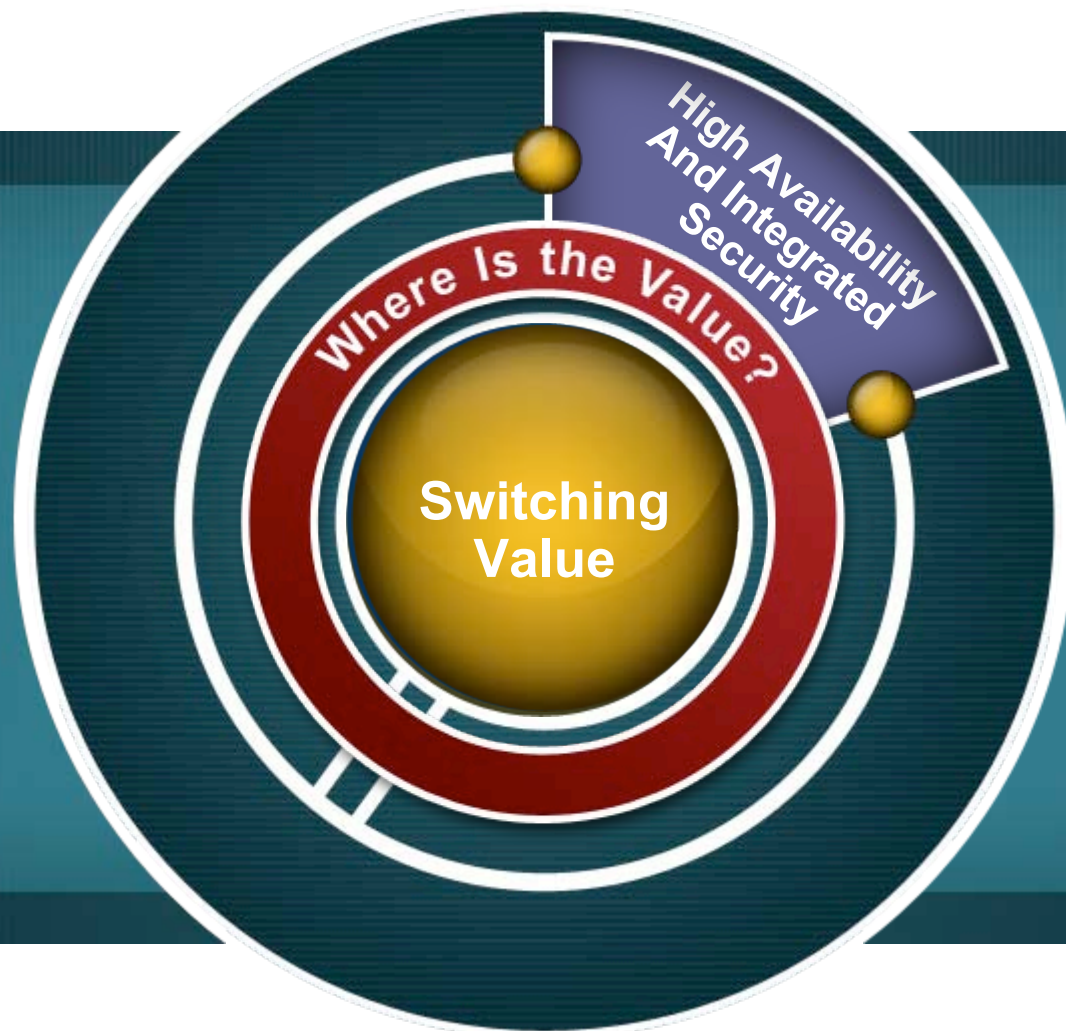




Catalyst 3750 & 3560 Series

Product Overview

Switching Value Today Far More Than Just Speeds and Feeds



Most Complete Line of Fixed Configuration LAN Products in the Industry



**Catalyst
4900**

**Space-Constrained
Server Racks**

- 10/100/1000 + 2 10GE wire speed switching
- Dual, hot swappable, internal power supplies
- Hot swappable fan tray



