

Overview

As a tool for successfully dealing with server sprawl, blade servers are playing a more prominent role in businesses' overall server strategies. With the more central role 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 networking solution for blade server environments. Built on the market-leading Cisco® hardware and Cisco 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. The switch is designed to support blade servers in their new role by delivering scalable, high-performance, highly resilient connectivity while still supporting ongoing initiatives to reduce server infrastructure complexity and total cost of ownership (TCO).

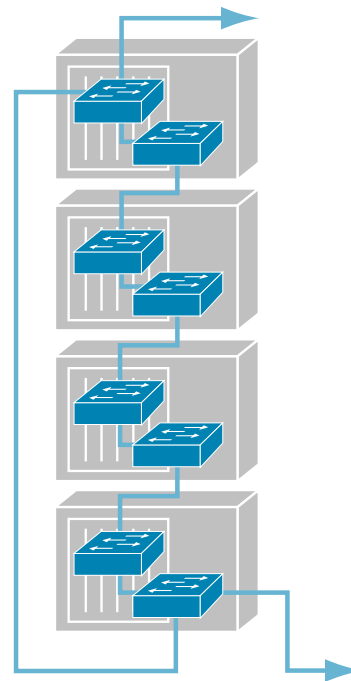


Cisco has coordinated development with HP to bring the Catalyst Blade Switch 3100 Series to the HP BladeSystem c-Class blade server enclosure with the release of the Cisco Catalyst Blade Switch 3120G and 3120X. These products offer identical functions except that the Cisco Catalyst Blade Switch 3120G supports up to 8 Gigabit Ethernet uplinks and the Cisco Catalyst Blade Switch 3120X supports 4 Gigabit Ethernet uplinks and 2 10 Gigabit Ethernet ports.

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. As with server virtualization technology, this innovation allows the switches to deliver better utilization, increased performance, and higher resilience while simplifying operations and management.

Figure 1. VBS Allows Up To 8 Switches to Act As A Single Switch



VBS delivers a number of specific advantages to supported servers, summarized in Table 1:

- By significantly simplifying data center design and operations, 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. This feature translates to quicker deployment, a more robust network, and faster troubleshooting and problem resolution.

Figure 2. Cisco Catalyst Blade Switch 3120



- By providing up to 160 Gbps upstream, the VBS provides exceptional performance. At the same time, the VBS can double the bandwidth available to a server, giving server administrators significant flexibility in supporting the performance requirements of their servers and applications.
- The VBS makes extensive use of link virtualization for both upstream connectivity and server connectivity, which has the dual benefits of increased available bandwidth and increased redundancy. Note that the VBS can recover from a physical link failure without having to reconverge the network, thus minimizing the potential for session drops.



- The VBS uses the same Cisco IOS Software interface, MIBs, and management tools as the rest of the Cisco Catalyst products, simplifying operations and management by the network operations team. This feature also helps ensure that attached servers can fully participate in end-to-end network services such as QoS and security policies, which is helpful, for example, for maintaining regulatory compliance.
- The Cisco Catalyst Blade Switch 3100 Series can mix-and-match Gigabit Ethernet and 10 Gigabit Ethernet switches, giving customers a cost-effective migration path. Switch capacity can be incrementally upgraded as server needs demand.
- 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 3120 combines Cisco Catalyst heritage with product innovation to meet the unique demands of today's blade server environment.

Table 1. Features and Benefits

Feature	Benefit
Infrastructure simplification	<ul style="list-style-type: none">• VBS technology makes a rack full of switches appear as a single node at Layers 2 and 3, simplifying management and increasing network stability• Management and operations are simplified through integration with Cisco VFrame, immediately active provisioning, Cisco IOS Embedded Event Manager (EEM), and Cisco Generic Online Diagnostics (GOLD).• Power, cooling, and cable management requirements are reduced.
Performance and scalability	<ul style="list-style-type: none">• Cisco EtherChannel® provides superior performance and flexibility• 160-Gbps aggregate upstream bandwidth is supported.• Server bandwidth is doubled through active-active configuration.• 64-Gbps interswitch VBS fabric is supported.
Continuous operations	<ul style="list-style-type: none">• Active-active server links are supported.• Cisco EtherChannel provides link resiliency and aggregation layer diversity.• VBS avoids Layer 2 and 3 reconvergence after link or switch failure. Simpler Layer 2 and 3 topologies also increase network stability.• Switch modules can be added or removed without service interruption in remaining modules; the software and configuration are remediated automatically.
Operational manageability	<ul style="list-style-type: none">• The switch can be integrated with OEM element managers.• The switch can be managed like any other switch running Cisco IOS Software, using the same tools (Cisco IOS EEM, Cisco GOLD, etc.) and procedures.• Consistent Cisco IOS Software feature implementation supports end-to-end features such as QoS.
TCO reduction	<ul style="list-style-type: none">• Support of a mixed Gigabit Ethernet and 10 Gigabit Ethernet environments provides a cost-effective, granular migration path.• Consistent management interface and Cisco VFrame support lower operational costs.