tr> <th colspan="2"></th> <th style="text-align: center;"><b>OPTIONS</b></th> <th></th> </tr> </thead> <tbody> <tr> <td></td> <td>128MB SDRAM ECC DIMM 133MHz</td> <td></td> <td>33L3081</td> </tr> <tr> <td></td> <td>256MB SDRAM ECC DIMM 133MHz</td> <td></td> <td>33L3083</td> </tr> <tr> <td></td> <td>512MB SDRAM ECC DIMM 133MHz</td> <td></td> <td>33L3085</td> </tr> <tr> <td></td> <td>20.4GB ATA-100 EIDE HDD</td> <td></td> <td>19K4461</td> </tr> <tr> <td></td> <td>40GB ATA-100 EIDE HDD</td> <td></td> <td>22P7157</td> </tr> <tr> <td></td> <td>IBM 16/4 Token-Ring PCI Management Adapter</td> <td></td> <td>34L5001</td> </tr> <tr> <td></td> <td>IBM PCI Token-Ring Adapter 2 with WOL</td> <td></td> <td>34L0701</td> </tr> <tr> <td></td> <td>IBM High-Speed 100/16/4 PCI Token-Ring Adap</td> <td></td> <td>34L5201</td> </tr> <tr> <td></td> <td>IBM Netfinity Gigabit Ethernet Adapter</td> <td></td> <td>19K4401</td> </tr> <tr> <td></td> <td>IBM 10/100 EtherLink Server Adapter by 3COM</td> <td></td> <td>09N9901</td> </tr> <tr> <td></td> <td>Netfinity Rack (with perforated door and panels)</td> <td></td> <td>9306910</td> </tr> <tr> <td></td> <td>IBM NetBAY42 Enterprise Rack</td> <td></td> <td>930842S</td> </tr> <tr> <td></td> <td>IBM Sleek Two-Button Mouse (black)</td> <td></td> <td>28L3673</td> </tr> <tr> <td></td> <td>IBM 84-key Space Saver Keyboard (black)</td> <td></td> <td>28L3644</td> </tr> <tr> <td></td> <td>IBM Preferred Keyboard (black)</td> <td></td> <td>28L3621</td> </tr> <tr> <td></td> <td>IBM E51 (13.8" viewable) Color Monitor (black)</td> <td></td> <td>633347N</td> </tr> <tr> <td></td> <td>IBM T54A 15" Flat Panel Color Monitor (black)</td> <td></td> <td>9511AG1</td> </tr> <tr> <td></td> <td>IBM T540 15" Flat Panel Color Monitor (black)</td> <td></td> <td>9511AG4</td> </tr> </tbody> </table>												<b>OPTIONS</b>			128MB SDRAM ECC DIMM 133MHz		33L3081		256MB SDRAM ECC DIMM 133MHz		33L3083		512MB SDRAM ECC DIMM 133MHz		33L3085		20.4GB ATA-100 EIDE HDD		19K4461		40GB ATA-100 EIDE HDD		22P7157		IBM 16/4 Token-Ring PCI Management Adapter		34L5001		IBM PCI Token-Ring Adapter 2 with WOL		34L0701		IBM High-Speed 100/16/4 PCI Token-Ring Adap		34L5201		IBM Netfinity Gigabit Ethernet Adapter		19K4401		IBM 10/100 EtherLink Server Adapter by 3COM		09N9901		Netfinity Rack (with perforated door and panels)		9306910		IBM NetBAY42 Enterprise Rack		930842S		IBM Sleek Two-Button Mouse (black)		28L3673		IBM 84-key Space Saver Keyboard (black)		28L3644		IBM Preferred Keyboard (black)		28L3621		IBM E51 (13.8" viewable) Color Monitor (black)		633347N		IBM T54A 15" Flat Panel Color Monitor (black)		9511AG1		IBM T540 15" Flat Panel Color Monitor (black)		9511AG4
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	IBM 84-key Space Saver Keyboard (black)		28L3644																																																																																			
	IBM Preferred Keyboard (black)		28L3621																																																																																			
	IBM E51 (13.8" viewable) Color Monitor (black)		633347N																																																																																			
	IBM T54A 15" Flat Panel Color Monitor (black)		9511AG1																																																																																			
	IBM T540 15" Flat Panel Color Monitor (black)		9511AG4																																																																																			



**LIMITED WARRANTY<sup>3</sup>**

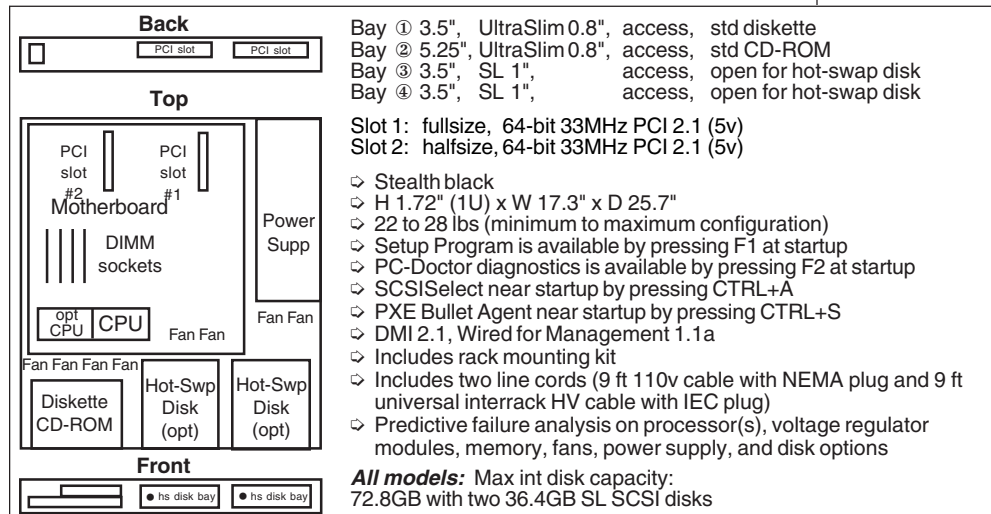
- ↪ 3 year parts / 1 year labor
- ↪ International Warranty Service<sup>3</sup>
- ↪ 1st year: on site, 8 am-5 pm, Mon-Fri excluding holidays, next business day response time
- ↪ 2nd/3rd year: parts exchange only, call 1-800-772-2227
- ↪ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hour coverage, Mon-Fri excluding holidays, next business day response time
  - 9 hour coverage, Mon-Fri excluding holidays, 4 hour response
  - 24 hr x 7 day coverage, 4 hour response time
  - 24 hr x 7 day coverage, 2 hour response time
- ↪ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

See footnotes for important warranty information  
 US model announced August 28, 2001; withdrawn effective February 28, 2003



IBM® Type-model	Qty x Processor	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot-swap disk bays	Ethernet	Available date
8654-11Y	1 x Pentium® III 800/133	256MB	None	Ultra160	1U rack	2 slots x 4 bays	2 hot-swap	2 x 10/100 ethernet	Oct 2000
8654-31Y	1 x Pentium III 866/133	256MB	None	Ultra160	1U rack	2 slots x 4 bays	2 hot-swap	2 x 10/100 ethernet	Oct 2000
8654-41Y	1 x Pentium III 933/133	256MB	None	Ultra160	1U rack	2 slots x 4 bays	2 hot-swap	2 x 10/100 ethernet	Nov 2000
8654-51Y	1 x Pentium III 1GHz/133	256MB	None	Ultra160	1U rack	2 slots x 4 bays	2 hot-swap	2 x 10/100 ethernet	Nov 2000

Processor SMP support Implementation L2 cache	<b>Intel® Pentium® III 800EB, 866, 933MHz or 1GHz / 133MHz Front Side Bus</b> 2-way SMP via identical processor / both VRMs integrated on planar Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA) / two Intel PGA370 sockets / terminator in empty socket <b>256KB</b> std and max / ECC / full speed								
Memory - std / max Memory - sockets Memory - features	<b>256MB</b> std / 4GB max / Error Checking and Correcting (ECC) memory controller 4 sockets / 3 available <b>SDRAM / 133MHz</b> / ECC DIMMs / 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant								
SCSI disk controller SCSI connectors RAID support IDE controller	Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit PCI / integrated on motherboard Internal 68-pin (attaches 1-drop cable to SCSI backplane); no external SCSI connector No hardware RAID standard / supports optional ServeRAID PCI adapter (see below) Enhanced IDE / two connectors on planar / one 1-drop IDE cable to CD-ROM / ATA-66								
Architecture / chipsets	<b>ServerWorks® ServerSet III LE chip set</b> / NB6635 North Bridge 3.0LE (the North Bridge has two peer PCI buses: PCI Bus 0, 32-bit 33MHz, IB6566 South Bridge, two ethernet controllers, graphics controller); PCI Bus 1, 64-bit 33MHz, SCSI controller, two 64-bit PCI slots) / IB6566 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)								
Mechanical Control Panel	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM Netfinity Rack products (rack requires vented front door) Front indicators/switches include Power, Reset, Console Select, Power LED and Fault/info LED								
Ethernet controllers	<b>2 x Intel 82559</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / redundant ethernet capability and load balancing support through the connection of both ethernet ports to the same LAN segment / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / no Wake on LAN® support								
CD-ROM / diskette Rear ports Console interconnects	<b>24X-10X<sup>5</sup> CD-ROM</b> ; CAV (ATAPI); bootable; IDE / 3.5" 1.44MB diskette drive <i>Serial</i> : one 9-pin; <i>Parallel</i> : none; <i>USB</i> : two ports (Version 1.1); <i>Adv Sys Mgmt</i> : two RJ-45 ports System-to-system interconnect cable (10 inch, 245mm) is standard / daisy chain connection to adjacent server / supports large rack deployments of daisy chained servers / chain functions with multiple server (not contiguous in chain) outage / one Cable Chain Technology Cable Kit required at end of chain (a cable with separate keyboard, mouse, monitor connectors)								
Systems mgmt	<b>Netfinity Advanced System Mgmt Processor</b> / on planar / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supply								
Diagnostics	<b>Light Path Diagnostics</b> (LED lights indicate failing component) and on-board diagnostics (via PC-Doctor in BIOS)								
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B			Pentium III 800/133MHz/256KB Proc Upg			10K3810		
Security	Power-on password / administrator password / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode			Pentium III 866/133MHz/256KB Proc Upg			10K3806		
Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), AntiVirus software, APC PowerChute Plus, IBM Director, others			Pentium III 933/133MHz/256KB Proc Upg			10K0052		
Keyboard / mouse Cooling fans	None standard Eight fans (four for processor(s) and planar, two for disk(s) and planar, two for power supply)			Pentium III 1GHz/133MHz/256KB Proc Upg			10K0053		
Power supply Prerequisites	200 watt / universal / auto-sensing / auto-restart support Monitor, keyboard, mouse, rack, SCSI disk, operating system, one Cable Chain Technology (C2T) Console Cable Kit per chain of servers			128MB SDRAM ECC DIMM 133MHz (RDIMM II)			33L3142		
				256MB SDRAM ECC DIMM 133MHz (RDIMM II)			33L3144		
				512MB SDRAM ECC DIMM 133MHz (RDIMM II)			33L3146		
				1GB SDRAM ECC DIMM 133MHz (RDIMM II)			33L3152		
				9.1GB 10K-4 Ultra 160 SCSI Hot-Swap SL HDD			37L7204		
				18.2GB 10K-4 Ultra 160 SCSI Hot-Swap SL HDD			37L7205		
				36.4GB 10K-4 Ultra 160 SCSI Hot-Swap SL HDD			37L7206		
				ServeRAID-4L Ultra 160 SCSI Adapter			37L6091		
				ServeRAID-4M Ultra 160 SCSI Adapter			37L6080		
				Netfinity Rack (with perforated door and side panels)			9306910		
				Netfinity Rack Front Door Kit			06P6010		
				xSeries Cable Chain Technology Cable Kit (contains 2 meter breakout cable and 2 meter interconnect chaining cable)			06P4792		



**LIMITED WARRANTY<sup>3</sup>**

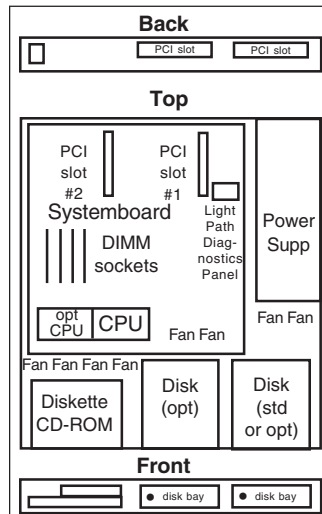
- 3 year parts and labor
- International Warranty Service<sup>3</sup>
- On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time
- 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 24 hr x 7 day coverage, 4 hour response time
  - 24 hr x 7 day coverage, 2 hour response time
- IBM Server Start Up Support
- 24 hour x 7 day<sup>14</sup> telephone, electronic, and Internet support

\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227

No warranties are expressed or implied in this summary (X330) © IBM Corp. November 2001

• = Hot-swap  
 US models withdrawn from marketing effective May 2001 or December 2001

IBM® Type-model	Qty x Processor	Memory	Disk	Disk controller	Mechanical	Slots x bays	Hot -swap or fixed disk bays	Ethernet	Available date
8674-11X	1 x Pentium® III 1.13GHz/133	256MB	None	Ultra160	1U rack	2 slots x 4 bays	2 hot-swap	2 x 10/100	Jul 2001
8674-12X	1 x Pentium III 1.13GHz/133	256MB	20.4GB <sup>2</sup> EIDE	EIDE	1U rack	2 slots x 4 bays	2 fixed	2 x 10/100	Jul 2001
8674-13X	1 x Pentium III 1.13GHz/133	256MB	18.2GB Ultra160	Ultra160	1U rack	2 slots x 4 bays	2 fixed	2 x 10/100	Jul 2001
Positioning	<i>Rack-optimized 1U server for demanding e-business applications</i>								
Processor	<b>Intel® Pentium® III 1.13GHz-S with 133MHz frontside bus</b> / supports upgrade to 1.26GHz								
SMP support	<b>2-way SMP</b> via identical processor / both VRMs integrated on planar								
Implementation	Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA2) / two Intel PGA370 sockets / terminator in empty socket								
L2 cache	<b>512KB</b> std and max / ECC / full speed								
Memory	<b>256MB</b> std / 4GB max / Error Checking and Correcting (ECC) memory controller / 4 sockets / 3 available								
	<b>SDRAM / 133MHz</b> / ECC registered DIMMs / 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant								
SCSI disk controller	<i>All:</i> Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit PCI / integrated on planar								
SCSI connectors	<i>All:</i> Internal 68-pin connector / no external SCSI connector								
IDE controller	<i>All:</i> Enhanced IDE / ATA-33 / two connectors on planar								
Cabling	<i>11X:</i> one 1-drop 16-bit LVD cable from internal 68-pin SCSI connector to hot-swap SCSI backplane <i>12X:</i> one 2-drop IDE cable to two disk bays (one used) <i>13X:</i> one 2-drop 16-bit LVD cable from internal 68-pin SCSI connector to SCSI disk bays (one used)								
Disk	<i>All:</i> one 1-drop IDE cable to standard CD-ROM <i>12X:</i> 20.4GB ATA-100, 8.7ms read, S.M.A.R.T.; <i>13X:</i> 18.2GB Ultra160 SCSI, 10K rpm, 5.2ms read seek, S.M.A.R.T.								
Architecture / chipsets	<b>ServerWorks® ServerSet III LE chip set</b> / NB6635 North Bridge 3.0LE (the North Bridge has two peer PCI buses: (1) PCI Bus 0, 32-bit 33MHz, South Bridge, Super I/O, graphics, 2 x ethernet; (2) PCI Bus 1, 64-bit 33MHz, SCSI controller, two 64-bit PCI slots) / IB6566 OSB4 rev B2 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)								
Mechanical	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door)								
Control Panel	Front indicators/switches include Power, Reset, Console Select, Power LED and Fault/info LED								
Ethernet controllers	<b>2 x Intel 82559</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / redundant ethernet capability and load balancing support through the connection of both ethernet ports to the same LAN segment / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / Wake on LAN <sup>®</sup> support								
CD-ROM / diskette	<b>24X-10X<sup>®</sup> CD-ROM, CAV</b> (ATAPI), bootable, IDE / 3.5" 1.44MB diskette drive								
Rear ports	<i>Serial:</i> one 9-pin; <i>Parallel:</i> none; <i>USB:</i> two ports (Version 1.1); <i>Adv Sys Mgmt:</i> two RJ-45 ports								
Console interconnects	System-to-system interconnect cable (10 inch, 245mm) is standard (Keyboard Video Mouse (KVM) chaining cable) / daisy chain connection to adjacent server / supports large rack deployments of daisy chained servers / chain functions with multiple server (not contiguous in chain) outage / one Cable Chain Technology Cable Kit required at end of chain (a cable with separate keyboard, mouse, monitor connectors)								
Systems mgmt	<b>Advanced System Mgmt Processor</b> / on planar / PowerPC 403GA™ / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supply / support for optional Remote Supervisor Adapter with 20-pin connector on planar for continuous power (no external power required)								
Diagnostics	<b>Light Path Diagnostics™</b> (LED lights indicate failing component) and on-board diagnostics (via PC-Doctor in BIOS)								
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B				Pentium III 1.13GHz-S/133MHz/512KB Proc Upg 25P2835 Pentium III 1.26GHz-S/133MHz/512KB Proc Upg 25P2836				
Security	Power-on password / administrator password / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode				128MB SDRAM ECC DIMM 133MHz (RDIMM) 10K0018 256MB SDRAM ECC DIMM 133MHz (RDIMM) 10K0020 512MB SDRAM ECC DIMM 133MHz (RDIMM) 10K0022 1GB SDRAM ECC DIMM 133MHz (RDIMM) 33L3326				
Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), AntiVirus software, IBM Director™, and others				40GB ATA-100 EIDE HDD* 22P7157 36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD* 37L7206 36.4GB 10K Ultra160 SCSI HDD* 00N8209 Remote Supervisor Adapter 09N7585 ServeRAID-4Mx Ultra160 SCSI Adapter 06P5736 IBM T540 15" Flat Panel Monitor (black) 9511AG4 xSeries Cable Chain Technology Cable Kit (contains 2 meter breakout cable and 2 meter KVM chaining cable) 06P4792				
Keyboard / mouse	None standard				* Disk not supported in all x330 systems				
Cooling fans	Eight fans (four for processor(s) and planar, two for disk(s) and planar, two for power supply)								
Power supply	200 watt / universal / auto-sensing / auto-restart support								
Prerequisites	Monitor, keyboard, mouse, rack, disk, operating system, one Cable Chain Technology (C2T) Console Cable Kit per chain of servers								



