NOR-TECH
People Friendly Technology

Case Study

Turnkey Solution, Simple Deployment, Excellent Support

"It was turnkey. Easy deployment was important because using a cluster was new to some of us. Nor-Tech has always been right there with the support when we need it."
Oceanography Laboratory Supervisor, Major Research University

Their Challenge

The Oceanography Lab at a major U.S. research institution realized they needed more computing power than their HPC workstations could provide. Once they committed to purchase a high performance cluster, they asked their CFD software provider to recommend an HPC technology developer and integrator. Their provider recommended Nor-Tech and several other partners.

The lab had to go through procurement and, even though Nor-Tech was not on the approved vendor list, the specs the client needed were specialized enough that they were able to override the lack of pre-approval.

The Oceanography Lab Supervisor explained, "We run computational fluid dynamics (CFD) models. We needed to run larger models and be able to refine our measurements. We also needed to run the models faster."

Nor-Tech's Senior HPC Account Manager Bob Dreis said, "My primary point of contact was a professor. He knew exactly what he wanted but it wasn't the best configuration mainly because it wasn't a recommended configuration for the software vendor. What he wanted would have worked; he just wouldn't have gotten the performance we provide with the Nor-Tech configuration."

Our Solution

Nor-Tech ended up developing a 12-node cluster with 528 cores, integrated with the newest Intel Xeon Scalable processors, the latest generation of CFD software and a job scheduler (Altair PBS Pro). Nor-Tech designed and developed the hardware configuration and integrated the software.

"Whether the client can integrate the software is a question of how much time they want to spend," Bob said. "What would take us a week would take the client a month or more. Researchers just want to run their code. When we deliver these onsite, they are ready to go."

It was a complete turnkey solution. But since the client had never used a cluster before, there was a learning curve to it. Because of this, Nor-Tech's engineers worked closely with the client until they were comfortable using it.

Their Success

"This was a seamless project because it was ready to go, almost from the time it was unboxed," Bob said. "Like most of our clients, there is very little or no in house expertise with HPC clusters. Having Nor-Tech build the technology, integrate the software, thoroughly test it before it leaves our facility, deploy it at the client's location and provide prompt support took all of the stress out it for them."

Prior to deploying the new cluster, the client had been using two fairly new workstations with 56 cores each. "The new cluster is much faster," the client said, "We had a model running on one of the workstations and the same model ran much faster on the cluster—a few days on the workstation vs. a few hours on the cluster. Some things we wouldn't have even had the capability to run before we had the cluster." Currently the client is using the cluster to examine the air-sea interface under hurricane speed winds.

The cluster was a learning process, but not hard to learn—thanks to Bob and Nor-Tech engineers Kyle and Travis.

"It's not that there weren't issues, there are always going to be some minor initial issues with equipment of this type at the beginning," the client explained. "The important thing is that Nor-Tech was right there with the support when we needed it and they were able to resolve things quickly. They were always very quick to get back to us.Using a cluster was new to some of us. It was a turnkey solution and easy deployment was important to me. The nice thing is that we were able to do remote testing before they even shipped it."

After receiving the technology, deploying it and learning how to fully leverage it, the client's bottom line is this: "I would definitely recommend Nor-Tech; the pricing was competitive, the device works beautifully and the customer service has solidified our relationship."

Bob agrees that the experience has been very positive. "I know I speak for our entire sales and engineering teams at Nor-Tech when I say that this client has been great to work with," he concluded. "A successful project like this is much more than building the best technology; it requires an excellent working relationship with the client based on consideration and mutual respect. That's what we have here."

About Intel's Family of Xeon Scalable Processors

Intel® Xeon® Scalable processors are workload-optimized to support hybrid cloud infrastructures and the most high-demand applications. Users can drive actionable insight, count on hardware-based security, and deploy dynamic service delivery. Value-added benefits include:

- Optimize Performance: New features such as Intel® Advanced Vector Extension 512 (Intel® AVX-512) improve with workload-optimized performance and throughput increases for advanced analytics, high performance computing (HPC) applications, and data compression.
- Accelerate Critical Workloads: Speed up data compression and cryptography with integrated Intel® QuickAssist Technology (Intel® QAT).
- Operate More Efficiently
- Operate More Efficiently: High-speed Integrated Intel® Ethernet (up to 4x10GbE) helps reduce total system cost. It also lowers power consumption and improves transfer latency of large storage blocks and virtual machine migration.
- Improve Security: Deploy hardware-enhanced security to protect data and system operations without compromising performance.

Synergy among compute, network, and storage is built in. Intel® Xeon® Scalable processors optimize interconnectivity with a focus on speed without compromising data security.

About Nor-Tech

Nor-Tech built its reputation on the industry's easiest-to-deploy cluster solutions and guaranteed no wait time support. The company designed and built the HPC cluster that enabled the first detection of a gravitational wave—a discovery destined to change history. In addition to HPC clusters, Nor-Tech's custom technology includes workstations, desktops, and servers for a range of applications including CAE, CFD, and FEA. Clients include some of the most respected organizations in the world. Nor-Tech engineers average 20+ years of experience and are responsible for significant high performance computing innovations. The company has been in business since 1998 and is headquartered in Burnsville, Minn. just outside of Minneapolis. To contact Nor-Tech call 952-808-1000/toll free: 877-808-1010 or visit http://www.nor-tech.com. Full release at: http://www.nor-tech.com/category/news/

Contact us

Email: info@nor-tech.com
Call 952-808-1000; toll free: 877-808-1010.