Cisco Catalyst 6500 Series Firewall Services Module

Why Should I Care About the Cisco Catalyst 6500 Series Firewall Services Module?

The Cisco® Catalyst® 6500 Series Firewall Services Module (FWSM) allows customers to benefit from industry-leading innovations, including:

1. Leading scalability and performance

- 100,000 connections/sec and 2.8 million pps

2. Unprecedented security protection at Layers 2–7

- Private VLAN integration between the FWSM and the Cisco Catalyst 6500 Series for ease of policy deployment
- Advanced firewall capabilities, including application and protocol inspections

3. Every port within the chassis becomes a security port

- Every FWSM works in tandem with other modules in the chassis to deliver robust security throughout the entire chassis

4. New services can be deployed with minimal operational complexity
   The integrated approach of the Cisco FWSM integrates virtualization and high availability. Solutions are enhanced through complementary functions. This integrated approach maximizes return on network investment by:
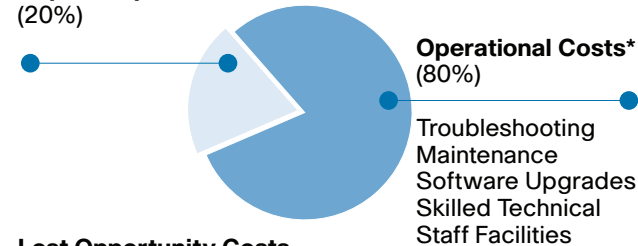
- **Building on the existing network:** All FWSMs take advantage of the infrastructure to deliver new services
- **Simplifying maintenance and management:** Integration of services modules into one chassis allows for ease of use and support for network administrators
- **Reducing environmental costs:** Lower overall power and cabling costs

What Problems Need to Be Solved?

Over the full deployment lifecycle of a network, the upfront cost of buying the equipment is a relatively small part (20%) of the total cost of ownership relative to the ongoing operational costs (80%). Beyond these hard costs, there are additional opportunity costs due to "service lockouts" that occur if a business has not invested in necessary enabling technologies. The operational costs and lost opportunity costs far outweigh the savings realized by buying a less expensive but lower function/service capable switch.

On the Cisco Catalyst 6500 Series, the integrated services module approach provides investment protection of the platform, lowers operating costs, and addresses the intangible opportunity costs.

Capital Expenditures*
(20%)

Operational Costs*
(80%)

Troubleshooting
Maintenance
Software Upgrades
Skilled Technical
Staff Facilities

Lost Opportunity Costs

Missed or Delayed Business Opportunities Due to Unavailable Technologies

*Source:
Momenta Research

The Cisco Catalyst 6500 Series FWSM helps reduce total cost of **network** ownership through:

- Infrastructure simplification
- Maximized return on network investment
- Pervasive security
- Services innovation

Cisco Catalyst 6500 Series FWSM

- Integrated services module
- High performance, high scalability, low latency
- Firewall services virtualization
- Transparent (Layer 2) firewalls
- High availability
- Rich stateful inspection

What Are the Benefits of the Cisco Catalyst 6500 Series FWSM?

Feature	Benefits
Integrated Services Module	**Enhances security and lowers cost of ownership:** • The FWSM can be deployed in existing Cisco Catalyst 6500 Series switches or 7600 Series routers, providing infrastructure simplification, maximum return on network investment, services innovation, and pervasive security. Any physical port on the switch can be configured to operate with firewall policy and protection, allowing for easy deployment at a reduced footprint without additional configuration, power, and cabling.
High Performance, High Scalability, Low Latency	**Future-proofed as network traffic grows and secures latency-sensitive applications:** • The Cisco FWSM provides industry-leading 100,000 connections per second, 5 Gbps throughput, and 1 million concurrent connections per module. Multiple FWSMs can be clustered using static VLAN configurations or Cisco IOS® Software policy-based routing for directing traffic to these FWSMs. Up to four FWSMs can be deployed in the same chassis for a total of 20 Gbps throughput. • A single FWSM can support up to 1000 virtual interfaces (256 per context), and a single chassis can scale up to a maximum of 4000 VLANs. In addition, two Cisco Application Control Engines (ACEs) can be used within the Cisco Catalyst 6500 Series chassis to load-balance between three FWSMs for more than 15 Gbps of firewall throughput. Full firewall protection is applied across the switch backplane, giving the lowest latency figures (30 ms for small frames, 30 usecs) possible. The Cisco FWSM is based on high-speed network processors that provide high performance but retain the flexibility of general-purpose CPUs.
Firewall Services Virtualization	**Reduces cost and complexity of management as needs grow:** • A single FWSM can be partitioned into a maximum of 250 virtual firewalls (security contexts) in Cisco FWSM Software Version 3.1, allowing service providers and large enterprises to implement policies for different customers or functional areas (such as DMZs) over the same physical infrastructure, reducing the cost and complexity of managing multiple devices. • The Resource Manager helps ensure high availability by limiting resource usage per context. Role-based management allows multiple IT owners to configure and manage network- and application-layer security policies. Used at the Internet edge, virtual firewalls can be combined with virtual routing/forwarding (VRF) instances to provide complete traffic separation and security on the campus network. Includes support for RIP, OSPF and stub iBGP routing protocols.
Transparent (Layer 2) Firewalls	**Eases deployment:** • Layer 2 firewalls can greatly simplify deployment in the data center with firewall policies configured within the same subsets and transparent to the hosts they are protecting. Layer 2 firewalls also fit into existing networks with no Layer 3 changes and transparently pass Layer 3 traffic from routers, allowing interoperability with HSRP, VRRP, GLBP, Multicast, and non-IP traffic such as IPX, MPLS, and BPDUs. The Cisco FWSM allows a mixture of transparent and routed firewalls to be implemented on the same module, providing the most flexible network deployment options. The FWSM allows both routed and transparent virtual firewalls to coexist on the same physical device.
High Availability	**Enterprise-class robustness for data center security:** • The Cisco FWSM can be deployed in pairs to provide intra- or inter-chassis stateful failover services that help ensure resilient network protection for the most critical environments. Both Active-Standby and Active-Active (Cisco FWSM Software Version 3.1) failover are supported.
Rich Stateful Inspection	**Market-leading firewall features and broad protocol support:** • The Cisco FWSM is based on Cisco PIX® firewall technology, which offers rich stateful inspection firewall services, and security enforcement technologies, including standards compliance checking, denial of service attack protection, and intelligent application-aware inspection and controls for Web, data center application, VoIP, and multimedia protocols.

Why Cisco?

The Cisco Catalyst 6500 Series switches are the most widely deployed, industry leading family of switches. Adding the high performance, feature rich firewall service module provides unprecedented capability with unmatched flexibility. Cisco delivers the industry's richest set of security features integrated into the network fabric.