Configurando PIX para PIX para PIX IPSec totalmente integrado

Contents

Introduction

Essa configuração permite que redes privadas atrás de três caixas do Cisco Secure PIX Firewall sejam conectadas por túneis VPN pela Internet ou por qualquer rede pública que use IPsec. Cada uma das três redes tem conectividade com as outras duas redes. Neste cenário, a Network Address Translation (NAT) é necessária para conexões à Internet pública. No entanto, o NAT não é necessário para o tráfego entre as três intranets, que podem ser transmitidas usando um túnel VPN sobre a Internet pública.

Prerequisites

Requirements

Para que o IPsec funcione, você deve ter conectividade de ponto de extremidade de túnel a ponto de extremidade de túnel antes de iniciar esta configuração.

Componentes Utilizados

Essa configuração foi desenvolvida e testada com o PIX Firewall versão 6.1(2).

Observação: o comando **show version** deve mostrar que a criptografia está habilitada.

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.

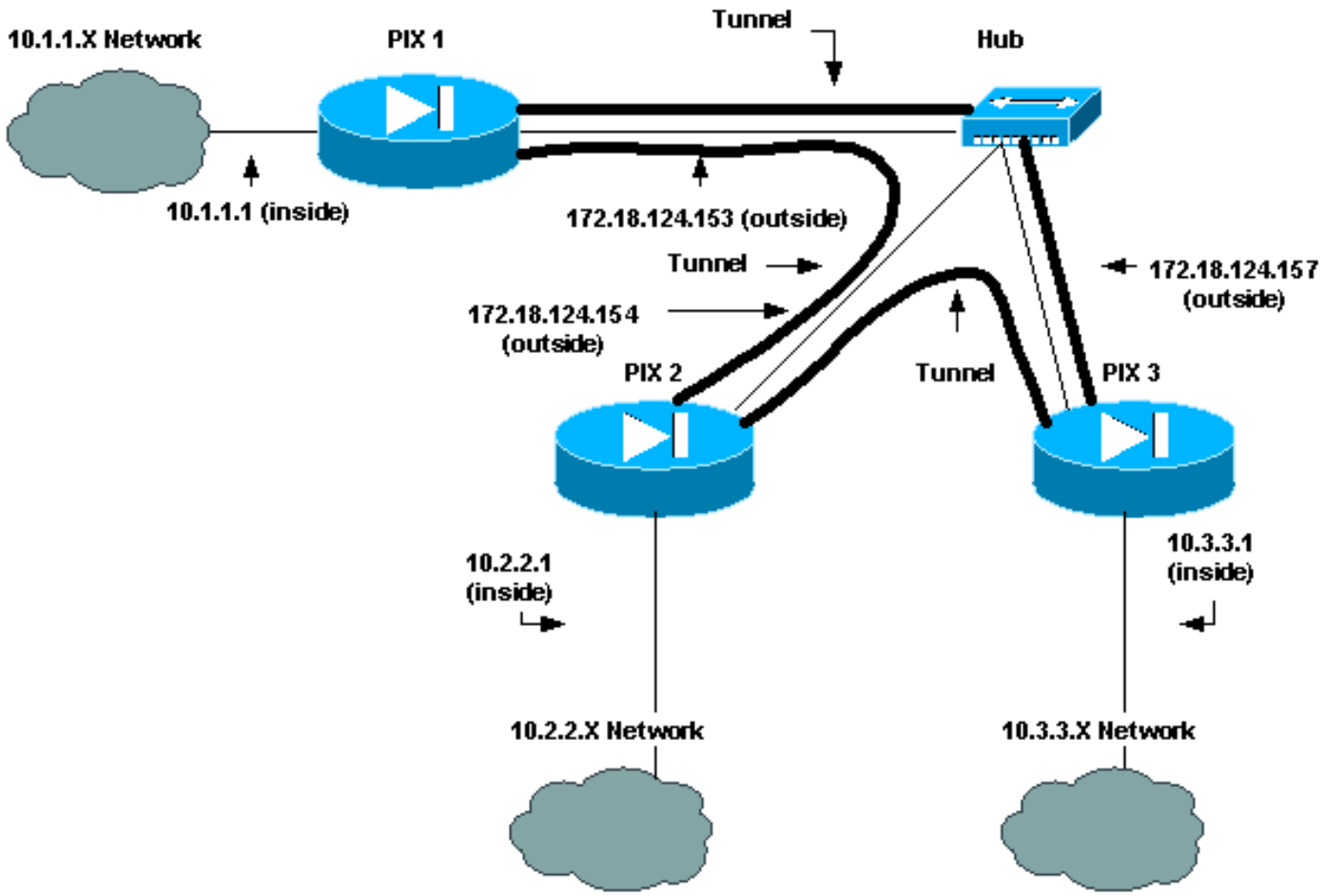
Configurar

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 as seguintes configurações:

- PIX 1
- PIX 2

- PIX 3

Configuração do PIX 1

```
PIX Version 6.1(2)
nameif ethernet0 outside security0
nameif ethernet1 inside security100
enable password 8Ry2YjIyt7RRXU24 encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname pix_1
fixup protocol ftp 21
fixup protocol http 80
fixup protocol h323 1720
fixup protocol rsh 514
fixup protocol smtp 25
fixup protocol sqlnet 1521
fixup protocol sip 5060
names
!--- Traffic to PIX 2 private network: access-list 120
permit ip 10.1.1.0 255.255.255.0 10.2.2.0 255.255.255.0
!--- Traffic to PIX 3 private network: access-list 130
permit ip 10.1.1.0 255.255.255.0 10.3.3.0 255.255.255.0
!--- Do not perform NAT for traffic to !--- other PIX
Firewall private networks: access-list 100 permit ip
10.1.1.0 255.255.255.0 10.2.2.0 255.255.255.0
access-list 100 permit ip 10.1.1.0 255.255.255.0
10.3.3.0 255.255.255.0
pager lines 24
logging on
no logging timestamp
no logging standby
no logging console
no logging monitor
no logging buffered
no logging trap
no logging history
logging facility 20
logging queue 512
interface ethernet0 auto
interface ethernet1 auto
mtu outside 1500
mtu inside 1500
ip address outside 172.18.124.153 255.255.255.0
ip address inside 10.1.1.1 255.255.255.0
ip audit info action alarm
ip audit attack action alarm
no failover
failover timeout 0:00:00
failover poll 15
failover ip address outside 0.0.0.0
failover ip address inside 0.0.0.0
arp timeout 14400
!--- Do not perform NAT for traffic to other PIX
Firewalls: nat (inside) 0 access-list 100
route outside 0.0.0.0 0.0.0.0 172.18.124.1 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00 rpc
0:10:00 h323
   0:05:00 sip 0:30:00 sip_media 0:02:00
timeout uauth 0:05:00 absolute
aaa-server TACACS+ protocol tacacs+
aaa-server RADIUS protocol radius
```

```
no snmp-server location
no snmp-server contact
snmp-server community public
snmp-server enable traps
floodguard enable
sysopt connection permit-ipsec
no sysopt route dnat
crypto ipsec transform-set myset esp-des esp-md5-hmac
!--- IPsec configuration for tunnel to PIX 2: crypto map
newmap 20 ipsec-isakmp
crypto map newmap 20 match address 120
crypto map newmap 20 set peer 172.18.124.154
crypto map newmap 20 set transform-set myset
!--- IPsec configuration for tunnel to PIX 3: crypto map
newmap 30 ipsec-isakmp
crypto map newmap 30 match address 130
crypto map newmap 30 set peer 172.18.124.157
crypto map newmap 30 set transform-set myset
crypto map newmap interface outside
isakmp enable outside
isakmp key ******** address 172.18.124.154 netmask
255.255.255.255
   no-xauth no-config-mode
isakmp key ******** address 172.18.124.157 netmask
255.255.255.255
   no-xauth no-config-mode
isakmp identity address
isakmp policy 10 authentication pre-share
isakmp policy 10 encryption des
isakmp policy 10 hash md5
isakmp policy 10 group 1
isakmp policy 10 lifetime 1000
telnet timeout 5
ssh timeout 5
terminal width 80
Cryptochecksum:436c96500052d0276324b9ef33221b2d
: end
[OK]
```

