



Cisco Catalyst 6500 Security Services Modules



May 2007

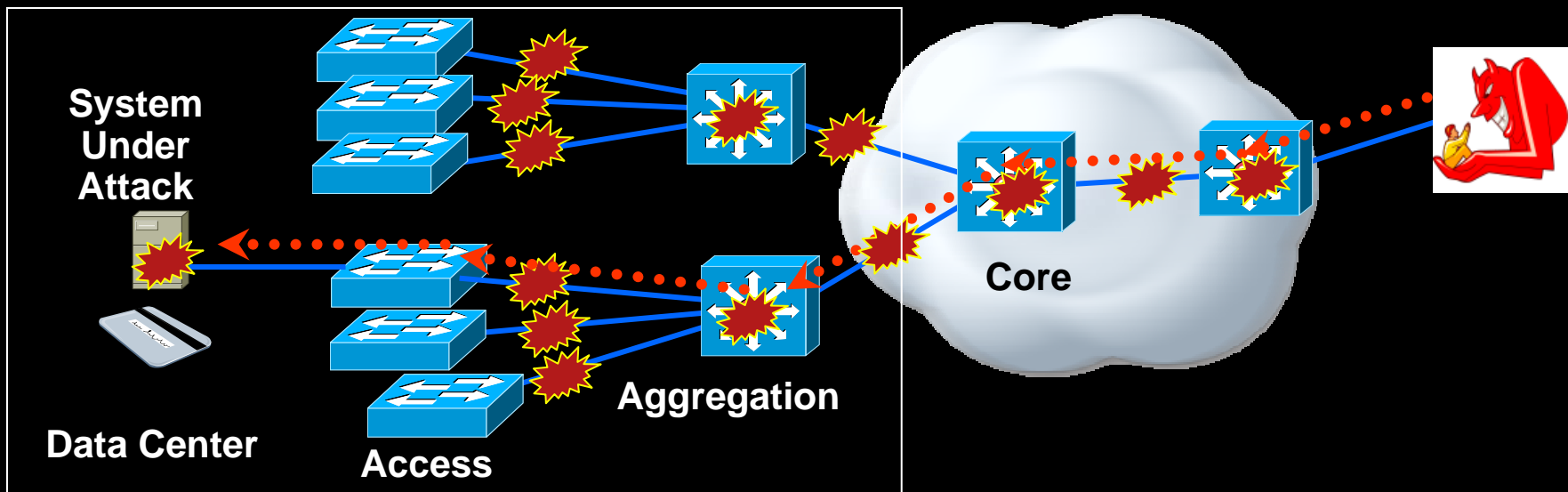
Donovan Williams , Product Manager FWSM

Agenda

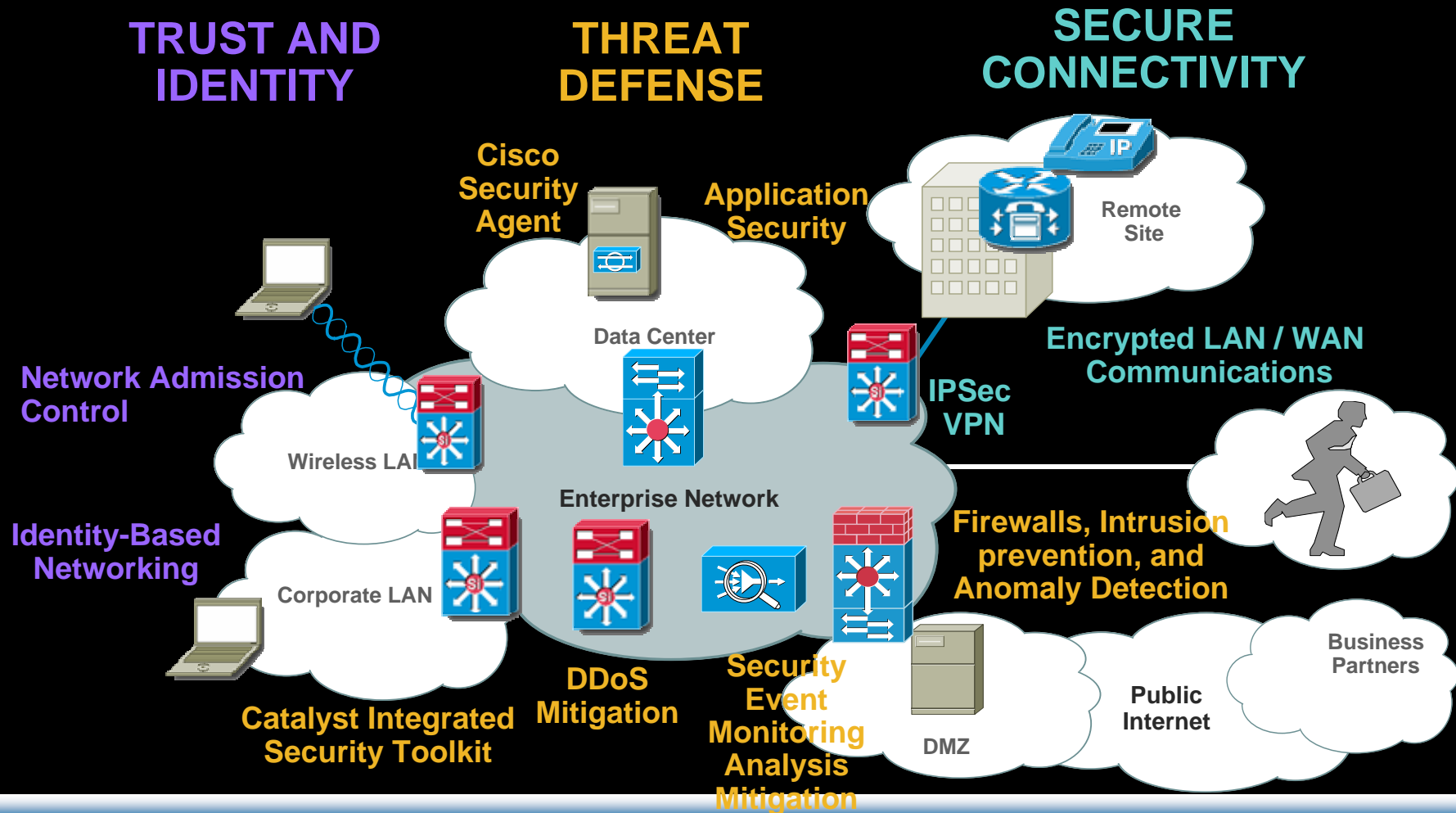
- **Market Drivers**
- Cisco 6500/7600 FireWall Services Module (FWSM)
- Pricing and Bundles
- Management
- Certifications

