Configuración de la asignación de certificados para la autenticación de cliente seguro en FTD mediante FMC

Contenido

Introducción

Este documento describe cómo configurar Cisco Secure Client con SSL en FTD a través de FMC utilizando la asignación de certificados para la autenticación.

Prerequisites

Requirements

Cisco recomienda que tenga conocimiento sobre estos temas:

- Cisco Firepower Management Center (FMC)
- Firewall Threat Defence (FTD) Virtual
- Flujo de autenticación VPN

Componentes Utilizados

- Cisco Firepower Management Center para VMWare 7.4.1
- Cisco Firewall Threat Defence Virtual 7.4.1

- Cisco Secure Client 5.1.3.62

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 tiene una red en vivo, asegúrese de entender el posible impacto de cualquier comando.

Antecedentes

La asignación de certificados es un método utilizado en conexiones VPN en las que un certificado de cliente se asigna a una cuenta de usuario local o los atributos del certificado se utilizan con fines de autorización. Se trata de un proceso en el que un certificado digital se utiliza como medio de identificar a un usuario o dispositivo. Mediante la asignación de certificados, aprovecha el protocolo SSL para autenticar a los usuarios sin necesidad de que introduzcan credenciales.

Este documento describe cómo autenticar Cisco Secure Client utilizando el nombre común de un certificado SSL.

Estos certificados contienen un nombre común que se utiliza para fines de autorización.

- CA: ftd-ra-ca-common-name
- Certificado de cliente VPN del ingeniero: vpnEngineerClientCN
- Certificado de cliente VPN del administrador: vpnManagerClientCN
- Certificado de servidor: 192.168.1.200

Diagrama de la red

Esta imagen muestra la topología utilizada para el ejemplo de este documento.

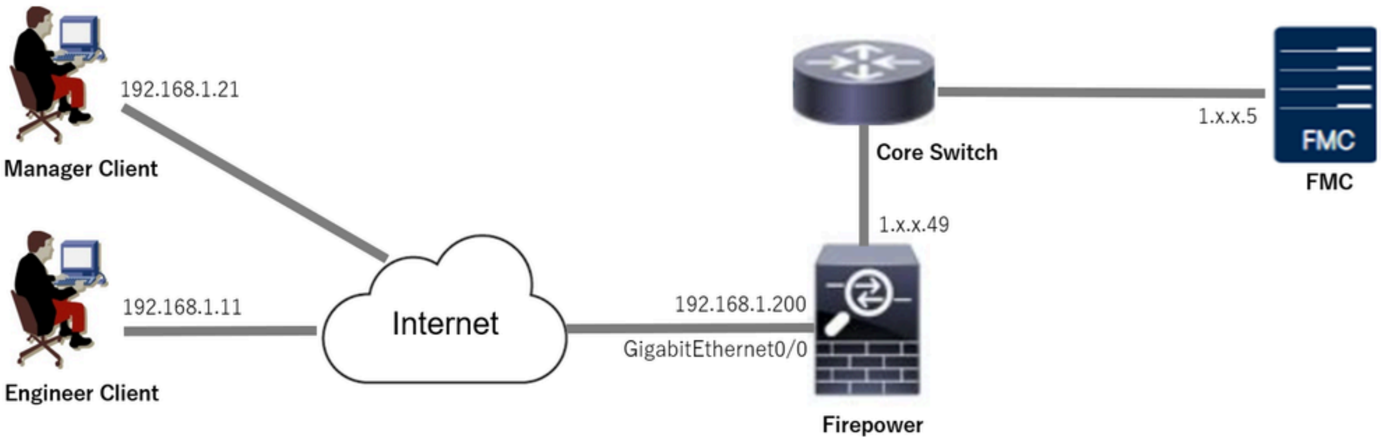


Diagrama de la red

Configuraciones

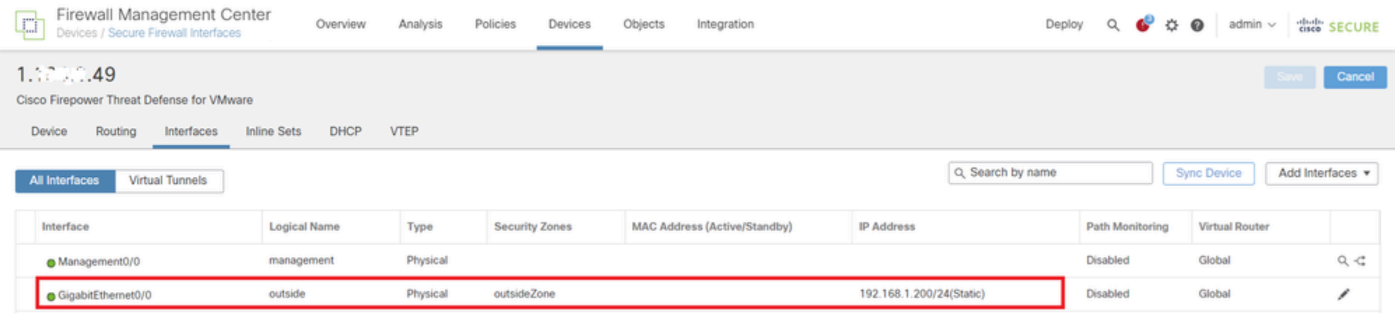
Configuración en FMC

Paso 1. Configuración de la interfaz FTD

Vaya a Devices > Device Management, edite el dispositivo FTD de destino, configure la interfaz externa para FTD en la ficha Interfaces.

Para GigabitEthernet0/0,

- Nombre: fuera
- Zona de seguridad: outsideZone
- Dirección IP: 192.168.1.200/24



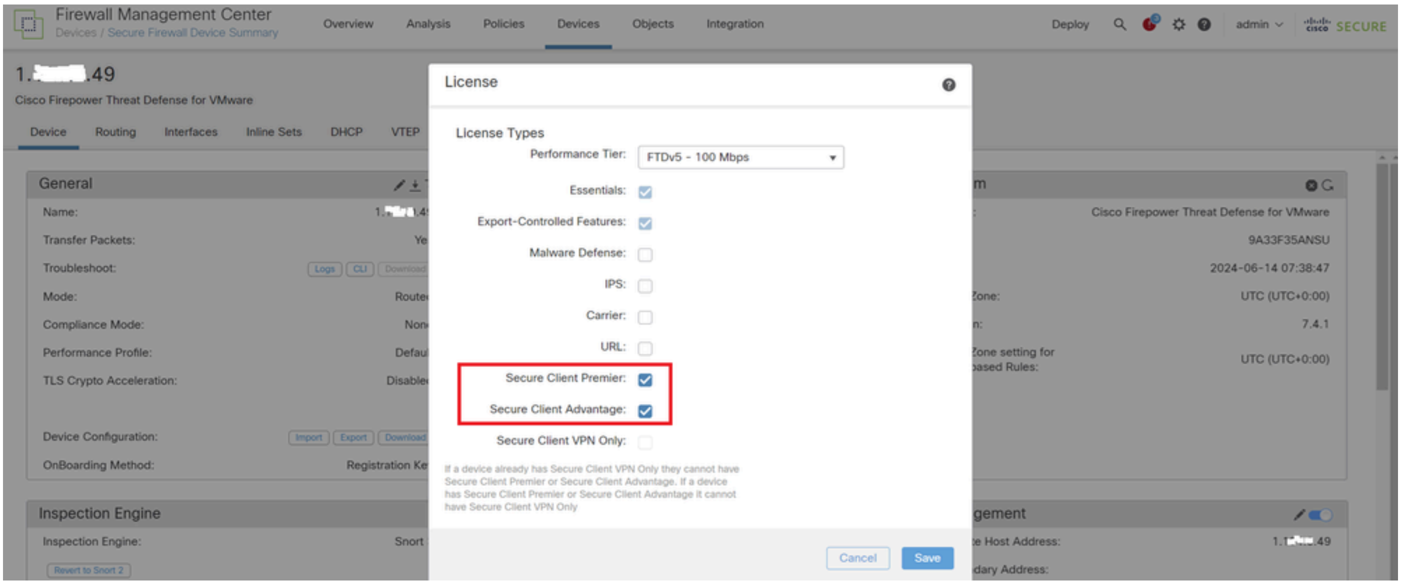
1.[redacted].49
Cisco Firepower Threat Defense for VMware

Interface	Logical Name	Type	Security Zones	MAC Address (Active/Standby)	IP Address	Path Monitoring	Virtual Router
Management0/0	management	Physical				Disabled	Global
GigabitEthernet0/0	outside	Physical	outsideZone		192.168.1.200/24(Static)	Disabled	Global

Interfaz FTD

Paso 2. Confirmar licencia de cliente seguro de Cisco

Vaya a Devices > Device Management, edite el dispositivo FTD de destino y confirme la licencia de Cisco Secure Client en la ficha Device.



1.[redacted].49

Cisco Firepower Threat Defense for VMware

General

Name: 1.[redacted].4
Transfer Packets: Ye
Troubleshoot:
Mode: Route
Compliance Mode: Non
Performance Profile: Defau
TLS Crypto Acceleration: Disable
Device Configuration:
OnBoarding Method: Registration Ke

Inspection Engine

Inspection Engine: Snort

License

License Types

Performance Tier: FTDv5 - 100 Mbps

Essentials: ☑

Export-Controlled Features: ☑

Malware Defense: □

IPS: □

Carrier: □

URL: □

Secure Client Premier: ☑

Secure Client Advantage: ☑

Secure Client VPN Only: □

If a device already has Secure Client VPN Only they cannot have Secure Client Premier or Secure Client Advantage. If a device has Secure Client Premier or Secure Client Advantage it cannot have Secure Client VPN Only

m

: Cisco Firepower Threat Defense for VMware
9A33F35ANSU
2024-06-14 07:38:47
Zone: UTC (UTC+0:00)
n: 7.4.1
Zone setting for based Rules: UTC (UTC+0:00)

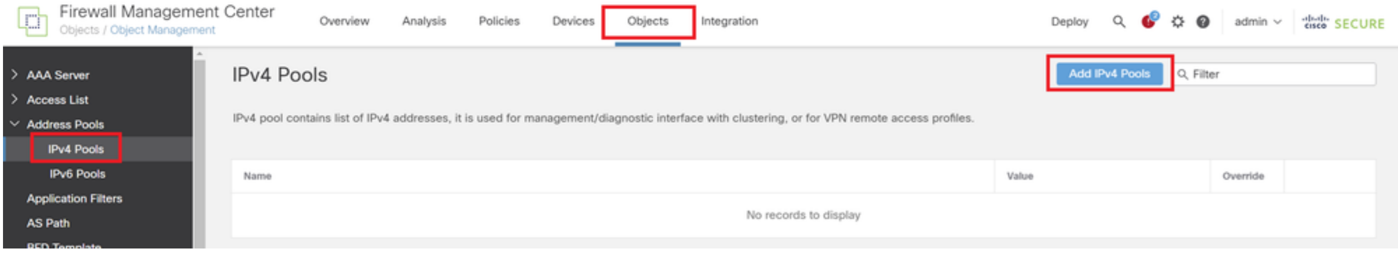
gement

e Host Address: 1.[redacted].49
dary Address:

Licencia de cliente seguro

Paso 3. Agregar conjunto de direcciones IPv4

Vaya aObjeto > Administración de objetos > Conjuntos de direcciones > Conjuntos IPv4, haga clic en el botón Agregar grupos IPv4.



IPv4 Pools

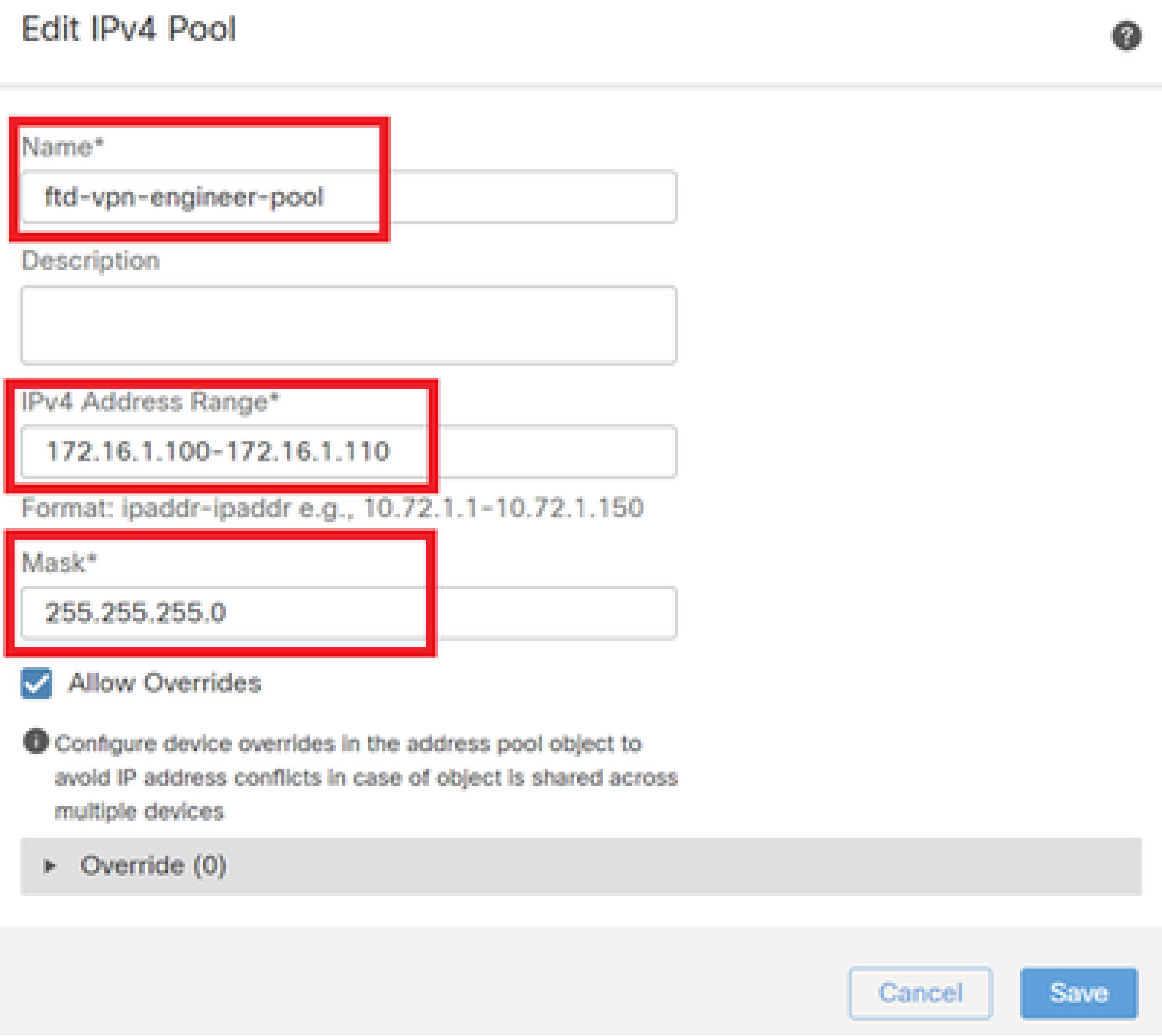
IPv4 pool contains list of IPv4 addresses, it is used for management/diagnostic interface with clustering, or for VPN remote access profiles.

Name	Value	Override
No records to display		

Agregar conjunto de direcciones IPv4

Introduzca la información necesaria para crear un conjunto de direcciones IPv4 para el cliente VPN de ingeniería.

