Exemplo de Configuração de Inspeção de Conexões SMTP e ESMTP com Cisco IOS Firewall

Contents

Introduction

Este documento fornece uma configuração de exemplo para a inspeção de conexões de entrada do Simple Mail Transfer Protocol (SMTP) ou do Extended Simple Mail Transfer Protocol (ESMTP) utilizando o Cisco IOS® Firewall no Cisco IOS. Tal inspeção é similar à característica MailGuard encontrada nos Cisco PIX 500 Series Security Appliances.

Prerequisites

Requirements

Não existem requisitos específicos para este documento.

Componentes Utilizados

As informações neste documento são baseadas nestas versões de software e hardware:

- Software Cisco IOS versão 12.3(4)T ou posterior
- Cisco 3640 Router

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Consulte as Convenções de Dicas Técnicas da Cisco para obter mais informações sobre convenções de documentos.

Informações de Apoio

A inspeção de SMTP faz com que os comandos SMTP sejam inspecionados para verificar se há comandos ilegais. Os pacotes com comandos ilegais são modificados para um padrão de "xxxx" e encaminhados ao servidor. Esse processo faz com que o servidor envie uma resposta negativa, o que força o cliente a emitir um comando válido. Um comando SMTP ilegal é qualquer comando, exceto estes comandos:

• DADOS • SAUDAÇÃO • AJUDA • CORREIO • NOOP • SAIR	• RCPT • RSET • SAML • ENVIAR • SOML • VRFY

A inspeção ESMTP opera da mesma forma que a inspeção SMTP. Os pacotes com comandos ilegais são modificados para um padrão "xxxx" e encaminhados ao servidor, o que dispara uma resposta negativa. Um comando ESMTP ilegal é qualquer comando, exceto estes comandos:

• AUTH • DADOS • EHLO • ETRN • SAUDAÇÃO • AJUDA • AJUDA • CORREIO	• NOOP • SAIR • RCPT • RSET • SAML • ENVIAR • SOML • VRFY

A inspeção ESMTP também examina essas extensões por meio de uma inspeção de comando mais profunda:

- Declaração de tamanho da mensagem (TAMANHO)
- Declaração de processamento de fila remota (ETRN)
- MIME Binário (BINARYMIME)
- Pipeling de comando
- Autenticação
- Notificação de status de entrega (DSN)
- Código de status aprimorado (ENHANCEDSTATUSCODE)
- Transporte MIME de 8 bits (8BITMIME)

Observação: a inspeção SMTP e ESMTP não pode ser configurada simultaneamente. Uma tentativa de configurar ambos os resultados em uma mensagem de erro.

Observação: no Cisco IOS Software Release 12.3(4)T ou posterior, o Cisco IOS Firewall não cria mais entradas dinâmicas de lista de acesso para permitir o tráfego. O Cisco IOS Firewall agora

mantém uma tabela de estado de sessão para controlar a segurança das conexões inspecionadas.

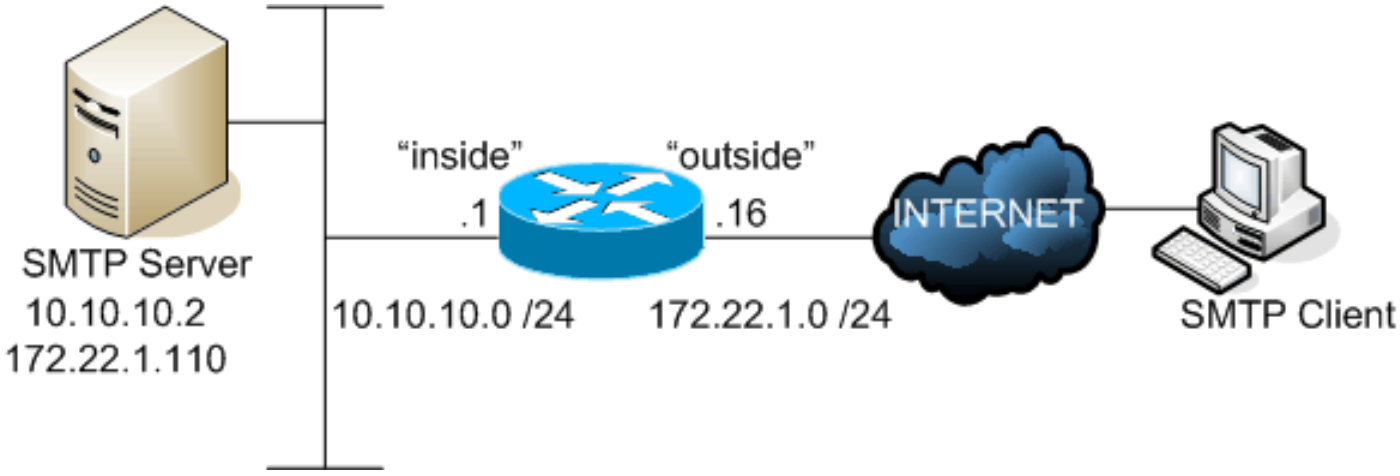
Configurar

Nesta seção, você encontrará informações para configurar os recursos descritos neste documento.

Nota: Use a Command Lookup Tool (somente clientes registrados) para obter mais informações sobre os comandos usados nesta seção.

Diagrama de Rede

Este documento utiliza a seguinte configuração de rede:



Configurações

Este documento utiliza esta configuração:

3640 Router

```
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
```

Verificar

Use esta seção para confirmar se a sua configuração funciona corretamente.

A Output Interpreter Tool (somente clientes registrados) (OIT) oferece suporte a determinados comandos show. Use a OIT para exibir uma análise da saída do comando show.

- **show ip inspect all** —Verifica a configuração das regras de inspeção do Cisco IOS Firewall e sua aplicação às 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
```

- **debug ip inspect smtp** — Exibe mensagens sobre eventos de inspeção SMTP do Cisco IOS Firewall.**Nota:Consulte Informações Importantes sobre Comandos de Depuração antes de usar comandos 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
```

Troubleshoot

Atualmente, não existem informações disponíveis específicas sobre Troubleshooting para esta configuração.

Informações Relacionadas

- Perguntas mais freqüentes sobre a definição do recurso de firewall do Cisco IOS
- Página de suporte de firewall do IOS
- Suporte Técnico e Documentação - Cisco Systems