Cisco Connect

Dubrovnik, Croatia, South East Europe 20-22 May, 2013

Cisco Firewall Update

György Ács – Cisco Systems



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Agenda

ASA Next Generation Firewall and Prime Security Manager

Cisco Security Manager 4.4



ASA Next Generation Firewall (CX)



Firewall Evolution







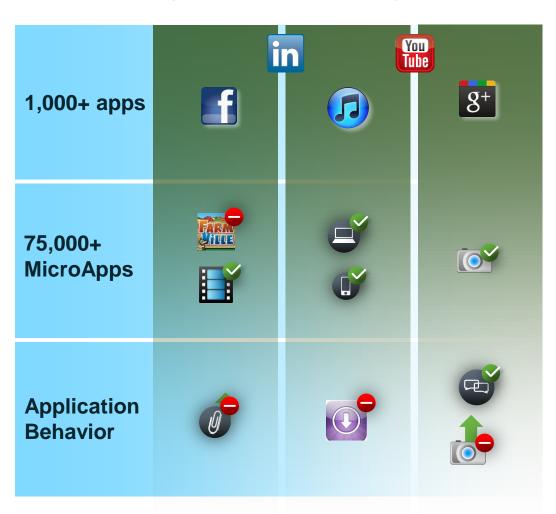
Phase 1 Phase 2 Phase 3

ASA Next Gen Firewall adds context-aware security to the ASA product line. PRSM provides common management experience.



Application Visibility and Control

Enforcing acceptable usage



- Greatest control and visibility over mobile, collaborative, and web 2.0 applications
- Ensures security of (and from) port-hopping applications, such as Skype and BitTorrent
- Granular enforcement of behaviors within applications
- Visibility of activity across the network
- Visit http://asacx-cisco.com

Cisco Connect

How ASA Next Gen Firewall Addresses Access Control

Beyond ports and protocols

Who: Identity and Authentication

What: Application, URL Category, Reputation

How: Device, OS, User Agent, Posture

Where: Local, Remote

Next Generation Firewall / ASA CX

Context-Aware Firewall

Active/Passive Authentication

Application Visibility and Control

Reputation Filtering

URL Filtering

Secure Mobility

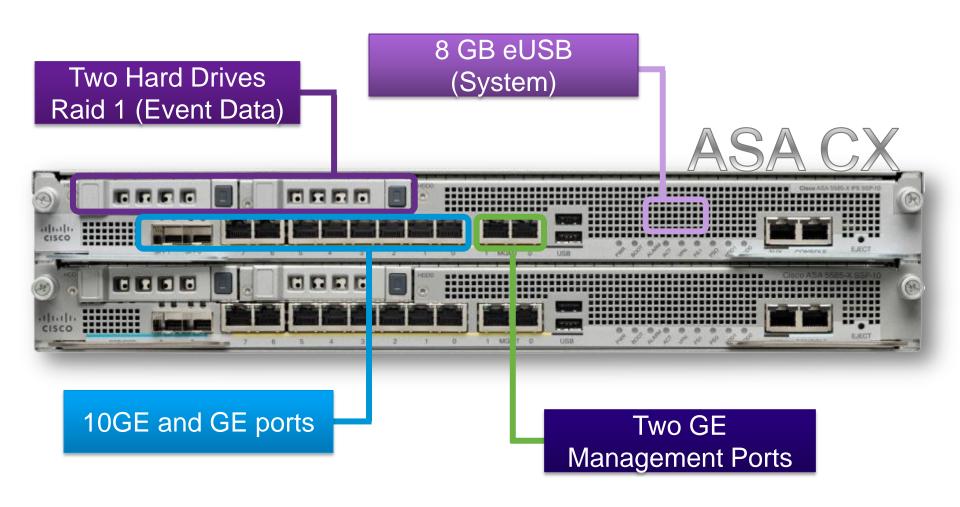
SSP-10 and SSP-20 at FCS

On ASA-X from 2012 Dec





ASA CX Module in ASA 5585-X chasses



ASA CX in 5500-X chassis

ASA 5512, 5515, 5525 (1RU 15.5" Chassis Depth)



ASA 5545, 5555 (1RU 19.05" Chassis Depth)



CX Hard drive Bay(s) (RAID-1 on ASA 5545/5555 chassis)

Licenses enable the CX functionality

All CX licenses are subscription based (1,3 or 5 years)

```
Application Visibility and Control(AVC)
 enables application visibility
 enables application based access control
 e.g. block Skype
WebSecurity Essential(WSE)
 enables URL filtering and Web reputation based access
 control
 e.g. block "Gaming Sites"
Licenses can be purchased separately
Bundled licenses (AVC+WSE) available
No User-Counts apply for any license
```

All licensing is managed via PRSM-UI

Licenses

4 results

Application Visibility and Control license

Model: Trial license applied to all models

PAK: Evaluation Application Visibility and Control License

Device name / Description	IP Address	Software version	Model	Commit version	Device group	
ASA CX	localhost 9.1.1 (1)		ASA5515 0		default	

Web Security Essentials license

Model: Trial license applied to all models

PAK: Evaluation Web Security Essential License

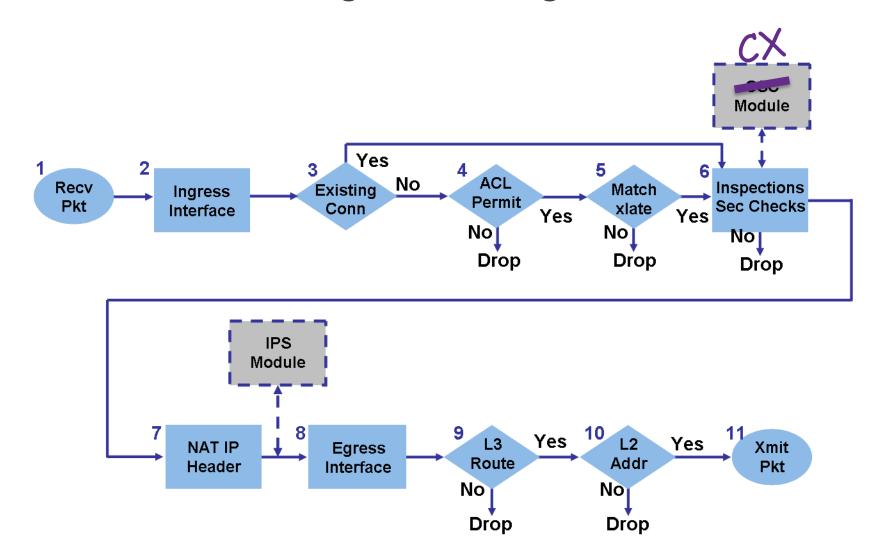
Device name / Description	IP Address	Software version	Model	Commit version	Device group
ASA CX	localhost	9.1.1 (1)	ASA5515	0	default

