Silicon Graphics® Tezro® Visual Workstation

Powerhouse Performance and Reliability for Visualization, Multiprocessing, and Digital Media

The Silicon Graphics Tezro visual workstation is an innovative, high-performance workstation platform that sets a new standard for desktop performance and reliability for visualization, multiprocessing, and digital media.

Tezro is powered by up to four MIPS® processors in an advanced high-bandwidth architecture leveraged from the SGI® 3000 family of supercomputers and delivers industry-leading visualization, digital media, and I/O connectivity on the desktop. Tezro is designed to help first-rate individuals and teams deliver cutting-edge results in ever-shorter production cycles—whether you are an innovative designer, scientist, engineer, image analyst, digital multimedia producer, or geophysicist.

And SGI delivers a full suite of high-definition and standard-definition video and audio I/O options, the DMediaPro™ suite. DMediaPro products deliver the highest quality, most powerful, and broadest multiformat digital media solutions on the desktop.

Power is knowledge. Power your productivity with Silicon Graphics Tezro.

Features	Benefits
• High-Performance Processing and High-Bandwidth Architecture	• Maximized Performance and Throughput
- Up to four 800 MHz MIPS RISC processors with 4MB L2 cache	- Leads workstation industry with powerful processing that increases application performance with CPU-intensive and multithreaded applications
- Industry-leading architecture based on the SGI 3000 family features 3.2GB-per-second memory bandwidth	- Maximizes application performance and interactivity for image manipulation and real-time visualization with large models and data sets
- Up to seven PCI-X slots; internal DVD-ROM and external DVD-RAM options	- Industry-leading I/O for maximum flexibility with options and data storage
• Advanced Visualization	• Accessibility of SGI® Visualization on the Desktop
- VPro™ V12 graphics supported by the IRIX® OS and SGI APIs	- Interactive visualization for the most demanding desktop requirements
- Advanced texture management	- Interactive rendering of volumetric data sets
- Hardware-accelerated specular shading (Phong effects)	- Improved realism and accuracy for 3D lighting without a performance penalty
- 48-bit (12-bit-per-component) RGBA with 16-bit Z buffer capability	- Cinematic quality and highest precision for 2D/3D imaging
- Support for high resolutions, including HDTV; stereo viewing options; Dual Channel and Dual Head display options	- Displays large datasets at high-resolutions and in multiple stereo modes; cost-effective industry-leading display capabilities with support for four synchronized displays
- 96-bit hardware-accelerated accumulation buffer	- High performance and accuracy for depth of field and other effects
• Full suite of DMediaPro options with playback support of two streams of uncompressed 10-bit 4:4:4 HDTV and single stream of 10- and 12-bit 2K data and 8-bit 3K data	• Highest quality multiresolution and multiformat real-time video input and output for broadcast, post-production, and film
• Proven, robust IRIX OS from SGI	• Provides Industry-leading real-time response and reliability
• Simple component access; tower and rackmount configurations	• Easy serviceability and flexible deployment

Silicon Graphics® Tezro® Visual Workstation

Technical Specifications

System Features

Processor Support
- 1, 2, or 4 MIPS RISC 64-bit R16000A™ 800[1] MHz (tower and rackmount)
- 1 or 2 MIPS RISC 64-bit R16000™ 700 MHz (tower)
- 4MB L2 cache

Memory Capacity
- 512MB–8GB synchronous double-data rate RAM (tower)
- 512MB–16GB synchronous double-data rate RAM (rackmount)

Internal Storage
- Up to two 18GB 15,000 RPM or 73GB 10,000 RPM Ultra160 SCSI drive

Graphics Subsystem
- OpenGL® 1.2, GLX™ 1.3, OpenGL ARB imaging extensions

Graphics Memory
- VPro V12: 128MB graphics memory, including up to 104MB texture memory

Graphics Architecture
- Integrated vertex processing engine, integrated image and texture engine, 12-bit-per-component color and alpha, double-buffered, 24-bit eye space
- Z buffer and 8-bit stencil buffers, 10-bit digital-to-analog (DAC) display interface, multiple concurrent visuals (8-bit window ID), swap-ready and genlock
- Supports hardware lighting and shading, hardware texturing and advanced effects. See *www.sgi.com/workstations/tezro/tech_specs.html*

Visual Formats
- 32-bit RGBA (8,8,8,8) double-buffered, 24-bit Z buffer, 8-bit stencil, 32-bit RGBA (10,10,10,2) double-buffered, 24-bit Z buffer, 8-bit stencil, 48-bit RGBA (12,12,12,12); double-buffered; 16-bit Z buffer, 16-bit RGBA quad-buffered (stereo), 24-bit Z buffer, 8-bit stencil, 12-bit Colorindex, double-buffered, 24-bit Z buffer, 8-bit stencil, 12-bit Colorindex, quad-buffered (stereo), 24-bit Z buffer, 8-bit stencil, 8-bit overlay and 8-bit window ID, 96-bit (24,24,24,24) hardware accumulation buffer

Display Resolutions
- From 640x480 at 60 Hz, up to 1920x1200 pixels at 60 Hz and 72 Hz; for the full list of supported resolutions for each graphics option, see *www.sgi.com/workstations/vpro_resolutions*

