

# Onyx2™ GroupStation



## *The Ultimate Work-Group Visualization Resource*

- Unparalleled realism using InfiniteReality2™ graphics enables faster, more accurate decisions
- Huge memory capacity lets you interact with larger models, accelerating data throughput
- Massive storage means no waiting to access data from a network
- Supercomputer backbone creates a dual-use asset, providing powerful compute/server capability
- CC-NUMA architecture increases application performance; bandwidth of entire machine scales with every upgrade

### **Increase Your Productivity**

Driven by InfiniteReality2, the most powerful graphics visualization system available to industry, Onyx2 GroupStation provides unparalleled realism for teams working in petrochemical discovery and production, digital prototyping, scientific visualization, engineering analysis, and imaging. Textured anti-aliased 3D models and images delivered to the screens in real time enable you to develop faster, more accurate analyses and decisions based upon massively complex geometries and volumetric data sets. Turbocharge your best engineers and scientists with the ability to share the memory and processing bandwidth of a single machine, creating a truly collaborative environment.

### **Rapid Data Access and Processing**

Eliminating downtime associated with accessing data from networked RAID arrays and disk farms, Onyx2 GroupStation can be configured with 200GB of storage per rack. Faster application performance, massive resident disk space, and unparalleled compute power make GroupStation the ultimate work group resource for high-end visualization. Individual GroupStations can be interconnected to allow up to 16 users to work independently while sharing memory and bandwidth on the same machine.

### **CC-NUMA Architecture**

In place of a system bus, the revolutionary CC-NUMA (Cache-Coherent Non-Uniform Memory Access) architecture uses point-to-point, bi-directional links between every component of the system. These components communicate with other parts of the system via lightning-fast interconnects operating at 1.6GB per second, allowing every processor and every megabyte of memory in even the largest GroupStation configuration to seamlessly interconnect to form a single machine image. Adding processors or memory increases the bandwidth of the entire machine.

### **Leverage Your Investment**

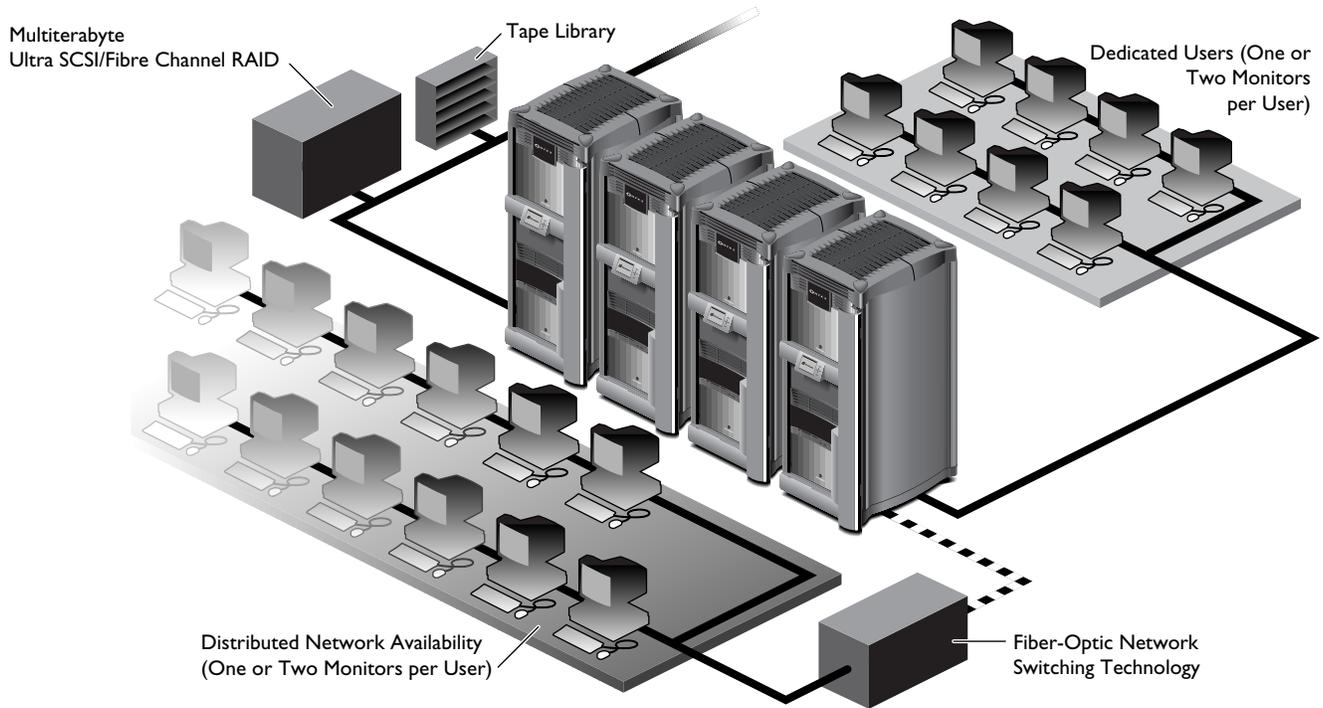
Sharing the CC-NUMA architecture with the Silicon Graphics® Origin2000™ line of servers, Onyx2 GroupStation can function as a powerful supercomputing engine for off-line and background computational routines such as reservoir simulation. And with out-of-the-box connectivity for immersive interfaces, Onyx2 GroupStation provides a springboard upon which you can build a dynamic, corporate resource that includes a multiseat visualization platform, a supercomputing workhorse, and a collaborative decision-making tool driving a CAVE or RealityCenter™.

