CHAPTER 1

Introduction to the Cisco ASA

Released: April 24, 2014
Updated: December 15, 2014

The Cisco ASA provides advanced stateful firewall and VPN concentrator functionality in one device, and for some models, integrated services modules such as IPS. The ASA includes many advanced features, such as multiple security contexts (similar to virtualized firewalls), clustering (combining multiple firewalls into a single firewall), transparent (Layer 2) firewall or routed (Layer 3) firewall operation, advanced inspection engines, IPsec VPN, SSL VPN, and clientless SSL VPN support, and many more features.

This chapter includes the following sections:

Hardware and Software Compatibility

For a complete list of supported hardware and software, see the *Cisco ASA Compatibility*:

http://www.cisco.com/en/US/docs/security/asa/compatibility/asamatrx.html

VPN Compatibility

See *Supported VPN Platforms, Cisco ASA Series*:

http://www.cisco.com/en/US/docs/security/asa/compatibility/asa-vpn-compatibility.html

New Features

Note New, changed, and deprecated syslog messages are listed in syslog messages guide.

New Features in ASA 9.2(3)

Released: December 15, 2014

Table 1-1 lists the new features for ASA Version 9.2(3).

Table 1-1 New Features for ASA Version 9.2(3)

Feature	Description
Remote Access Features	
Clientless SSL VPN session cookie access restriction	You can now prevent a Clientless SSL VPN session cookie from being accessed by a third party through a client-side script such as Javascript. **Note** Use this feature only if Cisco TAC advises you to do so. Enabling this command presents a security risk because the following Clientless SSL VPN features will not work without any warning. • Java plug-ins • Java rewriter • Port forwarding • File browser • Sharepoint features that require desktop applications (for example, MS Office applications) • AnyConnect Web launch • Citrix Receiver, XenDesktop, and Xenon • Other non-browser-based and browser plugin-based applications We introduced the following command: **http-only-cookie**

New Features in ASA 9.2(2.4)

Released: August 12, 2014

Table 1-2 lists the new features for ASA Version 9.2(2.4).

Note Version 9.2(2) was removed from Cisco.com due to build issues; please upgrade to Version 9.2(2.4) or later.

Table 1-2 New Features for ASA Version 9.2(2.4)

Feature	Description
Remote Access Features	
Internet Explorer 11 browser support on Windows 8.1 and Windows 7 for clientless SSL VPN	We added support for Internet Explorer 11 with Windows 7 and Windows 8.1 for clientless SSL VPN.. We did not modify any commands.

New Features in ASA 9.2(1)

Released: April 24, 2014

Table 1-3 lists the new features for ASA Version 9.2(1).

Note The ASA 5510, ASA 5520, ASA 5540, ASA 5550, and ASA 5580 are not supported in this release or later. ASA Version 9.1 was the final release for these models.

Table 1-3 New Features for ASA Version 9.2(1)

Feature	Description
Platform Features	
The Cisco Adaptive Security Virtual Appliance (ASAv) has been added as a new platform to the ASA series.	The ASAv brings full firewall functionality to virtualized environments to secure data center traffic and multi-tenant environments. The ASAv runs on VMware vSphere. You can manage and monitor the ASAv using ASDM or the CLI.
Routing Features	

Table 1-3 New Features for ASA Version 9.2(1) (continued)

