

## IBM Professional Workstations



**...delivering superior application performance**

The IBM IntelliStation professional workstation combines the highest performance PC technology with advanced capability usually found in UNIX<sup>®</sup> workstations. They can be tailored to a wide range of tasks, and are available in small-form and full-size desktops, mini-tower and tower configurations, with single or dual processors and responsive 2D or 3D graphics.

The IBM IntelliStation<sup>™</sup> is certified for Windows<sup>™</sup> XP Professional (preloaded on all models), Windows NT<sup>™</sup> and major Linux distributions so customers can now run general business applications, as well as their technical applications, on the same system.

### What is a workstation?

A workstation is a high performance, single user computer designed to host a range of specialised application software. The workstation marketplace is application driven with opportunities in the following sectors:

#### **Digital Content Creation (DCC)**

One of the fastest growing segments, it spans the media, entertainment and corporate industries. Solutions include pre-press and publishing, Web and content creation, 2D and 3D animation, and non linear video editing.

#### **Mechanical CAD (MCAD)**

2D/3D design and modelling in manufacturing, processing, oil and gas, engineering, construction and aerospace.

#### **Electronic Design Automation (EDA)**

Applications used by the electronics industry to assist with printed circuit board design, programmable logic devices and logic synthesis.

#### **Financial Services Portfolio analysis**

Order entry/routing, brokerage support and news feeds required by trading floors, banks and securities and brokerage firms.

#### **Software Engineering Code**

Creation, compilers, interactive databases, Web development and other processor-intensive applications used to develop software.

#### **General Business**

Incorporates other applications that need a powerful client platform, such as project planning, statistical analysis, training development, Desktop Publishing (DTP) and database analysis.

#### **Geographic Information Systems (GIS)**

Geographic analysis tools used in weather forecasting, sales analysis, population forecasting and land use planning.

#### **Science Statistical**

Analysis and 3D modelling used in research laboratories of pharmaceutical and biotechnology companies and universities.

#### **IBM IntelliStation leads with Linux**

From entrepreneurs to the enterprise, forward-thinking businesses are moving from proprietary UNIX-based workstations to the open source Linux platform. Freedom from OS licencing fees and the price/performance advantages of certified, standards-based systems add up to a compelling proposition.

## Why buy IntelliStation?

### **Usability**

Ingenious design and customer input drive the form and function of award-winning IntelliStation workstations: "...We consider the whole package to be great value for money. All in all, it's a powerful, secure and expandable workstation." (PC Magazine, 3/2002)

### **Certified for more**

IBM system engineers work directly with leading software vendors to compatibility-test and certify a host of leading applications on IntelliStation<sup>1</sup>. If the software isn't certified, the ISV will not provide support.

### **Application performance**

IBM workstation development resources are second to none – from research to integration to testing – a synergy that consistently delivers exceptional application performance. "...the M Pro's double and sometimes higher performance lead, depending on the application, against competing products should be enough to compel any animator, modeller, render expert or those visualising underground oil wells to beg their IT department to purchase a few." (PC Magazine, Middle East, November 2002)

### **Graphics expertise**

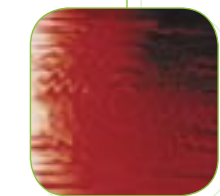
Choose from leading multi-monitor 2D and OpenGL 3D graphics solutions, each an exceptional price/performer. IBM graphics engineers meticulously tune and test driver software for optimum performance.








### **Award-winning service & support**

In addition to a 24x7 helpline and expert service/support teams, IntelliStation owners are afforded a unique level of Web-based support through 'Ask Engineering', an on-line service that helps customers optimise their workstations to suit their applications.

### **IBM manageability**

IBM is committed to helping customers deploy, manage and protect their workstation investment with standards-based IBM Manageability Tools, Lifecycle Care and IBM Global Services.