**Catalyst
3750**

Enterprise-Class

- High-speed stacking
- L3 dynamic routing
- PoE support
- Operates as a single unified system with integrated stack management



**Catalyst
3560**

Enterprise-Class

- PoE support
- L3 dynamic routing
- Enhanced security to prevent man-in-the-middle and virus attacks



**Catalyst
2960**

**Mid-Market &
Entry-Level
Enterprise**

- Granular control of L2+ L3/4 services
- Baseline enterprise security, availability, management, and QoS features



**Catalyst
Express
500**

**SMB
(< 250)**

- Smart, Simple, Secure
- GUI Managed

Cisco Catalyst 3750 Series

**Innovative Stacking
Sets New Standards
for Resiliency and
Management**



- **Enterprise-Class Services**
- **Wire-Speed Switching and Routing**
- **Cisco StackWise™ Technology**

**Fault-tolerant, Bi-directional 32 Gbps
stack interconnection**

Automated Configuration & Management

**Single network instance (IP, SNMP, CLI,
Spanning-Tree Protocol , VLAN)**

**Master/secondary architecture with master
failover**

**Cross-Stack EtherChannel®, cross-stack
QoS**

- **Next Generation in Desktop Switching**

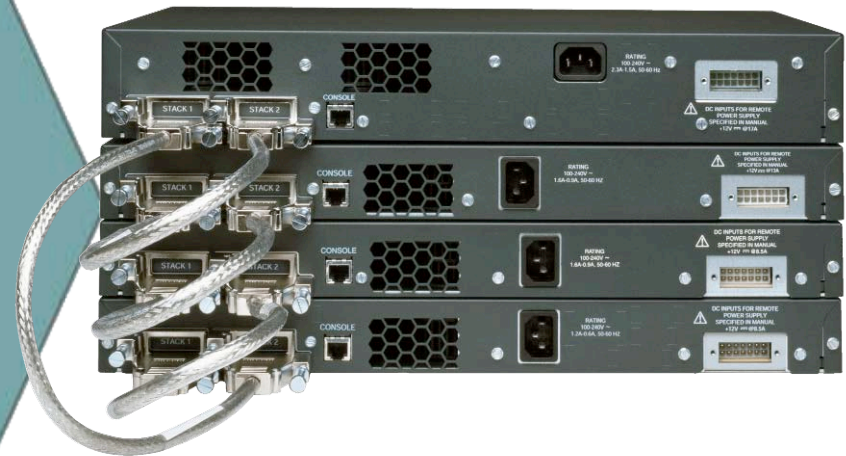
Optimized for Gigabit Ethernet

IPv6-capable in hardware

Cisco Catalyst 3750 Series Cisco Stackwise Technology

- **32 Gbps Stack Interconnect**
- **Stack up to 9 Units**
- **Separate Stacking Port**
- **1:N Master Redundancy**
- **Autoconfiguration and Cisco IOS® Version Check/Update**
- **Cross-Stack EtherChannel and QoS**
- **Line-rate Performance with QoS and ACLs for Gigabit Ethernet**
- **Hot swap of Gigabit Ethernet and Fast Ethernet Chassis in Same Stack**
- **Patented Cable Connector**