Feature	Description
BGP Support	We now support the Border Gateway Protocol (BGP). BGP is an inter autonomous system routing protocol. BGP is used to exchange routing information for the Internet and is the protocol used between Internet service providers (ISP). We introduced the following commands**: router bgp, bgp maxas-limit, bgp log-neighbor-changes, bgp transport path-mtu-discovery, bgp fast-external-fallover, bgp enforce-first-as, bgp asnotation dot, timers bgp, bgp default local-preference, bgp always-compare-med, bgp bestpath compare-routerid, bgp deterministic-med, bgp bestpath med missing-as-worst, policy-list, match as-path, match community, match metric, match tag, as-path access-list, community-list, address-family ipv4, bgp router-id, distance bgp, table-map, bgp suppress-inactive, bgp redistribute-internal, bgp scan-time, bgp nexthop, aggregate-address, neighbor, bgp inject-map, show bgp, show bgp cidr-only, show bgp all community, show bgp all neighbors, show bgp community, show bgp community-list, show bgp filter-list, show bgp injected-paths, show bgp ipv4 unicast, show bgp neighbors, show bgp paths, show bgp pending-prefixes, show bgp prefix-list, show bgp regexp, show bgp replication, show bgp rib-failure, show bgp route-map, show bgp summary, show bgp system-config, show bgp update-group, clear route network, maximum-path, network.** We modified the following commands: **show route**, **show route summary**, **show running-config router**, **clear config router**, **clear route all**, **timers lsa arrival**, **timers pacing**, **timers throttle**, **redistribute bgp**.
Static route for Null0 interface	Sending traffic to a Null0 interface results in dropping the packets destined to the specified network. This feature is useful in configuring Remotely Triggered Black Hole (RTBH) for BGP. We modified the following command: **route**.
OSPF support for Fast Hellos	OSPF supports the Fast Hello Packets feature, resulting in a configuration that results in faster convergence in an OSPF network. We modified the following command: **ospf dead-interval**
New OSPF Timers	New OSPF timers were added; old ones were deprecated. We introduced the following commands: **timers lsa arrival**, **timers pacing**, **timers throttle.** We removed the following commands: **timers spf**, **timers lsa-grouping-pacing**
OSPF Route filtering using ACL	Route filtering using ACL is now supported. We introduced the following command: **distribute-list**

Table 1-3 New Features for ASA Version 9.2(1) (continued)

Feature	Description
OSPF Monitoring enhancements	Additional OSPF monitoring information was added. We modified the following commands: **show ospf events**, **show ospf rib**, **show ospf statistics**, **show ospf border-routers [detail]**, **show ospf interface brief**
OSPF redistribute BGP	OSPF redistribution feature was added. We added the following command: **redistribute bgp**
EIGRP Auto- Summary	For EIGRP, the Auto-Summary field is now disabled by default.
High Availability Features	
Support for cluster members at different geographical locations (inter-site) for transparent mode	You can now place cluster members at different geographical locations when using Spanned EtherChannel mode in transparent firewall mode. Inter-site clustering with spanned EtherChannels in routed firewall mode is not supported. We did not modify any commands.
Static LACP port priority support for clustering	Some switches do not support dynamic port priority with LACP (active and standby links). You can now disable dynamic port priority to provide better compatibility with spanned EtherChannels. You should also follow these guidelines: • Network elements on the cluster control link path should not verify the L4 checksum. Redirected traffic over the cluster control link does not have a correct L4 checksum. Switches that verify the L4 checksum could cause traffic to be dropped. • Port-channel bundling downtime should not exceed the configured keepalive interval. We introduced the following command: **clacp static-port-priority**.

Table 1-3 New Features for ASA Version 9.2(1) (continued)