Configuração do PIX 2

```
PIX Version 6.1(2)
nameif ethernet0 outside security0
nameif ethernet1 inside security100
enable password 8Ry2YjIyt7RRXU24 encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname pix_2
fixup protocol ftp 21
fixup protocol http 80
fixup protocol h323 1720
fixup protocol rsh 514
fixup protocol smtp 25
fixup protocol sqlnet 1521
fixup protocol sip 5060
names
!--- Traffic to PIX 1: access-list 110 permit ip
10.2.2.0 255.255.255.0 10.1.1.0 255.255.255.0
!--- Traffic to PIX 3: access-list 130 permit ip
10.2.2.0 255.255.255.0 10.3.3.0 255.255.255.0
!--- Do not perform NAT for traffic to other PIX
Firewalls: access-list 100 permit ip 10.2.2.0
255.255.255.0 10.1.1.0 255.255.255.0
access-list 100 permit ip 10.2.2.0 255.255.255.0
```

```
10.3.3.0 255.255.255.0
pager lines 24
logging on
no logging timestamp
no logging standby
no logging console
no logging monitor
no logging buffered
no logging trap
no logging history
logging facility 20
logging queue 512
interface ethernet0 auto
interface ethernet1 auto
mtu outside 1500
mtu inside 1500
ip address outside 172.18.124.154 255.255.255.0
ip address inside 10.2.2.1 255.255.255.0
ip audit info action alarm
ip audit attack action alarm
no failover
failover timeout 0:00:00
failover poll 15
failover ip address outside 0.0.0.0
failover ip address inside 0.0.0.0
arp timeout 14400
!--- Do not perform NAT for traffic to other PIX
Firewalls: nat (inside) 0 access-list 100
route outside 0.0.0.0 0.0.0.0 172.18.124.1 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00 rpc
0:10:00 h323
   0:05:00 sip 0:30:00 sip_media 0:02:00
timeout uauth 0:05:00 absolute
aaa-server TACACS+ protocol tacacs+
aaa-server RADIUS protocol radius
no snmp-server location
no snmp-server contact
snmp-server community public
no snmp-server enable traps
floodguard enable
sysopt connection permit-ipsec
no sysopt route dnat
crypto ipsec transform-set myset esp-des esp-md5-hmac
!--- IPsec configuration for tunnel to PIX 1: crypto map
newmap 10 ipsec-isakmp
crypto map newmap 10 match address 110
crypto map newmap 10 set peer 172.18.124.153
crypto map newmap 10 set transform-set myset
!--- IPsec configuration for tunnel to PIX 3: crypto map
newmap 30 ipsec-isakmp
crypto map newmap 30 match address 130
crypto map newmap 30 set peer 172.18.124.157
crypto map newmap 30 set transform-set myset
crypto map newmap interface outside
isakmp enable outside
isakmp key ******** address 172.18.124.153 netmask
255.255.255.255
   no-xauth no-config-mode
isakmp key ******** address 172.18.124.157 netmask
255.255.255.255
   no-xauth no-config-mode
isakmp identity address
isakmp policy 10 authentication pre-share
```

```
isakmp policy 10 encryption des
isakmp policy 10 hash md5
isakmp policy 10 group 1
isakmp policy 10 lifetime 1000
telnet timeout 5
ssh timeout 5
terminal width 80
Cryptochecksum:aef12453a0ea29b592dd0d395de881f5
: end
```