Why is Data Center Security important

- Enterprise data centers contain the assets, applications, and data that are often targeted by electronic attacks
- Endpoints such as data center servers are key objectives of malicious attacks and must be protected.
- Attacks against server farms can result in lost business for e-commerce and business-to-business applications, and the theft of confidential or proprietary information.
- More people have authorization to access specific services either remotely or on site (for example, consultants, temporary workers, partners, etc.) which makes data center server farms more accessible / vulnerable
- Hackers can use several currently available tools to inspect networks and to launch intrusion and denial of service (DoS) attacks to data center servers



Cisco Catalyst 6500 Delivering Security in the Enterprise



- Comprehensive security protection from campus LAN access, distribution, core to data center and Internet edge

Facilities Constraints & Growth

You Will Effectively Lose 20% of Your IT Budget

Availability of quality data center space and power facilities is decreasing

- 50% of Enterprise Class DC's will be technologically obsolete within 24 months

- 12/05, Michael Bell, Gartner



Storage growth is 40-70 % CAGR



Server growth was 12% in 2005 and is expected to increase



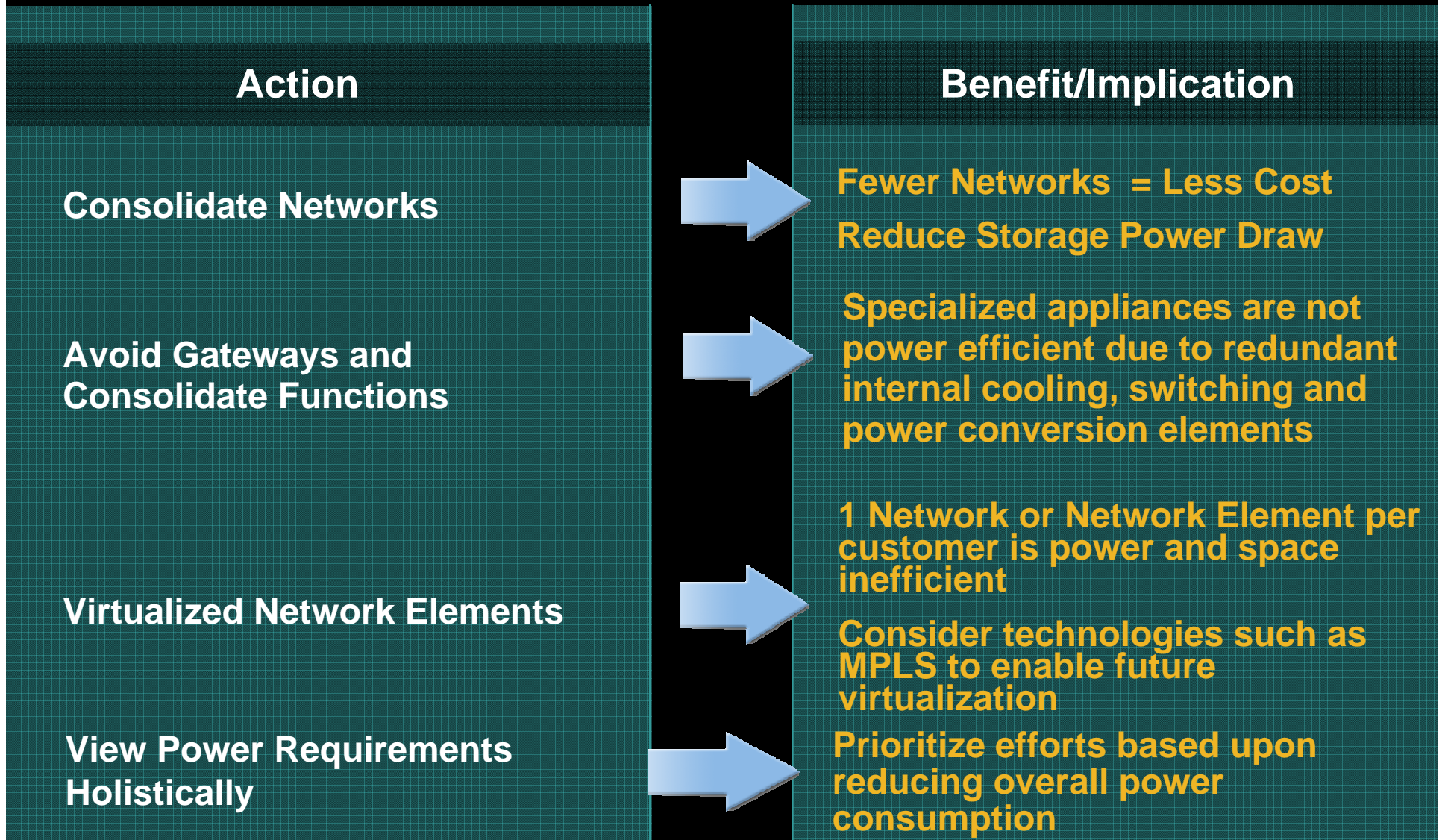
Energy bill will grow from 10% of IT budget to over 30%