	Essential workstation performance <b>IntelliStation E Pro</b> Workstation productivity at an outstandingly low price Latest single processor technology from Intel™ Affordable 2D/3D graphic engines for demanding applications Choice of small form factor, mini-tower or desktop design			Ultimate graphics performance <b>IntelliStation M Pro</b> Delivers high performance for computer intensive applications Fast single or dual processor technology from Intel™ A range of high end 2D/3D graphics engines Highly scalable mini-tower designs			Scalable multiprocessor <b>IntelliStation Z Pro</b> Ultimate power & performance Designed with the user in mind Features to meet segments' unique needs
	<b>Model 6214</b> 	<b>Model 6216</b> 	<b>Model 6226</b> 	<b>Model 6219</b> 	<b>Model 6229</b> 	<b>Model 6850</b> 	<b>Model 6221</b> 
<b>Processor</b>	Intel Pentium 4 up to 2.2GHz	Intel Pentium 4 up to 2.67GHz	Intel Pentium 4 up to 2.67GHz	Intel Pentium 4 up to 3.0GHz	Intel Pentium 4 up to 2.8GHz	Intel Xeon™ up to 2.8GHz dual capable	Intel Xeon™ up to 2.8GHz dual capable
<b>Core Logic</b>	Intel 845 with 400MHz front side bus	Intel 845e with 533MHz front side bus	Intel 845e with 533MHz front side bus	Intel E7205 with 533MHz front side bus	Intel 850e with 533MHz front side bus	Intel 860 with 400MHz front side bus	Intel E7505 with 533MHz front side bus
<b>Cache</b>	512KB L2	512KB L2	512KB L2	512KB L2	512KB L2	512KB L2	512KB L2
<b>Memory (std / max)</b>	256MB / 1.5GB SDRAM	256MB / 2GB DDR PC2100	256MB / 2GB DDR PC2100	256 or 512MB or 1 GB / 4GB DDR PC2100	256 or 512MB / 2GB PC800 Rambus	512MB / 4GB PC800 Rambus	512MB or 1GB / 8GB DDR PC2100
<b>ECC memory (error checking)</b>	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>S.M.A.R.T.<sup>2</sup> hard disk drives</b>	40GB / 7,200rpm ATA-100 EIDE 18.2GB / 10,000rpm Ultra160 SCSI	40GB / 7,200rpm ATA-100 EIDE 18.2GB / 10,000rpm Ultra160 SCSI	40GB / 7,200rpm ATA-100 EIDE 18.2GB / 10,000rpm Ultra160 SCSI	40GB / 7,200rpm ATA-100 EIDE 36.4GB / 10,000rpm Ultra320 SCSI	40GB / 7,200rpm ATA-100 EIDE 18.2GB / 10,000rpm Ultra160 SCSI	40GB / 7,200rpm ATA-100 EIDE 18.2GB / 10,000rpm Ultra160 SCSI	40GB / 7,200rpm ATA-100 EIDE 36.4GB / 10,000rpm Ultra320 SCSI
<b>Controller</b>	ATA-100 integrated; single channel Ultra160 SCSI PCI adapter	ATA-100 integrated; single channel Ultra160 SCSI PCI adapter <sup>6</sup>	ATA-100 integrated; single channel Ultra160 SCSI PCI adapter <sup>6</sup>	ATA-100 integrated; Integrated Ultra320 SCSI integrated	ATA-100 integrated; dual channel Ultra160 SCSI PCI adapter	ATA-100 integrated; dual channel Ultra160 SCSI PCI adapter	ATA-100 integrated; dual channel Ultra320 SCSI integrated
<b>Chassis</b>	Mini-tower	Small form factor desktop	Full size desktop	Mini-tower	Mini-tower	Mini-tower	Mini-tower
<b>Slots</b>	6 (one 4X AGP, five PCI)	4 low profile (one 4X AGP, three PCI)	4 (one 4X AGP, three PCI)	6 (one 8X AGP Pro 50, five 32-bit PCI)	6 (one 4X AGP Pro 50, five 32-bit PCI)	6 (one 4X AGP Pro 110, two 64-bit / 66MHz PCI, three 32-bit / 33MHz PCI)	6 (one 8X AGP Pro 50, one 32-bit PCI, 4 64-bit PCI-X)
<b>Bays</b>	7 (three 3.5" internal, two 3.5" external, two 5.25" external)	3 (Fully populated - HDD, CD, 3.5" diskette)	4 (one 3.5" external, one 3.5" internal, two 5.25" external, 1 free)	7 (three 3.5" internal, two 3.5" external, two 5.25" external)	7 (three 3.5" internal, two 3.5" external, two 5.25" external)	9 (six 3.5" internal, one 3.5" external, two 5.25" external)	7 (three 3.5" internal, two 3.5" external, two 5.25" external)
