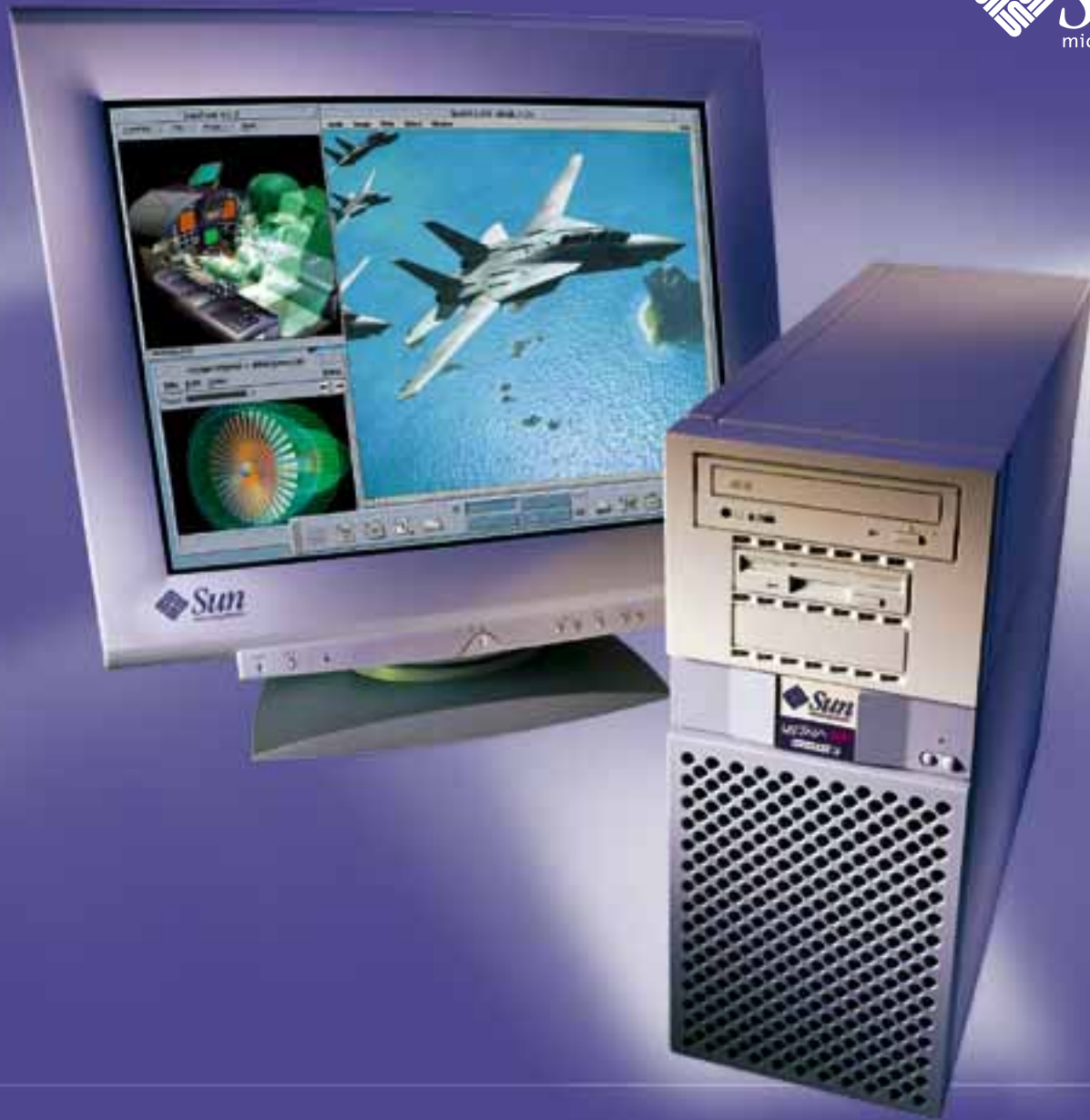


SUN ULTRA™ 60 WORKSTATION

THE NEXT LEVEL IN MULTIPROCESSING WORKSTATIONS.



It's the perfect combination of raw multiprocessing performance and sophisticated next-generation technologies—a high-powered, flexible system that's ready for today's compute-intensive challenges. And for whatever's next. The Sun Ultra™ 60 workstation accommodates two powerful, 450-MHz UltraSPARC™II modules, with horsepower to drive demanding applications. And the combination of fast UltraSCSI disk, 66-MHz PCI technology, and the 120-MHz, 1.9 GB/sec., crossbar-switch UPA interconnect delivers exceptionally fast processing and throughput. • Graphics are no less advanced, with Creator3D and Elite3D able to handle applications like geotechnical, simulation, seismic analysis, and medical imaging. Plus, dual-head and 24-inch monitor support means more visible display area—and more productivity. The Sun Ultra 60 workstation.