Expiration date: 11 Mar 2013

Used Devices:1

I want to... ▼

Packet Processing Flow Diagram



Send traffic to CX SSP

Use MPF to direct traffic to the CX blade:

```
policy-map global_policy
    class class-default
    cxsc fail-open auth-proxy

service-policy global_policy global
```

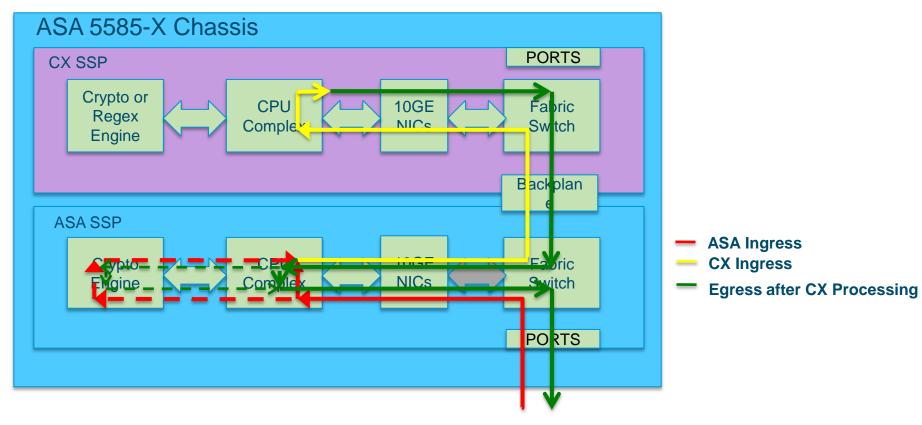
PRSM Multi-device applies this when connecting to CX:



Functionality Distribution

URL Category/Reputation HTTP Inspection AVC Multiple Policy **Decision Points TLS Proxy TCP Proxy** ASA CX ASA **TCP Normalization** NAT TCP Intercept Routing **IP Option Inspection ACL VPN Termination** IP Fragmentation

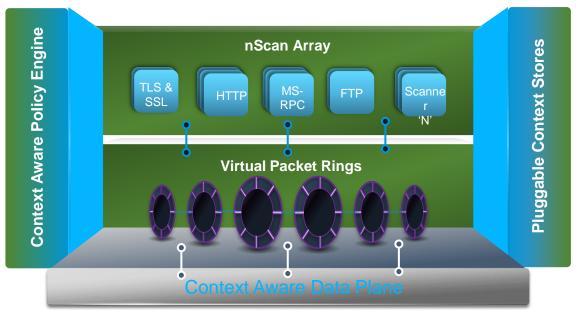
Customer Packet Flow across SSPs



- ASA SSP Configures and controls CX SSP customer ports
- ASA SSP processes all ingress/egress packets
- No packets are directly process by CX SSP except for management ports
- Packet rate doubles on ASA SSP when traffic is sent to CX SSP

Cisco ASA CX

Next-Generation Protection. Proven Cisco technology.



Context Aware

- Most comprehensive controls
 applications, users, and devices
- Most widely deployed remote access
- Business-class web security

Threat Aware

- Protection from zero-day threats
- Analyzes global data from multiple threat vectors
- Reputation analysis via human and machine intelligence

Robust stateful inspection and broadest context-aware controls

Policy types

Authentication

How to identify user?

Decryption

What to decrypt?

Access

Allow or Deny?

Policy types - Screenshot

Access Policy type: Access Used by device roles: default Number of Policies: 1 Features enabled: (a) Source Destination Application Action/Conditions 1 ANY ANY Allow Authentication Policy type: Authentication Used by device roles: default Number of Policies: 1 Features enabled: Destination Action/Conditions Source 1 ANY Use Identity When ANY Available Realm: seclabs Decryption Policy type: Decryption Used by device roles: default Number of Policies: 0 Features enabled: (3) Destination Action/Conditions There are no policies in this policy set

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Access

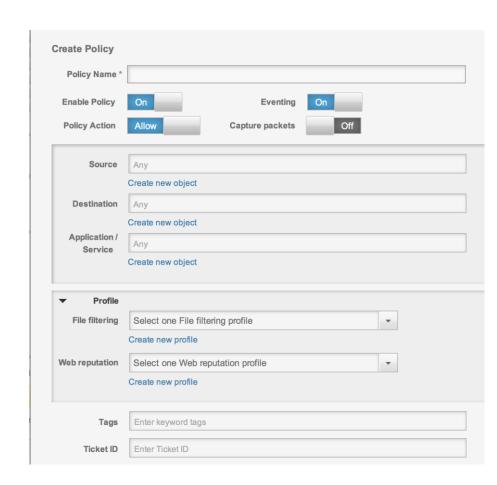
Allow or Deny the transaction based on full context

Other possible actions:

- Create Event (on by default)
- Capture Packets (off by default)

Also applied to HTTP Traffic:

- File Filtering Profile
 - Apply added filtering based on MIME type
- Reputation Profile
 - Apply added filtering based reputation score of destination
 - (default profile drops -6.0 and below and is not active)



