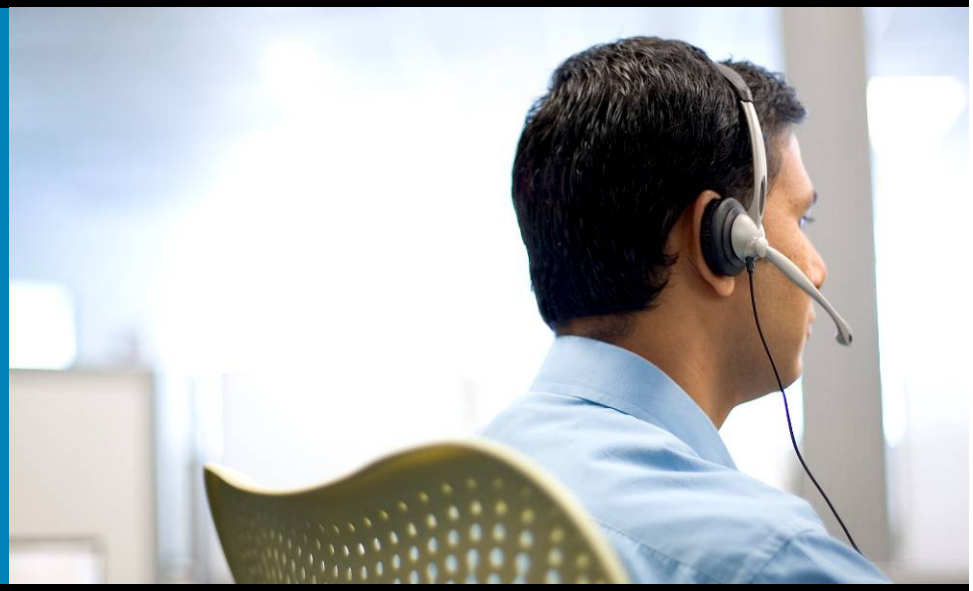
Technical Update

Januar 2007

Adaptive Security Appliances
NAC Appliance

Niels Mogensen

Cisco ASA 5500 Series Adaptive Security Appliances



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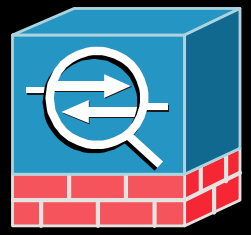
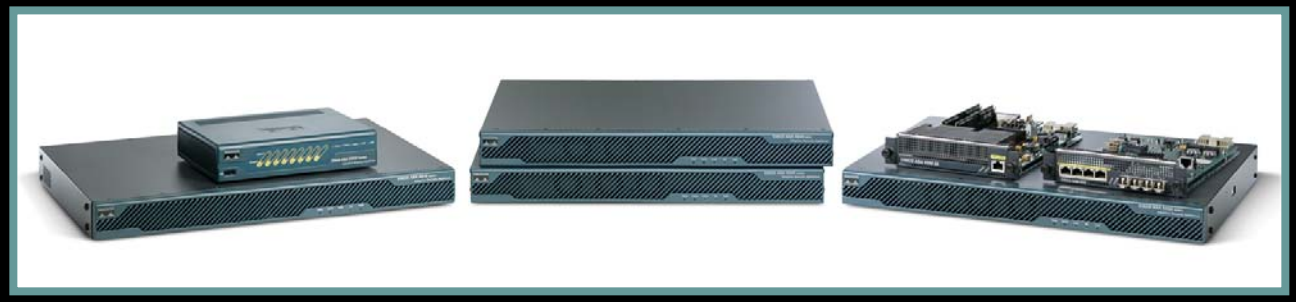


Introducing Cisco Adaptive Security Appliances
Delivering Adaptive Threat Defense and VPN Solutions

Converged Adaptive Threat Defense and Flexible VPN Services
Application Security, Worm/Virus Mitigation,
Malware Protection, Threat-Protected VPN and Network Awareness

Minimize Deployment and Operations Costs
Platform Standardization, Unified Management

Technology Extensibility to Address New Threats
Purpose-Built Adaptive Identification and Mitigation Architecture Enables
Unprecedented Extensibility and Policy Control

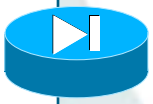


The Cisco ASA 5500 Series

Cisco ASA 5500 Series
Convergence of Robust, Market-Proven Technologies

Market-Proven Technologies

Firewall Technology
Cisco PIX

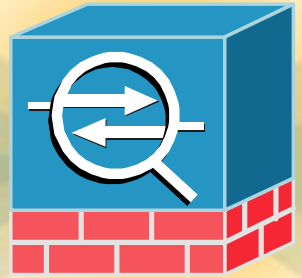


IPS Technology
Cisco IPS

Content Security
Trend Micro

VPN Technology
Cisco VPN 3000

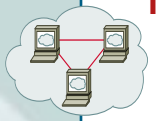
Network Intelligence
Cisco Network Services



Adaptive Threat Defense, Secure Connectivity

App Inspection, Use Enforcement, Web Control
Application Security

Malware/Content Defense, Anomaly Detection
IPS & Anti-X Defenses



Traffic/Admission Control, Proactive Response
Network Containment & Control

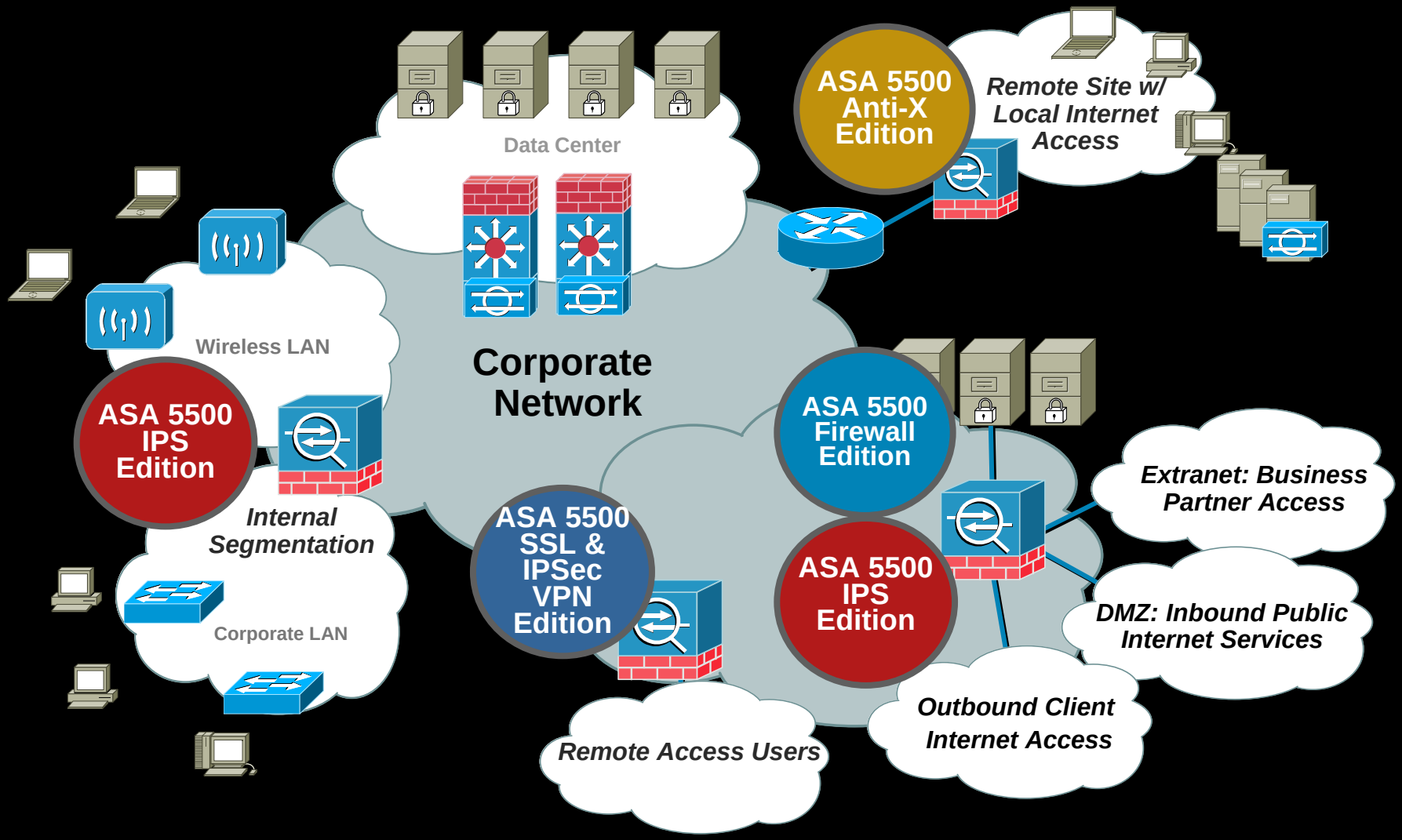
Secure Connectivity
IPSec & SSL VPN

Cisco ASA 5500 Series Enterprise Editions

A Family of Tailored Packages for Location Specific Needs

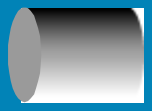
- **Enables standardization** on the Cisco ASA 5500 Series to reduce costs in management, training, and sparing
- **Superior protection** by providing the right services for the right location
- **Simplifies design and deployment** by providing pre-packaged location-specific security solutions

Cisco ASA 5500 Series Solutions
Business Solutions and the Corporate Network



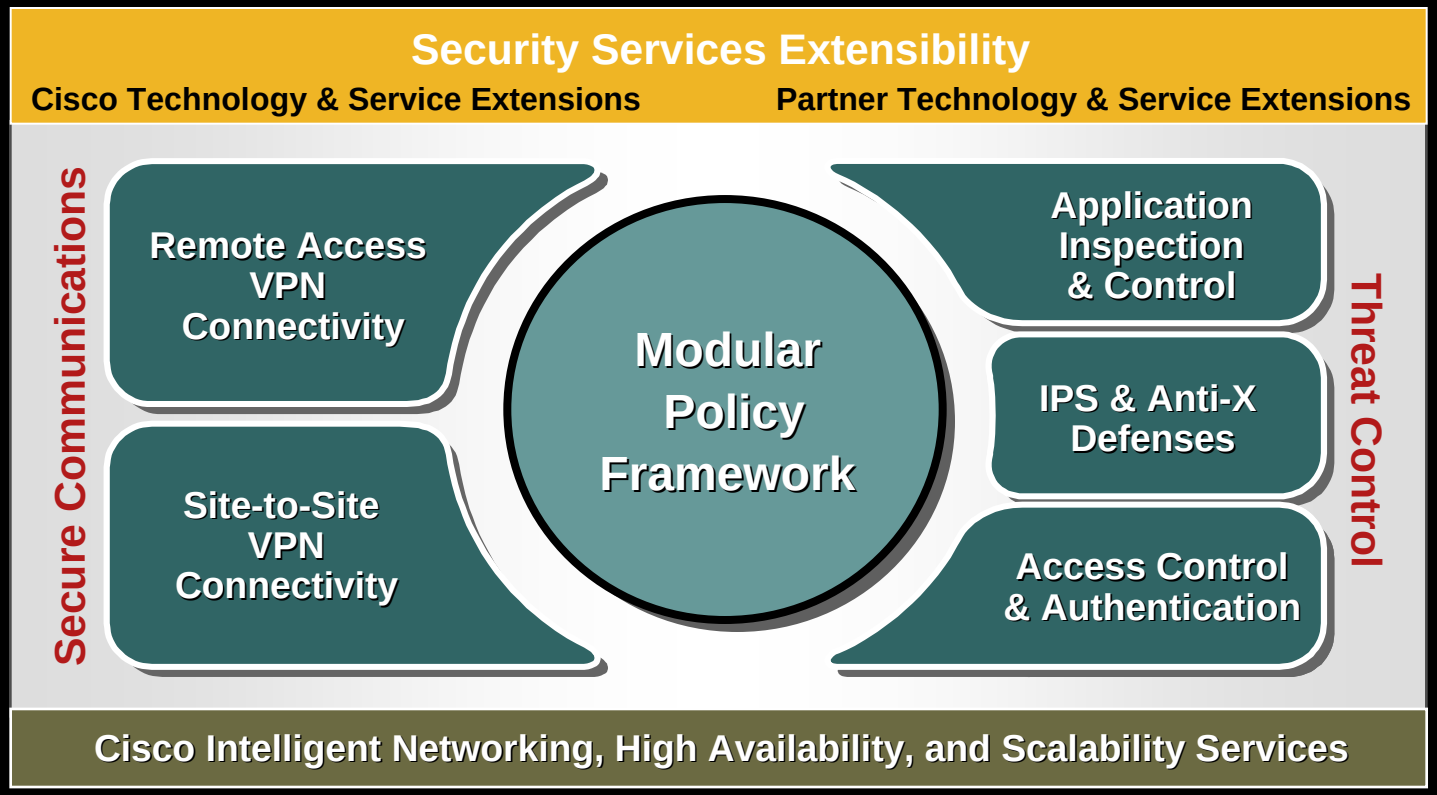
Cisco ASA 5500 Series: Breadth and Depth

Industry First Scalable, Multi-Function, Feature Rich Appliance

Firewall with Application Layer Security 	• Multi-layer packet and traffic analysis • Advanced application and protocol inspection services • Network application controls • Advanced VoIP/multimedia security
IPS and Anti-X Defenses 	• Real-time protection from application and OS level attacks • Network-based worm and virus mitigation • Spyware, adware, malware detection and control • On-box event correlation and proactive response
Access Control and Authentication 	• Flexible user and network based access control services • Stateful packet inspection • Integration with popular authentication sources including Microsoft Active Directory, LDAP, Kerberos, and RSA SecurID
SSL and IPSec Connectivity 	• Threat protected SSL and IPSec VPN services • Zero-touch, automatically updateable IPSec remote access • Flexible clientless and full tunneling client SSL VPN services • QoS/routing-enabled site-to-site VPN
Cisco Intelligent Networking Services 	• Low latency • Diverse topologies • Multicast support • Services virtualization • Network segmentation & partitioning • Routing, resiliency, load-balancing

Cisco ASA 5500 Series Modular Policy Framework

Extensible Design Enables Flexible, Flow-Based Services Policies

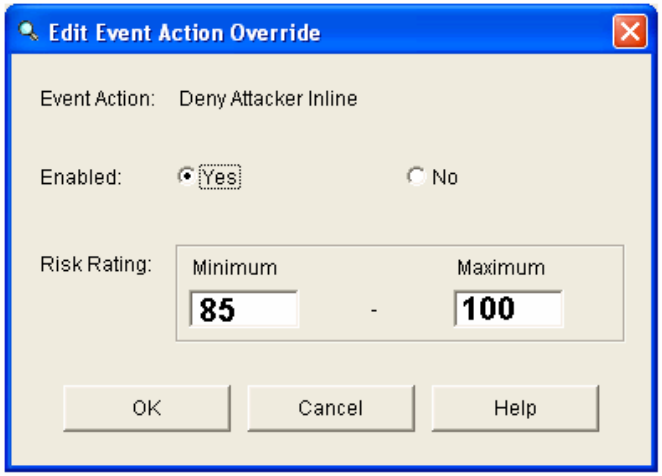


The Cisco ASA 5500 Series Modular Policy Framework allows business to adapt and extend the security services profile via Cisco-developed and partner-provide innovations delivering high current services performance and services extensibility

Going IPS

Event Severity	How urgent is the threat?
+	
Signature Fidelity	How prone to false positive?
+	
Attack Relevancy **	Is attack relevant to host being attacked?
+	
Asset Value of Target	How critical is this destination host?
RISK RATING	Drives Mitigation Policy

Decision support balances attack urgency with business risk

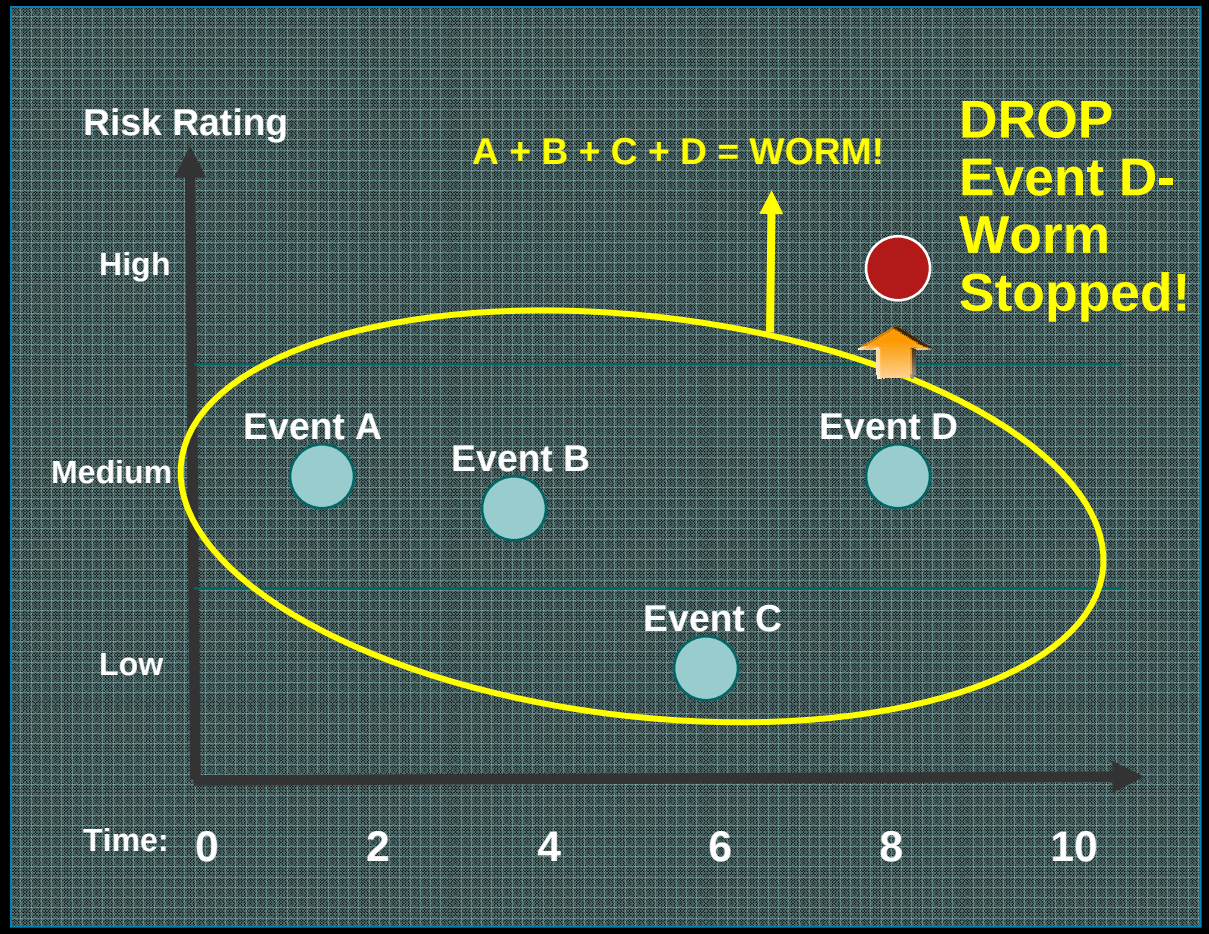


Customizable Risk Rating Thresholds :

0 < RR < 35	Alarm
35 < RR < 85	Alarm & Log Packets
85 < RR < 100	Drop Packet

Accurate Prevention Technologies
Meta Event Generator Delivers Advanced Correlation

On-box correlation allows adaptation to new threats in real-time without user intervention



- Links lower risk events into a high risk meta-event, triggering prevention actions
- Models attack Behavior by Correlating:
  - Event type
  - Time span

Content Security in the Cisco ASA 5500 Series

All New!

Introducing the
Content Security and Control
Security Services Modules

- Comprehensive Anti-X services on a single module
- Incorporates security technology from Trend Micro's award-winning InterScan VirusWall suite
- Seamless management and monitoring through Cisco ASDM, multi-device mgmt with Trend TMCM
- Enables a single-box solution for all the needs of the SMB

Cisco ASA 5500 Series Anti-X Edition
Delivering Comprehensive Protection and Control

THREAT TYPES

- Unauthorized Access
- Intrusions & Attacks
- Insecure Comms

NEW Anti-X Service Extensions

New!

- Viruses
- Spyware
- Malware
- Phishing
- Spam
- Inappropriate URLs
- Identity Theft
- Offensive Content

Cisco ASA 5500 with CSC-SSM

Granular Policy Controls

Comprehensive Malware Protection

Advanced Content Filtering

Integrated Message Security

Easy to Use

PROTECTION

- Resource & Information Access Protection
- Hacker Protection
- Client Protection
- DDoS Protection
- Protected Email Communication
- Protected Web Browsing
- Protected File Exchange
- Unwanted Visitor Control
- Audit & Regulatory Assistance
- Non-work Related Web Sites
- Identity Protection

Content Security and Control SSM
Product Details

Cisco ASA 5500 Series Content Security and Control Module (CSC SSM)

Platforms / Subscription Levels

CSC SSM-10

- 50 User
- 100 User
- 250 User
- 500 User

CSC SSM-20

- 500 User
- 750 User
- 1,000 User

Feature Sets

- Base Services:
  File-based Anti-Virus and malware filtering; Anti-Spyware
- Plus License:
  Anti-Spam, Content Filtering, Anti-Phishing, URL Filtering & Blocking

Note: License Packages subject to change prior to FCS

Application Inspection & Control Engines
Provide Control over Application Usage & Network Access

- Application and protocol-aware inspection services provide strong application-layer security and detailed policy controls
- Perform conformance checking, state tracking, security checks, NAT/PAT, dynamic port allocation, and offer a wide range of controls for businesses to set application-layer policies

Multimedia / Voice over IP

SIP
SCCP (Skinny)
H.323 v1-4
GTP (3G Mobile Wireless)
MGCP
RTP / RTCP / RTSP
TAPI / JTAPI

Specific Applications

Microsoft Windows Messenger
Microsoft NetMeeting
Real Player
Cisco IP Phones
Cisco Softphones

Core Internet Protocols

HTTP
FTP
TFTP
SMTP / ESMTP
DNS / EDNS
ICMP
TCP
UDP

Database / OS Services

ILS / LDAP
Oracle / SQL*Net (V1/V2)
Microsoft RPC / DCE RPC
Microsoft Networking
NFS
RSH
SunRPC / NIS+
X Windows (XDMCP)

Security Services

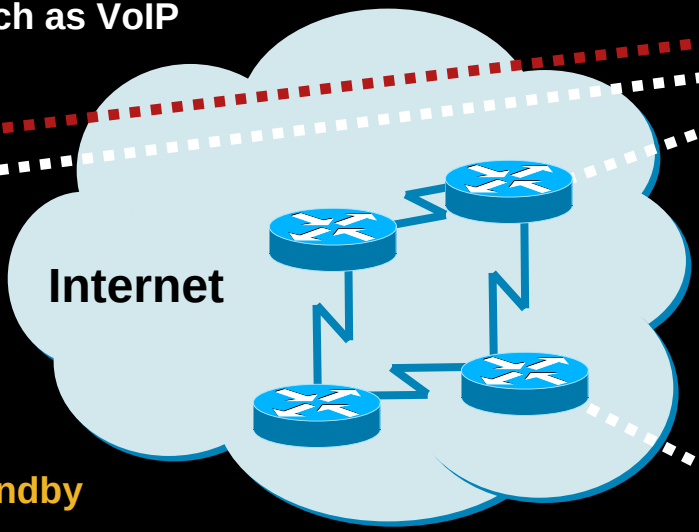
IKE
IPSec
PPTP

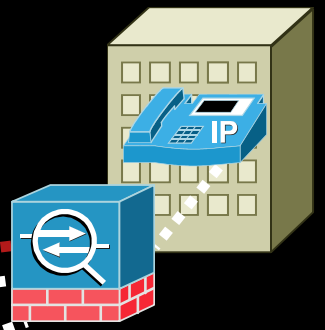
Cisco ASA 5500 Series VPN Solutions
Enterprise-Class Site-to-Site VPN Capabilities

Network-aware site-to-site VPNs

QoS-Enabled VPN

Support for low latency queuing for latency-sensitive traffic such as VoIP

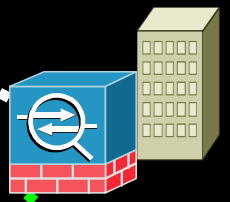




OSPF Routing Over VPN

IPSec Stateful Failover

- Provides high performance Active-Standby failover with automatic key and SA information synchronization



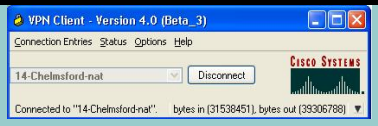
Robust X.509 Certificate Support

- Manual enrollment support (PKCS 7/10)
- n-tiered X.509 certificate chaining support
- 4096-bit RSA keysize support

Remote Access VPN Technology Comparison
IPSec and SSL VPNs

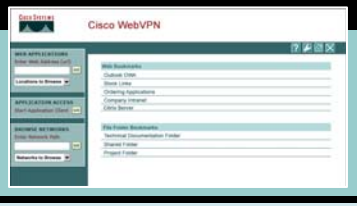
There are 2 primary remote access VPN technologies: IPSec and SSL. SSL is the newer technology of choice, typically has lower support costs and provides better access to business partners and contractors than IPSec. SSL is growing faster than IPSec.

