S TP y inspección de conexiones ESMTP con el ejemplo de configuración del Firewall Cisco IOS

Contenido

Introducción

Este documento proporciona una configuración de ejemplo para la inspección del SMTP (Simple Mail Transfer Protocol) entrante o de las conexiones ESMTP (Extended Simple Mail Transfer Protocol) mediante Cisco IOS® Firewall en Cisco IOS. Dicha inspección es similar a la función MailGuard característica de Cisco PIX 500 Series Security Appliances.

prerrequisitos

Requisitos

No hay requisitos específicos para este documento.

Componentes Utilizados

La información que contiene este documento se basa en las siguientes versiones de software y hardware.

- Cisco IOS Software Release 12.3(4)T o Posterior
- Cisco 3640 Router

La información que contiene este documento se creó a partir de los dispositivos en un ambiente de laboratorio específico. Todos los dispositivos que se utilizan en este documento se pusieron en funcionamiento con una configuración verificada (predeterminada). Si la red está funcionando, asegúrese de haber comprendido el impacto que puede tener cualquier comando.

Convenciones

Consulte Convenciones de Consejos Técnicos de Cisco para obtener más información sobre las convenciones sobre documentos.

Antecedentes

La inspección SMTP causa los comandos S TP de ser examinado para los comandos ilegales. Los paquetes con los comandos ilegales se modifican a un modelo del “xxxx” y se remiten al servidor. Este proceso hace el servidor enviar una contestación negativa, que fuerza al cliente a publicar un comando válido. Un comando ilegal S TP es comando any a excepción de estos comandos:

• DATOS • HELO • AYUDA • CORREO • NOOP • SALIR	• RCPT • RSET • SAML • ENVÍE • SOML • VRFY

El La inspección ESMTP actúa de la misma manera que lo hace la inspección SMTP. Los paquetes con los comandos ilegales se modifican a un modelo del “xxxx” y se remiten al servidor, que acciona una contestación negativa. Un comando ilegal ESMTP es comando any a excepción de estos comandos:

• AUTENTICACIÓN • DATOS • EHLO • ETRN • HELO • AYUDA • AYUDA • CORREO	• NOOP • SALIR • RCPT • RSET • SAML • ENVÍE • SOML • VRFY

El La inspección ESMTP también examina estas Extensiones vía un examen más profundo del comando:

- Declaración del tamaño del mensaje (TAMAÑO)
- Declaración de procesamiento en cola remota (ETRN)
- El binario IMITA (BINARYMIME)
- Cañería del comando
- Autenticación
- Notificación de estado de entrega (DSN)
- Código de estado aumentado (ENHANCEDSTATUSCODE)
- MIMEtransport de 8 bits (8BITMIME)

Nota: El S TP y el La inspección ESMTP no se pueden configurar simultáneamente. Una tentativa de configurar ambos resultados en un mensaje de error.

Nota: En el Cisco IOS Software Release 12.3(4)T y Posterior, el Firewall Cisco IOS crea no más

las entradas de lista de acceso dinámico para permitir el tráfico. El Firewall Cisco IOS ahora mantiene una tabla del estado de la sesión para controlar la seguridad de las conexiones inspeccionadas.