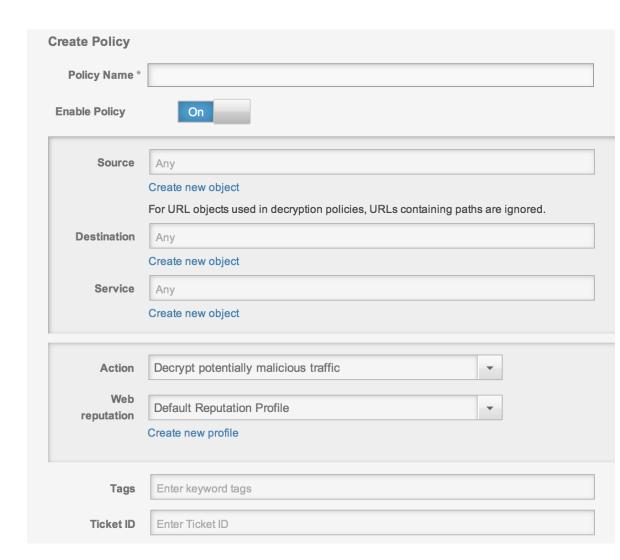
Decryption

Decrypt TLS/SSL traffic across any port

Self-signed (default) certificate or customer certificate/key

Based on FQDN, URL Category, User/Group, Device type, IP address, or Port

FQDN and URL Category are determined using server certificate



Authentication Realm

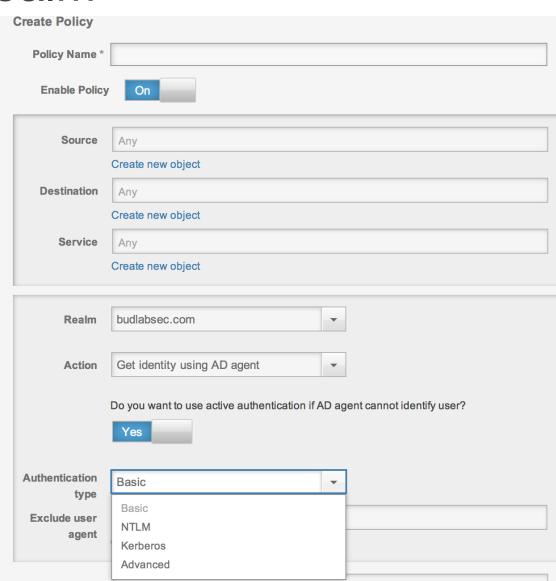
Realm: Logical group of trusted Directory Servers (AD or LDAP)

Active Directory

- One Realm
- One Domain (joins the domain)
- AD Agent for passive authentication
- Kerberos, NTLM, or Basic for active authentication

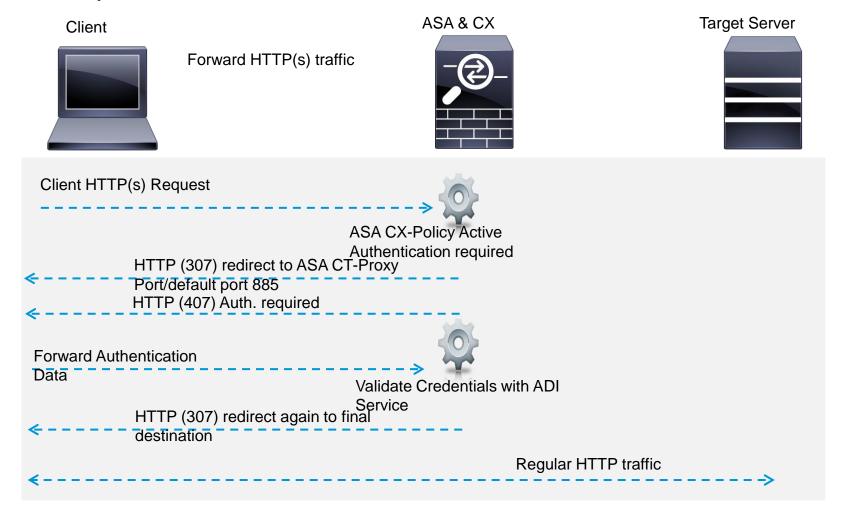
LDAP

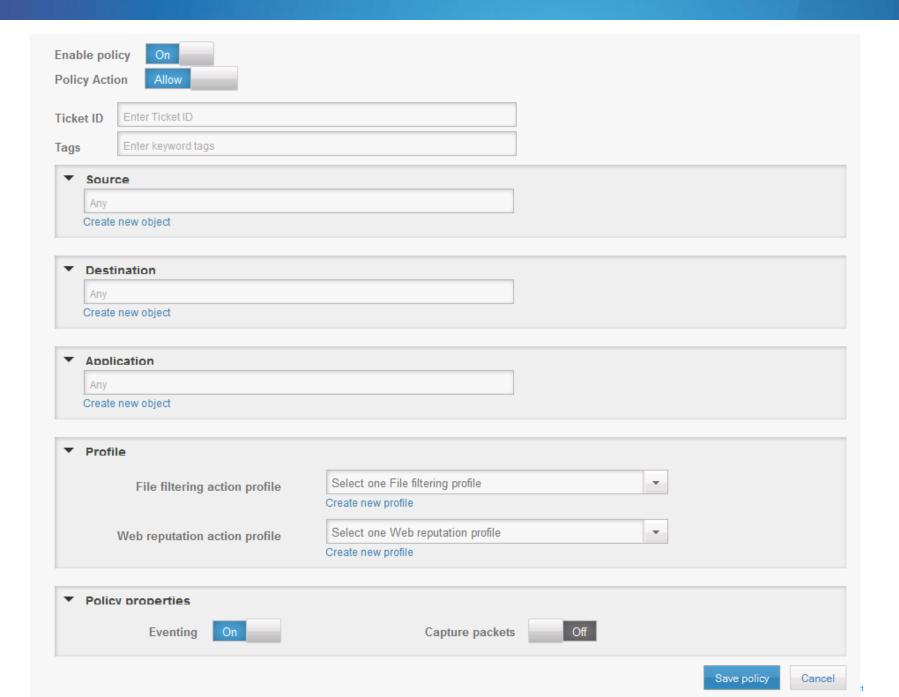
- Multiple Realms
- Basic authentication only



