Cisco Catalyst Blade Switch 3100 Series

Overview

As a successful strategy for dealing with server sprawl, blade servers are playing a more prominent role in businesses' overall server strategies. With the more central role that blade servers are playing, it is important that they have access to enterprise-class networking, including availability, performance, and end-to-end network services.

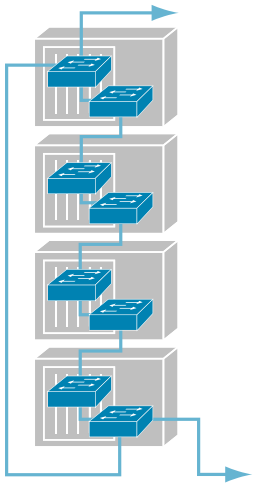
The Cisco Catalyst® Blade Switch 3100 Series represents the next generation of networking solutions for blade server environments. Built on the market-leading Cisco® hardware and IOS® software, the Cisco Catalyst Blade Switch 3100 Series is engineered with innovative technologies specifically designed to meet the rigors of blade server–based application infrastructure. Specifically, the switch is designed to support blade servers in their new role by delivering scaleable, high-performance, highly resilient connectivity while supporting ongoing initiatives to reduce server infrastructure complexity and total cost of operation (TCO).

As with the other Cisco Ethernet, Fibre Channel, and InfiniBand solutions, the Cisco Catalyst Blade Switch 3100 Series is available for blade server chassis from Dell PowerEdge, HP BladeSystem, and IBM BladeCenter.

The Virtual Blade Switch

With the Cisco Catalyst Blade Switch 3100 Series, Cisco introduces a unique technology called the virtual blade switch (VBS). Much like server virtualization technology, this switch virtualization technology treats the individual physical switches within a rack as one logical switch, an innovation that allows the switches to deliver better utilization, increased performance, and improved resilience while simplifying operations and management (Figure 1).

Figure 1 VBS Allows up to 8 switches to act as a single switch



The VBS delivers a number of advantages to the supported servers:

- By significantly simplifying data center design and operation, the VBS reduces infrastructure complexity, improves network resiliency, and increases the operational manageability of the blade-switching environment. For example, the VBS appears as a single network device, so the network topology is greatly simplified, enabling quicker deployment, a more robust network, and faster troubleshooting and problem resolution.
- By providing up to 160 Gbps upstream, the VBS offers exceptional performance. The VBS can double the bandwidth available to a server, giving server administrators significant flexibility in supporting the performance requirements of their severs and applications.
- The VBS makes extensive use of link virtualization for both upstream connectivity and server connectivity, providing the benefits of increased available bandwidth and increased redundancy. The VBS can recover from a physical link failure without having to reconverge the network, thus avoiding session drops.
- The VBS uses the same Cisco IOS Software interface, MIBs, and management tools as the rest of the Cisco Catalyst Series, which simplifies operations and management by the network operations team and helps ensure that attached servers can fully participate in end-to-end network services such as quality of service (QoS) and security policies, thus helping maintain regulatory compliance.
- The Cisco Catalyst Blade Switch 3100 Series can mix-and-match 1 Gigabit Ethernet and 10 Gigabit Ethernet switches, providing customers with a cost-effective migration path. Switch capacity can be incrementally upgraded as server needs demand.

Figure 2 shows the Cisco Catalyst Blade Switch 3100 Series, and Table 2 summarizes its features and benefits.

Figure 2 Cisco Catalyst Blade Switch 3100 Series

The Cisco Catalyst Blade Switch 3100 Series is another example of why most companies choose Cisco to meet their switching requirements. The Cisco Catalyst Blade Switch 3100 Series combines Cisco Catalyst heritage with product innovation to meet the unique demands of today's blade server environment.

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Table 1 Features and Benefits

Feature	Benefit
Simplified infrastructure	• Through VBS technology, makes a rack full of switches appear as a single node at Layers 2 and 3, simplifying management and increasing network stability • Simplifies management and operations through integration with Cisco VFrame, immediately activated provisioning, Cisco IOS Embedded Event Manager (EEM), and Cisco Generic Online Diagnostics (GOLD) • Reduces power, cooling, and cable management requirements
High performance and scalability	• Through Cisco EtherChannel®, provides superior performance and flexibility • Provides 160 Gbps aggregate upstream bandwidth • Doubles server bandwidth through active-active configuration • Provides 64-Gbps interswitch VBS fabric
Continuous operation	• Supports active-active server links • Through Cisco EtherChannel, provides link resiliency and aggregation layer diversity • Through VBS, avoids Layer 2 or 3 reconvergence after link or switch failure; simpler Layer 2 and 3 topologies also increase network stability • Allows switch modules to be added or removed without service interruption in remaining modules; software and configuration is automatically remediated
Operational manageability	• Offers integration with original equipment manufacturer (OEM) element manager • Can be managed like any other switch running Cisco IOS Software, using the same tools (such as Cisco EEM and Cisco GOLD) and procedures • Through its consistent Cisco IOS Software feature implementation, supports end-to-end features such as QoS
Reduced TCO	• Supports mixed Gigabit Ethernet and 10 Gigabit Ethernet environment, providing cost-effective, granular migration path • Through its consistent management interface and Cisco VFrame support, reduces operating costs