**Unified Stacking,
Behaving As a Single Unit**



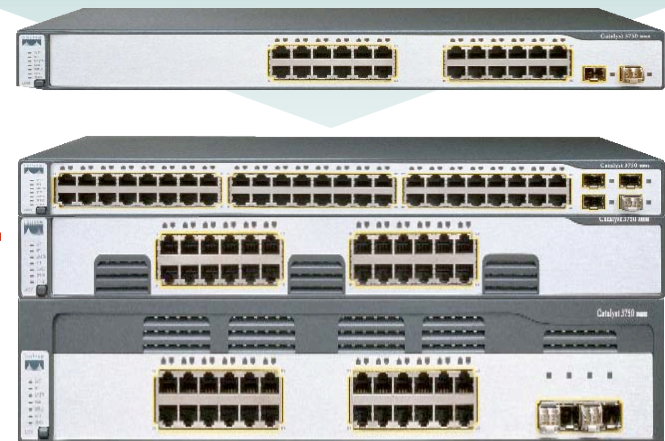
Cisco Eases Deployment of Remote Infrastructure with Automation

- **Automatic Cisco IOS version check of new units**
- **Automatic configuration of new units with global configuration**
- **Stack managed with single IP address**
- **Hot swap of switches—auto reconfiguration**

- 1) Check Cisco IOS version
- 2) Download new Cisco IOS version from master Flash
- 3) Download stack configuration file from master
- 4) Bring unit online



Single IP Address
10.0.1.25



Cisco Catalyst 3750 Series Model Overview

Catalyst 3750-24TS



- 24 10/100 + 2 SFP Ports

Catalyst 3750-48TS



- 48 10/100 + 4 SFP Ports

Catalyst 3750-24PS



- 24 10/100 + 2 SFP Ports
- 370W PoE

Catalyst 3750-48PS



- 48 10/100 + 4 SFP Ports
- 370W PoE

Catalyst 3750G-24TS-1U



- 24 10/100/1000 + 4 SFP

Catalyst 3750G-48TS



- 48 10/100/1000 + 4 SFP

Catalyst 3750G-24PS



- 24 10/100/1000 + 4 SFP
- 370W PoE

Catalyst 3750G-48PS



- 48 10/100/1000 + 4 SFP
- 370W PoE

Catalyst 3750-24TS



- 24 10/100/1000

Catalyst 3750-24PS



- 12 SFP (AC or DC)

Catalyst 3750G-24TS-1U



- 16 10/100/1000
- 1x 10GE XENPAK

Catalyst 3750-24FS



- 24 10/100/1000

Software

Three Software Licenses

IP Base (SMI)

- Enterprise-class intelligent services: advanced QoS, enhanced security, RIP, and static IP routing

IP Services (EMI)

- IP Base feature set plus: dynamic IP unicast routing, smart multicast routing, and PBR

Advanced IP Services

- Adds IPv6 capability (hardware supported)



Cisco Catalyst 3560 Series Switches Positioning

- **Enterprise-class, fixed configuration, multilayer switching line supports IEEE 802.3af or Cisco® prestandard Power over Ethernet**
- **Enables the deployment of network-wide intelligent services for converged applications**
 - Enhanced security
 - Advanced quality of service (QoS)
 - High Availability
- **Intelligent power management features provide granular control**
- **Express Setup and Cisco Network Assistant software supports easy deployment and configuration**
- **Cisco ASICs provide superior hardware and software integration, and innovative features**



Cisco Catalyst 3560 Series Model Overview

Catalyst 3560-24TS



- 24 10/100 + 2 SFP Ports

Catalyst 3560-48TS



- 48 10/100 + 4 SFP Ports

Catalyst 3560-24PS



- 24 10/100 + 2 SFP Ports
- 370W PoE

Catalyst 3560-48PS



- 48 10/100 + 4 SFP Ports
- 370W PoE

Catalyst 3560G-24TS



- 24 10/100/1000 + 4 SFP

Catalyst 3560G-48TS



- 48 10/100/1000 + 4 SFP

Catalyst 3560G-24PS



- 24 10/100/1000 + 4 SFP
- 370W PoE

Catalyst 3560G-48PS



- 48 10/100/1000 + 4 SFP
- 370W PoE

Three Software Licenses

IP Base Software License

- Enterprise-class intelligent services: advanced QoS, enhanced security, RIP, and static IP routing