I/O
- System-to-graphics interconnect: 1.6GB/sec
- 1 internal + 1 external Ultra160 SCSI ports
- 7 64-bit 3.3 V PCI-X card slots, 133/100 MHz (2P and 4P tower), 3 64-bit 3.3 V PCI-X card slots, 133/100 MHz (1P tower)
- 6 64-bit 3.3 V PCI-X card slots, 100 MHz + 1 PCI 66 HZ slot (4U rackmount), 2 64-bit 3.3 V PCI-X card slots, 100 MHz + 1 PCI 66 HZ slot (2U rackmount)

Communication
- Single 1000Base-T port, serial RS422/RS423 DB-9 ports (two on tower; four on rackmount)

Display Options

Monitors
- See www.sgi.com/peripherals/displays

Graphics
- Analog RGB and TMDS video on a single DVI-I monitor, Dual Channel option offers two DVI-I ports, Dual Head option with swap-ready and genlock (two V12 graphics boards, rackmount only), combined with Dual Channel drives up to four displays

Digital Media Features

Features
- Baseline analog audio output with optional analog desktop speakers (tower)

Audio Options
- Analog desktop speakers
- Analog audio option through PCI card for rackmount (DMediaPro™ DM8)
- Digital audio
  – 24-bit AES-3id I/O (2 channels) and ADAT optical I/O (8 channels)
- IEEE 1394 digital audio/video interface (DMediaPro™ DM10)

Video Options
- High-Definition and Standard-Definition Video I/O (DMediaPro™ DM3)
  – SMPTE 259M and 292M SDI inputs and outputs for video and alpha
- High-Definition and Standard-Definition Graphics-to-Video Output (DMediaPro™ DM5)
  – Compatible with DM3 and DM6 and supports their respective file formats
- Standard-Definition Digital I/O (DMediaPro™ DM6)
  – SMPTE 259M SDI video I/O
- IEEE 1394 digital audio/video interface (DMediaPro™ DM10)

Expansion Options

PCI
- Dual-port Ultra160 SCSI LVD, Dual-port Ultra SCSI HVD

PCI-X
- Single-port 1000Base-T (copper or optical), Single-port 2Gb Fibre Channel, Dual-port 2Gb Fibre Channel

Storage Options

Internal

Tower
- 2 internal 3.5" hard drive storage bays with efficient toolless removal
- 1 internal 5.25" half-height option drive storage bays for CD/DVD-ROM

Rackmount
- 2 internal 3.5" hard drive storage bays with efficient toolless removal
- 1 internal slim-line CD/DVD-ROM bay

External
- External DVD-RAM[1], DDS-4 DAT Tape, SGI® Total Performance 900 (TP900), SGI® Total Performance 9100 (TP9100), SGI® Total Performance 9300 (TP9300), SGI® Total Performance 9500 (TP9500) storage systems, SGI® NAS and SAN solutions

Support Services
- Embedded Support Partner (ESP), SGI® Supportfolio™, SGI Knowledgebase, Hardware and Software Support

Physical Environment

System Dimensions and Weight

Tower
- 17" H x 13.75" W x 20.75" D (22" D in localized area of fan); an additional 6.3" D with drive door open
- 60.6 lb with skins (rear wheels for easy transport)

Rackmount
- 3.44" H x 17.36" W x 27" D; an additional 8" D with drive door open
- 39.5 lb

Environmental (Operating)

Temperature (tower and rackmount)
- +5°C to +35°C operating up to 5,000 ft altitude
- +5°C to +30°C operating from 5,000 ft to 10,000 ft altitude

Relative humidity
- 10% to 80% noncondensing (tower and rackmount)

Altitude
- 10,000 ft MSL (tower and rackmount)

Vibration
- (sine sweep) 0.02" displacement 5–19 Hz; 0.25G 19-500 Hz
- (random) 0.10 Grms for 15 min, 5–500 Hz (tower and rackmount)

Shock
- (half sine wave) 30 G, 3 ms. (vertical); 15 G, 3 ms. (horizontal); Exception: Operational shock is limited to 15 G, 3 ms with CD/DVD-ROM media installed (tower); (half sine wave) 15G, 5 ms (vertical and horizontal) (rackmount)

Heat dissipation
- Minimum: 750 BTU/hour (1P 2U rackmount); 815 BTU/Hr (1P tower)
- Maximum: 1280/hour maximum (4P 2U rackmount); 2053 BTU/hour maximum (4P tower)
- Additional rackmount module: 384 BTU/hour minimum; 938 BTU/hour maximum (with DMediaPro DM3); 593 BTU/hour minimum; 963 BTU/hour maximum (with second VPro V12 graphics); 384 BTU/hour minimum; 636 BTU/hour maximum (memory without XIO™)

Acoustics (per ISO 7779) +5C to +25C up to 5000 ft. altitude
- Sound power 5.2 bels; sound pressure 39.4 dBA at operator position (tower), Sound power 5.7 bels; sound pressure 54.2 dBA at operator position (rackmount)

Electrical and Power
- Voltage and frequency: 100–120/200–240 VAC, 50/60 Hz (tower and rackmount)
- Power supply: 550 W EPS12 V (tower); 500 W TPS module (rackmount)
- Service type: NEMA 5-15P (110 V), 6-15P (220 V) (tower and rackmount)

Regulatory Agency

Silicon Graphics Tezro is classified FCC, CISPR, ICES, AS/NZS, VCCI, CNS Class A; CE, CSA NRTL, CSA CB

[1] IRIX 6.5.21 or higher required

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