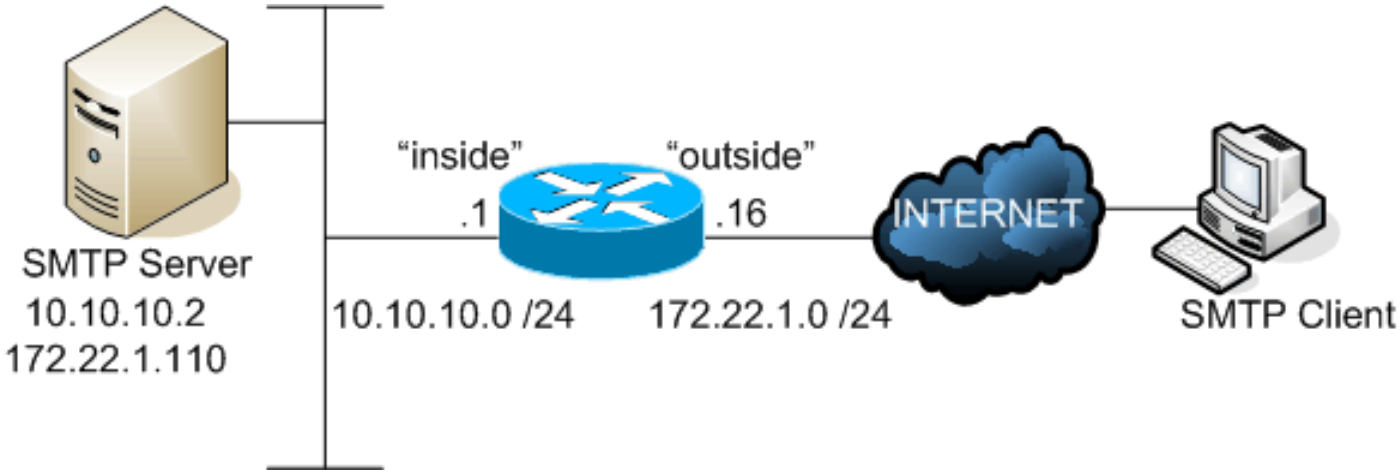
Configurar

En esta sección encontrará la información para configurar las funciones descritas en este documento.

Nota: Utilice la herramienta Command Lookup Tool (clientes registrados solamente) para obtener más información sobre los comandos utilizados en esta sección.

Diagrama de la red

En este documento, se utiliza esta configuración de red:



Configuraciones

Este documento usa esta configuración:

Router 3640

```
3640-123#show running-config Building configuration...
Current configuration : 1432 bytes ! version 12.3
service config service timestamps debug datetime msec
service timestamps log datetime msec service password-
encryption ! hostname 3640-123 ! boot-start-marker boot-
end-marker ! enable password 7 02050D4808095E731F ! no
aaa new-model ! resource policy ! voice-card 3 ! ip
subnet-zero ! ! ip cef no ip dhcp use vrf connected ! !
!--- This is the Cisco IOS Firewall configuration. !---
IN-OUT is the inspection rule for traffic that flows !--
- from the inside interface of the router to the outside
interface. ip inspect name IN-OUT tcp ip inspect name
IN-OUT udp ip inspect name IN-OUT ftp ip inspect name
IN-OUT http ip inspect name IN-OUT icmp !--- OUT-IN is
the inspection rule for traffic that flows !--- from the
outside interface of the router to the inside interface.
!--- This rule is where SMTP/ESMTP inspection is
specified. ip inspect name OUT-IN smtp ! no ip ips deny-
action ips-interface ! no ftp-server write-enable ! ! !
! controller T1 3/0 framing sf linecode ami ! ! ! ! ! !-
```

```
-- The outside interface. interface Ethernet2/0 ip
address 172.22.1.16 255.255.255.0 !--- Apply the access
list to permit SMTP/ESMTP connections !--- to the mail
server. This also allows Cisco IOS Firewall !--- to
inspect SMTP or ESMTP commands. ip access-group 101 in
ip nat outside !--- Apply the inspection rule OUT-IN
inbound on this interface. This is !--- the rule that
defines SMTP/ESMTP inspection. ip inspect OUT-IN in ip
virtual-reassembly half-duplex ! interface Serial2/0 no
ip address shutdown ! !--- The inside interface.
interface Ethernet2/1 ip address 10.10.10.1
255.255.255.0 ip nat inside !--- Apply the inspection
rule IN-OUT inbound on this interface. ip inspect IN-OUT
in ip virtual-reassembly half-duplex ! ip http server no
ip http secure-server ip classless ip route 0.0.0.0
0.0.0.0 172.22.1.1 ! ! !--- The static translation for
the mail server. ip nat inside source static 10.10.10.2
172.22.1.110 ip nat inside source static 10.10.10.5
172.22.1.111 ! !--- The access list to permit SMTP and
ESMTP to the mail server. !--- Cisco IOS Firewall
inspects permitted traffic. access-list 101 permit tcp
any host 172.22.1.110 eq smtp ! ! ! control-plane ! ! !
voice-port 1/0/0 ! voice-port 1/0/1 ! voice-port 1/1/0 !
voice-port 1/1/1 ! ! ! ! ! ! ! ! line con 0 line aux 0
line vty 0 4 password 7 121A0C0411045D5679 login ! ! end
```

Verificación

Use esta sección para confirmar que su configuración funciona correctamente.

