FUJITSU Supercomputer PRIMEHPC FX10

PRIMEHPC FX10 provides the ability to address these high magnitude problems by delivering over 23 Petaflops, a quantum leap in processing performance.

Combining high performance, scalability, and reliability with superior energy efficiency, PRIMEHPC FX10 further improves on Fujitsu's supercomputer technology employed in the "K computer," which achieved the world's top-ranked performance*1 in November 2011. All of the supercomputer's components–from processors to middleware–have been developed by Fujitsu, thereby delivering high levels of reliability and operability. The system can be scaled to meet customer needs, up to a 1,024 rack configuration achieving a super-high speed of 23.2 PFLOPS.

Fujitsu has developed PRIMEHPC FX10, a supercomputer capable of world-class performance of up to 23.2 PFLOPS. The new system will be available worldwide.

The new system is highly compatible with the "K computer" supercomputer, which is being developed by RIKEN and Fujitsu as part of an initiative led by Japan's Ministry of Education, Culture, Sports, Science and Technology (MEXT). As such, it is optimal for developing software to be used on the K computer.

Ultra-high Speed and Ultra-large Scale Supercomputer

Problems previously constrained or impossible to solve due to performance limits are now able to be handled. This is due to the PRIMEHPC FX10's maximum peak performance of 23.2 Petaflops and memory that scales up to 6 PB with a 98,304 node configuration.

Green Credentials as well as High Performance Mean Power Savings

In today's quest for a greener world the compromise between high performance and environmental footprint is a major issue. At the heart of PRIMEHPC FX10 are SPARC64 IXfx processors that deliver ultra high performance of 236.5 Gigaflops and superb power efficiency of over 2 Gigaflops per watt.

Application Performance and Simple Development

SPARC64 IXfx processor includes extensions for HPC applications known as HPC-ACE. This plus wide memory bandwidth, high performance Tofu interconnect, Technical Computing Suite, HPC Middleware for Petascale Computing, enable applications to achieve the best performance ever. In addition, the time and effort to adapt to massively parallel processing is reduced through the use of VISIMPACT, which simplifies the implementation of hybrid parallel applications combining MPI and thread parallelism.

High Reliability and Operability in Large Systems

Incorporating RAS functions, proven on mainframe and high-end SPARC64 servers, SPARC64 IXfx processor delivers higher reliability and operability. The flexible 6D Mesh/Torus architecture of the Tofu interconnect also contributes to overall reliability. The result is outstanding operation: enhanced by the advanced set of system management, monitoring, and job management software, and the highly scalable distributed file system.

*1 Top-ranked performance: According to the 38th TOP500 list announced on November 2011, with a performance of 10.51 Petaflops.

FUJITSU Supercomputer PRIMEHPC FX10 Specifications

	Node specifications	Theoretical peak performance	236.5 Gigaflops
		Processor	SPARC64 IXfx (1.848GHz / 16-core) x1
		Memory capacity	32GB, 64GB
		Memory bandwidth	85 GB/s
		Interconnect link bandwidth	5 GB/s x2 (bi-directional)
	System specifications	Number of racks	4 to 1,024
		Number of compute nodes	384 to 98,304
		Theoretical peak performance	90.8 Teraflops to 23.2 Petaflops
		Total memory capacity	12TB to 6PB
		Interconnect	Tofu Interconnect
		Cooling method	Direct water cooling + air cooling (Option: Exhaust cooling unit)

Contact
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