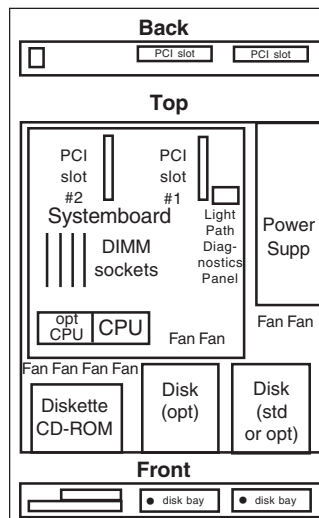
- ⇒ Stealth black
  - ⇒ H 1.72" (1U) x W 17.3" x D 25.7"
  - ⇒ 26 to 28.4 lbs (minimum to maximum configuration)
  - ⇒ Setup Program is available by pressing F1 at startup
  - ⇒ PC-Doctor diagnostics is available by pressing F2 at startup
  - ⇒ SCSISelect near startup by pressing CTRL+A
  - ⇒ PXE Bullet Agent near startup by pressing CTRL+S
  - ⇒ DMI 2.1 and Wired for Management 1.1a-compliant
  - ⇒ Includes rack mounting kit
  - ⇒ Includes two line cords (9 ft 110v cable with NEMA plug and 9 ft universal interrack HV cable with IEC plug)
  - ⇒ Predictive Failure Analysis<sup>®</sup> on processor(s), voltage regulator modules, memory, fans, power supply, and disk options
- All models:** Maximum internal disk capacity (model dependent):  
 146.8GB with two 73.4GB SL SCSI disks or  
 80GB with two 40GB EIDE disks / supports 15K rpm SCSI disks

**LIMITED WARRANTY<sup>3</sup>**

- ⇒ 3 year parts and labor
- ⇒ International Warranty Service<sup>3</sup>
- ⇒ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>
- ⇒ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - Mon-Fri coverage, 4 hour response time
  - 24 hr x 7 day coverage, 4 hour response time
- ⇒ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

See footnotes for important warranty information  
 • = Hot-swap in some models  
 US models withdrawn effective January 13, 2003

IBM® Type-model	Qty x Processor	Memory	Disk	Disk controller	Mechanical	Slots x bays	Hot-swap or fixed disk bays	Ethernet	Available date
8674-31X	1 x Pentium® III 1.26GHz/133	256MB	None	Ultra160	1U rack	2x4	2 hot-swap	2 x 10/100	Aug 2001
8674-32X	1 x Pentium III 1.26GHz/133	256MB	20.4GB <sup>2</sup> EIDE	EIDE	1U rack	2x4	2 fixed	2 x 10/100	Aug 2001
8674-33X	1 x Pentium III 1.26GHz/133	256MB	18.2GB Ultra160	Ultra160	1U rack	2x4	2 fixed	2 x 10/100	Aug 2001
Positioning	<i>Rack-optimized 1U server for demanding e-business applications</i>								
Processor	<b>Intel® Pentium® III 1.26GHz-S with 133MHz frontside bus</b>								
SMP support	2-way SMP via identical processor / both VRMs integrated on planar								
Implementation	Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA2) / two Intel PGA370 sockets / terminator in empty socket								
L2 cache	<b>512KB</b> std and max / ECC / full speed								
Memory	<b>256MB</b> std / 4GB max / Error Checking and Correcting (ECC) memory controller / 4 sockets / 3 available <b>SDRAM / 133MHz</b> / ECC registered DIMMs / 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant								
SCSI disk controller	<i>All:</i> Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit PCI / integrated on planar								
SCSI connectors	<i>All:</i> Internal 68-pin connector / no external SCSI connector								
IDE controller	<i>All:</i> Enhanced IDE / ATA-33 / two connectors on planar								
Cabling	<i>31X:</i> one 1-drop 16-bit LVD cable from internal 68-pin SCSI connector to hot-swap SCSI backplane <i>32X:</i> one 2-drop IDE cable to two disk bays (one used) <i>33X:</i> one 2-drop 16-bit LVD cable from internal 68-pin SCSI connector to SCSI disk bays (one used)								
Disk	<i>All:</i> one 1-drop IDE cable to standard CD-ROM <i>32X:</i> 20.4GB ATA-100, 8.7ms read, S.M.A.R.T.; <i>33X:</i> 18.2GB Ultra160 SCSI, 10K rpm, 5.2ms read seek, S.M.A.R.T.								
Architecture / chipsets	<b>ServerWorks® ServerSet III LE chip set</b> / NB6635 North Bridge 3.0LE (the North Bridge has two peer PCI buses: (1) PCI Bus 0, 32-bit 33MHz, South Bridge, Super I/O, graphics, 2 x ethernet; (2) PCI Bus 1, 64-bit 33MHz, SCSI controller, two 64-bit PCI slots) / IB6566 OSB4 rev B2 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)								
Mechanical	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door)								
Control Panel	Front indicators/switches include Power, Reset, Console Select, Power LED and Fault/info LED								
Ethernet controllers	<b>2 x Intel 82559</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / redundant ethernet capability and load balancing support through the connection of both ethernet ports to the same LAN segment / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / Wake on LAN <sup>®</sup> support								
CD-ROM / diskette	24X-10X <sup>6</sup> CD-ROM, CAV (ATAPI), bootable, IDE / 3.5" 1.44MB diskette drive								
Rear ports	<i>Serial:</i> one 9-pin; <i>Parallel:</i> none; <i>USB:</i> two ports (Version 1.1); <i>Adv Sys Mgmt:</i> two RJ-45 ports								
Console interconnects	C2T Interconnect™ cable (10 inch, 245mm) is standard (Keyboard Video Mouse (KVM) chaining cable) / daisy chain connection to adjacent server / supports large rack deployments of daisy chained servers / chain functions with multiple server (not contiguous in chain) outage / one Cable Chain Technology Cable Kit required at end of chain (a cable with separate keyboard, mouse, monitor connectors)								
Systems mgmt	<b>Advanced System Mgmt processor</b> / on planar / PowerPC 403GA™ / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supply / support for optional Remote Supervisor Adapter with 20-pin connector on planar for continuous power (no external power required)								
Diagnostics	<b>Light Path Diagnostics™</b> (LED lights indicate failing component) and on-board diagnostics (via PC-Doctor in BIOS)								
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B			Pentium III 1.26GHz-S/133MHz/512KB Proc Upg		25P2836			
Security	Power-on password / administrator password / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode			128MB SDRAM ECC DIMM 133MHz (RDIMM)		10K0018			
Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), AntiVirus software, IBM Director™, and others			256MB SDRAM ECC DIMM 133MHz (RDIMM)		10K0020			
Keyboard / mouse	None standard			512MB SDRAM ECC DIMM 133MHz (RDIMM)		10K0022			
Cooling fans	Eight fans (four for processor(s) and planar, two for disk(s) and planar, two for power supply)			1GB SDRAM ECC DIMM 133MHz (RDIMM)		33L3326			
Power supply	200 watt / universal / auto-sensing / auto-restart support			40GB ATA-100 EIDE HDD*		22P7157			
Prerequisites	Monitor, keyboard, mouse, rack, disk, operating system, one Cable Chain Technology (C2T) Console Cable Kit per chain of servers			36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD*		37L7206			
				36.4GB 10K Ultra160 SCSI HDD*		00N8209			
				Remote Supervisor Adapter		09N7585			
				ServeRAID™-4Lx Ultra160 SCSI Adapter		06P5740			
				ServeRAID-4Mx Ultra160 SCSI Adapter		06P5736			
				IBM T540 15" Flat Panel Monitor (black)		9511AG4			
				xSeries Cable Chain Technology Cable Kit (contains 2 meter breakout cable and 2 meter KVM chaining cable)		06P4792			
				* Disk not supported in all x330 systems					



Bay ① 3.5", UltraSlim 0.8", access, std diskette  
 Bay ② 5.25", UltraSlim 0.8", access, std CD-ROM  
 Bay ③ 3.5", SL 1", access, open for fixed or hot-swap disk  
 Bay ④ 3.5", SL 1", access, open for fixed or hot-swap disk

Slot 1: fullsize, 64-bit 33MHz PCI 2.2 (5v)  
 Slot 2: halfsize, 64-bit 33MHz PCI 2.2 (5v)

- Stealth black
- H 1.72" (1U) x W 17.3" x D 25.7"
- 26 to 28.4 lbs (minimum to maximum configuration)
- Setup Program is available by pressing F1 at startup
- PC-Doctor diagnostics is available by pressing F2 at startup
- SCSISelect near startup by pressing CTRL+A
- PXE Bullet Agent near startup by pressing CTRL+S
- DMI 2.1 and Wired for Management 1.1a-compliant
- Includes rack mounting kit
- Includes two line cords (9 ft 110v cable with NEMA plug and 9 ft universal interrack HV cable with IEC plug)
- Predictive Failure Analysis<sup>®</sup> on processor(s), voltage regulator modules, memory, fans, power supply, and disk options

**All models:** Maximum internal disk capacity (model dependent):  
 146.8GB with two 73.4GB SL SCSI disks or  
 80GB with two 40GB EIDE disks / supports 15K rpm SCSI disks

**LIMITED WARRANTY<sup>3</sup>**

- ⇒ 3 year parts and labor
- ⇒ International Warranty Service<sup>3</sup>
- ⇒ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>
- ⇒ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - Mon-Fri coverage, 4 hour response time
  - 24 hr x 7 day coverage, 4 hour response time
- ⇒ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

See footnotes for important warranty information  
 • = Hot-swap in some models  
 US models withdrawn effective January 13, 2003



IBM® Type-model	Qty x Processor	Memory	Disk	Disk controller	Mechanical	Slots x bays	Hot -swap or fixed disk bays	Ethernet	Available date
8674-41X	1 x Pentium® III 1.4GHz/133	256MB	None	Ultra160	1U rack	2x4	2 hot-swap	2 x 10/100	Feb 2002
8674-42X	1 x Pentium III 1.4GHz/133	256MB	40GB <sup>2</sup> EIDE	EIDE	1U rack	2x4	2 fixed	2 x 10/100	Feb 2002
8674-43X	1 x Pentium III 1.4GHz/133	256MB	18.2GB Ultra160	Ultra160	1U rack	2x4	2 fixed	2 x 10/100	Feb 2002
Positioning	<i>Rack-optimized 1U server for demanding e-business applications</i>								
Processor	<b>Intel® Pentium® III 1.4GHz-S with 133MHz frontside bus</b>								
SMP support	2-way SMP via identical processor / both VRMs integrated on planar								
Implementation	Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA2) / two Intel PGA370 sockets / terminator in empty socket								
L2 cache	<b>512KB</b> std and max / ECC / full speed								
Memory	<b>256MB</b> std / 4GB max / Error Checking and Correcting (ECC) memory controller / 4 sockets / 3 available / <b>SDRAM / 133MHz</b> / ECC registered DIMMs / 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant								
SCSI disk controller	All: Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit PCI / integrated on planar								
SCSI connectors	All: Internal 68-pin connector / no external SCSI connector								
IDE controller	All: Enhanced IDE / ATA-33 / two connectors on planar								
Cabling	41X: one 1-drop 16-bit LVD cable from internal 68-pin SCSI connector to hot-swap SCSI backplane 42X: one 2-drop IDE cable to two disk bays (one used) 43X: one 2-drop 16-bit LVD cable from internal 68-pin SCSI connector to SCSI disk bays (one used)								
Disk	All: one 1-drop IDE cable to standard CD-ROM 42X: 40GB ATA-100, 7200rpm, 8.7ms read; 43X: 18.2GB Ultra160 SCSI, 10K rpm, 5.2ms read seek; All: S.M.A.R.T. <sup>5</sup>								
Architecture / chipsets	<b>ServerWorks® ServerSet III LE chip set</b> / NB6635 North Bridge 3.0LE (the North Bridge has two peer PCI buses: (1) PCI Bus 0, 32-bit 33MHz, South Bridge, Super I/O, graphics, 2 x ethernet; (2) PCI Bus 1, 64-bit 33MHz, SCSI controller, two 64-bit PCI slots) / IB6566 OSB4 rev B2 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)								
Mechanical Control Panel	<b>EIA 19" Rack (1U*)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (such as NetBAY42 SR, NetBAY42 ER) Front indicators/switches include Power, Reset, Console Select, Power LED and Fault/info LED								
Ethernet controllers	<b>2 x Intel 82559</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / redundant ethernet capability and load balancing support through the connection of both ethernet ports to the same LAN segment / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / Wake on LAN™ support								
CD-ROM / diskette	24X-10X <sup>6</sup> CD-ROM, CAV (ATAPI), bootable, IDE / 3.5" 1.44MB diskette drive								
Rear ports	Serial: one 9-pin; Parallel: none; USB: two ports (Version 1.1); Adv Sys Mgmt: two RJ-45 ports								
Console interconnects	C2T Interconnect™ cable (10 inch, 245mm) is standard (Keyboard Video Mouse (KVM) chaining cable) / daisy chain connection to adjacent server / supports large rack deployments of daisy chained servers / chain functions with multiple server (not contiguous in chain) outage / one Cable Chain Technology Cable Kit required at end of chain (a cable with separate keyboard, mouse, monitor connectors)								
Systems mgmt	<b>Advanced System Mgmt processor</b> / on planar / PowerPC 403GA™ / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supply / support for optional Remote Supervisor Adapter with 20-pin connector on planar for continuous power (no external power required)								
Diagnostics	<b>Light Path Diagnostics™</b> (LED lights indicate failing component) and on-board diagnostics (via PC-Doctor in BIOS)								
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B			Pentium III 1.4GHz-S/133MHz/512KB Proc Upg			48P7466		
Security	Power-on password / administrator password / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode			128MB SDRAM ECC DIMM 133MHz (RDIMM)			10K0018		
Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), IBM Director™, and others			256MB SDRAM ECC DIMM 133MHz (RDIMM)			10K0020		
Keyboard / mouse	None standard			512MB SDRAM ECC DIMM 133MHz (RDIMM)			10K0022		
Cooling fans	Eight fans (four for processor(s) and planar, two for disk(s) and planar, two for power supply)			1GB SDRAM ECC DIMM 133MHz (RDIMM)			33L3326		
Power supply	200 watt / universal / auto-sensing / auto-restart support			40GB ATA-100 EIDE HDD**			22P7157		
Prerequisites	Monitor, keyboard, mouse, rack, disk, operating system, one Cable Chain Technology (C2T) Console Cable Kit per chain of servers			73.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD**			06P5756		
				73.4GB 10K Ultra160 SCSI HDD**			06P5752		
				Remote Supervisor Adapter			09N7585		
				ServeRAID™-4Lx Ultra160 SCSI Adapter			06P5740		
				ServeRAID-4Mx Ultra160 SCSI Adapter			06P5736		
				IBM T540 15" Flat Panel Monitor (black)			9511AG4		
				xSeries Cable Chain Technology Cable Kit (contains 2 meter breakout cable and 2 meter KVM chaining cable)			06P4792		
				* Disk not supported in all x330 systems					

**Back**

PCI slot    PCI slot

**Top**

PCI slot #2    PCI slot #1

Systemboard    Light Path Diagnostics Panel

DIMM sockets    Power Supp

opt CPU    CPU    Fan Fan    Fan Fan

Fan Fan Fan Fan    Disk (opt)    Disk (std or opt)

**Front**

disk bay    disk bay

Bay ① 3.5", UltraSlim 0.8", access, std diskette

Bay ② 5.25", UltraSlim 0.8", access, std CD-ROM

Bay ③ 3.5", SL 1", access, open for fixed or hot-swap disk

Bay ④ 3.5", SL 1", access, open for fixed or hot-swap disk

Slot 1: fullsize, 64-bit 33MHz PCI 2.2 (5v)

Slot 2: halfsize, 64-bit 33MHz PCI 2.2 (5v)

- ❑ Stealth black
- ❑ H 1.72" (1U) x W 17.3" x D 25.7"
- ❑ 26 to 28.4 lbs (minimum to maximum configuration)
- ❑ Setup Program is available by pressing F1 at startup
- ❑ PC-Doctor diagnostics is available by pressing F2 at startup
- ❑ SCSISelect near startup by pressing CTRL+A
- ❑ PXE Bullet Agent near startup by pressing CTRL+S
- ❑ DMI 2.1 and Wired for Management 1.1a-compliant
- ❑ Includes rack mounting kit
- ❑ Includes two line cords (9 ft 110v cable with NEMA plug and 9 ft universal interrack HV cable with IEC plug)
- ❑ Predictive Failure Analysis™ on processor(s), voltage regulator modules, memory, fans, power supply, and disk options

**All models:** Maximum internal disk capacity (model dependent):  
146.8GB with two 73.4GB SL SCSI disks or  
80GB with two 40GB EIDE disks / supports 15K rpm SCSI disks

**LIMITED WARRANTY<sup>3</sup>**

- ⇒ 3 year parts and labor
- ⇒ International Warranty Service<sup>3</sup>
- ⇒ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>
- ⇒ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hour coverage, Mon-Fri excluding holidays, 4 hour average response (ServicePac® part num 21P2072)
  - 24 hr x 7 day coverage, 4 hour average response (ServicePac part number 21P2073)
  - 24 hr x 7 day coverage, 2 hour average response (ServicePac part number 21P2074)
- ⇒ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

IBM® Type-model	Qty x Processor	L3 cache	Memory	Memory technology	Disk	Disk controller	Mechanical	Slots x bays	Hot-swap or fixed disk bays	Ethernet	Operating System	Available date
8675-4MX	1 x Pentium® III 1.4GHz	32MB	512MB	MXT/Chipkill	None	Ultra160	1U rack	2x4	2 hot-swap	2 x 10/100	None	Feb 2002