- Nombre: ftd-vpn-engineering-pool
- Intervalo de direcciones IPv4: 172.16.1.100-172.16.1.110
- Máscara: 255.255.255.0



Edit IPv4 Pool

Name*

ftd-vpn-engineer-pool

Description

IPv4 Address Range*

172.16.1.100-172.16.1.110

Format: ipaddr-ipaddr e.g., 10.72.1.1-10.72.1.150

Mask*

255.255.255.0

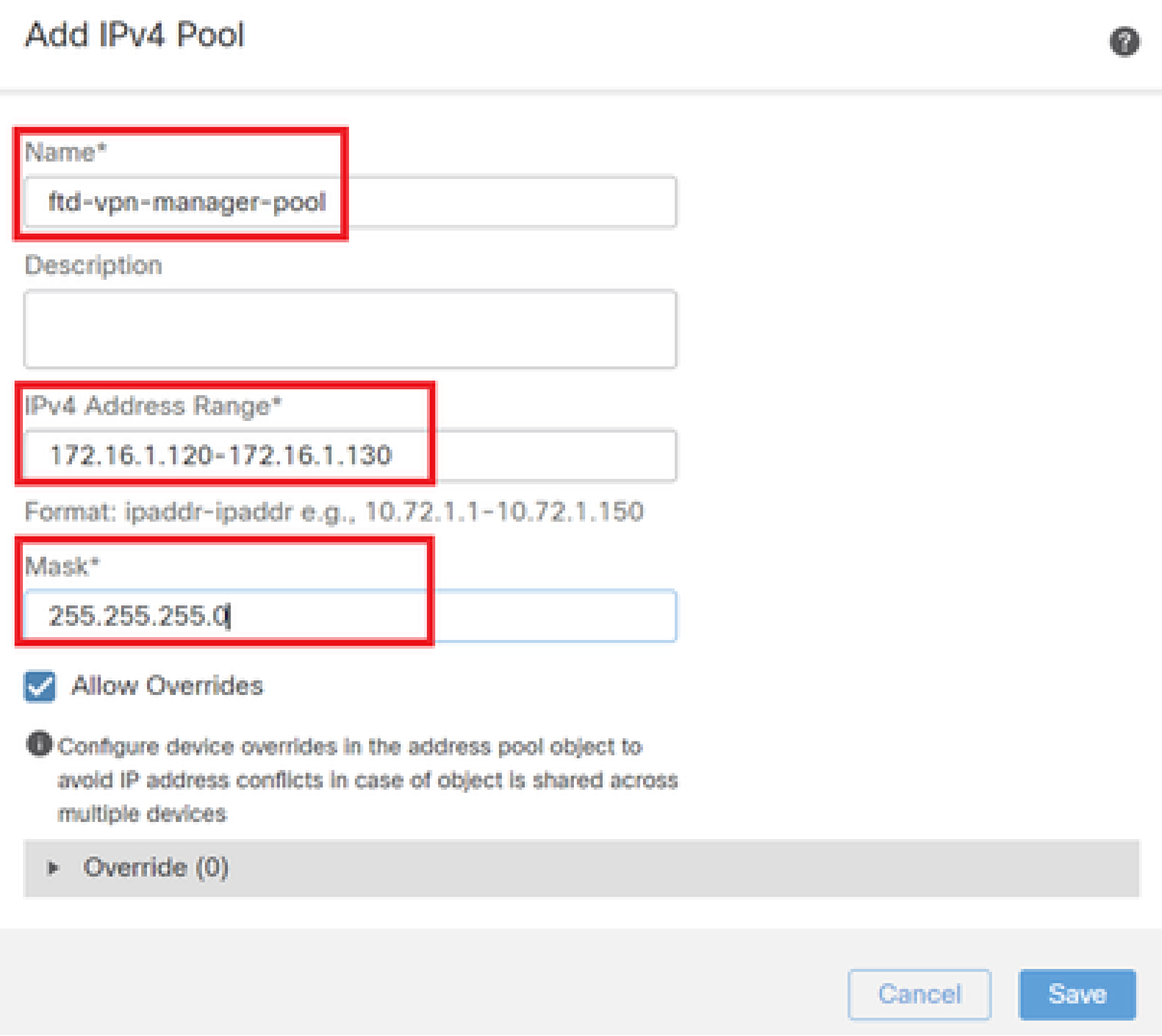
☑ Allow Overrides

Configure device overrides in the address pool object to avoid IP address conflicts in case of object is shared across multiple devices

Grupo de direcciones IPv4 para cliente VPN de ingeniero

Introduzca la información necesaria para crear un conjunto de direcciones IPv4 para el cliente VPN del administrador.

- Nombre: ftd-vpn-manager-pool
- Intervalo de direcciones IPv4: 172.16.1.120-172.16.1.130
- Máscara: 255.255.255.0



Add IPv4 Pool

Name*: ftd-vpn-manager-pool

Description:

IPv4 Address Range*: 172.16.1.120-172.16.1.130

Format: ipaddr-ipaddr e.g., 10.72.1.1-10.72.1.150

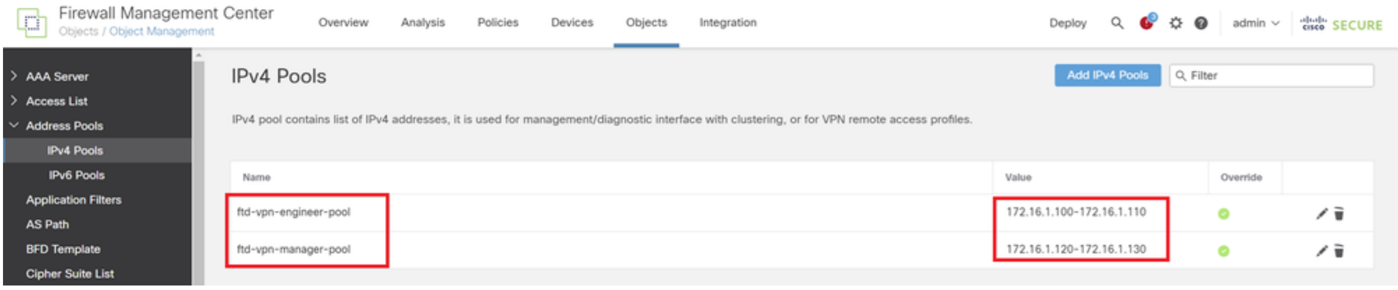
Mask*: 255.255.255.0

☑ Allow Overrides

Configure device overrides in the address pool object to avoid IP address conflicts in case of object is shared across multiple devices

Pool de Direcciones IPv4 para el Cliente VPN Manager

Confirme los nuevos conjuntos de direcciones IPv4.



IPv4 Pools

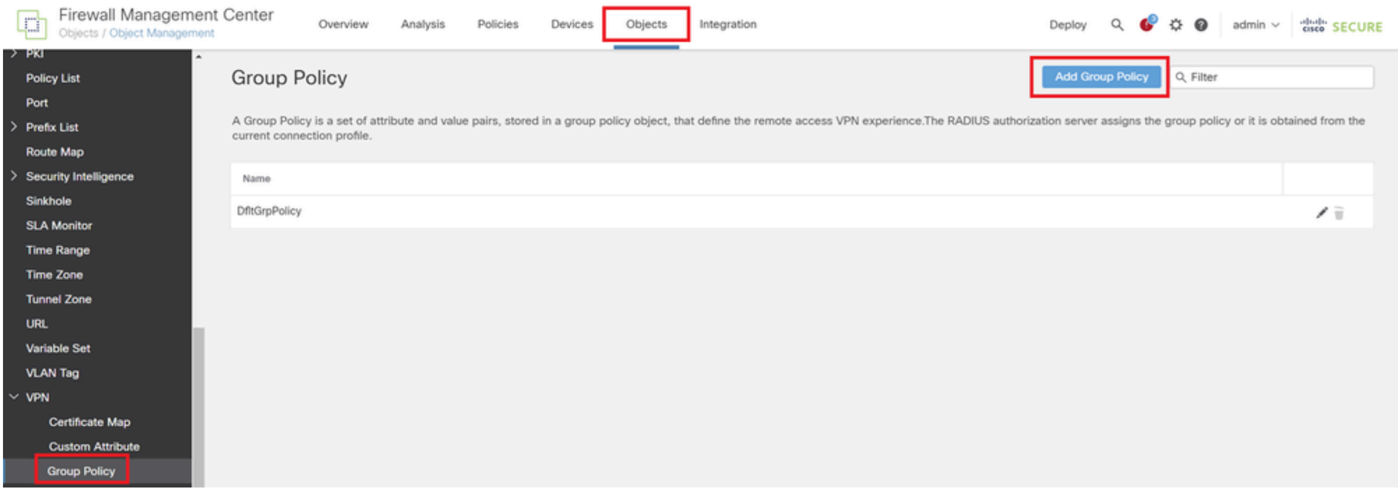
IPv4 pool contains list of IPv4 addresses, it is used for management/diagnostic interface with clustering, or for VPN remote access profiles.

Name	Value	Override
ftd-vpn-engineer-pool	172.16.1.100-172.16.1.110	●
ftd-vpn-manager-pool	172.16.1.120-172.16.1.130	●

Nuevos grupos de direcciones IPv4

Paso 4. Agregar directiva de grupo

Vaya aObjeto > Administración de objetos > VPN > Directiva de grupo, haga clic enAgregar directiva de grupo.



Group Policy

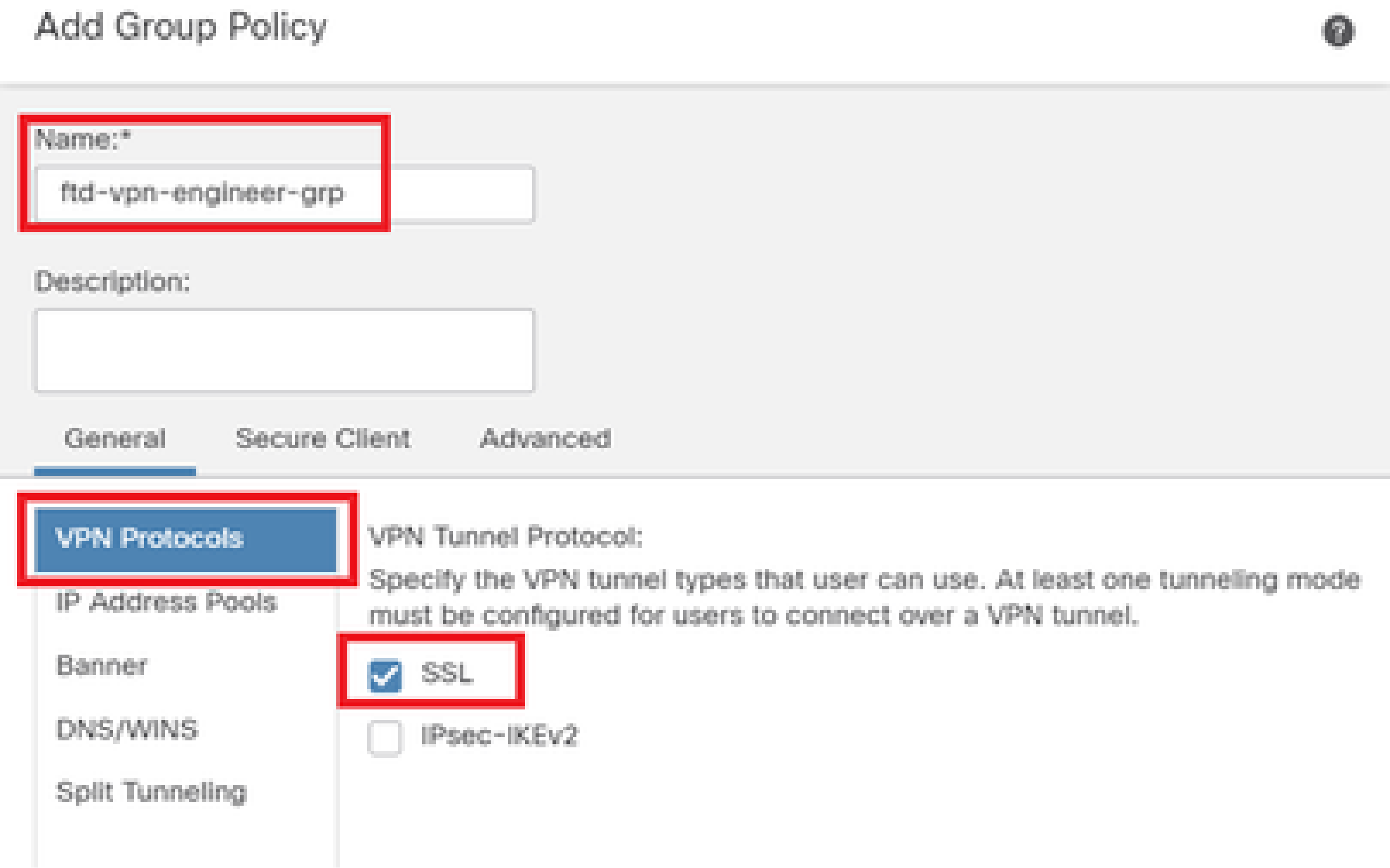
A Group Policy is a set of attribute and value pairs, stored in a group policy object, that define the remote access VPN experience.The RADIUS authorization server assigns the group policy or it is obtained from the current connection profile.

Name
DfltGrpPolicy

Agregar directiva de grupo

Introduzca la información necesaria para crear una directiva de grupo para el cliente VPN de ingeniero.

- Nombre: ftd-vpn-engineering-grp
- Protocolos VPN: SSL



Add Group Policy

Name:* ftd-vpn-engineer-grp

Description:

VPN Tunnel Protocol:

Specify the VPN tunnel types that user can use. At least one tunneling mode must be configured for users to connect over a VPN tunnel.

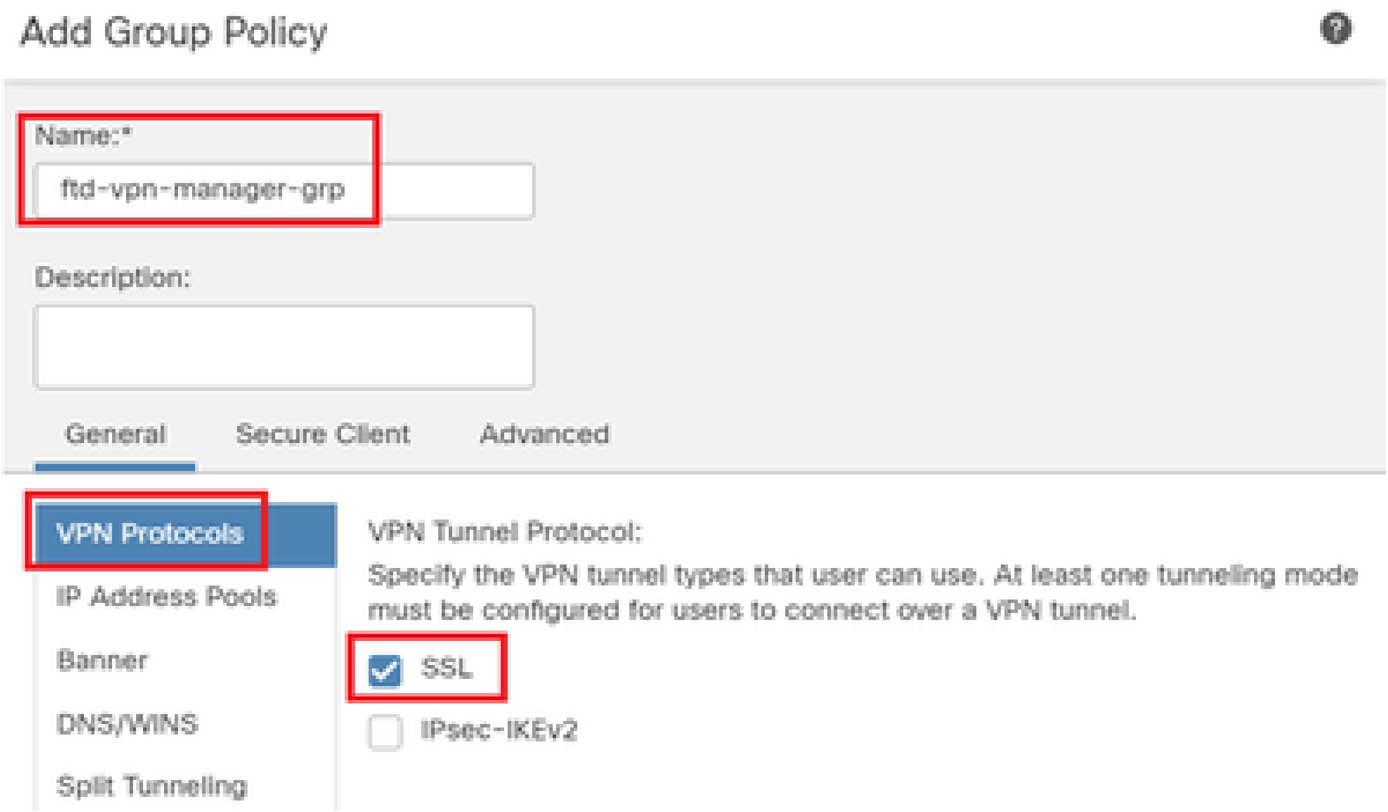
☑ SSL

□ IPsec-IKEv2

Directiva de grupo para el cliente VPN del ingeniero

Introduzca la información necesaria para crear una directiva de grupo para el cliente VPN de administrador.

- Nombre: ftd-vpn-manager-grp
- Protocolos VPN: SSL



Add Group Policy

Name:*

ftd-vpn-manager-grp

Description:

VPN Tunnel Protocol:

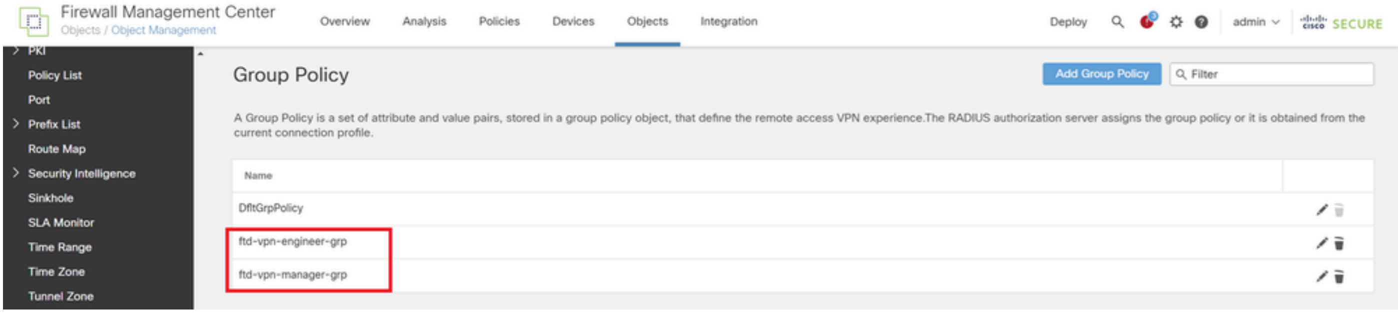
Specify the VPN tunnel types that user can use. At least one tunneling mode must be configured for users to connect over a VPN tunnel.

☑ SSL

□ IPsec-IKEv2

Directiva de grupo para Manager VPN Client

Confirme las nuevas directivas de grupo.