La herramienta Output Interpreter Tool (clientes registrados solamente) (OIT) soporta ciertos comandos show. Utilice la OIT para ver un análisis del resultado del comando show.

- **el IP de la demostración examina todos** — Verifica la configuración de las reglas del examen del Firewall Cisco IOS y de su aplicación a las interfaces.`3640-123#`**`show ip inspect all`** `Session audit trail is disabled Session alert is enabled one-minute (sampling period) thresholds are [400:500] connections max-incomplete sessions thresholds are [400:500] max-incomplete tcp connections per host is 50. Block-time 0 minute. tcp synwait-time is 30 sec -- tcp finwait-time is 5 sec tcp idle-time is 3600 sec -- udp idle-time is 30 sec dns-timeout is 5 sec Inspection Rule Configuration Inspection name IN-OUT tcp alert is on audit-trail is off timeout 3600 udp alert is on audit-trail is off timeout 30 ftp alert is on audit-trail is off timeout 3600 http alert is on audit-trail is off timeout 3600 icmp alert is on audit-trail is off timeout 10 Inspection name OUT-IN smtp max-data 20000000 alert is on audit-trail is off timeout 3600 Interface Configuration Interface Ethernet2/1 Inbound inspection rule is IN-OUT tcp alert is on audit-trail is off timeout 3600 udp alert is on audit-trail is off timeout 30 ftp alert is on audit-trail is off timeout 3600 http alert is on audit-trail is off timeout 3600 icmp alert is on audit-trail is off timeout 10 Outgoing inspection rule is not set Inbound access list is not set Outgoing access list is not set Interface Ethernet2/0 Inbound inspection rule is OUT-IN smtp max-data 20000000 alert is on audit-trail is off timeout 3600 Outgoing inspection rule is not set Inbound access list is 101 Outgoing access list is not set`
- **smtp del debug ip inspect** — Visualiza los mensajes sobre los eventos de la inspección SMTP del Firewall Cisco IOS.**Nota:** Consulte Información Importante sobre Comandos de Debug antes de usar un **comando debug**.`ausnml-3600-02#`**`debug ip inspect smtp`** `INSPECT SMTP Inspection debugging is on ausnml-3600-02# *Oct 18 21:51:35.886: CBAC SMTP: reply_type OTHERS *Oct 18 21:51:35.886: CBAC SMTP: OTHER REPLY - Reply len: 64, match_len:64, reply_re_state:18 *Oct 18 21:51:35.886: CBAC SMTP: OTHER REPLY match id:13 *Oct 18 21:51:35.886: CBAC SMTP: OTHER REPLY match id:10 *Oct 18 21:51:35.886: CBAC SMTP: End Of Reply Line - index:0 ,len:64 !--- The client issues a command. *Oct 18 21:51:40.810: CBAC`