IPSec VPN



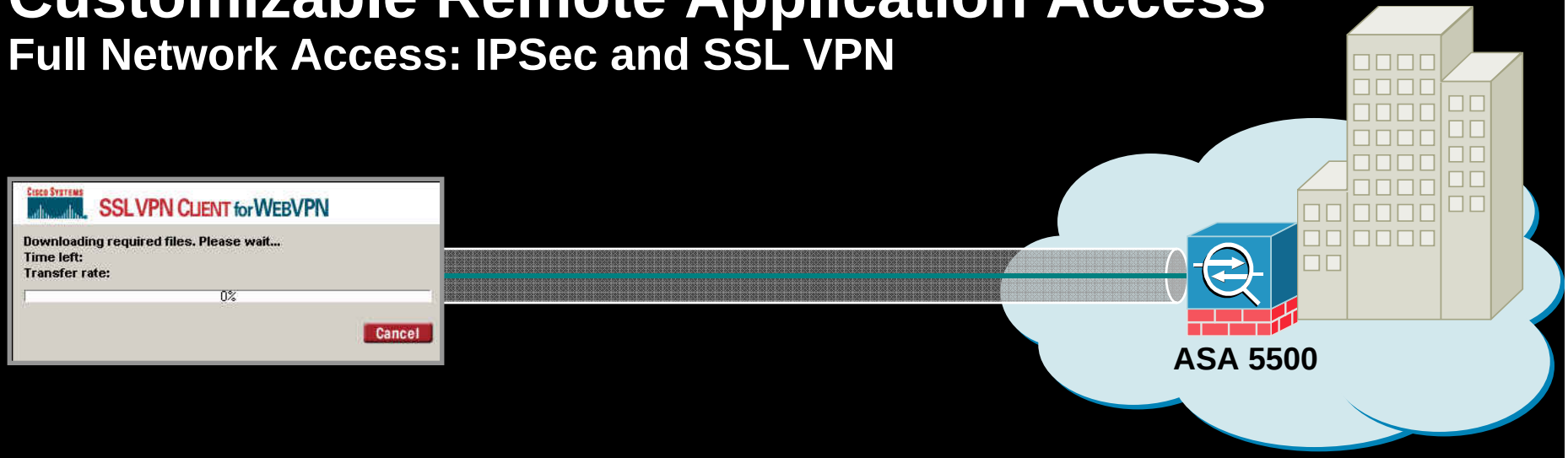
- Widely deployed, well-proven technology
- Operates well for extending access to employees using company-managed desktops

SSL VPN



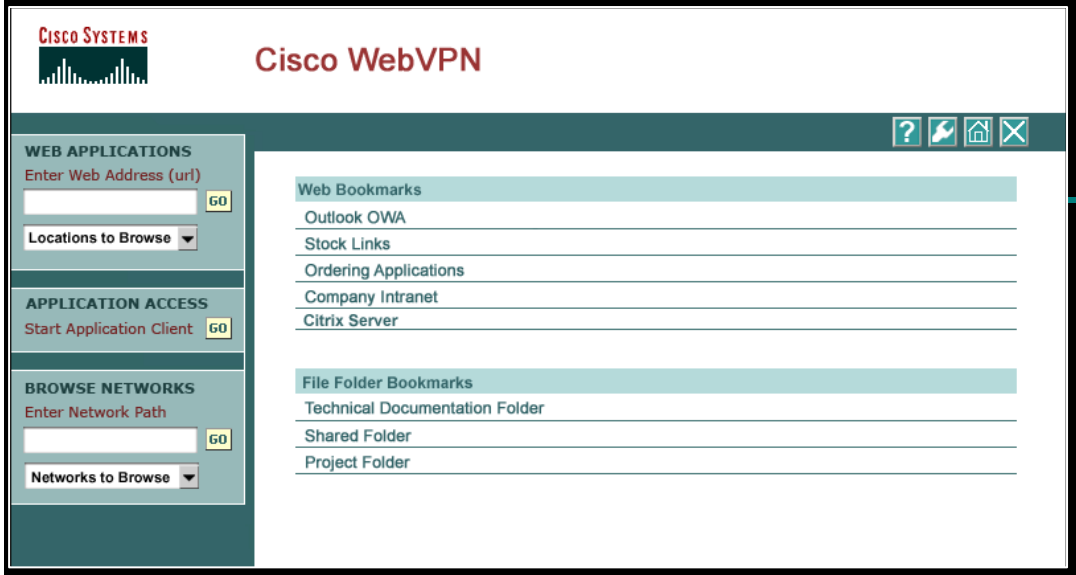
- Extends secure network access to non-employees like contractors and temps
- Simplifies provisioning and support for business partner access
- Provides “anywhere” access to non-managed desktops such as Internet kiosks
- Enables customized user access portals
- Reduces operations costs associated with managing client software

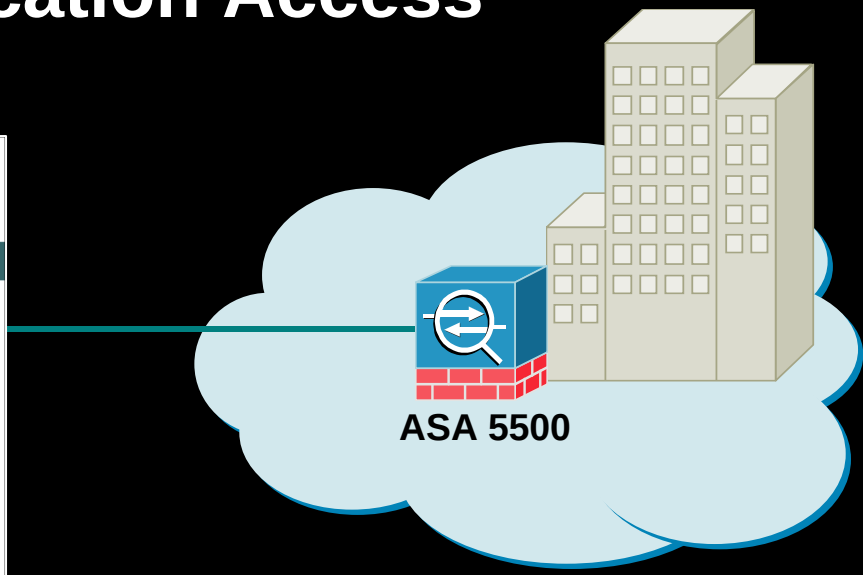
Customizable Remote Application Access
Full Network Access: IPSec and SSL VPN



- Customizable access and streamlined management – comprehensive IPSec and SSL VPN solutions on one platform
- Ease of administration – dynamically downloadable SSL VPN client is centrally configured and easy to update
- Fast initiation and operation – multiple delivery methods and small download size ensures broad compatibility and rapid download

Customizable Remote Application Access
Clientless Access





- Fully clientless web-based network access allows anywhere access to network resources
- Web content transformation provides excellent compatibility with web pages containing Java, ActiveX, complex HTML and JavaScript
- Multiple browser support ensures broad connection compatibility
- Uniform and efficient application delivery via fully clientless Citrix support
- Customizable user portal for ease of use and enhanced user experience

Optimizing SSL VPN Application Performance
Enhancing the End-User Experience

Optimized Application Access
Enhancing Performance of Resource-Intensive Applications like OWA and Lotus iNotes

Safe Caching

- Safe caching – head-end device and remote client cache non-security impacting information
- Improves application response times for end-users
- Improves application performance by reducing latency
- Increases performance for resource-intensive applications across SSL-VPN, such as Outlook Web Access (OWA) and Lotus iNotes

Compression

- GZIP compression support reduces bandwidth consumption
- Benefits both SSL VPN Client and Clientless modes

Endpoint Security for SSL VPN

Cisco Secure Desktop

Complete Pre-Connect Assessment:

- Location assessment – managed or unmanaged desktop?
- Security posture assessment – AV operational/up-to-date, personal firewall operational, malware present?

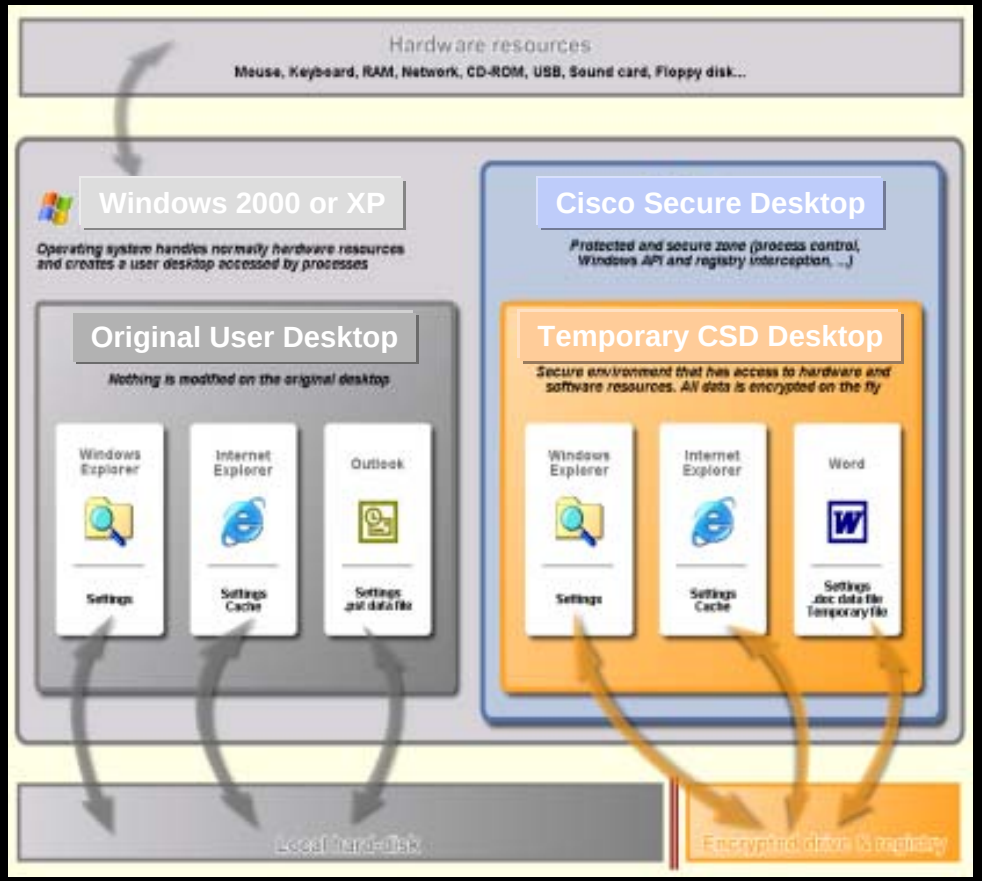
Comprehensive Session Protection:

- Data sandbox and encryption protects every aspect of session
- Malware detection with hooks to Microsoft free anti-spyware software

Post-Session Clean-Up:

- Encrypted partition overwrite (not just deletion) using DoD algorithm
- Cache, history and cookie overwrite
- File download and email attachment overwrite
- Auto-complete password overwrite

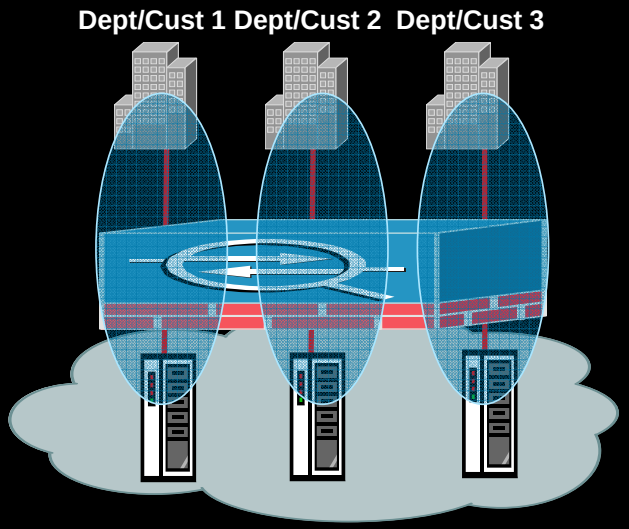
Works with Desktop Guest Permissions
No Admin Privileges Required



Virtualized Services and Transparent Operation
Simplifies Deployment and Reduces Operational Costs

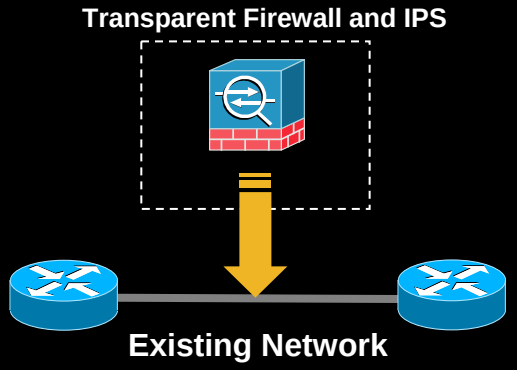
Scalable Security Services

- Adds support for Security Contexts (virtual firewalls) to lower operational costs
  - Enables device consolidation and segmentation
  - Supports separated policies and administration



Easy to Deploy Firewall and IPS Services

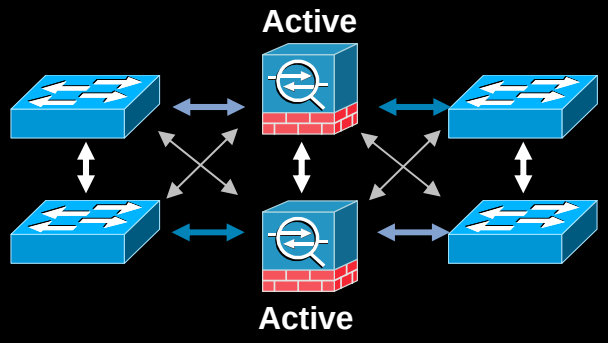
- Introduces transparent firewall capabilities for rapid deployment of security
  - Drops into existing networks without need for readdressing the network
  - Simplifies deployments of internal firewalling and security zoning – new applications



Advanced Network Integration
Maximizes Uptime and Supports Next-Gen Networks

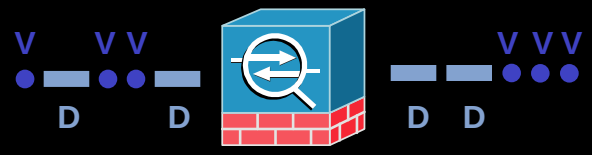
Improved Network and Device Resiliency

- Introduces Active-Active failover for enhanced resiliency and asymmetric routing support
- Delivers new zero-downtime software upgrade capability for improved uptime



Intelligent Network Integration

- Provides QoS traffic prioritization for improved handling of latency sensitive traffic
- Adds IPv6 support for hybrid IPv4/IPv6 network environments
- Delivers PIM sparse mode multicast support for improved support for streaming data delivery services, video conferencing, and other mission-critical real-time enterprise applications



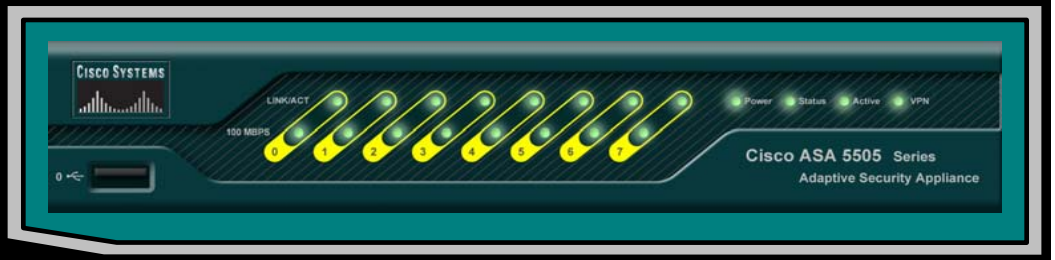
Quality of Service

Cisco ASA 5500 Series Product Lineup
Solutions Ranging from SOHO to Large Enterprise

	Cisco ASA 5505 (New!)	Cisco ASA 5510	Cisco ASA 5520	Cisco ASA 5540	Cisco ASA 5550 (New!)
					
Target Market	SOHO and ROBO	SMB and SME	Enterprise	Medium Enterprise	Large Enterprise
List Price	Starting at $595	Starting at $3,495	Starting at $7,995	Starting at $16,995	Starting at $19,995
Performance					
Max Firewall	150 Mbps	300 Mbps	450 Mbps	650 Mbps	1.2 Gbps
Max Firewall + IPS	Future	300 Mbps	375 Mbps	450 Mbps	N/A
Max IPSec VPN	100 Mbps	170 Mbps	225 Mbps	325 Mbps	425 Mbps
Max IPSec / SSL VPN Peers	25 / 25	250 / 250	750 / 750	5000 / 2500	5000 / 5000
Platform Capabilities					
Max Firewall Conns	10,000 / 25,000	50,000 / 130,000	280,000	400,000	650,000
Max Conns/Second	3,000	6,000	9,000	20,000	28,000
Base I/O	8-port FE switch	3+1 FE / 5 FE	4 GE + 1 FE	4 GE + 1 FE	8 GE + 1 FE
VLANs Supported	3 / 3 (trunk)	10 / 25	100	200	200
HA Supported	Stateless A/S (Sec Plus)	A/A & A/S (Sec Plus)	A/A & A/S	A/A & A/S	A/A & A/S

Introducing the Cisco ASA 5505
Next Generation SOHO / ROBO Security Appliance

Next Generation solution for small business, branch office and enterprise teleworker environments!



Best-of-class Small Business, Branch Office, and Teleworker solution

Full-featured, High Performance, Market-proven Security Services, Including:

- Advanced Application Inspection and Control services
- Site-to-Site VPN / Cisco Easy VPN Server / Remote IPSec VPN Connectivity
- SSL VPN Connectivity
- Dual ISP support with object tracking and failback
- Hardware failover, PPPoE, dynamic DNS, and more!

Platform Highlights:

- Compact desktop form-factor
- Integrated VPN acceleration
- 8 x 10/100 ports with flexible port grouping
- VLANs: Home/Business/Outside
- Support for true DMZ & trunking
- Power over Ethernet (802.3af) ports for IP phones, external Wireless APs, etc.
- USB 2.0 ports for future use
- Wall and rack mountable
- Convection cooling (no fan)

Teleworker Deployment Model
Easy to Install Modern Home Networking Services

Business VLAN

- Secure access to both Home and Internet VLANs
- Power Over Ethernet for IP Phones and WiFi Access Points

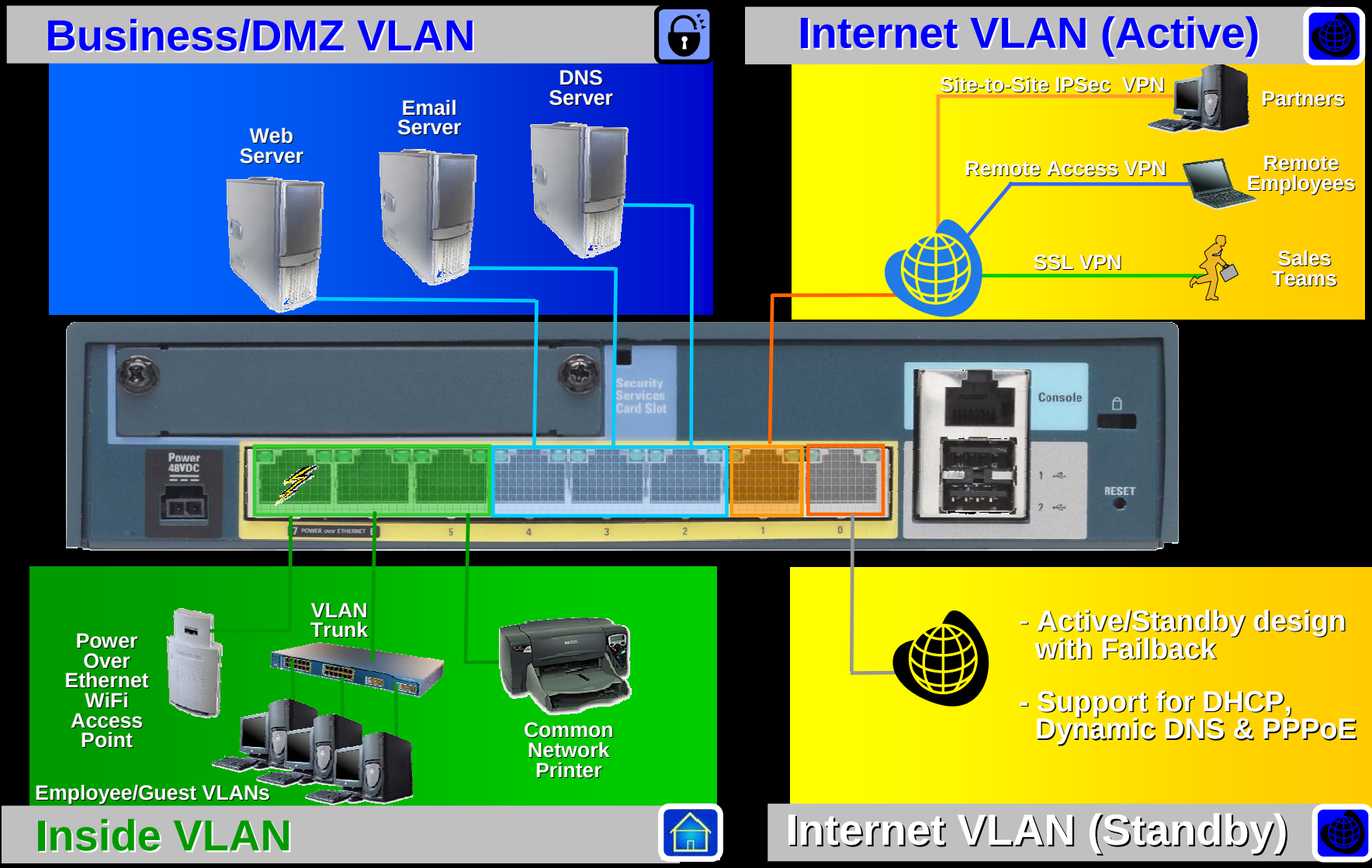
Internet VLAN

- DHCP & Dynamic DNS services
- PPPoE support
- Backup ISP support (Security Plus)

- Secure access for a wide range of applications through the Internet VLAN
- DHCP Server Services

Home VLAN

Remote Office/SMB Deployment Model
High Performance, Resilient Security Services



Cisco ASA 5505 Licensing Model

- Similar to PIX 501 licensing, but with additional dimensions
- User Based Licensing
  - 10, 50, and Unlimited user licenses
- SSL VPN Licensing
  - Base includes 2 for free, 10 & 25 user upgrades available
- Security Plus License – offers many additional capabilities
  - Increased system capacity
    - Increases number of maximum connections (10K to 25K)
    - Increases IPSec peer count from 10 to 25
  - Device and link-level redundancy
    - Enables stateless Active/Standby failover
    - Enables redundant ISP support (dual ISP uplinks)
  - Improved flexibility
    - Enables full DMZ and 802.1q VLAN trunking support
    - Can be used with any user licensing level

Cisco ASA 5510/5520/5540/5550 Adaptive Security Appliances Product Tour

Four 10/100/1000 Copper Gigabit Ports

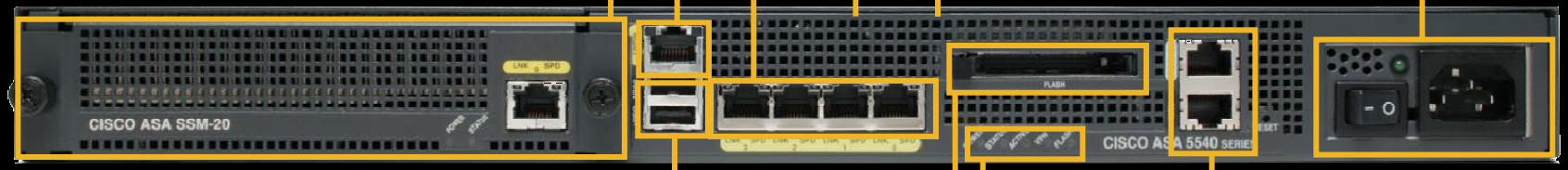
One 10/100 Out of Band Management Port*

One Expansion Slot for Add'l Accelerated Services or I/O

Sleek, High Performance 1 Rack Unit (RU) Design

Diskless Architecture for High Reliability

Single Field Upgradeable AC or DC Power Supply



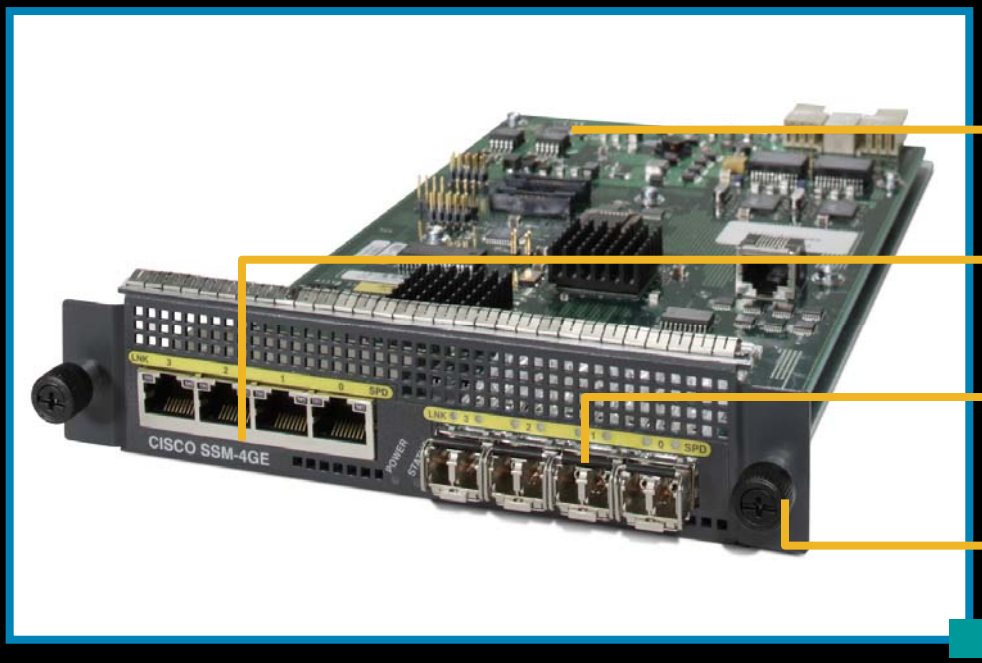
Two USB 2.0 Ports for Future Expansion (Credentials, Failover, and more)