Group Policy

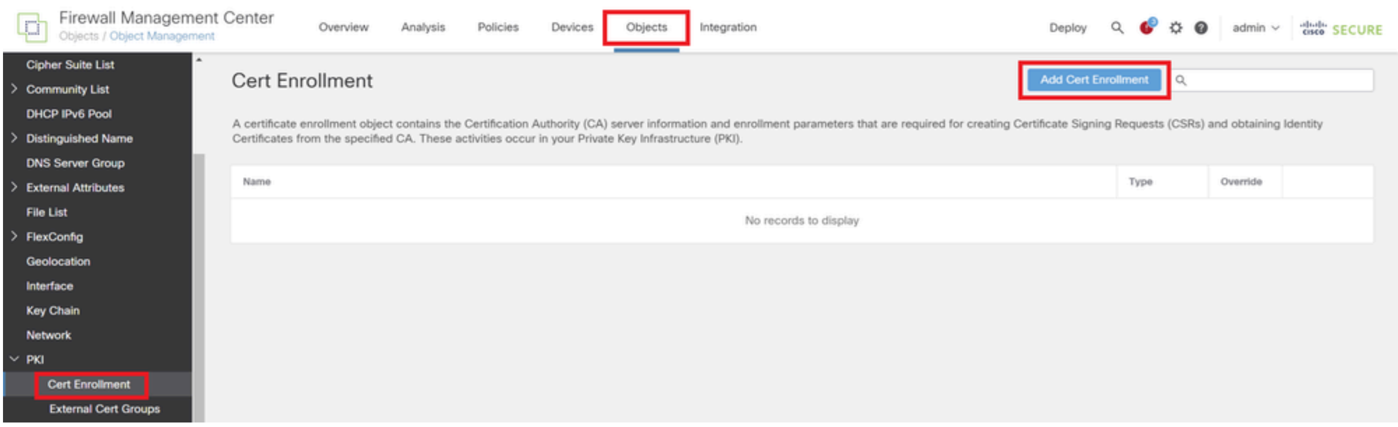
A Group Policy is a set of attribute and value pairs, stored in a group policy object, that define the remote access VPN experience.The RADIUS authorization server assigns the group policy or it is obtained from the current connection profile.

Name
DfltGrpPolicy
ftd-vpn-engineer-grp
ftd-vpn-manager-grp

Nuevas políticas de grupo

Paso 5. Agregar certificado FTD

Navegue hastaObjeto > Administración de objetos > PKI > Inscripción de certificados, haga clic en el botón Agregar inscripción de certificados.



Cert Enrollment

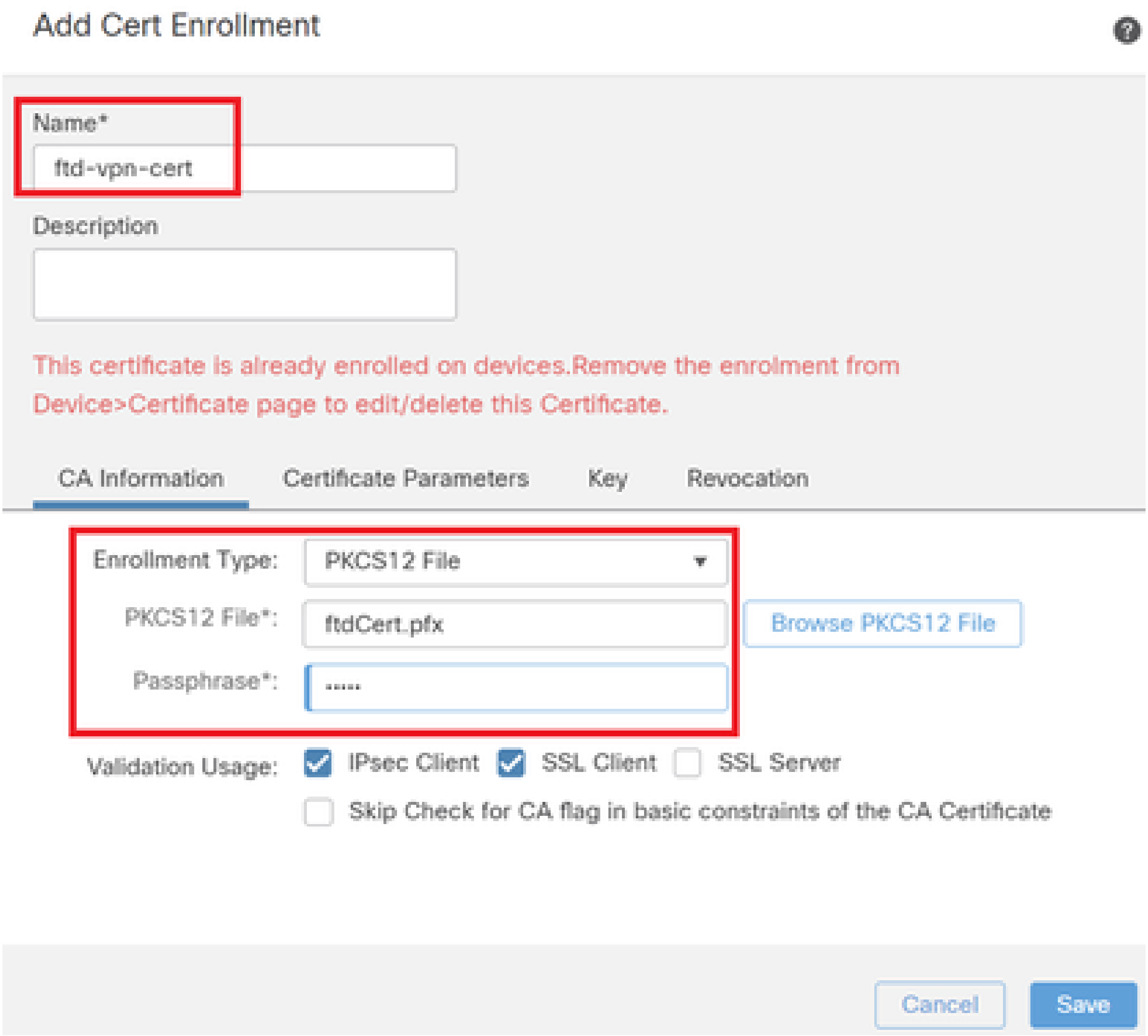
A certificate enrollment object contains the Certification Authority (CA) server information and enrollment parameters that are required for creating Certificate Signing Requests (CSRs) and obtaining Identity Certificates from the specified CA. These activities occur in your Private Key Infrastructure (PKI).

No records to display

Agregar inscripción de certificados

Introduzca la información necesaria para el certificado de FTD e importe un archivo PKCS12 desde el equipo local.

- Nombre: ftd-vpn-cert
- Tipo de inscripción: archivo PKCS12



Add Cert Enrollment

Name*: ftd-vpn-cert

Description:

This certificate is already enrolled on devices.Remove the enrolment from Device>Certificate page to edit/delete this Certificate.

Enrollment Type: PKCS12 File

PKCS12 File*: ftdCert.pfx

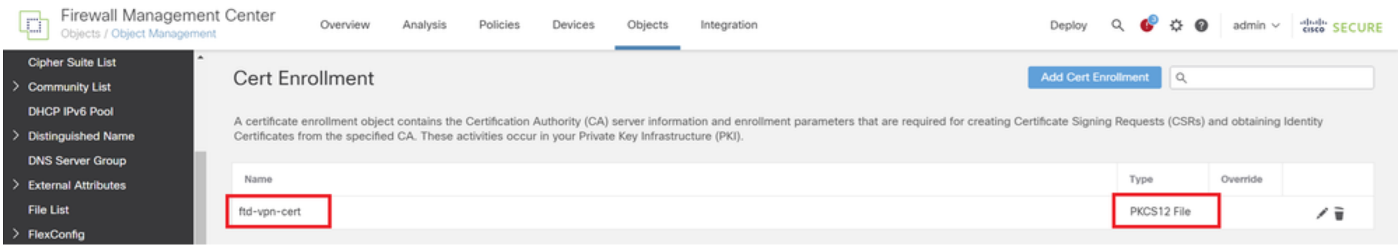
Passphrase*: •••••

Validation Usage: ☑ IPsec Client ☑ SSL Client □ SSL Server

□ Skip Check for CA flag in basic constraints of the CA Certificate

Detalles de la inscripción de certificados

Confirme la inscripción del nuevo certificado.



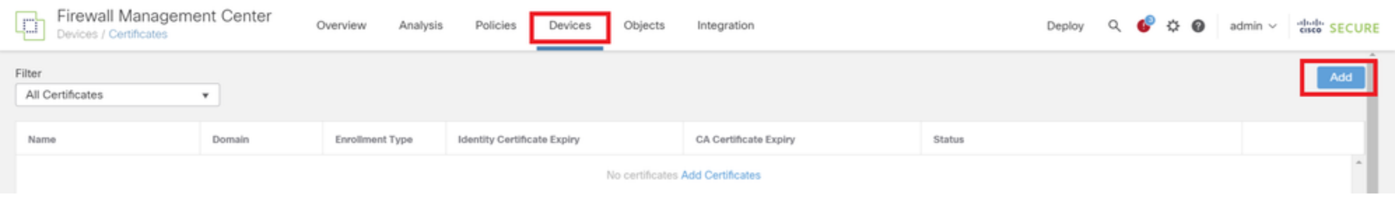
Cert Enrollment

A certificate enrollment object contains the Certification Authority (CA) server information and enrollment parameters that are required for creating Certificate Signing Requests (CSRs) and obtaining Identity Certificates from the specified CA. These activities occur in your Private Key Infrastructure (PKI).

Name	Type	Override
ftd-vpn-cert	PKCS12 File	

Inscripción de nuevos certificados

Navegue hasta Dispositivos > Certificados, haga clic en el botón Agregar.



Filter: All Certificates

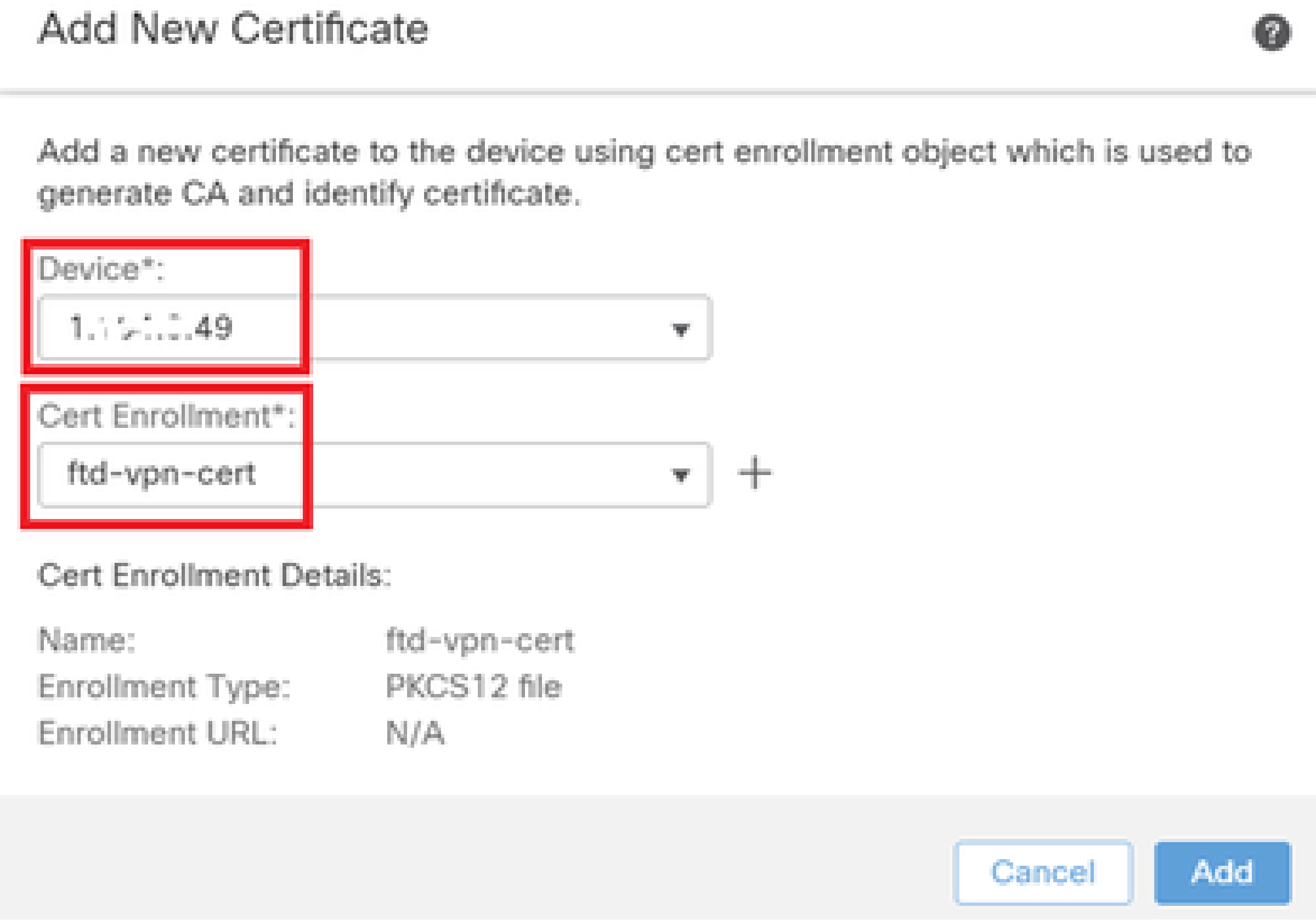
Name	Domain	Enrollment Type	Identity Certificate Expiry	CA Certificate Expiry	Status

No certificates Add Certificates

Agregar certificado FTD

Introduzca la información necesaria para enlazar la inscripción del nuevo certificado al FTD.

- Dispositivo: 1.x.x.49
- Inscripción de certificados: ftd-vpn-cert



Add a new certificate to the device using cert enrollment object which is used to generate CA and identify certificate.

Device*: 1.[redacted].49

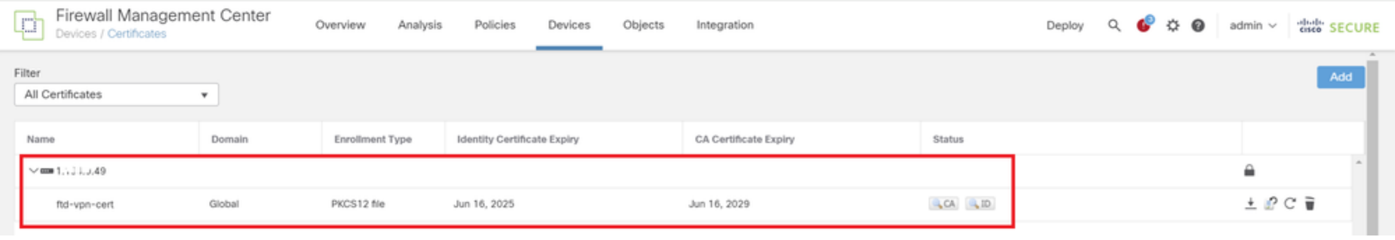
Cert Enrollment*: ftd-vpn-cert

Cert Enrollment Details:

Name:	ftd-vpn-cert
Enrollment Type:	PKCS12 file
Enrollment URL:	N/A

Enlazar certificado a FTD

Confirme el estado del enlace del certificado.



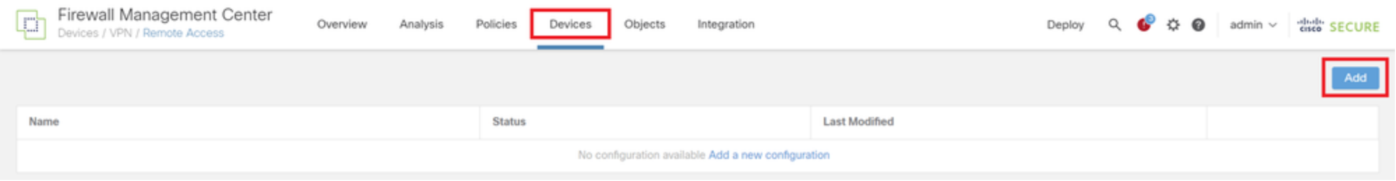
Filter: All Certificates

Name	Domain	Enrollment Type	Identity Certificate Expiry	CA Certificate Expiry	Status
1.[redacted].49					
ftd-vpn-cert	Global	PKCS12 file	Jun 16, 2025	Jun 16, 2029	CA ID

Estado de vinculación de certificados

Paso 6. Agregar asignación de directiva para perfil de conexión de ingeniero

Navegue hasta Devices > VPN > Remote Access, haga clic enAddbutton.