HIGHLIGHTS

- Up to two 450-MHz or 360-MHz UltraSPARC-II modules and 4-MB cache for exceptional application performance.
- 100% binary compatible with entire product line—which protects your investment.
- Modular design and 120-MHz, 1.9 GB/sec. UPA interconnect allows easy upgrade to next-generation processors, graphics cards, and peripherals.
- Rigorous testing ensures a robust, well-engineered system and years of uptime.
- Two Creator3D or Elite3D m3 graphics cards, or one Elite3D m6 card, with one Creator3D or one Elite m3 provide outstanding performance for demanding graphics applications.
- Supports previous-generation memory, disk, and graphics cards, protecting hardware investments.
- Dual-bus 66-MHz PCI technology, 10-/100-BaseT Ethernet, and UltraSCSI disk provide the industry's best I/O and networking capabilities.

WORKSTATIONS

SUN ULTRA 60 SPECIFICATIONS

PROCESSOR OPTIONS

Architecture	450-MHz or 360-MHz superscalar SPARC™ Version 9, UltraSPARC-II
Memory management	MMU with 64 I-TLB entries and 64 D-TLB entries, 8192 hardware-supported contexts 16-KB data and 16-KB instruction on chip Secondary: 4-MB external
Cache	

MAIN MEMORY

Total of 16 SIMM memory slots available Note: Install SIMMs in sets of four.
32-, 64-, and 128-MB SIMM expansion
256 MB maximum (with 16-MB SIMMs, in pairs)
512 MB maximum (with 32-MB SIMMs, in pairs)
1 GB maximum (with 64-MB SIMMs, in pairs)
2 GB maximum (with 128-MB SIMMs, in pairs)

STANDARD INTERFACES

Network	Ethernet/Fast Ethernet, twisted pair standard (10-BaseT and 100-BaseT) or MII for external transceiver
I/O	40-MB/sec UltraSCSI (SCSI-3) (synchronous)
Serial	Two RS-232C/RS-423 serial ports (DB25)
Parallel	Centronics-compatible parallel port (DB25) (ECP mode capable)
Audio	16-bit audio, 8 kHz to 48 kHz; internal speaker and external microphone; line in, line out, headphone output
Expansion bus	Four full-size PCI slots compliant with PCI spec- ification version 2.1; three slots operating at 33 MHz, 32- or 64-bit data bus width, 5 volt; one slot operating at 33 or 66 MHz, 32- or 64-bit data bus width, 3.3 volt
UPA graphics slots	Two UPA graphics slots supporting up to two Creator3D or Elite3D m3, or one Elite3D m6 and one Creator3D or Elite3D m3

MASS STORAGE AND MEDIA

Internal floppy disk	Optional 3.5-in. MS-DOS/IBM compatible (720 KB, 1.2 MB, 1.44 MB formatted)
Internal CD	Optional 644 MB SunCD™; 32X-speed, Photo CD compatible
Internal tape	Optional 12- to 24-GB DDS3 4-mm, 14 GB
Internal disk	Up to two 3.5- x 1-in or x 1.6-in. disks (9.1 GB or 18.1 GB formatted) Disk: 18.2- to 109-GB StorEdge™ MultiPack, StorEdge D1000, StorEdge A1000, StorEdge A3500, and StorEdge A5000 support Tape: 4- to 8-GB SLR, 12- to 24-GB 4-mm DDS3, 7- to 14-GB 8-mm, 20- to 40-GB 8-mm, 72- to 144-GB 4-mm DDS3 autoloader, 20- to 40-GB DLT4000, 35- to 70-GB DLT7000, StorEdge L280, StorEdge L400, StorEdge L1000, StorEdge L1800, StorEdge L3500

GRAPHICS AND IMAGING

Creator3D

All the imaging features of accelerated 24-bit 2-D graphics and imaging
plus accelerated 24-bit double-buffered 3-D graphics with 28-bit Z-buffer and
8-bit overlay plane. Gouraud shading, alpha blending and screen-door
transparency, line antialiasing, depth-cueing, 4-bit stencil support with
hardware acceleration of OpenGL stencil functions, four 256-entry colormaps
for dynamic colormap segment allocation and adjustable gamma correction.
NTSC/PAL video timing support. 1280 x 1024 at 76 Hz resolution standard,
stereo 960 x 680 at 112 Hz supported with 21-in. monitor. Up to two
Creator3D frame buffers are supported. Option to reconfigure this card to
high-resolution single-buffered mode for imaging applications supporting
24-in. high resolution wide-screen monitors, up to 1920 x 1200 at 70 Hz.

Elite3D m3

On-board graphics floating-point engines with all the imaging features of
Creator plus higher performance accelerated 24-bit double-buffered 3-D
graphics with 28-bit Z-buffer and 8-bit overlay plane. Gouraud shading, alpha
blending and screen-door transparency, line and dot antialiasing, per-pixel
depth-cueing, per-pixel alpha interpolation, 4-bit stencil support with
hardware acceleration of OpenGL stencil functions, compressed geometry
decompression, four 256-entry colormaps for dynamic colormap segment
allocation and adjustable gamma correction. NTSC/PAL video timing support.
1280 x 1024 at 76 Hz resolution standard, stereo 960 x 680 at 112 Hz sup-
ported with 21-in. monitor. Up to two Elite3D m3 frame buffers are supported.