Compact Flash for Software, Config, and Log Storage

Console and AUX Ports

Five Status LEDs (Power, Status, Active, VPN, Flash)

Cisco Four-Port Gigabit Ethernet SSM
Product Tour

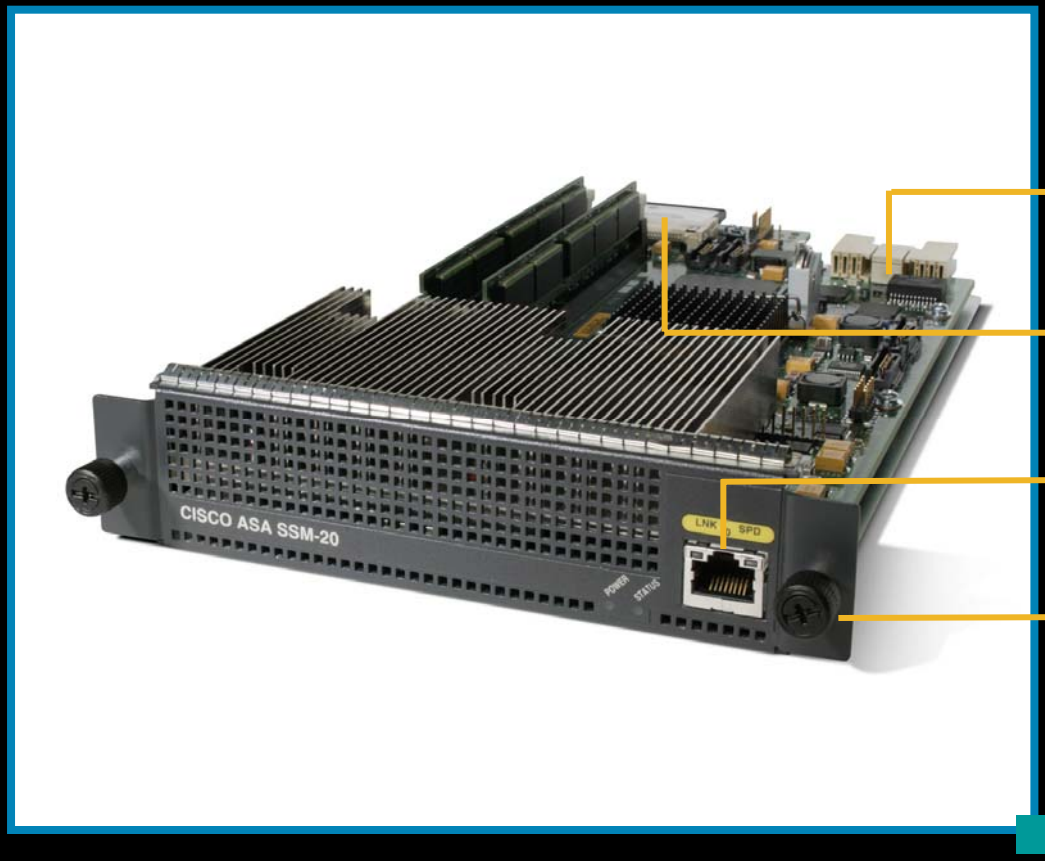


- High-Performance Module Adds More I/O Capacity
- Four Copper 10/100/1000 for Simplified Deployment
- Four SFP Gigabit Ports for Optical Connectivity
- Thumbscrews for Easy Insertion and Removal

Allows Customers to Choose Either Copper or Optical for Up to 4 Ports of Additional Connectivity

Ordering Information
Product ID: SSM-4GE=
List Price: $5,000

Cisco ASA Security Services Module (SSM)
Product Tour



- High Performance Module for Additional Services
- Diskless (Flash-Based) Design for Improved Reliability
- Gigabit Ethernet Port for Out-of-Band Management, etc.
- Thumbscrews for Easy Insertion and Removal

Cisco ASA Adaptive Security Appliances
Industry Certifications and Evaluations

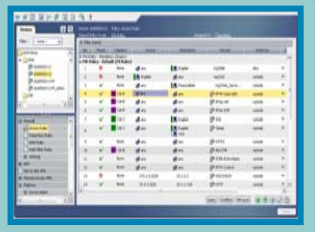
- Common Criteria
  - In Process: EAL4+, v7.0.4 – ASA Family (FW)
  - In Process: EAL2, v5.1 – ASA SSM-10/20 (IPS)
  - In Process: EAL4, v7.2 – ASA Family (VPN)
- FIPS 140 New!
  - Completed: Level 2, v7.0.4 – ASA Family
- ICSA Firewall 4.1, Corporate Category New!
  - Completed: v7.0.4 – ASA Family
- ICSA IPSec 1.0D New!
  - Completed: v7.0.4 – ASA Family
- ICSA Anti-Virus Gateway New!
  - Completed: v7.1 – ASA Family
- ICSA Intrusion Prevention (IPS)
  - In Process: v5.1 – ASA Family

Wide Range of Management Solutions
Provide Scalable, Cost Optimized Options for Businesses

Integrated Remote Management Capabilities Within ASA

- Configuration: Auto Update, SSH, Telnet, XML/HTTPS, and ASDM
- Real-time monitoring: Syslog, SNMP, HTTPS, and ASDM
- Software updates: Auto Update, SCP, HTTP, HTTPS, and TFTP

Cisco Security Manager (CS-Manager)

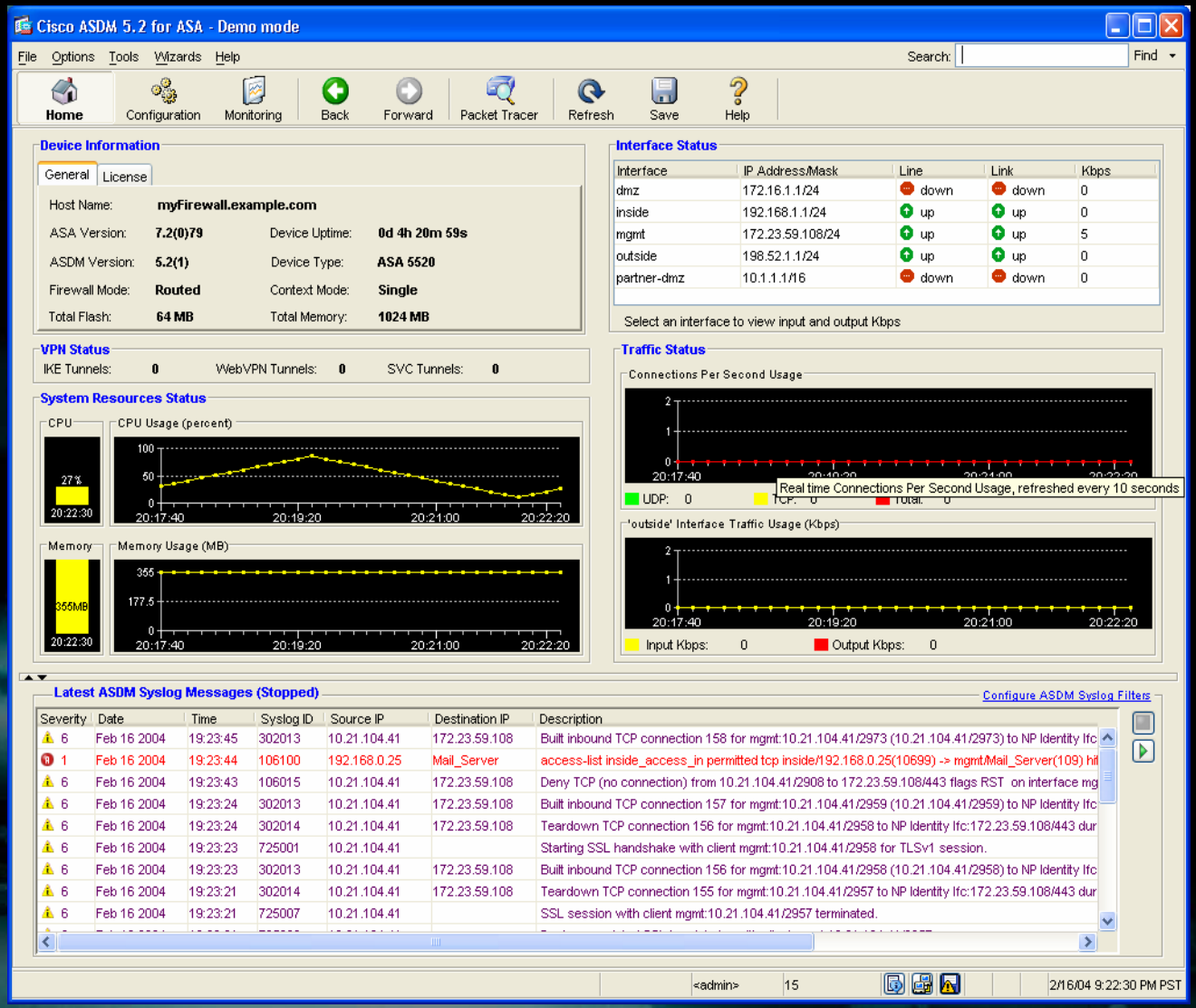


- Scalable management solution for wide range of Cisco security solutions including routers, switches, blades, and appliances
- Delivers centralized management of firewall, VPN, IPS/IDS, networking, and other services via flexible user interface
- Supports device grouping for simplified policy maintenance
- Provides role-based admin access and workflow capabilities
- Available on Windows (Linux version coming)

Cisco Monitoring and Response Solution (CS-MARS)

- Family of high performance appliances designed to provide automated analysis of security event information to help identify, manage, and counter attacks
- Supports getting events from wide range of Cisco and 3rd party solutions – and also analyzes NetFlow for additional intelligence
- Offers event correlation, visualization, rules engine, and reporting

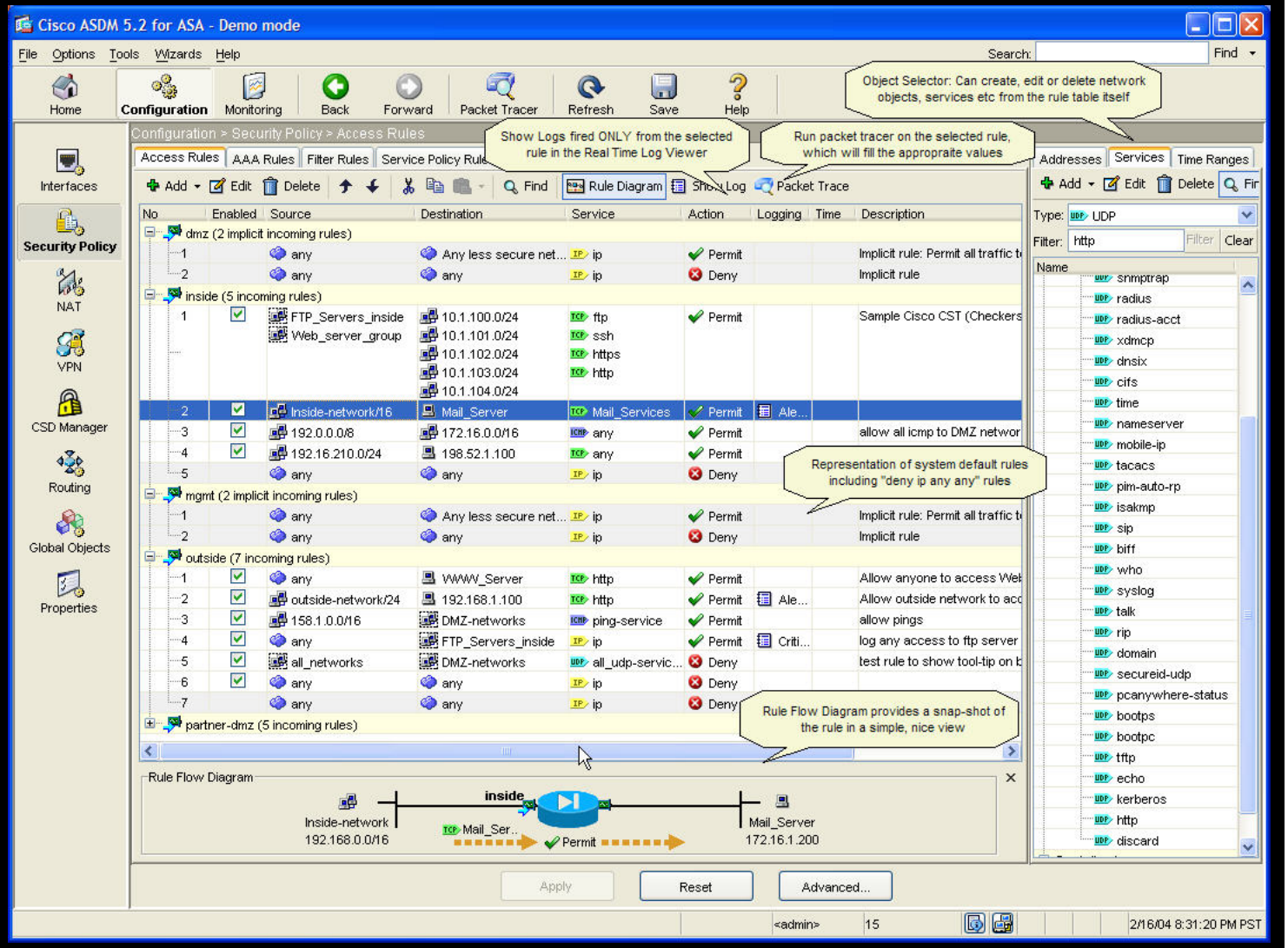
Cisco Adaptive Security Device Manager (ASDM) v5.2
Dashboard Provides At-a-Glance View of System Status



- **Dashboard provides instant status of items such as:**
  - **Software versions installed**
  - **Interface status and throughput**
  - **Platform uptime**
  - **Security Contexts**
  - **Real-time syslog viewer (last ten)**
- **Powerful search capabilities**
- **And more!**

Now Available in ASDM 5.2: New Rule Table
Many Enhancements Coming to Primary Focus Area

- Redesigned rule table for streamlined policy creation
- Able to create objects, object-groups and rules from single UI
- Policy visualizer provides graphical view of actions
- Policy query in the rule table for advanced filtering
- "Show log" for a particular access rule in the real time log viewer
- Options to expand and display elements in an object group
- Ability to see attributes of a object or members of a group via tooltips

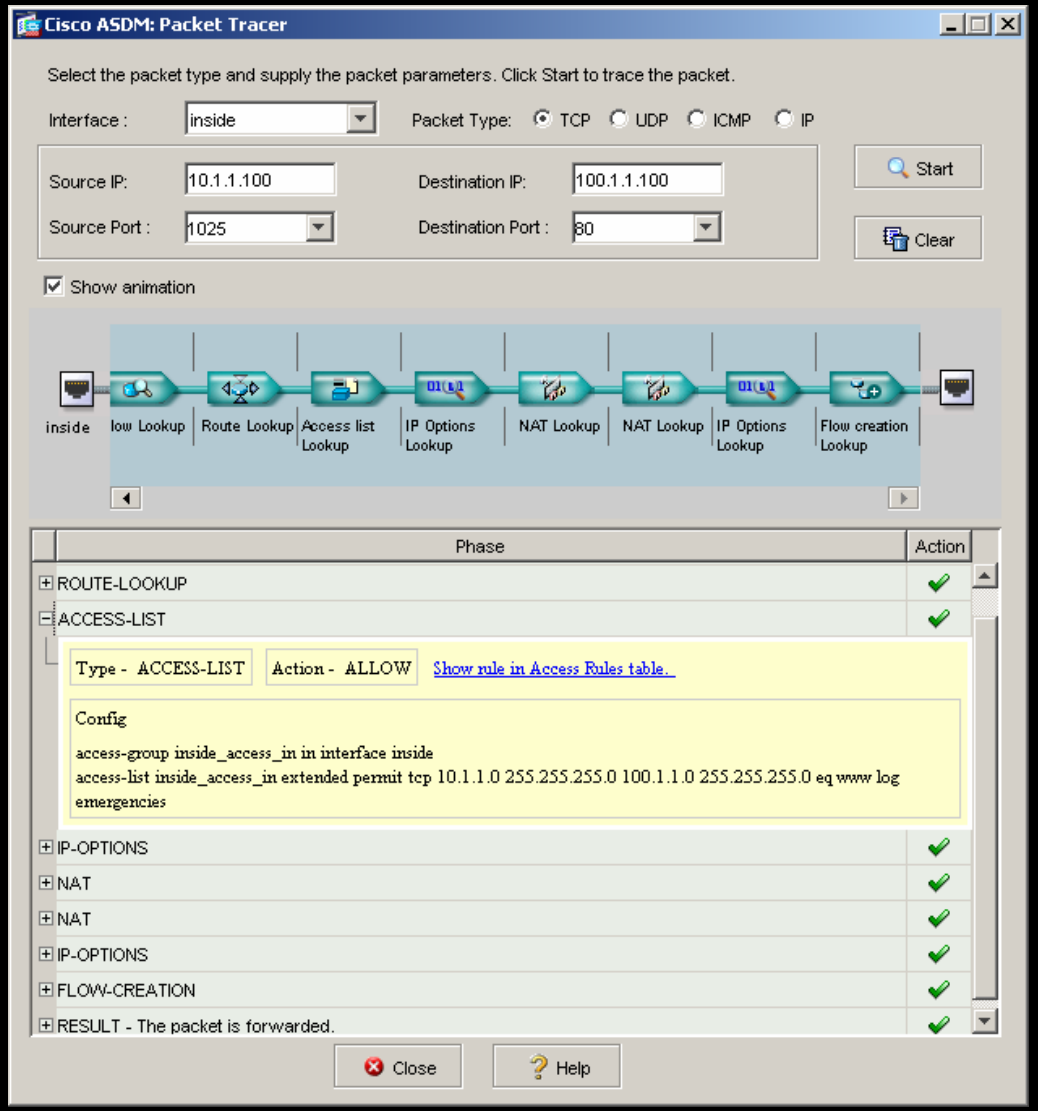


Now Available in ASDM 5.2: Packet Tracer
Live Tool to Determine Day In the Life of a Packet

PACKET TRACING:
Enables the injection of arbitrary packets through the system to audit policy configuration and enforcement

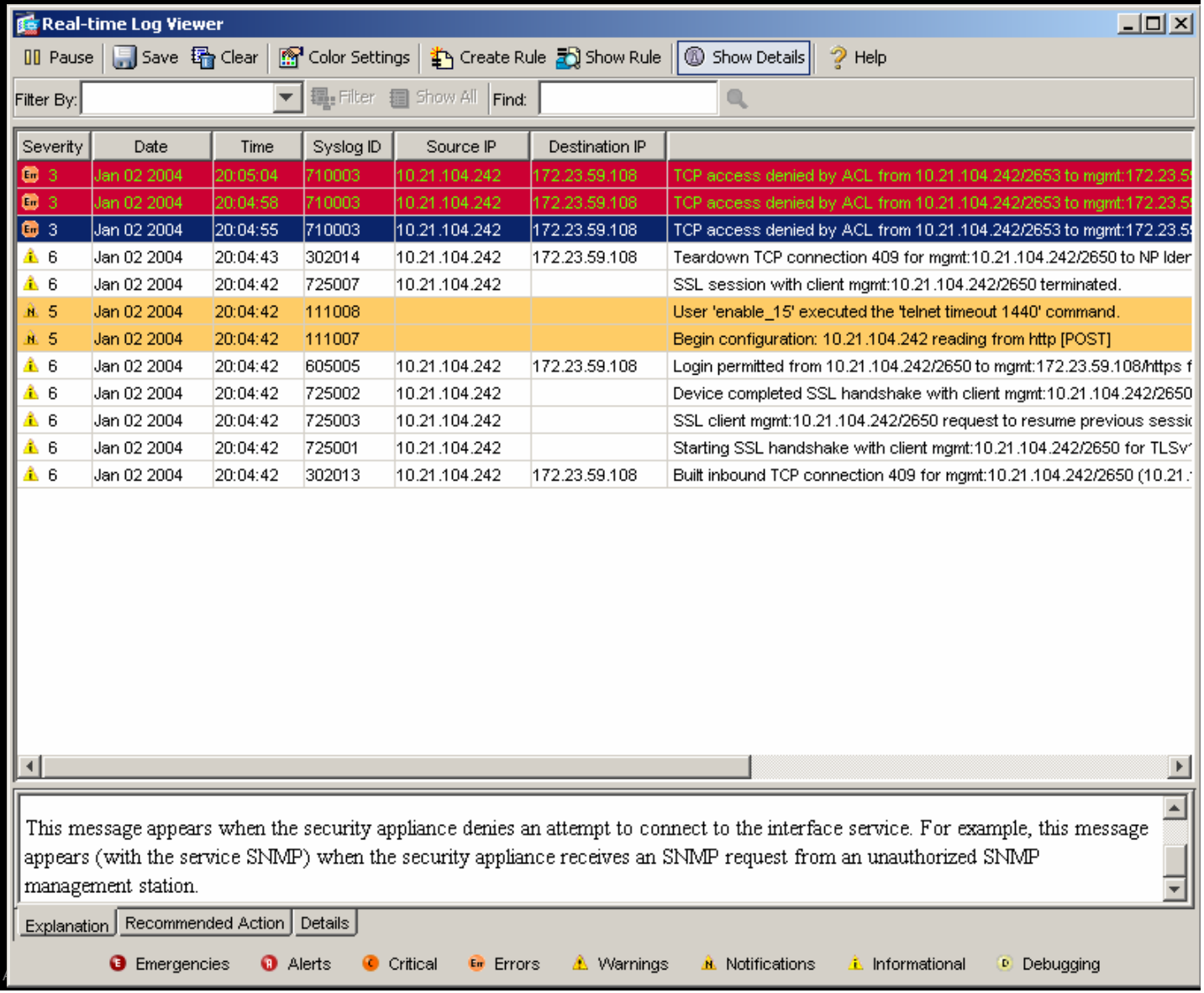
Benefits

- Enables policy tuning and refining
- Enables rapid troubleshooting
- Simplifies fault isolation in complex policy environments
- First Pro-active Debugging Tool



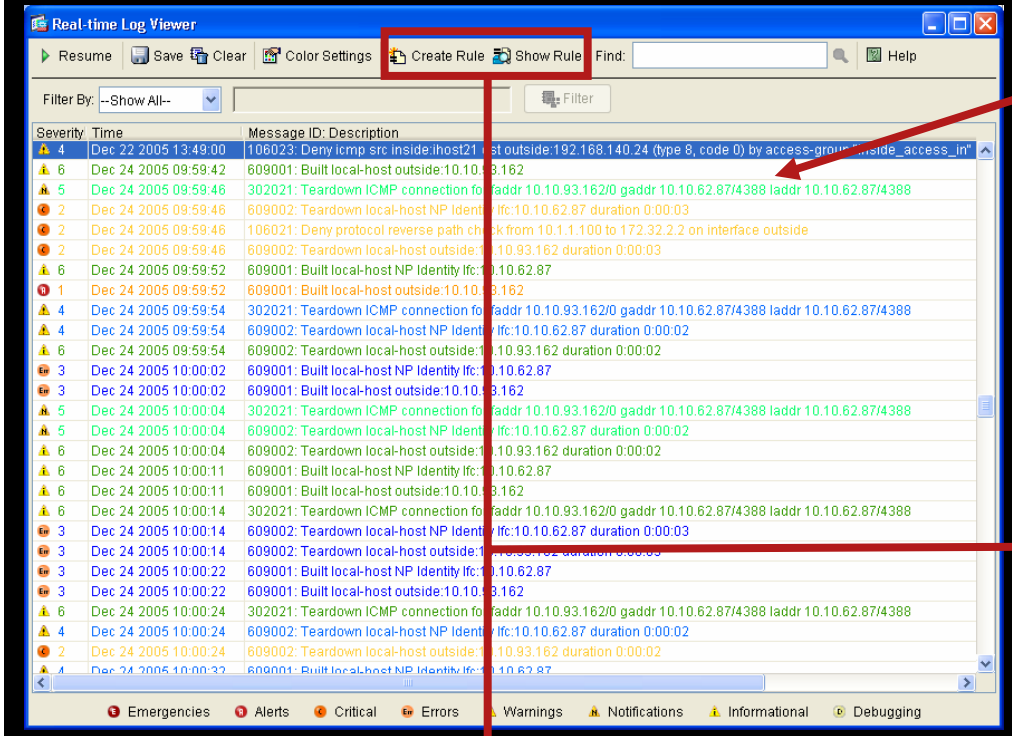
Now Available in Cisco ASDM 5.2
Logging Enhancements