Feature	Description
Support for 32 active links in a spanned EtherChannel for clustering	ASA EtherChannels now support up to 16 active links. With *spanned* EtherChannels, that functionality is extended to support up to 32 active links across the cluster when used with two switches in a vPC and when you disable dynamic port priority. The switches must support EtherChannels with 16 active links, for example, the Cisco Nexus 7000 with with F2-Series 10 Gigabit Ethernet Module. For switches in a VSS or vPC that support 8 active links, you can now configure 16 active links in the spanned EtherChannel (8 connected to each switch). Previously, the spanned EtherChannel only supported 8 active links and 8 standby links, even for use with a VSS/vPC. **Note** If you want to use more than 8 active links in a spanned EtherChannel, you cannot also have standby links; the support for 9 to 32 active links requires you to disable cLACP dynamic port priority that allows the use of standby links. We introduced the following command: **clacp static-port-priority**.
Support for 16 cluster members for the ASA 5585-X	The ASA 5585-X now supports 16-unit clusters. We did not modify any commands.
Support for clustering with the Cisco Nexus 9300	The ASA supports clustering when connected to the Cisco Nexus 9300.
Remote Access Features	
ISE Change of Authorization	The ISE Change of Authorization (CoA) feature provides a mechanism to change the attributes of an authentication, authorization, and accounting (AAA) session after it is established. When a policy changes for a user or user group in AAA, CoA packets can be sent directly to the ASA from the ISE to reinitialize authentication and apply the new policy. An Inline Posture Enforcement Point (IPEP) is no longer required to apply access control lists (ACLs) for each VPN session established with the ASA. When an end user requests a VPN connection the ASA authenticates the user to the ISE and receives a user ACL that provides limited access to the network. An accounting start message is sent to the ISE to register the session. Posture assessment occurs directly between the NAC agent and the ISE. This process is transparent to the ASA. The ISE sends a policy update to the ASA via a CoA “policy push.” This identifies a new user ACL that provides increased network access privileges. Additional policy evaluations may occur during the lifetime of the connection, transparent to the ASA, via subsequent CoA updates. We introduced the following commands: **dynamic-authorization, authorize-only**, **debug radius dynamic-authorization**. We modified the following commands: **without-csd** [**anyconnect**], **interim-accounting-update** [**periodic** [*interval*]]. We removed the following commands: **nac-policy**, **eou**, **nac-settings**.

Table 1-3 New Features for ASA Version 9.2(1) (continued)

Feature	Description
Improved clientless rewriter HTTP 1.1 compression handling	The rewriter has been changed so that if the client supports compressed content and the content will not be rewritten, then it will accept compressed content from the server. If the content must be rewritten and it is identified as being compressed, it will be decompressed, rewritten, and if the client supports it, recompressed. We did not introduce or modify any commands.
OpenSSL upgrade	The version of OpenSSL on the ASA will be updated to version 1.0.1e. **Note** We disabled the heartbeat option, so the ASA is not vulnerable to the Heartbleed Bug. We did not introduce or modify any commands.
Interface Features	
Support for 16 active links in an EtherChannel	You can now configure up to 16 active links in an EtherChannel. Previously, you could have 8 active links and 8 standby links. Be sure your switch can support 16 active links (for example the Cisco Nexus 7000 with with F2-Series 10 Gigabit Ethernet Module). **Note** If you upgrade from an earlier ASA version, the maximum active interfaces is set to 8 for compatibility purposes (the **lacp max-bundle** command). We modified the following commands: **lacp max-bundle** and **port-channel min-bundle**.
Maximum MTU is now 9198 bytes	The maximum MTU that the ASA can use is 9198 bytes (check for your model's exact limit at the CLI help). This value does not include the Layer 2 header. Formerly, the ASA let you specify the maximum MTU as 65535 bytes, which was inaccurate and could cause problems. If your MTU was set to a value higher than 9198, then the MTU is automatically lowered when you upgrade. In some cases, this MTU change can cause an MTU mismatch; be sure to set any connecting equipment to use the new MTU value. We modified the following command: **mtu** *Also in Version 9.1(6).*
Monitoring Features	

Table 1-3 New Features for ASA Version 9.2(1) (continued)