Active or passive Authentication options

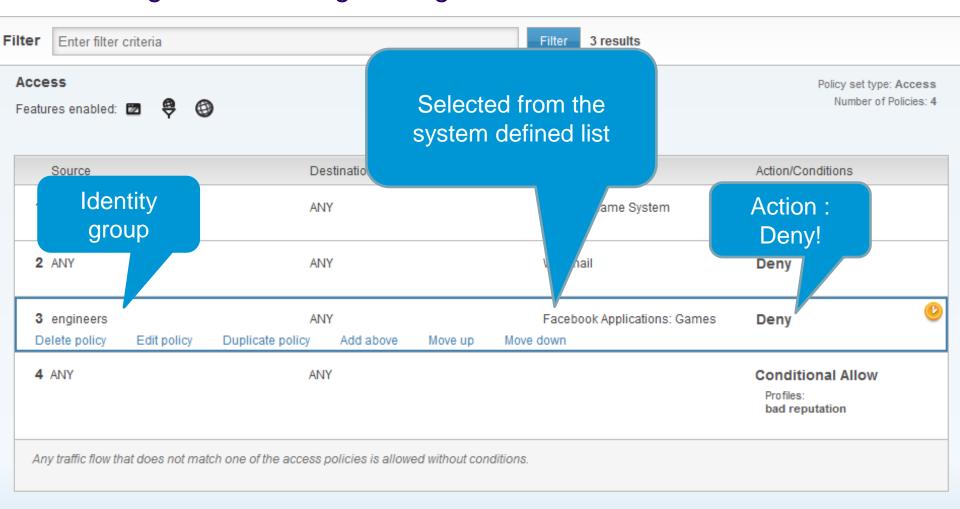
Example active authentication





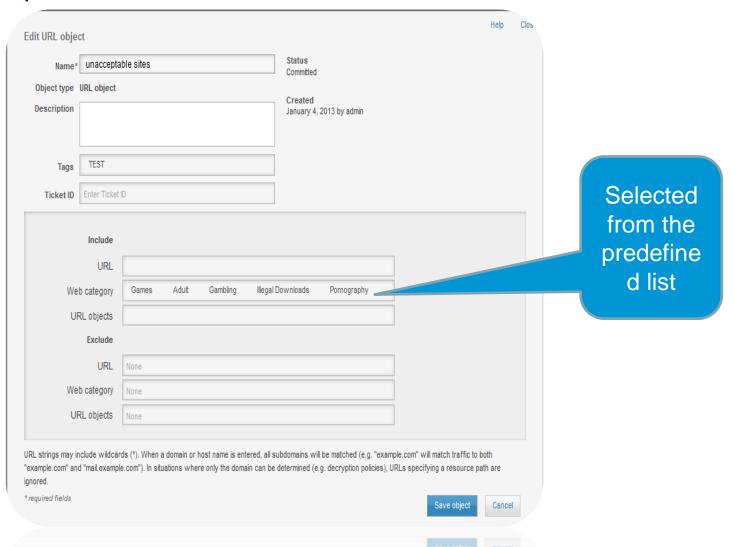
Policy Example 1

Facebook games blocking for engineers



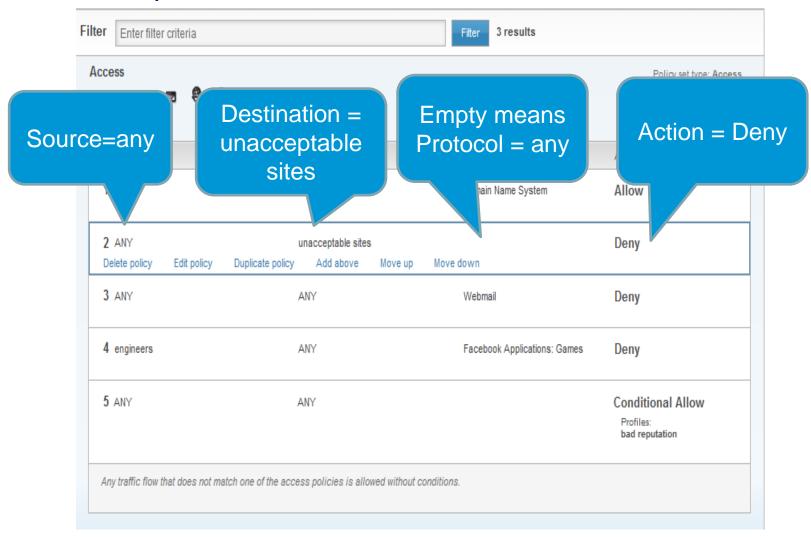
Policy Example 2 - Objects

Block Unacceptable Sites



Policy Example 2 - Policy

Block Unacceptable Sites

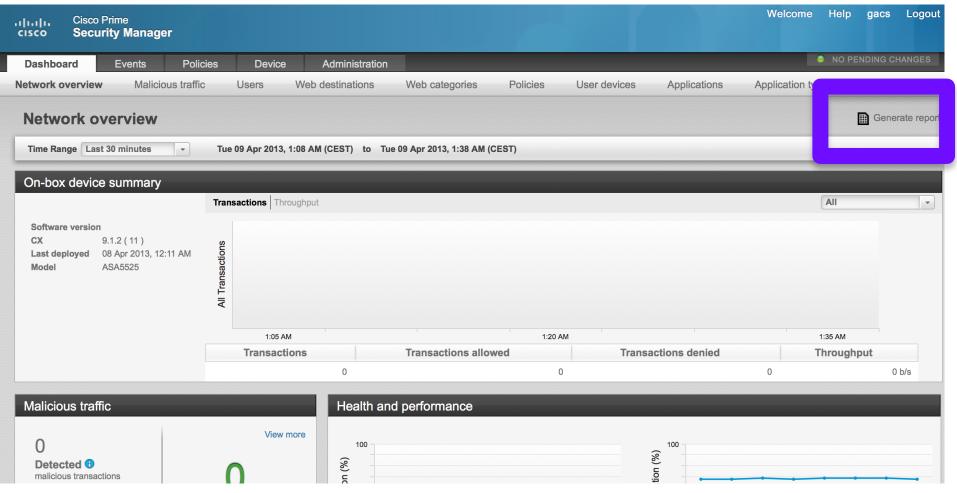


Demo

Next Generation Firewall and PRSM



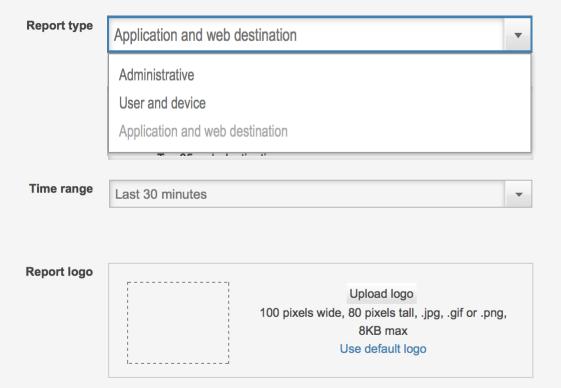
Next Generation Firewall – Reporting from 9.1(2)



Reports

Generate report

Please choose options to generate a report. Your report will be generated in PDF format.