Positioning	<i>An ultradense, 2-way, high-performance server designed for increased availability and lower costs</i>											
Processor	<b>1 x Intel® Pentium® III 1.4GHz-S with 133MHz frontside bus</b>											
SMP support	<b>2-way SMP</b> via identical processor / both VRMs integrated on planar											
Implementation	Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA2) / two Intel PGA370 sockets / terminator in empty socket											
L2 cache	<b>512KB</b> std and max / ECC / full speed											
L3 cache	<b>32MB</b> std and max / 8MB checksum / ECC / DDR-SDRAM / on planar / part of ServerSet III HE chipset											
Memory	<b>512MB</b> std / 4GB max / 4 sockets / 2 available / DIMMs must be installed in matched pairs / 2-way interleaving / <b>SDRAM / 133MHz</b> / ECC registered DIMMs / 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant											
Memory - MXT	<b>Memory eXpansion Technology (MXT):</b> technology can double amount of usable memory via compression/decompression in hardware (not software) with the memory controller											
Memory - errors	<b>Error Checking and Correcting (ECC)</b> via <b>16-bit Checksum Chipkill™</b> (corrects 1, 2, 3, or 4-bit errors on same chip and detects 1- through 8-bit errors contained in two chips)											
SCSI disk controller	Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit 66MHz PCI / integrated on planar											
SCSI connectors	Internal 68-pin connector / no external SCSI connector											
SCSI cabling	One 1-drop 16-bit LVD cable from internal 68-pin SCSI connector to hot-swap SCSI backplane											
IDE controller	Enhanced IDE / ATA-33 / two connectors on planar / one 1-drop IDE cable to standard CD-ROM											
Disk	None standard											
Architecture / chipsets	<b>ServerWorks® ServerSet III HE</b> / CNB30HE North Bridge NB6636-PO1 (memory controller with MXT, 16-bit Checksum Chipkill, and L3 cache controller) / CIOB I/O Bridge (Frontside Bus interface from North Bridge to PCI buses) / two peer PCI 2.2 buses (A: 64-bit 66MHz, B: 64-bit 33MHz) / IB6566 OSB4 rev PO5 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, serial, keyboard, mouse)											
Mechanical	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door)											
Control Panel	Front indicators/switches include Power, Reset, Console Select, Power LED and Fault/info LED											
10/100 ethernet	<b>2 x Intel 82559</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / redundant ethernet capability and load balancing support through the connection of both ethernet ports to the same LAN segment / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / Alert on LAN™ 2 and Wake on LAN® support											
CD-ROM / diskette	24X-10X <sup>6</sup> CD-ROM, CAV (ATAPI), bootable, IDE / 3.5" 1.44MB diskette drive											
Serial / parallel / USB	Serial: one 9-pin; Parallel: none; USB: two ports (Version 1.1); Mgmt: two RS485 ports for systems management											
Console interconnects	C2T Interconnect™ cable (10 inch, 245mm) is standard (C2T chaining cable) / daisy chain connection to adjacent server / supports large rack deployments of daisy chained servers / two C2T ports in rear / chain functions with multiple server (not contiguous in chain) outage / one Cable Chain Technology Cable Kit required at end of chain (a cable with separate keyboard, mouse, monitor connectors [a KVM cable])											
Systems mgmt	<b>Advanced System Mgmt processor</b> / on planar / PowerPC 403GA™ / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supply / support for optional Remote Supervisor Adapter with 20-pin connector on planar for continuous power (no external power required)											
Diagnostics	<b>Light Path Diagnostics™</b> (LED lights indicate failing component) and on-board diagnostics (via PC-Doctor in BIOS)											
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B						Pentium III 1.4GHz/133MHz/512KB Proc Upg			48P7466		
Security	Power-on password / administrator password / unattended boot / selectable boot / unattended start mode						256MB SDRAM ECC DIMM 133MHz (RDIMM)			33L3322		
Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), IBM Director, and others						512MB SDRAM ECC DIMM 133MHz (RDIMM)			33L3324		
Keyboard / mouse	None standard						1GB SDRAM ECC DIMM 133MHz (RDIMM)			33L3326		
Cooling fans	Eight variable speed fans (four for processor(s) and planar, two for disk(s) and planar, two for power supply)						36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD			37L7206		
Power supply	200 watt / universal / auto-sensing / auto-restart support						73.4GB 10K Ultra160 SCSI Hot-Swap SL HDD			06P5756		
Prerequisites	Monitor, keyboard, mouse, rack, disk, operating system, one Cable Chain Technology (C2T) Console Cable Kit per chain of servers						18.2GB 15K Ultra160 SCSI Hot-Swap SL HDD			19K0656		
							Remote Supervisor Adapter			09N7585		
							ServeRAID™-4Lx Ultra160 SCSI Adapter			06P5740		
							ServeRAID-4Mx Ultra160 SCSI Adapter			06P5736		
							IBM T540 15" Flat Panel Monitor (black)			9511AG4		
							xSeries Cable Chain Technology Cable Kit (contains 2 meter breakout cable and 2 meter KVM chaining cable) 06P4792					
							Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>					

<p><b>Back</b></p> <p>PCI slot    PCI slot</p> <p><b>Top</b></p> <p>PCI slot #2    PCI slot #1</p> <p>Systemboard</p> <p>DIMM sockets</p> <p>Light Path Diagnostics Panel</p> <p>Power Supp</p> <p>Fan Fan</p> <p>Fan Fan</p> <p>Fan Fan</p> <p>Fan Fan</p> <p>Diskette CD-ROM</p> <p>Disk (opt)</p> <p>Disk (opt)</p> <p><b>Front</b></p> <p>disk bay    disk bay</p>	<p>Bay ① 3.5", UltraSlim 0.8", access, std diskette</p> <p>Bay ② 5.25", UltraSlim 0.8", access, std CD-ROM</p> <p>Bay ③ 3.5", SL 1", access, open for hot-swap disk</p> <p>Bay ④ 3.5", SL 1", access, open for hot-swap disk</p> <p>Slot 1: fullsize, 64-bit 66MHz PCI 2.2 (3.3v)</p> <p>Slot 2: halfsize, 64-bit 33MHz PCI 2.2 (5v)</p> <ul style="list-style-type: none"> <li>⊕ Stealth black front bezel</li> <li>⊕ H 1.72" (1U) x W 17.3" x D 25.7"</li> <li>⊕ 26 to 28.4 lbs (minimum to maximum configuration)</li> <li>⊕ Setup Program is available by pressing F1 at startup</li> <li>⊕ PC-Doctor diagnostics is available by pressing F2 at startup</li> <li>⊕ SCSISelect near startup by pressing CTRL+A</li> <li>⊕ PXE Bullet Agent near startup by pressing CTRL+S</li> <li>⊕ DMI 2.1 and Wired for Management 1.1a-compliant</li> <li>⊕ Includes rack mounting kit</li> <li>⊕ Includes two line cords (9 ft 110v cable with NEMA plug and 9 ft universal interrack HV cable with IEC plug)</li> <li>⊕ Predictive Failure Analysis® on processor(s), voltage regulator modules, memory, fans, power supply, and disk options</li> </ul> <p>Maximum internal disk capacity (model dependent): 146.8GB with two 73.4GB SL SCSI disks / supports 15K rpm SCSI disks</p>	<p><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>⇒ 3 year parts and labor</li> <li>⇒ International Warranty Service<sup>3</sup></li> <li>⇒ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup></li> <li>⇒ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup> <ul style="list-style-type: none"> <li>• Mon-Fri coverage, 4 hour response time (ServicePac® part num 21P2072)</li> <li>• 24 hr x 7 day coverage, 4 hour response time (ServicePac part num 21P2073)</li> <li>• 24 hr x 7 day coverage, 2 hour response time (ServicePac part num 21P2074)</li> </ul> </li> <li>⇒ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></li> </ul>
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See footnotes for important warranty information  
 • = Hot-swap bays  
 US model announced February 12, 2002; withdrawn effective January 13, 2003  
 (X330MXT) © IBM Corp. February 2002

# IBM @server™ xSeries™ 330 (DC power models) - withdrawn xREF by eServer Field Skills Enablement Team

IBM® Type-model	Qty x Processor	Memory	Ultra160 SCSI disk	Disk controller	Mechanical	Slots x bays	Hot-swap bays	Ethernet	Power supply	NEBS-3 compliant	Available date
8674-3AX	1 x Pentium® III 1.26GHz <sup>1</sup>	256MB	None	Ultra160	1U <sup>4</sup> rack	2x4	2 hot-swap	2 x 10/100	DC power	No	Sept 2001
8674-N1X	2 x Pentium III 1.26GHz	1GB	2 x 18.2GB <sup>2</sup>	Ultra160	1U rack	2x4	2 hot-swap	2 x 10/100	DC power	NEBS-3	Mar 2002

**DC power models are designed for network infrastructures requiring network equipment to support DC power environments**

Positioning	<i>Model N1X is Network Equipment Building System (NEBS) level 3-compliant for telecommunications carrier environments</i>																																						
Processor	<b>1 or 2 x Intel® Pentium® III 1.26GHz-S with 133MHz frontside bus</b>																																						
SMP support	<b>2-way SMP</b> via identical processor / both VRMs integrated on planar																																						
Implementation	Processor and L2 cache in Flip-Chip Pin Grid Array (FC-PGA2) / two Intel PGA370 sockets / terminator in empty socket																																						
L2 cache	<b>512KB</b> std and max / ECC / full speed																																						
Memory	<b>256MB</b> or <b>1GB</b> std / 4GB max <sup>13</sup> / Error Checking and Correcting (ECC) memory controller / 4 sockets / <b>3AX</b> with <b>256MB</b> : 3 sockets available; <b>N1X</b> with <b>1GB</b> : 0 sockets available (standard with four x 256MB DIMMs) / <b>SDRAM / 133MHz</b> / PC133-compliant / ECC registered DIMMs / 168-pin gold-plated DIMM 3.3 volt sockets																																						
SCSI disk controller	Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit PCI / integrated on planar																																						
SCSI connectors	Internal 68-pin connector / no external SCSI connector																																						
SCSI cabling	One 1-drop 16-bit LVD cable from internal 68-pin SCSI connector to hot-swap SCSI backplane																																						
IDE controller / cabling	Enhanced IDE / ATA-33 / two connectors on planar / one 1-drop IDE cable to standard CD-ROM																																						
Disk	<b>3AX</b> : none; <b>N1X</b> : 18.2GB Ultra160 SCSI / 10K rpm / 5.5 ms average read seek time / 2.99ms average latency																																						
Architecture / chipsets	<b>ServerWorks® ServerSet III LE chip set</b> / NB6635 North Bridge 3.0LE (the North Bridge has two peer PCI buses: (1) PCI Bus 0, 32-bit 33MHz, South Bridge, Super I/O, graphics, 2 x ethernet; (2) PCI Bus 1, 64-bit 33MHz, SCSI controller, two 64-bit PCI slots) / IB6566 OSB4 rev B2 South Bridge for IDE, USB, ISA bus for Service Processor and Super I/O National Semiconductor® PC97317VUL (diskette, parallel, serial, keyboard, mouse)																																						
Mechanical	<b>EIA 19" Rack (1U<sup>4</sup>)</b> / rack-mount only / supported in IBM NetBAY™ Rack products (rack requires vented front door)																																						
Control Panel	Front indicators/switches include Power, Reset, Console Select, Power LED and Fault/info LED																																						
Ethernet controllers	<b>2 x Intel 82559</b> ethernet controllers / on planar / 10BaseT, 100BaseTX / full duplex / 32-bit PCI bus / redundant ethernet capability and load balancing support through the connection of both ethernet ports to the same LAN segment / two RJ-45 connectors on rear / supports PXE 2.0 Boot Agent / Wake on LAN® support																																						
CD-ROM / diskette	24X-10X <sup>5</sup> CD-ROM, CAV (ATAPI), bootable, IDE / 3.5" 1.44MB diskette drive																																						
Rear ports	<i>Serial</i> : one 9-pin; <i>Parallel</i> : none; <i>USB</i> : two ports (Version 1.1); <i>Adv Sys Mgmt</i> : two RJ-45 ports																																						
Console interconnects	System-to-system interconnect cable (10 inch, 245mm) is standard (Keyboard Video Mouse (KVM) chaining cable) / daisy chain connection to adjacent server / supports large rack deployments of daisy chained servers / chain functions with multiple server (not contiguous in chain) outage / one Cable Chain Technology Cable Kit required at end of chain (a cable with separate keyboard, mouse, monitor connectors)																																						
Systems mgmt	<b>Advanced System Mgmt Processor</b> / on planar / PowerPC 403GA™ / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supply / support for optional Remote Supervisor Adapter with 20-pin connector on planar for continuous power (no external power required)																																						
Diagnostics	<b>Light Path Diagnostics™</b> (LED lights indicate failing component) and on-board diagnostics (via PC-Doctor in BIOS)																																						
Graphics controller	SVGA / PCI bus / S3® Savage4Pro (on planar) / 8MB SDRAM std and max / DDC2B																																						
Security	Power-on password / administrator password / unattended boot / selectable boot / unattended start mode																																						
OS support	Windows® NT 4.0 Server, Windows 2000 Server and Adv Server; Linux®: Red Hat, TurboLinux, SuSE, Caldera eServer																																						
Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), AntiVirus software, IBM Director™, and others																																						
Keyboard / mouse	None standard																																						
Cooling fans	Eight fans (four for processor(s) and planar, two for disk(s) and planar, two for power supply)																																						
Power supply	<b>200 watt (-48 to -60 V dc [direct current])</b> / auto-sensing / supports dual input sources (two power sources) / not redundant / not hot-swap / auto-restart support																																						
Prerequisites	Appropriate dc power source and customer supplied wiring, monitor, keyboard, mouse, rack, disk, operating system, one Cable Chain Technology (C2T) Console Cable Kit per chain of servers																																						
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xSeries Cable Chain Technology Cable Kit (contains 2 meter breakout cable and 2 meter KVM chaining cable)	06P4792																																						
Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>																																							

	<p>Bay ① 3.5", UltraSlim 0.8", access, std diskette</p> <p>Bay ② 5.25", UltraSlim 0.8", access, std CD-ROM</p> <p>Bay ③ 3.5", SL 1", access, open for hot-swap disk</p> <p>Bay ④ 3.5", SL 1", access, open for hot-swap disk</p> <p>Slot 1: fullsize, 64-bit 33MHz PCI 2.2 (5v)</p> <p>Slot 2: halfsize, 64-bit 33MHz PCI 2.2 (5v)</p> <ul style="list-style-type: none"> <li>◇ Stealth black</li> <li>◇ H 1.72" (1U) x W 17.3" x D 25.7"</li> <li>◇ 26 to 28.4 lbs (minimum to maximum configuration)</li> <li>◇ Setup Program is available by pressing F1 at startup</li> <li>◇ PC-Doctor diagnostics is available by pressing F2 at startup</li> <li>◇ SCSISelect near startup by pressing CTRL+A</li> <li>◇ PXE Bullet Agent near startup by pressing CTRL+S</li> <li>◇ DMI 2.1 and Wired for Management 1.1a-compliant</li> <li>◇ Includes rack mounting kit</li> <li>◇ Predictive Failure Analysis® on processor(s), voltage regulator modules, memory, fans, power supply, and disk options</li> </ul> <p><b>3AX only:</b> Maximum internal disk capacity: 146.8GB with two 73.4GB SL SCSI disks / supports 15K rpm SCSI disks</p> <p><b>N1X only:</b> Maximum internal disk capacity<sup>13</sup>: 36.4GB with two 18.2GB SL SCSI disks</p>	<p><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>⇒ 3 year parts and labor</li> <li>⇒ International Warranty Service<sup>3</sup></li> <li>⇒ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time</li> <li>⇒ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup> <ul style="list-style-type: none"> <li>• 9 hour coverage, Mon-Fri excluding holidays, 4 hour response time (ServicePac® part number 21P2072)</li> <li>• 24 hr x 7 day coverage, 4 hour response time (ServicePac part number 21P2073)</li> <li>• 24 hr x 7 day coverage, 2 hour response time (ServicePac part number 21P2074)</li> </ul> </li> <li>⇒ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>5</sup></li> </ul>
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See footnotes for important warranty information

(X330DC) © IBM Corp. March 2002

• = Hot-swap

US models announced August 2001 and March 2002; withdrawn effective February 28, 2003



IBM® Type-model	Qty x Processor	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot -swap disk bays	Ethernet	Available date
8656-6RY	1 x Pentium® III 1GHz/133	128MB	None	2 x Ultra160	3U rack	5 slots x 7 bays	3 hot-swap	10/100 ethernet	Oct 2000
Intel® processor(s) L2 cache Implementation SMP support	<b>1 x Pentium® III 1GHz<sup>1</sup> with 133MHz Front Side Bus</b> 256KB std and max / ECC / at processor speed / processor and L2 cache in Single Edge Cartridge (SECC2) Motherboard contains two Intel Slot 1 connectors for SECC2 cartridges (open Slot 1 used by terminator), one VRM socket (one VRM integrated), four DIMM sockets, PCI slots, and integrated subsystems <b>2-way SMP</b> via second identical processor / upgrade via SECC2 into second Slot 1 CPU connector								
Memory - std / max Memory - sockets Memory - features Memory - support	<b>128MB std / 4GB max</b> 4 sockets / 3 available / <b>ECC</b> / (all have Error Checking and Correcting (ECC) memory controller) / non-interleaved <b>SDRAM / 133MHz</b> / four 168-pin gold-plated DIMM 3.3 volt sockets / PC133-compliant Supports registered SDRAM ECC DIMMs only (128, 256, 512MB, and 1GB)								
SCSI disk controller SCSI channels IDE controller / cable Disk - capacity Disk - bays	<b>Adaptec® AHA-7899 / dual channel Wide Ultra160 SCSI controller</b> (LVD 160MB/sec) / Ultra 160/m / on planar / 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 backplane <i>Channel B:</i> 16-bit 68-pin interface (not used) Single Primary IDE / one connector on planar / one 1 drop IDE cable (CD-ROM) <b>None standard</b> / supports 7200-10000 rpm disks / 1 backplane / SAF-TE 1.0-compliant Three hot-swap / 80-pin SCA-2 connectors / common tray with EXP300 and later systems								
Mechanical Rack support Bus slots (see below) Chip set Bays / available Status LEDs	<b>EIA 19" Rack (3U<sup>4</sup>)</b> x 26-inch deep Rack systems supported in IBM Netfinity Racks 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) <b>ServerWorks® ServerSet III LE chip set</b> / 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) (See diagram below): 7 bays / three hot-swap bays <b>Operator Information Panel</b> (in front) / includes power-on, disk, ethernet, information, system error							<i>All models: Max int disk capacity: 218.4GB<sup>2</sup> with six 36.4GB SL disks</i>	
10/100 ethernet CD-ROM / diskette Serial / parallel / USB Graphics controller	AMD® Am79C975 / on planar / <b>10BaseT, 100BaseTX / full duplex</b> / RJ-45 connector / 2 front LEDs 24X-10X <sup>6</sup> CD-ROM / multisession / IDE interface / bootable; <i>Diskette:</i> 3.5" 1.44MB diskette drive <i>Serial:</i> Three 9-pin (one for Mgmt Processor) <i>Parallel:</i> One (EPP, ECP) / IEEE 1284 <i>USB:</i> Two ports (Version 1.1) 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 name / hinged bezel to cover disk bays, power button, and reset button / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode								
Systems management Diagnostics Software UpgradeableEEPROMs	<b>Integrated Advanced System Mgmt Processor</b> / on planar / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temperature, fans, and power supplies / rear knockout for planar to RJ-11 cable (from optional Sys Mgmt Proc Interconnect Cable Kit) <b>Diagnostics LED Panel</b> (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 <b>ServerGuide™</b> (CD-ROM installation and config utilities), AntiVirus software, APC PowerChute Plus, IBM Director, others BIOS (remote), diagnostics (remote), and Mgmt Processor on motherboard can be upgraded								
Keyboard / mouse Power supply	None standard <i>Std:</i> one 270 watt hot-swap; <i>Max:</i> two 270 watt hot-swap / <b>front access</b> / redundant with two power supplies / worldwide / voltage-sensing / auto-restart / fans in each power supply					Pentium III 1GHz/133MHz/256KB Proc Upg 19K4640 128MB SDRAM ECC DIMM 133MHz (RDIMM II) 33L3123 256MB SDRAM ECC DIMM 133MHz (RDIMM II) 33L3125 512MB SDRAM ECC DIMM 133MHz (RDIMM II) 33L3127 1GB SDRAM ECC DIMM 133MHz (RDIMM II) 33L3129 Netfinity 270W Hot-Swap Redundant Pwr Supply 37L6880 Netfinity 3-Pack Ultra160 Hot-Swap Exp Kit 33L5050 18.2GB 15K-rpm Ultra160 SCSI Hot-Swap HDD 19K0656 18.2GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L7205 36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD 37L7206 Sys Mgmt Proc Interconnect Cable Kit 03K9309			
Fans	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								
Prerequisites	Monitor, disk, network oper system, keyboard, mouse, rack								

