

SGI with Intel® Xeon Phi™ Coprocessors Complete Solutions

Delivering Application-Specific Acceleration

Features

Plug & Play GPU Solutions

Hybrid Solutions

High Performance Density



Accelerating Results with Coprocessor Solutions

SGI leads the industry in delivering application-specific acceleration, dating back to the Geometry Engine™ which accelerated graphics applications in the 1980s. SGI then co-developed the SGI Tensor Processing Unit (TPU), followed by RASC™ technology, FPGA's that were tightly-coupled to our shared memory architecture. With RASC technology, SGI created the world's largest single system image server with accelerators, to solve the most challenging life-sciences problems. With a full team of application experts, SGI has a unique position to help customers solve problems with Intel® Xeon Phi™ coprocessor technology and has services and support personnel ready to help customers port and debug specific applications. SGI has been an Intel® Xeon Phi™ validation Partner, and has embraced the coprocessor across all its server lines. SGI coprocessor solutions are integrated with SGI software and SGI® InfiniteStorage™ to provide complete solutions for customer workflows. Both scale-up and scale-out coprocessor solutions are available to tackle any type of problem in scientific research, product development and homeland security.

Workgroup to Enterprise

SGI® Rackable™ Servers: Leveraging the winning combination of the latest Intel® Xeon® Processor and Intel® Xeon Phi™ coprocessors, these servers deliver top value and performance. Rackable servers are fully managed and factory integrated with SGI Management Center and Performance Suite software for ease of administration and performance tuning.

SGI® UV™ 20: A quad-socket Intel® Xeon® server, featuring rich memory and I/O in a compact, 2U footprint, the SGI UV 20 is a great solution for many scientific and engineering workloads. It can be used as a head node or fat node for a scale-out cluster, or standalone. When paired with Intel® Xeon Phi™ coprocessors, the resulting compute and memory density is available for large models and complex optimization.

Supercomputer

SGI® UV™ 2000: Customers trying to solve the world's toughest computational challenges independent of the typical limits of CPU, memory and I/O inherent in most twin-socket or even quad-socket designs will find that the SGI UV platform will exceed their needs. The UV platform brings coprocessors to a new class of solutions in chemistry, homeland defense, fluid dynamics and biosciences. Early adoption of the Intel® Xeon Phi™ coprocessor on SGI UV platforms at COSMOS Consortium¹ and The Genome Analysis Centre (TGAC) are driving important advancements in cosmology simulations and genomics.

SGI® ICE™ X: For customers who want to manage large scale-out HPC environments that include coprocessors, the SGI ICE X platform offers the ability to integrate service nodes containing coprocessors into dual-plane, high-bandwidth, low-latency Infiniband network topology. With the assistance of the SGI Professional Services team, SGI has implemented some of the largest hybrid clusters in the world by combining accelerators in service nodes with the SGI ICE platform.

Accelerating Customer Results

Coprocessor solutions accelerate customer results in a wide-range of scientific and engineering disciplines. With validation and integration done by SGI engineering, and systems built and tested in the SGI manufacturing facility, SGI with Intel® Xeon Phi™ coprocessor solutions arrive at the customer site ready to plug in and do real work.

Professor Stephen Hawking said: “I am delighted that our new COSMOS supercomputer from SGI contains the latest many-core technology from Intel®, the Xeon Phi™ coprocessors. With our powerful and flexible SGI UV2000 we can continue to focus on discovery, leading worldwide efforts to advance the understanding of our Universe.”

Services and Support

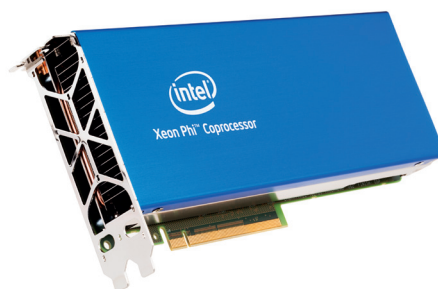
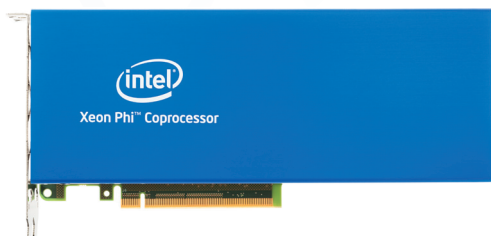
SGI has a team of coprocessor experts who have optimized Intel® Xeon Phi™ on SGI servers and are available on-site to accelerate applications in a wide range of technical disciplines. SGI Professional Services is available to integrate hybrid clusters either at the factory, so it reaches your floor ready for immediate availability, or at your site.

1 The COSMOS consortium, headed by Professor Hawking, is part of the UK DIRAC HPC facility, funded by the Science and Technology Facilities Council and Department of Business, Innovation and Skills. Please direct enquiries to Andrey Kaliazin, COSMOS system manager, or Professor Paul Shelled, Director.

SGI Coprocessors Complete Solutions at a Glance

sgi.com/phi

Solution	Vertical "U"	Sockets	DIMM Slots	Coprocessor
Rackable C1104G-RP5	1U	2 x 2S Intel® Xeon® E5-2600	8	Intel® Xeon Phi™
Rackable C2110G-RP5	2U	2 x 2S Intel® Xeon® E5-2600	8	Intel® Xeon Phi™
Rackable C2108-RP2	2U	2 x 2S Intel® Xeon® E5-2600	24	Intel® Xeon Phi™
SGI ICE X	21U enclosure	1 x 2S Intel® Xeon® E5-2600 blade, 1000s of blades	IP113: 8 or 16 IP115: 16	C1104G-RP5 or C2110G-RP5 + Intel® Xeon Phi™ (as service nodes)
SGI UV 20/2000	2U or 18U enclosure	Up to 256S Intel® Xeon® E5-4600	Up to 64 TB memory	Intel® Xeon Phi™



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