IP Services Software License

- IP Base feature set plus: dynamic IP unicast routing, smart multicast routing, and PBR

Advanced IP Services License

- Adds IPv6 capability

Power Over Ethernet

Why PoE

- Enables the network for IP Telephony and Wireless access
- Eliminate the need for separate electrical wiring
- Protect your investment and avoid costly upgrades

Cisco Catalyst Advantages

- Standards-based IEEE 802.3af guarantees device interoperability
- Intelligent power management with granular control
- Cisco's Redundant Power Supply (RPS675) maximizes reliability
- Both Cisco pre-standard POE and 802.3af are fully supported
- Wide selection of powered devices

IP Phones

Wireless Access Points

Surveillance cameras

Access Card Readers



Gigabit Ethernet

- **Proven Technology**

Over 80% of desktops and notebooks are now shipped with GE¹

Increased PC bus speeds and server TCP offload engines (TOE) allow for full bandwidth utilization

- **Easy to Deploy**

Works over existing Cat-5 cabling

Cisco's Time Domain Reflectometry (TDR) on GE witches verifies existing cabling

- **Prepares the network for future application demands**

Scales beyond 100 Mbps as bandwidth requirements increase

Protects your investment and avoids a costly upgrade

1. <http://www.gigabitsolution.com>

Gigabit Ethernet (cont.)

- **Storage**

 - Takes advantage of simple and affordable Network Attached Storage (NAS)**

 - Complies w/regulatory record keeping requirements (SOX, SEC, etc.)**

- **Clustering**

 - Enables high performance GRID and distributed computing**

- **Software Applications**

 - Data Backup, Database Access, Microsoft Exchange, File Sharing, Collaborative Development, Remote Operating System Updates, Medical Imaging**

 - Next generation operating systems, such as Microsoft Vista's remote imaging, data synchronization, and computer to computer search applications**

The Routed Access (Layer 3) Advantage

- **Routed Access (RA) utilizes routing in the wiring closet**
- **Benefits**
 - **Simplified Network Implementation** with only 1 control protocol.
 - **Worst Case 200 ms node/link failover/recovery**
 - **Easier Troubleshooting**
- **Works with OSPF, EIGRP and EIGRP-stub (in IP Base)**
- **RA was thoroughly tested in a large real-world network**

IPv6 Services

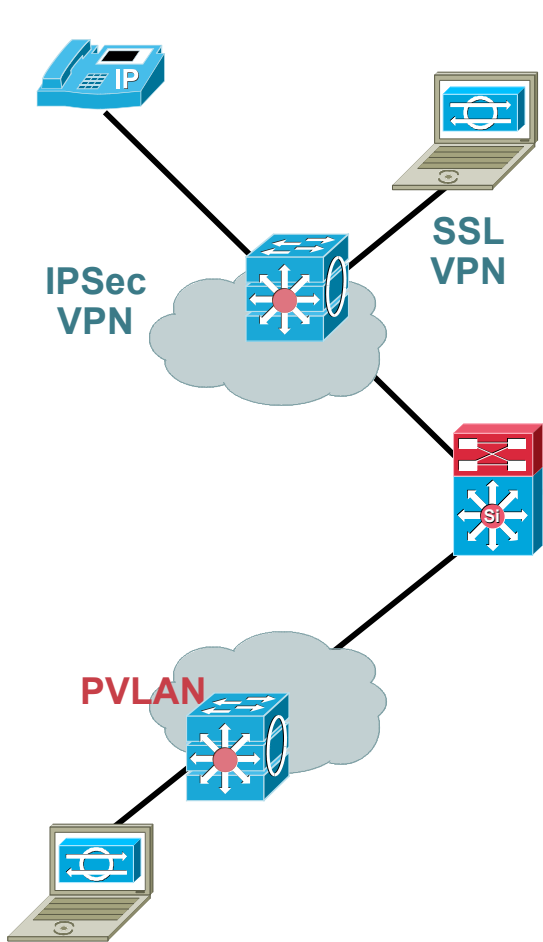
- IPv6 services are supported in hardware for maximum performance
- IPv6 expands the network address space, improves ease of use, mobility, security
- The Catalyst 3750 and 3560 support IPv6 routing, management, multicast, and ACLs; **host management available in IP Base license**

