Clinical Research Organization Upgrades IT to Support Global Growth

Standardizing on FlexPod infrastructure, INC Research increases data center performance to power clinical operations worldwide.

Executive Summary

- **Customer Name:** INC Research
- **Industry:** Pharmaceutical research
- **Location:** Raleigh, North Carolina
- **Number of Employees:** More than 5000 employees worldwide

Challenge
- Consolidating fragmented data centers across multiple facilities
- Supporting continual data growth across enterprise
- Improving efficiencies and business continuity

Solution
- Created new data center running on converged FlexPod infrastructure, including Cisco Unified Data Center Solutions, to reduce footprint and streamline management

Results
- Reduced data center footprint by more than 75 percent and associated costs by 50 to 65 percent
- Reduced operational costs, by US$250,000 annually
- Improved scalability with fast deployment

Integrator Partner
- ePlus Inc.

Challenge

Developing new medicines can be a long and difficult process. The contract research organization INC Research makes this process easier for pharmaceutical and biotechnology companies by offering its Trusted Process®, a proven and metrics-driven clinical trial outsourcing methodology created by the company to deliver dependable outcomes and actionable results. With the experience of its high-performance teams, INC Research works with its customers to bring products to market that will improve the health of people worldwide.

Over the past 15 years, continued growth and acquisitions have resulted in a fragmented data center environment. INC Research's eight data centers contained a wide mix of solutions, including Cisco®, NetApp, IBM, HP, Dell, and Compaq hardware. "As our company continues to grow, we knew that we needed a more flexible and efficient IT environment to meet and exceed global demand," says Jonathan E. Shough, chief information officer at INC Research.

By standardizing on a single data center solution, the company saw an opportunity to improve scalability and reduce the time needed to scale the environment. Simultaneously, migrating to a standard environment provided INC Research with the opportunity to consolidate data centers, reducing footprint and streamlining management. The company began looking for an infrastructure that could support high business availability with multiple redundancies and data replication technologies to help ensure business continuity for teams worldwide.

> "Although we're reducing the footprint by more than 75 percent, the power and performance of Cisco UCS and the FlexPod environment will increase available computing and storage capacity by 50 percent."
>
> – Jonathan E. Shough
> Chief Information Officer
> INC Research

INC Research decided to implement the converged FlexPod solution, including Cisco Unified Computing System™ (UCS®) servers, Cisco Nexus® switches, NetApp storage, and VMware virtualization. "FlexPod gives us the density and performance we need to run our applications, but in a highly integrated infrastructure with built-in compatibility that makes management and scaling efficient," says Shough.

Solution

Working with integration partner ePlus Inc., INC Research is currently migrating all of its data centers into a single data center built around FlexPod architecture. The compute system uses more than 100 Cisco UCS B22 Blade Servers and Cisco UCS B200 Blade Servers. With low density and high performance, the Cisco UCS blades significantly improve performance of the server-based applications, including Oracle database services, Microsoft Outlook, Microsoft Sharepoint and SAS Analytics. The servers are currently 85 percent virtualized with VMware, with plans to eventually reach 90 percent virtualization, and host more than 500 Linux and Windows servers. With Cisco UCS, INC Research has reduced overall costs to provide its server infrastructure, increased application performance, and enabled IT to provide services that were previously not possible.

At the core of the network, Cisco Nexus 7000 Series Switches deliver exceptional performance with enhanced connectivity of up to 10 gigabits per second. Cisco Nexus 5000 Series Switches improve flexibility of the network with broad connectivity support for Ethernet, Fibre Channel, and Fibre Channel over Ethernet connections. These switches connect directly to the NetApp FAS300 Series storage systems, minimizing load times for data in the high-availability cluster with a total of 300 TB of capacity. For virtual environments, the Cisco Nexus 1000V Series Switches extend the network from the physical to virtual layers.

The FlexPod implementation delivers converged infrastructure that simplifies management significantly. When working with a broad mix of solutions, INC Research used different proprietary management tools for each system, resulting in multiple interfaces and logins. All components in the FlexPod infrastructure can be managed from a single interface, providing integrated reporting and configurations. Scaling the FlexPod environment is also very simple due to the standard architecture and built-in compatibility with all components. By reusing standard templates and profiles, INC Research can greatly reduce provisioning time and streamline data center management.

