



People Friendly Technology

How Engineering Can Work with IT and the Vendor to Make the Best Technology Purchase Decisions

Most in-house IT personnel do not have a deep understanding of HPC. Despite this, engineering, IT, and the vendor need to collaborate closely when making high performance technology purchase decisions. With the end goal of ensuring that vendor recommended solutions cost-effectively meet technical requirements and IT infrastructure considerations, here are 15 decision-making guidelines:

1. **Define Requirements:** Engineering and IT teams need to work together from the start by clearly defining requirements. This includes understanding the technical needs of engineering and the infrastructure capabilities and constraints of IT.
2. **Perform an Engineering Needs Assessment:** Engineering should identify specific needs and objectives. This involves assessing the performance, scalability, security, and compatibility requirements of the technology. CAE applications that will run on the HPC cluster also need to be identified.
3. **Perform an IT Infrastructure Evaluation:** IT needs to assess the existing infrastructure and its ability to support the new technology. This includes considerations for network bandwidth, storage, security, power, cooling, noise, and any potential integration challenges.
4. **Decide on a Budget:** Together Engineering and IT need to establish a budget that considers both the cost of the technology itself, including applications, and any necessary infrastructure accommodations. IT may need to think beyond preconceived best practices for enterprise servers and think best practices for HPC.
5. **Determine What's Out There:** Now that Engineering and IT have decided on their needs and requirements, they need to see if a solution exists or can be built that satisfies those requirements. *This is the point to bring in a trusted vendor.*
6. **Evaluate All Potential Vendors:** High performance technology is a significant investment and there aren't many vendors capable of supplying the agreed upon solution. The best place to start is with a high-performance technology vendor the company has worked with well in the past. A vendor that can offer a demo is a significant plus.
7. **Choose a Vendor:** Once you have decided on the technology and are confident it is feasible, commit to a vendor. The vendor should be part of the technology team as early as possible in the process.
8. **Conduct Pilot Testing:** Before finalizing the purchase, perform pilot testing to ensure that the technology aligns with engineering requirements and integrates seamlessly with existing IT infrastructure.
9. **Start the Procurement Process:** Engineering, in particular, should be working very closely with the vendor during the procurement process—which can often be lengthy and involve industry-wide supply chain issues. A good vendor will be able to eliminate or minimize delays.
10. **Test Applications:** Once the HPC cluster is built and before shipment, work with the vendor to test applications and jobs. Training in how to use the new cluster is often conducted at this time also.
11. **Deploy the Technology:** Engineering and IT will need to decide if they have the resources to deploy the technology with internal resources or if they should bring in the vendor to unbox the technology and get it up and running as soon as possible.

12. **Provide Training and Documentation:** Work with the vendor to collaborate on any additional training programs for engineering staff and require the vendor to provide documentation to ensure engineering can effectively use the new technology.
13. **Make Provisions for Ongoing Support and Maintenance:** In collaboration with the vendor, establish procedures for ongoing support and maintenance.
14. **Monitor Performance:** Continuously monitor the performance of the technology and its impact on engineering processes. Collaborate with the vendor on making adjustments or optimizations as needed.
15. **Maintain Close Contact with the Vendor:** A great high performance technology vendor will welcome opportunities for support and make the process as simple as possible. One of the perks of working with a smaller technology provider is the likelihood the same person that built the equipment will be available for continuing support.

By following these steps and maintaining open communication and collaboration between engineering and IT teams along with the vendor, organizations can make informed technology purchase decisions that not only meet but exceed requirements.

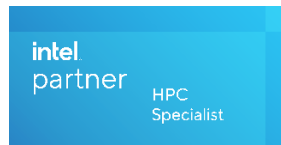
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Here's what our clients have to say

During the hardware-specification phase, I emailed and talked with engineers from Nor-Tech almost every day. They were always courteous and helpful, and gave us many good tips to help us get the best hardware configuration for our needs while staying within budget. The salespeople and engineers at Nor-Tech are so knowledgeable about their products and so responsive and helpful that I actually found it a lot of fun to work with them.

Senior Postdoctoral Fellow Physics & Astronomy, University of California, LA

ROI can be hard to pin down, but not in this case. With the dramatic increase in speed, we can get the answer a design engineer needs in a matter of hours rather than days. Quality equipment that is easy to deploy, consistently good customer service, a competitive price, and a quick turnaround on the order—that's all we were hoping for. We received that and more.

Computational Modeling Technology Manager, National Manufacturing Innovator

Most people are familiar with Dell and Apple products. Nor-Tech offered a significantly better price than their major competitors and there was no compromise in quality—if anything, the quality was better.

Senior Scientist, University of Wisconsin Milwaukee Center for Gravitation, Cosmology, and Astrophysics