Accelerating Cloud and Virtualization Benefits

Customer Case Study

Swedish mobile operator transforms data center to optimize application performance and maintain market position

EXECUTIVE SUMMARY

Customer Name: Hi3G Access AB

Industry: Mobile operator

Location: Sweden

Number of Employees: 1500

Challenge

- Lower costs and simplify data center management
- Improve scalability, resilience, and application performance

Solution

- Virtualized cloud environment based on Cisco Unified Data Center Architecture and Cisco Unified Computing System servers for ease of management
- Cisco Nexus Switches for highly-available 10Gbps networking with ability to reach 100Gbps and beyond when required

Results

- Number of servers reduced from 400 to 75, and floor space cut by 75 percent
- Dramatic application performance improvements, with billing system running 300 percent faster
- Improved security and record levels of uptime, while server deployment has been reduced from weeks to minutes

Challenge

Hi3G Access AB is one of Scandinavia's fastest-growing and most innovative mobile companies. Operating in Sweden and Denmark since 2003, the company has amassed 2.4 million subscribers for its pioneering mobile phone and 3G/4G broadband services, including the innovative offer of on-net free cross-border calls. It's been a key force in driving the region's mobile sector forward and reshaping the local market.

All the company's day-to-day administrative systems are housed and managed at a highly secure 5000m^2 data center on the outskirts of Stockholm. These systems include mission-critical applications such as billing, customer relationship management (CRM), resource planning, and business support.

The Stockholm data center needed a major overhaul. Many systems had dedicated servers, most of which were running at only eight to 12 percent capacity. Approximately 400 multivendor machines occupied some 150 chassis. This situation presented major inefficiencies in space utilization, power consumption, and cooling, while the whole environment was becoming increasingly costly and time consuming to manage and maintain. In addition, deploying new servers took days or even weeks.

"We needed to find a better way to cope with the increasing volumes of business that didn't require ever more servers and expansion of the premises," says Mikael Vinberg, data center manager at Hi3G Access. "Moving to a virtualized cloud model was key for consolidation, as well as to speed up and simplify networking and new service deployment."

Solution

To ease its transition to cloud, Hi3G Access opted to transform its data center using Cisco® Unified Data Center Architecture. The foundation for this is the Cisco Unified Computing System™ (UCS®), which integrates servers, networking, management, virtualization, and storage on a single platform, bringing unprecedented efficiency and flexibility.

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"The cost per virtual machine has gone down by at least 50 to 60 percent, probably more, compared to what we paid before."

Mikael Vinberg
Data Center Manager
Hi3G Access AB

The old mix of inefficient, standalone servers has given way to a virtualized environment controlled by a Cisco Unified Computing System Manager and built on UCS B200 and B230 Blade Servers operating at about 80 percent capacity. "We have complete management control of resources, including around 75 UCS blades running 500 VMware virtual machines," says Vinberg. In addition, the mobile operator has upgraded its data center network to Cisco Nexus® 7000 and 5000 Series Switches, creating a highly-available cloud delivery platform.

"With Nexus technology, the company is making the jump from 1Gbps to 10Gbps performance," says Michael Berglund, network engineer at Hi3G Access, "and we have the ability to support speeds up to 100Gbps in the future."

Another big plus was Cisco Nexus Virtual PortChannel, which bundles network connections together and simplifies switch configuration. That system has also allowed the company to remove issues relating to Spanning Tree loop management. The Nexus NX-OS operating software also brought welcome increases in functionality, and, since the company had previously used Cisco IOS® Software, the learning curve for network engineers was low. The choice of Cisco Unified Data Center architecture has greatly reduced the number of adapters and cables too.

To complete the transformation and help ensure all the components of the solution were effectively integrated and working optimally, the company worked closely with local Cisco partner Atea. "Although we were among the first customers in Scandinavia to attempt an installation of this size, the migration proceeded extremely smoothly," says Berglund.

Results

Hi3G Access is in a much stronger position to take advantage of explosive growth in mobile video and applications traffic, and other industry trends. Servers have been consolidated from around 400 to 75, and chassis from 150 to just eight. "With Cisco UCS servers, we have been able to dramatically reduce the number of devices we have to purchase, deploy, and maintain," says Vinberg, "while equipment that previously took up eight rows now fits comfortably into two."

The company now has the capacity needed to grow and launch new mobile offerings, without expensively expanding its premises. IT overheads have been significantly reduced. Energy savings, in particular, have been impressive both in terms of reduced power consumption and cooling requirements. "The cost per virtual machine has gone down by at least 50 to 60 percent, probably more, compared to what we paid before," says Vinberg.

Huge performance improvements have also been seen. "Our billing run used to take some 27 hours to complete. Now it's ready in less than nine," says Berglund. In addition, system availability figures have hit a record high thanks to the solution's combination of stable hardware, cloud technology, and application load balancing.

Security and failover measures have improved too. Cisco Unified Data Center Architecture made it easy to divide the data center into two functional areas, each housing four UCS Blade Server chassis. The mobile operator can now run all its systems in one part even if the other is down for, say, maintenance.

Among the most compelling benefits for Hi3G, though, are the increased speed and flexibility that the Cisco cloud solution gives. Administration of servers and the network is now fast and efficient. The reduced number of nodes has greatly simplified network administration and server deployment. Hi3G is now able to deploy new virtual machines, applications, and services in record time, allowing it to continue to drive the Scandinavian mobile market forward by acting fast on innovative ideas and requests from the business.

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"Our billing run used to take some 27 hours to complete. Now it's ready in less than nine."

Michael Berglund
Network Engineer
Hi3G Access AB

Vinberg says: "It's no problem to create a new machine for a campaign, a development project, or anything else. What before took us days, or even weeks, can now be accomplished in a few minutes."

Next Steps

With 4G mobile evolution offering exciting opportunities for the next wave of product and service innovation, Hi3G is assured of the operational agility to develop, deploy, market, sell, and support such offerings to customers. As the company moves forward, it can be confident its data center architecture will scale in line with changing business needs. As new services and applications are added, for example, the UCS Blade Servers can be easily swapped out, upgraded, or re-configured. "I don't think we could have made a better choice," says Vinberg.

For More Information

To learn more about the Cisco architectures and solutions featured within this case study, please go to: www.cisco.com/go/cloud

Product List

Data Center Solutions

- Cisco Unified Computing System (UCS)
  - Cisco UCS B200 M1 Blade Servers
  - Cisco UCS B230 M1 Blade Servers

Routing and Switching

- Cisco Nexus 5000 Series Switches
- Cisco Nexus 7000 Series Switches

Network Management

- Cisco Unified Computing System Manager

Applications

- VMware
- Oracle databases
- SAP ERP
- PeopleSoft

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