Feature	Description
Embedded Event Manager (EEM)	The EEM feature enables you to debug problems and provides general purpose logging for troubleshooting. The EEM responds to events in the EEM system by performing actions. There are two components: events that the EEM triggers, and event manager applets that define actions. You may add multiple events to each event manager applet, which triggers it to invoke the actions that have been configured on it. We introduced or modified the following commands: **event manager applet**, **description**, **event syslog id**, **event none**, **event timer**, **event crashinfo**, **action cli command**, **output**, **show running-config event manager**, **event manager run**, **show event manager**, **show counters protocol eem**, **clear configure event manager**, **debug event manager**, **debug menu eem**.
SNMP hosts, host groups, and user lists	You can now add up to 4000 hosts. The number of supported active polling destinations is 128. You can specify a network object to indicate the individual hosts that you want to add as a host group. You can associate more than one user with one host. We introduced or modified the following commands: **snmp-server host-group**, **snmp-server user-list**, **show running-config snmp-server**, **clear configure snmp-server**.
SNMP message size	The limit on the message size that SNMP sends has been increased to 1472 bytes.
SNMP OIDs and MIBs	The ASA now supports the cpmCPUTotal5minRev OID. The ASAv has been added as a new product to the SNMP sysObjectID OID and entPhysicalVendorType OID. The CISCO-PRODUCTS-MIB and CISCO-ENTITY-VENDORTYPE-OID-MIB have been updated to support the new ASAv platform.
Administrative Features	

Table 1-3 New Features for ASA Version 9.2(1) (continued)

Feature	Description
Improved one-time password authentication	Administrators who have sufficient authorization privileges may enter privileged EXEC mode by entering their authentication credentials once. The **auto-enable** option was added to the **aaa authorization exec** command. We modified the following command: **aaa authorization exec**.
Auto Update Server certificate verification enabled by default	The Auto Update Server certificate verification is now enabled by default; for new configurations, you must explicitly disable certificate verification. If you are upgrading from an earlier release, and you did not enable certificate verification, then certificate verification is not enabled, and you see the following warning: `WARNING: The certificate provided by the auto-update servers will not be verified. In order to verify this certificate please use the verify-certificate option.` The configuration will be migrated to explicitly configure no verification: **auto-update server no-verification** We modified the following command: **auto-update server** [**verify-certificate** | **no-verification**].

How the ASA Services Module Works with the Switch

You can install the ASASM in the Catalyst 6500 series and Cisco 7600 series switches with Cisco IOS software on both the switch supervisor and the integrated MSFC.

Note The Catalyst Operating System (OS) is not supported.

The ASA runs its own operating system.

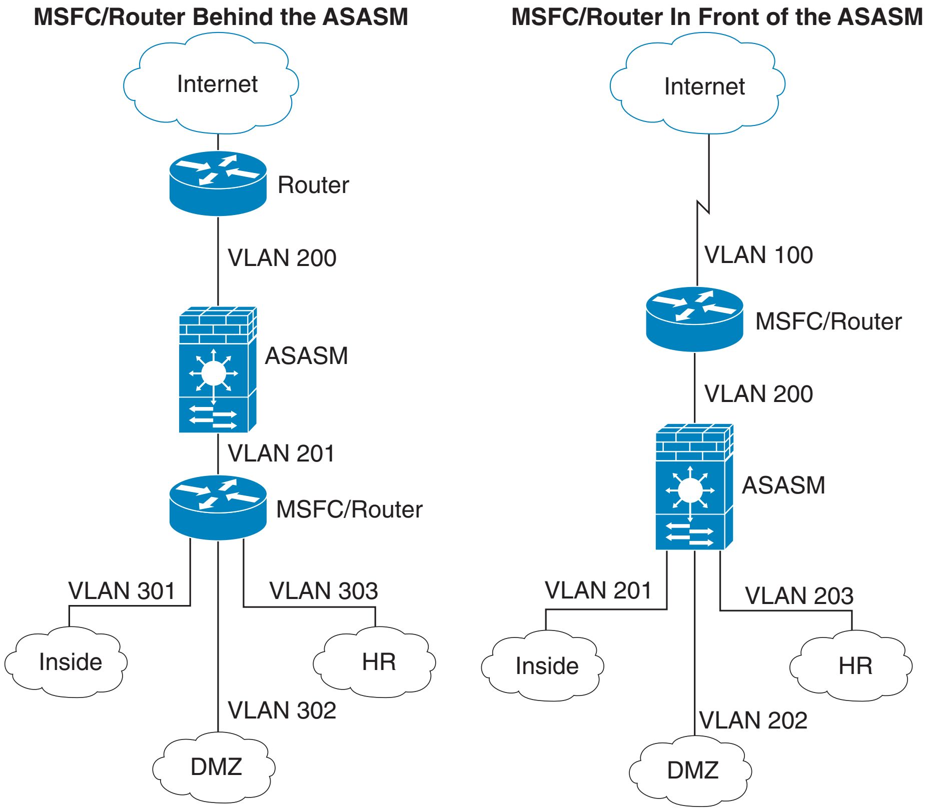
The switch includes a switching processor (the supervisor) and a router (the MSFC). Although you need the MSFC as part of your system, you do not have to use it. If you choose to do so, you can assign one or more VLAN interfaces to the MSFC. You can alternatively use external routers instead of the MSFC.