"Our primary business involves the collection and analysis of clinical data," says Shough. "Being able to work with a standard computing environment improves our ability to migrate and compare data."

Results

Once all of the operations are consolidated into one data center, INC Research expects to reduce the number of rack units from 2000 to only 400. "Although we're reducing the footprint by more than 75 percent, the power and performance of Cisco UCS and the FlexPod environment will increase available computing and storage capacity by 50 percent," says Shough. INC Research expects to gain multiple benefits from the compact data center. In addition to reducing cooling and power costs by at least 65 percent, the company will halve storage and data center costs.

Standardizing on the FlexPod solution also reduces costs associated with managing multivendor data centers. By reducing vendor support, licensing, and maintenance needs, INC Research expects to reduce operating costs by US$250,000 annually. As an integrated

environment, FlexPod also requires less complex cabling compared to other solutions, making it easier to scale the environment and reducing the total cost of ownership of the platform.

The FlexPod environment scales easily to meet global needs. Not only does the pre-validated environment require little testing, but Cisco UCS also makes configurations easy by employing reusable templates and profiles to quickly build out environments. As a result, new physical blade servers can be slotted into the rack and deployed within a day versus a week or more with other servers. The Cisco templates also apply across virtual machines, enabling INC Research to provision new virtual servers in an hour or two, rather than days.

"Using the fast deployment available with Cisco UCS, we can build out our capacity quickly and respond to customer requests more efficiently," says Shough. The fast provisioning also helps to improve availability. When INC Research needs to perform regular maintenance on any blade, the company can quickly configure new virtual servers on another blade and transfer data to keep business running as usual. INC Research also has reduced provisioning time for compute resources from four days to as low as 90 minutes and substantially improved availability.

Reduplication and real-time file restoration take the high availability functionality in FlexPod to the next level, enabling INC Research to switch over to server snapshots and practically eliminate downtime. And if the company needs to restore servers, the fast deployment available through Cisco helps INC Research return to normal operations as quickly as possible. When a user requests the restoration of a file or a share on the platform, INC Research can complete the user request and restore the information within 10 to 15 minutes compared to 2 to 4 hours using legacy methods.

Implementing the FlexPod solution improves staff productivity at INC research. Staff spend far less time provisioning, deploying, and configuring equipment. The ability to view reports for all components, physical and virtual, on a single interface significantly streamlines the time spent troubleshooting errors and optimizing performance. Working with a single environment also reduces training and support compared to working with multiple vendors. "Our investment in FlexPod enables staff to spend less time on maintenance and more time on strategy and optimization," says Shough. "We're positioning ourselves to handle more complex solutions in-house and reduce outsourcing expenses."

Next Steps

Using the FlexPod infrastructure with industry standard Cisco, NetApp, and VMware solutions, INC Research establishes a solid foundation for changes and improvements in the future. The performance of the FlexPod virtual environment opens the doors for virtual desktop infrastructure. INC Research also plans to develop new revenue streams with cloud solutions, including Infrastructure-as-a-Service and Platform-as-a-Service, which rely on the power and flexibility of the FlexPod virtual environment.

Product List

FlexPod
· Cisco Unified Computing System (UCS)
· Cisco UCS B22 Blade Servers
· Cisco UCS B200 Blade Servers
· NetApp FAS3250 and 3270 Series Storage Systems
· VMware

Routing and Switching
· Cisco Nexus 7000 Series Switches
· Cisco Nexus 5000 Series Switches
· Cisco Nexus 1000V Series Switches

OS
· Microsoft
· Linux

Database
· Oracle

Applications
· Citrix
· Lotus Notes
· Microsoft Outlook
· Microsoft CRM
· Microsoft SharePoint
· Oracle Argus Safety
· SAS Analytics

For More Information

To find out more about Cisco Unified Data Center, please visit:
www.cisco.com/go/unifieddatacenter.
To find out more about Cisco UCS, please visit: www.cisco.com/go/ucs.
To find out more about Cisco Nexus, please visit: www.cisco.com/go/nexus.

Americas Headquarters
Cisco Systems, Inc.
San Jose, CA

Asia Pacific Headquarters
Cisco Systems (USA) Pte. Ltd.
Singapore

Europe Headquarters
Cisco Systems International BV Amsterdam,
The Netherlands

Cisco has more than 200 offices worldwide. Addresses, phone numbers, and fax numbers are listed on the Cisco Website at **www.cisco.com/go/offices.**