Over the next three years 50% of large organizations will face an annual energy bill higher than their annual server budget

Source: Gartner, 2006

What Can Be Done To Reduce Power of Consumed by Network Services?



Reduce Power and Space Consumption Through Integrated Services Design

Design Efficiency

- Catalyst 6500 power supply efficiency has improved 70-80% since 1999
- Cisco ACE with FWSM reduces power by 85%~ 11kW
- Rack space saved with virtualized, integrated modules ~30R
- Additional savings from reduced cabling, port consumption and support costs
- **BONUS:** Reduce complexity, increase manageability, reduce latency, and eliminate single points of failure



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Cisco Catalyst 6500 and 7600 Series Firewall Services Module (FWSM) Product Overview



Firewall Services Module

Industry's Highest Performance Firewall



PIX base Feature Set

- High Performance Firewall: 5.5Gbps bandwidth (best case – large packets!)
- 2.8 Million pps throughput
- 1 million concurrent connections
- 100K new connections/sec
- 250 Virtual firewalls/contexts

- Transparent (L2) and Routed (L3) firewalls in the same service module
- Resource Manager: Assign Service Classes, Resource Limits
- 256 VLANs per context with maximum of 1000 VLANs
- LAN failover active/standby (both intra/inter chassis) and active/active
- Dynamic Routing: OSPF and RIP (2 OSPF virtual routers) in non-virtual FW mode
- Support multiple blades in the chassis, up to 4 for 20Gbps
- 80K access-lists enforced in hardware – maximum best-case figure
- Supported on Native IOS 12.1(13E) and CatOS 7.5(1) onwards

