

Microsoft®

Product Highlights:

-10-Gig support for blazing fast-switch-to-switch interconnection.

-Highly scalable with up to 12 units and 384 ports in a stack.

-Redundancy via spanning tree, link aggregation, back-up power supply and routing.

-Robust security supporting key protocols including SSL, SSH, 802.1x, ACLs and SNMPv3.

-10/100/1000Mbps for flexibility, ease of migration and future-proofing.

-Fiber Optic support for up to 80Km connections.

-High port density of up to 48 ports in 1 RU form factor.

-Streamlined network administration with single-IP management of entire stack.

"We needed a reliable high-end switch line for the core and training rooms and Smart Switches for the lab rooms. Since the PAC is devoted to new technologies, we wanted to partner with a vendor that had a fresh approach to switching solutions with a comprehensive line of network products. That's why we selected D-Link."

- Grant BlahaErath
PAC Architect

Microsoft Campus: Platform Adoption Center D-Link Business Class xStack™ Switching Solution

Challenge: The Microsoft Platform Adoption Center (PAC), located on the Microsoft Campus in Redmond, Washington, is a facility that bridges the world of internal product engineering at Microsoft and the world of independent software vendors and enterprise businesses. With training rooms, secure offices for visitors, and hundreds of state-of-the-art computers that are constantly refreshed with the latest builds of operating systems, developer tools, and servers, the PAC is a facility where Microsoft can introduce new products to its customers and partners and provide the company with the valuable service of observing how customers use their technology.

The PAC is a unique facility, open by invitation only. Invitees tend to be some of the brightest and most visible people in the technology industry, including Microsoft Regional Directors, Most Valuable Professionals (MVPs), Independent Software Vendor (ISV) partners, and corporate developers, as well as industry gurus and respected technology bloggers. The PAC is stocked with enough computer hardware to model almost any environment or purpose short of a scalability test, and that hardware can be set up with any Microsoft operating systems, applications, and tools, including ones too new to demonstrate elsewhere. Since the PAC is located on the main Microsoft campus, customers visiting the PAC with technical questions or needing assistance can find expert help on short notice. Attendees at the PAC also have the opportunity to make their views known to the Microsoft architects and developers on site. Enterprise customers come to events at the PAC for training in new technologies and to provide feedback to the development teams. Hands-on testing labs are another reason for ISVs to come to the PAC.

Microsoft is continuing to develop the Center to make it a world-class facility for bringing consumers, as well as tech experts, from all over the world to one location. The company had been running older, chassis-based switches that weren't feature-rich, and while the PAC had Gigabit network bandwidth capacity, it didn't have the requisite hardware to take advantage of the speed. "We really needed to upgrade, especially on the development and enterprise side. We couldn't get by with a one-hundred megabyte network anymore, we needed high bandwidth to use business applications," said Grant BlahaErath, PAC Architect. "We needed a reliable high-end switch line for the core and training rooms and Smart Switches for

the lab rooms. Since the PAC is devoted to new technologies, we wanted to partner with a vendor that had a fresh approach to switching solutions with a comprehensive line of network products. That's why we selected D-Link."

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Solution: The D-Link sales and technical team worked closely with Microsoft to determine which products would be best to upgrade the PAC's network. With a solid layout in hand, D-Link xStack Series switches and Gigabit Interface Converters were chosen for their high quality, affordability and reliability.

"We are pleased to be working with Microsoft to further enhance their Platform Adoption Center," said Jennifer Wu, director, product management, core Ethernet group at D-Link. "This partnership creates tremendous additional value to new and existing Microsoft customers, as well as Microsoft Regional Directors, MVPs and ISV partners." "This is an example of D-Link's commitment to providing businesses with robust networking solutions that can perform under the heaviest traffic," added Wu. D-Link xStack switches are used at the Microsoft PAC for the core Gigabit switching architecture. The PAC data room houses thirteen server racks and one switch rack for the new D-Link xStack switch line. Configured in a ring architecture, the data room utilizes eight D-Link xStack switches configured for redundant data paths and a 40Gbps stacking architecture that supplies 312 ports of Gigabit connectivity to the data room servers and the rest of the PAC. The PAC has four training rooms, two conference rooms and thirty-six lab rooms for center activities. Two of the training rooms also utilize the 48-port xStack switch line for training room connectivity. For connectivity in ten of the thirty-six lab rooms, D-Link Web Smart Gigabit switches are utilized for network edge connectivity. Proving D-Link from core to edge, the PAC is a live network emphasizing D-Link's strength in the networking arena.

Benefits: D-Link greatly enhanced the capabilities of the Microsoft PAC by installing D-Link's new high-end networking xStack Series high performance stackable switches for the data center backbone of the PAC and training rooms. As a result, the PAC

XSTACK



Product Outline:

The D-Link team determined that the most suitable equipment to run the backbone of the facility would be.