<p>Slot 1: fullsize, 32-bit 33MHz PCI 2.1 (5v), Bus A                      Slot 2: fullsize, 32-bit 33MHz PCI 2.1 (5v), Bus A                      Slot 3: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B                      Slot 4: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B                      Slot 5: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B</p> <p>Bay ① 3.5", US 0.8", access, diskette                      Bay ② 3.5", US 0.8", access, CD-ROM                      Bay ③ 3.5", SL 1", access, hot swap                      Bay ④ 3.5", SL 1", access, hot swap                      Bay ⑤ 3.5", SL 1", access, hot swap                      Bay ⑥ 5.25", HH 1.6", access*                      Bay ⑦ 5.25", HH 1.6", access*</p> <p>Bays 6 through 7 support two HH devices or an optional Netfinity 3-Pack Ultra 160 Hot-Swap Expansion Kit to convert these two bays into three hot-swap disk bays</p>	<ul style="list-style-type: none"> <li>⇨ Rail system enables devices (CD-ROM, diskette, tape drives) to snap in and out without screws</li> <li>⇨ Configuration/Setup Utility invoked by pressing F1 at startup</li> <li>⇨ SCSISelect near startup by pressing CTRL+A</li> <li>⇨ Several hardcopy publications</li> <li>⇨ Predictive failure analysis on disk options, memory, processors, VRMs, power supplies, and fans in conjunction with Netfinity Director can alert the system administrator of an imminent component failure</li> <li>⇨ Rack: H 5.25" x W 16.3" x D 26.0"</li> <li>⇨ 44 to 62 pounds</li> <li>⇨ Stealth black color</li> <li>⇨ Two 5.25" bays use rails (no screws) for devices</li> </ul>	<p><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>⇨ 3 year parts and labor</li> <li>⇨ International Warranty Service<sup>3</sup></li> <li>⇨ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup></li> <li>⇨ 3 year on site warranty service upgrade options ( in eligible locations):<sup>7</sup> <ul style="list-style-type: none"> <li>• 24 hr x 7 day coverage, 4 hour response time</li> <li>• 24 hr x 7 day coverage, 2 hour response time</li> </ul> </li> <li>⇨ IBM Server Start Up Support</li> <li>⇨ 24 hour x 7 day<sup>14</sup> telephone, electronic, and internet support</li> </ul>
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\* For a copy of IBM's Statement of Limited Warranty, call 1-800-772-2227  
 • = Hot-swap  
 US model withdrawn effective December 2001  
 No warranties are expressed or implied in this summary (X340) © IBM Corp. November 2001

IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk	SCSI controller	Mechanical	Slots x bays (hot-swap)	Power supply	Ethernet	Available date
8669-1RX	1 x Pentium® III 1.0GHz/133	256KB	256MB	None	2 x Ultra160	3U rack	5x7 (3 hot-swap)	1 hot-swap	10/100	Jun 2001
8669-2RX	1 x Pentium III 1.13GHz/133	512KB	256MB	None	2 x Ultra160	3U rack	5x7 (3 hot-swap)	1 hot-swap	10/100	Jun 2001
8669-4RX	1 x Pentium III 1.26GHz/133	512KB	256MB	None	2 x Ultra160	3U rack	5x7 (3 hot-swap)	1 hot-swap	10/100	Aug 2001
8669-5RX	1 x Pentium III 1.4GHz/133	512KB	256MB	None	2 x Ultra160	3U rack	5x7 (3 hot-swap)	1 hot-swap	10/100	Mar 2002

Positioning Processor(s) *Rack-optimized 3U server engineered for business-critical reliability and 2-way scalability*  
**1 x Intel® Pentium® III 1.0, 1.13, 1.26, 1.4GHz with 133MHz frontside bus** / upgrade from slower to faster proc supported  
 L2 cache **256KB or 512KB** std and max / ECC / at processor speed / processor and L2 cache in Flip Chip Pin Grid Array (FC-PGA2)  
 Implementation Motherboard contains two Intel PGA370 sockets, four DIMM sockets, five PCI slots, and integrated subsystems  
 SMP support **2-way SMP** via second identical proc (1 to 1.26GHz supported) / upgrade via FC-PGA2 into second PGA370 socket

Memory **256MB std / 4GB<sup>13</sup> max** / 4 sockets / 2 available / **ECC** (all have Error Checking and Correcting (ECC) memory controller) / matched pairs required / two-way interleaving / **SDRAM / 133MHz** / four 168-pin gold-plated sockets / PC133-compliant / supports registered SDRAM ECC DIMMs only

SCSI disk controller **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)

SCSI channels Two internal 16-bit channels / both internal (no external)  
*Channel A: 16-bit 68-pin LVD cable from controller to backplane; Channel B: 16-bit 68-pin interface (not used)*  
 IDE controller / cable Single Primary IDE South Bridge / one connector on planar / one 1-drop IDE cable (CD-ROM)  
 Disk - capacity **None standard** / supports 7200-15000 rpm disks / one backplane  
 Disk - bays Three hot-swap / 80-pin SCA-2 connectors / three additional hot-swap disk bays with Kit 33L5050

Mechanical **EIA 19" Rack (3U\*) x 26-inch deep**  
 Rack support Rack systems supported in IBM NetBAY™ Racks (such as NetBAY42 SR, NetBay42 ER) / no rack to tower conversion  
 Bus slots (See below) three peer PCI / no hot-swap Active™ PCI slots  
 Chipset **ServerWorks® HE-SL chipset** / NB6576 North Bridge for CIOB and PCI A (slot, graphics, south bridge) / NB6555 Champion I/O Bridge (CIOB) for PCI Bus B (slots, ethernet) and C (slots, SCSI) / IB6566 South Bridge for IDE, USB, ISA bus for Super I/O National Semiconductor® PC97317VUL (diskette, serial, keyboard, mouse)  
 Bays (See diagram below): 7 bays / two 5.25" HH bays (Kit converts to 3 HS) / one diskette bay / 3 HS bays  
 Status LEDs **Operator Information Panel** (in front) / includes power-on, disk, ethernet, information, system error

10/100 ethernet Intel 82550 / on planar / 10BaseT, 100BaseTX, 100BaseFX / full duplex / supports Wake on LAN® and Alert on LAN™ 2  
 CD-ROM / diskette 24X-10X<sup>6</sup> CD-ROM / multisession / IDE interface / bootable; *Diskette: 3.5" 1.44MB diskette drive / dust cover*  
 Rear ports *Serial: three 9-pin (one disabled); USB: two ports (Version 1.1); keyboard; mouse; no parallel port; Adv Sys Mgmt: two RJ-45*  
 Graphics controller SVGA / PCI 2.1 bus / S3® Savage4 (on planar) / 8MB SDRAM std/max / 1280x1024 at 16M colors at 100Hz / 15-pin D-shell

Security Power-on password / administrator password / unattended boot / selectable boot

Systems mgmt **IBM integrated system management processor (ISMP)** / Hitachi® H8S2148 / on planar using SMBus / monitors temperature, fans, voltage, and power supplies / support for optional IBM Remote Supervisor Adapter with 20-pin connector on planar for continuous power (no external power required)

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), AntiVirus software, IBM Director, others

Keyboard / mouse None (since rack-based)  
 Power supply *Std: one 270 watt hot-swap; Max: two 270 watt hot-swap / front access / redundant with two power supplies / worldwide / voltage-sensing / auto-restart / fans in each power supply*

Fans Three (two in middle, one in rear) / multispeed / **hot-swap** / redundant (any single fan can fail while maintaining cooling) / PFA / fan failure signals Diagnostic LED and Mgmt Processor / fan in each power supply / fan on each Pentium III processor

Prerequisites Monitor, disk, network operating system, rack, keyboard, mouse  
*All models: Max int disk capacity: 440.4GB<sup>2</sup> with six 73.6GB SL disks with 3-Pack Ultra160 Hot-Swap Expansion Kit*

Pentium III 1GHz/133MHz/256KB Proc Upg	24P3511
Pentium III 1.13GHz-S/133MHz/512KB Proc Upg	24P3512
Pentium III 1.26GHz-S/133MHz/512KB Proc Upg	25P2600
Pentium III 1.4GHz-S/133MHz/512KB Proc Upg	48P7467
128MB SDRAM ECC DIMM 133MHz RDIMM	33L3320
256MB SDRAM ECC DIMM 133MHz RDIMM	33L3322
512MB SDRAM ECC DIMM 133MHz RDIMM	33L3324
1GB SDRAM ECC DIMM 133MHz RDIMM	33L3326
Netfinity® 270W Hot-Swap Redundant Pwr Supp	37L6880
3-Pack Ultra160 Hot-Swap Expansion Kit	33L5050
Remote Supervisor Adapter	09N7585
IBM ServeRAID™-4Mx Ultra160 SCSI PCI Adptr	06P5736
18.2GB 15K rpm Ultra160 SCSI Hot-Swap HDD	19K0656
36.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD	37L7206
73.4GB 10K-4 Ultra160 SCSI Hot-Swap SL HDD	06P5756
IBM T540 15" Flat Panel Monitor (black)	9511AG4
Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>	

- Slot 1: fullsize, 32-bit 33MHz PCI 2.1 (5v), Bus A
- Slot 2: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B
- Slot 3: fullsize, 64-bit 33MHz PCI 2.1 (5v), Bus B
- Slot 4: fullsize, 64-bit 66MHz PCI 2.1 (3.3v), Bus C
- Slot 5: fullsize, 64-bit 66MHz PCI 2.1 (3.3v), Bus C



3U Rack

- Bay ① 3.5", US 0.8", access, diskette
- Bay ② 3.5", US 0.8", access, CD-ROM
- Bay ③ 3.5", SL 1", access, hot-swap
- Bay ④ 3.5", SL 1", access, hot-swap
- Bay ⑤ 3.5", SL 1", access, hot-swap
- Bay ⑥ 5.25", HH 1.6", access\*
- Bay ⑦ 5.25", HH 1.6", access\*

Bays 6 through 7 support two HH devices or an optional 3-Pack Ultra160 Hot-Swap Expansion Kit 33L5050 to convert these two bays into three hot-swap disk bays

- Rail system enables devices (CD-ROM, diskette, tape drives) to snap in and out without screws
- Configuration/Setup Utility invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A
- PC-Doctor diagnostics by pressing F2 at startup
- Several hardcopy publications
- Predictive Failure Analysis® on disk options, memory, processors, VRMs, power supplies, and fans in conjunction with IBM Director can alert the system administrator of an imminent component failure
- Rack: H 5.25" x W 16.3" x D 26.0"
- 44 to 62 pounds
- Stealth black color
- Two 5.25" bays use rails (no screws) for devices

**LIMITED WARRANTY<sup>3</sup>**

- 3 year parts and labor
- International Warranty Service<sup>3</sup>
- On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>
- 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hr coverage, Mon-Fri excluding holidays, 4 hr response time (ServicePac® 21P2077)
  - 24 hr x 7 day coverage, 4 hour average response time (ServicePac 21P2078)
  - 24 hr x 7 day coverage, 2 hour average response time (ServicePac 21P2093)
- 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

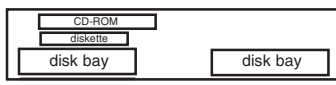
See footnotes for important warranty information

US models announced on June 26 and August 7, 2001, and February 12, 2002

US models withdrawn effective March, June, September, or October 2002

• = Hot-swap (HS)

IBM® Type-model	Qty x Processor	L2 cache	Memory	Ultra160 SCSI disk	SCSI controller	Mechanical	Slots x bays	Fixed disk bays	Alarm Panel	Power supply	Compliant	Available date
8827-14X	2 x Pentium® III 1.26GHz	512KB	2GB	1 x 36.4GB <sup>2</sup> 10K	2 x Ultra160	2U <sup>4</sup> rack	6x4	2 fixed	Yes	DC power	NEBS-3	Apr 2002
<p><b>DC power models are designed for network infrastructures requiring network equipment to support DC power environments</b></p>												
Positioning	Network Equipment Building System (NEBS) level 3-compliant for telecommunications carrier-grade environments											
Processor(s)	2 x Intel® Pentium® III 1.26GHz-S with 133MHz frontside bus											
L2 cache	512KB std and max / ECC / at processor speed / processor and L2 cache in Flip Chip Pin Grid Array (FC-PGA2)											
Implementation	Motherboard contains two Intel PGA370 sockets, six DIMM sockets, two PCI riser connectors, and integrated subsystems											
SMP support	2-way SMP via second identical processor is standard											
Memory	2GB std / 6GB <sup>13</sup> max / 6 sockets / 4 available (ships with two 1GB DIMMs) / Error Checking and Correcting (ECC) memory controller / matched pairs required / two-way interleaving / SDRAM / 133MHz / six 168-pin gold-plated sockets / PC133-compliant / supports registered SDRAM ECC DIMMs only											
SCSI disk controller	Adaptec® AHA-7899W / dual channel Wide Ultra160 SCSI controller (LVD 160MB/sec) / on planar / 64-bit PCI											
SCSI channels	SCSI Channel A: external 16-bit .8mm VHDCI 68-pin external connector (no cables) SCSI Channel B: one internal 16-bit 68-pin LVD cable from controller to two-bay disk drive carrier											
SCSI disk	1 x 36GB Ultra160 SCSI, 10K rpm, 4.9ms read seek, S.M.A.R.T. <sup>5</sup>											
SCSI disk bays	Two fixed disk bays (not hot-swap) in disk drive carrier that slides out from front											
IDE controller / cable	EIDE ATA-33 controller in South Bridge / one connector on planar / one 1-drop IDE cable (to CD-ROM)											
Mechanical	EIA 19" Rack (2U <sup>4</sup> ) x 20-inch deep											
Rack support	Designed for installation in a two-post, 19" rack unit only (not supported in IBM NetBAY™ Racks) / ships with rack mount kit (See below) three full height full length 64-bit 33MHz slots / three low-profile half length 64-bit 66MHz PCI slots / PCI 2.2 / peer PCI buses / no hot-swap Active™ PCI slots											
PCI bus slots												
Chipset	ServerWorks® III HE-SL chipset / CNB20HE-SL North Bridge for CIOB and PCI A 32-bit 33MHz (graphics, ethernet, South Bridge) / NB6555 Champion I/O Bridge (CIOB20) for PCI Bus B (slots, SCSI) and C (slots) / CSB5 South Bridge for EIDE, USB, LPC bus for Super I/O National Semiconductor PC8741 (diskette, serial, keyboard) and Baseboard Management Controller											
Bays	(See diagram below): 4 bays / two disk bays (not hot-swap) / one CD-ROM bay / one diskette bay											
10/100 ethernet	2 x Intel 82550 / on planar / full duplex / supports Wake on LAN®, PXE 2.0 Boot Agent, Adapter Fault Tolerance Failover											
CD-ROM / diskette	24X-10X <sup>6</sup> CD-ROM / multisession / IDE interface / bootable; Diskette: 3.5" 1.44MB diskette drive / dust cover											
Rear ports	Two USB ports (Version 1.1); RJ-45 serial; PS/2 keyboard; two RJ-45 ethernet; DB-15 graphics; 68-pin SCSI; DB-15 male connector for front panel alarm relay contacts / no parallel port / mouse connects to USB port (or keyboard port with standard Y-splitter cable)											
Graphics controller	SVGA / PCI bus / ATI® Rage XL (on planar) / 8MB SDRAM std/max / 1600x1280 at 16M colors at 85Hz / 15-pin D-shell											
Security	Power-on password / admin password / unattended boot / selectable boot / boot without keyboard / diskette write protect											
Alarm panel	External alarm panel in front bezel provides 24x7 surveillance of critical, major and minor errors and power outages / four alarm panel LEDs: power alarm fault, critical alarm fault, major alarm fault, minor alarm fault											
Status LEDs	Operator Information Panel (in front) / includes switches (NMI, power, reset) and status LEDs (NIC, disk, main power)											
Systems mgmt	Integrated service processor (Baseboard Management Controller) / on planar / failures or thresholds in fans, memory, processors, temperature, voltage, and power supplies activate alarm panel LEDs /											
Diagnostics	LED diagnostics and on-board diagnostics providing an LED map to a failing component											
OS support	Red Hat Linux® 7.1											
Software ship group	Resource CD (CD-ROM installation and configuration utilities, Intel Server Control server management software, Product Guide), PC-Doctor™ diagnostics diskette, and IBM Director (on separate CD)											
Keyboard / mouse	None (since rack-based)				512MB SDRAM ECC DIMM 133MHz RDIMM				33L3324			
Power supply	Std: two; max: two / accessible from rear / 350 watt (-48 to -60 V dc [direct current]) / supports dual input sources (two power sources) / redundant / hot-swap / auto-restart support				1GB SDRAM ECC DIMM 133MHz RDIMM				33L3326			
Fans	Four fans / multispeed / not hot-swap / not redundant / fan failure signals front panel alarm LED / fan in each power supply / fan on each Pentium III processor				36.4GB 10K Ultra160 SCSI SL HDD				06P5751			
Prerequisites	Appropriate dc power source and customer supplied wiring, monitor, keyboard, mouse, rack, operating system				IBM E54 (13.8" viewable) FST Monitor (black)				633147N			
					IBM Sleek Two-Button Mouse (black)				28L3673			
					IBM 84-key Space Saver Keyboard (black)				28L3644			
					Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>							

<p>Slot 1: fullsize, 64-bit 33MHz PCI 2.2 (5v), Bus B</p> <p>Slot 2: fullsize, 64-bit 33MHz PCI 2.2 (5v), Bus B</p> <p>Slot 3: fullsize, 64-bit 33MHz PCI 2.2 (5v), Bus B</p> <p>Slot 4: low-profile, 64-bit 66MHz PCI 2.2 (3.3v), Bus C</p> <p>Slot 5: low-profile, 64-bit 66MHz PCI 2.2 (3.3v), Bus C</p> <p>Slot 6: low-profile, 64-bit 66MHz PCI 2.2 (3.3v), Bus C</p>	<p>➤ Raven black color (front bezel)</p> <p>➤ Configuration/Setup Utility invoked by pressing F2 at startup</p> <p>➤ SCSISelect near startup by pressing CTRL+A</p> <p>➤ PC-Doctor™ diagnostics on diskette</p> <p>➤ Several hardcopy publications</p> <p>➤ H 3.5" x W 17.5" x D 20.0"</p> <p>➤ H 89 mm x W 445 mm x D 508 mm</p> <p>➤ 34 to 37 pounds (15.4 to 16.8 kg)</p> <p>➤ IPMI 1.5 and WfM 2.0-compliant</p>	<p><b>LIMITED WARRANTY<sup>3</sup></b></p> <p>↔ 1 year parts and labor</p> <p>↔ International Warranty Service<sup>3</sup></p> <p>↔ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup></p> <p>↔ 1 year on site warranty service upgrade options (in eligible locations):<sup>7</sup></p> <ul style="list-style-type: none"> <li>• 9 hr coverage, Mon-Fri excluding holidays, 4 hr response time (No ServicePac® part number)</li> <li>• 24 hr x 7 day coverage, 4 hour average response time (No ServicePac part number)</li> <li>• 24 hr x 7 day coverage, 2 hour average response time (No ServicePac part number)</li> </ul> <p>↔ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></p>
<p><b>2U Rack</b></p>  <p>Bay ① 3.5", 0.5", access, std diskette</p> <p>Bay ② 3.5", 0.5", access, std CD-ROM</p> <p>Bay ③ 3.5", SL 1", no access, std disk</p> <p>Bay ④ 3.5", SL 1", no access, optional disk</p>		
<p>All models: Max int disk capacity: 72.8GB<sup>2</sup> with two 36.4GB SL disks</p>		

