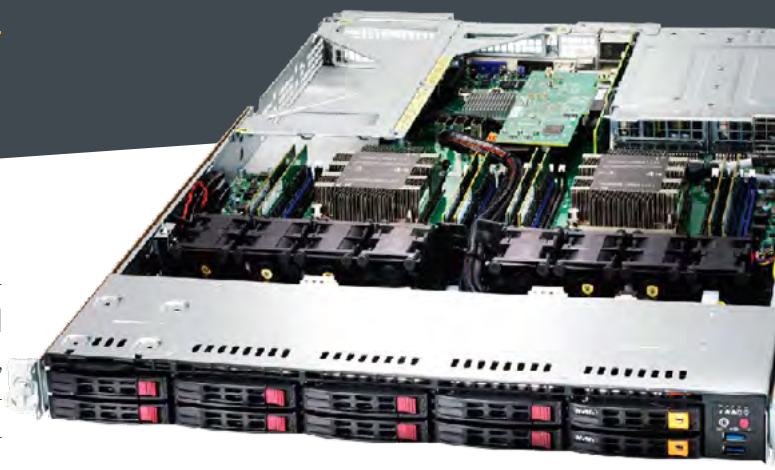
BIOS IT

INTEL SELECT SOLUTIONS
FOR SIMULATION & MODELING



Simulation and modeling applications, including computer-aided engineering (CAE) and computational fluid dynamics (CFD), are designed to run on scalable, high-performance clusters. To support those applications at scale, modern high-performance computing (HPC) systems require multi-core processors, high-bandwidth fabrics, and broad input/output (I/O) capabilities

INTEL SELECT SOLUTIONS FROM BIOS IT ALLOW YOU TO QUICKLY DEPLOY AN OPTIMIZED HPC CLUSTER FOR SIMULATION AND MODELING

BIOS IT's verified Intel® Select Solutions for Simulation and Modeling provide a fast path for purchasing and deploying an HPC cluster for simulation and modeling workloads. These solutions combine Intel® Xeon® Scalable processors with the Intel® Scalable System Framework (Intel® SSF) and other Intel® technologies and deliver optimized performance for Message Passing Interface (MPI)-based simulation and modeling applications registered with Intel SSF.

COMPUTE

Featuring the Intel Xeon Gold 6148 processor or a higher model number, offering 20 cores to deliver exceptional performance for compute and data-intensive workloads. Optionally, Intel Xeon Platinum processors—with up to 28 cores—can be used to meet the most challenging compute needs.

FABRIC

Intel® Omni-Path Architecture provides 100 gigabits per second (Gbps) bandwidth and a low-latency, next-generation fabric for HPC clusters. The 48-port switch chip delivers a 33 percent increase in density over the traditional 36-port switch ASIC historically used for InfiniBand* networking, which reduces the number of required switches.

INTEL® SSF

The Intel SSF specification provides an architectural foundation that enables development and deployment of a wide variety of high-performance, compute- and data intensive workloads. Run diverse workloads on a broadly available, common infrastructure and achieve high performance with flexibility, scalability, balance, and portability. number of required switches.

GET IN TOUCH

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TECHNOLOGY SELECTIONS

INTEL AVX-512
Up to double the number of floating point operations per second, compared to previous-generation Intel processors

INTEL CLUSTER CHECKER
Intel Cluster Checker examines the system at both the node and cluster level, making sure all components work together to deliver optimal performance.

INTEL® CLUSTER RUNTIMES
Supplies key software runtime elements that are required on each cluster to ensure optimal performance paths for applications.

OPENHPC
Provides a community-driven, open source software stack that includes a number of common ingredients required to deploy and manage Linux* HPC clusters

CONVERGED PARALLEL PROGRAMMING
For Intel Xeon Scalable processors and Intel® Xeon Phi™ processors: Enables the creation of a highly integrated portfolio of powerful technologies, software tools, and libraries. Offering an unparalleled flexible framework, based on a common programming model, that supports code modernization initiatives across AI frameworks.

INTEL® XEON® SCALABLE PROCESSORS

Offer high scalability for enterprise data centers. Deliver performance gains for virtualized infrastructure compared to previous-generation processors. Achieve exceptional resource utilization and agility. Enable improved data and workload integrity and regulatory compliance for data center solutions. The family includes Intel Xeon Bronze processors, Intel Xeon Silver processors, Intel Xeon Gold processors, and Intel Xeon Platinum processors.

INGREDIENT	INTEL® SELECT SOLUTIONS FOR SIMULATION AND MODELING CLUSTER CONFIGRATION DETAILS
PLATFORM	Dual-socket server platform
PROCESSOR	2x Intel® Xeon® Gold 6148 processors at 2.40GHz, 20 cores/40 threads, or a higher model Intel Xeon Scalable Processor
MEMORY	96 GB (12 × 8 GB 2,666-MHz 288-pin DDR4 RDIMM) 2 GB memory per processor core and all memory channels populated
LOCAL STORAGE	1 × Intel® Solid-State Drive (SSD) Data Center (DC) Family*
MESSAGING FABRIC	1 × Intel® Omni-Path Architecture, single-port Peripheral Component Interconnect Express (PCIe) 3.0 x16 adapter, 100 Gbps
MENAGEMENT NETWORK	Integrated 1 gigabit Ethernet (GbE)*
SOFTWARE	Linux operating system Intel® Cluster Checker 2018 Update 2 OpenHPC* Intel® Parallel Studio XE 2018 Cluster Edition**

*Recommended, not required

CUSTOMISED CONFIGURATIONS ARE ALSO AVAILABLE

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