<b>Ports</b>	1 parallel, 2 serial, 4 USB, 1 Ethernet (RJ45)	4 USB 2.0, 1 parallel, 2 serial, 1 Ethernet (RJ45)	4 USB 2.0, 1 parallel, 2 serial, 1 Ethernet (RJ45)	4 USB 2.0, 1 parallel, 2 serial and IEEE 1394 <sup>6</sup> , 1 Ethernet (RJ45)	4 USB, 1 parallel, 2 serial, 1 Ethernet (RJ45)	2 serial, 1 parallel, 2 USB, 1 Ethernet (RJ45)	4 USB 2.0, 1 parallel, 2 serial and IEEE 1394 (on selected models), 1 Ethernet (RJ45)
<b>Network Interface</b>	Integrated Intel 10/100 Ethernet with Wake on LAN	Integrated Gigabit Ethernet Wake on LAN, ASF	Integrated Broadcom Gigabit Ethernet Wake on LAN, ASF	Integrated Gigabit Ethernet Wake on LAN, ASF	Integrated Intel 10/100 Ethernet with Wake on LAN	Integrated Intel 10/100 Ethernet with Wake on LAN	Integrated Gigabit Ethernet Wake on LAN, ASF
<b>Dimensions (w x d x h)</b>	165 x 508 x 470mm	360 x 412 x 104mm	425 x 425 x 140mm	165 x 483 x 438mm	165 x 508 x 470mm	167 x 603 x 440mm	217 x 445 x 495mm
<b>Graphics Available:</b> All Graphic Cards are dual display capable	<b>2D</b> Matrox G450 DVI (32MB) nVIDIA Quadro4 200 NVS (64MB)	Matrox G450 DVI (32MB) nVIDIA Quadro4 200 NVS (64MB)	Matrox G450 DVI (32MB) nVIDIA Quadro4 200 NVS (64MB)	Matrox Millennium G450 DVI for entry 2D, nVIDIA Quadro4 280NVS for performance 3D	Matrox G450 DVI (32MB) nVIDIA Quadro4 200 NVS (64MB)	Matrox G450 DVI (32MB) nVIDIA Quadro4 200 NVS (64MB)	Matrox Millennium G450 DVI for entry 2D, nVIDIA Quadro4 280NVS for performance 2D
	<b>Entry 3D</b>	nVIDIA Quadro4 580 XGL	nVIDIA Quadro4 580 XGL				
	<b>Advanced 3D</b>	ATI Fire GL 8800 (128MB)	ATI Fire GL 8800 (128MB)	nVIDIA Quadro4 980XGL	ATI Fire GL 8800 (128MB)	ATI Fire GL 8800 (128MB)	nVIDIA Quadro4 980XGL
	<b>Extreme 3D</b>			3Dlabs Wildcat 47110	Wildcat III 6110 (64MB frame buffer, 128MB frame buffer) nVIDIA Quadro4 900XGL (128MB)	Wildcat III 6110 (64MB frame buffer, 128MB frame buffer) nVIDIA Quadro4 900XGL (128MB)	3Dlabs Wildcat 47110
<b>Media Device</b>	CD-ROM 48X-20X	CD-ROM 48X-20X	CD-ROM 48X-20X	CD-ROM 48X, CD-RW, DVD-CD RW	CD-ROM 48X-20X	CD-ROM 48X-20X	CD-ROM 48X, CD-RW, DVD-CD RW
<b>Operating System pre-loaded</b>	Microsoft Windows XP Professional, DOS license	Microsoft Windows XP Professional, DOS license	Microsoft Windows XP Professional, DOS license	Microsoft Windows / XP Professional, DOS licence	Microsoft Windows 2000 / XP, DOS licence	Microsoft Windows 2000 / XP, DOS licence	Microsoft Windows / XP Professional, DOS licence
<b>Operating System supported</b>	Major Linux distributions Windows 2000 Pro	Major Linux distributions Windows 2000 Pro	Major Linux distributions Windows 2000 Pro	Major Linux distributions Windows 2000 Pro	Certified for Microsoft Windows NT, Linux, compatible with Microsoft Windows 95/98™	Certified for Microsoft Windows NT, Linux, compatible with Microsoft Windows 95/98™	Major Linux distributions Windows 2000 Pro
<b>Audio</b>	AC-97, microphone in, line in, line out, integrated speaker	AC-97, microphone in, line in, line out, integrated speaker	AC-97, microphone in, line in, line out, integrated speaker	AC-97, microphone in, line in, line out, integrated speaker	AC-97, microphone in, line in, line out, integrated speaker	AC-97, microphone in, line in, line out, integrated speaker	AC-97, microphone in, line in, line out, integrated speaker, headphones out
<b>Warranty<sup>5</sup></b>	3 year on-site parts and labour	3 year on-site parts and labour	3 year on-site parts and labour	3 year on-site parts and labour	3 year on-site parts and labour	3 year on-site parts and labour	3 year on-site parts and labour