- Structured syslogs in Real time Log Viewer
- Parse all the syslogs and put into tabular structure
- Coloring of logs based on severity
- Integrated syslog guide within the Real time Log Viewer
- "Explanation" and "Recommended Action" for each syslog
- Single-Click Rule Creation from Syslog
- Ability to Show the access rule which created this Syslog

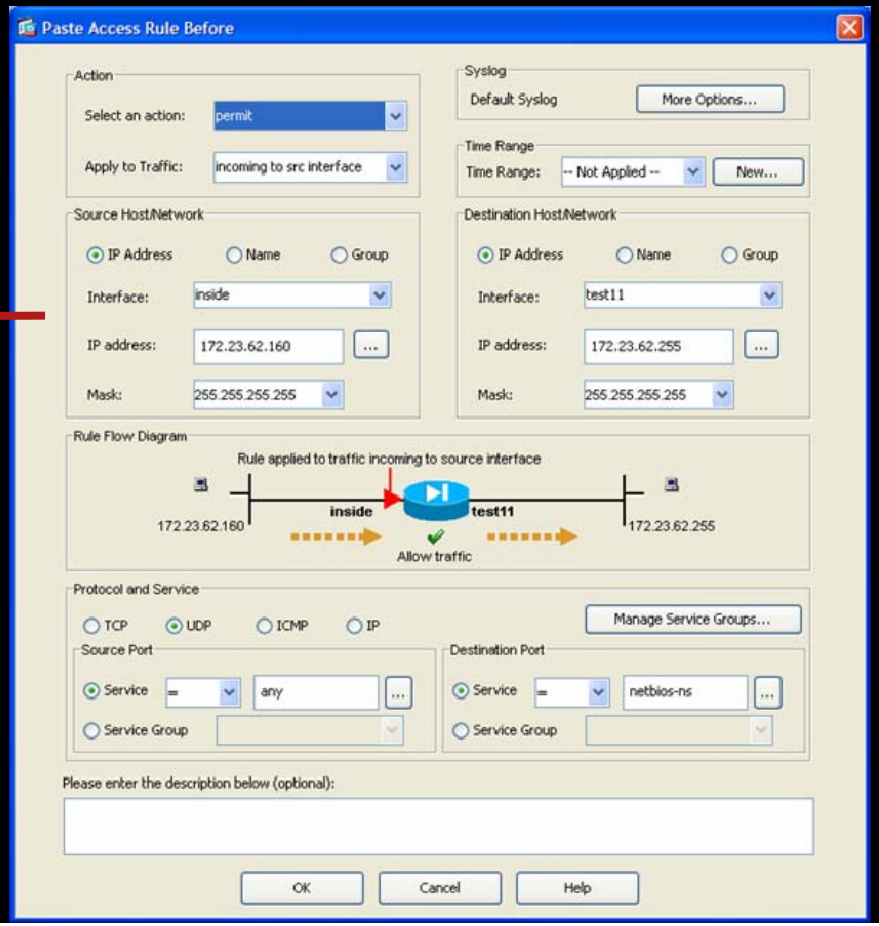


Cisco ASA / PIX Software v7.1 & ASDM v5.1

Syslog to ACL Correlation Features



Syslog messages now include unique hash and line number of ACL entry that created it



New buttons in ASDM Live Log Viewer allow admins to view / edit existing ACL, or create new ACL entry

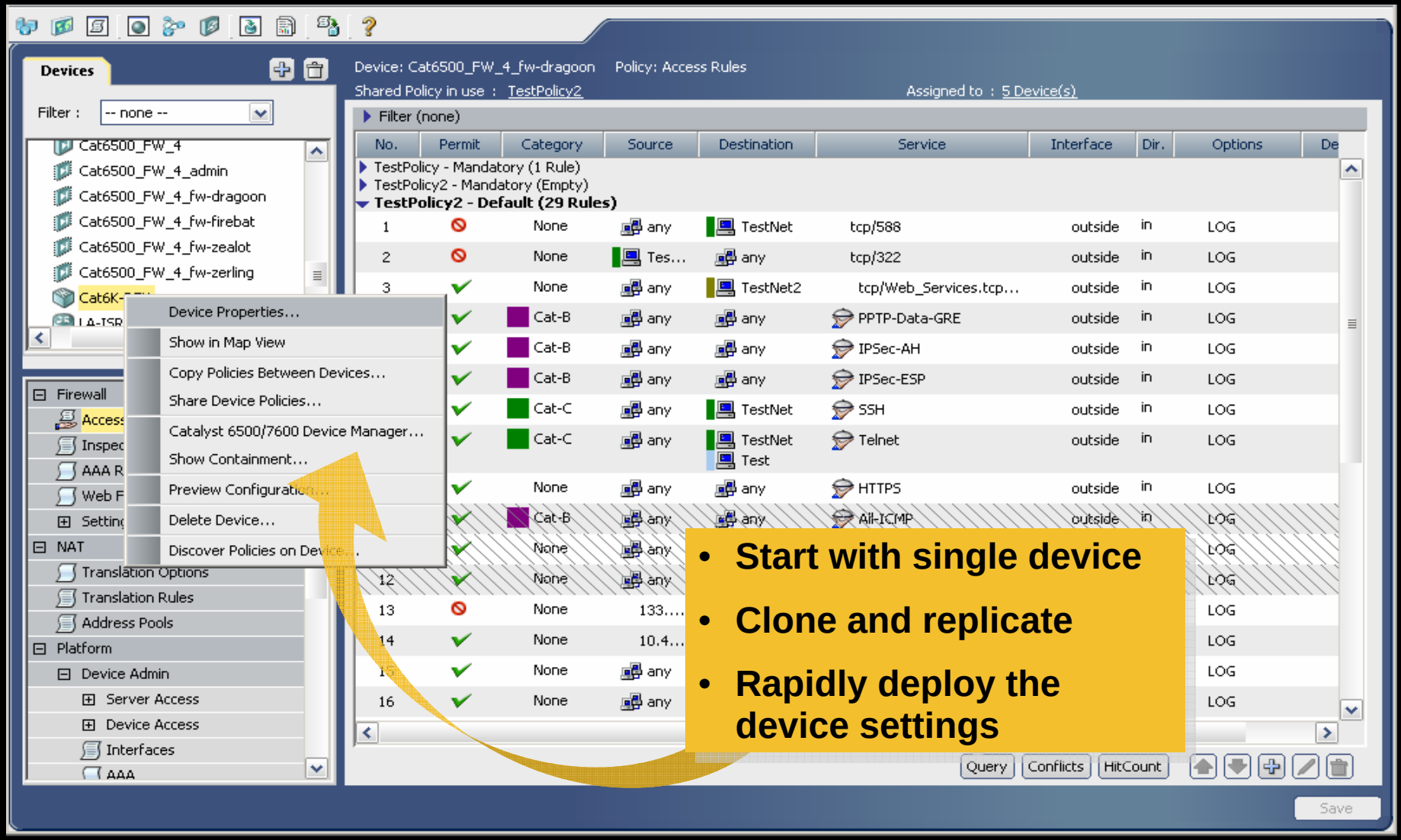
CS Manager

Cisco Security Manager

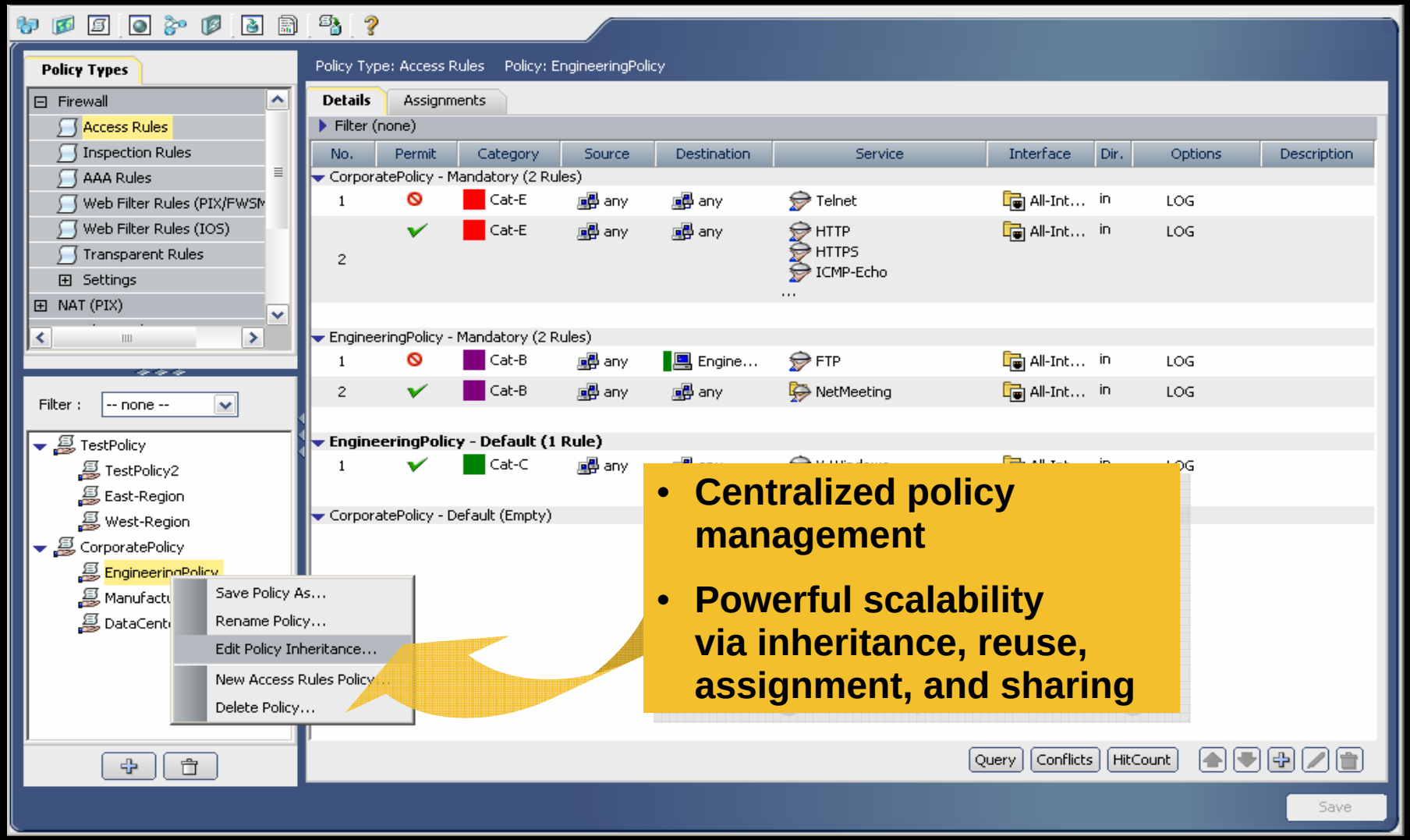
"It Has to be Easy to Use and Flexible"

- Feature Rich front-end
- Different views for different administration preference
  - Device View
  - Topology View
  - Policy View
- Unified security service management independent of the enforcing device
  - Firewall, VPN, IPS…
- Supporting ASA, PIX, IPS Sensors, ISR's and Catalyst Service modules

Device-Centric View

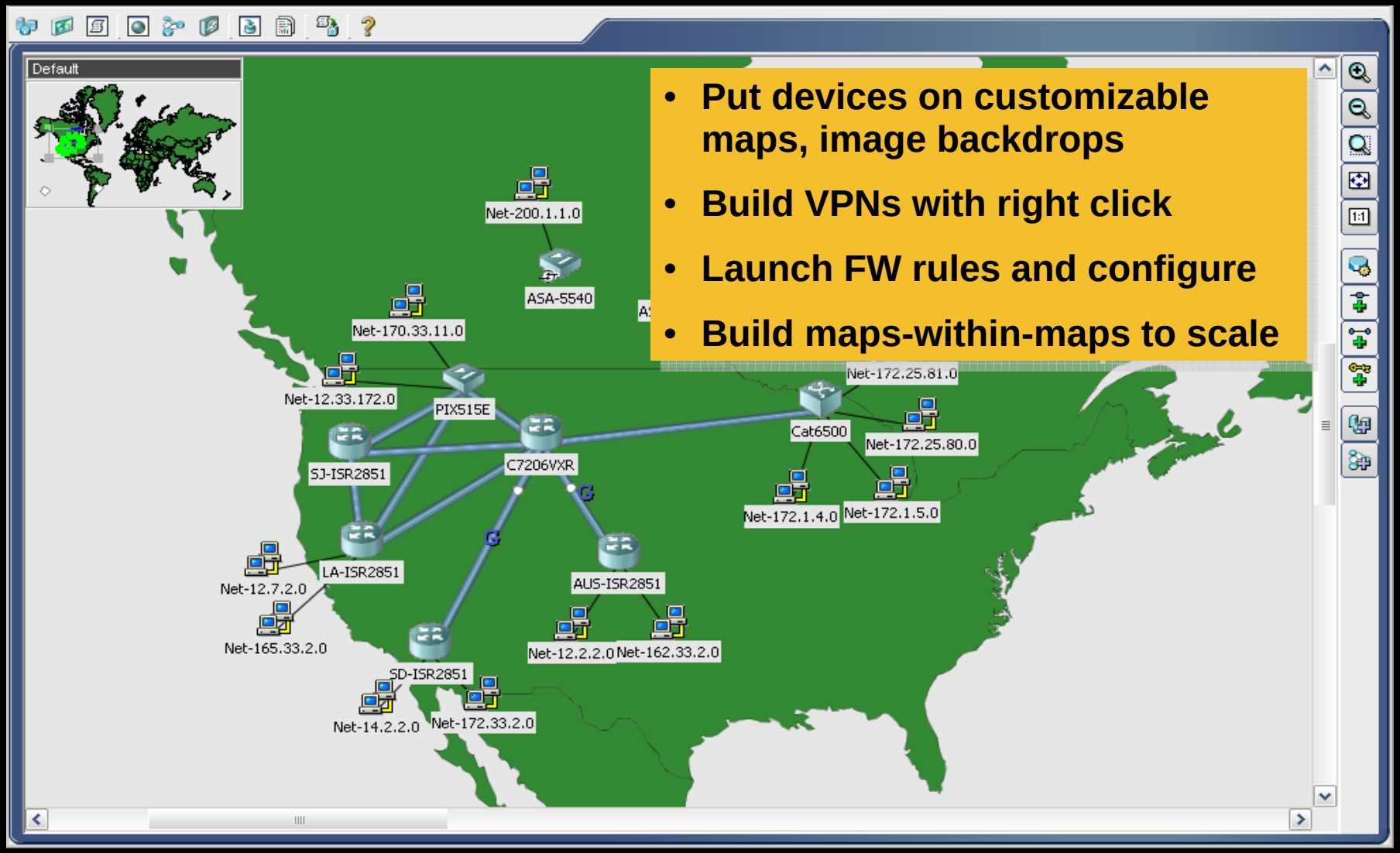


Policy-Centric View



- **Centralized policy management**
- **Powerful scalability via inheritance, reuse, assignment, and sharing**

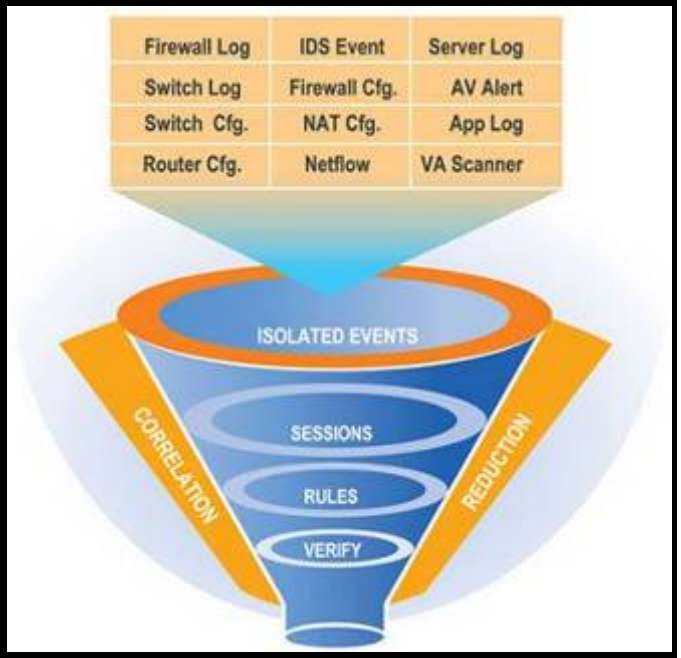
Topology-Centric View

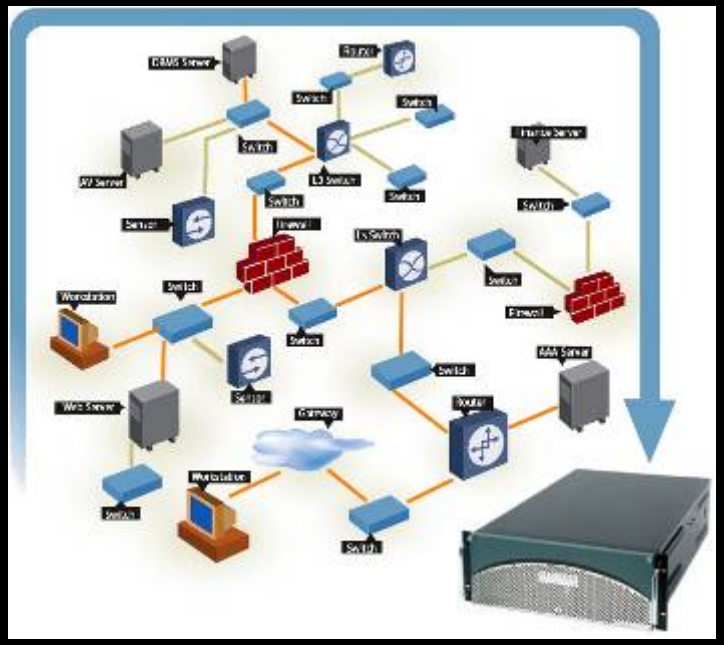


- Put devices on customizable maps, image backdrops
- Build VPNs with right click
- Launch FW rules and configure
- Build maps-within-maps to scale

Mitigation and Response System (MARS) Next Generation SIM/STM

- Leverage YOUR existing investment to build "pervasive security"
- Correlate data from across the Enterprise
  - NIDS, Firewalls, Routers, Switches, CSA
  - Syslog, SNMP, RDEP, SDEE, NetFlow, Endpoint event logs
- Rapidly locate and mitigate attacks





- Key Features
  - Determines security incidents based on device messages, events, and "sessions"
  - Incidents are topologically aware for visualization and replay
  - Mitigation on L2 ports and L3 chokepoints
  - Efficiently scales for real-time use across the Enterprise

Cisco Integrated Services Router Portfolio
Scalable From Small Business to Large Enterprise

Performance and Services Density

Cisco® Integrated Services Routers (ISRs)

Cisco 3800 Series ISR

High Density and Performance for Concurrent Services

Cisco 2800 Series ISR

Embedded, Advanced Voice, Video, Data and Security Services

Cisco 1800 Series ISR

Cisco 800 Series ISR

Embedded Wireless, Security and Data

Branch Office	Small Branch	SMB	Small Office and Teleworker

Securing Complexity with Cisco Clean Access (NAC Appliance): A Technical View

Niels Mogensen

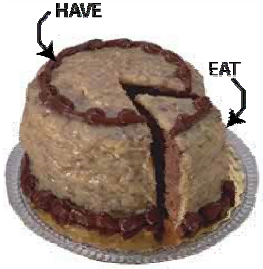
Agenda

1. **Securing Complexity**
2. Clean Access Product Overview
3. Clean Access Features In-Depth
4. Clean Access Technical Benefits

The Challenge of Securing Complexity

This is a story about network security.

Specifically, how you can have compromising <u>productivity</u>.



<u>security</u> without

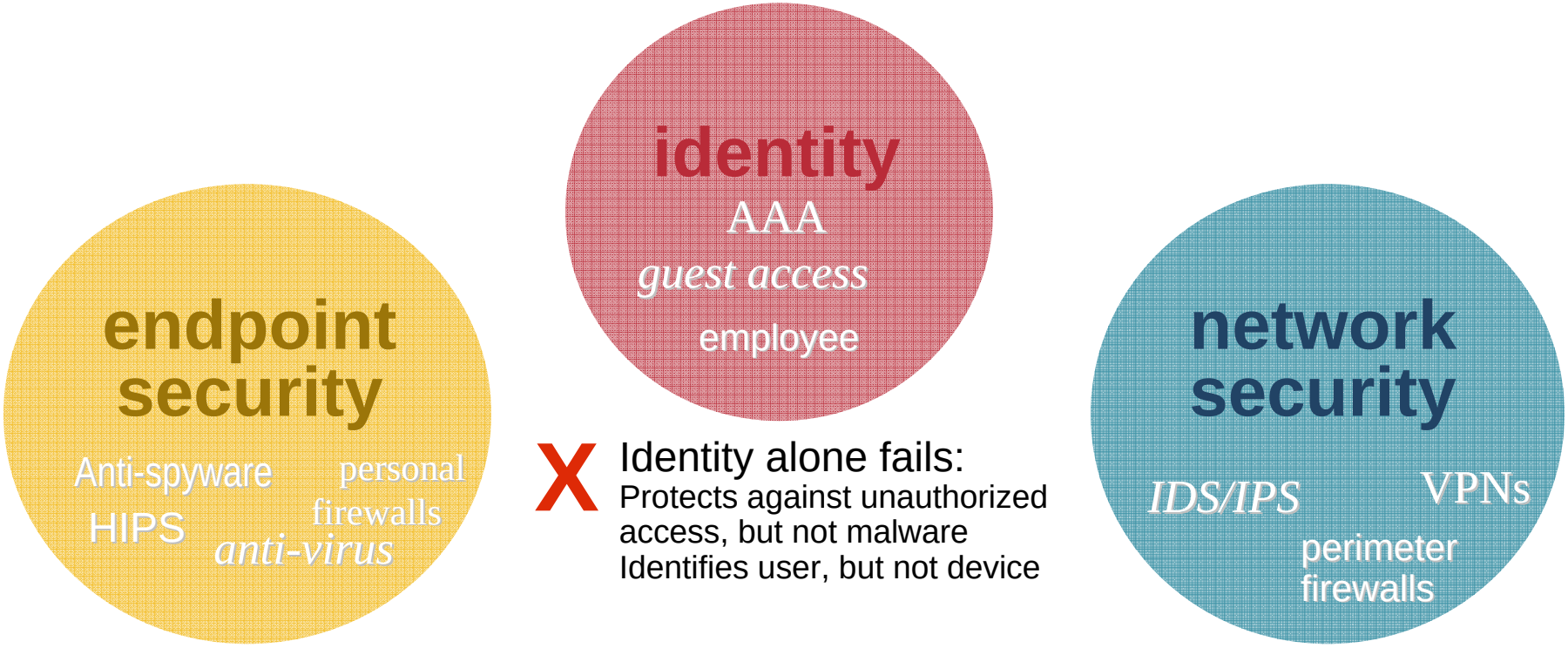
More to the point, your company may already be bristling with network defenses, but you still have one glaring vulnerability—

your network users.

