Consulting Group Moves Services to Secure Private Cloud

Hay Group moved production applications to IPR International's ZoneIT cloud, hosted on Unified Computing System.

EXECUTIVE SUMMARY

HAY GROUP

- Consulting
- Philadelphia, Pennsylvania USA
- 2600 Employees

BUSINESS CHALLENGE

- Provide high availability for customer web portals
- Increase business agility
- Protect intellectual property

NETWORK SOLUTION

- ZoneIT secure multitenant cloud, based on Cisco Unified Computing System
- Automated failover to disaster recovery site with identical configuration

BUSINESS RESULTS

- Achieved 99.999 percent availability
- Accelerated new service introduction from weeks to minutes
- Increased server-to-blade ratio from 15:1 to 35:1, and consolidated from 540 to 12 switch ports

Business Challenge

Hay Group is a global management consulting firm specializing in developing talent, organizing people to be more effective, and motivating them to perform at their best. More than 2600 employees work in 86 offices in 48 countries, serving clients including private, public, and not-for-profit organizations in every major industry.

More than half of Hay Group's revenues come from subscriptions to web portals with up-to-date research on reward strategies and benefits, which clients use to maximize employee performance. The firm used to host these web portals, as well as its internal business applications, on standalone servers in a managed service provider's data center. Each of Hay Group's six business units that deliver subscription services had its own servers, storage, and networks.

Hay Group saw an opportunity to increase client service levels by changing the way it hosted applications. One reason is that clients count on HR information to be available at a moment's notice, and had become increasingly interested in Hay Group's disaster recovery (DR) capabilities. "To increase our value to clients, we decided to move to a fully virtualized environment that increased reliability and availability," says Robert Butler, global chief information officer for Hay Group. In addition, the firm wanted to empower business units to quickly introduce new client services, sometimes just for a brief opportunity. "We didn't have that flexibility with the traditional hosting model," Butler says.

> "With IPR's private cloud, based on Cisco UCS, we can bring up new web portals for our clients almost immediately, compared to weeks when we used standalone servers."
>
> **—Robert Butler, Chief Information Officer, Hay Group**

Hay Group envisioned a private cloud, where the different business units could share the same infrastructure while keeping their information separate on servers, storage, and the network.

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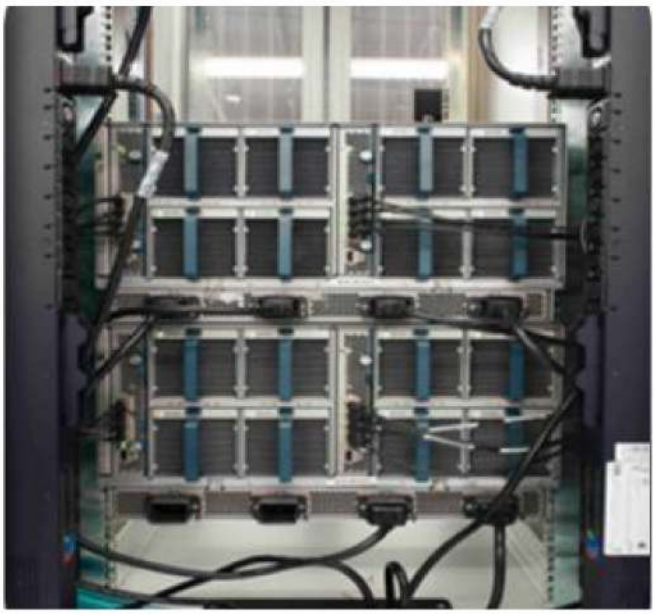
Before UCS



After UCS

Solution

After evaluating private cloud hosting proposals from five managed service providers, Hay Group selected IPR International. “We proposed building a secure, multitenant hosting environment in our two hardened data centers, with automated failover, and Hay Group would become our first customer for Infrastructure as a Service,” says Michael Emmi, chief executive officer of IPR International.

Hay Group and IPR jointly decided to build the private cloud service on Cisco Unified Computing System (UCS), which combines compute, networking, storage access, and virtualization in a cohesive system managed as a single entity. “The Cisco Nexus 1000V Switch played an important role in our decision because it preserves the security profiles of our various client services as we move them between Cisco UCS server blades,” says Butler.

Hay Group and IPR collaborated with Cisco Advanced Services and Presidio Networked Solutions, a Cisco Gold Certified Partner, to build the private cloud infrastructure on Cisco UCS in just three months, a week earlier than scheduled. “Hay Group and other customers continue to manage their applications, databases, web site, active directory, and other software applications just as they always have, while IPR provides a highly available, secure multitenant environment hosted on Cisco UCS,” Emmi says.

Three Cisco UCS chassis with 24 server blades reside in IPR’s production data center in Wilmington, Delaware, and another three are housed in the DR facility in Reading, Pennsylvania. Authorized personnel from both Hay Group and IPR use Cisco UCS Manager to create service profiles and later assign them to server blades over the network with a few clicks. “Cisco UCS Manager is so easy to use that our network operations team began configuring Cisco UCS server blades the day after we received access,” Butler says. A single pair of Cisco UCS 6100 Series Fabric Interconnects, wired once, connects all server blades to the data network and storage, eliminating the delays and costs of cabling as Hay Group or other tenants add new servers.