FWSM v3.1

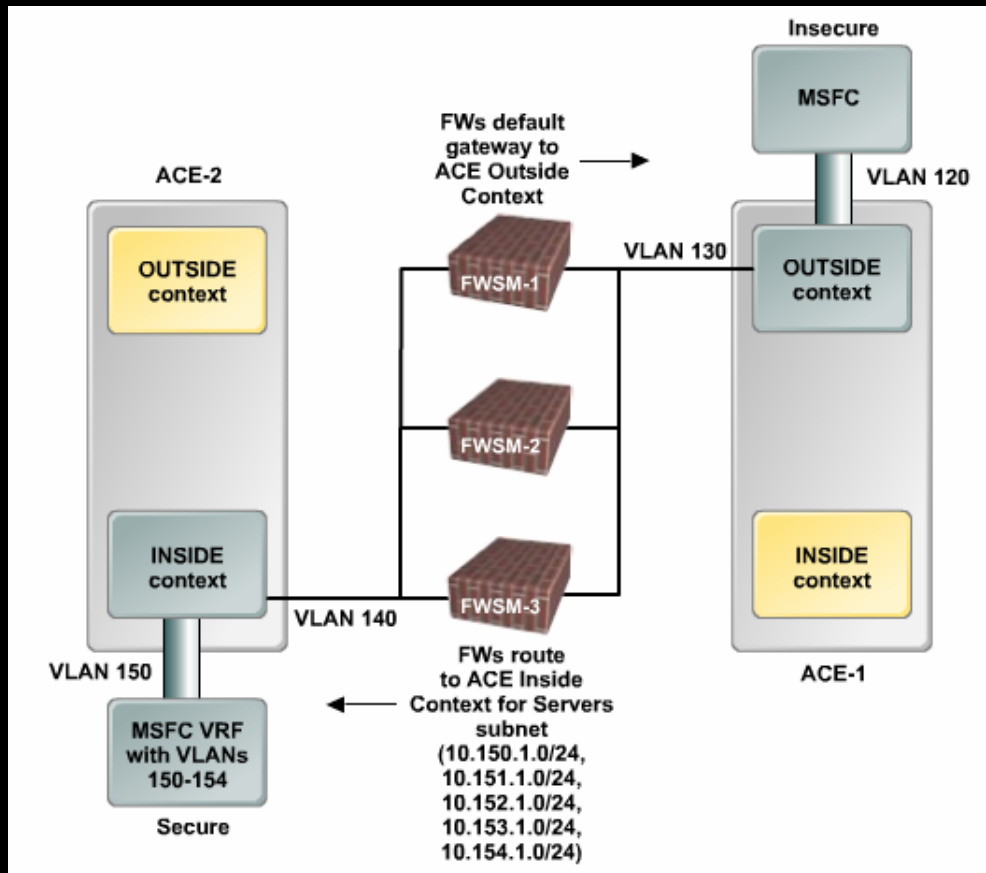


Scaling Switch Integrated FW Services to 20 Gbps



FWSM Clustering

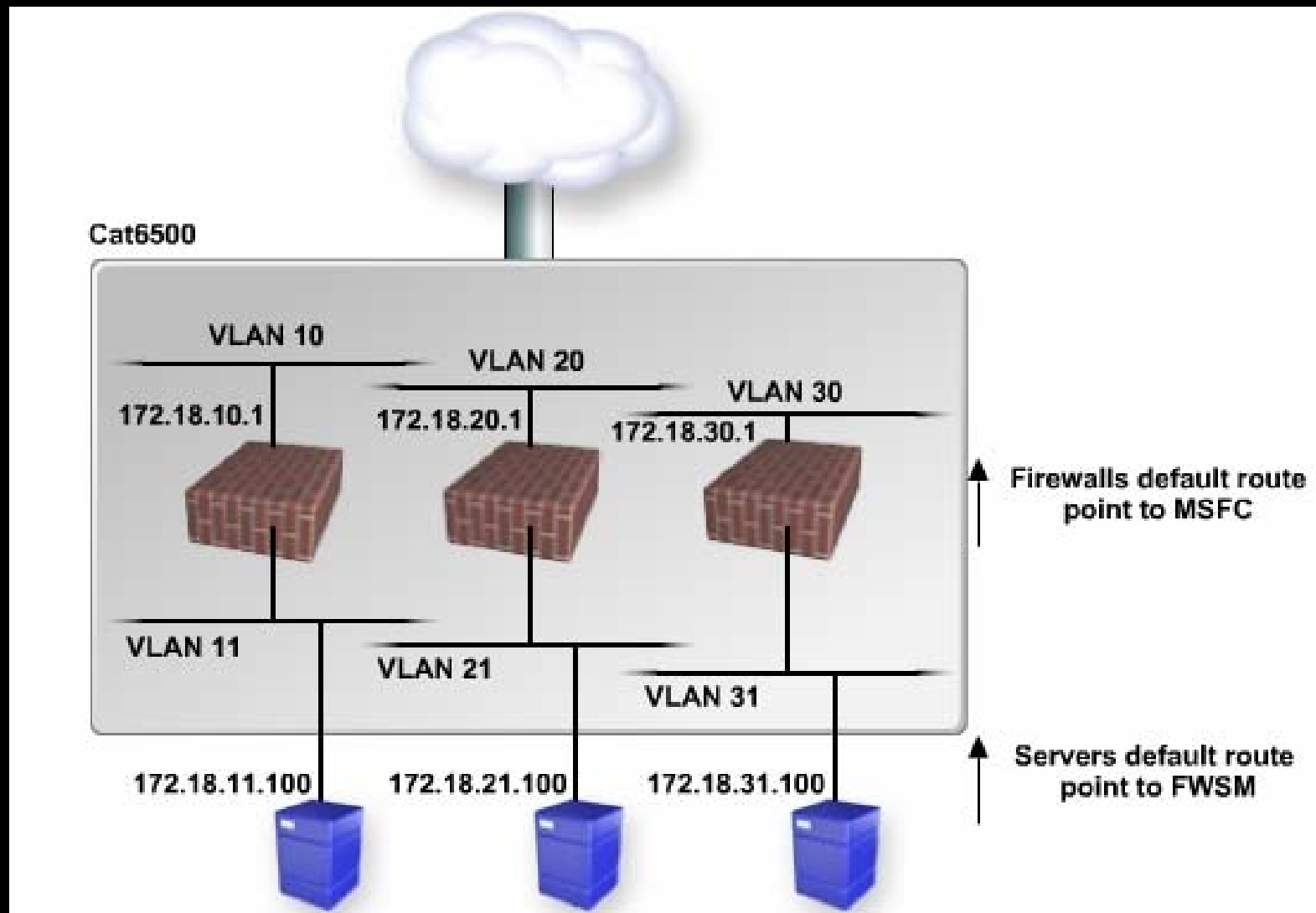
Scaling to 16 Gbps using 2 ACE Modules



- Using the Application Control Engine (ACE) service module to deliver a high-performance server load balancing solution
- Delivers upto 16 Gbps of performance
- Visibility into SSL encrypted traffic

