

# Expertly Engineered HPC Clusters Integrated with Intel Xeon Scalable Processors

*Koi Computers recently completed an HPC cluster for a DOE laboratory involved in particle physics research around the world.*

CHICAGO, ILL., U.S., August 7, 2020 / EINPresswire.com/ -- [Koi Computers](#), one of the leading HPC technology solution providers, recently completed an HPC cluster for a DOE laboratory. The laboratory hosts a range of cutting-edge experiments and develops and builds technologies that support particle physics research at locations around the world. It was in need of a new cluster to support its vision and mission.

The laboratory had specific performance and technical requirements along with other requirements such as on-site installation and support. Koi Computers was able to propose a complete solution meeting all of the performance and technical requirements using the 2nd Gen Intel Xeon Scalable Processors and Intel Omni-Path High Performance Computing Fabric.



For this cluster, the laboratory required a minimum aggregate performance of 25TFlops based on their supplied application codes. The laboratory needed system configurations with dual-socket, powers of two core counts preferred, a minimum of 256GB memory or more, system disk, a high-speed interconnect, IPMI for management, and the associated network rack equipment.

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*Koi Computers Federal Business Development Manager Catherine Ho*

Koi Computers proposed a 1U dual socket configuration using a complete Intel solution with the 2nd Gen Intel Xeon Scalable Processors and Intel Omni-Path High Performance Computing Fabric. The selected 2nd Gen Intel

Xeon Scalable Processor's performance required fewer compute nodes therefore lowering infrastructure expenses.



As an experienced Federal Government contractor, Koi Computers is readily familiar with the guidelines, rules and safety requirements at the laboratory. As an ISO 9001:2015 certified and audited company with a Supply Chain Risk Management Program in place, Koi Computers only sources components from authorized and trusted suppliers to ensure quality control. Adhering to the company's core values, there's no ambiguity in what is being delivered to clients.

Koi Computers was able to build the initial HPC Cluster in three weeks. After a rigorous and successful burn-in at Koi Computers' facility, the cluster was then shipped and installed on-site since the laboratory supplied the racks. As part of Koi Computers' on-site installation, all nodes were racked and all cables labeled based on Koi Computers' proposed rack layout and delivery plan. Koi Computers' Vice President of Engineering Simon Ho performed the integration and installation along with the rest of the Koi Computers engineering team. After the installation, post-sales support was and continues to be handled directly by Koi Computers - there is no need for the laboratory to contact a 3rd party for support.

After Koi Computers delivered the initial cluster, it was expanded with additional compute nodes.

As with all HPC Clusters that Koi Computers builds and delivers, there is a period where the cluster undergoes application performance verification and an acceptance test. During this period, Koi Computers is not allowed to have more than 5 percent downtime for the duration of this acceptance test. Because of Koi Computers' quality control and use of quality components, and a rigorous burn-in and testing process, there was no downtime during this acceptance test.

Koi Computers' Federal Business Development Manager Catherine Ho said, "We make sure that when we integrate the systems and burn them in, we identify and address any possible issues before the technology arrives on-site. We won't deliver anything until we are confident that there are no issues, which is why our uptime averages 99.9 percent for all clients.

Headquartered in Greater Chicago since 1995, Koi Computers has been working with top technology manufacturers to deliver scalable high performance computing and technology solutions that improve efficiency, reliability and speed. The company's world-class engineering team specializes in building custom IT solutions that accommodate today's needs and tomorrow's vision with services that include performance benchmarking and outstanding support. Koi Computers has a strong track record of developing, building and deploying HPC technology for the U.S. Federal Government with satisfactory ratings in CPARS and Past

Performance. The company is a Prime Contract Holder of the GSA IT Schedule 70, NASA SEWP V, and NITAAC CIO-CS contracts. To learn more, call: 888-LOVE-KOI (888-568-3564); email: [sales@koicomputers.com](mailto:sales@koicomputers.com) or visit <https://www.koicomputers.com>. For media inquiries, contact Jeanna Van Rensselar at Smart PR Communications; [jeanna@smartprcommunications.com](mailto:jeanna@smartprcommunications.com) 630-363-8081.

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## About 2nd Gen Intel Xeon Scalable-Refresh Processors

Building on the momentum of the existing 2nd Gen Intel Xeon Scalable processors (CLX), these CLX-R processors offer enhanced power and value for high performance, mainstream and entry level applications at a similar or lower price than CLX. They feature:

- Peak Frequencies for High Performance Use: Two new Intel Xeon Gold 6200 processors deliver up to 4.5 GHz Intel Turbo Boost Technology, along with up to 3.9 GHz base frequency, with up to 33 percent more processor cache.
- Enhanced Performance for Mainstream Use: New Intel Xeon Gold 6200R processors deliver built-in value through a combination of higher base and Intel Turbo Boost Technology frequencies (in addition to increased processor cache), at a similar or lower price than original 2nd generation processors.
- Increased Value and Capability for Entry Use: New Intel Xeon Gold 6200U, Silver 4200R and Bronze 3200R processors deliver increased value for single-socket, entry, edge, networking and IoT applications.

## About Intel Omni-Path Architecture

Intel Omni-Path Architecture (Intel OPA), an element of Intel Scalable System Framework (Intel SSF), delivers the performance for tomorrow's high performance computing (HPC) workloads and the ability to scale to tens of thousands of nodes—and eventually more—at a price competitive with today's fabrics. The Intel OPA 100 Series product line is an end-to-end solution of PCIe adapters, silicon, switches, cables, and management software. As the successor to Intel True Scale Fabric, this optimized HPC fabric is built upon a combination of enhanced IP and Intel technology.

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