

High Performance Computing

High Performance Computing (HPC) has become both a common and strategic topic of discussion for higher education institutions during the past decade. As technology keeps evolving, more information and more data is being collected and stored, and as the research needs of scientists and engineers continue to grow, HPC offers vast capabilities and optimal solutions for researchers to use as they take advantage of new scientific opportunities.

Implementing an HPC Environment

Several factors need to be addressed when an institution decides to embark in the HPC domain. Institutions are presented with different options to address their HPC needs; starting from decentralized departmental computing silos, to a central facility that handles institution-wide needs, to becoming a member of a shared collaborative infrastructure. The selection of the best alternative is tied to the institution's specific research vision and needs as well as the setup and operational costs (and funding) required to have a sustainable infrastructure.

There are also occasions when, with not much planning, institutions end up with a high cost and possibly expansive HPC infrastructure that needs to be maintained. This can be the result of an award for a quick-turnaround response to a grant or a Faculty member initiative. In these instances, the startup costs are usually covered (perhaps in whole or in part) but the institution still has the burden to cope with the operation costs.

Business Operations and Compliance

An HPC environment can quickly become expensive to maintain due to the complexity of the technology required, to the exponential growth of data captured and stored, and to the relative difficulty to estimate capacity needs. In addition, there can be hidden costs not taken into consideration when planning for a new HPC environment, which can become substantial once the operation is in place. Replacement costs can also be substantial once the institution begins phasing out the original, now obsolete, servers and replacing those with new technology in order to maintain at least the same level of capacity and service.

Institutions are then faced with the need to determine how to maintain and grow their HPC infrastructure in a sustainable way. They may desire to recover the operational costs through overhead cost recovery or direct charges to users and grants. This path could have an impact on the demand for the environment as users potentially decide to look at different alternatives, which may or may not be a desired outcome. Additionally, it is extremely important that whatever recovery mechanism is used, the institution must consider federal costing principles for compliance purposes.

The Attain Solution

At Attain, we can assist research institutions with estimating the total cost of ownership (TCO) for a new HPC operation to uncover the hidden costs of HPC, or with reviewing the current costs if the operation is already in place. We can then perform an assessment of costing options and provide different funding model alternatives. A desired funding model should guarantee the sustainability of the operation, be financially viable and comply with federal cost principles. We can also assist with the implementation of the selected funding model.

Our staff of skilled professionals includes seasoned higher education and IT specialists, and career consultants with extensive relevant subject matter expertise. We know how to work with higher education leaders to examine strategies, resources, organization and operations, bringing real value to every engagement. We have provided professional services to higher education institutions for nearly thirty years, including about 80 of the top 100 research institutions in the United States. In partnership with higher education leadership, we deliver quality analyses, recommendations and technical solutions that drive successful implementations and transformation in today's environment.

Proven Performance. Forward Thinking.

Based in Vienna, Va., Attain is a professional services company comprised of innovative problem solvers who deliver tangible results to address today's complex public sector and higher education challenges. Attain delivers strategic, operational support, healthcare solutions, IT security and application services to more than 125 customers in the Federal, state and local government, higher education and academic medical center markets.

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Attain Higher Education and Academic Medical Centers



A Legacy Of Innovation

Attain's national reputation as a leader in the higher education and academic medical center communities is unmatched. Our professionals are recognized as management and technology thought leaders in the industry. In a time of significant industry change, Attain has the expertise and solutions to help institutions successfully adapt to a new environment.

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