SMTP: VERB - Cmd len:1, match_len:1, cmd_re_state:9 *Oct 18 21:51:40.994: CBAC SMTP: VERB - Cmd len:2, match_len:1, cmd_re_state:24 *Oct 18 21:51:41.190: CBAC SMTP: VERB - Cmd len:3, match_len:1, cmd_re_state:40 *Oct 18 21:51:41.390: CBAC SMTP: VERB - Cmd len:4, match_len:1, cmd_re_state:56 *Oct 18 21:51:41.390: CBAC SMTP: VERB - match id:5 *Oct 18 21:51:42.046: CBAC SMTP: CMD PARAM - Cmd len:5, match_len:1, cmd_re_state:7 *Oct 18 21:51:43.462: CBAC SMTP: CMD PARAM - Cmd len:6, match_len:1, cmd_re_state:2 *Oct 18 21:51:43.594: CBAC SMTP: CMD PARAM - Cmd len:7, match_len:1, cmd_re_state:2 *Oct 18 21:51:43.794: CBAC SMTP: CMD PARAM - Cmd len:9, match_len:2, cmd_re_state:2 *Oct 18 21:51:43.994: CBAC SMTP: CMD PARAM - Cmd len:10, match_len:1, cmd_re_state:2 *Oct 18 21:51:44.194: CBAC SMTP: CMD PARAM - Cmd len:12, match_len:2, cmd_re_state:3 *Oct 18 21:51:44.194: CBAC SMTP: CMD PARAM - match id:6 *Oct 18 21:51:44.194: CBAC SMTP: End Of Command Line - index:1, len:12 *!--- The server replies.* *Oct 18 21:51:44.198: CBAC SMTP: reply_type OTHERS *Oct 18 21:51:44.198: CBAC SMTP: OTHER REPLY - Reply len: 11, match_len:11, reply_re_state:18 *Oct 18 21:51:44.198: CBAC SMTP: OTHER REPLY match id:13 *Oct 18 21:51:44.198: CBAC SMTP: OTHER REPLY match id:10 *Oct 18 21:51:44.198: CBAC SMTP: End Of Reply Line - index:1 ,len:11 *!--- The client issues a command.* *Oct 18 21:51:49.482: CBAC SMTP: VERB - Cmd len:1, match_len:1, cmd_re_state:3 *Oct 18 21:51:50.222: CBAC SMTP: VERB - Cmd len:2, match_len:1, cmd_re_state:15 *Oct 18 21:51:50.618: CBAC SMTP: VERB - Cmd len:3, match_len:1, cmd_re_state:31 *Oct 18 21:51:50.954: CBAC SMTP: VERB - Cmd len:4, match_len:1, cmd_re_state:46 *Oct 18 21:51:50.954: CBAC SMTP: VERB - match id:15 *Oct 18 21:51:51.642: CBAC SMTP: CMD PARAM - Cmd len:5, match_len:1, cmd_re_state:7 *Oct 18 21:51:51.914: CBAC SMTP: CMD PARAM - Cmd len:6, match_len:1, cmd_re_state:2 *Oct 18 21:51:52.106: CBAC SMTP: CMD PARAM - Cmd len:7, match_len:1, cmd_re_state:2 *Oct 18 21:51:54.754: CBAC SMTP: CMD PARAM - Cmd len:8, match_len:1, cmd_re_state:4 *Oct 18 21:51:55.098: CBAC SMTP: CMD PARAM - Cmd len:9, match_len:1, cmd_re_state:2 *Oct 18 21:51:55.322: CBAC SMTP: CMD PARAM - Cmd len:11, match_len:2, cmd_re_state:3 *Oct 18 21:51:55.322: CBAC SMTP: CMD PARAM - match id:6 *Oct 18 21:51:55.322: CBAC SMTP: End Of Command Line - index:2, len:11 *!--- The server replies.