In single context mode, you can place the router in front of the firewall or behind the firewall (see Figure 1-1).

The location of the router depends entirely on the VLANs that you assign to it. For example, the router is behind the firewall in the example shown on the left side of Figure 1-1 because you assigned VLAN 201 to the inside interface of the ASASM. The router is in front of the firewall in the example shown on the right side of Figure 1-1 because you assigned VLAN 200 to the outside interface of the ASASM.

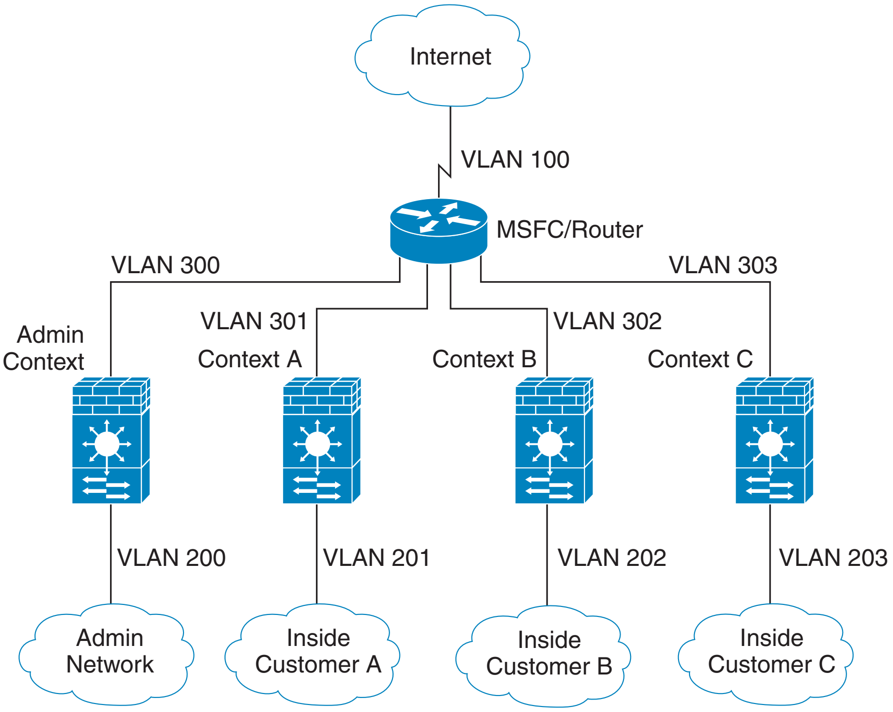
In the left-hand example, the MSFC or router routes between VLANs 201, 301, 302, and 303, and no inside traffic goes through the ASASM unless it is destined for the Internet. In the right-hand example, the ASASM processes and protects all traffic between the inside VLANs 201, 202, and 203.

Figure 1-1 MSFC/Router Placement



For multiple context mode, if you place the router behind the ASASM, you should only connect it to a single context. If you connect the router to multiple contexts, the router will route between the contexts, which might not be your intention. The typical scenario for multiple contexts is to use a router in front of all the contexts to route between the Internet and the switched networks (see Figure 1-2).