Help

Top 25 applications by transactions

08 Apr 2010, 01:46:00 PM (CEST) to 08 Apr 2013, 02:46:00 PM (CEST)

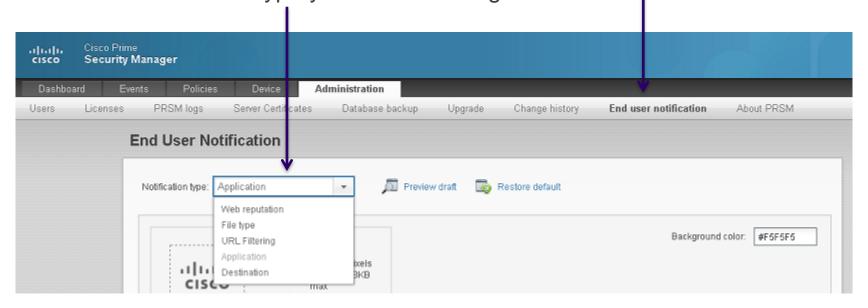
		Transactions Bytes				Top 5 by transactions					
	Application	Total	Allowed	Denied	Total	Sent	Received	Users		Web destinations	
1	HyperText Transfer Protocol	1.0 k	1.0 K	19	11.0 MB	893.0 KB	10.0 MB	10.1.1.24 budlabsec.com\\idtest2	1.0 K 34	www.cisco.com index.hu ichef.bbci.co.uk static.bbci.co.uk www.static-cisco.com	210 184 181 136 59
2	Facebook General	475	475	0	4.0 MB	316.0 KB	4.0 MB	10.1.1.24	475	static.ak.fbcdn.net profile.ak.fbcdn.net www.facebook.com creative.ak.fbcdn.net pixel.facebook.com	135 124 104 30 16
3	Transport Layer Security Protocol	384	378	6	1.0 MB	556.0 KB	796.0 KB	10.1.1.24	384	www.cisco.com cisco.com	161 38
4	Generic Search Engine Traffic	264	264	0	804.0 KB	247.0 KB	556.0 KB	10.1.1.24	264	polling.bbc.co.uk newsrss.bbc.co.uk www.bbc.co.uk indapass.hu sa.bbc.co.uk	221 22 9 6 5
5	Facebook Messages and Chat	49	49	0	131.0 KB	84.0 KB	47.0 KB	10.1.1.24	49	www.facebook.com 2-act.channel.facebook.com 6-act.channel.facebook.com 4-act.channel.facebook.com 3-act.channel.facebook.com	37 4 3 2 1
6	Google Analytics	38	38	0	45.0 KB	31.0 KB	13.0 KB	10.1.1.24	38	www.google-analytics.com	38
7	Ads and Tracking	33	33	0	41.0 KB	18.0 KB	23.0 KB	10.1.1.24	33	ad.doubleclick.net b.scorecardresearch.com ad.yieldmanager.com fls.doubleclick.net pix04.revsci.net	16 7 3 3 2

Customizable End User Notification

Allows an eligible admin to define the end user notifications that are shown to clients whose web traffic is denied by the http inspector.

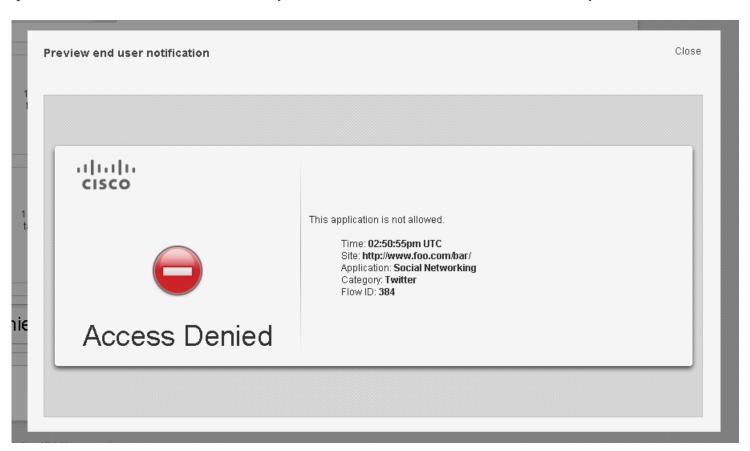
There are five notification types, each for a different category of deny reason, and each with a predefined default message.

To change an EUN, navigate to **Administration > End user notification**, then choose the notification type you wish to change.



Customizable EUN - Preview draft

The user may click preview draft to get a look at how the EUN will look when displayed to clients, with example values filled in for the template variables.



CX Monitor-mode Feature

Two new modes on ASA 9.1.2 (upcoming) for redirecting traffic to CX 9.1.2 service blade acting as a passive device and monitoring traffic:

ASA CXSC monitor-only redirection ASA traffic-forward to CX

Restrictions for CX in monitor mode

No policy enforcement

Doesn't support active authentication

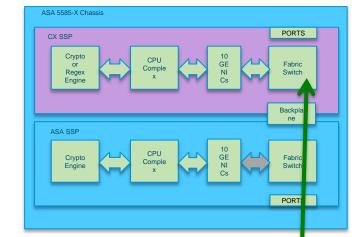
Doesn't support decryption

Some traffic that needs TCP proxying will not have associated events or reports.

Clients and servers are more than 1 hop away from ASA.

Monitor-mode only supported on SDM PRSM

ASA-CX in monitor-mode can't be imported by PRSM in MDM mode



Web Security Portfolio Basics







Firewall Integrated (ASA CX)

Cloud Appliance, Physical & Virtual (Cloud Web Security) (Web Security Appliance)

Web/URL Filtering	$\overline{\checkmark}$			
Application Controls	Ports (all) Protocols (all)	Ports (80, 443) Protocols (HTTP(S))	Ports (21, 80, 443) Protocols (HTTP(S), FTP)	
Malware Protection	Basic (reputation)	Advanced (reputation + content analysis)	Advanced (reputation + content analysis)	
Remote User Security	VPN Backhaul	Direct to cloud	VPN Backhaul	
Deployment	On the firewall	Cloud forward via ASA, ISR, WSA, AnyConnect	On Premise Redirect	
Policy & Reporting	On Premise	In the Cloud	On Premise	
Licensing / Subscription	Based on ASA model 1Y / 3Y / 5Y	Based on user count 1Y / 3Y / 5Y	Based on user count 1Y / 3Y / 5Y	

Web Security Positioning





Firewall Integrated (ASA CX)





Appliance, Physical & Virtual (Web Security Appliance)

When The Requirements Are...

- Next gen firewall capabilities
- Application control for porthopping and evasive applications like Skype
- URL filtering

- · Cloud based service
- Web security for small branches with direct internet access
- Web security for roaming or mobile users without backhauling over VPN
- Anti-Virus/Anti-Malware scanning

- On-premise proxy
- Anti-Virus/Anti-Malware scanning
- DLP for Web
- SOCKS Proxy
- FTP Proxy
- Caching
- On-premise logs
- Video/Audio bandwidth throttling

- Web/URL Filtering
- Web Application Controls
- Reputation filtering for malicious sites & IPs