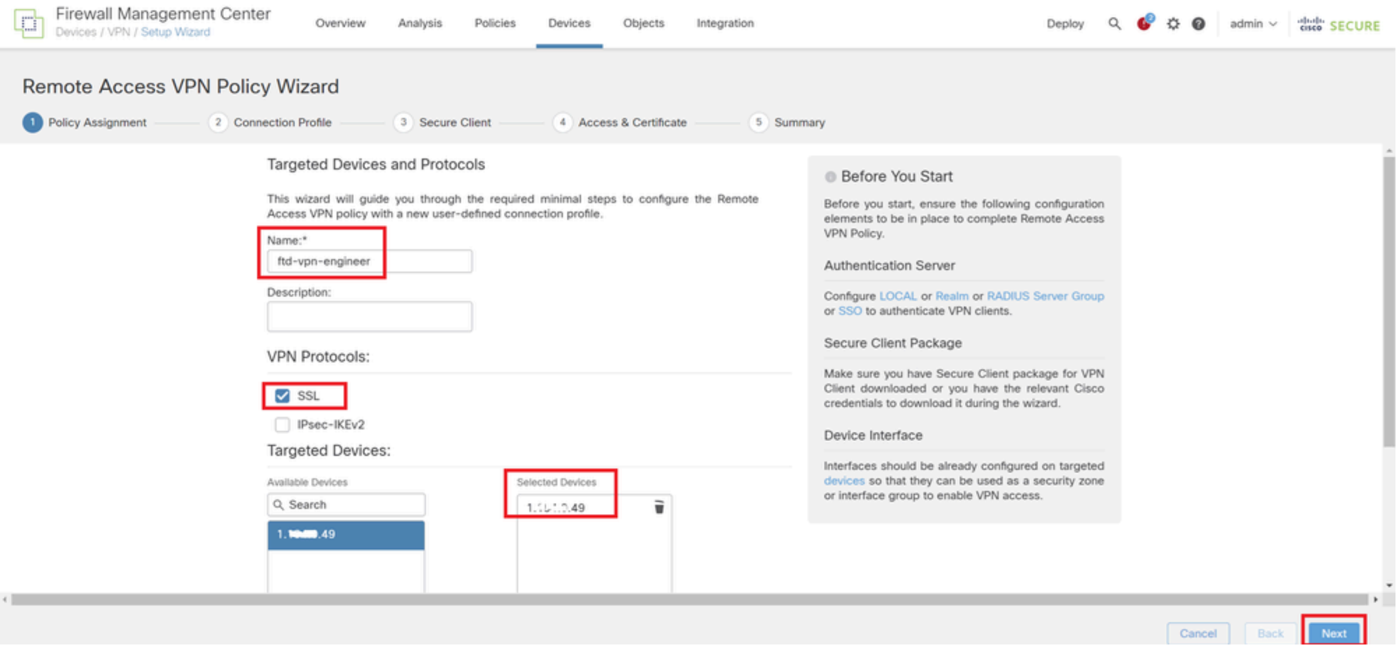


Name	Status	Last Modified
No configuration available Add a new configuration		

Agregar VPN de acceso remoto

Introduzca la información necesaria y haga clic enSiguiente botón.

- Nombre: ftd-vpn-engineering
- Protocolos VPN: SSL
- Dispositivos objetivo: 1.x.x.49



Remote Access VPN Policy Wizard

Targeted Devices and Protocols

This wizard will guide you through the required minimal steps to configure the Remote Access VPN policy with a new user-defined connection profile.

Name:* ftd-vpn-engineer

Description:

VPN Protocols:

☑ SSL

□ IPsec-IKEv2

Targeted Devices:

Available Devices: 1.[redacted].49

Selected Devices: 1.[redacted].49

Before You Start

Before you start, ensure the following configuration elements to be in place to complete Remote Access VPN Policy.

Authentication Server

Configure LOCAL or Realm or RADIUS Server Group or SSO to authenticate VPN clients.

Secure Client Package

Make sure you have Secure Client package for VPN Client downloaded or you have the relevant Cisco credentials to download it during the wizard.

Device Interface

Interfaces should be already configured on targeted devices so that they can be used as a security zone or interface group to enable VPN access.

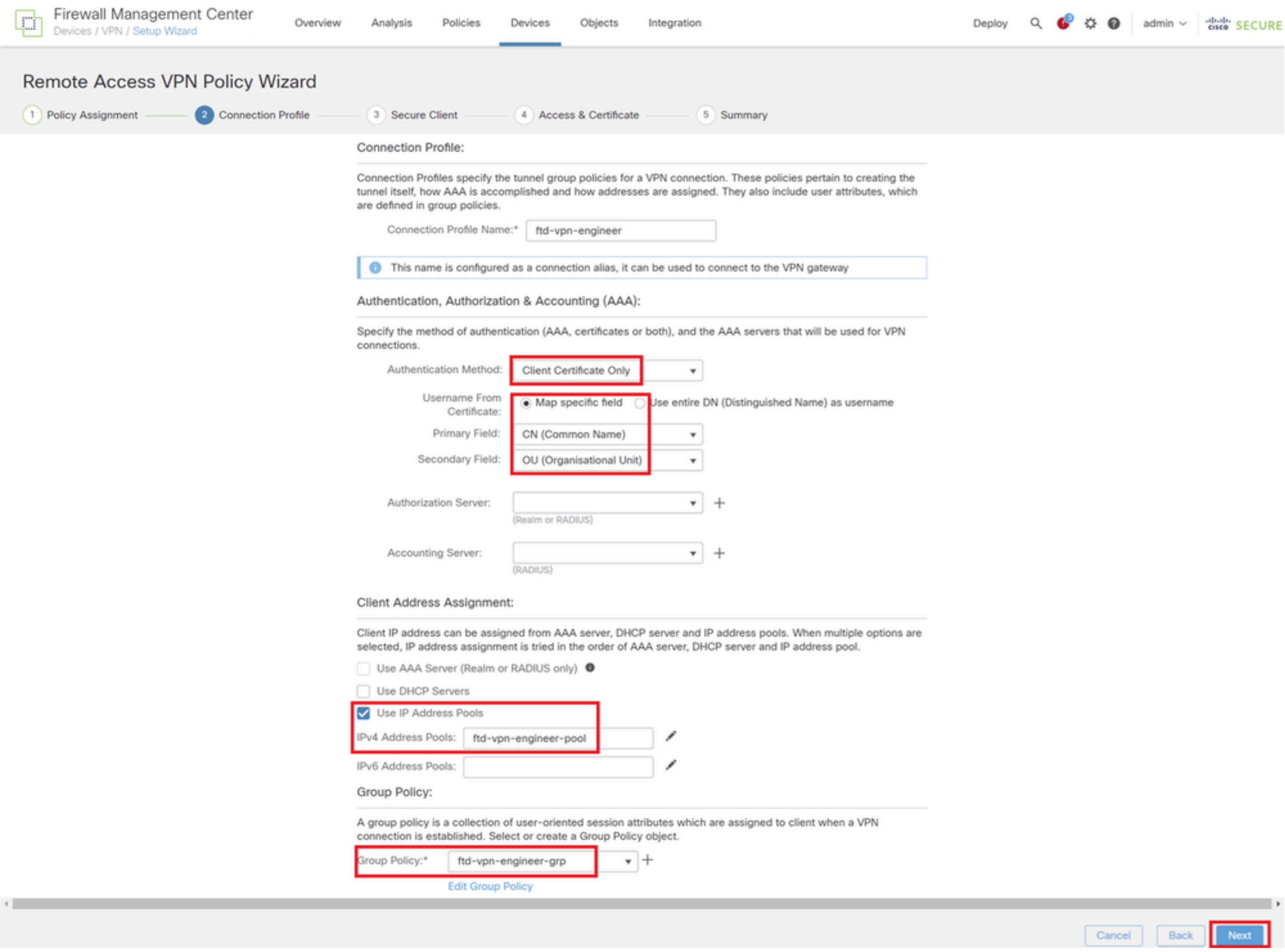
Asignación de políticas

Paso 7. Configurar detalles para el perfil de conexión del ingeniero

Introduzca la información necesaria y haga clic enSiguiente botón.

- Método de autenticación: sólo certificado de cliente
- Nombre de usuario del certificado: campo específico de asignación
- Campo principal: CN (nombre común)
- Campo secundario: OU (unidad organizativa)

- Conjuntos de direcciones IPv4: ftd-vpn-engineering-pool
- Política de grupo: ftd-vpn-engineering-grp



Remote Access VPN Policy Wizard

1 Policy Assignment — 2 Connection Profile — 3 Secure Client — 4 Access & Certificate — 5 Summary

Connection Profile:

Connection Profiles specify the tunnel group policies for a VPN connection. These policies pertain to creating the tunnel itself, how AAA is accomplished and how addresses are assigned. They also include user attributes, which are defined in group policies.

Connection Profile Name:* ftd-vpn-engineer

This name is configured as a connection alias, it can be used to connect to the VPN gateway

Authentication, Authorization & Accounting (AAA):

Specify the method of authentication (AAA, certificates or both), and the AAA servers that will be used for VPN connections.

Authentication Method: Client Certificate Only

Username From Certificate: ● Map specific field ○ Use entire DN (Distinguished Name) as username

Primary Field: CN (Common Name)

Secondary Field: OU (Organisational Unit)

Authorization Server: (Realm or RADIUS) +

Accounting Server: (RADIUS) +

Client Address Assignment:

Client IP address can be assigned from AAA server, DHCP server and IP address pools. When multiple options are selected, IP address assignment is tried in the order of AAA server, DHCP server and IP address pool.

□ Use AAA Server (Realm or RADIUS only)

□ Use DHCP Servers

☑ Use IP Address Pools

IPv4 Address Pools: ftd-vpn-engineer-pool

IPv6 Address Pools:

Group Policy:

A group policy is a collection of user-oriented session attributes which are assigned to client when a VPN connection is established. Select or create a Group Policy object.

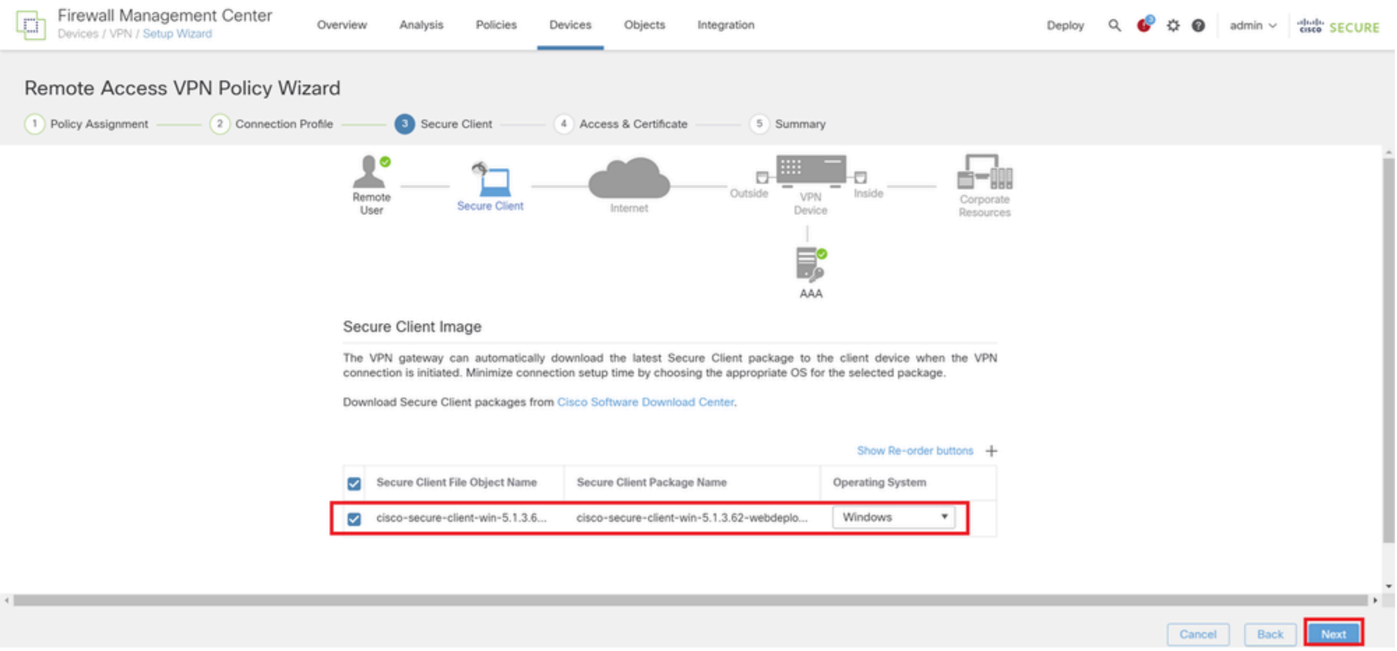
Group Policy:* ftd-vpn-engineer-grp +

Edit Group Policy

Detalles del perfil de conexión

Paso 8. Configurar imagen de cliente seguro para perfil de conexión de ingeniero

Seleccione archivo de imagen de cliente seguro y haga clic en el botón Siguiente.



Remote Access VPN Policy Wizard

1 Policy Assignment — 2 Connection Profile — 3 Secure Client — 4 Access & Certificate — 5 Summary

Secure Client Image

The VPN gateway can automatically download the latest Secure Client package to the client device when the VPN connection is initiated. Minimize connection setup time by choosing the appropriate OS for the selected package.

Download Secure Client packages from Cisco Software Download Center.

Show Re-order buttons +

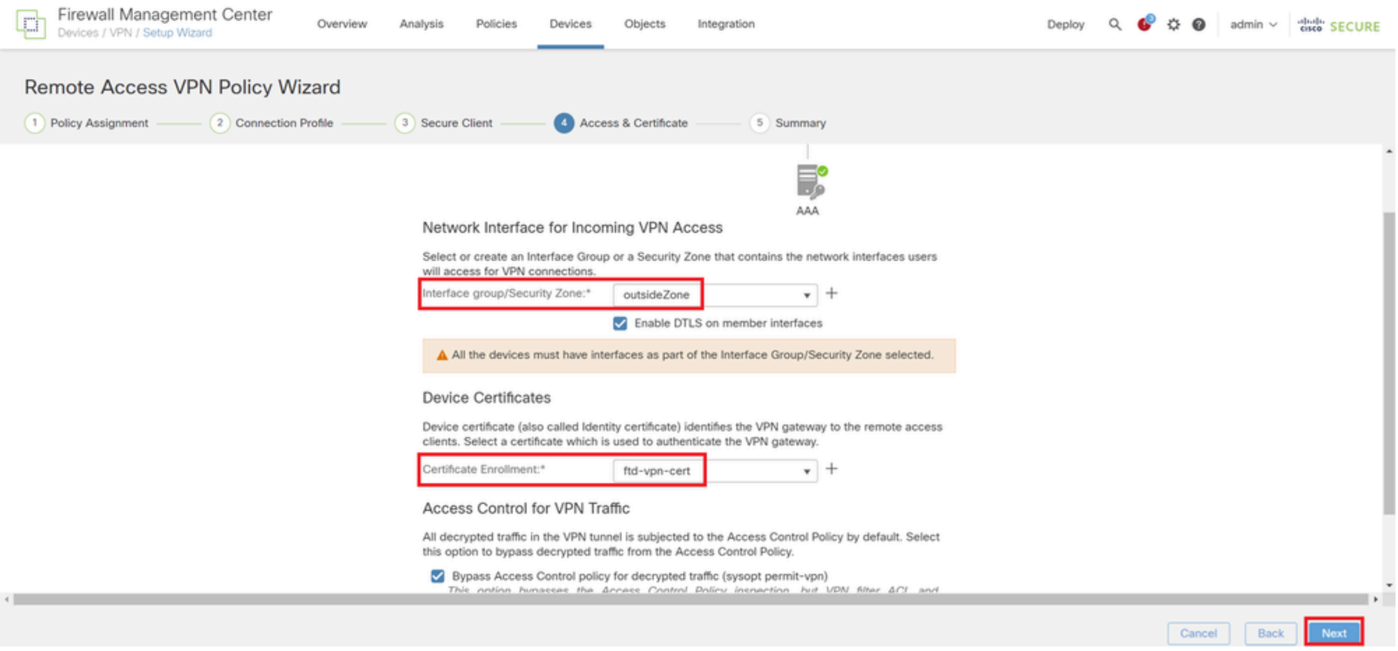
☑	Secure Client File Object Name	Secure Client Package Name	Operating System
☑	cisco-secure-client-win-5.1.3.6...	cisco-secure-client-win-5.1.3.62-webdeplo...	Windows

Seleccionar cliente seguro

Paso 9. Configurar acceso y certificado para el perfil de conexión del ingeniero

Seleccione el valor para los elementos Grupo de interfaz/Zona de seguridad y Inscripción de certificados, haga clic en el botón Siguiente.

- Grupo de interfaz/Zona de seguridad: outsideZone
- Inscripción de certificados: ftd-vpn-cert



Remote Access VPN Policy Wizard

1 Policy Assignment — 2 Connection Profile — 3 Secure Client — 4 Access & Certificate — 5 Summary

Network Interface for Incoming VPN Access

Select or create an Interface Group or a Security Zone that contains the network interfaces users will access for VPN connections.

Interface group/Security Zone:* outsideZone

☑ Enable DTLS on member interfaces

⚠ All the devices must have interfaces as part of the Interface Group/Security Zone selected.

Device Certificates

Device certificate (also called Identity certificate) identifies the VPN gateway to the remote access clients. Select a certificate which is used to authenticate the VPN gateway.