FWSM Clustering

VLAN & PBR Techniques to scale to 20 Gbps



FWSM - Key Value Proposition

Silver Bullets	Cisco Advantages
Multiple 10-20 Gbps Solutions	FWSM Offers multiple 10 Gigs Solutions throughput by load-balancing with ACE, clustering using VLANs & PBRs
Low Power Consumption	Service Modules have significantly lowered their power consumption.
Industry's Highest Port Density	Ability to aggregate multiple data feeds into a single high performance firewall blade
High Availability	Catalyst Firewall Switching Module supports both inter chassis and intra chassis high availability.
Switch Integration	Redundant Power, DC Power, NEBS Compliant Chassis
L2/L3/Mixed Mode Deployment	Ability to work in both transparent and routed modes increasing deployment flexibility.
Multiple media types	Addressing wide area of uplink requirements including copper, fiber and 10 GE.

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6500 / 7600 Firewall Services Module

Overview and Pricing

Performance

- 5.5Gbps bandwidth
- 2.8 Million pps throughput
- 1 million concurrent connections
- 100K new connections/sec

Advanced Features

- 250 Virtual firewalls/contexts
- Transparent (L2) and Routed (L3) firewalls in the same service module
- Resource Manager: Assign Service Classes, Resource Limits
- 256 VLANs per context with maximum of 1000 VLANs
- LAN failover active/standby (both intra/inter chassis) and active/active
- Dynamic Routing: OSPF and RIP (2 OSPF virtual routers) in non-virtual FW mode
- Support multiple blades in the chassis, up to 4 for 20Gbps
- 80K access-lists enforced in hardware – maximum best-case figure

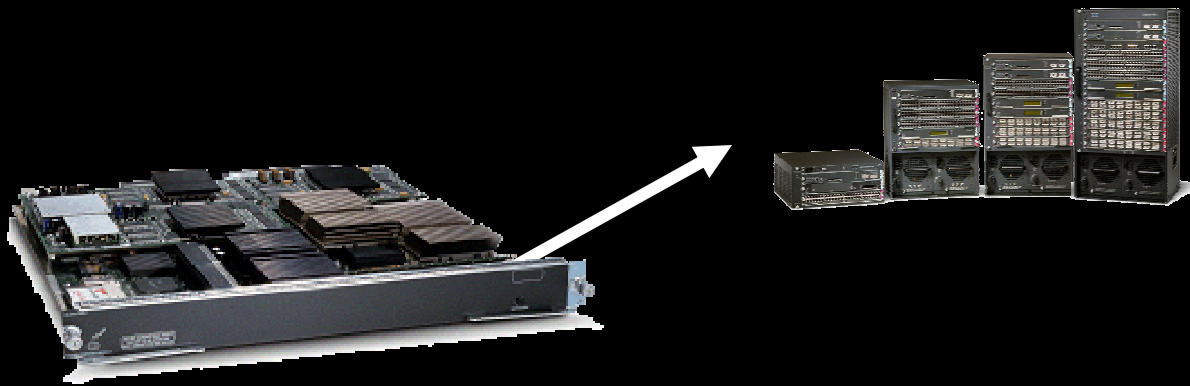


Firewall Services Module
Product ID: **WS-SVC-FWM-1=**
US List Price: **\$34,995**