Figure 1-2 MSFC/Router Placement with Multiple Contexts



Firewall Functional Overview

Firewalls protect inside networks from unauthorized access by users on an outside network. A firewall can also protect inside networks from each other, for example, by keeping a human resources network separate from a user network. If you have network resources that need to be available to an outside user, such as a web or FTP server, you can place these resources on a separate network behind the firewall, called a *demilitarized zone* (DMZ). The firewall allows limited access to the DMZ, but because the DMZ only includes the public servers, an attack there only affects the servers and does not affect the other inside networks. You can also control when inside users access outside networks (for example, access to the Internet), by allowing only certain addresses out, by requiring authentication or authorization, or by coordinating with an external URL filtering server.

When discussing networks connected to a firewall, the *outside* network is in front of the firewall, the *inside* network is protected and behind the firewall, and a *DMZ*, while behind the firewall, allows limited access to outside users. Because the ASA lets you configure many interfaces with varied security policies, including many inside interfaces, many DMZs, and even many outside interfaces if desired, these terms are used in a general sense only.

This section includes the following topics:

- Security Policy Overview, page 1-12
- Firewall Mode Overview, page 1-14
- Stateful Inspection Overview, page 1-15

Security Policy Overview

A security policy determines which traffic is allowed to pass through the firewall to access another network. By default, the ASA allows traffic to flow freely from an inside network (higher security level) to an outside network (lower security level). You can apply actions to traffic to customize the security policy. This section includes the following topics:

- Permitting or Denying Traffic with Access Lists, page 1-12
- Applying NAT, page 1-12
- Protecting from IP Fragments, page 1-12
- Using AAA for Through Traffic, page 1-13
- Applying HTTP, HTTPS, or FTP Filtering, page 1-13
- Applying Application Inspection, page 1-13
- Sending Traffic to Supported Hardware or Software Modules, page 1-13
- Applying QoS Policies, page 1-13
- Applying Connection Limits and TCP Normalization, page 1-13
- Enabling Threat Detection, page 1-13
- Enabling the Botnet Traffic Filter, page 1-14
- Configuring Cisco Unified Communications, page 1-14

Permitting or Denying Traffic with Access Lists

You can apply an access list to limit traffic from inside to outside, or allow traffic from outside to inside. For transparent firewall mode, you can also apply an EtherType access list to allow non-IP traffic.

Applying NAT

Some of the benefits of NAT include the following:

- You can use private addresses on your inside networks. Private addresses are not routable on the Internet.
- NAT hides the local addresses from other networks, so attackers cannot learn the real address of a host.
- NAT can resolve IP routing problems by supporting overlapping IP addresses.

Protecting from IP Fragments

The ASA provides IP fragment protection. This feature performs full reassembly of all ICMP error messages and virtual reassembly of the remaining IP fragments that are routed through the ASA. Fragments that fail the security check are dropped and logged. Virtual reassembly cannot be disabled.

Using AAA for Through Traffic

You can require authentication and/or authorization for certain types of traffic, for example, for HTTP. The ASA also sends accounting information to a RADIUS or TACACS+ server.

Applying HTTP, HTTPS, or FTP Filtering

Although you can use access lists to prevent outbound access to specific websites or FTP servers, configuring and managing web usage this way is not practical because of the size and dynamic nature of the Internet.

You can configure Cloud Web Security on the ASA, or install an ASA module that provides URL and other filtering services, such as ASA CX. You can also use the ASA in conjunction with an external product such as the Cisco Web Security Appliance (WSA).

Applying Application Inspection

Inspection engines are required for services that embed IP addressing information in the user data packet or that open secondary channels on dynamically assigned ports. These protocols require the ASA to do a deep packet inspection.

Sending Traffic to Supported Hardware or Software Modules

Some ASA models allow you to configure software modules, or to insert hardware modules into the chassis, to provide advanced services. These modules provide additional traffic inspection and can block traffic based on your configured policies. You can send traffic to these modules to take advantage of these advanced services.