Certificate Enrollment:* ftd-vpn-cert

Access Control for VPN Traffic

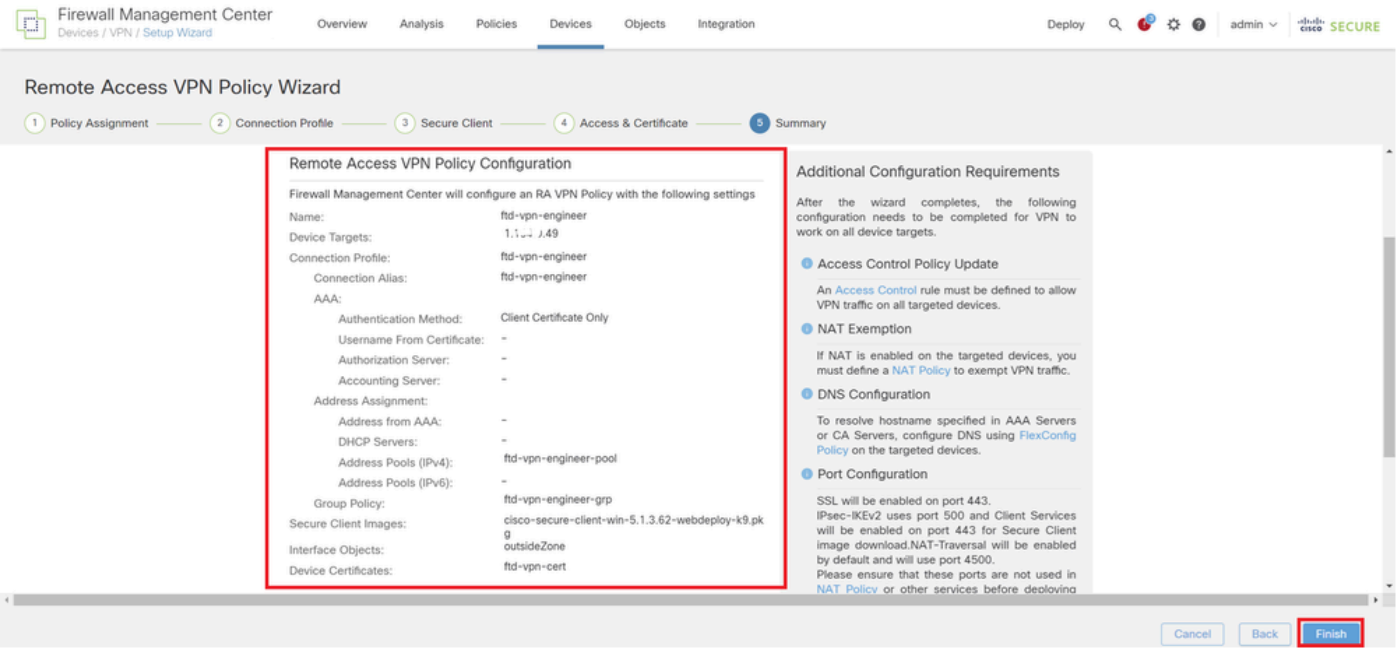
All decrypted traffic in the VPN tunnel is subjected to the Access Control Policy by default. Select this option to bypass decrypted traffic from the Access Control Policy.

☑ Bypass Access Control policy for decrypted traffic (sysopt permit-vpn)

Detalles de acceso y certificado

Paso 10. Confirmar resumen para perfil de conexión de ingeniero

Confirme la información especificada para la directiva VPN de acceso remoto y haga clic en el botón Finish.



Remote Access VPN Policy Wizard

1 Policy Assignment — 2 Connection Profile — 3 Secure Client — 4 Access & Certificate — 5 Summary

Remote Access VPN Policy Configuration

Firewall Management Center will configure an RA VPN Policy with the following settings

```
Name:                               ftd-vpn-engineer
Device Targets:                     1.[redacted].49
Connection Profile:                 ftd-vpn-engineer
    Connection Alias:               ftd-vpn-engineer
    AAA:
        Authentication Method:      Client Certificate Only
        Username From Certificate:  -
        Authorization Server:       -
        Accounting Server:          -
    Address Assignment:
        Address from AAA:           -
        DHCP Servers:               -
        Address Pools (IPv4):       ftd-vpn-engineer-pool
        Address Pools (IPv6):       -
    Group Policy:                   ftd-vpn-engineer-grp
Secure Client Images:               cisco-secure-client-win-5.1.3.62-webdeploy-k9.pk
                                    g
Interface Objects:                  outsideZone
Device Certificates:                ftd-vpn-cert
```

Additional Configuration Requirements

After the wizard completes, the following configuration needs to be completed for VPN to work on all device targets.

Access Control Policy Update

An Access Control rule must be defined to allow VPN traffic on all targeted devices.

NAT Exemption

If NAT is enabled on the targeted devices, you must define a NAT Policy to exempt VPN traffic.

DNS Configuration

To resolve hostname specified in AAA Servers or CA Servers, configure DNS using FlexConfig Policy on the targeted devices.

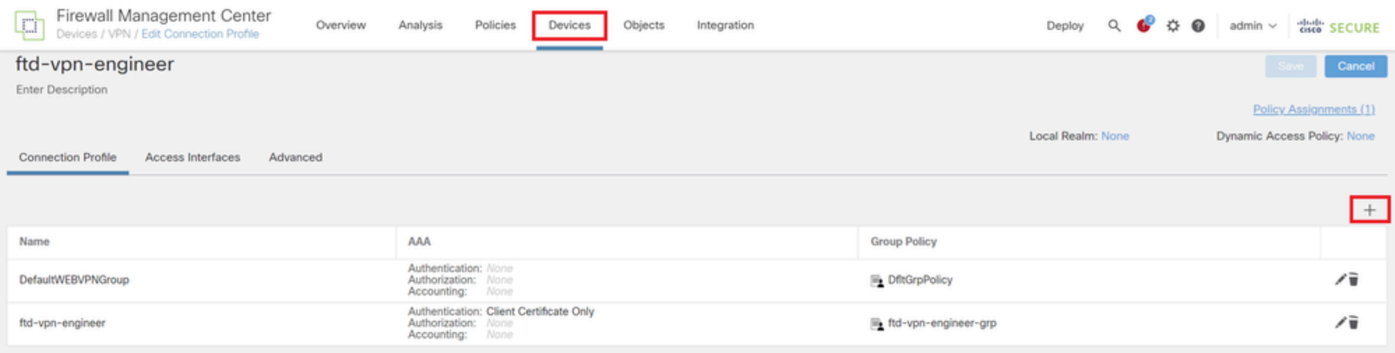
Port Configuration

SSL will be enabled on port 443.
IPsec-IKEv2 uses port 500 and Client Services will be enabled on port 443 for Secure Client image download.NAT-Traversal will be enabled by default and will use port 4500.
Please ensure that these ports are not used in NAT Policy or other services before deploving

Detalles de la directiva VPN de acceso remoto

Paso 11. Agregar perfil de conexión para Manager VPN Client

Navegue hasta Devices > VPN > Remote Access > Connection Profile, haga clic en el botón +.



ftd-vpn-engineer

Enter Description

Local Realm: None

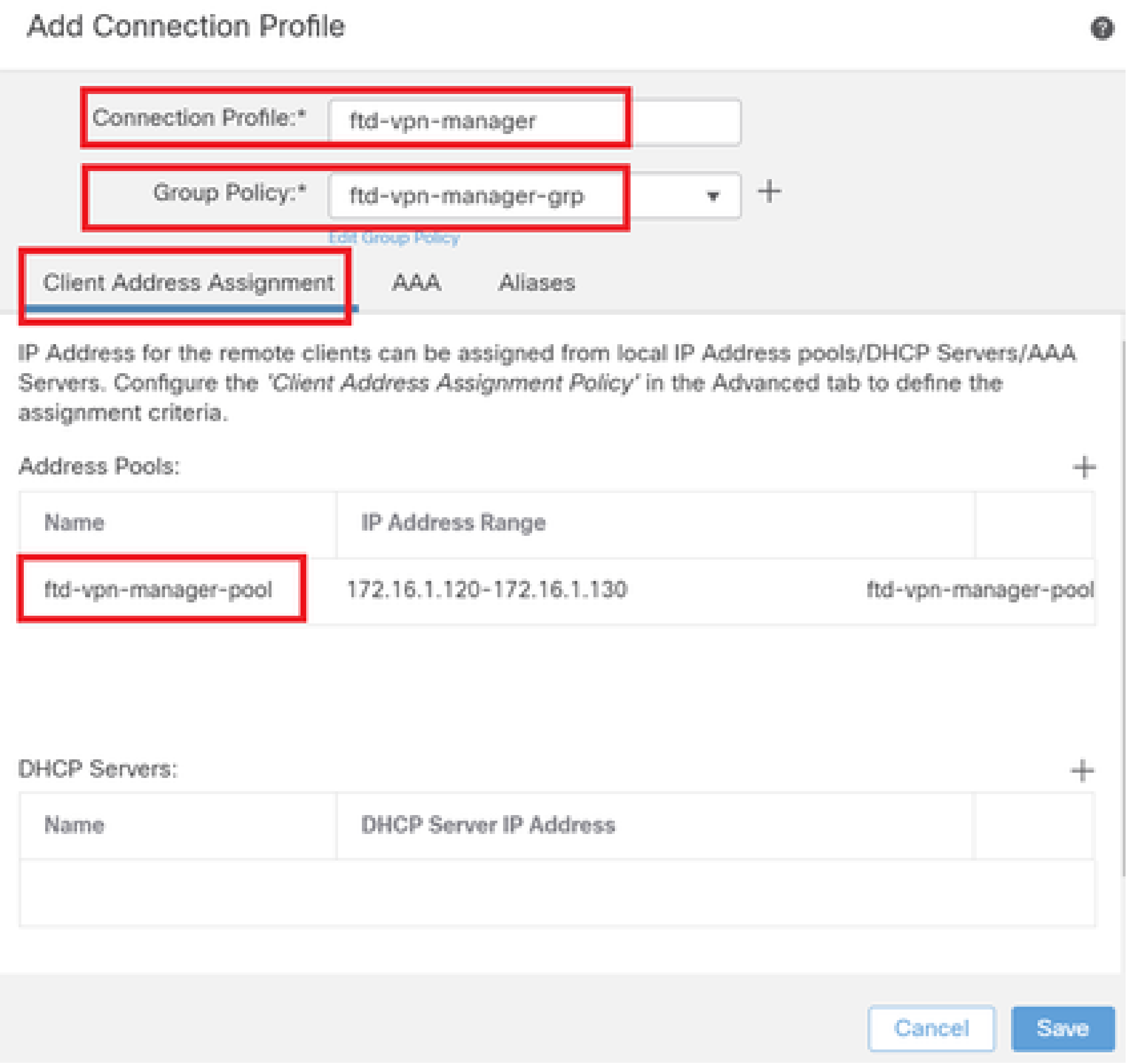
Dynamic Access Policy: None

Name	AAA	Group Policy
DefaultWEBVPNGroup	Authentication: None Authorization: None Accounting: None	DfltGrpPolicy
ftd-vpn-engineer	Authentication: Client Certificate Only Authorization: None Accounting: None	ftd-vpn-engineer-grp

Agregar perfil de conexión para Manager VPN Client

Introduzca la información necesaria para el perfil de conexión y haga clic en el botón Save.

- Nombre: ftd-vpn-manager
- Política de grupo: ftd-vpn-manager-grp
- Conjuntos de direcciones IPv4: ftd-vpn-manager-pool



Add Connection Profile

Connection Profile:* ftd-vpn-manager

Group Policy:* ftd-vpn-manager-grp

IP Address for the remote clients can be assigned from local IP Address pools/DHCP Servers/AAA Servers. Configure the *'Client Address Assignment Policy'* in the Advanced tab to define the assignment criteria.

Address Pools:

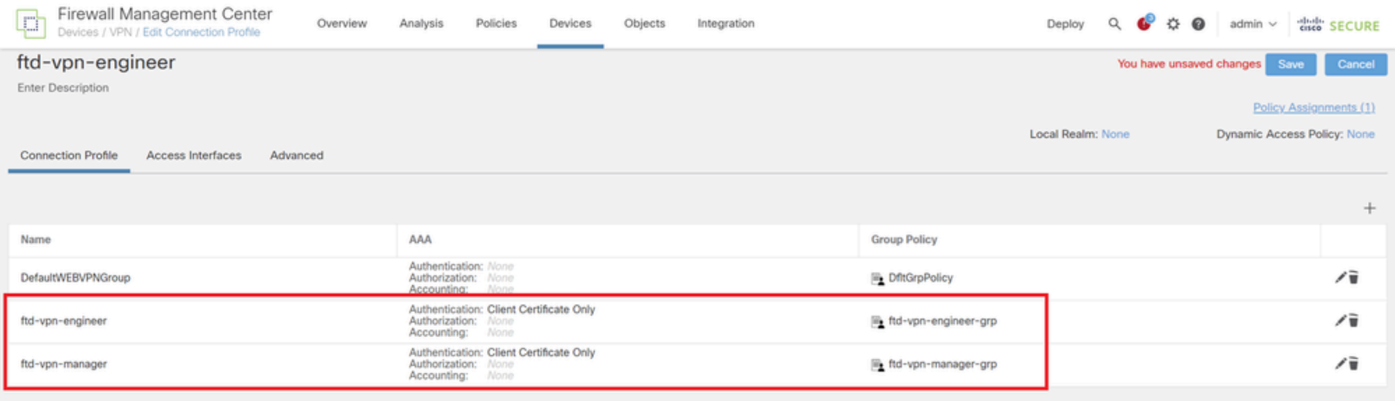
Name	IP Address Range	
ftd-vpn-manager-pool	172.16.1.120-172.16.1.130	ftd-vpn-manager-pool

DHCP Servers:

Name	DHCP Server IP Address	

Detalles del perfil de conexión para Manager VPN Client

Confirme los nuevos perfiles de conexión agregados.



ftd-vpn-engineer

Enter Description

You have unsaved changes

Local Realm: None

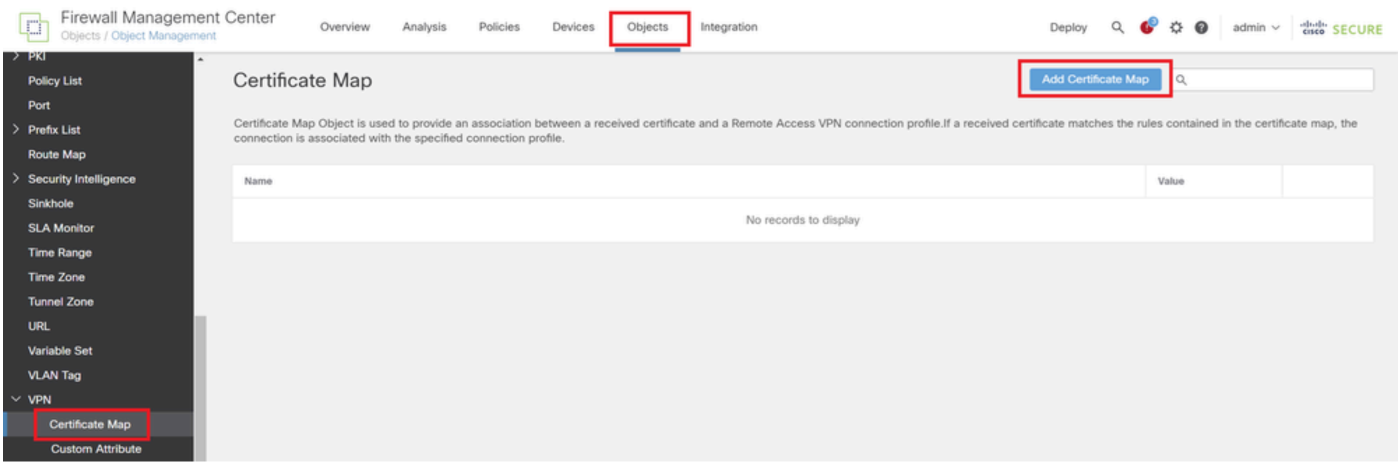
Dynamic Access Policy: None

Name	AAA	Group Policy
DefaultWEBVPNGroup	Authentication: None Authorization: None Accounting: None	DfltGrpPolicy
ftd-vpn-engineer	Authentication: Client Certificate Only Authorization: None Accounting: None	ftd-vpn-engineer-grp
ftd-vpn-manager	Authentication: Client Certificate Only Authorization: None Accounting: None	ftd-vpn-manager-grp

Confirmar perfiles de conexión agregados

Paso 12. Agregar mapa de certificado

Navegue hasta Objetos > Administración de objetos > VPN > Mapa de certificado, haga clic en el botón Agregar mapa de certificado.