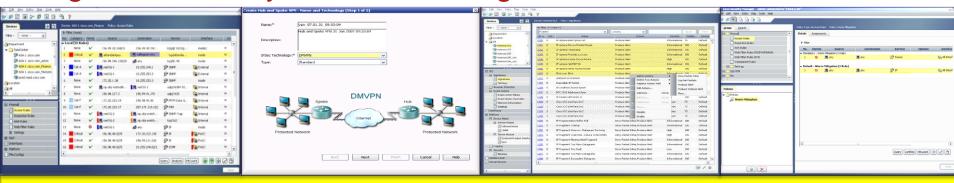
Agenda

Next Generation Firewall and Prime Security Manager

Cisco Security Manager 4.4



Cisco Security Manager Integrated Security Solution Management



 Support for PIX, ASA, FWSM, ASASM, IOS/ISR/ASR

Firewall

- IDFW & AD integration, shared objects & policy grouping, inheritance
- Powerful analysis tools: conflict detection, rule combiner, hit counts...
- Botnet Traffic Filter & ScanSafe integration

 Support for PIX, ASA, VPNSM, VPNSPA, IOS/ISR/ASR Routers

VPN

- Support for wide array of VPN technologies such as: GRE IPSec, DMVPN, GETVPN, Easy VPN, and SSL VPN
- VPN Wizard for 5-Step Point-and-Click VPN Creation

 Support for IPS Sensors/SSP Modules and IOS IPS

IPS

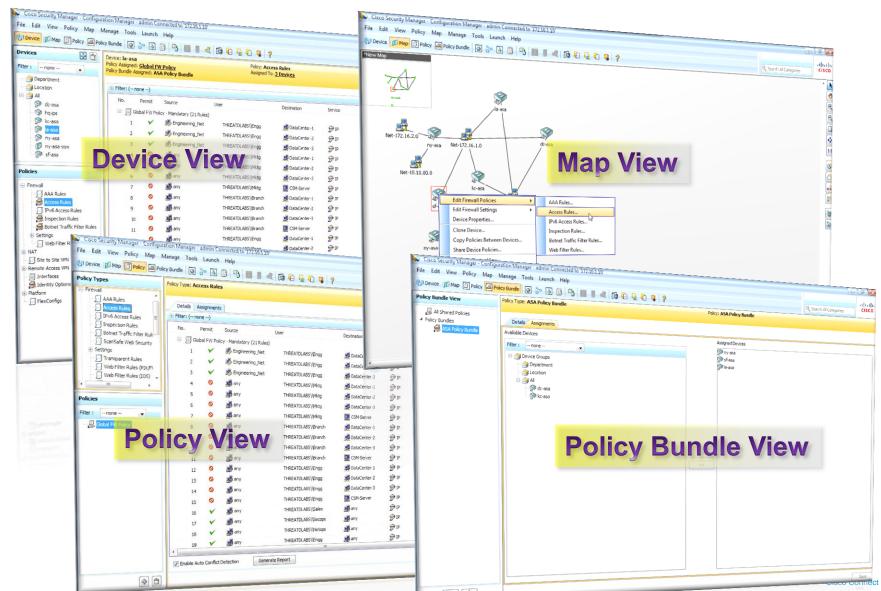
- Automatic policy based IPS Sensor software and signature updates
- Signature Update Wizard allowing easy review/editing prior to deployment
- Global Correlation Support & CSIO integration

 Unified Security Management for > 250 security platforms

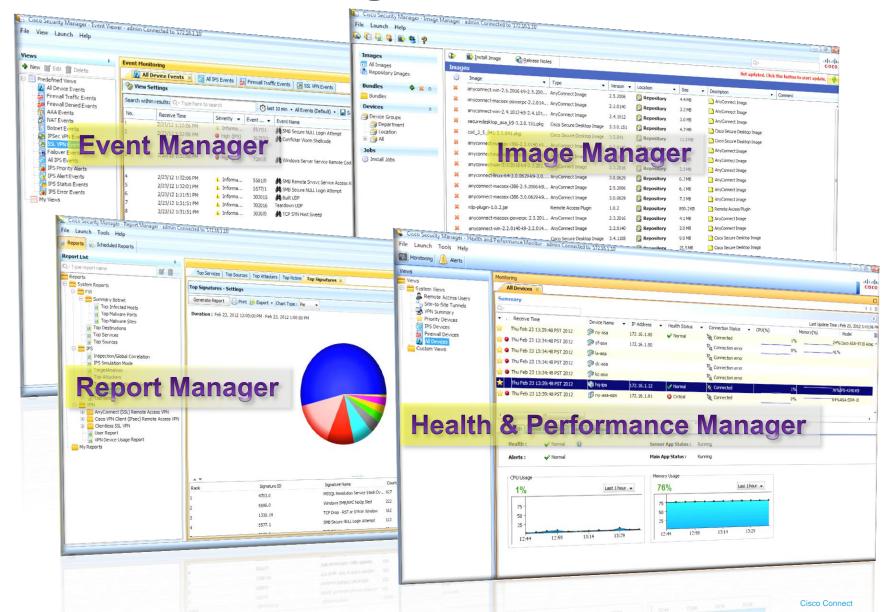
Operation

- Robust multi-users support with leading RBAC & WorkFlow for change management & control
- Efficiently manage up to 500 devices per server
- Multiple views for task optimization
- Events, Reports, HPM &

Efficient Policy Provisioning & Enforcement Tools



Proactive Monitoring & Maintenance Tools

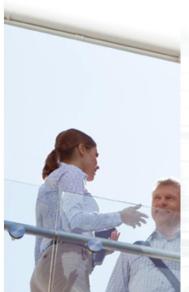


Please see it: http://www.ciscocsm.autovod.com

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Cisco Security

Cisco Security Manager - Enterprise Deployment



Contents

Select a topic from the main table of contents. Review the brief description or click on the expand/collapse icon to reveal greater detail about the content contained within. The total running time is posted for each Module identifying the time commitment to complete the specific content of interest.

Title	Running Time	Progress
Role Based Access Control	6 min	21%
Multi-User Management	5 min	0%
Configuration Versioning and Rollback	5 min	3%
Change Workflow	10 min	0%
Alert Notifications	5 min	75%
Scheduled Deployment	4 min	0%
Backup/Restore of CSM Data	4 min	0%
CSM API	9 min	5%
IPS Signatures and Event Actions	9 min	0%
IPS Operations	9 min	0%
IPS Reports	6 min	0%
Sharing a Local Policy	6 min	0%
Object Overrides	8 min	0%
Interface Role	4 min	0%
Inheritance	3 min	0%
Policy Bundles	5 min	0%
Cisco Security Manager	10 min	0%

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POWERED BY AUTOVOD

ASA 9.x Cluster Management

Clustering feature only supported in ASA 9.0(1)+ only for ASA 5580 and 5585 platforms