Available : Now

Catalyst 6500 / Cisco 7600 Firewall Systems

Sup720-3B Bundles



WS-C6503-E-FWM-K9	\$59,995
WS-C6506-E-FWM-K9	\$64,995
WS-C6509-E-FWM-K9	\$69,995
WS-C6513-FWM-K9	\$74,995

Available : Now

Value Proposition

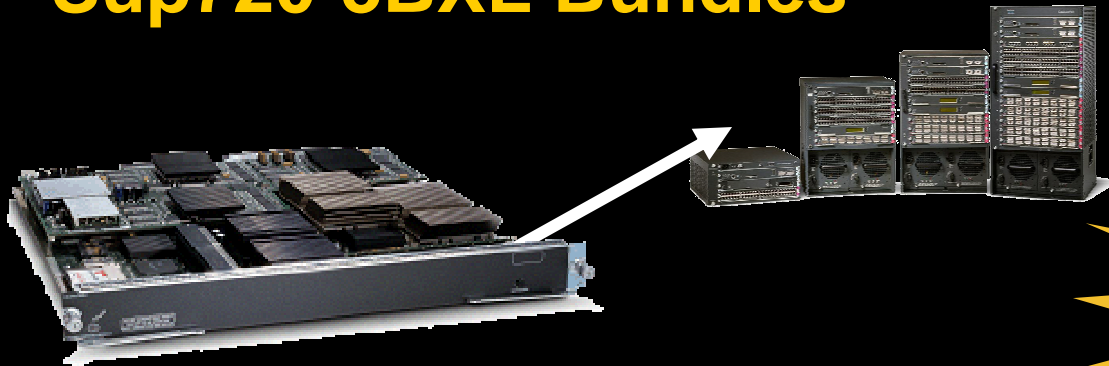
- Increased Advanced Technology revenue and Partner VIP rebate
- Ease of ordering / configuration
- Upgraded technology - Enhanced chassis and Sup 720-3B
- Additional discount - ensure competitiveness

Chassis and Supervisor

- Catalyst 6500 E-series and Fan Trays
- Supervisor 720 with PFC3B
- Firewall Module and IOS 12.2(18)SXF or 12.2(18)SF2
- Power Supply not included

NEW Catalyst 6500 / Cisco 7600 Firewall Systems

Sup720-3BXL Bundles



WS-6506-EXL-FWM-K9	\$80,990
WS-6509-EXL-FWM-K9	\$84,990
WS-C6513-XL-FWM-K9	\$90,990

Available : Now

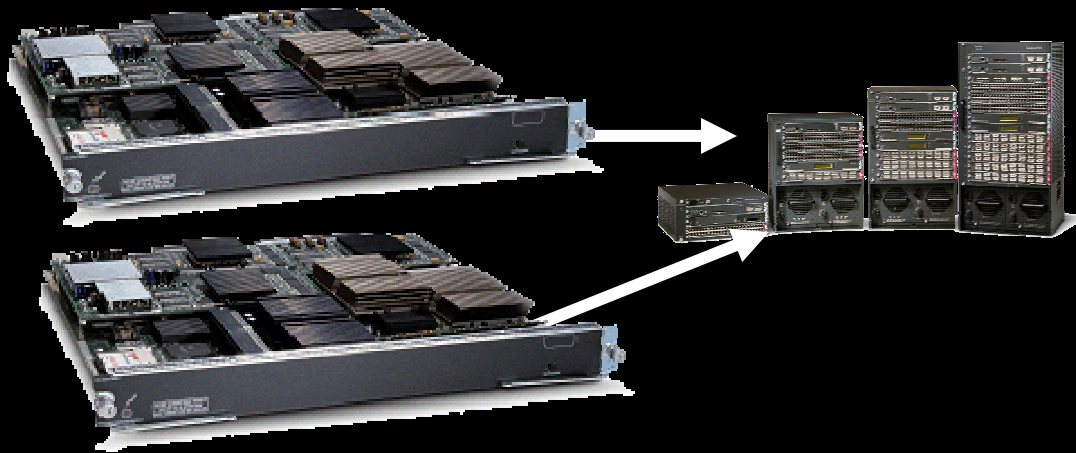
Value Proposition

- Increased Advanced Technology revenue and Partner VIP rebate
- Ease of ordering / configuration
- Upgraded technology - Enhanced chassis and Sup 720-3BXL
- Additional discount - ensure competitiveness

Chassis and Supervisor

- Catalyst 6500 E-series and Fan Trays
- Supervisor 720 with PFC3BXL
- Firewall Module and IOS 12.2(18)SXF or 12.2(18)SF2
- Power Supply not included

NEW Catalyst 6500 / Cisco 7600 Firewall Systems with TWO Firewall Services Modules **Sup720-3BXL Bundles**



WS-C6509-EXL-2FWM-K9	\$113,000
WS-C6513XL-2FWM-K9	\$118,000

Available : Now

Value Proposition

- Increased Advanced Technology revenue and Partner VIP rebate
- Ease of ordering / configuration
- Upgraded technology - Enhanced chassis and Sup 720-3BXL
- Additional discount - ensure competitiveness

Chassis and Supervisor

- Catalyst 6500 E-series and Fan Trays
- Supervisor 720 with PFC3BXL
- 2 Firewall Modules and IOS 12.2(18)SXF or 12.2(18)SF2
- Power Supply not included

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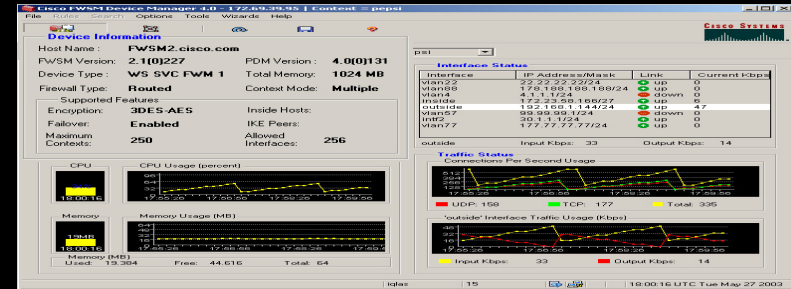
Management Overview



Single Module Management ASDM.F

ASDM.F (5.2 current)

- Either Java applet (<https://...>) or Java Webstart program that runs on your PC
- Understands all FWSM features
- Manages virtual firewalls
- Real-time logging
- Monitoring
- Can run in admin context mode or per-context basis → self-adapts accordingly



Configuration changes saved successfully.