Applying QoS Policies

Some network traffic, such as voice and streaming video, cannot tolerate long latency times. QoS is a network feature that lets you give priority to these types of traffic. QoS refers to the capability of a network to provide better service to selected network traffic.

Applying Connection Limits and TCP Normalization

You can limit TCP and UDP connections and embryonic connections. Limiting the number of connections and embryonic connections protects you from a DoS attack. The ASA uses the embryonic limit to trigger TCP Intercept, which protects inside systems from a DoS attack perpetrated by flooding an interface with TCP SYN packets. An embryonic connection is a connection request that has not finished the necessary handshake between source and destination.

TCP normalization is a feature consisting of advanced TCP connection settings designed to drop packets that do not appear normal.

Enabling Threat Detection

You can configure scanning threat detection and basic threat detection, and also how to use statistics to analyze threats.

Basic threat detection detects activity that might be related to an attack, such as a DoS attack, and automatically sends a system log message.

A typical scanning attack consists of a host that tests the accessibility of every IP address in a subnet (by scanning through many hosts in the subnet or sweeping through many ports in a host or subnet). The scanning threat detection feature determines when a host is performing a scan. Unlike IPS scan detection that is based on traffic signatures, the ASA scanning threat detection feature maintains an extensive database that contains host statistics that can be analyzed for scanning activity.

The host database tracks suspicious activity such as connections with no return activity, access of closed service ports, vulnerable TCP behaviors such as non-random IPID, and many more behaviors.

You can configure the ASA to send system log messages about an attacker or you can automatically shun the host.

Enabling the Botnet Traffic Filter

Malware is malicious software that is installed on an unknowing host. Malware that attempts network activity such as sending private data (passwords, credit card numbers, key strokes, or proprietary data) can be detected by the Botnet Traffic Filter when the malware starts a connection to a known bad IP address. The Botnet Traffic Filter checks incoming and outgoing connections against a dynamic database of known bad domain names and IP addresses (the blacklist), and then logs any suspicious activity. When you see syslog messages about the malware activity, you can take steps to isolate and disinfect the host.

Configuring Cisco Unified Communications

The Cisco ASA series is a strategic platform to provide proxy functions for unified communications deployments. The purpose of a proxy is to terminate and reoriginate connections between a client and server. The proxy delivers a range of security functions such as traffic inspection, protocol conformance, and policy control to ensure security for the internal network. An increasingly popular function of a proxy is to terminate encrypted connections in order to apply security policies while maintaining confidentiality of connections.

Firewall Mode Overview

The ASA runs in two different firewall modes:

- Routed
- Transparent

In routed mode, the ASA is considered to be a router hop in the network.

In transparent mode, the ASA acts like a “bump in the wire,” or a “stealth firewall,” and is not considered a router hop. The ASA connects to the same network on its inside and outside interfaces.

You might use a transparent firewall to simplify your network configuration. Transparent mode is also useful if you want the firewall to be invisible to attackers. You can also use a transparent firewall for traffic that would otherwise be blocked in routed mode. For example, a transparent firewall can allow multicast streams using an EtherType access list.

Stateful Inspection Overview

All traffic that goes through the ASA is inspected using the Adaptive Security Algorithm and either allowed through or dropped. A simple packet filter can check for the correct source address, destination address, and ports, but it does not check that the packet sequence or flags are correct. A filter also checks *every* packet against the filter, which can be a slow process.

Note The TCP state bypass feature allows you to customize the packet flow.

A stateful firewall like the ASA, however, takes into consideration the state of a packet:

- Is this a new connection?

  If it is a new connection, the ASA has to check the packet against access lists and perform other tasks to determine if the packet is allowed or denied. To perform this check, the first packet of the session goes through the "session management path," and depending on the type of traffic, it might also pass through the "control plane path."