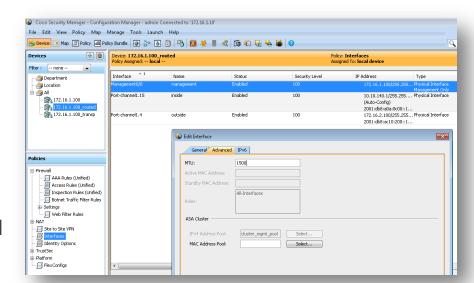
Supported types: L2 (spanned) & L3 clusters (Individual)

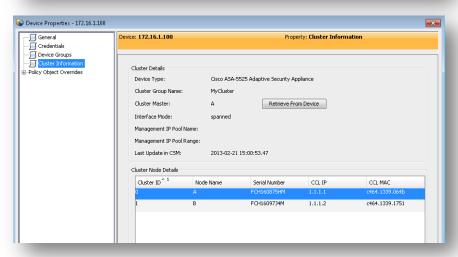
CSM does NOT configure or manage cluster bootstrap settings. Use ASDM or CLI to activate clustering before importing it to CSM

CSM discovers and manages a cluster of devices by communicating with cluster's Management IP address (master)

In Multi-Context Load Balancing Mode, import cluster's Admin context to CSM using Management IP address, cluster members info will be imported via Master

Details of discovered devices in a cluster are in the Device Properties > Cluster Information



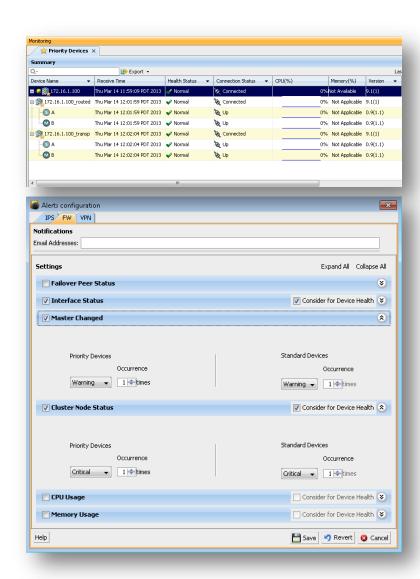


HPM: Firewall Cluster Monitoring & Alerts

Firewall cluster can have up to 8 nodes. HPM monitors cluster master, nodes status (up/down) and throughput of cluster

All cluster members are monitored as devices in cluster's tree

New alerts, 'Node Down' and 'Master Changed' are added.



Unified Access Rules Management

Supports Unified Access Lists containing both IPv4 & IPv6 addresses and objects.

CSM introduced three new policies

Access Rules (Unified)

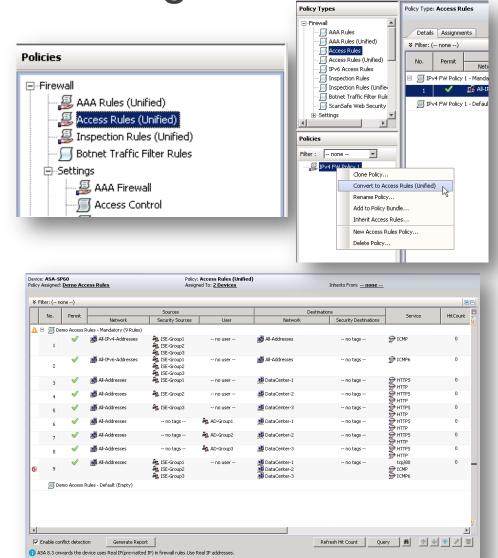
AAA Rules (Unified)

Inspection Rules (Unified)

Previous Access Rules, AAA Rules and Inspection Rules are still usable on ASA 9.x device

IPv6 Access Rules are not applicable for ASA 9.0 devices, use Unified Rules

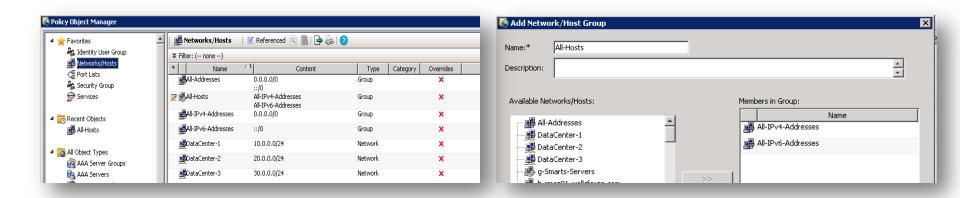
User can convert previous policy on ASA 8.x (Access Rules, AAA Rules and Inspection Rules) to Unified Rules



New Unified Network Objects

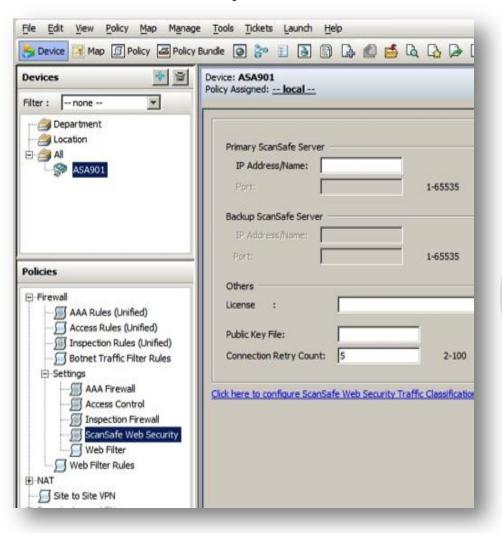
Supports both IPv4 & IPv6 Network objects as common type

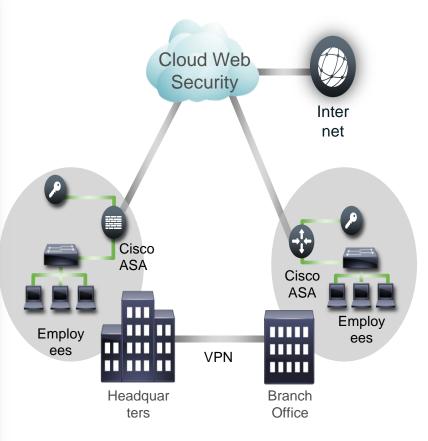
The new network object group allows mix of both IPv4 and IPv6 addresses/objects



ScanSafe Web Security

Supports ScanSafe Web Security settings for single mode or multi-contexts system mode