Productivity Causes Complexity

WHAT SYSTEM IS IT?	**Windows, Mac or Linux** **Laptop or desktop or PDA** **Printer or other corporate asset**
WHO OWNS IT?	**Company** **Employee** **Contractor** **Guest** **Unknown**
WHERE IS IT COMING FROM?	**VPN** **LAN** **WLAN** **WAN**
WHAT'S ON IT? IS IT RUNNING?	**Anti-virus, anti-spyware** **Personal firewall** **Patching tools**
WHAT'S THE PREFERRED WAY TO CHECK/FIX IT?	**Pre-configured checks** **Customized checks** **Self-remediation or auto-remediation** **Third-party software**

Complexity Demands Defense-in-Depth



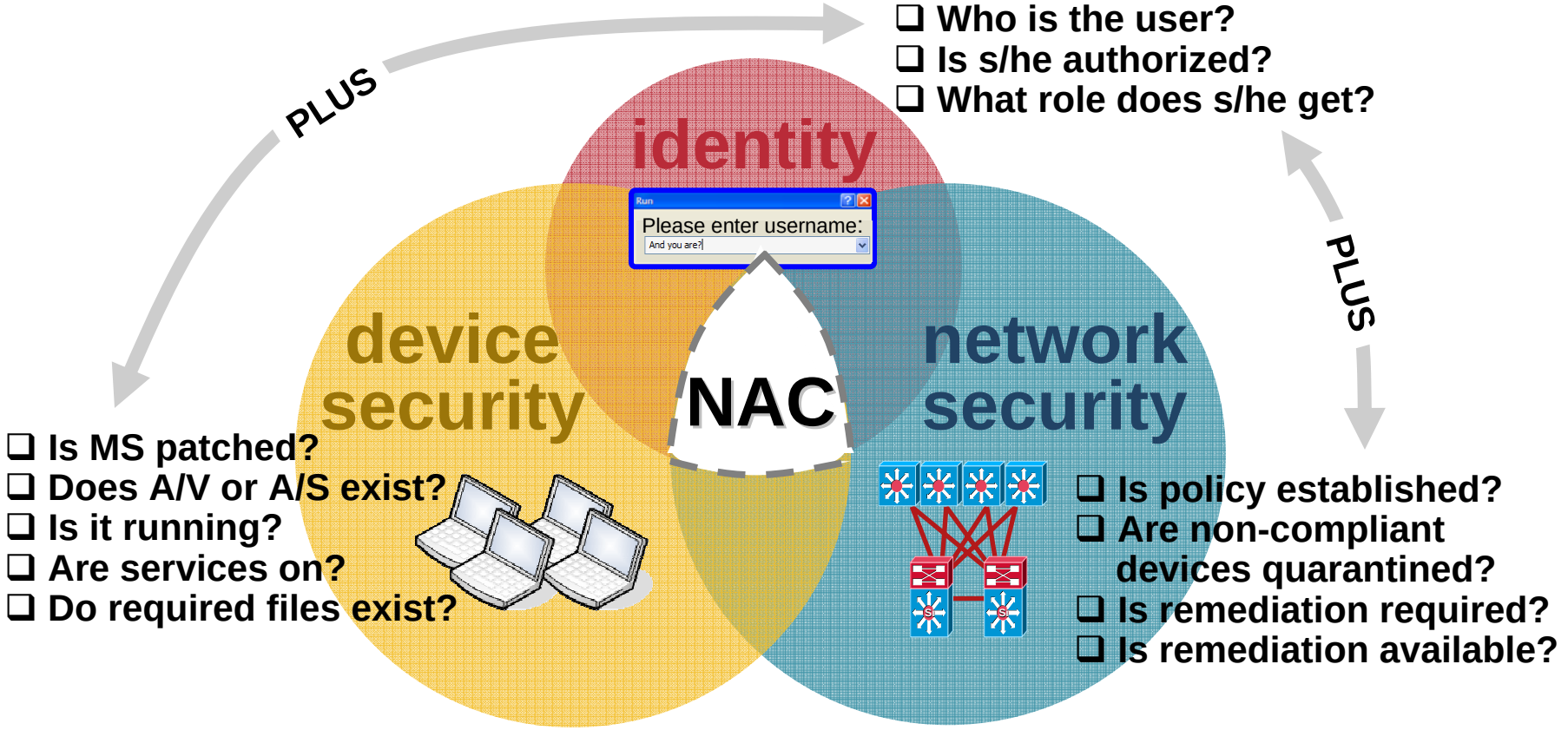
X Identity alone fails:
Protects against unauthorized access, but not malware
Identifies user, but not device

X Endpoint security alone fails:
99% have AV, but infections persist!
Host based apps are easily manipulated—even unintentionally
Time gap between virus and virus def/repair

X Network security alone fails:
Firewalls cannot block legitimate ports
VPNs cannot block legitimate users
Malware signatures must be known
Detection often occurs after-the-fact

What Is Network Admission Control?

Using the network to enforce policies ensures that incoming devices are compliant.



Four Key Capabilities of NAC

	SECURELY IDENTIFY DEVICE & USER	ENFORCE CONSISTENT POLICY	QUARANTINE AND REMEDIATE	CONFIGURE AND MANAGE
WHAT IT MEANS	**Uniquely identifies users and devices, and creates associations between the two**	**Assess and enforce a ubiquitous policy across the entire network**	**Acts on posture assessment results, isolates device, and brings it into compliance**	**Easily creates comprehensive, granular policies that map quickly to user groups and roles**
WITHOUT IT . . .	Critical to associate users and devices with roles to know which policies apply; prevents device spoofing.	A decentralized policy mechanism (e.g. on endpoint) can leave gaping security holes.	Just knowing a device is non-compliant is not enough—someone still needs to fix it.	Policies that are too complex or difficult to create and use will lead to abandonment of project.

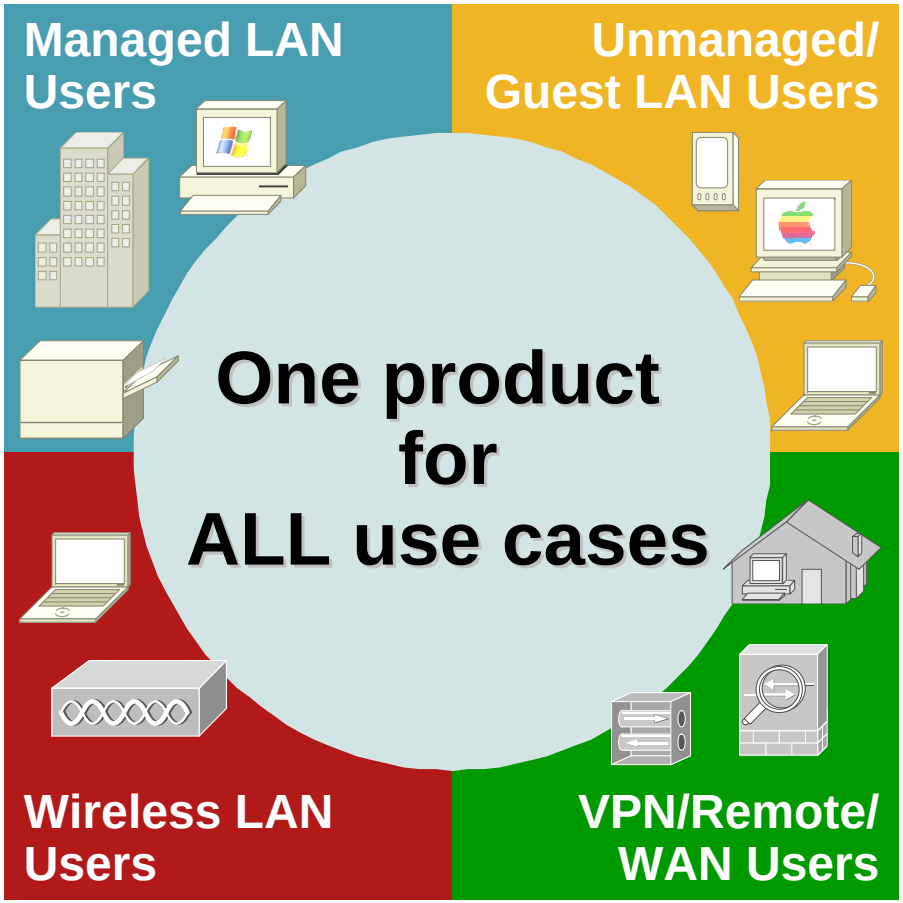
A robust NAC solution must have all four capabilities.

Agenda

1. Securing Complexity
2. **Clean Access Product Overview**
3. Clean Access Features In-Depth
4. Clean Access Technical Benefits

The Cisco Clean Access Advantage

1.



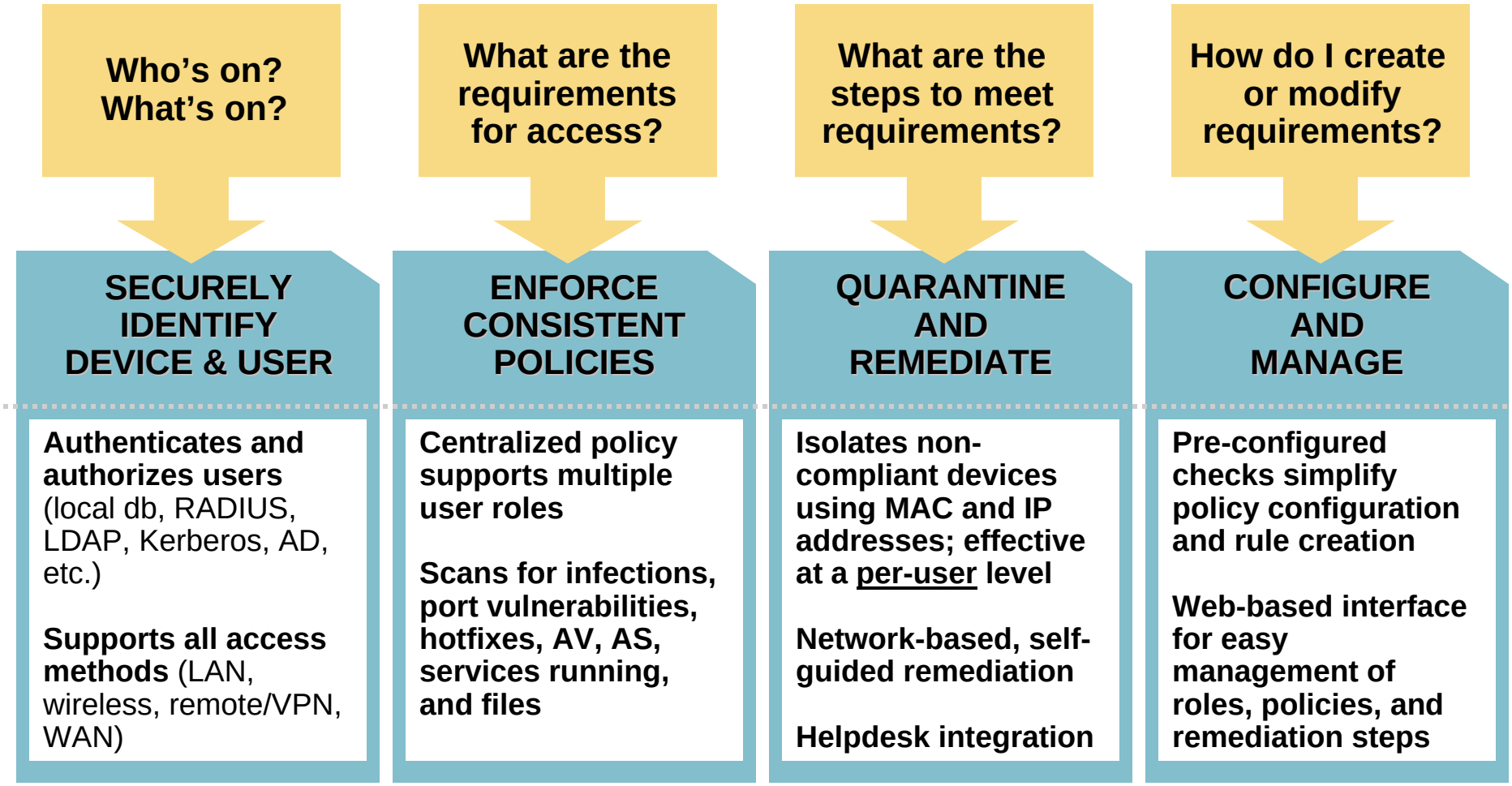
2. 500+ customers across all use cases: No. 1 NAC solution

3. Most deployments ready under 5 days

4. Scales from 100 users to 100,000+ user, across 150+ locations

5. Does not require infrastructure upgrade

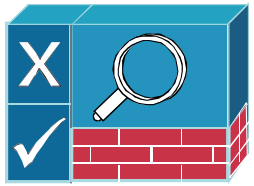
Clean Access Enforces Compliance



Clean Access Components

- Cisco Clean Access Server

  Serves as an in-band or out-of-band device for network access control

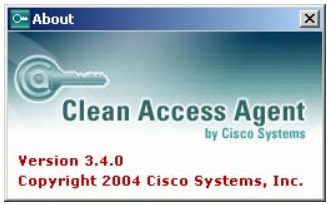


- Cisco Clean Access Manager

  Centralizes management for administrators, support personnel, and operators

- Cisco Clean Access Agent

  Optional lightweight client for device-based registry scans in unmanaged environments



- Rule-set Updates

  Scheduled automatic updates for anti-virus, critical hot-fixes and other applications

Sampling of Pre-Configured Checks

Critical Windows Updates

Windows XP, Windows 2000, Windows 98, Windows ME

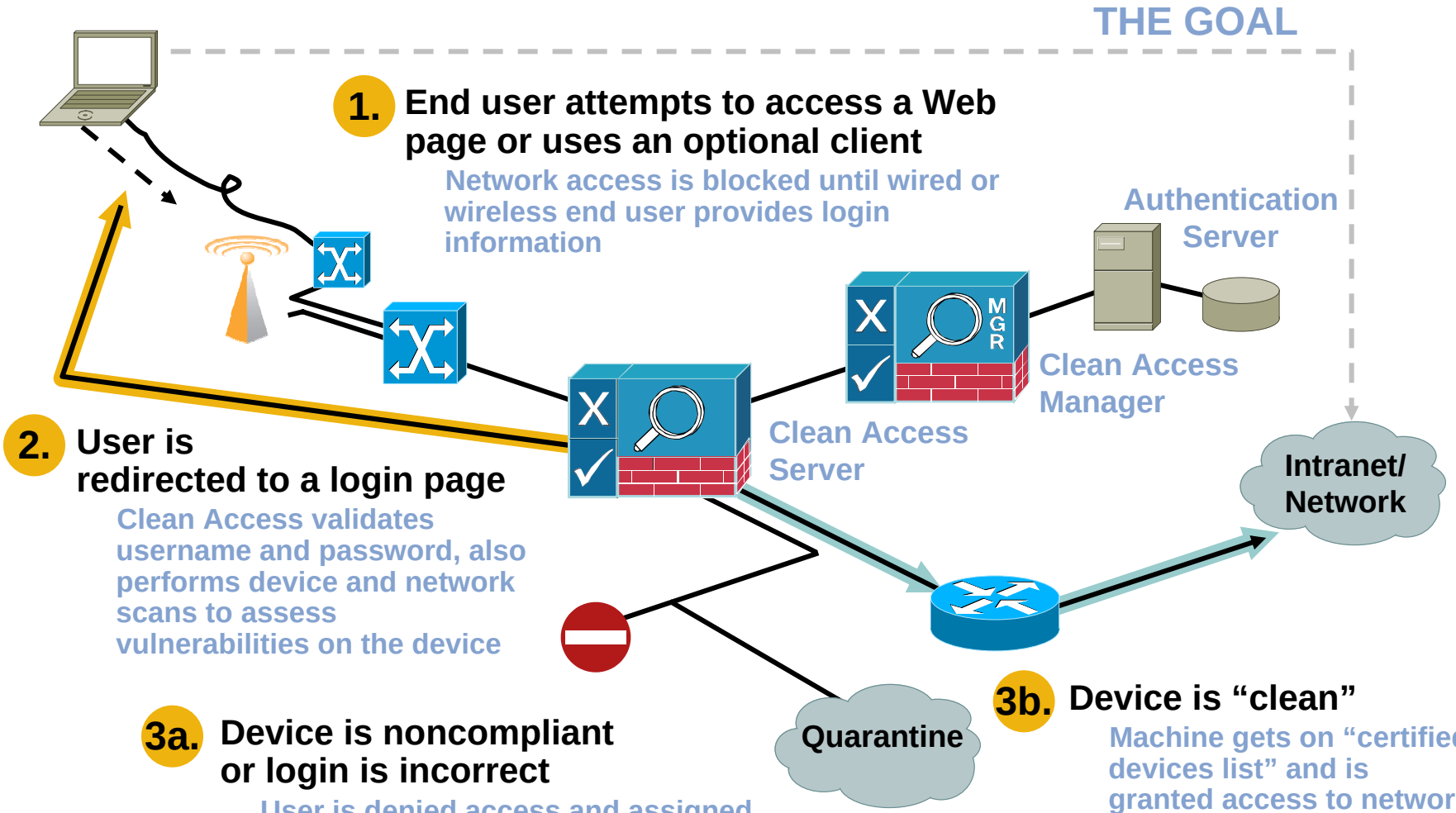
Anti-Virus Updates

Anti-Spyware Updates

Other 3rd Party Checks

Customers can easily add customized checks

Product User Flow Overview



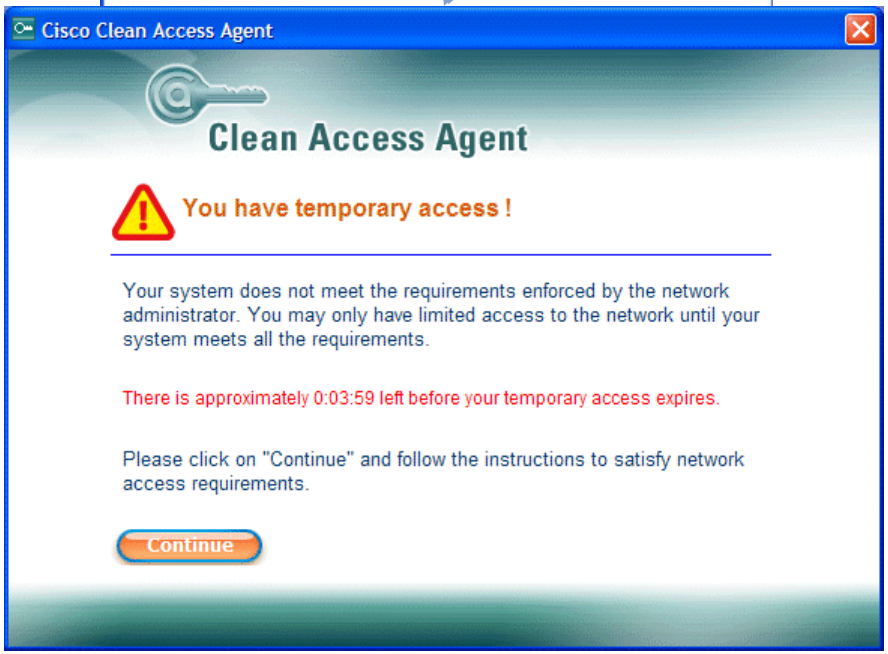
User Experience with Agent

Login Screen

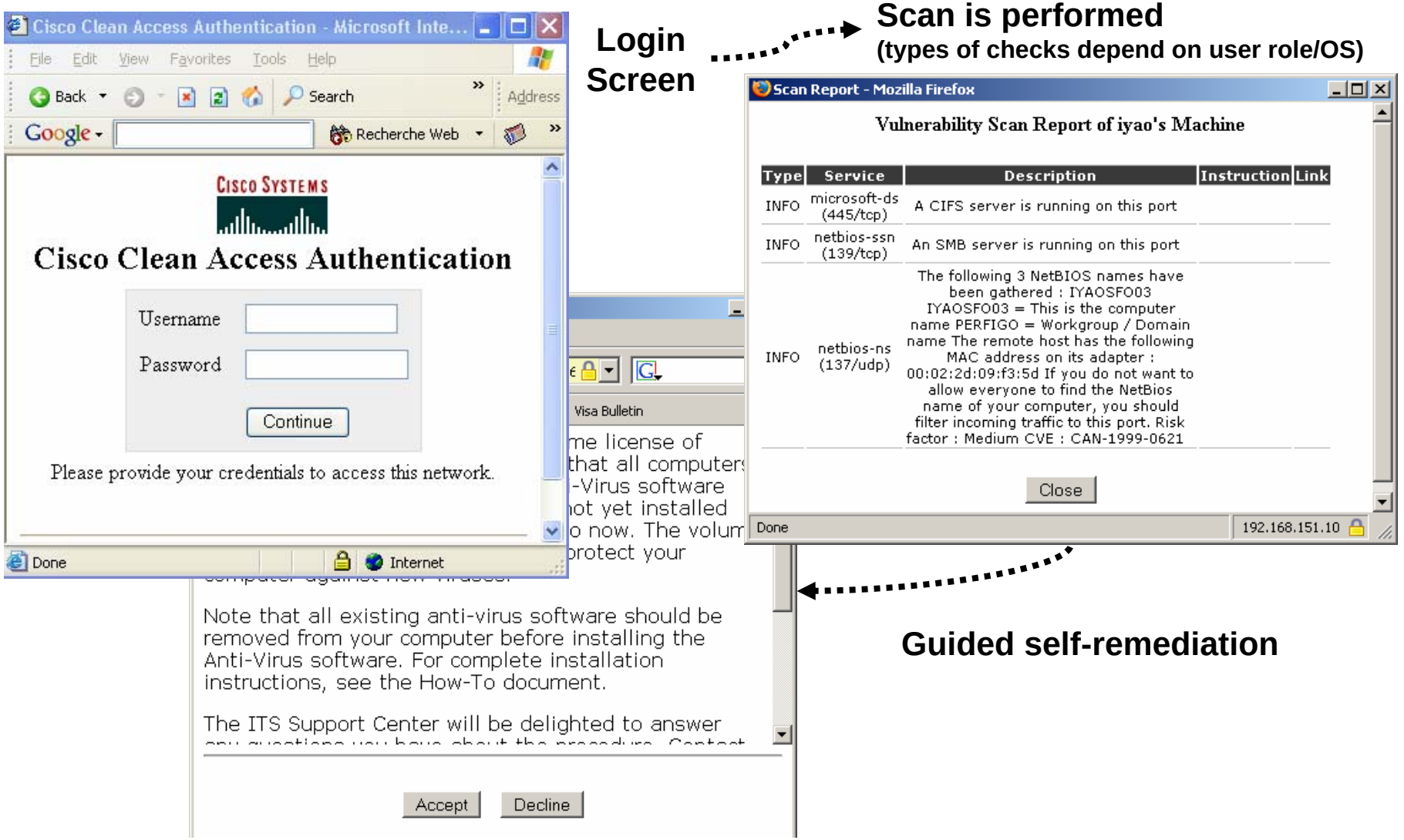
Scan is performed
(types of checks depend on user role)