See footnotes for important warranty information  
US model announced March 19, 2002



IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk	SCSI controller	Slots x bays	Bays max	HS power supplies	Ethernet	Mechanical	Available date
8682-4RY	1 x Pentium III Xeon 700MHz	1MB	512MB	None	2 x Ultra160	6x5 (3HS)	8 (6HS)	1 (3 max)	10/100	4U <sup>4</sup> rack	Mar 2001
8682-5RY	1 x Pentium III Xeon 700MHz	2MB	512MB	None	2 x Ultra160	6x5 (3HS)	8 (6HS)	1 (3 max)	10/100	4U rack	Mar 2001
8682-6RY	1 x Pentium III Xeon 900MHz	2MB	512MB	None	2 x Ultra160	6x5 (3HS)	8 (6HS)	1 (3 max)	10/100	4U rack	Apr 2001
Processor(s)	<b>1 x Intel® Pentium® III Xeon™ 700 or 900MHz with 100MHz frontside bus</b>										
L2 cache	<b>1MB</b> std and max / at processor speed or <b>2MB</b> std and max / at processor speed										
Implementation	Motherboard contains four Intel Slot 2 connectors for SECC cartridges (fourth Slot 2 occupied by terminator), PCI slots, one slot for Memory Board, and integrated subsystems / all VRMs integrated in processors										
SMP support	<b>4-way SMP</b> via identical processors / upgrade via SECC into Slot 2 CPU connectors										
Mem - std / max / type	<b>512MB std / 16GB max<sup>13</sup> / Chipkill™</b> multibit error correction using ind std ECC DIMMs (fixes 1 to 4-bit errors on same chip and detects 1- through 8-bit errors contained in two chips) / Chipkill performed by memory controller and firmware										
Memory - sockets	One Memory Board std and max / 16 sockets / 12 available (four 128MB DIMMs standard) / 4-way memory interleave										
Memory - support	<b>SDRAM / 100MHz</b> / sixteen 168-pin gold-plated DIMM 3.3 volt sockets / PC100-compliant / requires 4 identical DIMMs Supports <b>registered</b> SDRAM ECC DIMMs only (128, 256, 512MB, and 1GB)										
SCSI disk controller	<b>Adaptec® AHA-7899 / dual channel Wide Ultra160 SCSI controller</b> (LVD 160MB/sec) / Ultra 160/m / on planar / 64-bit PCI / no hardware RAID standard										
SCSI channels	Two 16-bit channels / both internal or one internal with one external / <i>Channel A:</i> 16-bit 68-pin LVD cable from controller to backplane / <i>Channel B:</i> internal 16-bit connector to use internally or can attach standard bulkhead LVD cable through punch out for external connector										
Extra SCSI cable	Includes a 16-bit LVD SCSI cable for external SCSI devices via an external 0.8mm VHDCI connector										
IDE controller / cable	Single Primary IDE / one connector on planar / one 1-drop IDE cable (CD-ROM)										
Disk - bays	Hot-swap (HS) / 3 bays std / 6 max / 80-pin SCA-2 connectors / common tray with EXP300 and later systems										
Mechanical	<b>EIA 19" Rack (4U<sup>4</sup>)</b>										
Rack support	Supported in IBM NetBAY™ Racks										
Architecture	Three peer PCI 2.2 buses / Bus A: 32-bit 33MHz (1 PCI slot, ethernet, graphics, South Bridge, Mgmt Processor daughtercard) / Bus B: 64-bit 66MHz (3 PCI slots) / Bus C: 64-bit 33MHz (2 PCI slots, SCSI controller)										
Slots (Active™ PCI)	(See below) 6 hot-swap PCI slots <sup>10</sup> available / hot replace, hot upgrade, hot expansion										
Chip set	<b>ServerWorks® ServerSet 2.0HE chip set</b> / NB6536 North Bridge 2.0HE / NB6555IO Bridge 2.0 (Inter Module Bus with two 16-bit links to 6536) / 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): 5 bays / three hot-swap disk bays standard (option for three additional hot-swap disk bays)										
Status LEDs	<b>Operator Information Panel</b> (in front) / includes power-on, disk, ethernet, information, system error										
10/100 ethernet	AMD® Am79C975 / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 connector / 2 front LEDs										
CD-ROM / diskette	48X-20X <sup>6</sup> CD-ROM / multisession / IDE interface / bootable; <i>Diskette:</i> 3.5" 1.44MB diskette drive / dust cover										
Serial / parallel / USB	<i>Serial:</i> Three 9-pin (one for Mgmt Processor) <i>Parallel:</i> One <i>USB:</i> Two ports (Version 1.1) <i>Adv Sys Mgmt:</i> Two RJ-45 SVGA / PCI 2.1 bus / S3 <sup>®</sup> Savage4 (on planar) / 8MB SDRAM std/max / 1280x1024 at 16M colors at 100Hz / DDC2B										
Graphics controller											
Security	Power-on password / administrator password / hinged bezel to cover power button and reset button / unattended boot / selectable boot / systems mgmt security (user log-in password, read-only or read/write access, dial back) / unattended start mode										
Systems management	<b>Advanced System Mgmt Processor</b> / on daughtercard / ISA bus proprietary connector / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temp, fans, and power supplies										
Diagnostics	<b>Diagnostics LED Panel</b> Light Path Diagnostics™ (under cover) / provides an LED map to failing component / motherboard error LEDs / diagnostics in ROM by pressing F2 at startup for PC-Doctor										
Software	<b>ServerGuide™</b> (installation and configuration utilities), Anti-Virus software, APC PowerChute Plus, IBM Director, others										
Keyboard / mouse	None standard										
Power supply	<i>Std:</i> one 270 watt hot-swap; <i>Max:</i> three 270 watt hot-swap / <b>front access</b> / redundant with two power supplies in most cases; redundancy with three in all cases / auto-restart										
Fans	Six (four for disks, memory, PCI; two for processors) / <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										
Prerequisites	Monitor, disk, operating system, keyboard, mouse, rack										
Slot 1:	fullsize, 32-bit 33MHz PCI (5v), hot-swap, Bus A	⇨ Rail system enables CD-ROM and diskette to snap in and out without screws		<p style="text-align: center;"><b>LIMITED WARRANTY<sup>3</sup></b></p> <ul style="list-style-type: none"> <li>⇨ <b>3 year parts and labor</b></li> <li>⇨ <b>International Warranty Service<sup>3</sup></b></li> <li>⇨ <b>On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time</b></li> <li>⇨ <b>3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup></b> <ul style="list-style-type: none"> <li>• 24 hr x 7 day coverage, 4 hour response time</li> <li>• 24 hr x 7 day coverage, 2 hour response time</li> </ul> </li> <li>⇨ <b>24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup></b></li> </ul>							
Slot 2:	fullsize, 64-bit 66MHz PCI (3.3v), hot-swap, Bus B	⇨ Configuration/Setup Utility invoked by pressing F1 at startup									
Slot 3:	fullsize, 64-bit 66MHz PCI (3.3v), hot-swap, Bus B	⇨ SCSISelect near startup by pressing CTRL+A									
Slot 4:	fullsize, 64-bit 66MHz PCI (3.3v), hot-swap, Bus B	⇨ Several hardcopy publications									
Slot 5:	fullsize, 64-bit 33MHz PCI (5v), hot-swap, Bus C	⇨ Predictive Failure Analysis <sup>®</sup> on disk options, memory, processors, power supplies, and fans in conjunction with IBM Director can alert the system administrator of an imminent component failure									
Slot 6:	fullsize, 64-bit 33MHz PCI (5v), hot-swap, Bus C	⇨ Rack: H 7.0" x W 19.0" x D 28.0"									
				<p>⇨ 62 to 77 pounds</p> <p>⇨ Stealth black color</p>							
<p>Bay ① 3.5", SL 1", access, diskette</p> <p>Bay ② 3.5", HH 1.6", access, CD-ROM</p> <p>Bay ③ 3.5", SL 1", access, hot swap</p> <p>Bay ④ 3.5", SL 1", access, hot swap</p> <p>Bay ⑤ 3.5", SL 1", access, hot swap</p> <p>Bay ⑥ 3.5", SL 1", access, hot swap</p> <p>*Bay ⑥, ⑦, ⑧ Optional 3-Pack for 3 SL 1.0" hot-swap disk bays (otherwise not usable)</p>				<p><b>All models:</b> Max int disk capacity: 218.4GB<sup>2</sup> with six 36.4GB SL disks</p>							

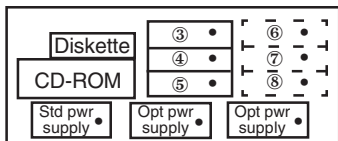
See footnotes for important warranty information  
US models withdrawn effective June 2002  
• = Hot-swap

IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk	SCSI controller	Slots x bays	Bays max	HS power supplies	IXA support	Ethernet	Mechanical	Available date
8682-4AX	1 x Pentium III Xeon 700	1MB	512MB	None	2 x Ultra160	6x5 (3HS)	8 (6HS)	1 (3 max)	IXA	10/100	4U <sup>4</sup> rack	Jun 2001
8682-5AX	1 x Pentium III Xeon 700	2MB	512MB	None	2 x Ultra160	6x5 (3HS)	8 (6HS)	1 (3 max)	IXA	10/100	4U rack	Jun 2001

**These xSeries 350 models support the Integrated xSeries Adapter for iSeries (IXA) option 1519-100 and should only be ordered when IXA applications are required. The IXA provides Windows users integration into iSeries platforms via a direct, high speed attachment.**

Processor(s)	<b>1 x Intel® Pentium® III Xeon™ 700MHz with 100MHz frontside bus</b>											
L2 cache	<b>1MB</b> std and max / at processor speed or <b>2MB</b> std and max / at processor speed											
Implementation	Motherboard contains four Intel Slot 2 connectors for SECC cartridges (fourth Slot 2 occupied by terminator), PCI slots, one slot for Memory Board, and integrated subsystems / all VRMs integrated in processors											
SMP support	<b>4-way SMP</b> via identical processors (700 or 900MHz) / upgrade via SECC into Slot 2 CPU connectors /											
Mem - std / max / type	<b>512MB std / 16GB max<sup>13</sup> / Chipkill™</b> multibit error correction using ind std ECC DIMMs (fixes 1 to 4-bit errors on same chip and detects 1- through 8-bit errors contained in two chips) / Chipkill performed by memory controller and firmware											
Memory - sockets	One Memory Board std and max / 16 sockets / 12 available (four 128MB DIMMs standard) / 4-way memory interleave											
Memory - support	<b>SDRAM / 100MHz</b> / sixteen 168-pin gold-plated DIMM 3.3 volt sockets / PC100-compliant / requires 4 identical DIMMs Supports <b>registered</b> SDRAM ECC DIMMs only (128, 256, 512MB, and 1GB)											
SCSI disk controller	<b>Adaptec® AHA-7899 / dual channel Wide Ultra160 SCSI controller</b> (LVD 160MB/sec) / 64-bit PCI / on planar /											
SCSI channels	Two 16-bit channels / both internal or one internal with one external / <i>Channel A:</i> 16-bit 68-pin LVD cable from controller to backplane / <i>Channel B:</i> internal 16-bit connector to use internally or can attach standard bulkhead LVD cable through punch out for external connector											
Extra SCSI cable	Includes a 16-bit LVD SCSI cable for external SCSI devices via an external 0.8mm VHDCI connector											
IDE controller / cable	Single Primary IDE / one connector on planar / one 1-drop IDE cable (CD-ROM)											
Disk - bays	Hot-swap (HS) / 3 bays std / 6 max / 80-pin SCA-2 connectors / common tray with EXP300 and later systems											
Mechanical	<b>EIA 19" Rack (4U<sup>4</sup>)</b> / supported in IBM NetBAY™ Racks											
Architecture	Three peer PCI 2.2 buses / Bus A: 32-bit 33MHz (1 PCI slot, ethernet, graphics, South Bridge, Mgmt Processor card) / Bus B: 64-bit 66MHz (3 PCI slots) / Bus C: 64-bit 33MHz (2 PCI slots, SCSI controller)											
Slots (Active™ PCI)	(See below) 6 hot-swap PCI slots <sup>10</sup> available / hot replace, hot upgrade, hot expansion											
IXA-compatible	<b>Supports the Integrated xSeries Adapter for iSeries (IXA) option 1519-100</b>											
Chip set	<b>ServerWorks® ServerSet 2.0HE chip set</b> / NB6536 North Bridge 2.0HE / NB6555IO Bridge 2.0 (Inter Module Bus with two 16-bit links to 6536) / 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): 5 bays / three hot-swap disk bays standard (option for three additional hot-swap disk bays)											
10/100 ethernet	AMD® Am79C975 / on planar / 10BaseT, 100BaseTX / full duplex / RJ-45 connector / 2 front LEDs											
CD-ROM / diskette	48X-20X® CD-ROM / multisession / IDE interface / bootable; <i>Diskette:</i> 3.5" 1.44MB diskette drive / dust cover											
Serial / parallel / USB	<i>Serial:</i> Three 9-pin (one for Mgmt Processor) <i>Parallel:</i> One <i>USB:</i> Two ports (Version 1.1) <i>Adv Sys Mgmt:</i> Two RJ-45											
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 / hinged bezel to cover power button and reset button / unattended boot / selectable boot / unattended start mode											
Systems management	<b>Advanced System Mgmt Processor</b> / on daughtercard / ISA bus proprietary connector / provides remote console and mgmt / allows diagnostic, reset, POST, and auto recovery functions / monitors temp, fans, and power supplies											
Diagnostics	<b>Diagnostics LED Panel</b> Light Path Diagnostics™ (under cover) / provides an LED map to failing component / motherboard error LEDs / diagnostics in ROM by pressing F2 at startup for PC-Doctor											
Software	<b>ServerGuide™</b> (installation and configuration utilities), Anti-Virus software, APC PowerChute Plus, IBM Director, others											
Keyboard / mouse	None standard											
Power supply	Std: one 270 watt hot-swap; Max: three 270 watt hot-swap / <b>front access</b> / redundant with two power supplies in most cases; redundancy with three in all cases / auto-restart											
Fans	Six (four for disks, memory, PCI; two for processors) / <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											
Prerequisites	Monitor, disk, operating system, keyboard, mouse, rack											

- Slot 1: fullsize, 32-bit 33MHz PCI (5v), hot-swap, Bus A
- Slot 2: fullsize, 64-bit 66MHz PCI (3.3v), hot-swap, Bus B
- Slot 3: fullsize, 64-bit 66MHz PCI (3.3v), hot-swap, Bus B
- Slot 4: fullsize, 64-bit 66MHz PCI (3.3v), hot-swap, Bus B
- Slot 5: fullsize, 64-bit 33MHz PCI (5v), hot-swap, Bus C
- Slot 6: fullsize, 64-bit 33MHz PCI (5v), hot-swap, Bus C



- Bay ① 3.5", SL 1", access, diskette
- Bay ② 3.5", HH 1.6", access, CD-ROM
- Bay ③ 3.5", SL 1", access, hot swap
- Bay ④ 3.5", SL 1", access, hot swap
- Bay ⑤ 3.5", SL 1", access, hot swap
- \*Bay ⑥, ⑦, ⑧ Optional 3-Pack for 3 SL 1.0" hot-swap disk bays (otherwise not usable)

- Rail system enables CD-ROM and diskette to snap in and out without screws
- Configuration/Setup Utility invoked by pressing F1 at startup
- SCSISelect near startup by pressing CTRL+A
- Several hardcopy publications
- Predictive Failure Analysis® on disk options, memory, processors, power supplies, and fans in conjunction with IBM Director can alert the system administrator of an imminent component failure
- Rack: H 7.0" x W 19.0" x D 28.0"
- 62 to 77 pounds
- Stealth black color

All models: Max int disk capacity: 218.4GB<sup>2</sup> with six 36.4GB SL disks

**LIMITED WARRANTY<sup>3</sup>**

- ↔ 3 year parts and labor
- ↔ International Warranty Service<sup>3</sup>
- ↔ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time
- ↔ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 24 hr x 7 day coverage, 4 hour response time
  - 24 hr x 7 day coverage, 2 hour response time
- ↔ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

See footnotes for important warranty information  
US models withdrawn effective June 2002  
● = Hot-swap (HS)



IBM® Type-model	Qty x Processor	L3 cache	Memory	Disks	SCSI controller	Mechanical	Slots x bays	RXE Exp Ports	Hot-swap pwr supplies	Mgmt adapter	Available date
8686-1RX	1 x Xeon™ MP 1.4GHz	512KB	1GB Chipkill™	None	Ultra160	3U <sup>4</sup> rack	6x5	One	One (not redund)	PCI	Mar 2002
8686-2RX	2 x Xeon MP 1.5GHz	512KB	2GB Chipkill	2 x 36GB 10K	Ultra160	3U rack	6x5	One	Two redundant	PCI	Dec 2001
8686-3RX	2 x Xeon MP 1.6GHz	1MB	2GB Chipkill	2 x 36GB 10K	Ultra160	3U rack	6x5	One	Two redundant	PCI	Dec 2001

Positioning Processors L2 cache L3 cache Processor upgrade Implementation

*Space efficient 4-way, 3U, rack-dense server with ground breaking Enterprise X-Architecture™ technology*  
**1 or 2 x Intel® Xeon™ Processor MP 1.4, 1.5, or 1.6GHz** with 400MHz frontside bus / Hyper-Threading technology  
**256KB** / on die of processor / at processor speed  
**512KB or 1MB** / on die of processor / at processor speed  
**4-way SMP** / up to four Xeon Processors MP (same speed/cache size)  
 Systemboard contains four Intel 603-pin micro-PGA ZIF sockets, one memory board slot, six Active™ PCI-X slots, and integrated SCSI, ethernet, graphics

Memory

**1GB or 2GB** std / 8GB max / two (1GB model) or four (2GB models) 512MB DIMMs installed / 1.7-inch tall / one memory board standard with 8 DIMM gold-connector slots / DIMMs must be installed in matched pairs / 128-bit simultaneous transfer from two DIMMs / PC1600 200MHz registered 184-pin DDR-SDRAM RDIMMs / **Error Checking and Correcting (ECC)** via **16-bit Checksum Chipkill™** (corrects 1, 2, 3, or 4-bit errors on same chip and detects 2- through 8-bit errors contained in two chips)

