Service Provider Redesigns for Cloud, Hosted, and Virtual Services

Cisco network and compute architectures and solutions position provider for major growth among business customers.

EXECUTIVE SUMMARY

INDUSTRY

- Telecommunications

BUSINESS CHALLENGE

- Develop long-lasting extensible architecture to be deployed across multiple data centers
- Design new data center architecture to offer cloud, hosted, and virtual services for differentiated services
- Provide faster time to market, scalability, and flexibility with lower capital and operational costs

NETWORK SOLUTION

- Cisco Unified Data Center architecture, with Cisco Unified Computing System, Cisco Nexus, Cisco ASR 9000, and Cisco Catalyst switch products
- Detailed market, architecture, and economic analyses in close collaboration with service provider's staff to enable optimum business decisions
- Design, implementation from Cisco Advanced Services
- Consulting and joint marketing services from Cisco Marketing

BUSINESS RESULTS

- Provider can flexibly position complete collocation, virtual data center, private cloud computing and public cloud solutions for variety of requirements among small, medium, enterprise, and public sector customers
- Cisco Nexus switching and Cisco UCS architectures have enabled the provider to quickly scale to add new hosted and managed services
- With the new Cisco UCS servers, the provider is able to scale rapidly meet growing demand without the time and expense of cabling, deployment, provisioning, and other costs
- Servers can be quickly provisioned with Cisco UCS Manager service profiles

Business Challenge

Based in North America, an integrated service provider with $18 billion in annual revenues from fixed, mobile, broadband, and TV services, chose Cisco Nexus switches and other Cisco networking solutions as part of an end-to-end data center architecture to increase time-to-market for a growing portfolio of managed hosting, virtual data center, and cloud services. In 2011, after evaluating the solution in their labs, the provider adopted the Cisco Unified Computing System as well. They stopped any further deployment of their legacy computing environment and all new customers for their virtual data center service are being deployed on Cisco UCS. It is also serving as the foundation for their dedicated managed hosted service, as well as for public cloud Infrastructure-as-a-Service which is in development.

Demand for managed, hosted, and collocation services among public sector agencies, enterprises, and small and medium-sized businesses is growing in North America as customers become more aware of the many cost efficiencies and numerous other benefits that these services can provide. This trend has been validated, with research forecasting dramatic opportunities for service providers over the next decade. The global market for cloud computing alone is expected to grow by nearly a factor of six: from US$40.7 billion in revenues in 2011 to more than $241 billion by 2020, according to Forrester.

Aware of this opportunity, a leading service provider in North America wanted to expand its offerings and gain a prominent market share with differentiated services. The service provider turned to Cisco to help design a new infrastructure optimized for scalable and flexible state-of-the-art cloud computing services. The provider's vision of new data center capabilities evolved significantly between 2009 and 2011, nurtured by the Cisco account team, Cisco executives, and specialists in Cisco business units. The new architecture directly addresses the provider's plan to enhance its business capabilities to better address the rich range of hosting and cloud service opportunities.

Network Solution

Beginning in 2009, Cisco supported the provider's efforts to rebuild its data center to support collocation services. This deployment began with adoption of a new network architecture based on:

- **Cisco Nexus® 7000, 5000, 2000, and 1000 Series Switches**, which simplify data center networks by converging LANs and SANs, can lower total cost of ownership by up to 50 percent, scale for bare metal and virtual machine workloads, and extend intelligent services into the network fabric across applications and workloads.
- **Cisco® ASR 9000 Series Aggregation Services Routers**, which intelligently blend the edge, aggregation, and access points to simplify operations and accelerate services.
- **Cisco Catalyst® 6509 Switch**, used as a services chassis containing firewall, load balancing, VPN, and Intrusion Prevention Services (IPS).

Initially, the customer was intent on keeping its legacy server infrastructure for managed and hosted services. After attending an executive briefing center session in San Jose in 2010, however, the provider began to see the unique value of the Cisco architectural approach and the new Cisco Unified Computing System™ (UCS™), especially with the expected growth of managed cloud services.

Product management, technology, and operations directors in the provider's data center teams heard about the high memory capacity of the Cisco UCS, which supports more virtual machines per blade server than most other systems and thereby increases application performance. Economies of scale enabled by the wire-once architecture would enable the provider to quickly add capacity and make any necessary changes to support growth as the demand increases and thus maximize the return on investment (ROI). The firm and long-term commitment of Cisco to the data center and cloud services market was another selling point.

PRODUCT LIST

- Cisco Unified Computing System
- Cisco Nexus 7000, 5000, 2000, and 1000 Series Switches
- Cisco ASR 9000 Series Aggregation Services Routers
- Cisco Catalyst 6509 Switch

Supplying Cisco UCS units to the provider's labs in 2010, Cisco showed the company how Cisco UCS could be easily integrated into the existing Cisco architecture. The virtualized hosted services for a few customers (distinct from being considered a cloud service only because the services did not include a self-service portal) were then deployed on Cisco UCS, and the results led to the decision to go with Cisco UCS for all subsequent managed hosted, virtual data center, and cloud services beginning in 2011.

The network and technology solutions provided by Cisco were additionally supported with a comprehensive market, architecture, and economic analysis developed by Cisco in close collaboration with the service provider's subject-matter experts. These tools have positioned the service provider to make more optimal business decisions and greatly improve the prospects of long-term business goals being met or exceeded.

Business Results

New services launched by the service provider on Cisco network platforms and Cisco UCS include:

- **Managed and hosted services with single tenant provisioning**, for customers wanting virtual machines managed in their own dedicated server chassis.
- **Virtual data center services with multitenant virtual machines**. With Cisco UCS, the service provider can deliver high-performance computing, while leveraging the benefits of running multiple customers running on a single blade server in a Cisco Virtual Multi-tenant Data Center (VMDC) reference design.

- **Cloud-based infrastructure-as-a-service (IaaS),** which offers customers the fast deployment of virtual servers, firewalls, load balancers, and other infrastructure, which can all be configured by the customer's IT department. A web-based control panel provides real-time configuration access, role-based permissions, and online reporting. Usage-metered billing and fast scalability increase the service's flexibility. Among the uses of IaaS for businesses is the ability to develop and test a new application for the cloud in the IaaS environment before deploying it in a production environment. The IaaS service is also highly beneficial for companies of many kinds that need to quickly scale IT resources up or down based on rapid growth, special events, or seasonal changes in business activity.

For More Information

Managed and Cloud Services

To learn more about Cisco cloud-based services, go to: http://www.cisco.com/en/US/partner/netsol/ns1098/networking_solutions_solution_category.html.

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