IP Service	IPv4 Solution	IPv6 Solution
Addressing Range	32-bit, NAT	128-bit, Multiple Scopes
Autoconfiguration	DHCP	Serverless, Auto-Config
Mobility	Mobile IP	Mobile IP, but no foreign agent required
Multicast	Many protocols use broadcast traffic	More protocols use efficient multicast traffic
Security	IPSec Support Optional	IPSec Support Mandatory

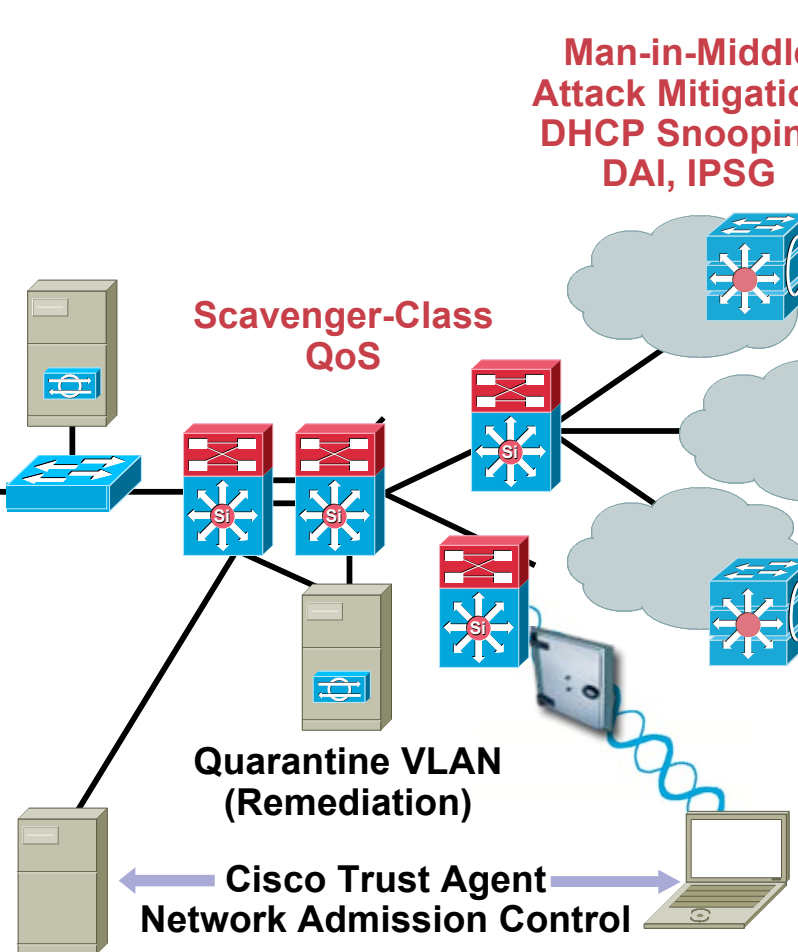


Cisco Catalyst Switching Integrated Security

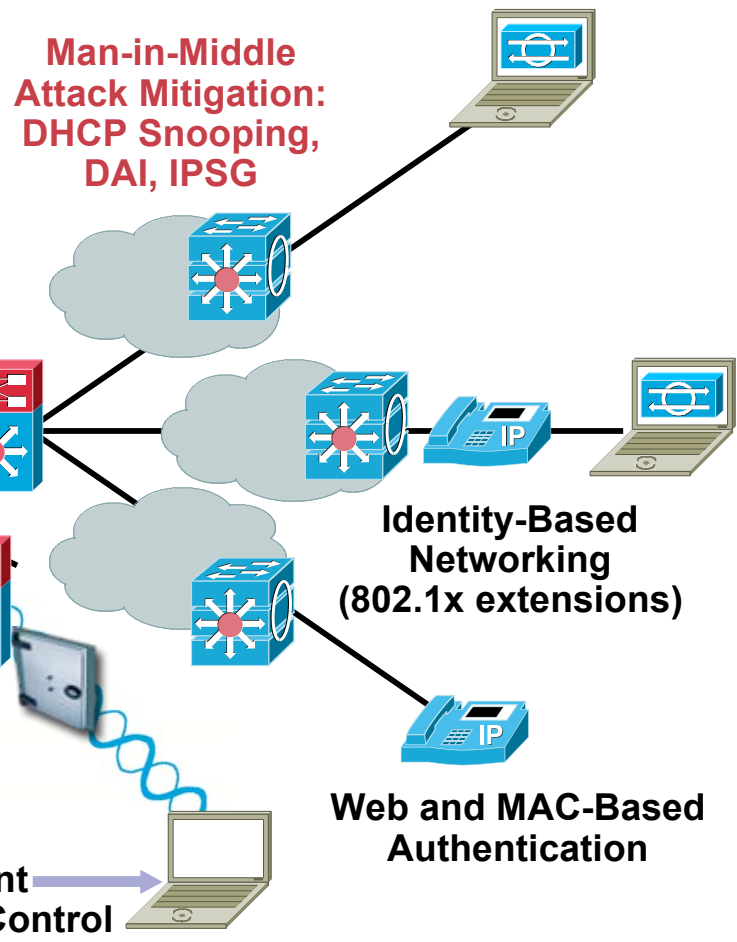
Secure Connectivity



Threat Defense



Trust and Identity



The Need For Admission Control

- **Viruses, worms, spyware, etc. still #1 cause of financial loss²**
 - Downtime, recovery, lost productivity, credibility, legal implications**
- **Users routinely authenticated, but...**
 - Endpoint devices (laptops, PCs, PDAs) are **not** checked for security policy compliance**
 - Unprotected endpoints spread infection**
 - Required security software not installed, disabled, or out of date**
 - Checking for compliance is difficult and expensive**



“Endpoint systems are vulnerable and represent the most likely point of infection from which a virus or worm can spread rapidly and cause serious disruption and economic damage.”

