IT Infrastructure Provider Increases Capacity to Prepare for Growth

The Planet added Nexus 5020 Switches to transition to 10 Gigabit Ethernet.

EXECUTIVE SUMMARY
THE PLANET • IT Infrastructure Outsourcer • Houston, Texas • 550 employees; 20,000+ customers
BUSINESS CHALLENGE • Increase backplane switching capacity within the datacenter • Contain costs • Cost-effectively introduce new services
NETWORK SOLUTION • Deployed Cisco Nexus 5020 Switch for server connectivity
BUSINESS RESULTS • Increased backplane switching capacity by 500 percent while maintaining existing cost structure • Simplified management and operations requirements • Built the foundation to offer innovative services, such as shared storage

Challenge

Headquartered in Houston, Texas, The Planet is a leading provider of on-demand IT infrastructure solutions, serving more than 20,000 small- and medium-size business customers worldwide and hosting 15.2 million web sites. Customers can choose from a broad array of solutions, including dedicated servers; dedicated servers with services; fully managed hosting; and colocation, all backed by 24x7x365 support. The company's six wholly owned data centers house more than 56,000 servers.

The Planet's business model is based on maximizing revenue from the data center infrastructure while minimizing capital and operational expense. Increasing bandwidth to the top of the rack from Gigabit Ethernet to 10 Gigabit Ethernet would enable The Planet to reduce capital expense and also begin offering new services that require high bandwidth, such as shared storage.

"The challenge was finding a way to provide ten times as much bandwidth to the top of the rack without paying ten times more," says Will Charnock, director of technology. "If we could do it for no more than four times our previous cost, we would gain 500 percent more switching capacity without increasing costs."

When The Planet began planning a new service called Virtual Rack, the need for 10-Gigabit Ethernet became urgent. Built for environments with two or more servers, Virtual Rack would require a higher-capacity switching fabric. Main criteria for the new switch platform included:

- High port density for 10 Gigabit Ethernet, to minimize rack costs for the new service

- Simplified and consistent operations that would not increase the workload for The Planet's engineers when new servers were added

- Support for VLANs, which The Planet uses to segment each customer's traffic over the shared infrastructure

> "The Cisco Nexus 5020 Switch integrates into our network without affecting our other systems or engineers' workload. Other switches we evaluated would have required a configuration change every time we added a server."
>
> **—William Charnock, Vice President of Technology, The Planet**

Solution

After evaluating leading data center switches, The Planet chose the Cisco Nexus 5020 Switch, which has 40 fixed-wirespeed 10 Gigabit Ethernet ports, as well as expansion modules that the company can use if needed. "We chose the Nexus 5020 because it meets our requirements for port density and price and we have confidence that Cisco will be around for the long term," Charnock says. In addition, the IT group would be able to deploy the Cisco Nexus 5020 quickly because it did not require changes to the code that The Planet uses to auto-provision the server network. "The Nexus 5020 Switch does not affect our other systems or add to our engineers' workload," says Charnock. "Other switches we evaluated would have required a configuration change every time we added a server."

In The Planet's new rack environment, a Cisco Nexus 5020 Switch increased the number of 10 Gigabit Ethernet connected racks per router from 48 to 192. The low latency of the Cisco Nexus 5020 makes it practically unnoticeable.

The Planet completed its testing of the Cisco Nexus 5020 in just two weeks. "We were able to just drop it in and it worked right away," says Charnock.

PRODUCT LIST
Routing and Switching
• Cisco Nexus 5020 Switch
• Cisco Catalyst 4510 RE Switch
• Cisco Catalyst 3759 and 2900
• Cisco Catalyst 6500 Switch
Security
• Cisco Adaptive Security Appliance
• Cisco Guard and Cisco Traffic Anomaly Detectors

Results

Using the Cisco Nexus 5020 Switch, The Planet achieved its goal of transitioning to 10 Gigabit Ethernet at low cost. Business benefits include:

- **Low incremental cost per server**: With the Nexus 5020, cost per 10 Gigabit Ethernet port has decreased by 30 percent. "For a very small premium, we upgraded to 10 Gigabit Ethernet and increased capacity available to servers," Charnock says.

- **Foundation for additional services:** The Planet's data center switching fabric now has the capacity to support a shared storage service, creating a potential new revenue stream. "The Nexus 5020 lays the foundation for us to add new services without major equipment upgrades," says Charnock.

- **Little management impact:** Charnock says that adding the Cisco Nexus 5020 into the architecture did not affect the teams responsible for support, engineering, or provisioning. "That's a huge benefit in a business where profit margins depend on low operating costs," he says. Cisco Nexus 5000 Switches use the NX-OS operating system, which resembles the Cisco IOS Software closely enough that The Planet can configure and implement the switches without additional training.

Next Steps

The Planet will also use the Cisco Nexus 5020 in a new Dallas data center scheduled to open in 2009. Other ways that The Planet is considering using its Cisco Nexus 5020 Switches to reduce costs or increase revenue include:

- Connecting servers directly over 10 Gigabit Ethernet as customers request it
- Connecting the Cisco Nexus 5020 to the storage area network to begin offering shared storage services
- Creating a unified fabric for server connectivity and storage, reducing the number of servers and switch ports and associated power and cooling costs

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