SCSI disk controller SCSI connectors SCSI cabling IDE controller / cabling Disk - capacity Disk - bays

Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit 33MHz PCI / integrated on planar Controller hard-wired to SCSI backplane (no cable) / no external SCSI connector  
 One standard 16-bit LVD cable included for attaching an optional ServeRAID adapter to the three-bay backplane; SCSI RAID adapter 68-pin connector on systemboard for this cable to get signals to three-bay backplane  
 Enhanced IDE ATA-33 controller in OSB4 South Bridge / one one-drop IDE cable from IDE controller to CD-ROM  
**1RX:** none; **2RX/3RX:** two 36.4GB Ultra160 10K rpm disks / 4.9 ms average read seek / supports 15,000 rpm disks  
 Three hot-swap bays / converged tray / 80-pin SCA-2 connectors

Mechanical

**EIA 19" rack models (3U<sup>4</sup>)** x 28" deep / supported in NetBAY™ Racks (such as NetBAY42 SR, NetBAY42 ER)

Chipset

**IBM XA-32™ chipset** / IBM Memory I/O Controller with two remote I/O ports (one to IBM PCI-X Host Bridge; one to RXE Expansion Port) / IBM PCI-X Host Bridge provides three peer PCI buses (two PCI-X 1.0, one PCI 2.2) / PCI 2.2 Bus 0 supports SCSI, graphics, ethernet, adapter slot with Remote Supervisor Adapter, and ServerWorks® OSB4 South Bridge (IDE, USB, ISA bus for Super I/O National Semiconductor® PC97317VUL [diskette, keyboard, mouse])

Slots (Active™ PCI-X)

**Six hot-swap PCI-X 1.0 slots<sup>10</sup>** available with power and attention indicator lights (optical sensors control power to slot) / **hot replace, hot upgrade, hot expansion** / separated by insulative plastic dividers

RXE Expansion Port

**One port to support up to 12 additional PCI-X slots via an optional IBM RXE-100 Remote Expansion Enclosure**

CD-ROM / diskette Ethernet Graphics controller Ports

24X-10X<sup>9</sup> CD-ROM / 3.5" 1.44MB diskette drive  
 Intel 82559 10/100 ethernet controller / on systemboard / full duplex / 32-bit PCI / Wake on LAN® / Alert on LAN™ 2  
 SVGA / S3® Savage4 LT / on systemboard / 8MB SDRAM std/max / up to 1280x1024 at 64K colors at 85Hz  
**Rear:** RXE-100 Expansion Port (to connect optional RXE-100), RXE Management Port (to manage optional RXE-100), two USB (Ver 1.1), keyboard, mouse, analog DB-15 graphics, ethernet / no serial or parallel ports / **Front:** one USB (Ver 1.1)

Security

Power-on and administrator passwords / unattended boot / selectable boot

Systems management

**Remote Supervisor Adapter** / PCI adapter / includes 10/100 ethernet, RJ-11, and serial connectors / provides remote console and mgmt / power on/off system / monitors power status, op system, temperature, disks, fans, power supplies

Diagnostics

**Light Path Diagnostics™** / primary indicator on information panel with LEDs associated with failing components / IBM Real Time Diagnostics (operated through IBM Director) available even while server running

Software

**ServerGuide™** (CD-ROM installation and configuration utilities), IBM Director, and others

Keyboard / mouse Power supplies

None standard (because rack-based)  
**Std:** one or two 370 watt hot-swap; **Max:** three hot-swap / redundant with two power supplies (some configurations) / worldwide / voltage-sensing / auto-restart / fans in each power supply / PFA

Cooling fans

Six hot-swap, redundant, multi-speed fans / one additional fan in each power supply / PFA / fan failure signals Diagnostic LED and mgmt processor

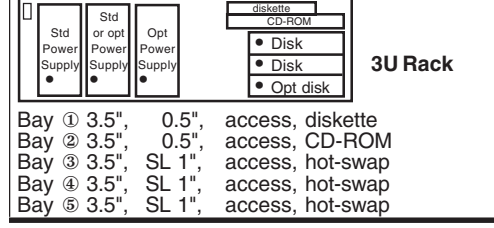
RXE-100 Remote Expansion Enclosure	86841RX
256MB PC1600 ECC DDR SDRAM RDIMM	33L3281
512MB PC1600 ECC DDR SDRAM RDIMM	33L3283
1GB PC1600 ECC DDR SDRAM RDIMM	33L3285
Xeon MP 1.4GHz/512KB L3 Cache Proc Upg	19K4638
Xeon MP 1.5GHz/512KB L3 Cache Proc Upg	19K4639
Xeon MP 1.6GHz/1MB L3 Cache Proc Upg	19K4647
370 watt Hot-Swap Redundant Power Supply	31P6108
IBM ServeRAID™-4Mx Ultra160 SCSI Adapter	06P5736
IBM 73.4GB 10K Ultra 160 SCSI Hot-Swap SL	06P5756
IBM NetBAY42 Standard Rack (SR)	9306420
IBM NetBAY42 Enterprise Rack (ER)	930842S
IBM T540 15" Flat Panel Color Monitor (black)	9511AG4
Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>	

- Six available 3.3 volt Active PCI-X slots:
- Bus 2 (B) with two slots supports (slots 1, 2):
    - one fullsize, 64-bit, 133MHz PCI-X, hot-swap
    - or two fullsize, 64-bit, 100MHz PCI-X, hot-swap
    - or two fullsize, 64-bit, 66MHz PCI-X, hot-swap
    - or two fullsize, 64-bit, 66MHz PCI, hot-swap
    - or two fullsize, 64-bit, 33MHz PCI, hot-swap
  - Bus 1 (A) with four slots supports (slots 3, 4, 5, 6):
    - four fullsize, 64-bit, 66MHz PCI-X, hot-swap
    - or two fullsize, 64-bit, 66MHz PCI, hot-swap
    - or four fullsize, 64-bit, 33MHz PCI, hot-swap
  - Bus 0 with one slot supports:
    - only standard Remote Supervisor Adapter in halfsize, 64-bit 33MHz PCI, not hot-swap

- ◇ Dimensions: H5.25" x W17.4" x D27.6"
- ◇ Dimensions: H133.4mm x W442.0mm x D701mm
- ◇ Weight: 58.4 to 70lbs; 24.9 to 31.8kg
- ◇ Stealth black color
- ◇ Tool-free serviceability
- ◇ Access adapters, processors, memory, and systemboard from top
- ◇ Access power supplies and disks from front
- ◇ Setup Program by pressing F1 at startup
- ◇ Diagnostics (PC-Doctor) by pressing F2 at startup
- ◇ SCSISelect by pressing Ctrl+A at startup
- ◇ Top cover Light Path Diagnostics (level 2 diagnostic panel) for outside view of potential problem without removing cover
- ◇ Information LED panel, diagnostic LED panel, and component LEDs give visual indications of system well-being
- ◇ Predictive Failure Analysis® alerts on disks, power supplies, memory, processors, VRMs, and fans with IBM Director

**LIMITED WARRANTY<sup>3</sup>**

- ⇨ 3 year parts and labor
- ⇨ International Warranty Service<sup>3</sup>
- ⇨ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>
- ⇨ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - Mon-Fri coverage, 4 hour response time (ServicePac® part number 21P2077)
  - 24 hr x 7 day coverage, 4 hour response time (ServicePac part number 21P2078)
  - 24 hr x 7 day coverage, 2 hour response time (ServicePac part number 21P2093)
- ⇨ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>



**All models:** Maximum internal disk capacity: 220.2GB with three 73.4GB<sup>2</sup> hot-swap SCSI disks

See footnotes for important warranty information  
 US models announced November 27, 2001 or February 12, 2002  
 US models withdrawn effective October 2002  
 • = Hot-swap  
 (X360) © IBM Corp. October 2002



IBM® Type-model	Qty x Processor	L3 cache	Memory	Disks	SCSI controller	Mechanical	Slots x bays	RXE Exp Ports	Hot-swap pwr supplies	Mgmt adapter	Available date																										
8686-2RY	2 x Xeon™ MP 1.5GHz	512KB	2GB Chipkill™	None	Ultra160	3U <sup>4</sup> rack	6x5	One	Two redundant	PCI	Apr 2002																										
8686-3RY	2 x Xeon MP 1.6GHz	1MB	2GB Chipkill	None	Ultra160	3U rack	6x5	One	Two redundant	PCI	Apr 2002																										
Positioning	<i>Space efficient 4-way, 3U, rack-dense server with ground breaking Enterprise X-Architecture™ technology</i>																																				
Processors	<b>2 x Intel® Xeon™ Processor MP 1.5 or 1.6GHz</b> with 400MHz frontside bus / supports Hyper-Threading technology																																				
L2 cache	<b>256KB</b> / on die of processor / at processor speed																																				
L3 cache	<b>512KB or 1MB</b> / on die of processor / at processor speed																																				
Processor upgrade	<b>4-way SMP</b> / up to four Xeon Processors MP (same speed/cache size)																																				
Implementation	Systemboard contains four Intel 603-pin micro-PGA ZIF sockets, one memory board slot, six Active™ PCI-X slots, and integrated SCSI, ethernet, graphics																																				
Memory	<b>2GB</b> std / 8GB max / four 512MB DIMMs installed / four slots available / 1.7-inch tall / one memory board standard with 8 DIMM gold-connector slots / DIMMs must be installed in matched pairs / 128-bit simultaneous transfer from two DIMMs / PC1600 200MHz registered 184-pin DDR-SDRAM RDIMMs / <b>Error Checking and Correcting (ECC)</b> via <b>16-bit Checksum Chipkill™</b> (corrects 1, 2, 3, or 4-bit errors on same chip and detects 2- through 8-bit errors contained in two chips)																																				
SCSI disk controller	Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit 33MHz PCI / integrated on planar																																				
SCSI connectors	Controller hard-wired to SCSI backplane (no cable) / no external SCSI connector																																				
SCSI cabling	One standard 16-bit LVD cable included for attaching an optional ServeRAID adapter to the three-bay backplane; SCSI RAID adapter 68-pin connector on systemboard for this cable to get signals to three-bay backplane																																				
IDE controller / cabling	Enhanced IDE ATA-33 controller in OSB4 South Bridge / one one-drop IDE cable from IDE controller to CD-ROM																																				
Disk - capacity	None standard																																				
Disk - bays	Three hot-swap bays / converged tray / 80-pin SCA-2 connectors																																				
Mechanical	<b>EIA 19" rack models (3U<sup>4</sup>)</b> x 28" deep / supported in NetBAY™ Racks (such as NetBAY42 SR, NetBAY42 ER)																																				
Chipset	<b>IBM XA-32™ chipset</b> / IBM Memory I/O Controller with two remote I/O ports (one to IBM PCI-X Host Bridge; one to RXE Expansion Port) / IBM PCI-X Host Bridge provides three peer PCI buses (two PCI-X 1.0, one PCI 2.2) / PCI 2.2 Bus 0 supports SCSI, graphics, ethernet, adapter slot with Remote Supervisor Adapter, and ServerWorks® OSB4 South Bridge (IDE, USB, ISA bus for Super I/O National Semiconductor® PC97317VUL [diskette, keyboard, mouse])																																				
Slots (Active™ PCI-X)	Six hot-swap PCI-X 1.0 slots <sup>10</sup> available with power and attention indicator lights (optical sensors control power to slot) / <b>hot replace, hot upgrade, hot expansion</b> / separated by insulative plastic dividers																																				
RXE Expansion Port	<b>One port to support up to 12 additional PCI-X slots via an optional IBM RXE-100 Remote Expansion Enclosure</b>																																				
CD-ROM / diskette	24X-10X <sup>6</sup> CD-ROM / 3.5" 1.44MB diskette drive																																				
Ethernet	Intel 82559 10/100 ethernet controller / on systemboard / full duplex / 32-bit PCI / Wake on LAN® / Alert on LAN™ 2																																				
Graphics controller	SVGA / S3® Savage4 LT / on systemboard / 8MB SDRAM std/max / up to 1280x1024 at 64K colors at 85Hz																																				
Ports	<i>Rear:</i> RXE-100 Expansion Port (to connect optional RXE-100), RXE Management Port (to manage optional RXE-100), two USB (Ver 1.1), keyboard, mouse, analog DB-15 graphics, ethernet / <i>no serial or parallel ports</i> / <i>Front:</i> one USB (Ver 1.1)																																				
Security	Power-on and administrator passwords / unattended boot / selectable boot																																				
Systems management	<b>Remote Supervisor Adapter</b> / PCI adapter / includes 10/100 ethernet, RJ-11, and serial connectors / provides remote console and mgmt / power on/off system / monitors power status, op system, temperature, disks, fans, power supplies																																				
Diagnostics	<b>Light Path Diagnostics™</b> / primary indicator on information panel with LEDs associated with failing components / IBM Real Time Diagnostics (operated through IBM Director) available even while server running																																				
Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), AntiVirus software, IBM Director, and others																																				
Keyboard / mouse	None standard (because rack-based)																																				
Power supplies	Std: two 370 watt hot-swap; Max: three hot-swap / redundant with two power supplies (some configurations) / worldwide / voltage-sensing / auto-restart / fans in each power supply / PFA																																				
Cooling fans	Six hot-swap, redundant, multi-speed fans / one additional fan in each power supply / PFA / fan failure signals Diagnostic LED and mgmt processor																																				
<p>Six available 3.3 volt Active PCI-X slots:</p> <ul style="list-style-type: none"> <li>• Bus 2 (B) with two slots supports (slots 1, 2): <ul style="list-style-type: none"> <li>- one fullsize, 64-bit, 133MHz PCI-X, hot-swap</li> <li>- or two fullsize, 64-bit, 100MHz PCI-X, hot-swap</li> <li>- or two fullsize, 64-bit, 66MHz PCI-X, hot-swap</li> <li>- or two fullsize, 64-bit, 66MHz PCI, hot-swap</li> <li>- or two fullsize, 64-bit, 33MHz PCI, hot-swap</li> </ul> </li> <li>• Bus 1 (A) with four slots supports (slots 3, 4, 5, 6): <ul style="list-style-type: none"> <li>- four fullsize, 64-bit, 66MHz PCI-X, hot-swap</li> <li>- or two fullsize, 64-bit, 66MHz PCI, hot-swap</li> <li>- or four fullsize, 64-bit, 33MHz PCI, hot-swap</li> </ul> </li> <li>• Bus 0 with one slot supports: <ul style="list-style-type: none"> <li>- only standard Remote Supervisor Adapter in halfsize, 64-bit 33MHz PCI, not hot-swap</li> </ul> </li> </ul> <p>⊖ Dimensions: H5.25" x W17.4" x D27.6"  Dimensions: H133.4mm x W442.0mm x D701mm  ⊖ Weight: 58.4 to 70lbs; 24.9 to 31.8kg  ⊖ Stealth black color  ⊖ Tool-free serviceability  ⊖ Access adapters, processors, memory, and systemboard from top  ⊖ Access power supplies and disks from front  ⊖ Setup Program by pressing F1 at startup  ⊖ Diagnostics (PC-Doctor) by pressing F2 at startup  ⊖ SCSISelect by pressing Ctrl+A at startup  ⊖ Top cover Light Path Diagnostics (level 2 diagnostic panel) for outside view of potential problem without removing cover  ⊖ Information LED panel, diagnostic LED panel, and component LEDs give visual indications of system well-being  ⊖ Predictive Failure Analysis® alerts on disks, power supplies, memory, processors, VRMs, and fans with IBM Director</p>																																					
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See footnotes for important warranty information  
US models announced April 30, 2002  
US models withdrawn effective October 2002  
• = Hot-swap

IBM® Type-model	Qty x Processor	L3 cache	Memory	Disks	SCSI controller	Mechanical	Slots x bays	RXE Exp Ports	Hot-swap pwr supplies	Mgmt adapter	Available date
8686-4RX	1 x Xeon™ MP 1.4GHz	512KB	1GB Chipkill™	None	Ultra160	3U <sup>4</sup> rack	6x5	One	One (not redund)	PCI	Aug 2002
8686-5RX	2 x Xeon MP 1.5GHz	512KB	2GB Chipkill	None	Ultra160	3U rack	6x5	One	Two redundant	PCI	Aug 2002
8686-6RX	2 x Xeon MP 1.6GHz	1MB	2GB Chipkill	None	Ultra160	3U rack	6x5	One	Two redundant	PCI	Aug 2002

Positioning Processors L2 cache L3 cache Processor upgrade Implementation  
*Space efficient 4-way, 3U, rack-dense server with ground breaking Enterprise X-Architecture™ technology*  
**1 or 2 x Intel® Xeon™ Processor MP 1.4, 1.5, or 1.6GHz<sup>1</sup>** with 400MHz frontside bus / Hyper-Threading technology  
**256KB** / on die of processor / at processor speed  
**512KB or 1MB** / on die of processor / at processor speed  
**4-way SMP** / up to four Xeon Processors MP (same speed/cache size)  
 Systemboard contains four Intel 603-pin micro-PGA ZIF sockets, one memory board slot, six Active™ PCI-X slots, and integrated SCSI, ethernet, graphics

Memory  
**1GB or 2GB** std / 8GB max<sup>13</sup> / two (1GB model) or four (2GB models) 512MB DIMMs installed / 1.7-inch tall / one memory board standard with 8 DIMM gold-connector slots / DIMMs must be installed in matched pairs / 128-bit simultaneous transfer from two DIMMs / PC1600 200MHz registered 184-pin DDR-SDRAM RDIMMs / **Error Checking and Correcting (ECC)** via **16-bit Checksum Chipkill™** (corrects 1, 2, 3, or 4-bit errors on same chip and detects 2- through 8-bit errors contained in two chips)

SCSI disk controller SCSI connectors SCSI cabling IDE controller / cabling Disk - capacity Disk - bays  
 Adaptec® AIC-7892 / Wide Ultra160 SCSI (LVD 160MB/sec) / single channel / 64-bit 33MHz PCI / integrated on planar Controller hard-wired to SCSI backplane (no cable) / no external SCSI connector  
 One standard 16-bit LVD cable included for attaching an optional ServeRAID adapter to the three-bay backplane; SCSI RAID adapter 68-pin connector on systemboard for this cable to get signals to three-bay backplane  
 Enhanced IDE ATA-33 controller in OSB4 South Bridge / one one-drop IDE cable from IDE controller to CD-ROM  
 None standard / supports up to 15,000 rpm disks  
 Three hot-swap bays / converged tray / 80-pin SCA-2 connectors

Mechanical  
**EIA 19" rack models (3U<sup>4</sup>)** x 28" deep / supported in NetBAY™ Racks (such as NetBAY42 SR, NetBAY42 ER)

Chipset Slots (Active™ PCI-X) RXE Expansion Port  
**IBM XA-32™ chipset** / IBM Memory I/O Controller (improved performance from earlier models) with two remote I/O ports (one to IBM PCI-X Host Bridge; one to RXE Expansion Port) / IBM PCI-X Host Bridge provides three peer PCI buses (two PCI-X 1.0, one PCI 2.2) / PCI 2.2 Bus 0 supports SCSI, graphics, ethernet, adapter slot with Remote Supervisor Adapter, and ServerWorks® OSB4 South Bridge (IDE, USB, ISA bus for Super I/O NS PC97317VUL [diskette, keyboard, mouse])  
 Six hot-swap PCI-X 1.0 slots<sup>10</sup> available with power and attention indicator lights (optical sensors control power to slot) / **hot replace, hot upgrade, hot expansion** / separated by insulative plastic dividers  
**One port to support up to 12 additional PCI-X slots via an optional IBM RXE-100 Remote Expansion Enclosure**

