



# Benefits of Upgrading from a Workstation to a Cluster Detailed in Nor-Tech Case Study



MINNEAPOLIS June 14, 2021 **Nor-Tech**, the leading experts on Linux-based high-performance technology solutions, recently completed a case study exemplifying the benefits of upgrading from a workstation to a cluster. The client is a leading-edge precision contract manufacturer that depends on a fast quoting process and fast production to grow sales. Their current workstation, however, was creating a bottleneck in both quoting and production—ultimately causing them to lose projects.

“We were confident that if we could speed up the quoting process and production time we would win more bids,” the client said. “With a workstation it could take up to 2-1/2 days to create and build a single part, I knew a cluster would be much faster. In this business, it’s all about how quickly we respond to customers.” The client added, “We thought about purchasing four workstations, but we quickly realized it just wouldn’t be a cost-effective approach. We wanted to move computations to a cluster so that it would be much more efficient.”

Nor-Tech’s Senior HPC Account Executive Tom Morton set the client up on Nor-Tech’s demo cluster so that he could benchmark Intel’s Cascade Lake Xeon Scalable processor against AMD’s EPYC Rome processor. After deciding on Cascade Lake, Nor-Tech custom built an HPC cluster that fit the client’s budget and computational needs and then integrated more robust software into the cluster. It was a complete turnkey solution with 128 Cascade Lake processor cores; Intel enterprise SSDs, 60 TB of storage and a low latency InfiniBand network.

Nor-Tech’s Vice President of Engineering Dom Daninger explained, “One of the challenges was working with software that we had never integrated before. Fortunately our engineers have extensive experience in the HPC space. Most integrators could not have handled this, but we have seen a lot tougher integration challenges. It’s what we do all day long.”

With the new cluster, the client can respond to customers in a fraction of the time it used to take. “It has definitely had a bottom line effect on our business,” the client said. “The cluster integrated with the new software is now an essential tool.”

Clusters can also scale up more cost-effectively than workstations and with intelligent job schedulers, clusters allow the customer to make better use of their engineering, hardware and software investments.

The client was especially pleased with Nor-Tech’s ability to make the entire process as straightforward as possible. “Nor-Tech sent documentation that was impeccable,” the client said. “We unboxed the cluster ourselves, followed the instructions, plugged it in and it worked. Nor-Tech just has a really good support team. They are people you want in your corner—you can buy the parts from anybody. As far as I’m concerned, Nor-Tech’s slogan, ‘People Friendly Technology’ fits them to a tee.”

Nor-Tech Executive Vice President Jeff Olson said, “This project is typical of the benefits of upgrading from a workstation to a cluster with Intel’s Xeon processors. In this case it was faster quotes; in other cases it’s faster time to market or faster time to results. The commonality here is ‘faster’ and in today’s economy, faster equals more profit.”

Nor-Tech is on CRN’s list of the top 40 Data Center Infrastructure Providers along with IBM, Oracle, Dell, and Supermicro and is also a member of Hyperion Research’s prestigious HPC Technical Computing Advisory Panel. The company is a complete high performance computer solution provider for 2015 and 2017 Nobel Physics Award-contending/winning projects. Nor-Tech engineers average 20+ years of experience. All of Nor-Tech’s high performance technology is developed by Nor-Tech in Minnesota and supported by Nor-Tech around the world. The company is headquartered in Burnsville, Minn. just outside of Minneapolis. Nor-Tech holds the following contracts: Minnesota State IT, GSA, University of Wisconsin System, and NASA SEWP V. To contact Nor-Tech call 952-808-1000/toll free: 877-808-1010 or visit <https://www.nor-tech.com>. Full release at: <https://www.nor-tech.com/category/news/>. For media inquiries, contact Jeanna Van Rensselaar at Smart PR Communications; [jeanna@smartprcommunications.com](mailto:jeanna@smartprcommunications.com) 630-363-8081.

## About Intel 3rd Generation Xeon Scalable Processors

The Intel 3rd Gen Xeon Ice Lake processor is the only data center CPU with built-in AI acceleration. Other highlights include:

- 1.5X better performance than other CPUs across 20 popular machine and deep learning workloads with a core count increase to 40.
- On average up to 62% better performance on a range of broadly-deployed network and 5G workloads over the prior generation, offering users huge performance increases while maintaining the convenience and compatibility of their architecture
- For key AI workloads, an up to 74% increase in AI performance on the deep learning topology BERT while maintaining full compatibility
- Support and benefits with PCIe-Gen4 support, increased memory bandwidth, memory capacity up to 4TB per processor/socket and additional AVX-512 instructions.
- Includes Intel SGX for increased protection of data and application code and Intel Crypto Acceleration for encryption-intensive workloads
- Built on open standards and APIs, with fully optimized software.
- A powerful and flexible portfolio with connectivity, storage, software and oneAPI cross-architectural tools that can further enhance workload optimized solutions

Innovations in core architecture and memory bandwidth deliver outstanding performance for diverse and challenging applications. With the flexibility, security, capability, and interoperability to power heterogeneous demands, 3rd Gen Intel Xeon Scalable processors provide effective and efficient platform performance for outstanding utility, predictability, and peace of mind.