12/17/03 8:26:09 AM PDT

The screenshot shows the Cisco PDM 4.0 for FWSM - 172.23.59.109 | System (Preview Release) interface. The 'Security Contexts' panel lists contexts like 'admin', 'admin', 'admin', 'admin', and 'peps'. An 'Edit Context' dialog box is open, showing the 'Security Context' 'admin'. The 'Interface Assignments' section shows a table of VLAN ID to Aliased Name mappings: vlan200 to vlan200, vlan100 to vlan100, and vlan55-vlan57 to vlan55-vlan57. The 'Resource Assignment' section shows 'Resource Class' set to 'default'. The 'Config URL' is 'disk:// /qlas/admin.cfg' and the 'Description' is 'This is the admin context'.

Free

Multi-device manager: Cisco Security Manager



Policy Administration

Centrally **provision policies** for firewalls, VPN's and IPS

Very **scalable**

Policy Inheritance feature enables consistent policies across enterprise

Powerful **device grouping** options

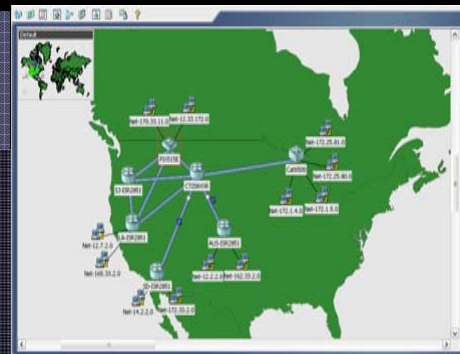
Superior Usability

Administer policies visually on tables or **topology map**

Jumpstart help: an extensive animated learning tool

Flexible **management views**

Client/Server architecture



Firewall Administration

Configure policies for ASA, PIX, FW SM and IOS

Single rule table for all platforms

Intelligent analysis of policies

Sophisticated rule table editing

Compresses the number of access rules required

VPN Administration

VPN Wizard setup Site-to-Site, hub-spoke and full mesh VPN's with a few mouse clicks

Configure remote-access VPN, DMVPN, and Easy VPN devices

IPS Administration

Automatic updates to the IPS Sensors

Support for **Outbreak Prevention Services**



CS-M

Device support

- **Products Supported**

- Pix: 6.3.x, 7.0.x, 7.1.x, ASA: 7.0.x, 7.1.x, FWSM 2.2, 2.3 and 3.1

- IOS Routers: 12.3.x and 12.4.x, with and without IOSFW feature

- IOS Routers need to be able to talk SSH / SSL (standard in 12.4)

- Catalyst 65xx series for router ACL's

- VPN Service Module, VPN SPA Module

- All IPS devices with versions 4.x and 5.x

- **Technologies Supported**

- FWSM: Near full feature coverage

- CS-M 3.1 coming out in March 07 supports FWSM 3.2

- Pix 7.0/7.1 and ASA 7.0/7.1: Near full feature coverage except SSL VPN

- IPS devices: Near full feature coverage

- IOS: Only security related features and features that have a direct relation with VPN such as: routing, Qos, dial backup etc

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FWSM Testing / Certifications



Common Criteria – 3.1(3.17) is EAL4 Certified!!

FWSM is SafeHarbor Certified - 3.1(4.X) is going through testing right now; next SH will test 3.2(2)

Internal validation of Performance Metric - Measuring current metrics and deltas with previous releases

Internal testing for FWSM Clustering up to 20 Gbps

FWSM testing in Voice environments in progress by VTG

Testing in progress for FWSM in bursty Multicast environments to mimic traffic streams for Global Financial trading sector