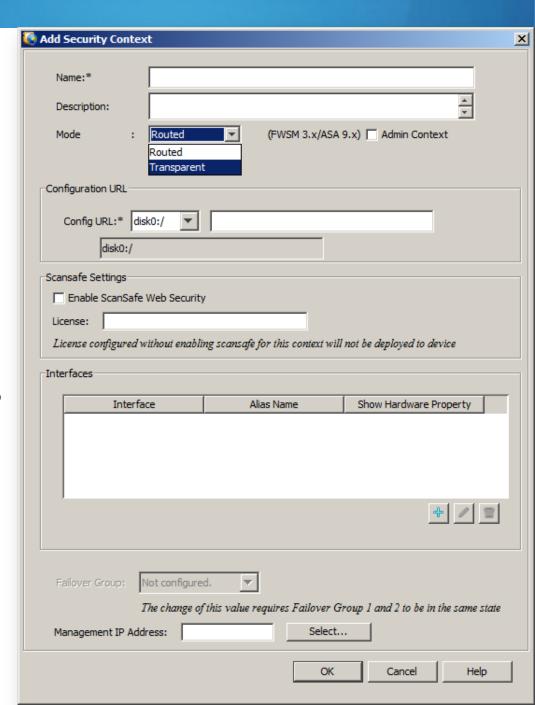


ASA Mixed Mode Support

ASA 9.x supports virtual contexts in mixed firewall modes (routed or transparent)

CSM also supports correct feature sets on individual virtual context based on its firewall mode.

Mixed mode support at par with FWSM/ASASM



S2S VPN Policy Management Updates

VPN in Multi-context mode

Supports S2S VPN in multi-context running routed mode

Existing S-2-S VPN supports for single context device in CSM are identical for multi-context devices

ASA 9.x doesn't support RAVPN in multi-context, RAVPN is disabled in CSM for multi-context devices

VPN in Cluster mode

CSM supports S2S configuration on devices which are in cluster

When an ASA device in cluster is added in CSM, failover will be disabled

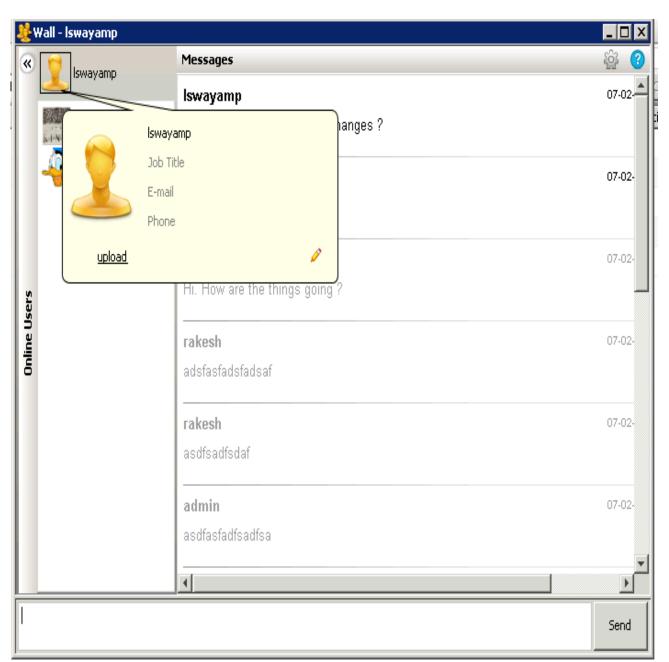
All RAVPN (SSL and IPSec) is disabled in CSM for devices in cluster mode

VPN Support in ASA-SM device

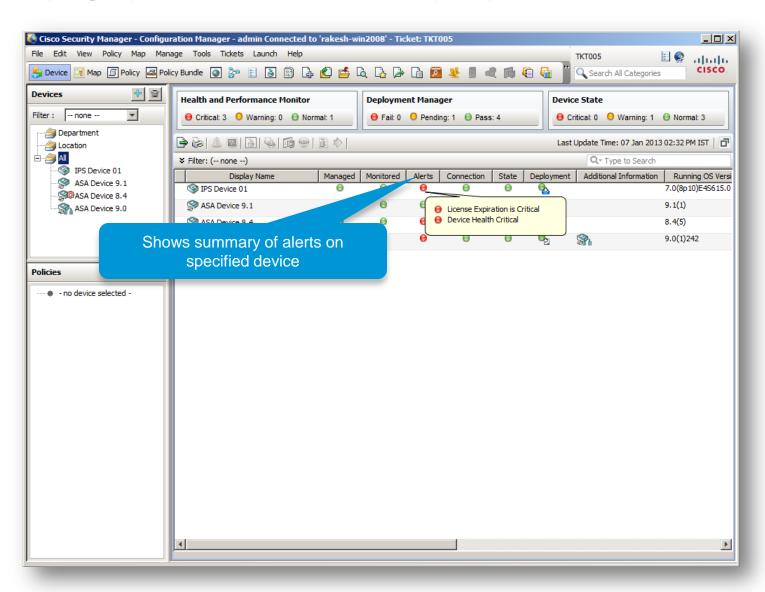
CSM supports S2S as well as RAVPN on ASA-SM

The support is at par with the VPN support on 558x platform

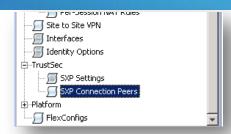
Wall UI



Device Status View – Alerts



TrustSec Settings



two new policies for configuring TrustSec

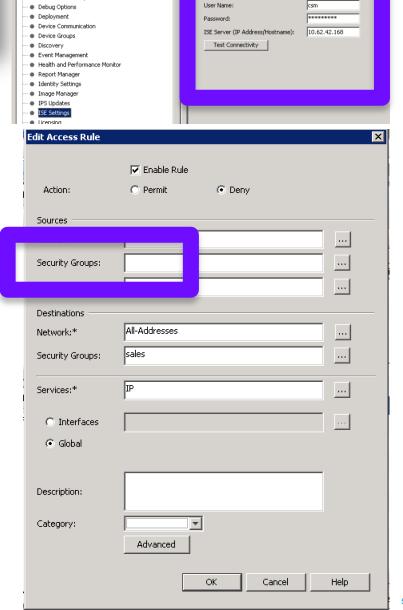
- SXP Settings
- SXP Connection Peers

only on ASA 9.0 and above

Settings: timers, enabling the SXP and configuring the server group which is used to communicate with the ISE (Identity Service Engine)

In admin settings CSM also maintains username, password, IP address of the ISE server that it can communicate with.

CSM communicates with ISE to fetch the names/tags for usage in unified firewall rules and security group policy objects



ISE Server Configuration

▼ Enable ISE feature

🌠 Cisco Security Manager - Administration

· APT

AutoLink

CS-MARS

Configuration Archive

Customize Desktop

Agenda

Next Generation Firewall and Prime Security Manager

Cisco Security Manager 4.4



Thank you.

CISCO

Segue Slide