  The session management path is responsible for the following tasks:

  – Performing the access list checks

  – Performing route lookups

  – Allocating NAT translations (xlates)

  – Establishing sessions in the "fast path"

  The ASA creates forward and reverse flows in the fast path for TCP traffic; the ASA also creates connection state information for connectionless protocols like UDP, ICMP (when you enable ICMP inspection), so that they can also use the fast path.

  Note For other IP protocols, like SCTP, the ASA does not create reverse path flows. As a result, ICMP error packets that refer to these connections are dropped.

  Some packets that require Layer 7 inspection (the packet payload must be inspected or altered) are passed on to the control plane path. Layer 7 inspection engines are required for protocols that have two or more channels: a data channel, which uses well-known port numbers, and a control channel, which uses different port numbers for each session. These protocols include FTP, H.323, and SNMP.

- Is this an established connection?

  If the connection is already established, the ASA does not need to re-check packets; most matching packets can go through the "fast" path in both directions. The fast path is responsible for the following tasks:

  – IP checksum verification

  – Session lookup

  – TCP sequence number check

  – NAT translations based on existing sessions

  – Layer 3 and Layer 4 header adjustments

  Data packets for protocols that require Layer 7 inspection can also go through the fast path.

Some established session packets must continue to go through the session management path or the control plane path. Packets that go through the session management path include HTTP packets that require inspection or content filtering. Packets that go through the control plane path include the control packets for protocols that require Layer 7 inspection.

VPN Functional Overview

A VPN is a secure connection across a TCP/IP network (such as the Internet) that appears as a private connection. This secure connection is called a tunnel. The ASA uses tunneling protocols to negotiate security parameters, create and manage tunnels, encapsulate packets, transmit or receive them through the tunnel, and unencapsulate them. The ASA functions as a bidirectional tunnel endpoint: it can receive plain packets, encapsulate them, and send them to the other end of the tunnel where they are unencapsulated and sent to their final destination. It can also receive encapsulated packets, unencapsulate them, and send them to their final destination. The ASA invokes various standard protocols to accomplish these functions.

The ASA performs the following functions:

- Establishes tunnels
- Negotiates tunnel parameters
- Authenticates users
- Assigns user addresses
- Encrypts and decrypts data
- Manages security keys
- Manages data transfer across the tunnel
- Manages data transfer inbound and outbound as a tunnel endpoint or router

The ASA invokes various standard protocols to accomplish these functions.

Security Context Overview

You can partition a single ASA into multiple virtual devices, known as security contexts. Each context is an independent device, with its own security policy, interfaces, and administrators. Multiple contexts are similar to having multiple standalone devices. Many features are supported in multiple context mode, including routing tables, firewall features, IPS, and management; however, some features are not supported. See the feature chapters for more information.

In multiple context mode, the ASA includes a configuration for each context that identifies the security policy, interfaces, and almost all the options you can configure on a standalone device. The system administrator adds and manages contexts by configuring them in the system configuration, which, like a single mode configuration, is the startup configuration. The system configuration identifies basic settings for the ASA. The system configuration does not include any network interfaces or network settings for itself; rather, when the system needs to access network resources (such as downloading the contexts from the server), it uses one of the contexts that is designated as the admin context.

The admin context is just like any other context, except that when a user logs into the admin context, then that user has system administrator rights and can access the system and all other contexts.

ASA Clustering Overview

ASA Clustering lets you group multiple ASAs together as a single logical device. A cluster provides all the convenience of a single device (management, integration into a network) while achieving the increased throughput and redundancy of multiple devices.

You perform all configuration (aside from the bootstrap configuration) on the master unit only; the configuration is then replicated to the member units.

Legacy Features

The following features are covered in the legacy feature guide:

- URL Filtering
- IP Audit
- IP spoofing prevention
- Fragment size
- Connection shunning
- AAA for network access
- RIP

While you can use these features in your configuration, there may be better alternative features described in the main configuration guides.