SiliconGraphics
Computer Systems

OCTANE™

Visual Workstation

Breakthrough System Architecture for High-Performance Visual Computing

Pure Performance

OCTANE from Silicon Graphics is the high-performance UNIX® workstation designed to power the next generation of visual computing solutions. OCTANE lets users take control of large, complex, and continually growing data sets that would normally stall conventional computer systems. Whether in manufacturing, entertainment, visual simulation, defense imaging, or the sciences, OCTANE brings interaction to complex computing tasks with its revolutionary new architecture. This interaction is the key to innovation and insight.

Switching Away from Tradition

OCTANE employs a radical new architecture that shatters the bottlenecks associated with conventional systems. OCTANE replaces the traditional one-at-a-time shared bus with a one-to-one crossbar switch. This switch allows different computer subsystems to communicate directly, without interfering or competing with other system activity.

Graphics Leadership

OCTANE offers the most powerful desktop graphics available, providing unmatched realism and polygon performance. The system is highly modular and scalable, allowing users to choose from three graphics configurations to suit their current and future needs. For applications that require additional space or two separate screens, OCTANE supports a dual-head option. OCTANE/SE and OCTANE/SSE are ideal for superior solid modeling, and OCTANE/MXE adds to the outstanding solid model performance of OCTANE/SSE graphics by providing unrivaled texture for 3D graphics and an improved Geometry Engine® processor.

The Power of Symmetric Multiprocessing

With OCTANE, Silicon Graphics now delivers symmetric multiprocessing to the desktop. OCTANE provides the option for one or two MIPS® R12000® processors that operate simultaneously or independently on separate tasks. The threaded 64-bit operating system of OCTANE, combined with threaded applications, further boosts the system's computational capabilities so that concurrent engineering design and analysis applications will benefit.

Robust Digital Media

The OCTANE Personal Video option allows users to create and manipulate content for a variety of uses ranging from collaboration to videoconferencing to multimedia Web sites. The OCTANE Compression option provides state-of-the-art compression capabilities that can be used for anything from Web-based moviemaking to high-end broadcast graphics. To satisfy the demanding requirements of video professionals, OCTANE Digital Video delivers two streams of uncompressed real-time video and video texturing for unique special effects.

Beyond PCI

The OCTANE system has a modular, expandable design that supports a wide range of peripherals and I/O devices. The base system includes built-in 10Mb/100Mb Ethernet, plus two Ultra SCSI buses. OCTANE also supports three optional PCI-64 slots, offering connections to a wide range of industry-standard peripherals. To expand beyond the capabilities of PCI-based devices, OCTANE provides four high-speed XIO slots, which have data rates of 1.6GB per second peak and 1.2GB per second sustained.

OCTANE

Technical Specifications

BASE SYSTEM FEATURES

Processor Support	1-2 MIPS RISC 64-bit R12000 2MB L2 cache 1-2 MIPS RISC 64-bit R10000® 1MB or 2MB L2 cache
Memory Capacity	128MB–4GB synchronous DRAM (SDRAM)
System Graphics	Resolution (with double-buffered 32-bit color): • OCTANE/SE 1280x1024 at 72 Hz • OCTANE/SSE 1920x1035 at 60 Hz • OCTANE/MXE 1920x1035 at 60 Hz Formats: • 8-bit, 12-bit, 24-bit RGB single-buffered, z-buffered • 24-bit, 36-bit RGB double-buffered, z-buffered • 16-bit, 32-bit RGBA double-buffered, z-buffered, stereo
Graphics Features	Texture cache: 4MB standard for OCTANE/MXE 4MB optional upgrade on OCTANE/SE and OCTANE/SSE Alpha blending, accumulation buffer, anti-aliased RGB lines and points, texture mapping, fog, lighting features (spot lighting, eight light sources, two-sided lighting, ambient, diffused, and specular), arbitrary clipping planes, depth cueing, soft shadow and depth of field, subpixel positioning, stenciling, stereo graphics, pan and zoom, X11 pixel operations
Storage and I/O	Crossbar: 1.6GB/sec/port (6 ports) Internal single-ended SCSI controller External single-ended SCSI controller 4 XIO board slots 3 internal 3.5" storage bays Single half-height, dual full-height PCI slots with optional PCI cardcage
Communication	Single 10Base-T/100Base-TX port Dual serial RS422/RS423 DB-9 ports Single bidirectional parallel port Six audio I/O ports