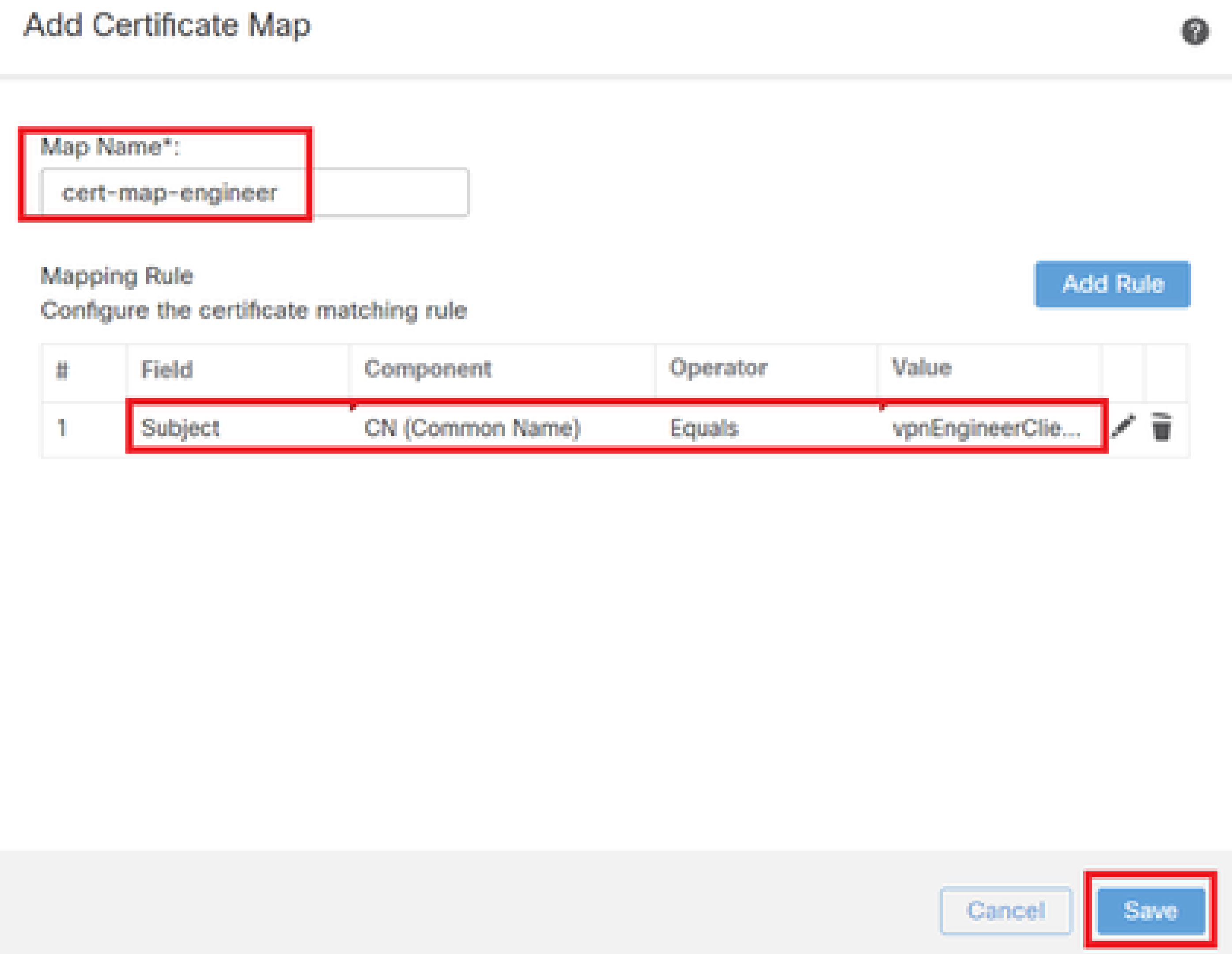
Certificate Map Object is used to provide an association between a received certificate and a Remote Access VPN connection profile.If a received certificate matches the rules contained in the certificate map, the connection is associated with the specified connection profile.

Name	Value
No records to display	

Agregar mapa de certificado

Introduzca la información necesaria para el mapa de certificado del cliente VPN del ingeniero y haga clic en el botón Save.

- Nombre del mapa: cert-map-engineering
- Regla de asignación: CN (nombre común) es igual a vpnEngineerClientCN



Add Certificate Map

Map Name*:
cert-map-engineer

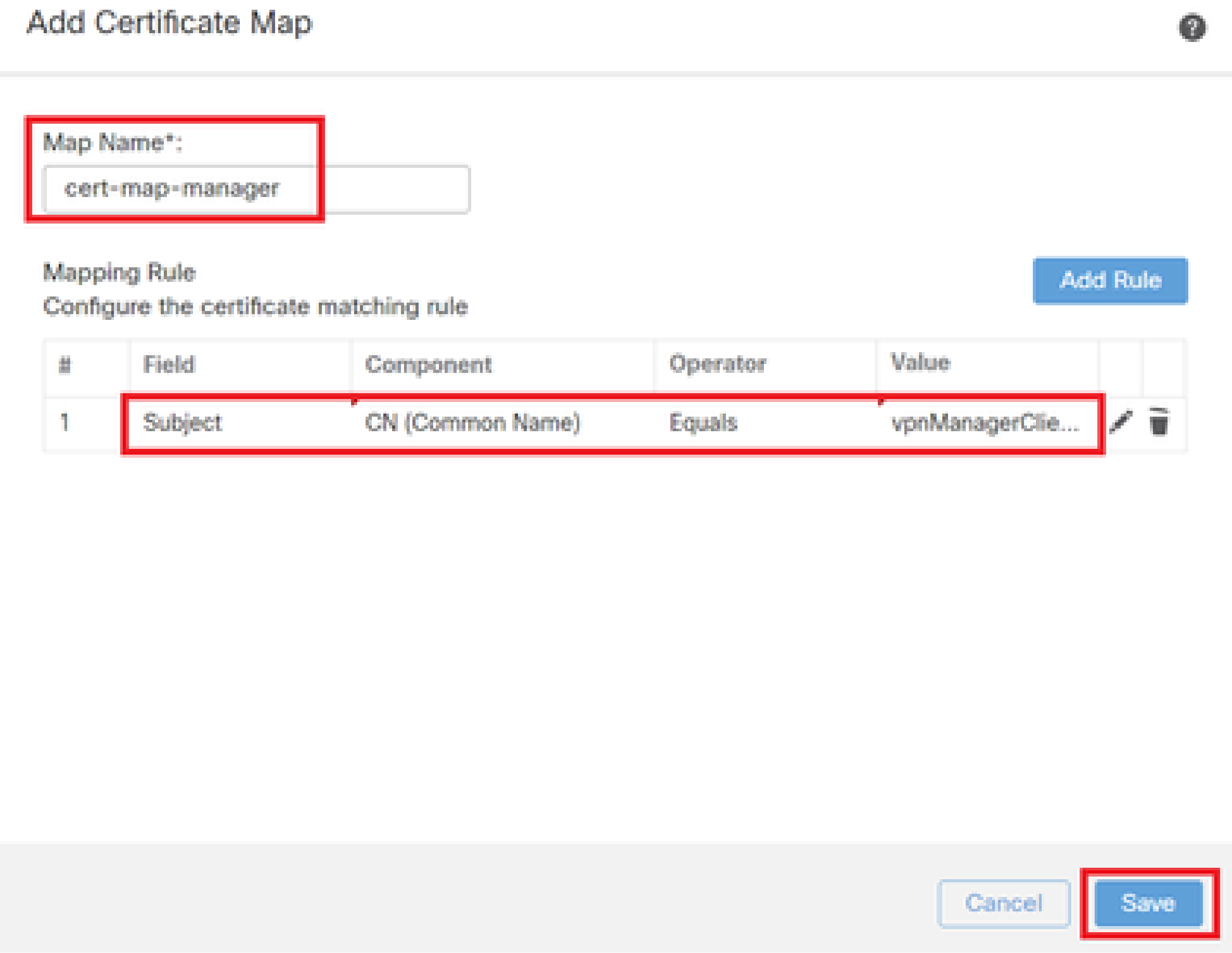
Mapping Rule
Configure the certificate matching rule

#	Field	Component	Operator	Value
1	Subject	CN (Common Name)	Equals	vpnEngineerClie...

Mapa de certificado para cliente de ingeniero

Introduzca la información necesaria para el mapa de certificados del cliente VPN del administrador y haga clic en el botón Save.

- Nombre del mapa: cert-map-manager
- Regla de asignación: CN (nombre común) es igual a vpnManagerClientCN



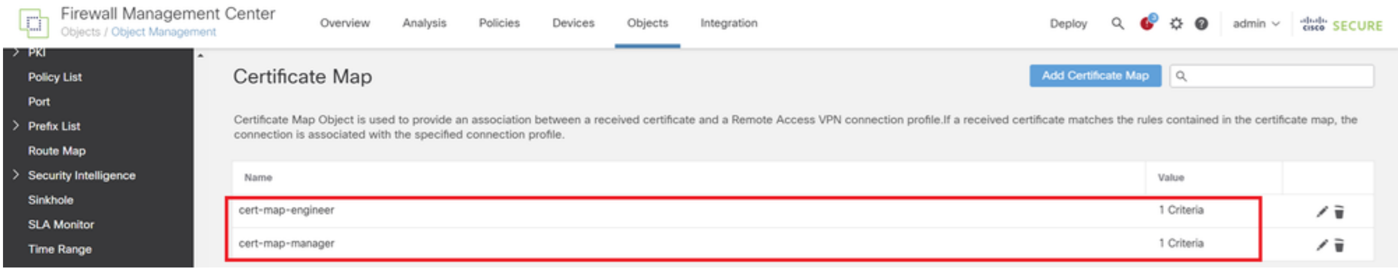
Map Name*: cert-map-manager

Mapping Rule
Configure the certificate matching rule

#	Field	Component	Operator	Value
1	Subject	CN (Common Name)	Equals	vpnManagerClie...

Mapa de certificado para Manager Client

Confirme los nuevos mapas de certificados agregados.



Certificate Map

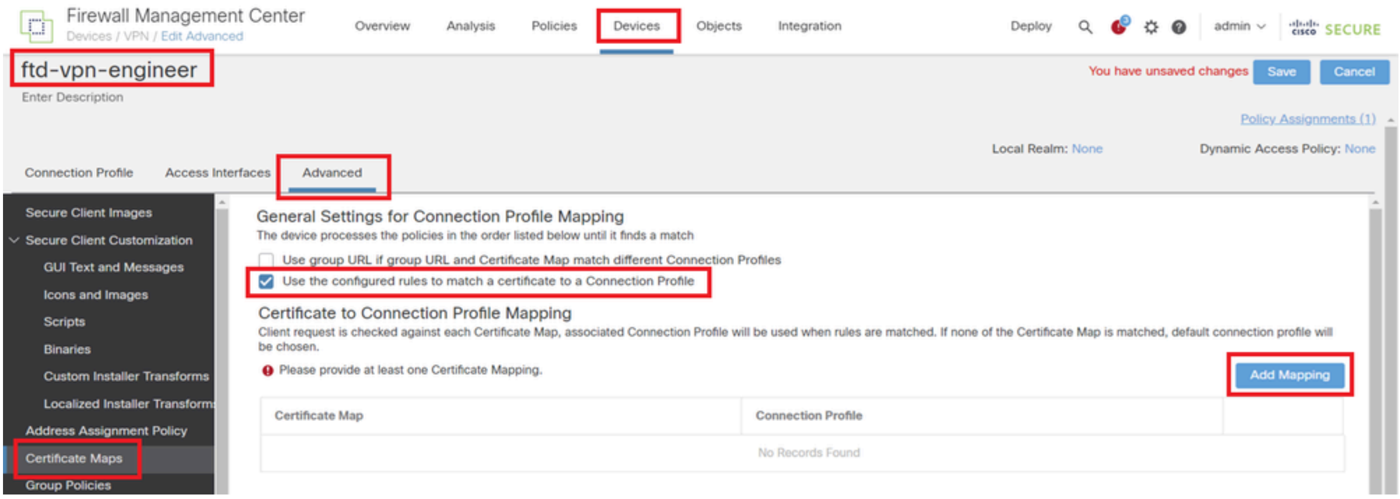
Certificate Map Object is used to provide an association between a received certificate and a Remote Access VPN connection profile.If a received certificate matches the rules contained in the certificate map, the connection is associated with the specified connection profile.

Name	Value
cert-map-engineer	1 Criteria
cert-map-manager	1 Criteria

Nuevos mapas de certificados

Paso 13. Enlazar mapa de certificado a perfil de conexión

Vaya a Devices > VPN > Remote Access, edit ftd-vpn-engineering. Luego, navegue hasta Advanced > Certificate Maps, haga clic en el botón Add Mapping.



ftd-vpn-engineer

Enter Description

Local Realm: None

Dynamic Access Policy: None

General Settings for Connection Profile Mapping

The device processes the policies in the order listed below until it finds a match

☐ Use group URL if group URL and Certificate Map match different Connection Profiles

☑ Use the configured rules to match a certificate to a Connection Profile

Certificate to Connection Profile Mapping

Client request is checked against each Certificate Map, associated Connection Profile will be used when rules are matched. If none of the Certificate Map is matched, default connection profile will be chosen.

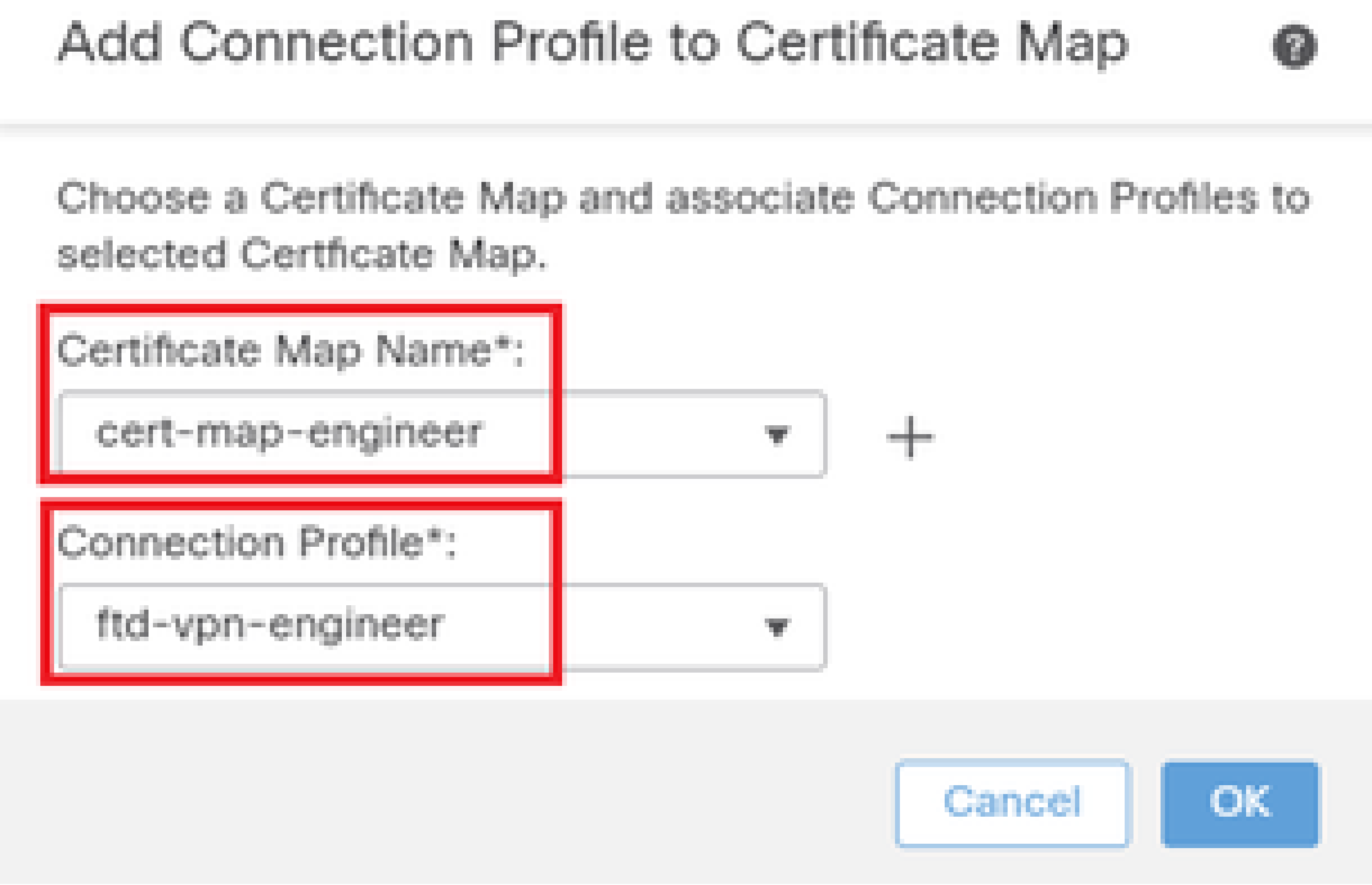
Please provide at least one Certificate Mapping.

Certificate Map	Connection Profile
No Records Found	

Enlazar mapa de certificado

Enlace de mapa de certificado al perfil de conexión para el cliente VPN del ingeniero.

- Nombre del mapa de certificado: cert-map-engineering
- Connection Profile: ftd-vpn-engineer



Add Connection Profile to Certificate Map

Choose a Certificate Map and associate Connection Profiles to selected Certficate Map.