K8 (image without strong crypto) available Q4FY07 with 3.1.5

Testing FWSM with Telepresence deployments

Agenda

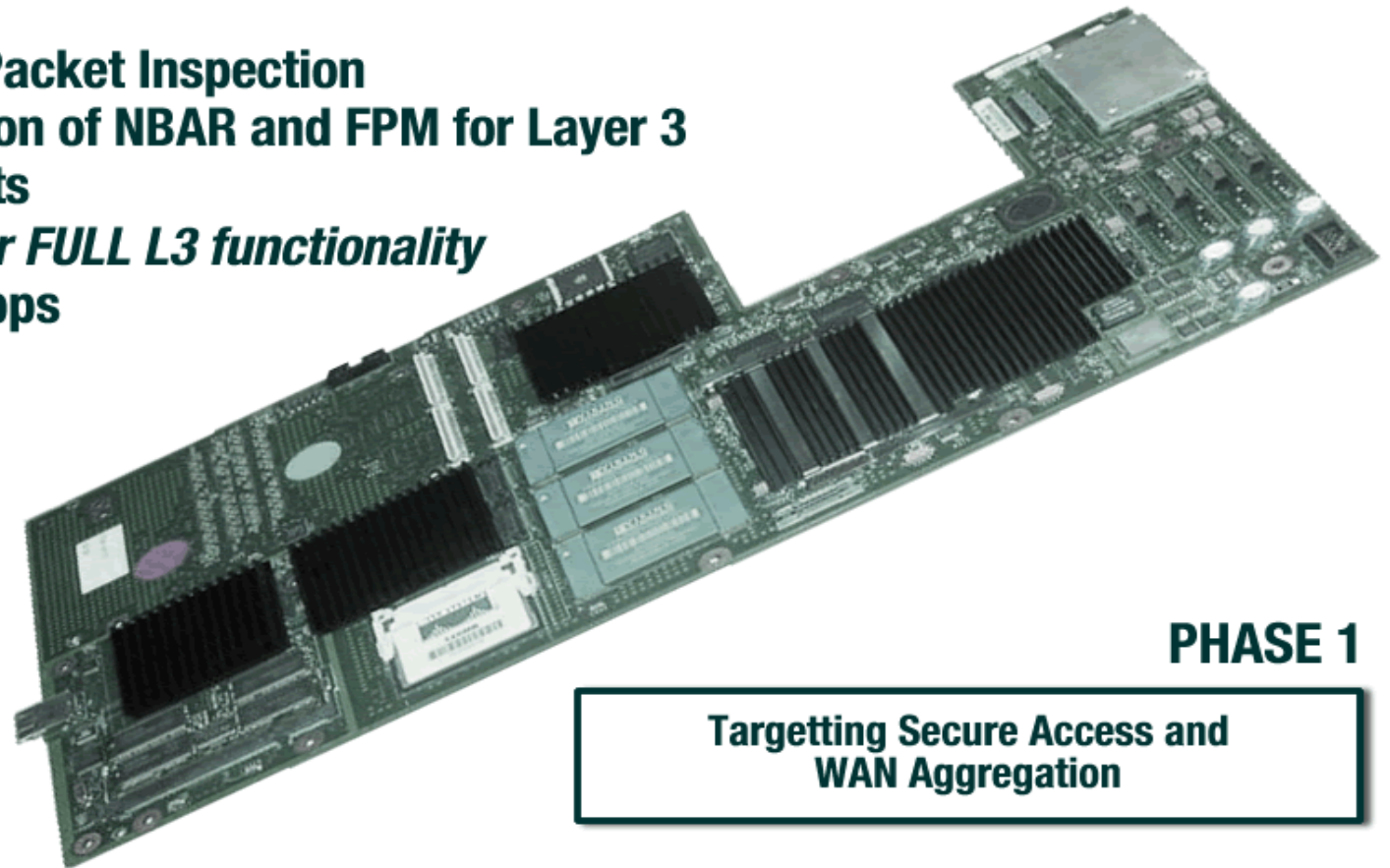
- Market Drivers
- Customer Case Study
- Cisco 6500/7600 FireWall Services Module (FWSM)
- Pricing and Bundles
- Firewall Services Module Key Features

FWSM 4.0 Roadmap Update

SUP32+PISA + FWSM Interoperability Programmable Intelligent Services Accelerator

Next Generation **CONVERGED** Services Solution

- Deep and Stateful Packet Inspection
- Provides acceleration of NBAR and FPM for Layer 3 IPv4 Unicast packets
- *Integrated MSFC for FULL L3 functionality*
- Performance @ 2Gbps



PHASE 1

**Targetting Secure Access and
WAN Aggregation**

Value Added Hardware Accelerated IP Services

FWSM 4.0 Roadmap Update

SUP32+PISA + FWSM Interoperability

NBAR provides...

FULL packet stateful inspection to identify traffic
Protocol Discovery using Application Signatures
Applies QoS Policies to Application flows

Why is HTTP slow?



HTTP Server

NBAR policy can mark HTTP data as high priority and rate limit both SKYPE and E-Donkey traffic ensuring priority for internal HTTP traffic

101101101011110
001011100101000
110100100111011
101110110100010

LINK UTILIZATION

E-DONKEY	60%
SKYPE	30%
HTTP	5%
E-MAIL	5%

References

- Firewall Services Module Web Site

<http://www.cisco.com/go/fwsm>

- Firewall Services Module (FWSM) Configuration Guide:

http://www.cisco.com/en/US/partner/products/hw/switches/ps708/products_module_configuration_guide_book09186a0080579a1e.html

- Cisco Conversion Tool

<http://www.cisco.com/web/partners/sell/technology/security/resources.html#technical>

- Information on PISA

<http://www.cisco.com/en/US/products/ps7209/index.html>