Scan fails

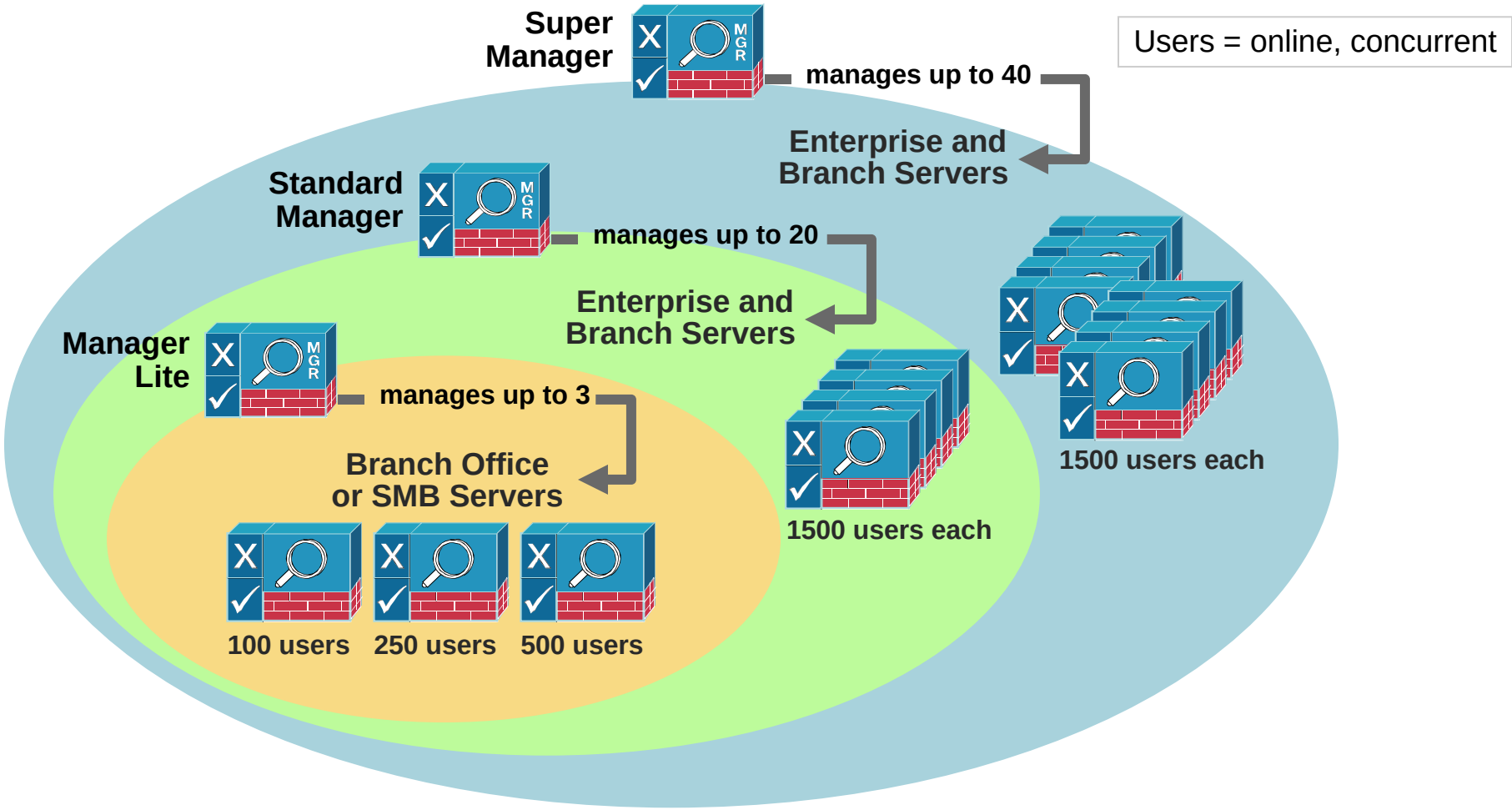
Remediate



User Experience via Web Browser



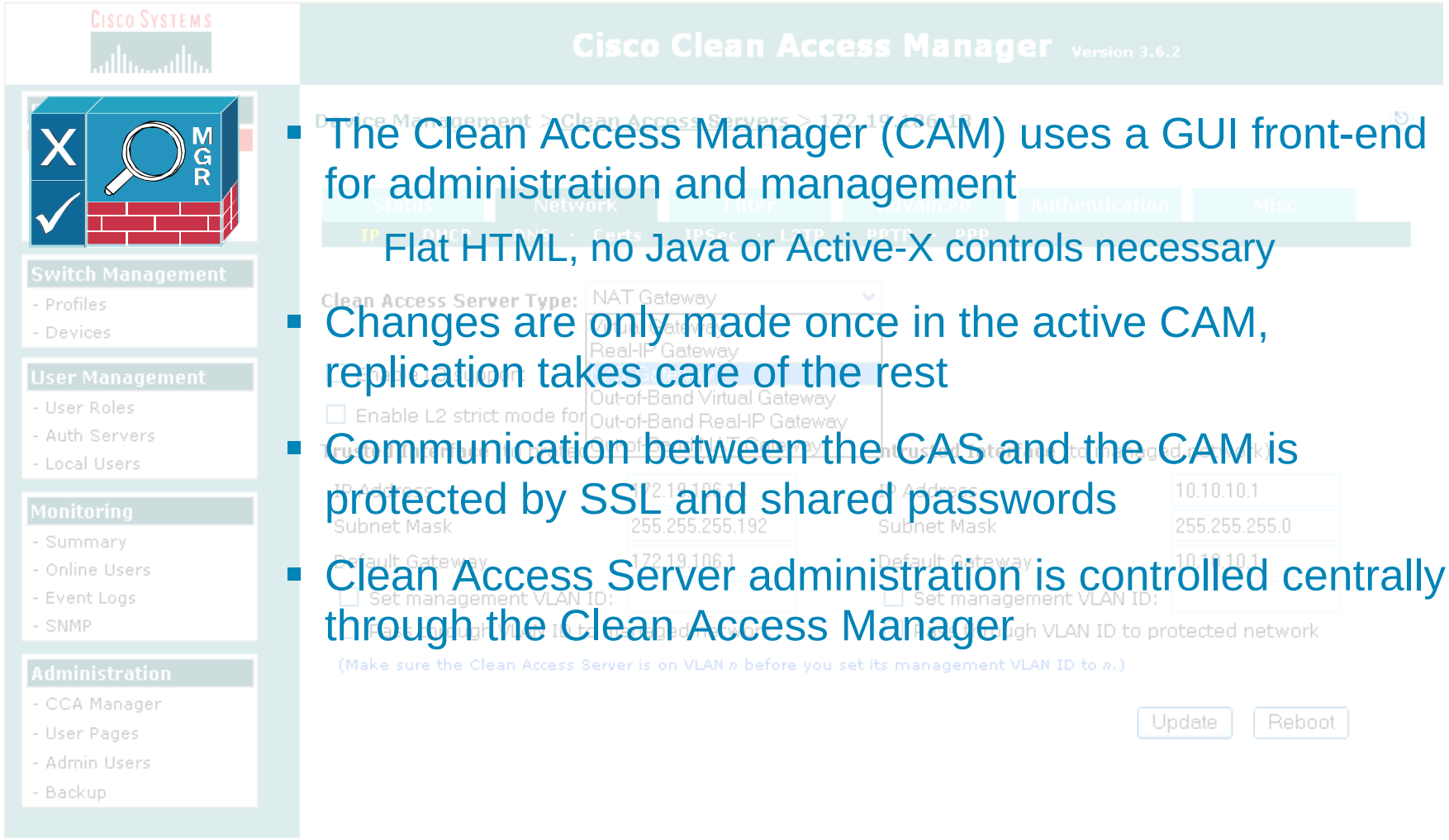
Clean Access Sizing



Agenda

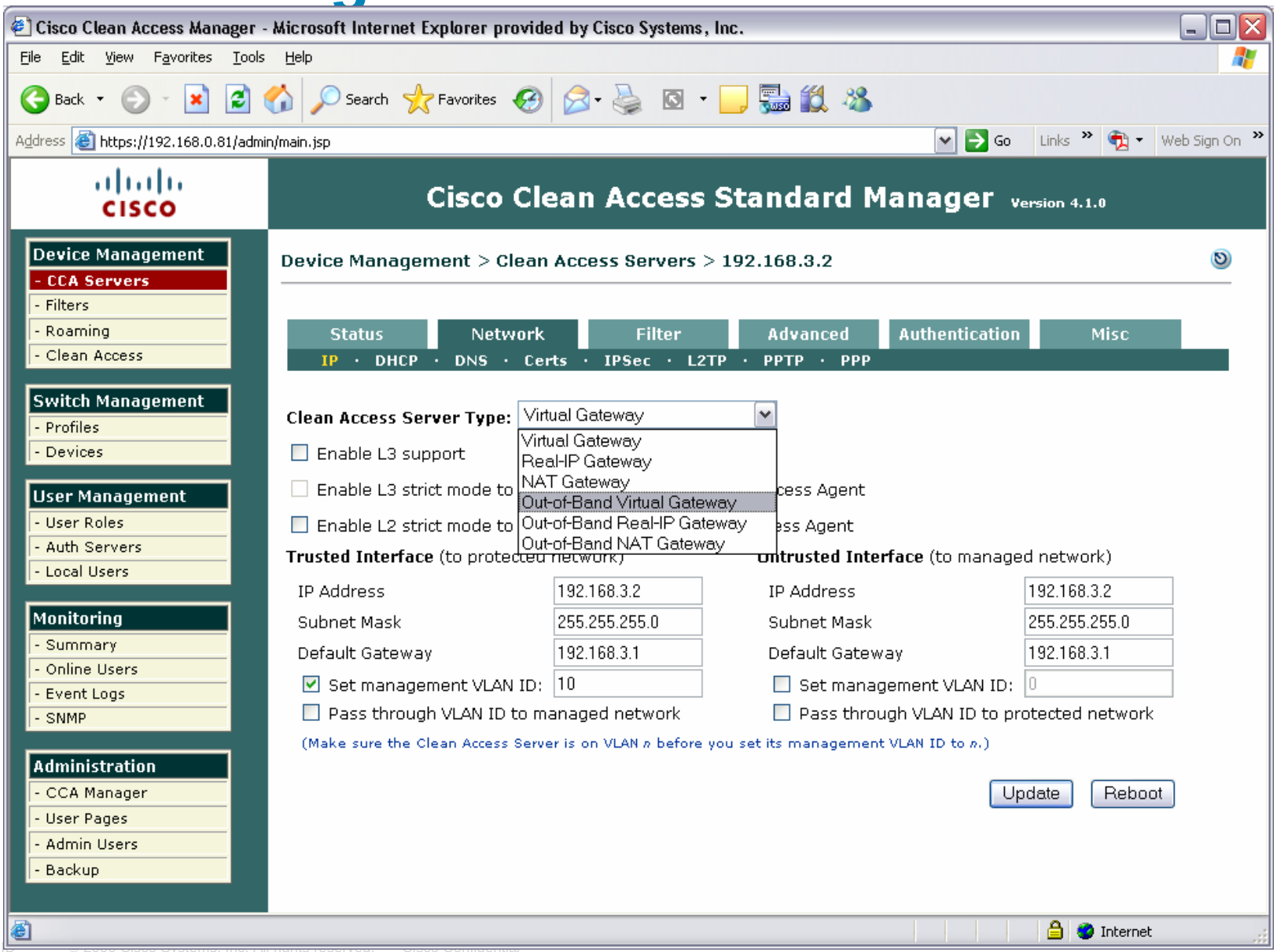
1. Securing Complexity
2. Clean Access Product Overview
3. **Clean Access Features In-Depth**
   - **Management Console**
   - **Checks, Rules, Requirements**
4. Clean Access Technical Benefits

Tour of Features: Management Console



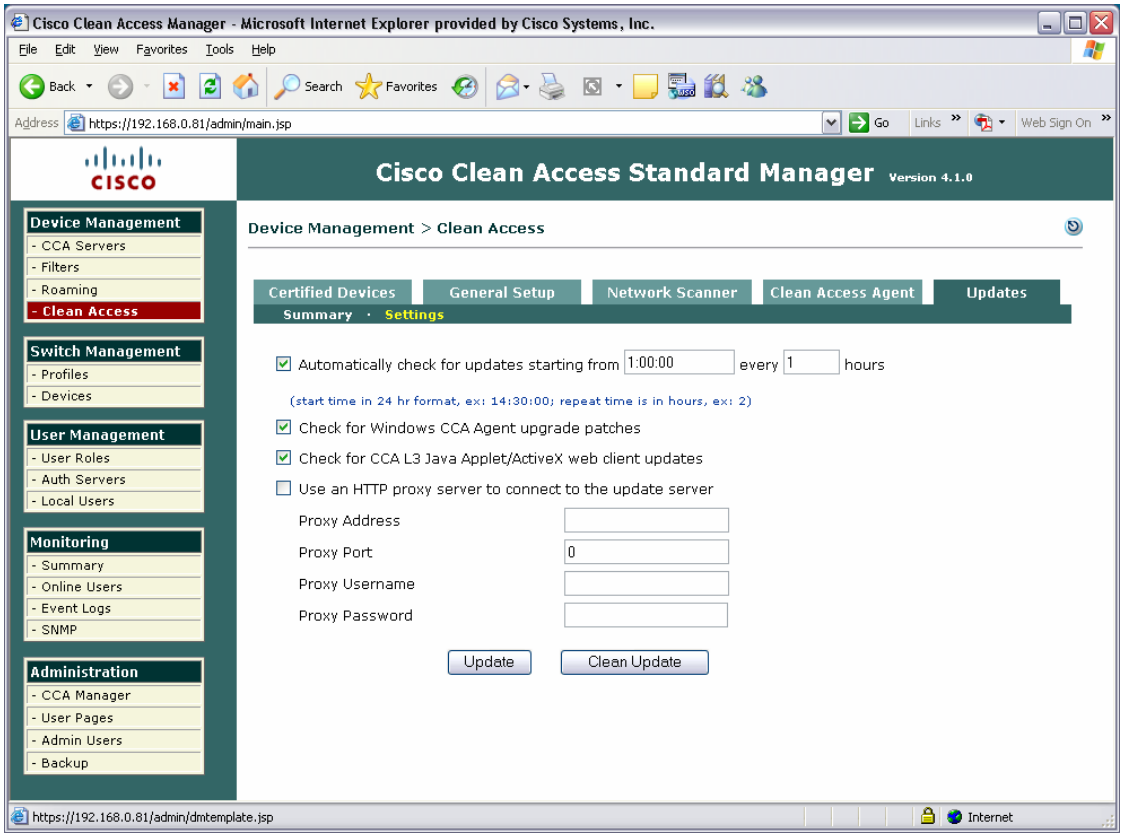
- The Clean Access Manager (CAM) uses a GUI front-end for administration and management
  - Flat HTML, no Java or Active-X controls necessary
- Changes are only made once in the active CAM, replication takes care of the rest
- Communication between the CAS and the CAM is protected by SSL and shared passwords
- Clean Access Server administration is controlled centrally through the Clean Access Manager

CAM Manages All Clean Access Servers



Pre-Configured Checks

Updates of Clean Access Agent and pre-configured checks are downloaded automatically at designated intervals



- Proxy capabilities for customer who do not allow direct internet connections
- SSL encryption and certificates secure traffic between Cisco and the CAM

Posture Validation Overview

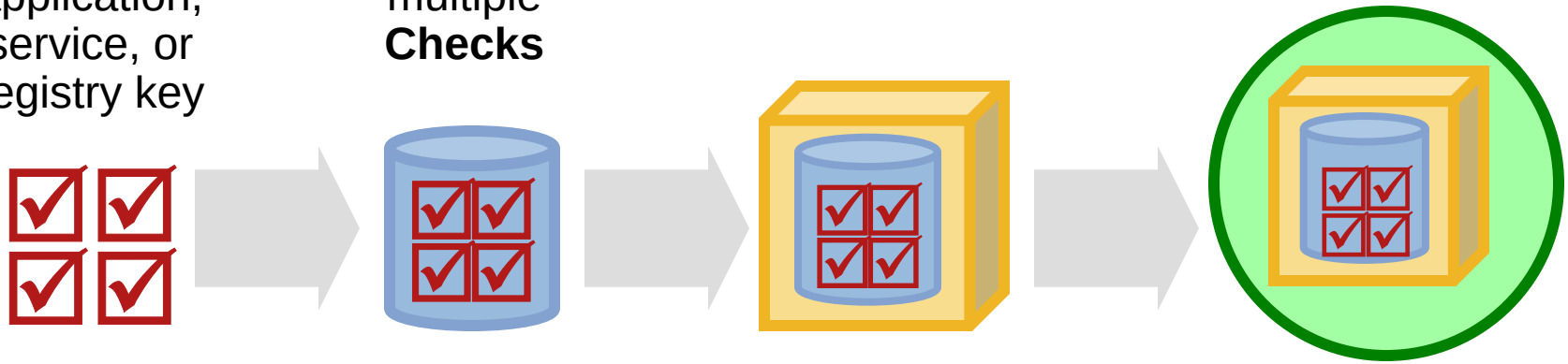
Clean Access posture validation is a hierarchical process with either pre-loaded or custom profiles

CHECKS assess the state of a file, application, service, or registry key

RULES contain single or multiple **Checks**

REQUIREMENTS contain single or multiple **Rules**

ROLES have one or more **Requirements**

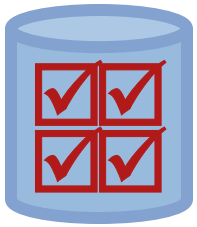


Checks and Rules: An Example

CHECKS
assess the state of a file, application, service, or registry key

Is anti-spyware installed?
(application present, file present)
Is anti-spyware up-to-date?
(file version > or =)
Is anti-spyware running?
(service / exe running)

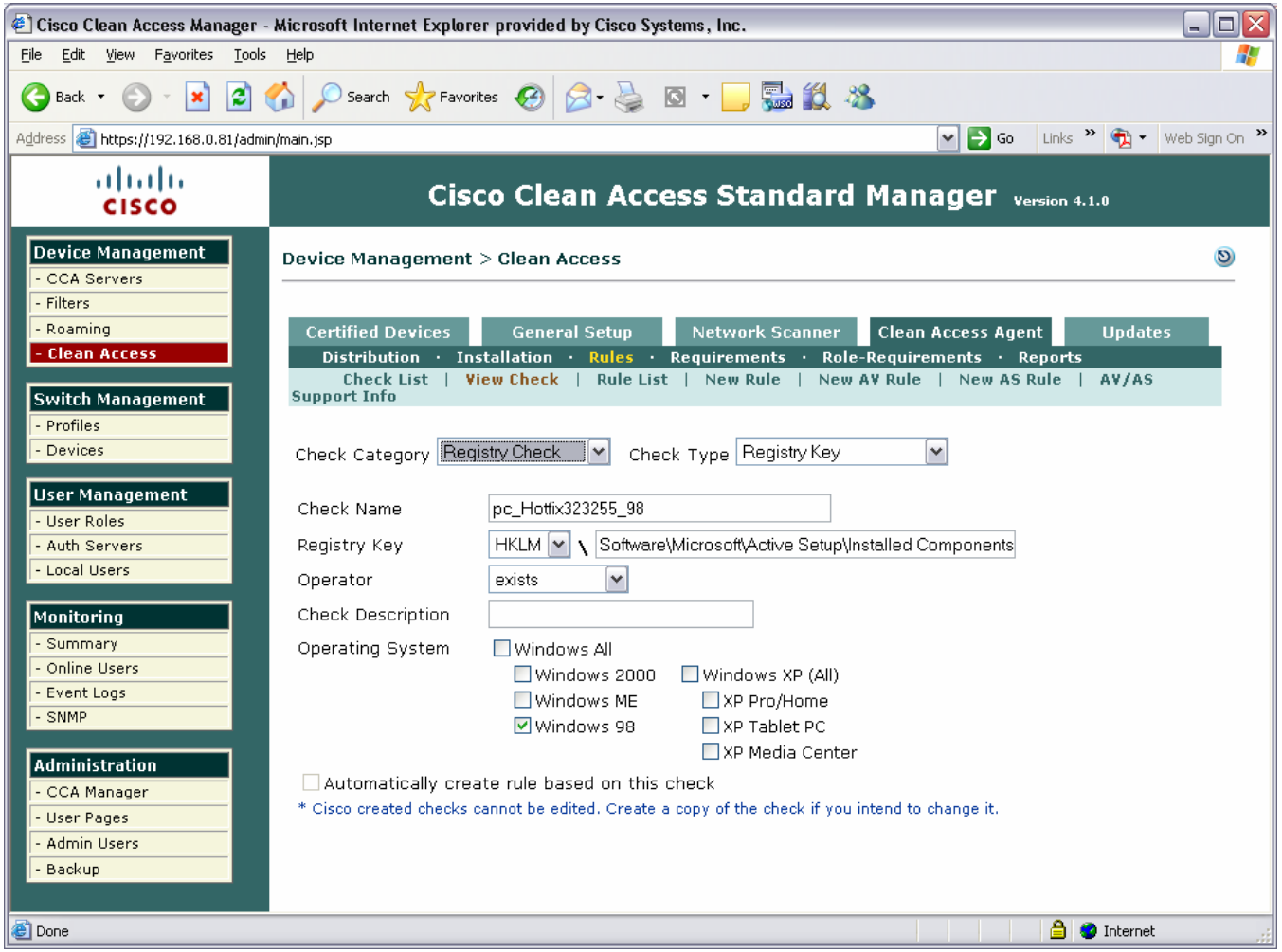
RULES
assemble individual checks together to make a posture assessment

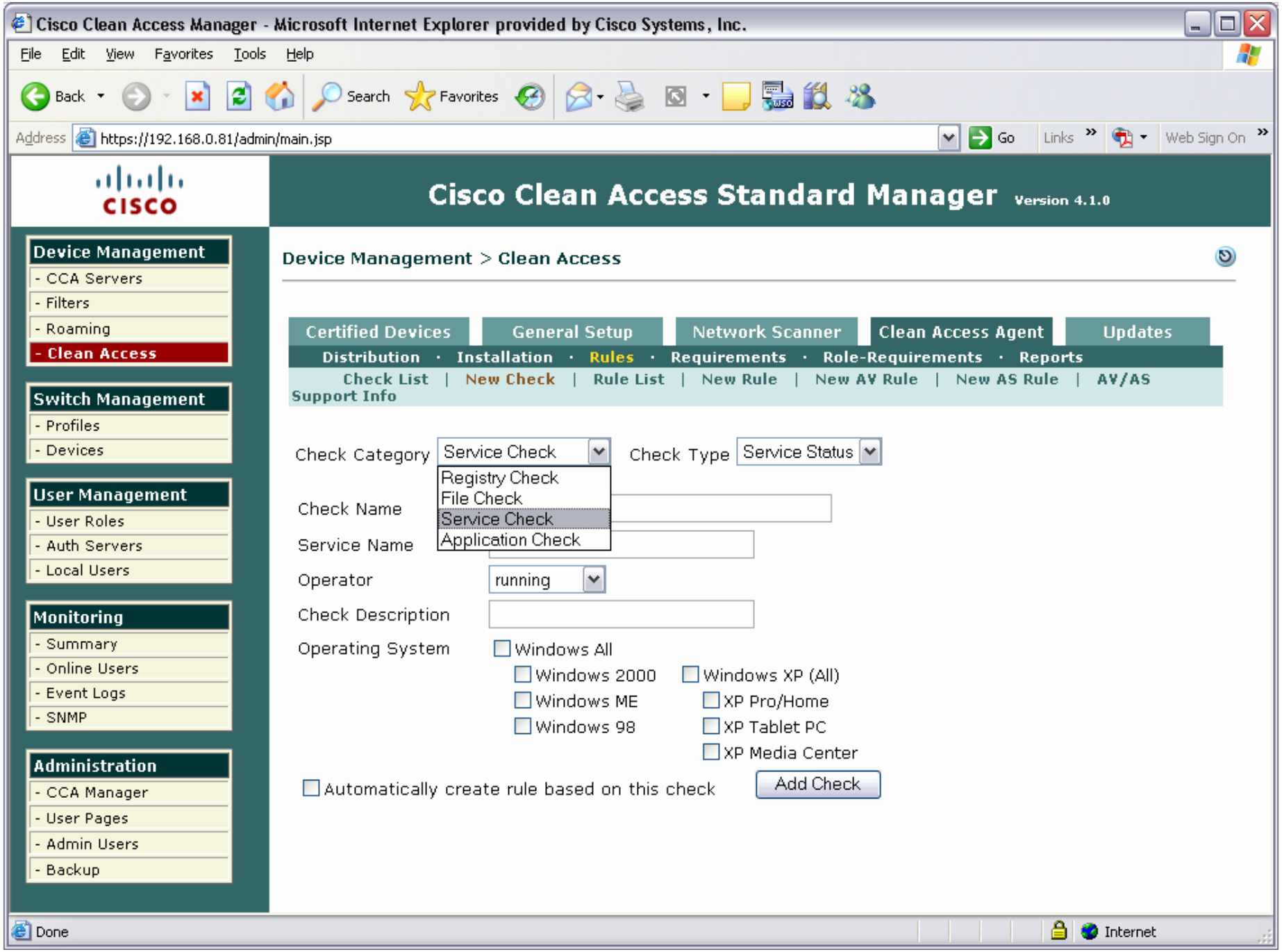


Anti_Spyware_Installed_Check
AND
Anti_Spyware_UptoDate_Check
AND
Anti_Spyware_Running_Check

How Checks Look in the Manager

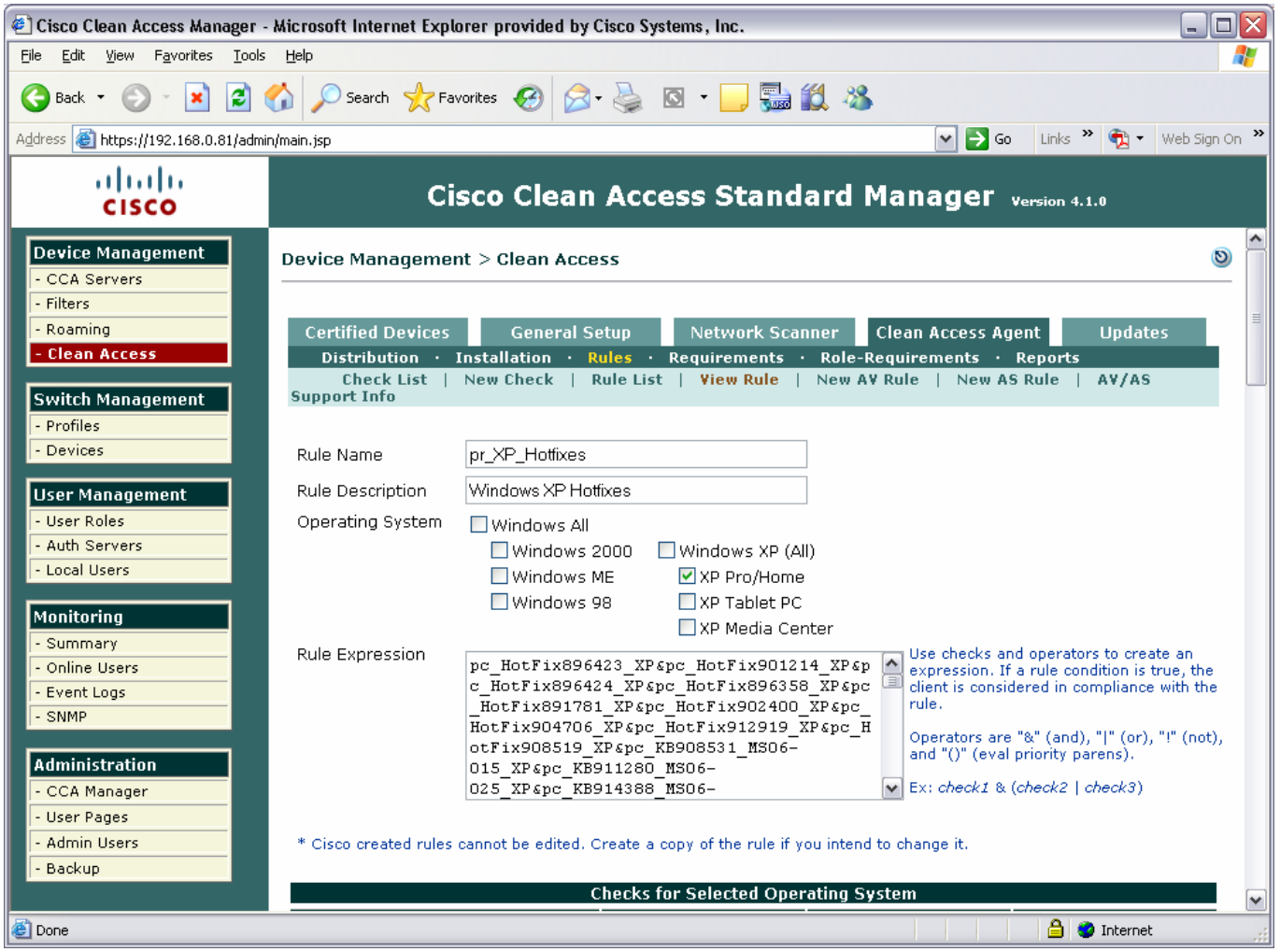
This is an example of a registry key CHECK for a Windows Hotfix:




Cisco Clean Access Manager - Microsoft Internet Explorer provided by Cisco Systems, Inc.
File Edit View Favorites Tools Help
Back Search Favorites
Address https://192.168.0.81/admin/main.jsp
Go Links Web Sign On
Cisco Clean Access Standard Manager Version 4.1.0
Device Management
- CCA Servers
- Filters
- Roaming
- Clean Access
Switch Management
- Profiles
- Devices
User Management
- User Roles
- Auth Servers
- Local Users
Monitoring
- Summary
- Online Users
- Event Logs
- SNMP
Administration
- CCA Manager
- User Pages
- Admin Users
- Backup
Device Management > Clean Access
Certified Devices
General Setup
Network Scanner
Clean Access Agent
Updates
Distribution · Installation · Rules · Requirements · Role-Requirements · Reports
Check List | New Check | Rule List | New Rule | New AV Rule | New AS Rule | AV/AS Support Info
Check Category Service Check
Check Type Service Status
Registry Check
File Check
Service Check
Application Check
Check Name
Service Name
Operator running
Check Description
Operating System
Windows All
Windows 2000
Windows XP (All)
Windows ME
XP Pro/Home
Windows 98
XP Tablet PC
XP Media Center
Automatically create rule based on this check
Add Check
Done
Internet

How Rules Look in the Manager

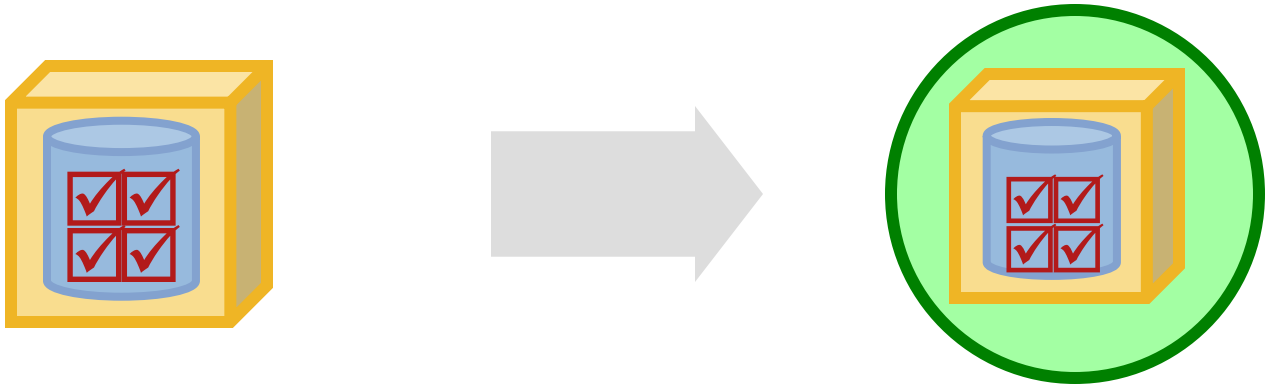
This is an example of a Windows Hotfix RULE with multi-level check logic:



Requirements and Roles

REQUIREMENTS
tie remediation actions directly to a rule

ROLES
determine which requirements and which security filters apply



Remediation methods include:

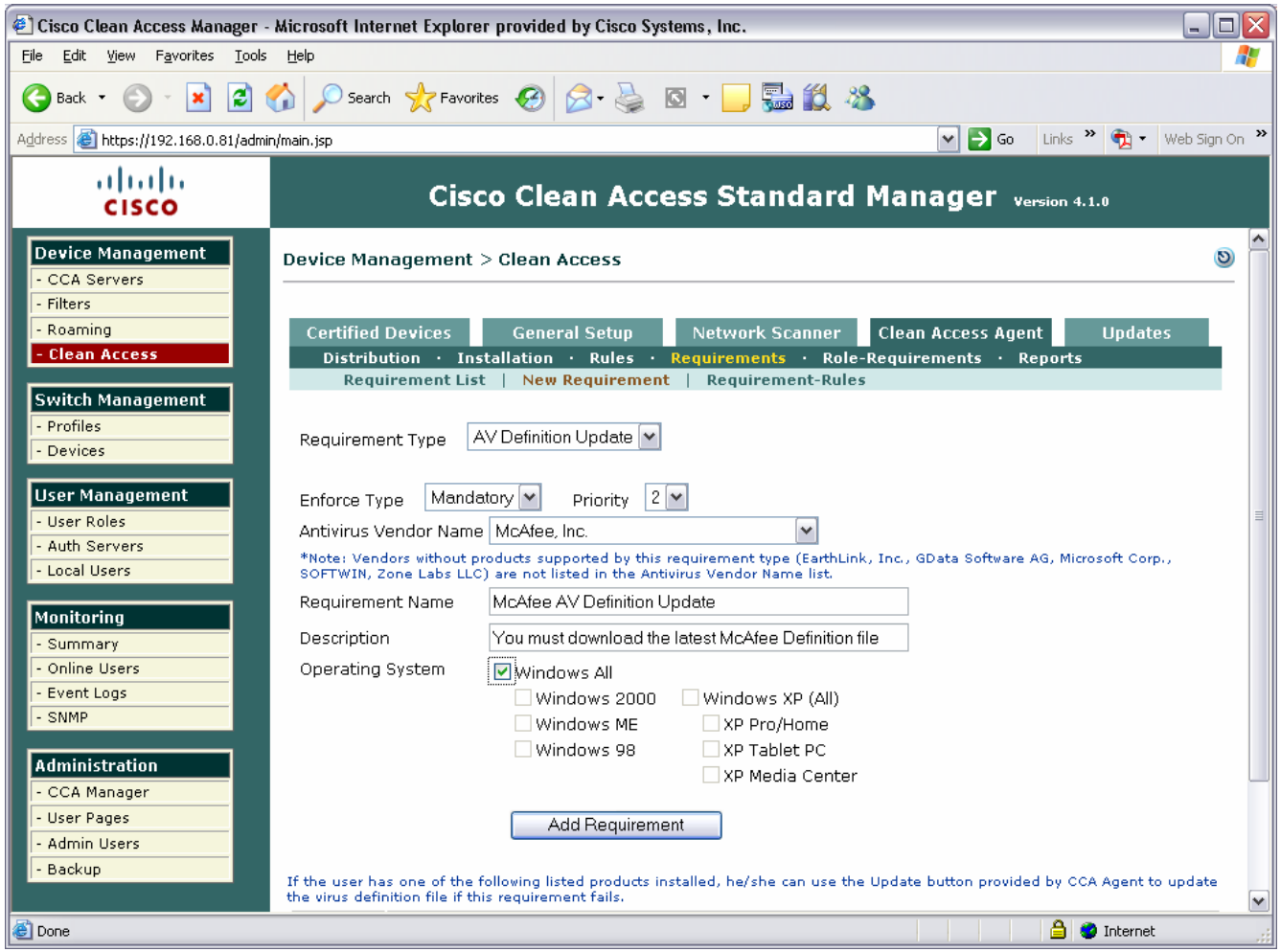
- **File Distribution ("Download antispyware.exe")**
- **Link Distribution ("windowsupdate.com")**
- **Local Check (text instructions or messages)**
- **Definition Update (direct launch of supported AV or AS)**

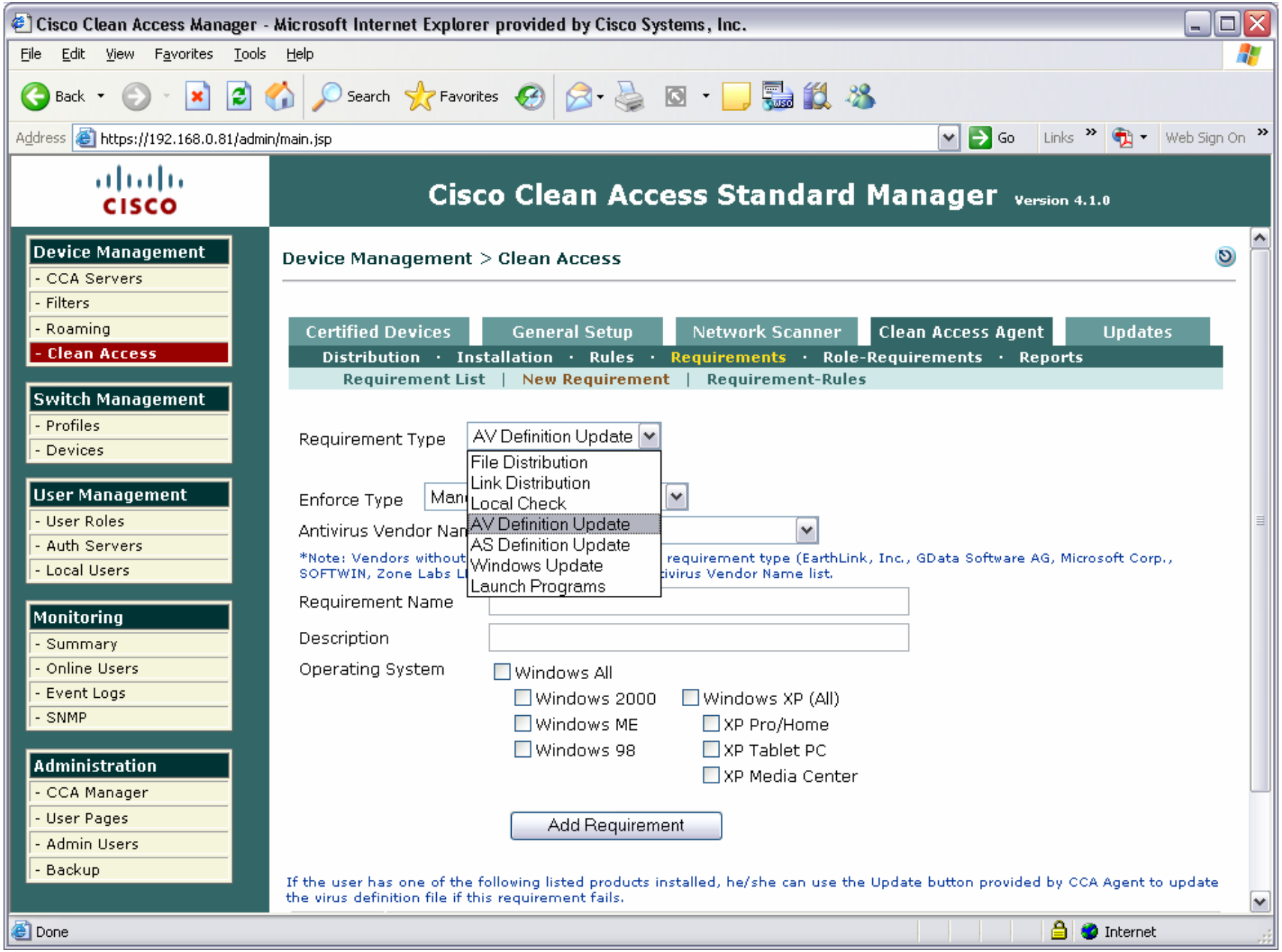
Option to dynamically assign VLANs

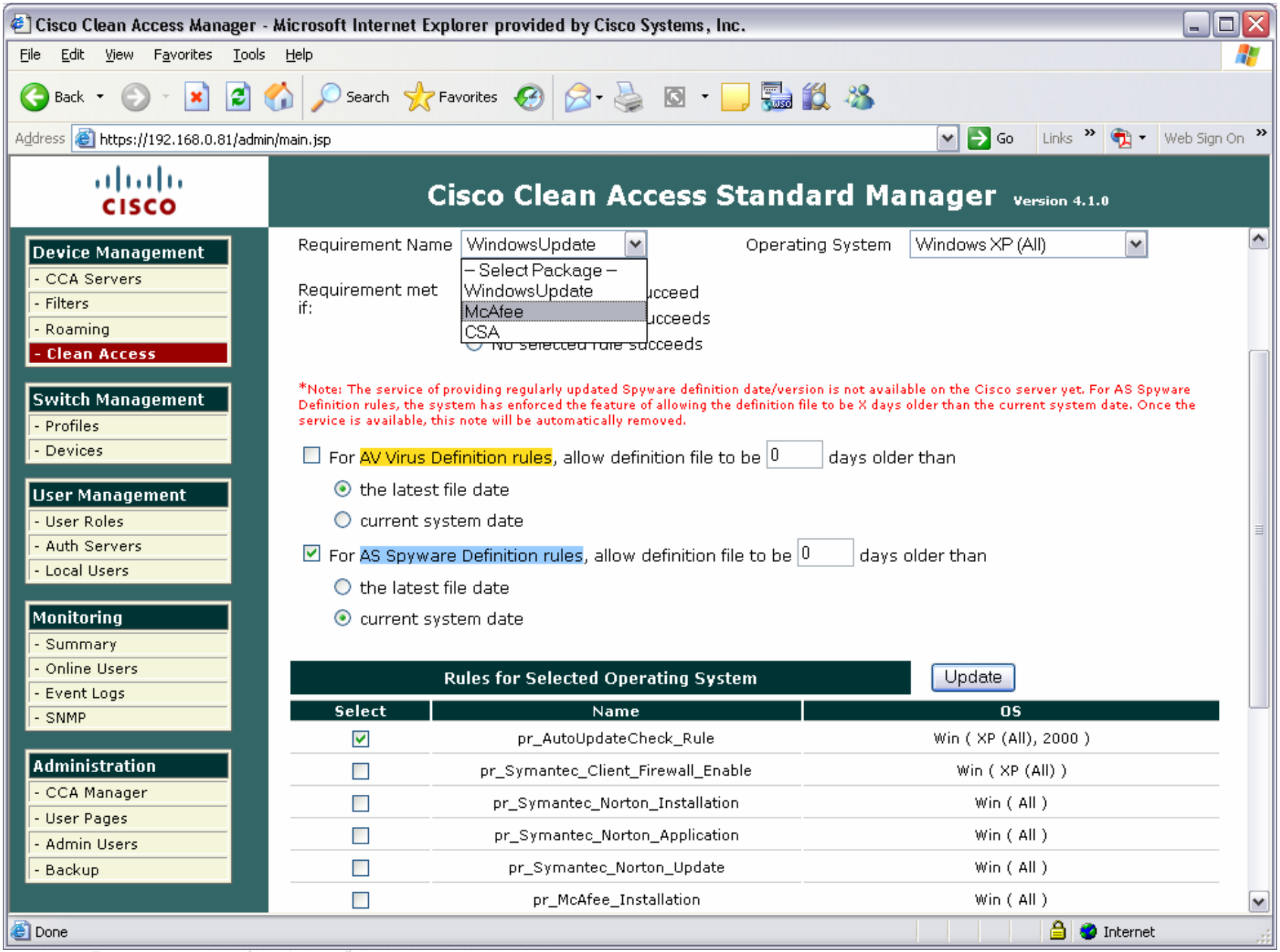
Apply individual URL redirection per role, as well as Acceptable Usage Policies, User Pages, and more

How Requirements Look in the Manager

Remediation as required by REQUIREMENTS can be manual, automatic, optional, or enforced:




Cisco Clean Access Manager - Microsoft Internet Explorer provided by Cisco Systems, Inc.
File Edit View Favorites Tools Help
Back Search Favorites
Address https://192.168.0.81/admin/main.jsp
Go Links Web Sign On
Cisco Clean Access Standard Manager Version 4.1.0
Device Management
- CCA Servers
- Filters
- Roaming
- Clean Access
Switch Management
- Profiles
- Devices
User Management
- User Roles
- Auth Servers
- Local Users
Monitoring
- Summary
- Online Users
- Event Logs
- SNMP
Administration
- CCA Manager
- User Pages
- Admin Users
- Backup
Device Management > Clean Access
Certified Devices
General Setup
Network Scanner
Clean Access Agent
Updates
Distribution · Installation · Rules · Requirements · Role-Requirements · Reports
Requirement List | New Requirement | Requirement-Rules
Requirement Type
AV Definition Update
File Distribution
Link Distribution
Local Check
AV Definition Update
AS Definition Update
Windows Update
Launch Programs
Enforce Type
Antivirus Vendor Nam
*Note: Vendors without
requirement type (EarthLink, Inc., GData Software AG, Microsoft Corp.,
SOFTWIN, Zone Labs L
tivirus Vendor Name list.
Requirement Name
Description
Operating System
Windows All
Windows 2000
Windows ME
Windows 98
Windows XP (All)
XP Pro/Home
XP Tablet PC
XP Media Center
Add Requirement
If the user has one of the following listed products installed, he/she can use the Update button provided by CCA Agent to update the virus definition file if this requirement fails.
Done
Internet


Cisco Clean Access Manager - Microsoft Internet Explorer provided by Cisco Systems, Inc.
File Edit View Favorites Tools Help
Back Search Favorites
Address https://192.168.0.81/admin/main.jsp
Go Links Web Sign On
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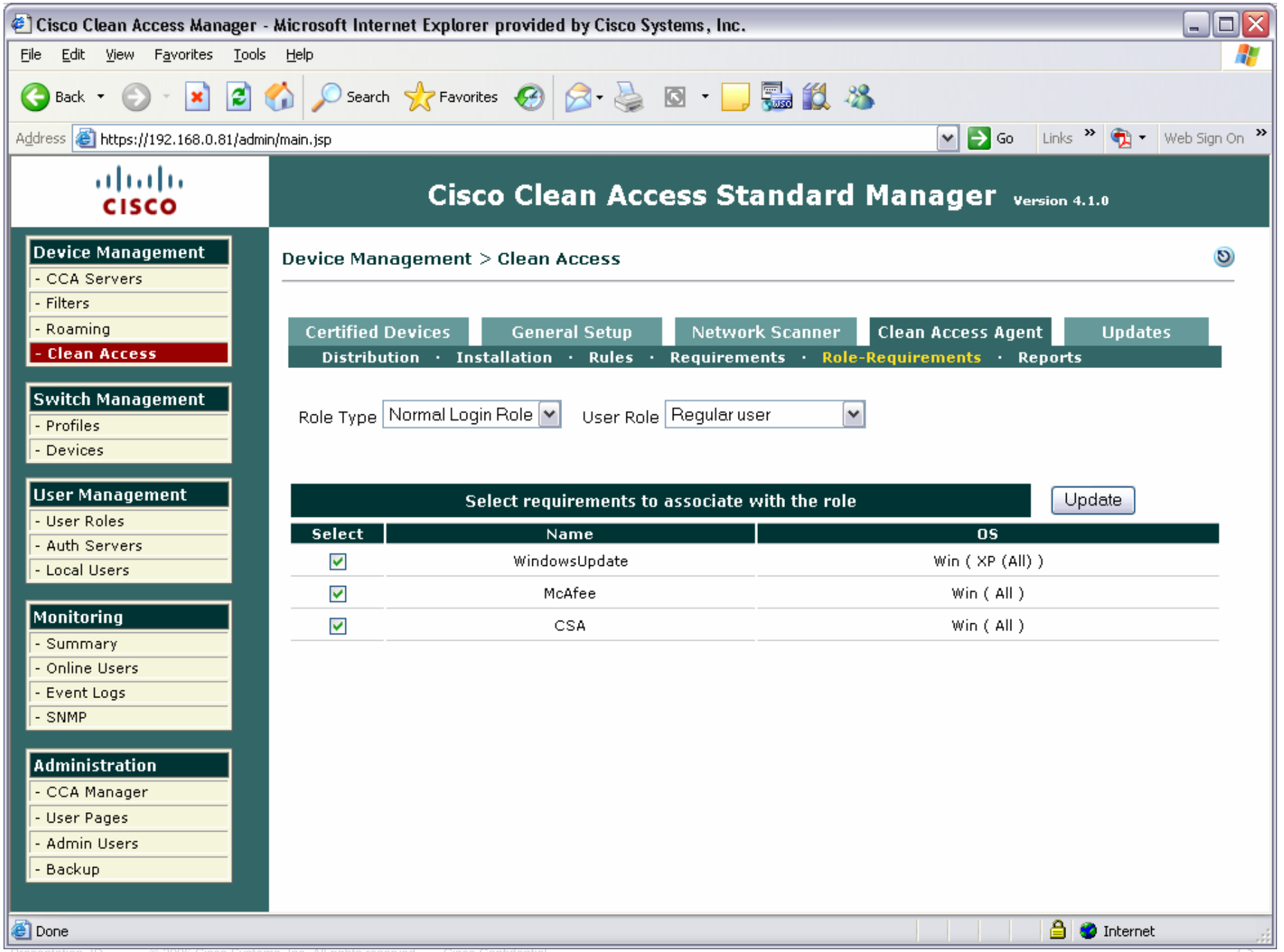
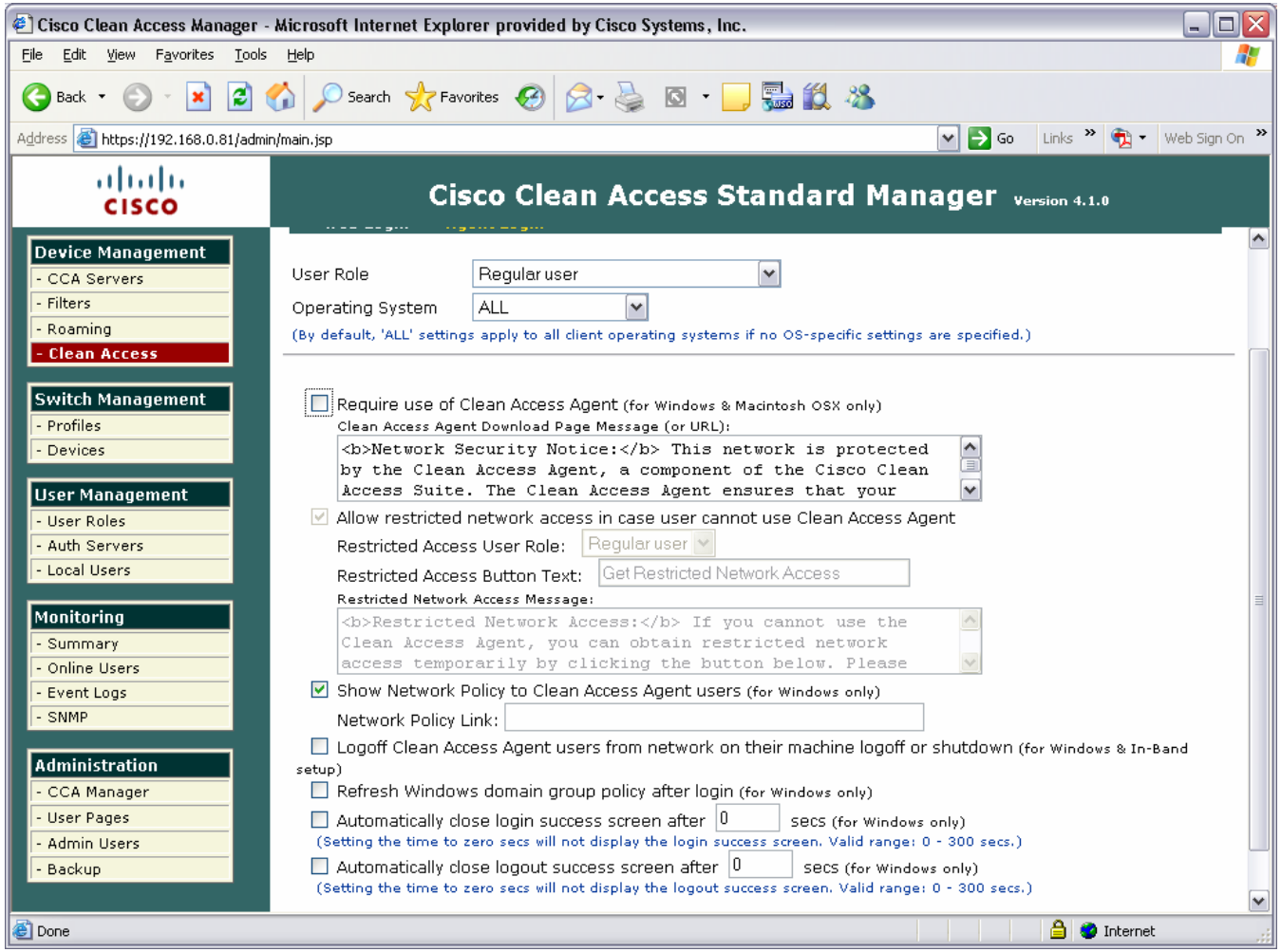
Requirement Name WindowsUpdate
Operating System Windows XP (All)
– Select Package –
WindowsUpdate
McAfee
CSA
Requirement met if:
*Note: The service of providing regularly updated Spyware definition date/version is not available on the Cisco server yet. For AS Spyware Definition rules, the system has enforced the feature of allowing the definition file to be X days older than the current system date. Once the service is available, this note will be automatically removed.
For AV Virus Definition rules, allow definition file to be 0 days older than
the latest file date
current system date
For AS Spyware Definition rules, allow definition file to be 0 days older than
the latest file date
current system date
Rules for Selected Operating System
Update
Select
Name
OS
pr_AutoUpdateCheck_Rule
Win (XP (All), 2000)
pr_Symantec_Client_Firewall_Enable
Win (XP (All))
pr_Symantec_Norton_Installation
Win (All)
pr_Symantec_Norton_Application
Win (All)
pr_Symantec_Norton_Update
Win (All)
pr_McAfee_Installation
Win (All)
Done
Internet



