Bright Computing

Florida Atlantic University Goes All-In On HPC, With Help from Bright Cluster Manager

CASE STUDY

Most organizations refer to their high-performance computing environment as simply "the HPC," or even "the cluster," but at Florida Atlantic University, the team calls it "Ko'Ko." As simple and easy to remember as that pet name may be, however, the supercomputing resource it describes is both powerful and highly complex.

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HPC Administrator at FAU

The Customer

Based in Boca Raton, Florida Atlantic University (FAU) is a public, four-year coeducational doctoral degree-granting institution with five satellite campuses. In 2012, FAU became a member of the Sunshine State Education & Research Computing Alliance (SSERCA), which provides HPC resources to researchers, students, and academics.

The Challenge

FAU's Office of Information Technology received funding through the student tech fee in 2013 to create the first set of 20 nodes in what became Ko'Ko. The goal was to provide students access to a diverse set of HPC resources to perform world-leading research, and to support faculty in providing world-class education. Beyond purchasing equipment and software, FAU spent considerable time making connections in the supercomputing sector and learning best practices. In 2014, for example, the university hosted the quarterly SSERCA Summit, becoming an equity member. Internally, FAU set up an HPC Governance Committee composed of both researchers and faculty to guide the strategic thinking behind its efforts.

The Solution

When Ko'Ko went live on the Jupiter campus in late 2014, FAU chose Bright Cluster Manager to provide critical support in administering the HPC environment. There is already high demand from students and faculty, who are using Ko'Ko's resources for teaching Hadoop Map Reduce, pursuing bioinformatics research and other modeling and visualization work.

"Bright Cluster Manager has been a great help," says Eric Borenstein, HPC Administrator at FAU. "Before this project, I was a Windows admin. Bright made things easy. It's a simple learning curve, compared with other options."

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The Results

Ko'Ko has given FAU the ability to speed up research while reducing costs by offering high bandwidth and low latency. More specifically, Borenstein says Bright Cluster Manager provided value in these key areas:

Automation — Borenstein said it's a relief using Bright Cluster Manager to handle everything from large projects to more simple tasks like the DNS and HTTP.

"I could do it all manually, but Bright makes it a breeze," he says. "I like how it monitors everything – the implementation of Hadoop was really straightforward, especially having never worked with Hadoop before. It was great to just bring up new nodes or move them into another category. Once you figure out the workload, you can rebuild in two minutes."

Troubleshooting — Given that HPC was new to FAU, first-class support was essential, and according to Borenstein, Bright Computing delivered.

"I would get good feedback, and even within the same day of reaching out, the team at Bright would send me a package to fix any little issue," he says. "I've used their support quite a lot. They probably recognize my email by now!"

Scalability — Borenstein says the environment has quickly grown to 56 nodes since the launch, with about 44 compute nodes in its main cluster, a small Windows cluster and a test cluster. Ko'Ko is expected to double in size every year as FAU pursues more areas of research. This could include medicine, big data analytics, physics and astronomy. Other academics at FAU are considering the cluster for work in software development.

As Ko'Ko becomes an integral part of getting important work done at FAU, Borenstein said Bright Cluster Manager is making sure he and his team achieve their primary goal: complete user satisfaction. "The biggest thing for us is feedback from our customers," he says. "If faculty and students are happy, we're happy."