Burton Group

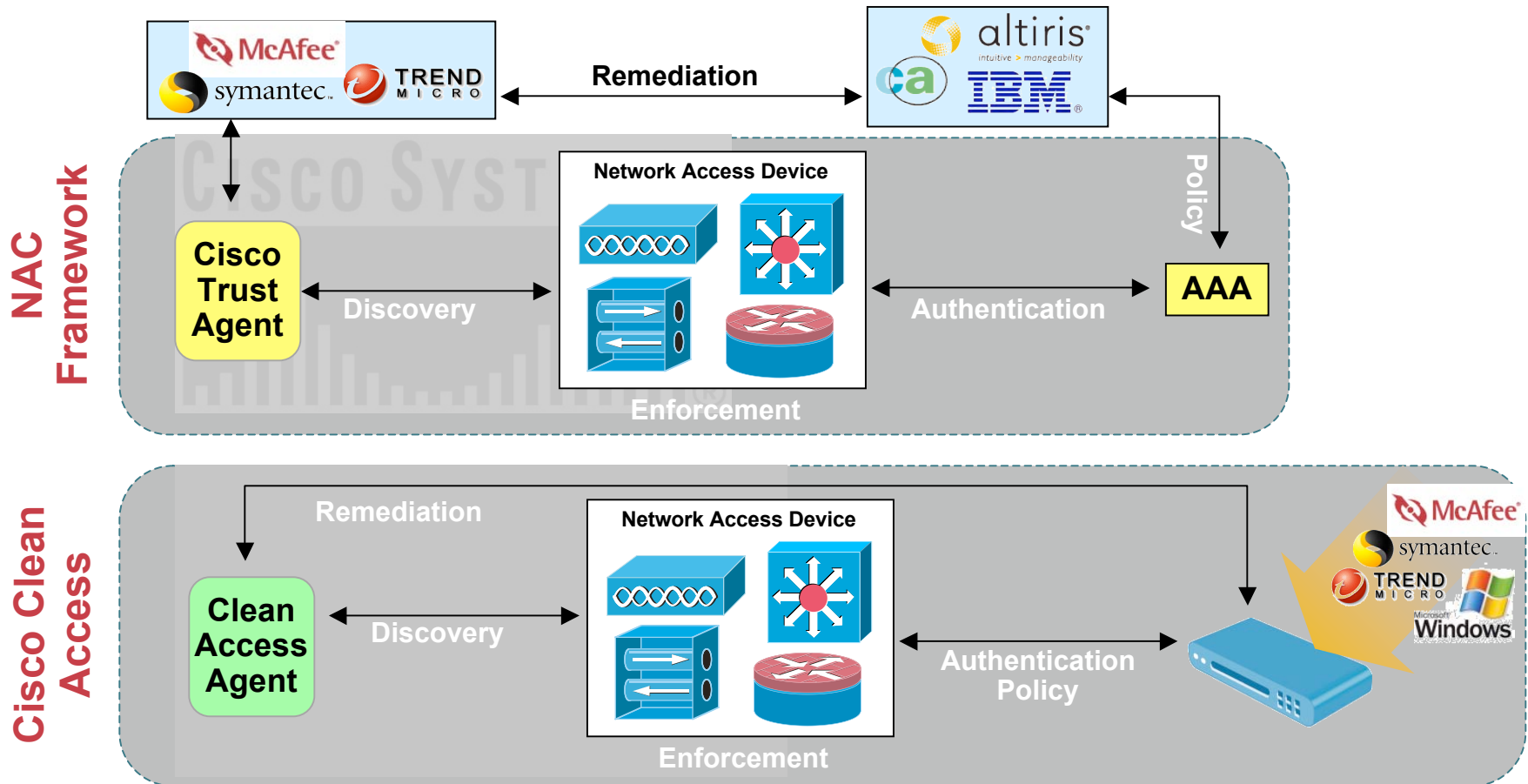


Network Admission Control Options

Two Paths: Both Leverage Cisco Network

NAC Framework: Vendor products provide assess and remediate across an intelligent network

Cisco Clean Access: Turnkey NAC appliance for authentication, assessment, and remediation



NAC Framework Deployment Options

- **Two NAC Framework Deployment Options:**

- LAN Port 802.1X Basic (LP1X)—Available on Cat 3K and 2K**

- Carries credentials inside EAPoL along with user authentication**

- Triggered by normal 802.1X exchange**

- Enforcement policy is RADIUS VLAN Assignment**

- Requires an enhanced supplicant with CTA built-in**

- LAN Port IP (LPIP)—Available on Cat 3K Only**

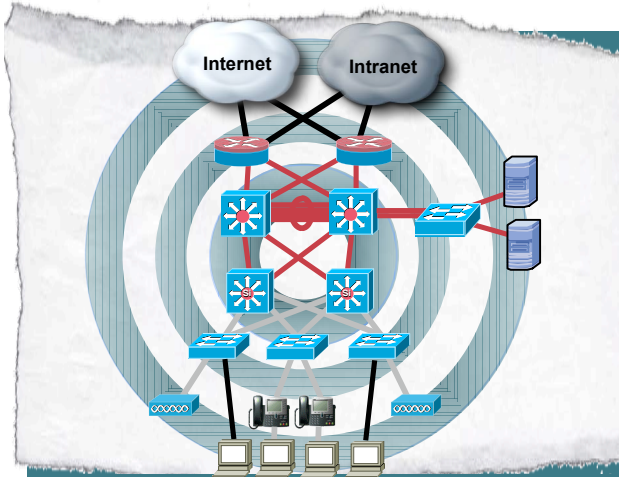
- Carries credentials inside EAPoUDP, completely independent of any user authentication**