* *Oct 18 21:51:55.326: CBAC SMTP: reply_type OTHERS *Oct 18 21:51:55.326: CBAC SMTP: OTHER REPLY - Reply len: 19, match_len:19, reply_re_state:3 *Oct 18 21:51:55.326: CBAC SMTP: OTHER REPLY match id:13 *Oct 18 21:51:55.326: CBAC SMTP: End Of Reply Line - index:2 ,len:19 *Oct 18 21:51:57.070: CBAC SMTP: VERB - Cmd len:1, match_len:1, cmd_re_state:3 *Oct 18 21:51:57.402: CBAC SMTP: VERB - Cmd len:2, match_len:1, cmd_re_state:15 *Oct 18 21:51:58.162: CBAC SMTP: VERB - Cmd len:3, match_len:1, cmd_re_state:31 *Oct 18 21:51:58.462: CBAC SMTP: VERB - Cmd len:4, match_len:1, cmd_re_state:46 *Oct 18 21:51:58.466: CBAC SMTP: VERB - match id:15 *Oct 18 21:51:58.746: CBAC SMTP: CMD PARAM - Cmd len:5, match_len:1, cmd_re_state:7 *Oct 18 21:51:59.006: CBAC SMTP: CMD PARAM - Cmd len:6, match_len:1, cmd_re_state:2 *Oct 18 21:51:59.234: CBAC SMTP: CMD PARAM - Cmd len:7, match_len:1, cmd_re_state:2 *Oct 18 21:51:59.418: CBAC SMTP: CMD PARAM - Cmd len:9, match_len:2, cmd_re_state:2 *Oct 18 21:51:59.618: CBAC SMTP: CMD PARAM - Cmd len:10, match_len:1, cmd_re_state:2 *Oct 18 21:51:59.818: CBAC SMTP: CMD PARAM - Cmd len:12, match_len:2, cmd_re_state:3 *Oct 18 21:51:59.818: CBAC SMTP: CMD PARAM - match id:6 *Oct 18 21:51:59.818: CBAC SMTP: End Of Command Line - index:3, len:12 *Oct 18 21:51:59.818: CBAC SMTP: reply_type OTHERS *Oct 18 21:51:59.818: CBAC SMTP: OTHER REPLY - Reply len: 19, match_len:19, reply_re_state:3 *Oct 18 21:51:59.822: CBAC SMTP: OTHER REPLY match id:13 *Oct 18 21:51:59.822: CBAC SMTP: End Of Reply Line - index:3 ,len:19 *Oct 18 21:52:04.974: CBAC SMTP: VERB - Cmd len:1, match_len:1, cmd_re_state:9 *Oct 18 21:52:05.170: CBAC SMTP: VERB - Cmd len:2, match_len:1, cmd_re_state:24 *Oct 18 21:52:05.326: CBAC SMTP: VERB - Cmd len:3, match_len:1, cmd_re_state:40 *Oct 18 21:52:05.526: CBAC SMTP: VERB - Cmd len:4, match_len:1, cmd_re_state:55 *Oct 18 21:52:05.526: CBAC SMTP: VERB - match id:6 *Oct 18 21:52:05.742: CBAC SMTP: CMD PARAM - Cmd len:6, match_len:2, cmd_re_state:3 *Oct 18 21:52:05.742: CBAC SMTP: CMD PARAM - match id:6 *Oct 18 21:52:05.742: CBAC SMTP: End Of Command Line - index:4, len:6 *Oct 18 21:52:05.746: CBAC SMTP: reply_type OTHERS *Oct 18 21:52:05.746: CBAC SMTP: OTHER REPLY - Reply len: 54, match_len:54, reply_re_state:3 *Oct 18 21:52:05.746: CBAC SMTP: OTHER REPLY match id:13 *Oct 18 21:52:05.746: CBAC SMTP: End Of Reply Line - index:4 ,len:54 *Oct 18 21:52:05.746: CBAC SMTP: reply_type OTHERS *Oct 18 21:52:05.746: CBAC SMTP: OTHER REPLY - Reply len: 15, match_len:15, reply_re_state:3 *Oct 18 21:52:05.746: CBAC SMTP: OTHER REPLY match id:13 *Oct 18 21:52:05.746: CBAC SMTP: End Of Reply Line - index:5 ,len:15 *Oct 18 21:52:05.746: CBAC SMTP: reply_type OTHERS *Oct 18 21:52:05.746: CBAC SMTP: OTHER REPLY - Reply len: 15, match_len:15, reply_re_state:3 *Oct 18 21:52:05.746: CBAC SMTP: OTHER REPLY match id:13 *Oct 18 21:52:05.746: CBAC SMTP: End Of Reply Line - index:6 ,len:15 *Oct 18 21:52:05.746: CBAC SMTP: reply_type OTHERS *Oct 18 21:52:05.750: CBAC SMTP: OTHER REPLY - Reply len: 6, match_len:6, reply_re_state:3 *Oct 18 21:52:05.750: CBAC SMTP: OTHER REPLY match id:13 *Oct 18 21:52:05.750: CBAC SMTP: End Of Reply Line - index:7 ,len:6 *Oct 18 21:52:05.750: CBAC SMTP: reply_type OTHERS *Oct 18 21:52:05.750: CBAC SMTP: OTHER REPLY -