DISPLAY OPTIONS

Monitors	20" color monitor standard 24" color monitor optional with OCTANE/SSE and OCTANE/MXE
Graphics	Dual-head and CADduo configurations: • OCTANE/SE and OCTANE/SE • OCTANE/SE+texture and OCTANE/SE+texture • OCTANE/SE and OCTANE/SSE • OCTANE/SE and OCTANE/MXE

DIGITAL MEDIA FEATURES

Analog Audio (Standard)	Mono-microphone, self-powered stereo desktop loudspeakers with headphone output, stereo analog—10dBV line level (18-bit A to D and D to A)
Digital Audio (Standard)	16-bit analog stereo I/O (two channels), 24-bit AES-3id I/O (two channels), and 24-bit ADAT optical I/O (eight channels)
Digital Audio I/O (Optional)	8 channels, 24-bit ADAT optical I/O 2 channels, 24-bit AES-3id I/O AES11 synchronization
OCTANE Personal Video (Optional)	S-Video, composite, Silicon Graphics digital video input and output for NTSC and PAL standards; real-time graphics to video output
OCTANE Digital Video (Optional)	Two fully independent input and output channels of SMPTE 259M (CCIR 601 serial digital video) or single dual-link signal with key for NTSC and PAL (8 or 10 bits per component), real-time graphics to video output
OCTANE Compression (Optional)	Dual-stream M-JPEG compression as low as 2:1 for composite and S-Video or 601 when used with OCTANE Digital Video

EXPANSION OPTIONS

XIO	4-port Ultra SCSI (4 differential) 4-port 100Base-TX and 6 460Kb/sec serial ports 2-port Fibre Channel OCTANE Channel Option OCTANE Digital Video OCTANE Personal Video (S-Video and composite) OCTANE Compression (JPEG compression), lossless on IRIX 6.5 for JPEG
PCI (Requires PCI Expansion Unit)	Single-port 1000Base-TX Single-port 100Base-TX Single-port differential Ultra SCSI Single-port single-ended Ultra SCSI Single-port Fibre Channel Single-attached FDDI Dual-attached FDDI ISDN basic rate interface Digital audio

STORAGE OPTIONS

Internal	4GB Ultra Fast/Wide drive 9GB Ultra Fast/Wide drive 12GB 4 mm DAT drive
External	4GB Ultra Fast/Wide 9GB Ultra Fast/Wide 3.5" floppy drive 12GB 4 mm DAT drive 32X CD-ROM Digital linear tape

BUNDLED SOFTWARE

Collaboration	Outbox InPerson® IRIS Annotator™ IRIS Showcase™ Cosmo™ Player Netscape Communicator® 4.05 InfoSearch Netscape® FastTrack Server Cosmo™ Create Adobe® Acrobat Reader™ SGI Meeting Teleffect
Connectivity	NFS™ ISDN/PPP support Novell NetWare™ Client Xinet AppleTalk® Samba
Digital Media	SoundEditor MovieMaker ImageWorks SoundTrack FX Builder MediaRecorder MediaPlayer CD/DAT Player Audio Panel Video Panel Synth Panel Media Convert
Run-Time Libraries	OpenGL® Image Extensions OpenGL

PHYSICAL ENVIRONMENT

System	16.25" H x 11.0" W x 13.25" D 14.75" D (depth in localized area of power supply) 16.25" D (depth in localized area of optional PCI module) 54 lb 20" monitor 18.7" H x 18.9" W x 19.9" D
Voltage and Frequency	100-120/200-240 VAC
Heat Dissipation	2400 BTU/hour
Ambient Temperature	+13°C to +35°C operating -10°C to +65°C nonoperating
Relative Humidity	10% to 80% operating, no condensation 10% to 95% nonoperating, no condensation
Altitude	10,000 ft operating 40,000 ft nonoperating
Vibration	0.02", 5-19 Hz; 0.35G, 19-500 Hz

REGULATORY AGENCY

Electromagnetic Emission	FCC Class A Canada DOC Class A CISPR22 Class A VCCI Class A

OCTANE is part of the Silicon Graphics visual workstation product family, which includes the O2™, OCTANE, and Onyx2™ systems for UNIX and the Silicon Graphics 320™ and Silicon Graphics 540™ workstations for Windows NT.

SiliconGraphics
Computer Systems

Corporate Office
2011 N. Shoreline Boulevard
Mountain View, CA 94043
(650) 960-1980
www.sgi.com

U.S. 1(800) 800-7441
Europe (44) 118-925.75.00
Asia Pacific (81) 3-54.88.18.11
Latin America 1(650) 933.46.37

Canada 1(905) 625-4747
Australia/New Zealand (61) 2.9879.95.00
SAARC/India (91) 11.621.13.55
Sub-Saharan Africa (27) 11.884.41.47

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