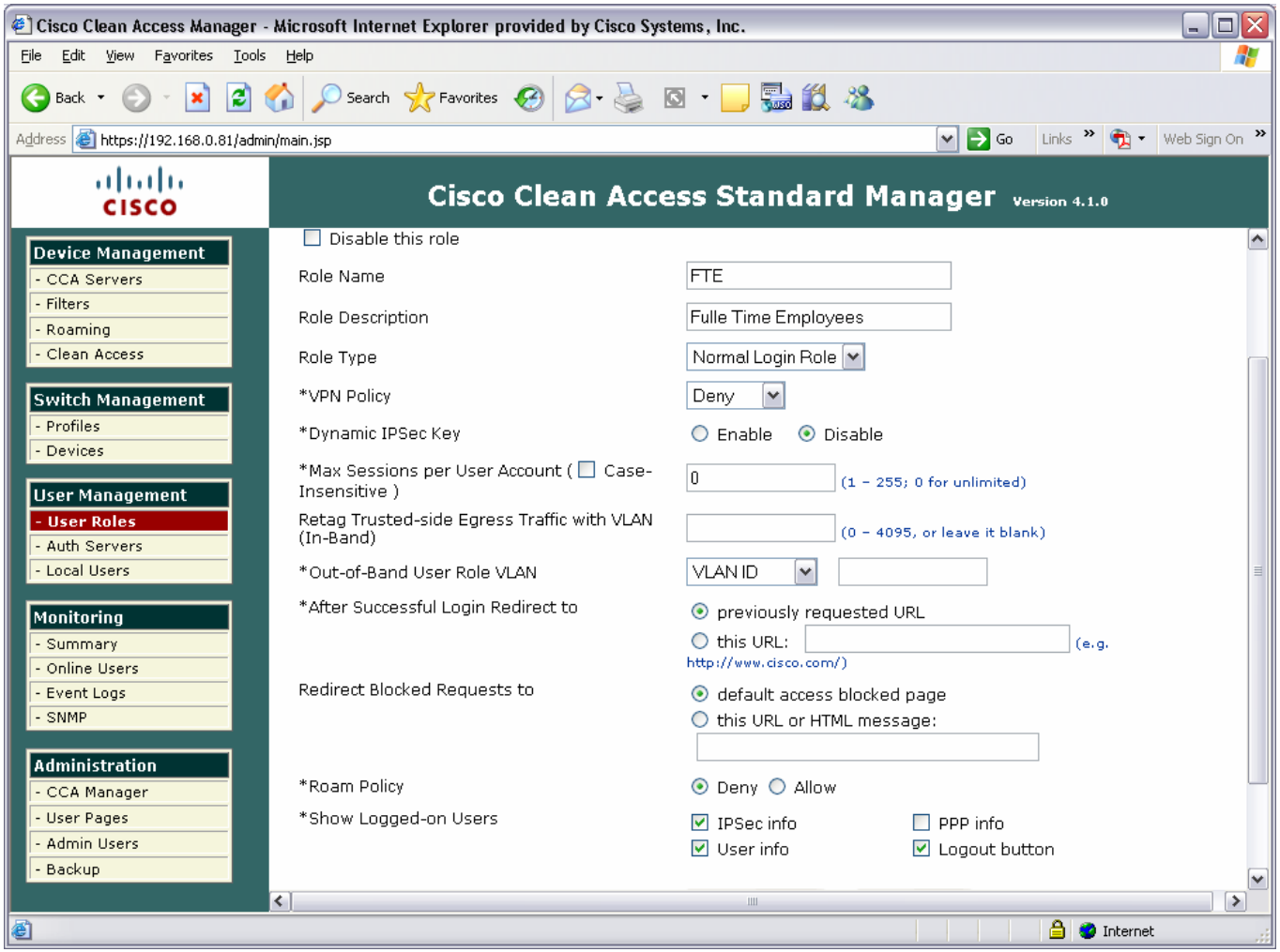
How Roles Look in the Manager

Fine-tuning for timers, agents, and policies on a per-ROLE basis:

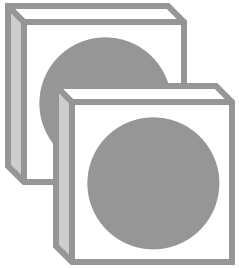


How Roles Look in the Manager

More options based on user ROLE (called "FTE" in this case):

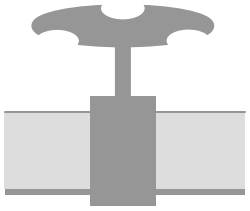


Filters and Bandwidth



SECURITY FILTERS behave the same as Access Control Lists with additional http://weblink and Layer 2 protocol capabilities.

Each role has its own filter, with access levels controlled by the system administrator.

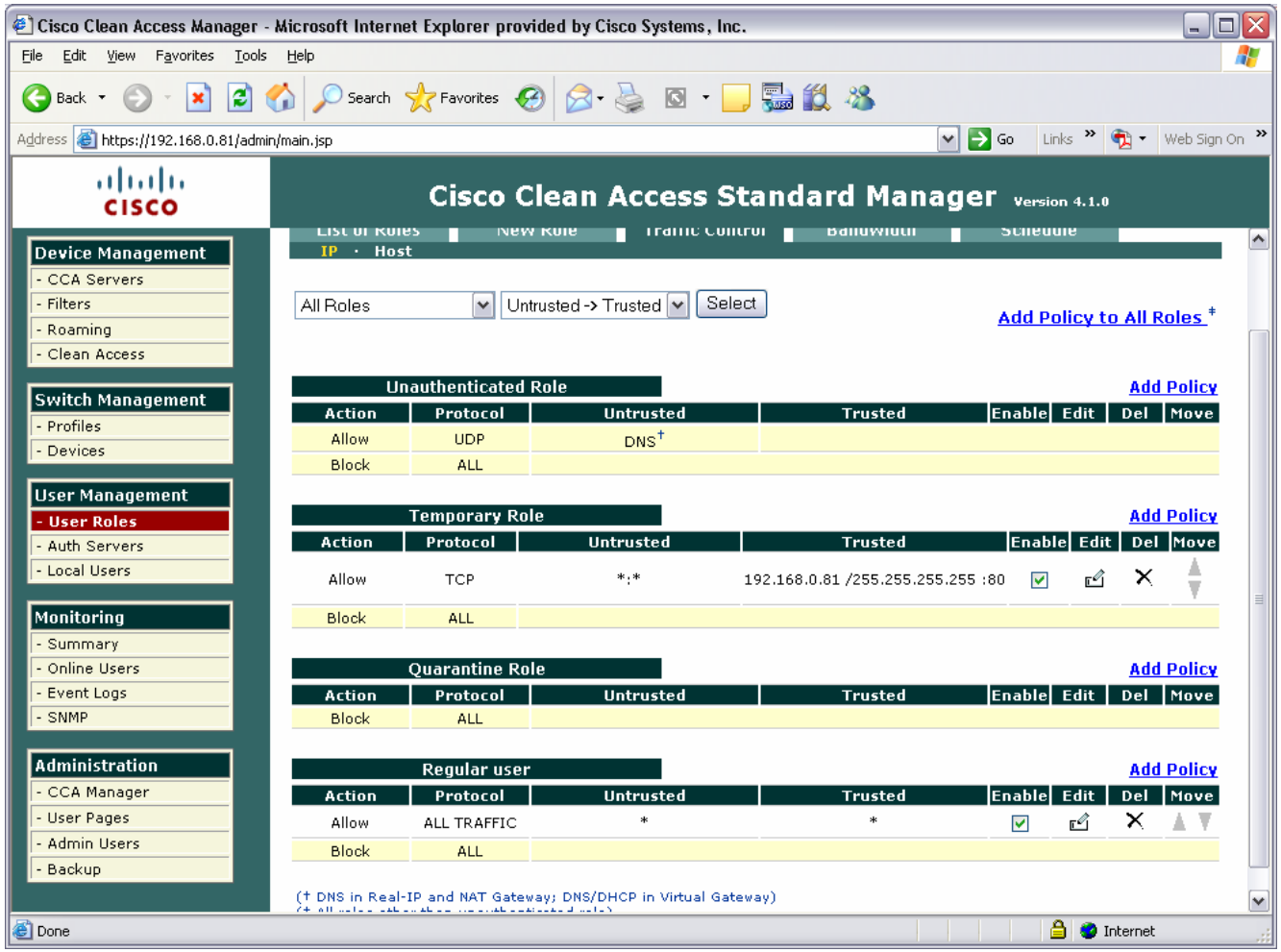


BANDWIDTH CONTROLS allow for either per-user or per-role restrictions.

Common for remediation and guest access applications.

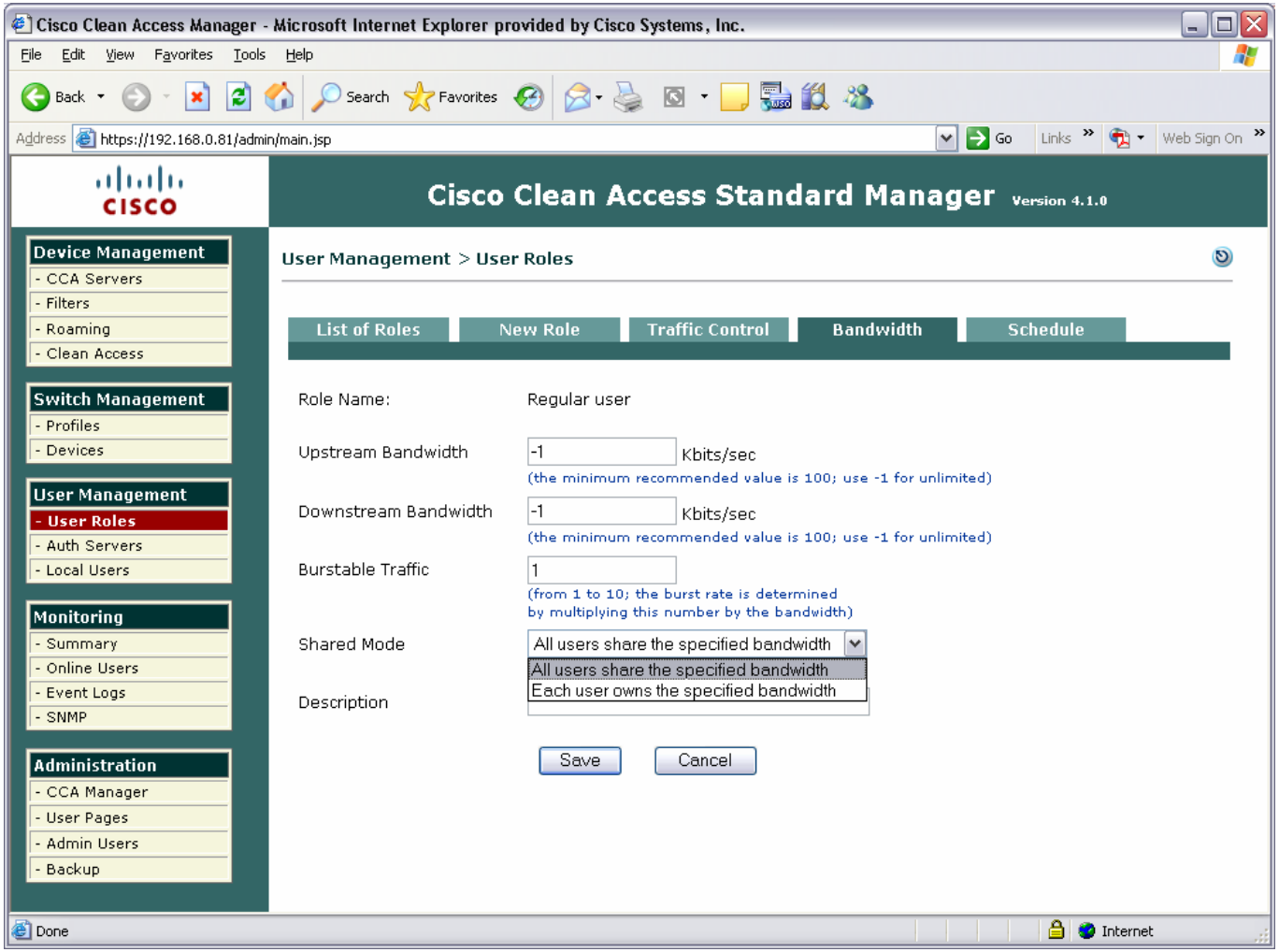
How Filters Look in the Manager

At-a-glance display of Filters by User Roles:



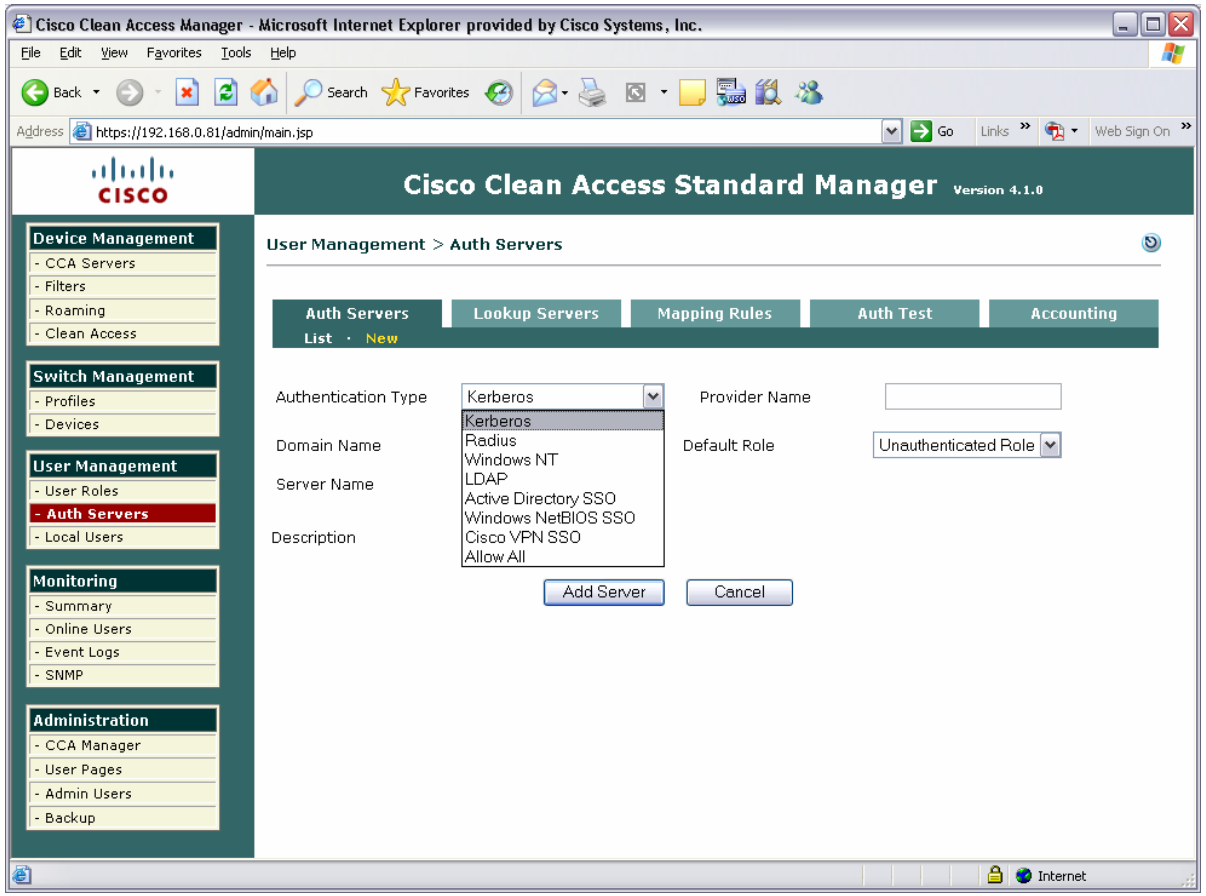
How Bandwidth Controls Look

Bandwidth control on a per-user and per-role basis:



Clean Access Manager: Back-end Authentication

Flexible back-end authentication options allow for fast integration to existing networks: Kerberos/NTLM, RADIUS, LDAP, AD, local db

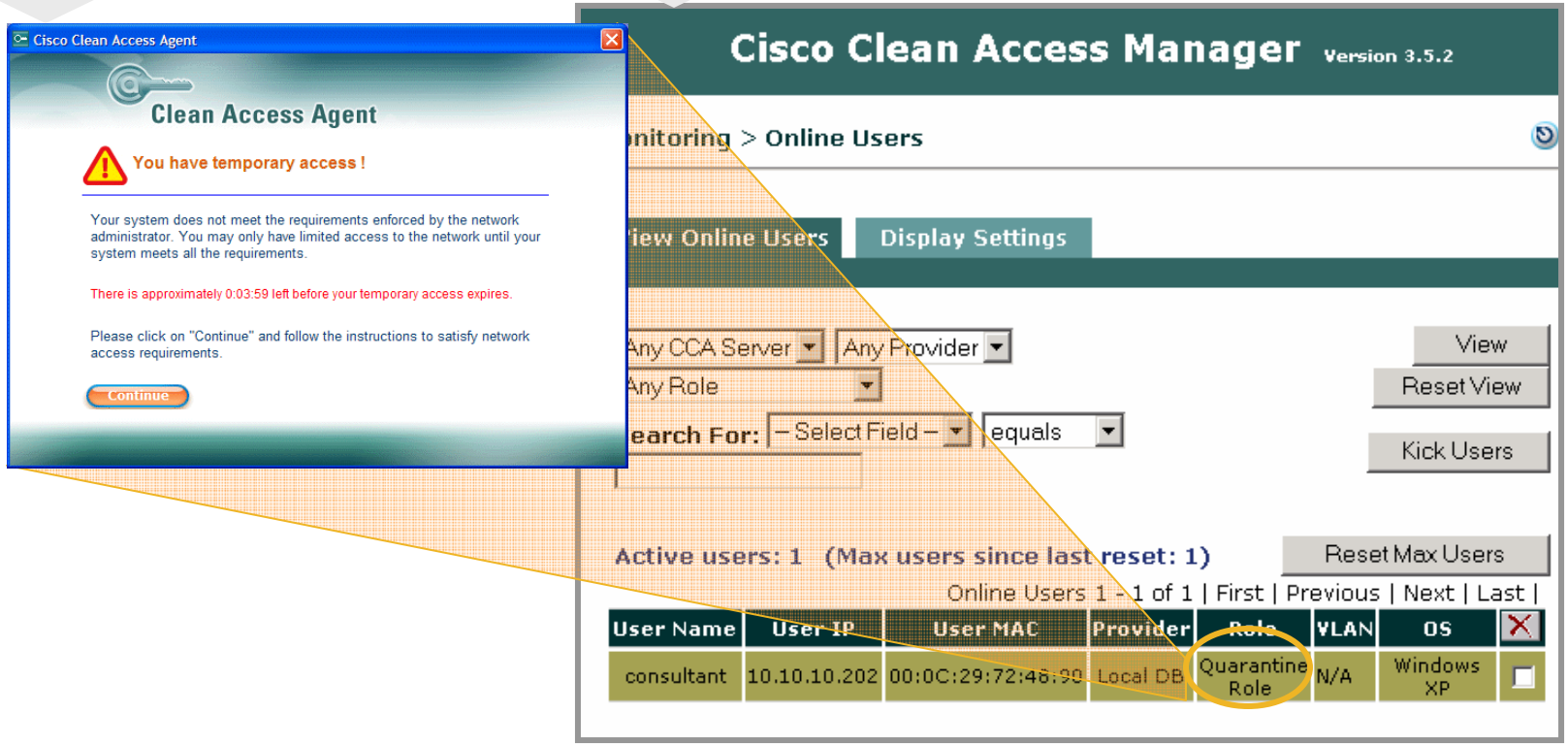


- Map users attributes and rights directly to Roles and Filters
- Add operators and conditions to mapping rules to dial in the desired access rights

Admin Control with Real-Time Information

USER

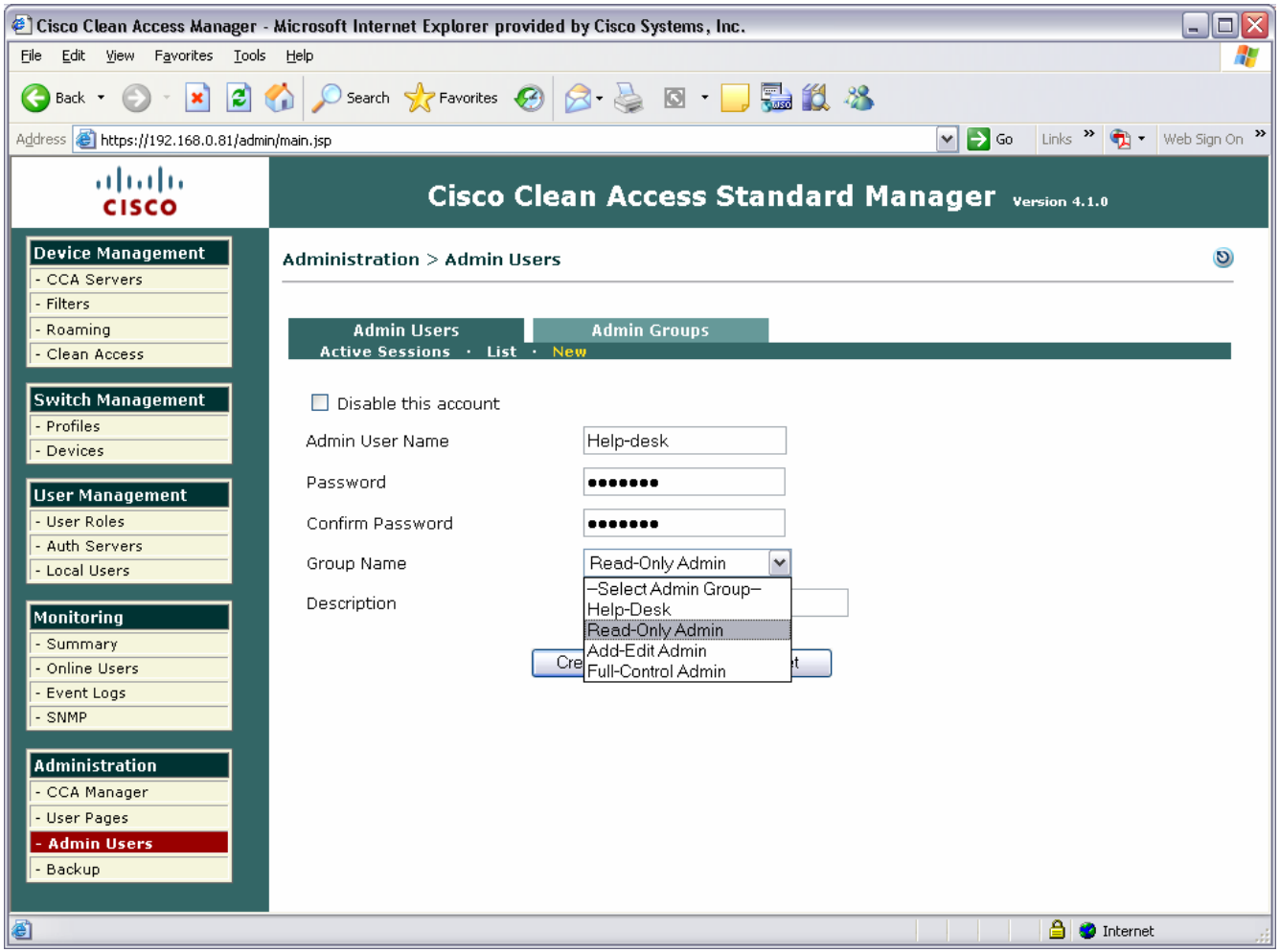
ADMIN



Logs can be viewed locally or sent via Syslog to an off-box collection engine for custom reports

Fine-Tuning Administrator Access

Multiple administrator user accounts for NOC, help desk operators, etc.



Clean Access Manager Benefits Summary

- Centralized and scalable management and policy configuration
- Pre-configured checks drastically reduce “Day 2” support and maintenance
- Full access to the rules engine can create a posture assessment for any application
- Flexible remediation options give users as much power as desired to self-repair, reducing help desk dependence

Agenda

1. Securing Complexity
2. Clean Access Product Overview
3. Clean Access Features In-Depth
4. **Clean Access Technical Benefits**

Clean Access Technical Benefits

Product Experience	With 500+ deployments, Cisco understands the technical impact on your network
Defense-in-Depth	Clean Access is a self-contained, proactive way to enforce policy compliance on all incoming devices
Rapid Setup Easy Mgmt	Pre-configured rulesets and checks make it easy to setup, maintain, modify, and expand
Flexible Deployment	Broad deployment options means that Clean Access fits into your network the way you need it to
Future Proof	Clean Access is core to Cisco's strategic NAC vision and can be leveraged across all future deployment options

Q&A