

The CRAY T932 Supercomputer System

T932

Bringing the value of supercomputing straight to the bottom line

The CRAY T932 computer system is Cray Research's most powerful supercomputer. Its high-speed processors each deliver a peak performance of approximately 2 billion floating point operations per second (2 GFLOPS). As the top-end system of the CRAY T90 series, the CRAY T932 system provides up to 32 processors, 8192 Mbytes of central memory, and a peak performance of more than 60 GFLOPS.

Balanced architecture delivers the best overall performance

The CRAY T932 system incorporates custom-designed high-speed processors, fast static RAM memory, and a high bandwidth I/O subsystem. This combination of fast processors, fast memory, and fast I/O delivers top performance on the most complex and varied workloads. For scalar, short vector, long vector, and parallel, in any combination, the CRAY T932 system provides superior overall performance.

The CRAY T932 system supports multiple ATM, FDDI, and HIPPI connections. Disk drive technology support includes IPI drives

and, in the near future, SCSI and fiber channel disks offering a maximum disk capacity of 256,000 Gbytes (256 Tbytes) of storage. Tape support includes support for numerous tapes and tape silos through BLOCK MUX and ESCON technology. The CRAY T932 also supports solid-state disk technology (SSD) allowing you to further improve system throughput.

MPP ready

The CRAY T932 system can be closely coupled to the massively parallel CRAY T3D system. For highly parallel applications, this heterogeneous architecture makes an unprecedented level of performance accessible for a wide spectrum of users.



CRAY T932 System Highlights

- Full binary compatibility with CRAY C90 line
- 8, 16, or 32 processors
- Over 60 GFLOPS peak performance
- MPP ready
- 1024 to 8192 Mbytes of central memory
- Memory bandwidth of over 800 Gbytes/s
- Aggregate I/O bandwidth of more than 35 Gbytes/s
- Optional SSD with 4096 to 16,384 Mbytes
- UNICOS operating system based on UNIX System V



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Superior scalability

To meet the demands of your growing business, the CRAY T932 system is extremely scalable: as you add more processors, your performance improves almost linearly. To provide an even more scalable parallel processing path, Cray Research SuperCluster software allows users to efficiently cluster Cray Research systems with equipment from other computer vendors. Acting as a node in a clustered environment, the CRAY T932 system can distribute applications and balance workloads across its internal processors, eliminating the network transfer delays (latencies) that typically compromise performance in clustered workstation environments.

Powerful UNIX software taps the speed of the hardware

To ensure that your applications take full advantage of the CRAY T932 system performance, Cray Research provides the UNICOS operating system and associated system software products. UNICOS is a standard UNIX environment that has been enhanced to provide efficient parallel processing, production quality resource management, security, and

network connectivity. With over twelve years of parallel UNIX experience, Cray Research provides the reliable operating system environment required for high performance simulation. User productivity is enhanced through the use of visual interfaces, advanced application-building tools, expert performance analysis tools, and automatic optimization tools.

Applications support delivers the best possible performance

Thanks to our standards-based implementations, our system software transparently delivers scalable application performance. Our industry-leading compilers automatically parallelize, vectorize, and scalar-optimize standard applications to deliver the best possible performance from your CRAY T932 system.

To further enhance our standards in precision, we also offer IEEE floating point compatibility. In addition, IEEE compatibility enhances compatibility with workstations and makes it easier to port IEEE-based application codes to the CRAY T932 system.

CRAY T932 Product Specifications

Processor	
Technology	Custom silicon 50,000 gate array circuits
Number of processors	16 or 32
Vector pipes	2 per processor
Peak performance	Over 60 GFLOPS
Memory	
Technology	4 Mbit static RAM
Memory size	4096 or 8192 Mbytes
Maximum memory bandwidth	Over 800 Gbytes/s
I/O	
Number of I/O clusters	1 to 32
I/O bandwidth	More than 35 Gbytes/s
Max. LOSP channels	32
Max. HISP channels	32
Max. VHISP channels	16
Optional SSD	
Capacity	4096, 8192, 12,288, or 16,384 Mbytes
Bandwidth	Over 28 Gbytes/s
Physical characteristics	
Mainframe cabinet footprint area	7.5' x 5' x 5' (2.3 m x 1.5 m x 1.5 m)
Cooling unit area (per unit)	3.6' x 4.2' x 5.5' (1.1 m x 1.3 m x 1.7 m)