

Aviation Institute Increases Efficiency with Server Refresh



Florida Institute of Technology Aviation installs UCS and blade servers to maximize performance and increase memory.

Executive Summary

Florida Institute of Technology Aviation

- **Industry:** Education
- **Location:** Melbourne, Florida
- **Number of Employees:** 145

CHALLENGE

- Create unified fabric for network connectivity among departments
- Refresh technologies to enable and speed virtual applications
- Increase both student and staff productivity while lowering technology management costs

SOLUTION

- Installed management platform to increase server memory
- Deployed blade servers to help lower operational costs
- Increased security and reliability of FITA's network

RESULTS

- Created ease of management for day-to-day activities
- Increased productivity in all departments by having more memory available to run programs
- Increased access to student courses through boost in speed and improved access to virtual programs

Challenge

The Florida Institute of Technology Aviation (FITA), located at the Melbourne International Airport on Florida's Space Coast, is a wholly owned subsidiary of Florida Institute of Technology and is one of the few schools that offer varying levels of aviation education and training. FITA instructs students in the areas of conventional gear, aerobatics, and complex instruments as well as flight training for the general public.

In 2007, FITA installed virtual servers and was running a full Virtual Desktop Infrastructure by 2009 to support the flight simulation programs and other training software. FITA utilizes a number of virtual programs for students receiving training in several flight fields, including multiengine and flight instructor training, that require a large amount of memory and put a lot of stress on the servers.

FITA's virtual servers were becoming over-utilized at an increasing rate due to the large amount of data being run on the system. The drag and underperformance of the servers were cutting into the efficiency of students and employees in all departments. "People were losing 15, 20, and even 40 seconds while they were running a variety of processes," says Hilary Schrey, systems administrator at FITA. "While it doesn't sound like a lot of time, it added up and severely affected student and employee productivity." As its virtual environment continued to fade, FITA looked for a solution that would allow the institute to replace its servers without too much downtime and overhead maintenance.

In 2011, several of FITA's virtual servers continued to underperform due to strain retrieving information and a limited amount of memory. At this point, Schrey knew that FITA required a new system that would be able to efficiently send, deliver, and store large amounts of data. He and his team began researching different options to refresh FITA's network and accommodate the institute's growing need for virtual applications.

Solution

Once FITA decided to refresh its virtual servers, the institute began to explore different vendor options that could support the large amount data being processed every day. After talking with a number of other vendors, FITA selected Cisco to access larger memory blocks and streamline network management. FITA decided to deploy the Cisco Unified Computing System™ (UCS™) platform, a data center platform that combines computing, hardware, virtualization, and other components into a cohesive platform. Cisco® UCS virtual servers were able to maximize data transfer speeds for FITA. The platform also connects directly to blade servers, delivering better performance at a lower cost and offering integrated system management.

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Hilary Schrey

System Administrator, Florida Institute of Technology Aviation

The simplicity of FITA's new virtual network increased throughput and eliminated multiple switching that cluttered servers and increased costs, which was a large problem for FITA's students and employees. It also enabled engineers to accelerate and simplify application deployment with security and reliability, allowing FITA to incorporate new applications with little hassle. “Our old system completely ran on rack servers,” says Schrey. “We found that, when our previous system ran out of resources for virtual machines, the entire platform would grind to a halt; we needed something brand new.”

By coupling Cisco UCS and blade servers, FITA significantly reduced capital and operating expenses and integrated the management of its virtual network. The blade servers appealed to FITA because of their ability to maximize the performance of data analysis while running flight simulation programs and analysis programs, which require heightened memory. The blade servers also helped FITA save costs when it came to virtualization requirements. The Cisco UCS server that FITA purchased only required 8-gigabyte ram sticks to meet virtualization requirements, while other vendor solutions typically require 16- or 32-gigabyte ram sticks, especially when running such a large system.

The affordability of Cisco UCS was valuable for FITA, but Schrey found a key selling point in the system's unification services, which aggregate server cables including Ethernet and fiber channels. “Having everything with one configuration with a unified fabric was extremely appealing,” says Schrey. “Multiple fabrics are a lot more costly and can be difficult to manage, so having the unified fabric option was ideal.”

Results

FITA deployed Cisco UCS in November 2011, and within months the institute experienced a huge increase in performance efficiency. “We have seen a staggering jump in productivity at the end-user level,” says Schrey. “Our virtual network runs more smoothly, and we've had positive feedback from all departments.” Since utilizing Cisco's UCS platform and installing the blade servers, FITA has been able to manage multiple virtual servers from a single platform. The B250 servers FITA bought are utilized for the brunt of their virtual infrastructure because of their high RAM capacity, while the B200 servers are utilized for certain virtual machines which require higher than average allocation of host processing power. This consolidation has allowed FITA to access more memory, which allows applications and virtual operating systems to run faster, increasing the speed of access for all users. FITA has also been able to increase access to student courses as a result of the boost in speed and smooth access to virtual programs.

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Product List

NETWORK MANAGEMENT

- Cisco UCS B250 M2 Blade Server
- Cisco UCS B200 M2 Blade Server
- Cisco UCS Manager v2.0
- Cisco UCS 5108 Blade Server Chassis
- Cisco UCS 6120XP Fabric Interconnects

In particular, the business analysts at FITA have seen a dramatic increase in productivity. The business analyst department uses large 100- to 200-MB spreadsheets for a variety of analytics, which takes up a considerable amount of memory. Prior to installing Cisco UCS, up to 45 minutes would be required to run a report on a 100- to 200-MB file. Now, with increased memory, reports take as little as five minutes to generate. The accounting department has also experienced increased efficiency in report generation, which is helpful as the accountants often switch between software when creating content.

Overall, the new servers have allowed the entire institute to increase productivity, which has improved day-to-day operations. "I remember when one of our software integration developers used to come in and check the system. Everyday the lights would be red, signifying that our server was maxed out," says Schrey. "Her first day back after the installation, she was elated because there was not a single red light. Cisco UCS has made everyday work at FITA more enjoyable and has enabled everyone here to expand and improve on work."

For More Information

To find out more about the Cisco Unified Computing System, go to: <http://www.cisco.com/en/US/products/ps10280/index.html>.