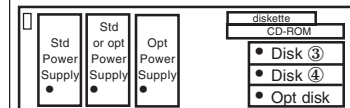
CD-ROM / diskette Ethernet Graphics controller Ports  
 24X-10X<sup>6</sup> CD-ROM / 3.5" 1.44MB diskette drive  
 Intel 82559 10/100 ethernet controller / on systemboard / full duplex / 32-bit PCI / Wake on LAN® / Alert on LAN™ 2  
 SVGA / S3® Savage4 LT / on systemboard / 8MB SDRAM std/max / up to 1280x1024 at 64K colors at 85Hz  
**Rear:** RXE-100 Expansion Port (to connect optional RXE-100), RXE Management Port (to manage optional RXE-100), two USB (Ver 1.1), keyboard, mouse, analog DB-15 graphics, ethernet / no serial or parallel ports / **Front:** one USB (Ver 1.1)

Security  
 Power-on and administrator passwords / unattended boot / selectable boot

Systems management Diagnostics  
**Remote Supervisor Adapter** / PCI adapter / includes 10/100 ethernet, RJ-11, and serial connectors / provides remote console and mgmt / power on/off system / monitors power status, op system, temperature, disks, fans, power supplies  
**Light Path Diagnostics™** / primary indicator on information panel with LEDs associated with failing components / IBM Real Time Diagnostics (operated through IBM Director) available even while server running

Software	<b>ServerGuide™</b> (CD-ROM installation and configuration utilities), IBM Director, and others RXE-100 Remote Expansion Enclosure 256MB PC1600 ECC DDR SDRAM RDIMM 512MB PC1600 ECC DDR SDRAM RDIMM 1GB PC1600 ECC DDR SDRAM RDIMM Xeon MP 1.4GHz/512KB L3 Cache Proc Upg Xeon MP 1.5GHz/512KB L3 Cache Proc Upg Xeon MP 1.6GHz/1MB L3 Cache Proc Upg 370 watt Hot-Swap Redundant Power Supply IBM ServeRAID™-4Mx Ultra160 SCSI Adapter IBM 73.4GB 10K Ultra 160 SCSI Hot-Swap SL IBM NetBAY42 Standard Rack (SR) IBM Integrated xSeries Adapter for iSeries IBM T541 15" Flat Panel Color Monitor (black) Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>	86841RX 33L3281 33L3283 33L3285 19K4638 19K4639 19K4647 31P6108 06P5736 06P5756 9306420 1519100 9512AB1
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- Six available 3.3 volt Active PCI-X slots:
- Bus 2 (B) with two slots supports (slots 1, 2):
    - one fullsize, 64-bit, 133MHz PCI-X, hot-swap
    - or two fullsize, 64-bit, 100MHz PCI-X, hot-swap
    - or two fullsize, 64-bit, 66MHz PCI-X, hot-swap
    - or two fullsize, 64-bit, 66MHz PCI, hot-swap
    - or two fullsize, 64-bit, 33MHz PCI, hot-swap
  - Bus 1 (A) with four slots supports (slots 3, 4, 5, 6):
    - four fullsize, 64-bit, 66MHz PCI-X, hot-swap
    - or two fullsize, 64-bit, 66MHz PCI, hot-swap
    - or four fullsize, 64-bit, 33MHz PCI, hot-swap
  - Bus 0 with one slot supports:
    - only for standard Remote Supervisor Adapter halfsize, 64-bit, 33MHz PCI, not hot-swap



3U Rack

- Bay ① 3.5", 0.5", access, diskette
- Bay ② 3.5", 0.5", access, CD-ROM
- Bay ③ 3.5", SL 1", access, hot-swap
- Bay ④ 3.5", SL 1", access, hot-swap
- Bay ⑤ 3.5", SL 1", access, hot-swap

- ◇ Dimensions: H5.25" x W17.4" x D27.6"
- ◇ Dimensions: H133.4mm x W442.0mm x D701mm
- ◇ Weight: 58.4 to 70lbs; 24.9 to 31.8kg
- ◇ Stealth black color
- ◇ Tool-free serviceability
- ◇ Access adapters, processors, memory, and systemboard from top
- ◇ Access power supplies and disks from front
- ◇ Setup Program by pressing F1 at startup
- ◇ Diagnostics (PC-Doctor) by pressing F2 at startup
- ◇ SCSISelect by pressing Ctrl+A at startup
- ◇ Top cover Light Path Diagnostics (level 2 diagnostic panel) for outside view of potential problem without removing cover
- ◇ Information LED panel, diagnostic LED panel, and component LEDs give visual indications of system well-being
- ◇ Predictive Failure Analysis® alerts on disks, power supplies, memory, processors, VRMs, and fans with IBM Director

**All models:** Maximum internal disk capacity: 220.2GB with three 73.4GB<sup>2</sup> hot-swap SCSI disks

**LIMITED WARRANTY<sup>3</sup>**

- ⇨ 3 year parts and labor
- ⇨ International Warranty Service<sup>3</sup>
- ⇨ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>
- ⇨ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - Mon-Fri coverage, 4 hour response time (ServicePac® part number 21P2077)
  - 24 hr x 7 day coverage, 4 hour response time (ServicePac part number 21P2078)
  - 24 hr x 7 day coverage, 2 hour response time (ServicePac part number 21P2093)
- ⇨ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

See footnotes for important warranty information  
 • = Hot-swap



IBM® Type-model	Qty x Processor	L2 cache	Memory	Disk	SCSI controller	Mechanical	Slots x bays	Hot-swap pwr supplies	Mgmt adapter	Available date
8681-1RX	1 x Pentium III Xeon 700/100	1MB	512MB	None	2 x Wide Ultra2	8U <sup>4</sup> rack	12x4 (12 hs)	Three redundant	PCI	Mar 2001
8681-2RX	1 x Pentium III Xeon 700/100	2MB	512MB	None	2 x Wide Ultra2	8U rack	12x4 (12 hs)	Three redundant	PCI	Mar 2001
8681-3RX	1 x Pentium III Xeon 900/100	2MB	512MB	None	2 x Wide Ultra2	8U rack	12x4 (12 hs)	Three redundant	PCI	Apr 2001

Processor(s) **1 x Intel® Pentium® III Xeon™ 700 or 900MHz with 100MHz frontside bus**  
 L2 cache **1MB or 2MB / full speed**  
 Processor upgrade(s) **8-way SMP / up to eight Pentium III Xeon processors (same speed/cache size) / two 64-bit 100MHz processor buses**  
 Features **Standard:** one Processor Board with four Intel Slot 2 sockets (one processor bus)  
**Maximum:** two Processor Boards (second processor bus) / requires two Cache Coherency Filter Cards (reduces cache snoop bus traffic between two processor buses) / 'Mezzanine Exp Kit' has one Processor Board that requires 'Netfinity® 4X Accelerator Filter' containing two 1MB Cache Coherency Filter Cards (one for each Processor Board)

Memory - std / max **512MB / 32GB**  
 Memory - std DIMMs **4 x 128MB DIMM**  
 Memory - type **PC100-compliant 3.3v registered 168-pin SDRAM RDIMMs / 100MHz / gold connectors**  
**Error Checking and Correcting (ECC)** memory and memory controller (Profusion Memory Controller MAC and DIB)  
 Memory - cards **One Memory Card std (one memory bus) / two cards max (second memory bus) / each card has 16 sockets / 16GB max per card / second card supports two-way cache line interleaving**

SCSI disk controller **Adaptec® AIC-7897 / no integrated RAID controller**  
 SCSI channels **Two Wide Ultra2 SCSI channels (LVDS 80MB/sec)**  
 SCSI implementation **64-bit PCI / integrated on I/O Function Card**  
 SCSI connectors **One 68-pin connector internal and one .8mm VHDCI connector external / each channel supports up to 15 devices**  
 SCSI cabling **One 16-bit LVD cable to two bay backplane / one 16-bit LVD cable from controller to external 68-pin VHDCI connector**  
 IDE controller / cabling **Enhanced IDE controller in PIIX4E / one one-drop IDE cable from IDE controller to CD-ROM**  
 Disk - capacity **None / supports 10,000 rpm disks / converged tray is interchangeable with EXP200/300 and later Netfinity systems**  
 Disk - bays **Hot-swap / no trays included (disks ship with trays) / 80-pin SCA-2 connectors**

**All models:** Maximum internal disk capacity: 72.8GB with two 36.4GB<sup>2</sup> HH Hot-swap SCSI disks

Mechanical **EIA 19" rack models (8U<sup>4</sup>) x 28" deep**  
 Rack / conversion **Supported in NetBAY Enterprise Racks and current racks with extension options / kit available to convert rack to tower**

Architecture **Intel Profusion® chip set / one midplane (interconnects major buses and components) / four PCI 2.2 buses (four PB64) numbered 0, 4, 10, 13 to allow hot-swap of PCI-to-PCI bridge adapters**  
 I/O Function Card **64-bit 33MHz PCI adapter / includes controllers for SVGA (32-bit PCI), SCSI, and PIIX4E (32-bit PCI Intel 82371AB for EIDE, ISA Bridge, USB) / Super I/O (NS PC97317VUL on 16-bit ISA) off PIIX4E**  
 Slots (Active™ PCI) **12 hot-swap PCI slots<sup>10</sup> available with power and attention indicator lights (optical sensors control power to slot) / Hot replace, hot upgrade, hot expansion / separated by insulative plastic dividers / PCI Hot-Plug Specification 1.0**

LAN adapter **No standard NIC controller or adapter**  
 CD-ROM / Diskette **CD-ROM: 48X-20X<sup>5</sup> CD-ROM / IDE interface off PIIX4E / 1.6" HH / bootable; Diskette drive: 3.5" 1.44MB / dust cover**  
 Ports **Two 9-pin serial / one 25-pin parallel / two USB / one keyboard / one mouse / one SVGA (all in rear)**  
 Graphics controller **SVGA / S3® Trio3D / integrated on I/O Function Card / 4MB SGRAM std/max / up to 1024x768 at 256 colors at 85Hz**

Security **Power-on and administrator passwords / mountable in an optional secure rack enclosure / selectable drive-startup / keyboard password / Advanced Remote Management security (user log-in password, read-only or read/write access, dial back)**

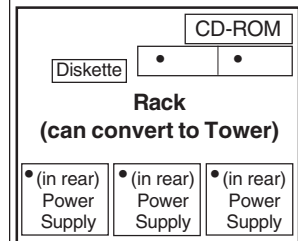
Systems management **Netfinity Advanced System Mgmt PCI Adapter (service processor) / PCI adapter / includes 10/100 ethernet, RJ-11, and serial connectors / provides remote console and mgmt / power on/off system / monitors power status, operating system, temperature, disks, fans, power supply / NS LM78 hardware monitor (voltage, temperature, fans)**

Diagnostics **Light Path Diagnostics™ / primary indicator on information panel with LEDs associated with failing components**  
 LCD information panel **Intelligent front panel / two 16 character lines of status info**  
 Software **ServerGuide™ - CD-ROM installation and configuration utilities, AntiVirus, and APC PowerChute Plus / includes IBM Director and others**

Keyboard / mouse **None standard (since for rack)**  
 Power supplies **Hot-swap / redundant / std and max: three 750 watt at 220v or 550 watts at 110v / universal (voltage sensing) / fans in each power supply / each has individual power cord / PFA**  
 Fans **Nine fans / six hot-swap redundant (three fans in front for cpu area, three fans in middle for memory and adapter area) / one fan in each power supply / PFA / fan failure signals Diagnostic LED and mgmt processor**

Netfinity 128MB SDRAM DIMM (registered) II	20L0245
Netfinity 256MB SDRAM DIMM (registered) II	20L0247
Netfinity 512MB SDRAM DIMM (registered) II	20L0249
Netfinity 1GB SDRAM DIMM (registered) II	33L3056
Netfinity 8500R Memory Card (16 sockets)	28L4454
Pentium III Xeon 700MHz/1MB Proc Upg	10K2330
Pentium III Xeon 700MHz/2MB Proc Upg	10K2166
Pentium III Xeon 900MHz/2MB Proc Upg	19K4637
Netfinity 8Ux28D Rack-to-Tower Conversn Kit	28L4705
NetBAY3E (3U pedestal on bottom)	36L9701
Netfinity Mezzanine Expansion Kit	10K2337
Netfinity 4X Accelerator Filter (two 1MB filters)	10K2335
Netfinity ServeRAID™-4H Ultra (160 SCSI Adptr)	37L6889
Sys Mgmt Proc Interconnect Kit	03K9309

- ⇨ Dimensions: H14.0" x W17.3" x D29.4"; 147-170lbs
- ⇨ Tool-free top, front, and rear access
- ⇨ Access adapters from top
- ⇨ Access memory, processors, and disks from front
- ⇨ Access power supplies from rear
- ⇨ Setup Program by pressing F1 at startup
- ⇨ Diagnostics (PC-Doctor) by pressing F2 at startup
- ⇨ Six power cords (9' each) included (three 110v and three 220v)



- ⇨ Two 1.6" high HH 3.5" bays (both hot-swap)
- ⇨ Stealth black color
- ⇨ 4 removable handles
- ⇨ (If convert to tower) supports up to three NetBAY3 units on bottom
- ⇨ Wired for Mgmt 1.1a
- ⇨ DMI 2.0, ACPI 1.0

- Slot 1: fullsize, 64-bit 33MHz PCI, hot-swap, Bus D
- Slot 2: fullsize, 64-bit 33MHz PCI, hot-swap, Bus D
- Slot 3: fullsize, 64-bit 33MHz PCI, hot-swap, Bus D
- Slot 4: fullsize, 64-bit 33MHz PCI, hot-swap, Bus D
- Slot 5: fullsize, 64-bit 33MHz PCI, hot-swap, Bus D
- Slot 6: fullsize, 64-bit 66MHz PCI, hot-swap, Bus C
- Slot 7: fullsize, 64-bit 66MHz PCI, hot-swap, Bus C
- Slot 8: fullsize, 64-bit 66MHz PCI, hot-swap, Bus B
- Slot 9: fullsize, 64-bit 66MHz PCI, hot-swap, Bus B
- Slot 10: fullsize, 64-bit 33MHz PCI, hot-swap, Bus A
- Slot 11: fullsize, 64-bit 33MHz PCI, hot-swap, Bus A
- Slot 12: fullsize, 64-bit 33MHz PCI, hot-swap, Bus A
- Slot\*: fullsize, 64-bit 33MHz PCI, not hot-sw, Bus A
- Slot\*\*: fullsize, 32-bit 33MHz PCI, not hot-sw, Bus A
- \* used by I/O Function Card
- \*\* used by Advanced Remote Mgmt PCI Adapter
- ⇨ Predictive Failure Analysis™ alerts on disks, power supplies, memory, processors, VRMs, and fans with IBM Director

**LIMITED WARRANTY<sup>3</sup>**

- ⇨ 3 year parts and labor
- ⇨ International Warranty Service<sup>3</sup>
- ⇨ On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time<sup>7</sup>
- ⇨ 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 24 hr x 7 day coverage, 4 hour response time (ServicePac® part number 30L9187)
  - 24 hr x 7 day coverage, 2 hour response time (ServicePac part number 31L2723)
- ⇨ 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

Se footnotes for important warranty information  
 US models withdrawn effective June 2002  
 • = Hot-swap



IBM® Type-model	Qty x Processor	L3 cache	Memory	SCSI disks	SCSI controller	Mechanical	Slots x bays	Hot-swap slots	Hot-swap power supplies	Chipset	Operating system	Available date	
8683-1RX	1 x Itanium	733	2MB	1GB	2 x 36.4GB	2 x Ultra160	7U <sup>4</sup> rack	8x4	8 hot-swap	4 redundant	460GX	None	July 2001
8683-2RX	1 x Itanium	800	4MB	1GB	2 x 36.4GB	2 x Ultra160	7U rack	8x4	8 hot-swap	4 redundant	460GX	None	July 2001
8683-3RX	1 x Itanium	733	2MB	1GB	2 x 36.4GB	2 x Ultra160	7U rack	8x4	8 hot-swap	4 redundant	460GX	Adv Server	Aug 2001
8683-4RX	1 x Itanium	800	4MB	1GB	2 x 36.4GB	2 x Ultra160	7U rack	8x4	8 hot-swap	4 redundant	460GX	Adv Server	Aug 2001

Processor **1 x Intel® Itanium™ 733 or 800MHz** with 266MHz frontside bus (double pumped 133MHz)  
 L1 and L2 cache 32KB L1 cache / 96KB L2 cache / on die of Itanium / at processor speed  
 L3 cache **2MB or 4MB L3 cache** / inside Itanium cartridge / at processor speed  
 Processor upgrade Implementation **4-way SMP** via identical processors  
 One Processor Board with four Socket M 418-pin LIF sockets / one socket used by Itanium PAC418 (418-pin array cartridge) processor and caches / each Itanium powered by one Power Pod on Processor Board / system contains one Processor Board (4 sockets, SAC, SDC), two Memory Boards, one I/O Baseboard (slots, graphics, ethernet, SCSI, PXB, 3 x WXB), one Sideplane (connects I/O Baseboard to Processor Brd), one Legacy I/O Board (IFB, USB, FWH, Super I/O)

Memory - std / max **1GB std / 64GB max<sup>13</sup>** / registered SDRAM PC100 3.3v / Error Checking and Correction (ECC) controller and DIMMs  
 Memory - features Two Memory Boards standard each with 32 168-pin DIMM sockets / ships standard with four DIMMs on one Memory Board for four-way interleaving / must install four identical DIMMs at a time / adding DIMMs on second Memory Board enables Card to Card (C2C) interleaving

SCSI disk controller QLogic® ISP12160A / no integrated RAID controller  
 SCSI channels Two Ultra160 (Ultra3) SCSI channels (LVDS 160MB/sec) / 64-bit 66MHz PCI / controller on I/O Baseboard  
 SCSI implementation First channel to internal 2-port SCSI backplane for internal hot-swap disks (16-bit LVD cable to SCSI backplane) / second channel to one external .8mm VHDCI 68-pin connector (16-bit LVD cable from I/O Baseboard to ext connector)  
 IDE controller Enhanced IDE busmaster / ATA-33 / controller in IFB off the PXB / two connectors on Legacy I/O Board  
 IDE cabling One 1-drop IDE cable to LS-120 / one 1-drop IDE cable to CD-ROM  
 Disks - capacity **2 x 36.4GB<sup>2</sup>** Ultra160 SCSI / 7200 rpm / tray integrated on disk and unique to system  
 Disk - bays Hot-swap / 80-pin SCA-2 connectors