1 xStack Series: DGS-3324SR:
 • 24-Port 10/100/1000T.
 • 8 Combo SFP 120G Stacking Ports.

1 xStack Series: DXS-3326GSR:
 • 24-Port SFP Switch.
 • 4 Combo 10/100/1000T.
 • 2 10GbE Ports.

9 xStack Series: DXS-3350SR:
 • 48-Port 10/100/1000T Switch.
 • 4 Combo SFP.
 • 2 10GbE Ports.

3 xStack Series: DGS-3324SR:
 • 24-Port 10/100/1000T.
 • 4 Combo SFP Switch.
 • 40G Stacking Ports.

10 Web Smart: DGS-1216T:
 • 16-Port 10/100/1000T.
 • 2 Combo SFP Switch.

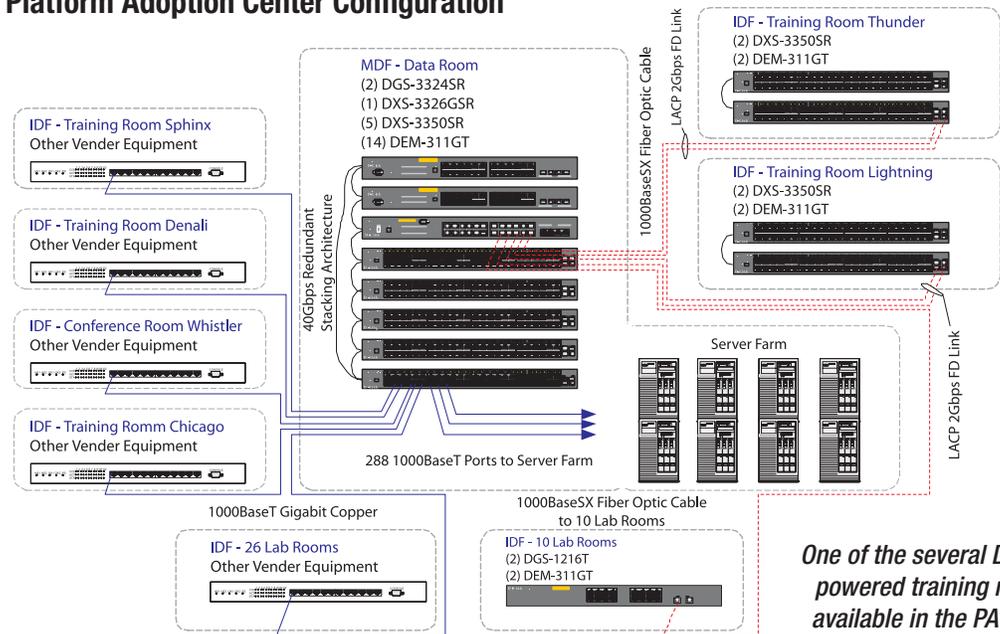
20 GBIC Transceivers: DEM-311GT:
 • 850nm multimode SFP/mini-GBIC.

is now able to transfer data at least twelve times faster based on practical tests like system re-imaging, video streaming, and raw file transfers to NAS devices. In addition, Microsoft installed D-Link smart switches in some offices to enable guests to configure them for whatever bandwidth-intensive applications they need.

“D-Link offers very nice solutions that are easy to deploy, easy to work with and have very intuitive web interfaces,” said Grant BlahaErath, PAC Architect. “D-Link’s web interface doesn’t hide functionality from the user, but organizes the interface in an effective way. The xStack Series has excellent performance for the price and works very well in the data center as our central switching stack. Our facility has to cater to a wide variety of events, some with very complex and demanding network requirements presented on a short schedule. The xStack ring architecture lets us add and remove switch components in an agile fashion which helps us meet these challenges,” added BlahaErath.

The D-Link xStack Series also proved to be robust during a recent incident. During a recent iCSI testing event, one of our attendees had brought in a device to simulate and create network packet failures. By accident, the device entered a network attack mode and generated millions of bad packets, broadcast storms, and a variety of DOS attacks. The facility-wide network built from a variety of network products was completely floored as they tried to handle all the spurious traffic. However, the D-Link switches remained operational and shielded the data center from the crazy traffic. “While we have many devices that can do this on our network, all except the D-Link switches had crashed or locked up because their CPU power wasn’t able to handle the sheer amount of bad traffic. The D-Link switches created a safe zone that let us pinpoint the source of the attack and helped us shut it down,” recalled BlahaErath.

Platform Adoption Center Configuration



One of the several D-Link powered training rooms available in the PAC that can now offer attendees and guests robust and flexible 10/100/1000 Mbps connections