Elite3D m6

Highest performance Sun graphics with the integrated imaging features
of Creator, plus very high-performance accelerated 24-bit double-buffered
3-D graphics with 28-bit Z-buffer and 8-bit overlay plane. Gouraud shading,
alpha-blending and screen-door transparency, line and dot antialiasing,
per-pixel depth-cueing, per-pixel alpha interpolation, 4-bit stencil support
with hardware acceleration of OpenGL stencil functions, compressed
geometry decompression, four 256-entry colormaps for dynamic colormap
segment allocation and adjustable gamma correction. NTSC/PAL video
timing support. 1280 x 1024 at 76 Hz resolution standard, stereo 960 x 680
at 112 Hz supported with 21-in. monitor. One Elite3D m6 frame buffer and
an additional Elite3D m3 or Creator frame buffer are supported.

MONITOR OPTIONS

	17-in. color	19-in. color	21-in. color	24-in. wide-screen color
1600 x 1200 resolution, 75-Hz refresh rate, 105 dpi		•	•	
1280 x 1024 resolution, 76- or 67-Hz refresh rate, 89 dpi		•	•	
1152 x 900 resolution, 76- or 66-Hz refresh rate, 77 dpi	•	•	•	
1024 x 768 resolution, 76-Hz refresh rate, 67 dpi	•	•	•	
960 x 680 resolution, 112-Hz refresh rate, 70 dpi	•	•	•	
1920 x 1200 resolution, 70-Hz refresh rate, 103 dpi		•	•	•
1600 x 1000 resolution, 76- or 66-Hz refresh rate, 86 dpi		•	•	•
1440 x 900 resolution, 76-Hz refresh rate, 77 dpi		•	•	•
1280 x 800 resolution, 76-Hz refresh rate, 69 dpi		•	•	•
1024 x 768 resolution, 76-Hz refresh rate, 60 dpi		•	•	•

INPUT DEVICES

Keyboard	Sun Type 6
Mouse	Opto-mechanical, 3-button
Microphone	SunMicrophone™ II

SOFTWARE

Operating system	Solaris™ 2.7 Solaris 2.5.1, Hardware: 11/97 Solaris 2.6, Hardware: 3/98 Solaris NEO™ 2.0, Solaris OpenStep 1.0 OpenWindows™ Version 3.5, Common Desktop Environment Version 1.0.1
Windowing system	Sun WorkShop™, Internet WorkShop 1.0, WorkShop OpenStep 1.0
Development environments	C, C++, Pascal, FORTRAN, Java™ ONC™, NFS™, TCP/IP, SunLink™, OSI, MHS, IPX/SPX, DCE
Languages	
Networking	
Graphics	XGL™, XIL™, OpenGL, Xlib, PostScript™

ENVIRONMENT

AC power	100-240 VAC, 47-63 Hz, 0.4 K VA
Operating	5° C to 40° C (41° F to 104° F) 20% to 80% relative humidity, noncondensing
Nonoperating	-40° C to 60° C (-4° F to 140° F) 5% to 95% relative humidity, noncondensing
Operating acoustic noise	6.1 bels
Idling acoustic noise	5.9 bels
Declared noise emissions in accordance with ISO 9296, measured at 23° C	

REGULATIONS

Meets or exceeds the following requirements:	
Safety	UL 1950, CSA C22.2 No. 950, TUV EN 60950, CB Scheme with Nordic deviations EMKO-TSE (74-SEC) 203, ZH1/618 FCC Class B, DOC Class B, VCCI Class 2, EN 55022 Class B, EN 61000-3-2
RFI/EMI	
Immunity	EN 50082-1
X-ray	DHHS 21 Subchapter J; PTB German X-ray Decree
Power management	Energy Star compliant

DIMENSIONS AND WEIGHTS

Sun Ultra 60 chassis	
Height	45.0 cm (17.7 in.)
Width	19.0 cm (7.5 in.)
Depth	49.8 cm (19.6 in.)
Shipping weight	22.65 kg (50 lb.)
21-in. color monitor	
Height	50.2 cm (19.9 in.)
Width	50.0 cm (19.4 in.)
Depth	47.6 cm (18.9 in.)
Shipping weight	31.0 kg (68.3 lb.)
24-in. wide-screen color monitor	
Height	50.0 cm (19.7 in.)
Width	58.0 cm (22.8 in.)
Depth	54.8 cm (21.6 in.)
Shipping weight	41.4 kg (91.0 lb.)

UPGRADES

Upgrades are available for SPARCstation™ and Ultra systems

SALES OFFICES

AFRICA (NORTH, WEST, AND CENTRAL): +33-1-3067-4680
ARGENTINA: +54-11-4317-5600
AUSTRALIA: +61-2-9844-5000
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