- Triggered by ARP or DHCP traffic from the host**

- Enforcement policy is RADIUS IP Downloadable ACLs**

- Can be used with or without CTA (*clientless host*)**

The Business Relevance of Cisco Smartports



Cisco Smartports allows for simple and accurate deployment of high value network-optimizing intelligent features

Benefits

- Simplified feature deployment
- Less chance of errors
- Deployment consistency across the network
- Greater value from the intelligent network through increased feature usage

What It Does

- Preconfigured macros enabling fast and easy configuration of advanced Catalyst intelligent capabilities
- Quickly enables QoS, Security and availability features with a single command
- Granular flexibility on a per-port basis
- Ability to create customized macros

Smartports Feature

Maximizing Network Value

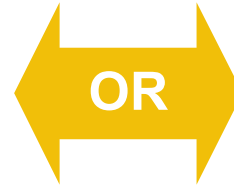
This....

Global
Commands

```
failureserrdisable recovery cause link-flap
errdisable recovery cause udd
errdisable recovery interval 60
vtp domain [smartports]
vtp mode transparent
udd aggressive
spanning-tree mode rapid-pvst
spanning-tree loopguard default
spanning-tree extend system-id
```

Interface
Commands

```
default interface range FastEthernet[1]/0/[1 - 48]
interface range FastEthernet[1]/0/[1 - 48]
switchport access vlan [data]
switchport mode access
switchport voice vlan [voice]
switchport port-security
switchport port-security maximum 3
switchport port-security violation restrict
switchport port-security aging time 2
switchport port-security aging type inactivity
auto qos voip cisco-phone
spanning-tree portfast
spanning-tree bpdguard enable
```



This.

```
Switch(config)# <template type>
```

Smartports allows for **simple** and **accurate** deployment of high value network-**optimizing** features

- Security
- Availability
- Manageability
- Performance

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

Why Catalyst 3750 and 3560?

Enterprise-Class Switches

Stackwise (Cat 3750)

- Stack operates a single unified system with integrated stack management
- Automatic SW version checking
- Auto configuration
- 1:N Master failover (sub second L2, sub 3-seconds L3)
- Cross stack EtherChannel®
- Hot add/delete: plug-and-play

L3 Routing

- Advanced routing protocols like OSPF, EIGRP, & EIGRP-stub
- Multicast routing: DVMRP tunneling and PIM
- Equal cost routing for load balancing
- Multi VRF-CE
- IPv6 forwarding and management

PoE

- 24 & 48 port available in FE or GE models

Higher Density GE

- 24 10/100/1000 + 4 SFP
- 48 10/100/1000 + 4 SFP

Enhanced Security

- NAC LAN port IP
- Dynamic ARP Inspection
- IP Source Guard
- PVLAN
- ACLs

Scalability

- 2000 ACEs for Security, QoS, and multicast filtering
- 1000 VLANs
- 2K multicast groups as

Summary

- **The Catalyst 3750 and 3560 Series deliver value via industry-leading innovative features**
- **Stackwise turns the Catalyst 3750 into the industry's most robust stackable solution**
- **PoE with Intelligent Power Management and Gigabit Ethernet prepare the network for advanced technologies and extend the deployment life**
- **Catalyst Integrated Security prevents viruses and worms from spreading and thwarts man-in-middle attacks**
- **Routed access simplifies deployments with increased scalability and manageability**
- **Smartports enables easy and accurate deployment of advanced security and QoS features**



CISCO SYSTEMS