### **High-Performance Connectivity**

Onyx2 visual supercomputers feature versatile networking options, including industry-standard Ethernet, HIPPI, PCI, FDDI, ATM, and Fibre Channel interfaces. With unrivaled system bandwidth, I/O devices in Onyx2 systems operate at peak performance, avoiding bandwidth contention among subsystems.

# Onyx2 GroupStation Full Enterprise Connectivity

(Eight-Seat GroupStation Configuration Shown)



## Onyx2 GroupStation

Technical Specifications

### GRAPHICS

	IR2	IR
Polygons/sec	13.1M	10.9M
Pixel fill, smooth, Z	224M to 896M	224M to 896M
Pixel fill, textured, AA, Z	192M to 768M	156M to 624M
Anti-aliased vectors/sec	8.6M	7.1M
Trilinear interpolations/sec	200M to 800M	200M to 800M
Convolutions/sec (5x5, sep RGBA)	15.3M	12.7M
Voxels/sec	200M to 800M	200M to 800M
24-bit floating-point Z		yes
Color		48-bit RGBA
Overlay planes		16
Anti-aliasing multisampling		8x8
Max. bits/pixel		256 to 2048
Graphics pipelines per rack		2
Geometry Engine <sup>®</sup> processors/pipeline		4
Raster Managers/pipeline	1 to 4 and 1 to 2	
Texture memory/pipeline		64MB
Frame buffer size/pipeline		80 to 320MB
Display channels/pipeline		2 or 8
Display capability		VGA to HDTV
Std. monitor size resolution		24" 1920x1200

### COMPUTER PLATFORM

CPU	MIPS <sup>®</sup> R10000 <sup>®</sup>
Quantity per rack	4 to 8
Primary caches (ins./data)	32KB/32KB
Secondary cache	4MB
RAM memory per rack	256MB to 16GB
Disk storage (internal)	1 to 11 9.1 or 18.2GB Ultra SCSI or 10 3.5" Fibre Channel per rack
Expansion slots	9* XIO-slots standard and 3-slot PCI optional per rack
Dimensions	73" H, 40" D, 28" W per rack
Weight (max. configuration)	800 lb (364 kg) per rack
Standard monitor weight	90.2 lb (41 kg)

### ELECTRICAL AND POWER

Voltage	200 to 240 volts AC, 1 phase
Frequency	47 to 63Hz
Power	4,750 W per rack
Heat dissipation	16,198BTU/hr per rack
Electrical service type	NEMA L6-30 (U.S. only)
Noise	65 to 70 dBA

### I/O, NETWORKING, AND COMMUNICATION

Standard data	40MB/sec Ultra SCSI, 10Base-T/100Base-TX Ethernet, 4 460 kbaud asynchronous serial ports, 2 keyboard ports, 2 mouse ports, parallel port
Standard audio	2.75 ohm BNC AES/EBU stereo in/out, 2 optical ADAT 8-channel in/out, RCA phono jack stereo line-level input output, 3.5 mm stereo analog headphone output, mono microphone input jack
Optional data	XIO to PCI adapter (1 full-height, 2 double-height slots, 132MB to 264MB/sec), XIO to VME adapter (6U, 9U), FDDI single attach, FDDI dual attach, UTP FDDI, Token Ring, ISDN, high-speed synchronous serial, 100MB/sec Fibre Channel (2 port), 40MB/sec Ultra SCSI (4 port), 100Base-TX (4 port) combined with 460 kbaud asynchronous serial (6 ports), ATMOC3 (4 port) and ATMOC12, DIVO in/out (CCIR601, SMPTE 259)



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