**IBM monitors in stealth black**

- T210 20.8" hybrid flat panel
- T860 18.1" hybrid flat panel
- P275 21" (19.8" VIS) FD Trinitron CRT
- P97 19" (18.0" VIS) FD Trinitron CRT

**Memory**

- E Pro SDRAM 128, 256, 512MB ECC  
DDR 256, 512, 1024MB ECC
- M Pro RDRAM 128, 256, 512MB ECC PC800  
DDR 128, 256, 512 and 1024MB ECC  
PC2100
- Z Pro DDR 256, 512, 1024 and 2048MB ECC  
PC2100

**Second processor**

- M Pro 6850 2.0, 2.2, 2.4 and 2.8GHz Intel Xeon Processor
- Z Pro 2.4, 2.67 and 2.8GHz Intel Xeon processor

**Hard disk**

- 18.2, 36.4 or 73.4GB 10,000rpm or 15,000rpm Ultra160 SCSI (Ultra2 compatible)

- EIDE 40, 60, 80GB, 7,200rpm ATA/100
- PCI Ultra160 SCSI Adaptor
- IBM ServeRAID<sup>®</sup>-4Lx Ultra160 SCSI Controller

**DVD-RAM**

- IBM DVD-RAM/DVD-R Drive

**CD-RW**

- IBM 40x12x40X CD-RW
- Internal IDE Drive

**Tape drive**

- TR5 10/20GB Internal IDE
- IBM 250MB Zip Drive
- TR7 20/40BG Internal IDE

**Multimedia**

- T860 Speaker/USB Hub

**Graphics Control**

- SpaceBall 3D Input Device

**Selected certified / compatible applications**

**Digital Content Creation**

- Adobe: Premier, After Effects, InDesign, Illustrator, Photoshop, GoLive
- Alias/Wavefront: Maya
- Avid: Xpress, Xpress DV, Media Composer, Symphony, Film Composer
- Discreet: edit, combustion, 3ds max
- Macromedia: Dreamweaver, Flash, Shockwave
- Newtek: Lightwave, Video Toaster
- Softimage: 3D Extreme, Toons, XSI

**Engineering**

- Autodesk: AutoCAD and Inventor
- IBM/Dassault Systèmes: CATIA Version 5
- PTC: Pro/ENGINEER
- UGS: Unigraphics
- Solidworks Corp.: Solidworks
- ESRI: ArcView

**Financial Services**

- Market Data, Analytics: Reuters, TIBCO, Bridge
- Risk Management: RiskMetrics, e-Risk

Key:

- E Pro
- M Pro
- Z Pro

Price

**3Dlabs Wildcat 4 7110**

Model	Part no.	Memory	Speed	HDD
6219 37G	KT737XX	1GB	2.8GHz	36.4GB/SCSI
6219 47G	KT747XX	1GB	3GHz	36.4GB/SCSI
6221 37G	KPK37XX	1GB	2.8GHz	36.4GB/SCSI

**nVIDIA Quadro4 980NVS**

Model	Part no.	Memory	Speed	HDD
6219 26G	KT726XX	512MB	2.67GHz	36.4GB/SCSI
6219 36G	KT736XX	512MB	2.8GHz	36.4GB/SCSI
6219 46G	KT746XX	512MB	3.0GHz	36.4GB/SCSI
6221 36G	KPK36XX	1GB	2.8GHz	36.4GB/SCSI

**nVIDIA Quadro4 580NVS**

Model	Part no.	Memory	Speed	HDD
6216 54G	KAU54XX	256MB	2.67GHz	40GB/EIDE
6216 55G	KAU55XX	256MB	2.67GHz	18GB/SCSI
6226 54G	KBU54XX	256MB	2.67GHz	40GB/EIDE
6226 55G	KBU55XX	256MB	2.67GHz	18GB/SCSI