```
Reply len: 19, match_len:19, reply_re_state:3 *Oct 18 21:52:05.750: CBAC SMTP: OTHER REPLY
match id:13 *Oct 18 21:52:05.750: CBAC SMTP: End Of Reply Line - index:8 ,len:19 *Oct 18
21:52:05.750: CBAC SMTP: reply_type OTHERS *Oct 18 21:52:05.750: CBAC SMTP: OTHER REPLY -
Reply len: 17, match_len:17, reply_re_state:3 *Oct 18 21:52:05.750: CBAC SMTP: OTHER REPLY
match id:13 *Oct 18 21:52:05.750: CBAC SMTP: End Of Reply Line - index:9 ,len:17 *Oct 18
21:52:05.750: CBAC SMTP: reply_type OTHERS *Oct 18 21:52:05.750: CBAC SMTP: OTHER REPLY -
Reply len: 6, match_len:6, reply_re_state:3 *Oct 18 21:52:05.750: CBAC SMTP: OTHER REPLY
match id:13 *Oct 18 21:52:05.754: CBAC SMTP: End Of Reply Line - index:10 ,len:6 *Oct 18
21:52:05.754: CBAC SMTP: reply_type OTHERS *Oct 18 21:52:05.754: CBAC SMTP: OTHER REPLY -
Reply len: 6, match_len:6, reply_re_state:3 *Oct 18 21:52:05.754: CBAC SMTP: OTHER REPLY
match id:13 *Oct 18 21:52:05.754: CBAC SMTP: End Of Reply Line - index:11 ,len:6 *Oct 18
21:52:05.754: CBAC SMTP: reply_type OTHERS *Oct 18 21:52:05.754: CBAC SMTP: OTHER REPLY -
Reply len: 6, match_len:6, reply_re_state:3 *Oct 18 21:52:05.754: CBAC SMTP: OTHER REPLY
match id:13 *Oct 18 21:52:05.754: CBAC SMTP: End Of Reply Line - index:12 ,len:6 *Oct 18
21:52:05.754: CBAC SMTP: reply_type OTHERS *Oct 18 21:52:05.754: CBAC SMTP: OTHER REPLY -
Reply len: 3, match_len:3, reply_re_state:3 *Oct 18 21:52:05.754: CBAC SMTP: OTHER REPLY
match id:13 *Oct 18 21:52:05.754: CBAC SMTP: End Of Reply Line - index:13 ,len:3 *Oct 18
21:52:15.646: CBAC SMTP: VERB - Cmd len:1, match_len:1, cmd_re_state:6 *Oct 18 21:52:15.838:
CBAC SMTP: VERB - Cmd len:3, match_len:2, cmd_re_state:37 *Oct 18 21:52:16.206: CBAC SMTP:
VERB - Cmd len:4, match_len:1, cmd_re_state:52 *Oct 18 21:52:16.206: CBAC SMTP: VERB - match
id:9 *Oct 18 21:52:18.954: CBAC SMTP: CMD PARAM - Cmd len:6, match_len:2, cmd_re_state:3
*Oct 18 21:52:18.958: CBAC SMTP: CMD PARAM - match id:6 *Oct 18 21:52:18.958: CBAC SMTP: End
Of Command Line - index:5, len:6 *Oct 18 21:52:18.958: CBAC SMTP: reply_type OTHERS *Oct 18
21:52:18.958: CBAC SMTP: OTHER REPLY - Reply len: 21, match_len:21, reply_re_state:18 *Oct
18 21:52:18.958: CBAC SMTP: OTHER REPLY match id:13 *Oct 18 21:52:18.958: CBAC SMTP: OTHER
REPLY match id:10 *Oct 18 21:52:18.958: CBAC SMTP: End Of Reply Line - index:14 ,len:21
```

Troubleshooting

Actualmente, no hay información específica de troubleshooting disponible para esta configuración.

Información Relacionada

- Preguntas frecuentes sobre el conjunto de funciones del Firewall de Cisco IOS
- Página de soporte de firewall de IOS
- Soporte Técnico y Documentación - Cisco Systems