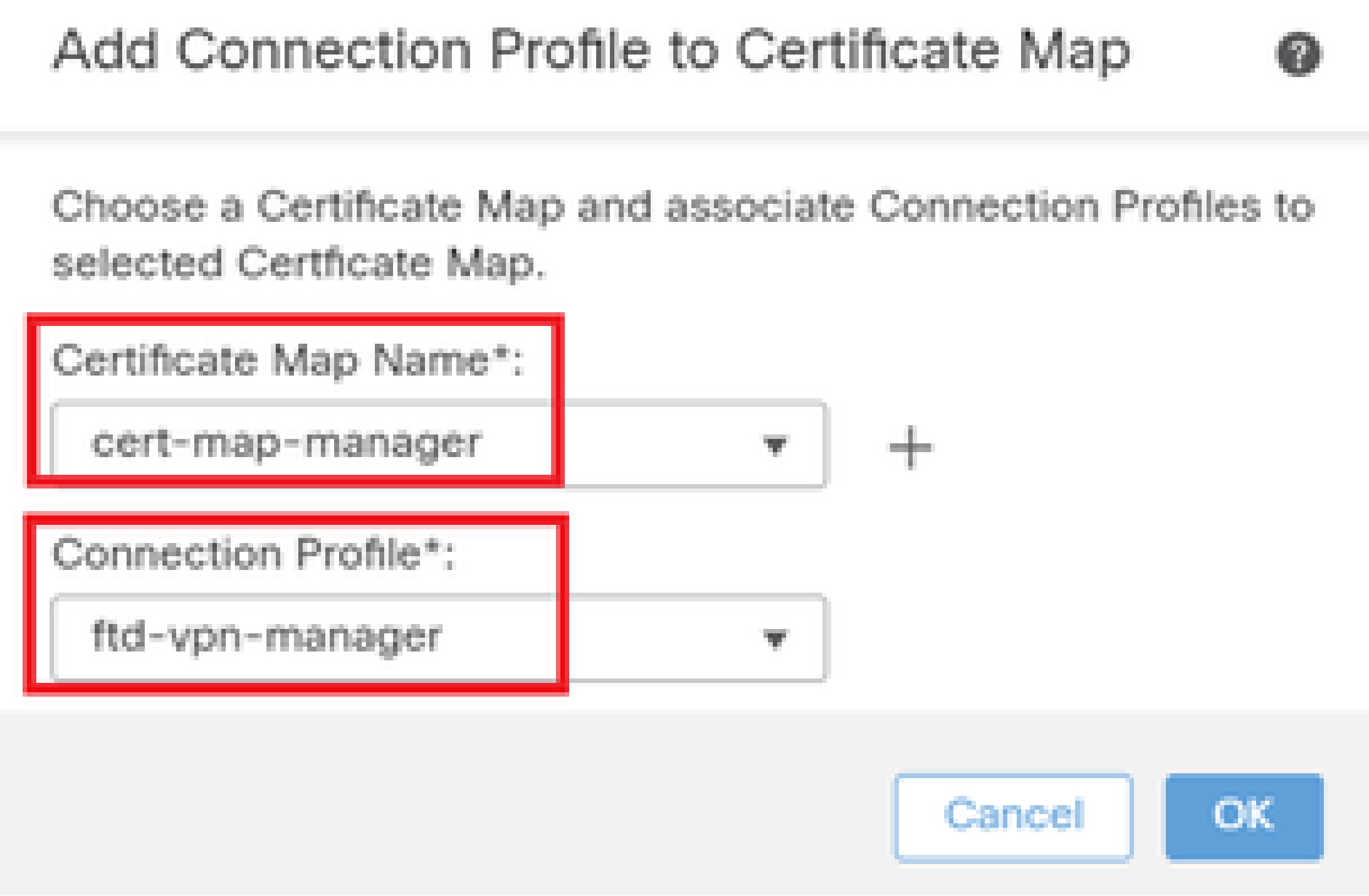
Certificate Map Name*: cert-map-engineer

Connection Profile*: ftd-vpn-engineer

Enlace del mapa de certificado para el cliente VPN del ingeniero

Vinculación del mapa de certificado al perfil de conexión para el cliente VPN del administrador.

- Nombre de mapa de certificado: cert-map-manager
- Perfil de conexión: ftd-vpn-manager



Add Connection Profile to Certificate Map

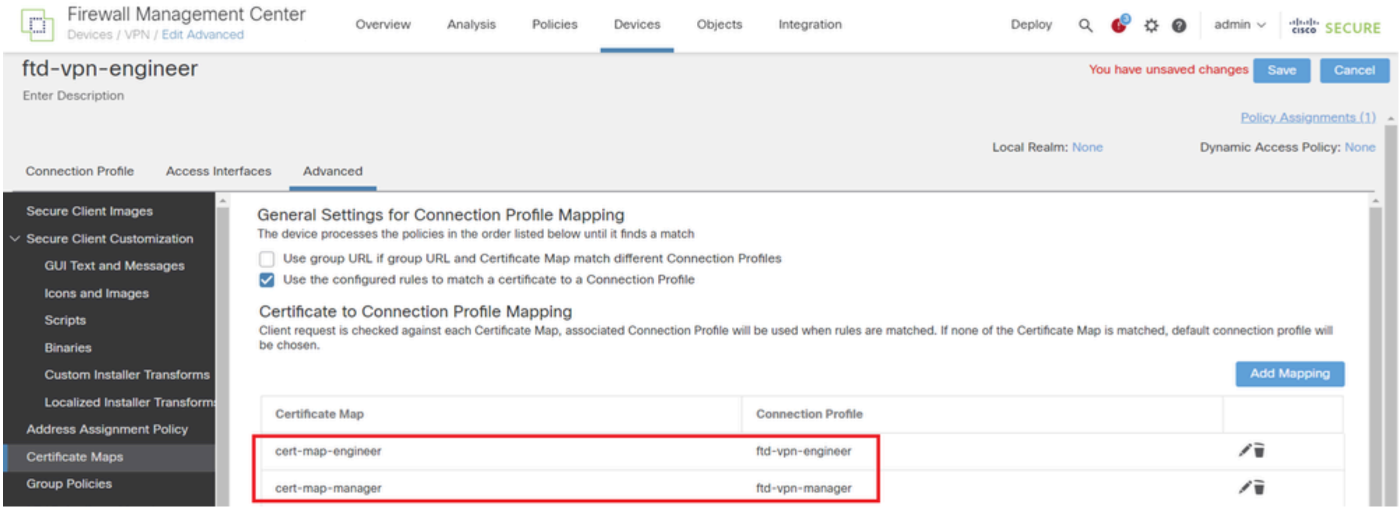
Choose a Certificate Map and associate Connection Profiles to selected Certficate Map.

Certificate Map Name*: cert-map-manager

Connection Profile*: ftd-vpn-manager

Enlace de Mapa de Certificado para Manager VPN Client

Confirme la configuración del enlace de certificados.



ftd-vpn-engineer

Enter Description

You have unsaved changes

Local Realm: None

Dynamic Access Policy: None

General Settings for Connection Profile Mapping

The device processes the policies in the order listed below until it finds a match

- □ Use group URL if group URL and Certificate Map match different Connection Profiles
- ☑ Use the configured rules to match a certificate to a Connection Profile

Certificate to Connection Profile Mapping

Client request is checked against each Certificate Map, associated Connection Profile will be used when rules are matched. If none of the Certificate Map is matched, default connection profile will be chosen.

Certificate Map	Connection Profile
cert-map-engineer	ftd-vpn-engineer
cert-map-manager	ftd-vpn-manager

Confirmar vinculación de certificados

Confirmar en CLI de FTD

Confirme la configuración de la conexión VPN en la CLI de FTD después de la implementación desde el FMC.

```
// Defines IP of interface
```

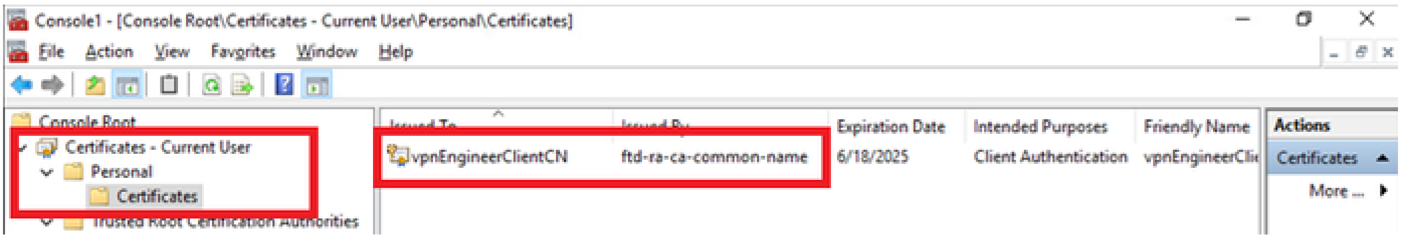
```
interface GigabitEthernet0/0
nameif outside
security-level 0
ip address 192.168.1.200 255.255.255.0

// Defines a pool of addresses
ip local pool ftd-vpn-engineer-pool 172.16.1.100-172.16.1.110 mask 255.255.255.0
ip local pool ftd-vpn-manager-pool 172.16.1.120-172.16.1.130 mask 255.255.255.0

// Defines Trustpoint for Server Certificate
crypto ca trustpoint ftd-vpn-cert
keypair ftd-vpn-cert
crl configure

// Server Certificate Chain
crypto ca certificate chain ftd-vpn-cert
certificate 22413df584b6726c
3082037c 30820264 a0030201 02020822 413df584 b6726c30 0d06092a 864886f7
......
quit

certificate ca 5242a02e0db6f7fd
3082036c 30820254 a0030201 02020852 42a02e0d b6f7fd30 0d06092a 864886f7
......
quit

// Defines Certificate Map for Engineer VPN Clients
crypto ca certificate map cert-map-engineer 10
subject-name attr cn eq vpnEngineerClientCN

// Defines Certificate Map for Manager VPN Clients
crypto ca certificate map cert-map-manager 10
subject-name attr cn eq vpnManagerClientCN

// Configures the FTD to allow Cisco Secure Client connections and the valid Cisco Secure Client images
webvpn
enable outside
http-headers
hsts-server
enable
max-age 31536000
include-sub-domains
no preload
hsts-client
enable
x-content-type-options
x-xss-protection
content-security-policy
anyconnect image disk0:/csm/cisco-secure-client-win-5.1.3.62-webdeploy-k9.pkg 1 regex "Windows"
anyconnect enable
tunnel-group-list enable
cache
disable
certificate-group-map cert-map-engineer 10 ftd-vpn-engineer
certificate-group-map cert-map-manager 10 ftd-vpn-manager
error-recovery disable

// Configures the group-policy to allow SSL connections from manager VPN clients
group-policy ftd-vpn-manager-grp internal
group-policy ftd-vpn-manager-grp attributes
banner none
wins-server none
```

```
dns-server none
dhcp-network-scope none
vpn-simultaneous-logins 3
vpn-idle-timeout 30
vpn-idle-timeout alert-interval 1
vpn-session-timeout none
vpn-session-timeout alert-interval 1
vpn-filter none
vpn-tunnel-protocol ikev2 ssl-client
split-tunnel-policy tunnelall
ipv6-split-tunnel-policy tunnelall
split-tunnel-network-list none
default-domain none
split-dns none
split-tunnel-all-dns disable
client-bypass-protocol disable
vlan none
address-pools none
webvpn
anyconnect ssl dtls enable
anyconnect mtu 1406
anyconnect firewall-rule client-interface public none
anyconnect firewall-rule client-interface private none
anyconnect ssl keepalive 20
anyconnect ssl rekey time none
anyconnect ssl rekey method none
anyconnect dpd-interval client 30
anyconnect dpd-interval gateway 30
anyconnect ssl compression none
anyconnect dtls compression none
anyconnect modules value none
anyconnect ask none default anyconnect
anyconnect ssl df-bit-ignore disable

// Configures the group-policy to allow SSL connections from engineer VPN clients
group-policy ftd-vpn-engineer-grp internal
group-policy ftd-vpn-engineer-grp attributes
banner none
wins-server none
dns-server none
dhcp-network-scope none
vpn-simultaneous-logins 3
vpn-idle-timeout 30
vpn-idle-timeout alert-interval 1
vpn-session-timeout none
vpn-session-timeout alert-interval 1
vpn-filter none
vpn-tunnel-protocol ssl-client
split-tunnel-policy tunnelall
ipv6-split-tunnel-policy tunnelall
split-tunnel-network-list none
default-domain none
split-dns none
split-tunnel-all-dns disable
client-bypass-protocol disable
vlan none
address-pools none
webvpn
anyconnect ssl dtls enable
anyconnect mtu 1406
anyconnect firewall-rule client-interface public none
anyconnect firewall-rule client-interface private none
anyconnect ssl keepalive 20
anyconnect ssl rekey time none
anyconnect ssl rekey method none
anyconnect dpd-interval client 30
anyconnect dpd-interval gateway 30
anyconnect ssl compression none
anyconnect dtls compression none
anyconnect modules value none
anyconnect ask none default anyconnect
anyconnect ssl df-bit-ignore disable

// Configures the tunnel-group to use the certificate authentication for engineer VPN clients
tunnel-group ftd-vpn-engineer type remote-access
tunnel-group ftd-vpn-engineer general-attributes
address-pool ftd-vpn-engineer-pool
default-group-policy ftd-vpn-engineer-grp
tunnel-group ftd-vpn-engineer webvpn-attributes
authentication certificate
group-alias ftd-vpn-engineer enable

// Configures the tunnel-group to use the certificate authentication for manager VPN clients
tunnel-group ftd-vpn-manager type remote-access
tunnel-group ftd-vpn-manager general-attributes
address-pool ftd-vpn-manager-pool
default-group-policy ftd-vpn-manager-grp
tunnel-group ftd-vpn-manager webvpn-attributes
authentication certificate
```

Confirmar en cliente VPN

Paso 1. Confirmar certificado de cliente

En el cliente de ingeniero VPN, navegue hasta Certificados - Usuario actual > Personal > Certificados, verifique el certificado de cliente utilizado para la autenticación.



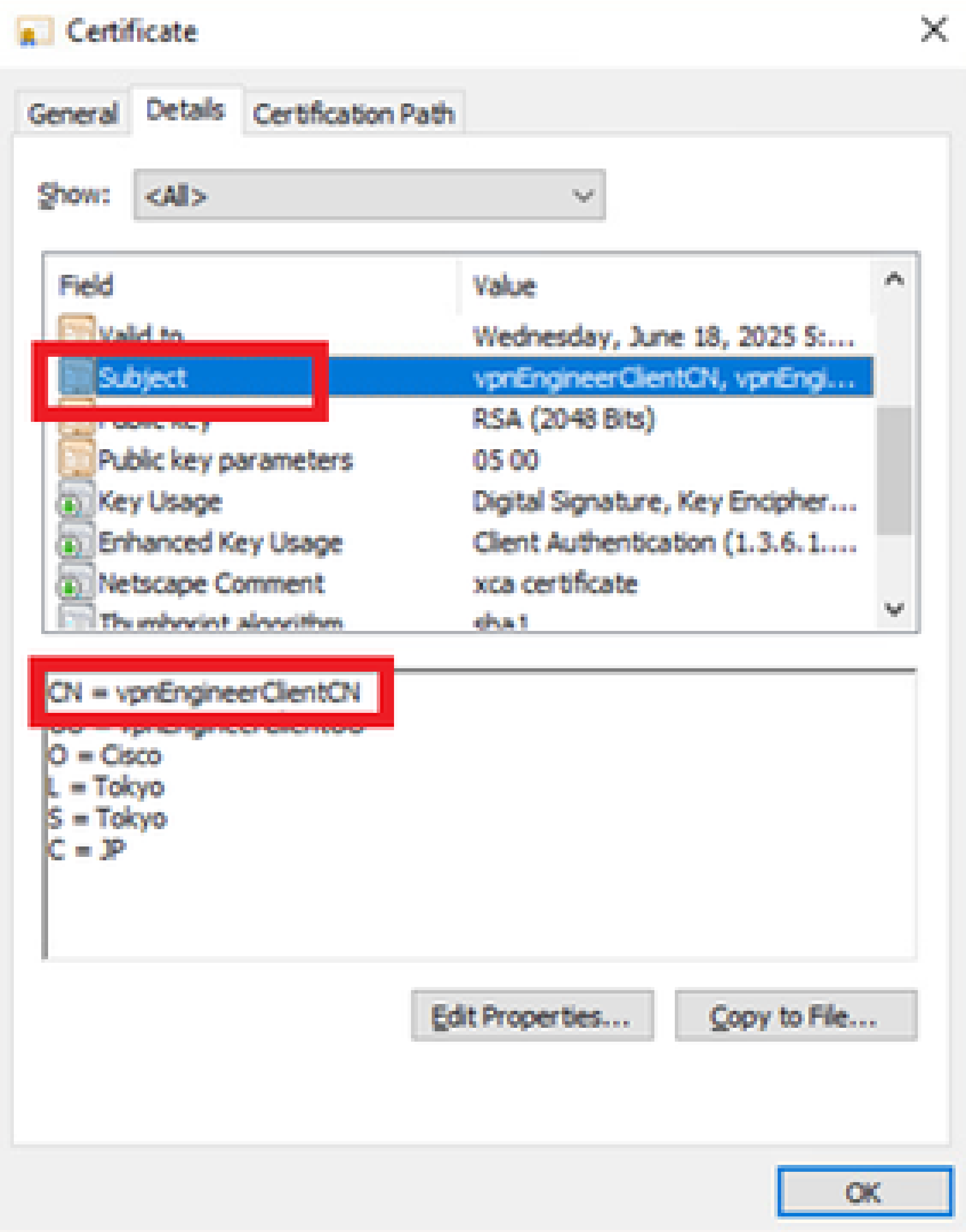
Console1 - [Console Root\Certificates - Current User\Personal\Certificates]

Issued To	Issued By	Expiration Date	Intended Purposes	Friendly Name
vpnEngineerClientCN	ftd-ra-ca-common-name	6/18/2025	Client Authentication	vpnEngineerCli

Confirmar certificado para cliente de VPN de ingeniero

Haga doble clic en el certificado de cliente, navegue hastaDetalles, verifique los detalles deAsunto.