After Presidio and Cisco Advanced Services provided design and implementation services, Hay Group moved existing virtual machines and approximately 70 new virtual machines over the network to IPR’s private cloud, called ZoneIT. After testing application performance in the production and DR environments and practicing DR failover, Hay Group cut over to the cloud by simply changing the DNS entry. Clients were able to access Hay Group services

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during the cutover, and afterwards, clients in Europe reported that web portal performance had increased by as much as 80 percent.

All 415 of Hay Group's application servers now reside in IPR's ZoneIT private cloud, including the client web portals, Microsoft Exchange, Microsoft SharePoint, HR systems, financial systems, and file and print services. IPR uses multiple Cisco technologies to keep each tenant's applications and data separate.

Results

Increased Availability

Hay Group can offer industry-leading SLAs for availability because IPR's cloud platform is built with completely redundant Cisco solutions. And in the event of a data center outage, IPR or Hay Group can quickly failover applications to the other center without interrupting web access for customers. "During testing, we failed over the entire application environment from the production data center to the DR data center in less than 30 minutes," says Marcia Wasserman, director of strategic accounts for IPR International.

Clients can also continue to access information during routine maintenance. When Hay Group upgrades firmware, for example, an administrator applies a service profile to provision an available blade with a few clicks, temporarily moves the virtual machines there, then moves them back to the upgraded blade. Customers experience no down time.

Increased Agility

The cloud gives Hay Group greater agility by making it easier to collect, aggregate, stage, and clean data to deliver new services to clients. "With IPR's private cloud based on Cisco UCS, we can bring up new web portals for our clients in minutes, compared to weeks when we had to provision standalone servers," says Butler. "

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> **—Michael Emmi, Chief Executive Officer, IPR International**

Cost Control

Hay Group now needs fewer servers because the 72 GB RAM on Cisco UCS server blades supports 35 virtual machines, compared to 10 to 15 on the previous platform. What's more, hosting all business units' applications and data in the cloud has enabled Hay Group to provide a DR site for all six business units for about the same cost as building a dedicated DR infrastructure for one business unit.

The firm also saves on cable and switch port costs. Previously, the 36 VMware ESX servers used 216 cables, and the 65 traditional rack-mounted web servers used 324 cables. Now all servers are consolidated onto 24 Cisco UCS server blades that connect to the data network and SAN through a single pair of Cisco UCS 6100 Fabric Interconnects using 12 cables. "With the Cisco UCS, we consolidated from 540 to 12 cables, a 44-to-1 ratio," says Butler. "The Cisco UCS 6100 Fabric Interconnect also eliminated the need to purchase additional host bus adapters and fibre channel switches to connect our new virtual machines to the storage area network, reducing costs while simplifying troubleshooting."

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Operational Efficiency

The Cisco UCS platform helps IPR efficiently deliver its private cloud service to Hay Group and other customers. “Cisco UCS Manager service profiles create ongoing cost savings with less spare hardware,” Wasserman says, “If a blade ever fails, we can use Cisco UCS Manager service profiles to identically configure another available blade with a few clicks.”

PRODUCT LIST

- Cisco Unified Computing System
  - Cisco UCS B200 M1 and B250 M1 Blade Servers
  - Cisco UCS 6100 Series Fabric Interconnects
- Cisco Nexus 5000 Switches
- Cisco Nexus 1000V Switch
- Cisco ASA Adaptive Security Appliance 5540 with Intrusion Prevention System (IPS) module
- Cisco Catalyst 3750 Switch for Metro Ethernet
- Cisco ACE Application Control Engines

To learn more about Cisco Unified Computing System, go to www.cisco.com/go/ucs.

To learn more about Cisco Data Center 3.0 solutions, go to www.cisco.com/go/dc.

To learn more about Cisco and Oracle data center solutions, go to www.cisco.com/go/oracle.

To learn more about Hay Group, visit www.haygroup.com.

To learn more about ZoneIT, go to www.iprintl.com.

Next Steps

Based on the success of this project, Hay Group has made it a corporate policy to move all servers that can be virtualized to the private cloud. The firm is beginning with the 250 physical servers currently hosted in global regional processing centers.

Hay Group is also planning to use the IPR ZoneIT private cloud to host virtual desktops. Cisco UCS B440 M1 blades have four sockets, “an economically attractive design because we’ll be able to support more virtual desktops on a blade,” Butler says.

Technical Implementation

The Cisco UCS consists of three chassis at each of IPR’s two data centers. The chassis contain a mix of Cisco UCS B200 M1 and B250 M1 blade servers with 72 GB RAM, all using the Intel Xeon 5540 processor.

The Cisco UCS and Cisco Nexus switches in IPR’s two data centers are configured identically, including VLAN numbering and IP addresses for virtual machines. All Cisco devices, including Cisco Nexus switches and Cisco ASA Adaptive Security Appliances, are implemented in high-availability pairs, with counterparts in the other building. “Moving applications between the two data centers simply requires changing the DNS and network pointing,” says Butler.

IPR built a multicarrier, geographically diverse, high-speed private fiber network to keep the two data center facilities synchronized within 65 milliseconds. Cisco ACE Application Control Engines provide load balancing for traffic arriving over public networks, directing the traffic through Cisco switches and firewalls that IPR configured to Hay Group’s specifications.

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