Mechanical **EIA 19" rack models (7U<sup>4</sup>) x 28" deep**  
 Rack / conversion Supported in IBM NetBAY™ Enterprise Racks or other NetBAY racks with extension options

Chipsets **Intel 460GX chipset** / 82460GX includes 82461GX System Address Controller (SAC), 82462GX System Data Controller (SDC), 82463 Memory Address Controller (MAC), 82464GX Memory Data Controller (MDC), 3 x 82466GX Wide eXpansion Bus (WXB), 82467NX PCI eXpansion Bus (PXB), 82468GX I/O Firmware Bridge (IFB), 82802AC Firmware Hub (FWH), 82064AA Programmable Interrupt Device (PID)  
 Legacy I/O Board Legacy I/O Board in proprietary connector / contains controllers for hardware monitoring (BMC, ICMB), USB (Vers 1.1), two channel IDE, Firmware Hub (FWH), I/O Firmware Bridge (IFB), SMCS™ LPC47B27X Super I/O (two serial, parallel, kybrd, mouse)

Slots (Active™ PCI) Eight hot-swap PCI 2.2 slots<sup>11</sup> available with power and attention indicator lights (magnetic sensors control power to slot) / **hot replace, hot upgrade, hot expansion** / separated by insulative plastic dividers / PCI Hot-Plug Specification 1.0

10/100Mbps ethernet Intel 82559 (D101M) ethernet 10/100 controller on I/O Baseboard / full duplex / RJ-45 connector on rear  
 LS-120 / CD-ROM *SuperDisk*: LS-120, primary IDE 0, 0.5" high, compatible w/ diskettes / *CD-ROM*: 24X-10X<sup>6</sup>, secondary IDE 1, 0.5" high  
 Ports Two 9-pin serial / one 25-pin parallel / two USB / one keyboard / one mouse / one analog DB-15 SVGA (all in rear)  
 Graphics controller SVGA / ATI® RAGE XL / integrated on I/O Baseboard / 8MB SGRAM std/max

Security BIOS administrator and BIOS user passwords / mountable in an optional secure rack enclosure / selectable drive-startup

Systems management Three microcontrollers: (1) Baseboard Mgmt Controller (BMC), (2) Intelligent Chassis Management Bus Controller (ICMB), (3) Hot-Swap Controller (HSC) / provides remote console and mgmt / power on/off system / monitors power status, oper system, temp, disks, fans, power supplies / software utility (Intel Server Control) for mgmt required and supported by Intel

Diagnostics AMIDiagnostic utility on standard LS-120 diskette  
 Front panel Switches, LEDs, LCD display with two lines of status info  
 Software and CDs Diagnostic Diskette (LS-120), Utility CD, Publication CD, Installation Guide / *some*: Adv Server CD / no ServerGuide™

Keyboard / mouse None standard (since for rack)  
 Power supplies *Std and max*: four 800 watt at 220v or 700 watts at 110v / **hot-swap / N+1 redundant** / universal (voltage sensing) / two individual 220v power cords to two connectors / PFA  
 Fans **Fourteen fans / six hot-swap redundant** (four 172 mm and two 120 mm) / two fans in each pwr supp / variable spd / PFA

Operating system included on CD *1xx/2xx*: No operating system included;  
*3xx/4xx*: Microsoft® Windows® Advanced Server, Limited Edition (LE); *All*: support for 64-bit Red Hat Linux®

1GB (4x256MB) ECC SDRAM RDIMM Kit	33L3258
2GB (4x512MB) ECC SDRAM RDIMM Kit	33L3260
4GB (4x1GB) PC100 ECC SDRAM RDIMM Kit	33L3262
Itanium 733MHz/2MB L3 Proc Upg	10K3815
Itanium 800MHz/4MB L3 Proc Upg	10K0050
System to PDU Power Cable (220V/10A)	00N7701

*xSeries options:*  
 Visit [ibm.com/pc/us/eserver/xseries/storage.html](http://ibm.com/pc/us/eserver/xseries/storage.html)  
 Configure your xSeries 380:  
 Visit [ibm.com/pc/us/eserver/xseries](http://ibm.com/pc/us/eserver/xseries)

**LIMITED WARRANTY<sup>3</sup>**

- 3 year parts and labor
- International Warranty Service<sup>3</sup>
- On site, 8 am - 5 pm, Mon - Fri coverage excluding holidays, next business day response time
- 3 year on site warranty service upgrade options (in eligible locations):<sup>7</sup>
  - 9 hr coverage, Mon-Fri excluding holidays, 4 hour average response time
  - 24 hr x 7 day coverage, 4 hour average response time
- 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>
- ServicePac<sup>®</sup> Warranty and Maintenance options at [ibm.com/services/its/us/servicepac.html](http://ibm.com/services/its/us/servicepac.html)

Dimensions: H12.25" x W17.5" x D28.0"; 135-150lbs  
 Access adapters from top (no tools required)  
 Access power supplies from front (cust replaceable)  
 Processor and memory upgrades (IBM service only)  
 BIOS Setup Utility by pressing F2 at startup  
 QLogic Setup Utility by pressing ALT+Q near startup  
 EFI Boot Manager at startup

**Rack (front)**

Two 1.0" SL 3.5" disk bays (both hot-swap)  
 Stealth black color  
 4 removable handles  
 Wired for Mgmt 2.0  
 DMI 2.0 and ACPI 2.0-compliant

Slot: used by Legacy I/O Board, Bus A  
 Slot 1: fullsize, 64-bit 33MHz PCI, no access, Bus A  
 Slot 2: fullsize, 64-bit 33MHz PCI, no access, Bus A  
 Slot 3: fullsize, 64-bit 66MHz PCI, hot-swap, Bus B  
 Slot 4: fullsize, 64-bit 66MHz PCI, hot-swap, Bus C  
 Slot 5: fullsize, 64-bit 66MHz PCI, hot-swap, Bus C  
 Slot 6: fullsize, 64-bit 66MHz PCI, hot-swap, Bus D  
 Slot 7: fullsize, 64-bit 66MHz PCI, hot-swap, Bus D  
 Slot 8: fullsize, 64-bit 66MHz PCI, hot-swap, Bus E  
 Slot 9: fullsize, 64-bit 66MHz PCI, hot-swap, Bus F  
 Slot 10: fullsize, 64-bit 66MHz PCI, hot-swap, Bus G

Predictive Failure Analysis<sup>®</sup> alerts on disks, power supplies, memory, processors, Power Pods, and fans (enabled by Intel Server Control (ISC) software)  
 SMBIOS-2.3 compliant

**All models:** Maximum internal disk capacity: 72.8GB with two 36.4GB<sup>2</sup> SL hot-swap SCSI disks

IBM® Type-model	Qty x Processor	L3 cache	L4 cache	Memory	Disk	SCSI controller	Mechanical	Slots x bays	SMP/RXE Exp Ports	Hot-swap pwr supplies	Mgmt adapter	Available date
8687-1RX	2 x Xeon™ MP 1.4GHz	512KB	32MB	2GB Chipkill™	None	2xUltra160	4U <sup>4</sup> rack	6x4	3/1	Two redundant	PCI	Apr 2002
8687-2RX	2 x Xeon MP 1.5GHz	512KB	32MB	2GB Chipkill	None	2xUltra160	4U rack	6x4	3/1	Two redundant	PCI	Apr 2002
8687-3RX	2 x Xeon MP 1.6GHz	1MB	32MB	2GB Chipkill	None	2xUltra160	4U rack	6x4	3/1	Two redundant	PCI	Apr 2002

Positioning  
Processors  
L2 cache  
L3 cache  
L4 cache  
Processor upgrade  
SMP Expansion Module  
Additional boards

*Up to 8-way power for high-end databases, server consolidation and mission-critical business applications*  
**2 x Intel® Xeon™ Processor MP 1.4, 1.5, or 1.6GHz<sup>1</sup>** with 400MHz frontside bus / supports Hyper-Threading technology  
**256KB** each processor / on die of processor / at processor speed  
**512KB or 1MB** each processor / on die of processor / at processor speed  
**32MB XcelL4™ Server Accelerator Cache** (up to **64MB** with optional SMP Expansion Module) /  
 32MB in each SMP Expansion Module / ECC / 64-bit 400MHz bus from Cache and Scalability Controller  
**4-way SMP** (up to **8-way SMP** with optional SMP Expansion Module)  
**One SMP Expansion Module std** / two max / each contains four Intel 603-pin micro-PGA ZIF sockets for Xeon MP, 32MB L4 cache, sixteen DIMM sockets, three SMP Expansion Ports (second module connected via one or two SMP Expansion Ports) / each SMP Expansion Module activates one RXE Expansion Port (only one RXE Expansion Port supported)  
 One I/O Board (PCI-X Host Bridge, SCSI, ethernet, graphics, South Bridge, Super I/O, slot for Mgmt Adapter), one PCI Board (PCI-X Host Bridge, six PCI-X slots), one Midplane Board (connects SMP Exp Modules, I/O Board, PCI Board)

Memory

**2GB** std / **16GB** max<sup>13</sup> (up to **32GB** with optional SMP Expansion Module) / four 512MB DIMMs installed / 16 DIMM gold-connector slots / must install four identical DIMMs at same time / 4-way interleaving / PC133-compliant / 3.3v registered 168-pin SDRAM RDIMMs / 133MHz / **Error Checking and Correcting (ECC) and Chipkill™ via Memory ProteXion™** (1, 2, 3, or 4-bit errors on same chip; up to two chips at once; redundant bit steering) / **Active Memory™** via memory mirroring (memory mirroring supported with any OS)

SCSI disk controller  
SCSI implementation  
IDE controller  
Disk - capacity/bays

Adaptec® AIC-7899W / Wide Ultra160 SCSI (LVD 160MB/sec) / dual channel / 64-bit 66MHz PCI / integrated on I/O Board  
 First channel to internal 2-port SCSI backplane for internal hot-swap disks (16-bit LVD cable to SCSI backplane) / second channel to one external .8mm VHDCI 68-pin connector (16-bit LVD cable from I/O Board to ext connector) / one standard (longer) 16-bit LVD cable included for attaching an optional ServeRAID adapter to the two-bay backplane  
 Enhanced IDE ATA-100 controller in South Bridge / one one-drop IDE cable to backplane for diskette and CD-ROM  
 No disks standard / supports up to 15K rpm SCSI disks / two hot-swap bays / converged tray / 80-pin SCA-2 connectors

Mechanical

**EIA 19" rack models (4U<sup>4</sup>)** x 28" deep / supported in NetBAY™ Racks (such as NetBAY42 SR, NetBAY42 ER)

Chipset

**IBM XA-32™ chipset** / IBM Cache and Scalability Controller with L4 cache controller and three SMP Expansion Ports / IBM Memory I/O Controller with two remote I/O ports (each to a IBM PCI-X Host Bridge) / each IBM PCI-X Host Bridge provides three peer PCI buses / PCI 2.2 Bus E supports graphics, adapter slot with Remote Supervisor Adapter, VIA® 82C686B South Bridge (IDE ATA-100, USB, Super I/O PC97317VUL [keyboard, mouse]) / PCI 2.2 Bus F supports SCSI, ethernet / PCI-X Bus A, B, C, D support PCI-X slots / designed to the PCI-X 1.0 specification

Slots (Active™ PCI-X)  
RXE Expansion Port

Six hot-swap PCI-X 1.0 slots<sup>10</sup> available with power and attention indicator lights (optical sensors control power to slot) / **hot replace, hot upgrade, hot expansion** / separated by insulative plastic dividers  
**One port to support up to 12 additional PCI-X slots via an optional IBM RXE-100 Remote Expansion Enclosure**

CD-ROM / diskette  
Ethernet  
Graphics controller  
Ports

24X-10X<sup>6</sup> CD-ROM / 3.5" 1.44MB diskette drive / both removable from Ultrabay™ 2000 bays / supports CD-RW, DVD  
 Broadcom® 5700 10/100/1000 ethernet controller / on I/O Board / full duplex / 64-bit 66MHz PCI bus / Wake on LAN®  
 SVGA / S3® Savage4 Pro / on I/O Board / 8MB SDRAM 125MHz std/max / up to 1280x1024 at 64K colors at 85Hz  
 Rear: RXE-100 Expansion Port (to connect optional RXE-100), RXE Management Port, two USB (Vers 1.1), keyboard, mouse, analog DB-15 graphics, ethernet / no serial or parallel ports / Front: one USB (Vers 1.1)

Security

Power-on and administrator passwords / unattended boot / selectable boot

Systems mgmt

**Remote Supervisor Adapter** / PCI adapter / includes 10/100 ethernet, RJ-11, and serial connectors / provides remote console and mgmt / power on/off system / monitors power status, op system, temperature, disks, fans, power supplies

Diagnostics

**Light Path Diagnostics™** / primary indicator on information panel with LEDs associated with failing components / IBM Real Time Diagnostics (operated through IBM Director) available even while server running

Software

**ServerGuide™** (CD-ROM installation and configuration utilities), IBM Director, and others

Keyboard / mouse  
Power supplies

None standard (because rack-based)  
 Std: two / hot-swap / 1050 watts at 220v or 550 watts at 110v / redundant at 220v with two power supplies / front access / worldwide / voltage-sensing / auto-restart / fans in each power supply / PFA

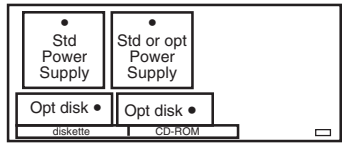
Cooling fans

Four hot-swap, redundant, multi-speed fans / one additional fan in each power supply / PFA / fan failure signals Diagnostic LED and mgmt processor

xSeries SMP Expansion Module	59P5188
512MB PC133 ECC SDRAM RDIMM	33L3324
1GB PC133 ECC SDRAM RDIMM	31P8300
Xeon MP 1.4GHz/512KB L3 Cache Proc Upg	32P8705
Xeon MP 1.5GHz/512KB L3 Cache Proc Upg	32P8706
Xeon MP 1.6GHz/1MB L3 Cache Proc Upg	32P8707
IBM 73.4GB 10K Ultra160 SCSI Hot-Swap	06P5756
IBM ServeRAID™-4H Ultra160 SCSI Adapter	37L6889
NetBAY11 Standard Rack Cabinet	9306110
8X/4X/24X Max CD-RW Ultrabay 2000	22P9101
IBM T540 15" Flat Panel Color Monitor (black)	9511AG4
Other options at <a href="http://ibm.com/pc/us/accessories">ibm.com/pc/us/accessories</a>	

Six available 3.3 volt Active PCI-X slots:

- Slot 1: fullsize, 64-bit 66MHz PCI-X, hot-swap Bus A
- Slot 2: fullsize, 64-bit 66MHz PCI-X, hot-swap Bus A
- Slot 3: fullsize, 64-bit 100MHz PCI-X, hot-swap, Bus B
- Slot 4: fullsize, 64-bit 100MHz PCI-X, hot-swap, Bus B
- Slot 5: fullsize, 64-bit 133MHz PCI-X, hot-swap, Bus C
- Slot 6: fullsize, 64-bit 133MHz PCI-X, hot-swap, Bus D
- Slot: used by Remote Supervisor Adp, 32-bit 33MHz



**4U Rack**

Bay ① 3.5", 0.5", access, diskette (Ultrabay 2000)  
 Bay ② 3.5", 0.5", access, CD-ROM (Ultrabay 2000)  
 Bay ③ 3.5", SL 1", access, hot-swap  
 Bay ④ 3.5", SL 1", access, hot-swap

- Dimensions: H7.0" x W19.0" x D27.5"
- Dimensions: H178mm x W483mm x D699mm
- Max weight: 110 lbs; 50kg
- Stealth black color
- Tool-free serviceability
- Access processors, memory, adapters, and SMP Expansion Module from top
- Access power supplies and disks from front
- Setup Program by pressing F1 at startup
- Diagnostics (PC-Doctor) by pressing F2 at startup
- SCSISelect by pressing Ctrl+A at startup
- Information LED panel and front-accessible pull-out Light Path panel (1st and 2nd level diagnostics without removing cover)
- Predictive Failure Analysis® alerts on processors, XcelL4 Server Accelerator Cache, memory, fans, power supplies, and optional disks with IBM Director

**LIMITED WARRANTY<sup>3</sup>**

- 1 year parts and labor
- International Warranty Service<sup>3</sup>
- On site, 24 hr x 7 day coverage, same day response time<sup>7</sup>
- 1 year on site warranty service upgrade option (in eligible locations):<sup>7</sup>
  - 24 hr x 7 day coverage, 2 hour response time (No ServicePac available)
- Post warranty maintenance services available
- 24x7<sup>14</sup> toll-free support for warranty issues during the warranty period<sup>3</sup>

**All models:** Maximum internal disk capacity: 146.8GB with two 73.4GB<sup>2</sup> hot-swap SCSI disks

Warranty information: For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC, 27709, Attn: Dept JDJA/B203. IBM makes no representation or warranty regarding third party products or services.

- <sup>1</sup> MHz/GHz only measures microprocessor internal clock speed; many factors affect application performance.
- <sup>2</sup> MB/GB/TB = 1 million/billion/trillion bytes when referring to storage capacity. Accessible capacity is less; up to 3GB is used in service partition.
- <sup>3</sup> For terms and conditions or a copy of IBM's Statement of Limited Warranty, call 1 800 772-2227 in the U.S. Copies available upon request. Telephone support may be subject to additional charges. For onsite labor, IBM will attempt to diagnose and resolve the problem remotely before sending a technician. International Warranty Service is available in any country in which this product is sold and serviced. Service delivery methods and parts availability vary by country, may be different from that in the country of purchase, and are subject to change without notice. Fees and restrictions may apply in some countries.
- <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> CD and DVD drives speeds are variable and are often less than the maximum.
- <sup>7</sup> These services are available for machines normally used for business, professional, or trade purposes, rather than personal, family or household purposes. Not all machine types and models are covered. Service period begins with the equipment date of purchase. Service must be purchased during the original limited product warranty period. Service levels are response time objectives and are not guarantees. A service technician is scheduled to arrive at your location within two or four business hours or the next business day (depending on service) after remote problem determination is completed. For the 9x5x4-hour service, calls dispatched after 1:00 p.m. local time, you can expect the service technician to arrive by the morning of the next business day. For non-critical service requests, a service technician will arrive by the end of the following business day. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. External peripherals, such as racks, tape drives, and channel controllers, require their own, separate service coverage, they are not covered under the attached

Machine. Service activation is required immediately following purchase. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. For failing non-IBM components, customer must provide replacement part unless IBM has a Technical Support Agreement with the manufacturer. Service does not cover accessories, supply items and certain parts such as batteries, frames and covers. Not available in all states; call your IBM representative for details.

- <sup>8</sup> Subject to conditions.
- <sup>9</sup> Some software may differ from retail version (if any) and may not include user manuals or all program functionality. Software license agreements may apply.
- <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> Fire GL1, Fire GL2 and Fire GL4 are trademarks of ATI Technologies, Inc., and are used under license.
- <sup>13</sup> Maximum memory and internal hard disk capacities may require the replacement of standard component with largest supported component available.
- <sup>14</sup> Response times may vary. May exclude some holidays. Telephone support may be subject to additional charges.
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