Configuração do PIX 3

```
PIX Version 6.1(2)
nameif ethernet0 outside security0
nameif ethernet1 inside security100
enable password 8Ry2YjIyt7RRXU24 encrypted
passwd 2KFQnbNIdI.2KYOU encrypted
hostname pix_3
fixup protocol ftp 21
fixup protocol http 80
fixup protocol h323 1720
fixup protocol rsh 514
fixup protocol smtp 25
fixup protocol sqlnet 1521
fixup protocol sip 5060
names
!--- IPsec configuration for tunnel to PIX 1: access-
list 110 permit ip 10.3.3.0 255.255.255.0 10.1.1.0
255.255.255.0
!--- IPsec configuration for tunnel to PIX 2: access-
list 120 permit ip 10.3.3.0 255.255.255.0 10.2.2.0
255.255.255.0
!--- Do not perform NAT for traffic to other PIX
Firewalls: access-list 100 permit ip 10.3.3.0
255.255.255.0 10.2.2.0 255.255.255.0
access-list 100 permit ip 10.3.3.0 255.255.255.0
10.1.1.0 255.255.255.0
pager lines 24
logging on
no logging timestamp
no logging standby
no logging console
no logging monitor
no logging buffered
no logging trap
no logging history
logging facility 20
logging queue 512
interface ethernet0 auto
interface ethernet1 auto
mtu outside 1500
mtu inside 1500
ip address outside 172.18.124.157 255.255.255.0
ip address inside 10.3.3.1 255.255.255.0
ip audit info action alarm
ip audit attack action alarm
no failover
failover timeout 0:00:00
failover poll 15
failover ip address outside 0.0.0.0
failover ip address inside 0.0.0.0
arp timeout 14400
!--- Do not perform NAT for traffic to other PIX
```

```
Firewalls: nat (inside) 0 access-list 100
route outside 0.0.0.0 0.0.0.0 172.18.124.1 1
timeout xlate 3:00:00
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00 rpc
0:10:00 h323
   0:05:00 sip 0:30:00 sip_media 0:02:00
timeout uauth 0:05:00 absolute
aaa-server TACACS+ protocol tacacs+
aaa-server RADIUS protocol radius
no snmp-server location
no snmp-server contact
snmp-server community public
no snmp-server enable traps
floodguard enable
sysopt connection permit-ipsec
no sysopt route dnat
crypto ipsec transform-set myset esp-des esp-md5-hmac
!--- IPsec configuration for tunnel to PIX 1: crypto map
newmap 10 ipsec-isakmp
crypto map newmap 10 match address 110
crypto map newmap 10 set peer 172.18.124.153
crypto map newmap 10 set transform-set myset
!--- IPsec configuration for tunnel to PIX 2: crypto map
newmap 20 ipsec-isakmp
crypto map newmap 20 match address 120
crypto map newmap 20 set peer 172.18.124.154
crypto map newmap 20 set transform-set myset
crypto map newmap interface outside
isakmp enable outside
isakmp key ******** address 172.18.124.153 netmask
255.255.255.255
   no-xauth no-config-mode
isakmp key ******** address 172.18.124.154 netmask
255.255.255.255
   no-xauth no-config-mode
isakmp identity address
isakmp policy 10 authentication pre-share
isakmp policy 10 encryption des
isakmp policy 10 hash md5
isakmp policy 10 group 1
isakmp policy 10 lifetime 1000
telnet timeout 5
ssh timeout 5
terminal width 80
Cryptochecksum:e6ad75852dff21efdb2d24cc95ffbe1c
: end
[OK]
```

Verificar

No momento, não há procedimento de verificação disponível para esta configuração.

Troubleshoot

Esta seção fornece informações que podem ser usadas para o troubleshooting da sua configuração. Consulte Troubleshooting do PIX para Passar o Tráfego de Dados em um Túnel IPsec Estabelecido para obter mais informações.

Comandos para Troubleshooting

Nota:Consulte Informações Importantes sobre Comandos de Depuração antes de usar comandos debug.

Comandos debug

Use esses comandos no PIX, com os comandos **logging monitor debugging** ou **logging console debugging** em execução.

- **debug crypto ipsec** — Depura o processamento do IPsec.
- **debug crypto isakmp** — Depura o processamento do ISAKMP (Internet Security Association and Key Management Protocol).
- **debug crypto engine** — Exibe mensagens de depuração sobre mecanismos de criptografia, que executam criptografia e descriptografia.

comandos clear

Para limpar as associações de segurança (SAs), use esses comandos no modo de configuração do PIX.

- **clear [crypto] ipsec sa** — Exclui as SAs IPsec ativas. A palavra-chave crypto é opcional.
- **clear [crypto] isakmp sa** — Exclui as SAs ativas do Internet Key Exchange (IKE). A palavra-chave crypto é opcional.

Observação: para que o IPsec funcione, você deve ter conectividade do ponto final do túnel ao ponto final do túnel antes de iniciar esta configuração.

Informações Relacionadas

- Troubleshooting de PIX para Passagem de Tráfego de Dados em um Túnel de IPSec Estabelecido
- Cisco PIX 500 Series Security Appliances
- Referências de comando PIX
- Negociações IPsec/Protocolos IKE
- Solicitações de Comentários (RFCs)
- Suporte Técnico e Documentação - Cisco Systems