**nVIDIA Quadro4 280NVS**

Model	Part no.	Memory	Speed	HDD
6219 12G	KT712XX	256MB	2.4GHz	40GB/EIDE
6219 32G	KT732XX	512MB	2.8GHz	40GB/EIDE
6219 42G	KT742XX	512MB	3.0GHz	40GB/EIDE
6221 22G	KPK22XX	512MB	2.67GHz	40GB/EIDE
6221 29G	KPK29XX	512MB	5.34GHz	36.4GB/SCSI
6221 33G	KPK33XX	512MB	2.8GHz	36.4GB/SCSI

**nVIDIA Quadro4 200NVS**

Model	Part no.	Memory	Speed	HDD
6216 22G	KAU22XX	256MB	2GHz	40GB/EIDE
6216 23G	KAU23XX	256MB	2GHz	18.2GB/SCSI
6216 32G	KAU32XX	256MB	2.26GHz	40GB/EIDE
6216 42G	KAU42XX	256MB	2.4GHz	40GB/EIDE
6216 52G	KAU52XX	256MB	2.67GHz	40GB/EIDE
6226 22G	KBU22XX	256MB	2GHz	40GB/EIDE
6226 32G	KBU32XX	256MB	2.26GHz	40GB/EIDE
6226 42G	KBU42XX	256MB	2.4GHz	40GB/EIDE
6226 52G	KBU52XX	256MB	2.67GHz	40GB/EIDE

**matrox G450 DVI**

Model	Part no.	Memory	Speed	HDD
6216 20G	KAU20XX	256MB	2GHz	40GB/EIDE
6216 30G	KAU30XX	256MB	2.26GHz	40GB/EIDE
6216 40G	KAU40XX	256MB	2.4GHz	40GB/EIDE
6216 50G	KAU50XX	256MB	2.67GHz	40GB/EIDE
6226 20G	KBU20XX	256MB	2GHz	40GB/EIDE
6226 30G	KBU30XX	256MB	2.26GHz	40GB/EIDE
6226 40G	KBU40XX	256MB	2.4GHz	40GB/EIDE
6226 50G	KBU50XX	256MB	2.67GHz	40GB/EIDE
6219 10G	KT710XX	256MB	2.4GHz	40GB/EIDE
6219 21G	KT721XX	512MB	2.67GHz	36.4GB/SCSI
6221 10G	KPK10XX	512MB	2.4GHz	40GB/EIDE



Images created using the IBM IntelliStation supplied courtesy of Pepper's Ghost Productions (PGP) and Catia.

Performance



# IBM Digital Content Creation Solutions help train the next generation of special effects stars



Escape Studios, the only school in Europe to offer facilities for students who want training and experience in visual arts and design, has selected an IBM Digital Media Solution to help train students to use film and TV visual effects as well as computer games.

Escape Studios



## Solution

Escape Studios is using 20 IBM

IntelliStation E Pro workstations for running graphics and creative applications, and are using IBM Professional series monitors to ensure excellent image clarity for their 3D imaging, all running on the Linux operating system.

## Benefits

The Digital Content Creation solution allows Escape Studios to run high-level software applications, confident of blistering performance. The IntelliStation E Pro's high performance video adapters ensure that very large 3D images can be created and manipulated with ease, and the provision of 128MB of unified memory allows for programmable per-pixel shading, a key advantage for digital content creation.

"We chose IBM equipment because it had the best reputation in the visual effects industry," said Dominic Davenport, Managing Director of Escape Studios. "Escape is a centre of training excellence for visual art students, which means we have to ensure that our technology partner is of the same calibre."

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1 IBM makes no representations or warranties regarding non-IBM products. These products are offered and warranted by third parties, not IBM.

2 Self-Monitoring, Analysis and Reporting Technology.

3 GB equals one thousand million bytes when referring to storage capacity. Accessible capacity is less.

4 Variable read rate. Actual playback speed will vary and is often less than the maximum possible.

5 For information regarding the IBM Statement of Limited Warranty, contact your Business Partner or IBM Marketing Representative. With respect to onsite service, a technician is sent after IBM attempts to diagnose and resolve the problem remotely.

6 On selected models

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