- Asunto: CN = vpnEngineerClientCN

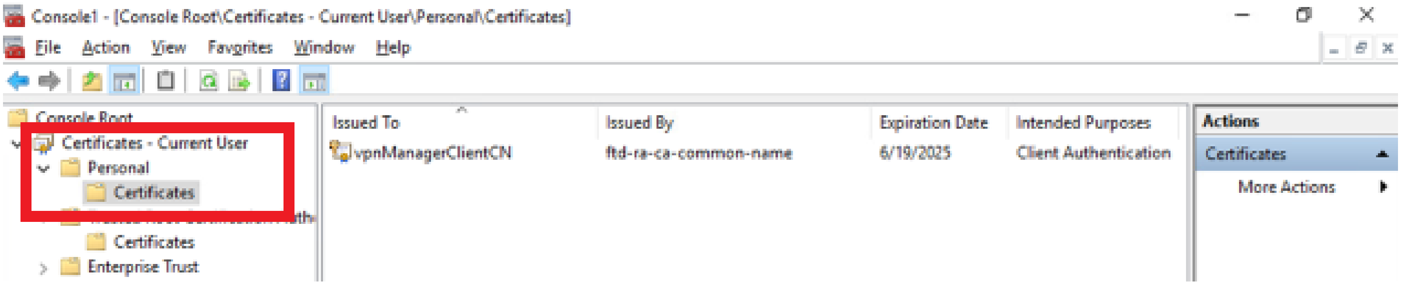


Field	Value
Valid to	Wednesday, June 18, 2025 5:...
Subject	vpnEngineerClientCN, vpnEngi...
Public key	RSA (2048 Bits)
Public key parameters	05 00
Key Usage	Digital Signature, Key Encipher...
Enhanced Key Usage	Client Authentication (1.3.6.1....
Netscape Comment	xca certificate
Thumbprint algorithm	sha1

CN = vpnEngineerClientCN
OU = vpnEngineerClientOU
O = Cisco
L = Tokyo
S = Tokyo
C = JP

Detalles del certificado de cliente de ingeniero

En manager VPN client, navegue hasta Certificados - Usuario actual > Personal > Certificados, verifique el certificado de cliente utilizado para la autenticación.

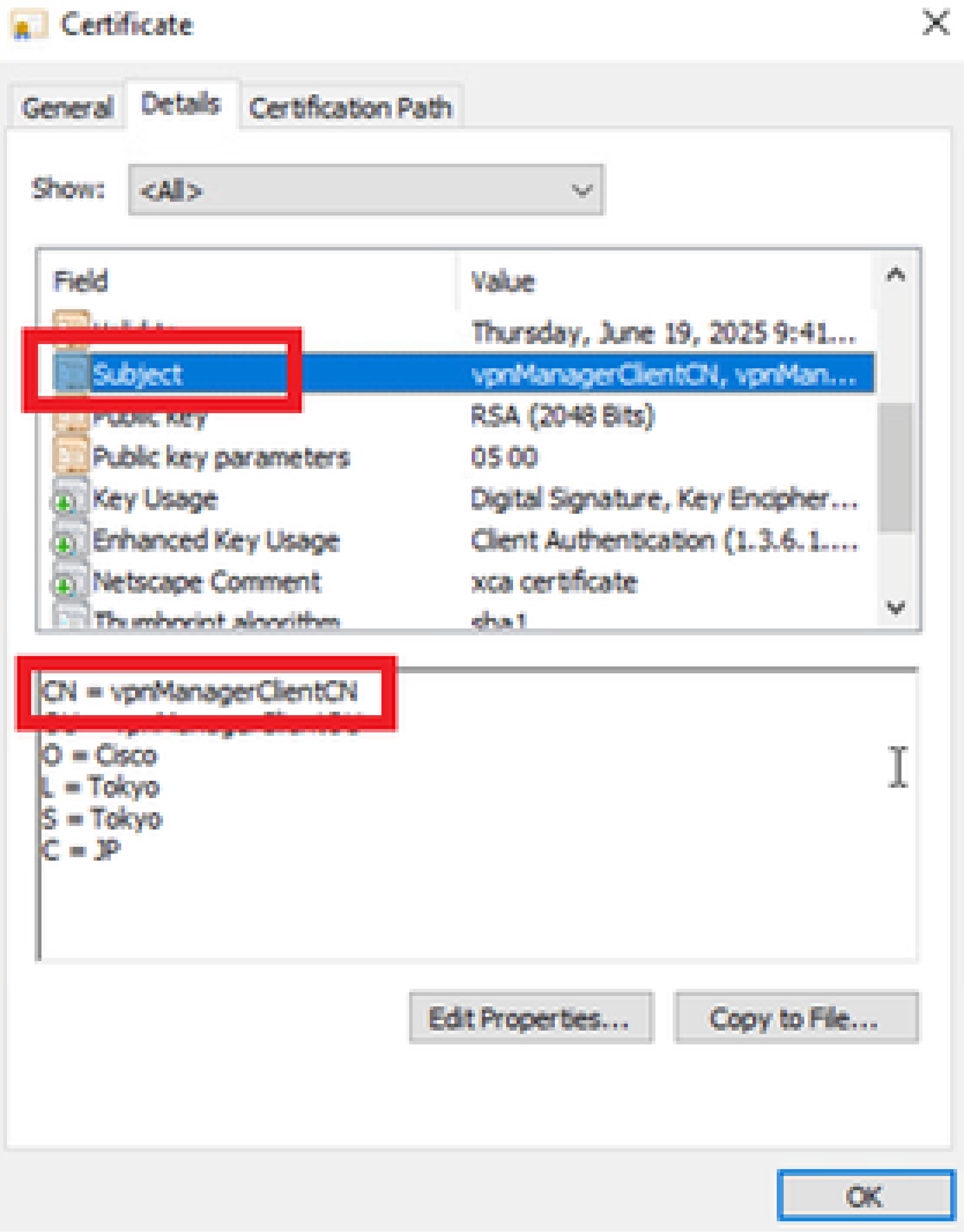


Issued To	Issued By	Expiration Date	Intended Purposes
vpnManagerClientCN	ftd-ra-ca-common-name	6/19/2025	Client Authentication

Confirmar certificado para Manager VPN Client

Haga doble clic en el certificado de cliente, navegue hastaDetalles, verifique los detalles deAsunto.

- Asunto: CN = vpnManagerClientCN



Show: <All>

Field	Value
Valid to	Thursday, June 19, 2025 9:41...
Subject	vpnManagerClientCN, vpnMan...
Public key	RSA (2048 Bits)
Public key parameters	05 00
Key Usage	Digital Signature, Key Encipher...
Enhanced Key Usage	Client Authentication (1.3.6.1....
Netscape Comment	xca certificate
Thumbprint algorithm	sha1

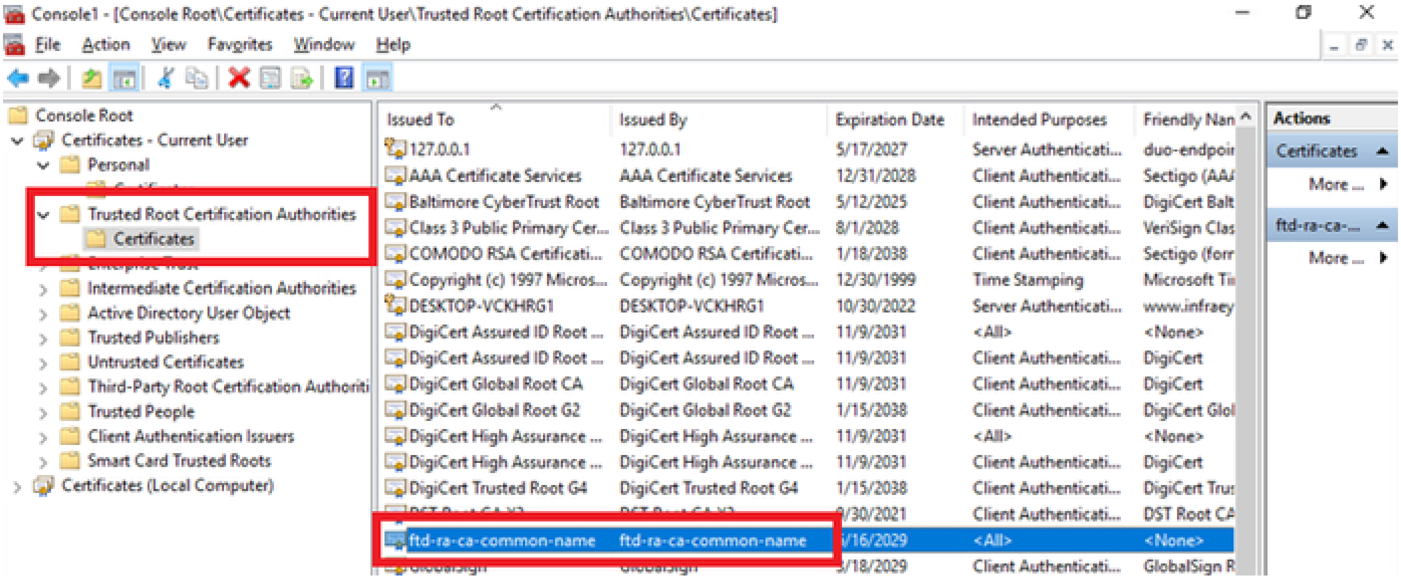
```
CN = vpnManagerClientCN
OU = vpnManagerClientOU
O = Cisco
L = Tokyo
S = Tokyo
C = JP
```

Detalles del certificado de cliente del administrador

Paso 2. Confirmar CA

En el cliente VPN del ingeniero y en el cliente VPN del administrador, navegue hasta Certificados - Usuario actual > Entidades de certificación raíz de confianza > Certificados, verifique la CA utilizada para la autenticación.

- Emitido por: ftd-ra-ca-common-name


Console1 - [Console Root\Certificates - Current User\Trusted Root Certification Authorities\Certificates]
File
Action
View
Favorites
Window
Help
Console Root
Certificates - Current User
Personal
Trusted Root Certification Authorities
Certificates
Intermediate Certification Authorities
Active Directory User Object
Trusted Publishers
Untrusted Certificates
Third-Party Root Certification Authoriti
Trusted People
Client Authentication Issuers
Smart Card Trusted Roots
Certificates (Local Computer)
Actions
Certificates
More ...
ftd-ra-ca-...
More ...

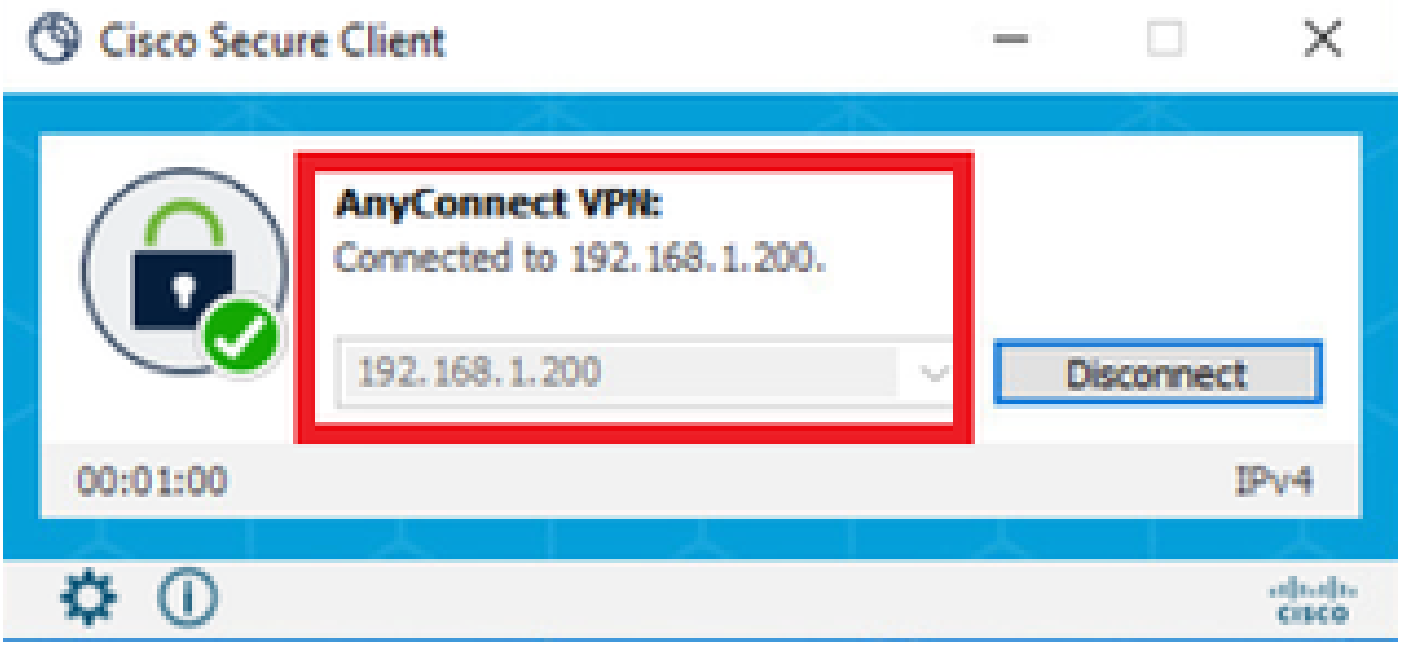
Issued To	Issued By	Expiration Date	Intended Purposes	Friendly Nan
127.0.0.1	127.0.0.1	5/17/2027	Server Authenticati...	duo-endpoi
AAA Certificate Services	AAA Certificate Services	12/31/2028	Client Authenticati...	Sectigo (AA
Baltimore CyberTrust Root	Baltimore CyberTrust Root	5/12/2025	Client Authenticati...	DigiCert Balt
Class 3 Public Primary Cer...	Class 3 Public Primary Cer...	8/1/2028	Client Authenticati...	VeriSign Clas
COMODO RSA Certificati...	COMODO RSA Certificati...	1/18/2038	Client Authenticati...	Sectigo (for
Copyright (c) 1997 Micros...	Copyright (c) 1997 Micros...	12/30/1999	Time Stamping	Microsoft Ti
DESKTOP-VCKHRG1	DESKTOP-VCKHRG1	10/30/2022	Server Authenticati...	www.infraey
DigiCert Assured ID Root ...	DigiCert Assured ID Root ...	11/9/2031	<All>	<None>
DigiCert Assured ID Root ...	DigiCert Assured ID Root ...	11/9/2031	Client Authenticati...	DigiCert
DigiCert Global Root CA	DigiCert Global Root CA	11/9/2031	Client Authenticati...	DigiCert
DigiCert Global Root G2	DigiCert Global Root G2	1/15/2038	Client Authenticati...	DigiCert Glo
DigiCert High Assurance ...	DigiCert High Assurance ...	11/9/2031	<All>	<None>
DigiCert High Assurance ...	DigiCert High Assurance ...	11/9/2031	Client Authenticati...	DigiCert
DigiCert Trusted Root G4	DigiCert Trusted Root G4	1/15/2038	Client Authenticati...	DigiCert Tru
DST Root CA X3	DST Root CA X3	9/30/2021	Client Authenticati...	DST Root CA
ftd-ra-ca-common-name	ftd-ra-ca-common-name	/16/2029	<All>	<None>
GlobalSign	GlobalSign	/18/2029	Client Authenticati...	GlobalSign R

Confirmar CA

Verificación

Paso 1. Iniciar conexión VPN

En el cliente de ingeniería VPN, inicie la conexión de Cisco Secure Client. No es necesario introducir el nombre de usuario y la contraseña, ya que la VPN se ha conectado correctamente.

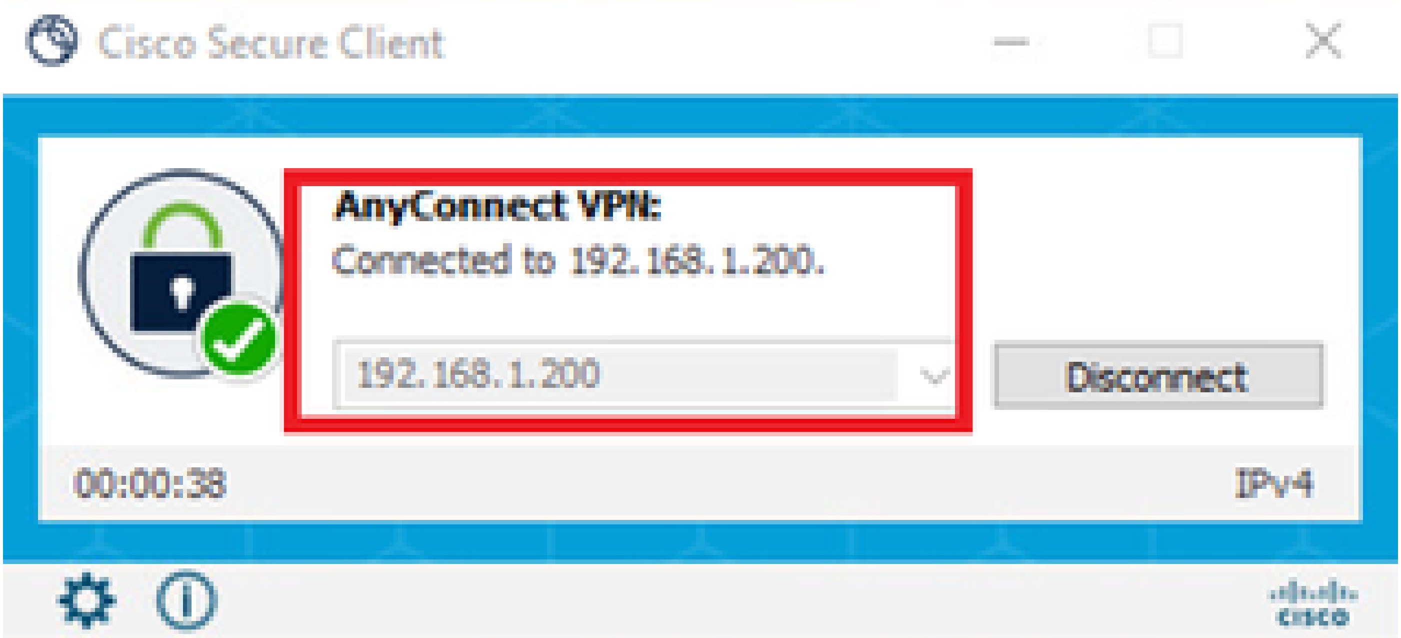


AnyConnect VPN:
Connected to 192.168.1.200.

192.168.1.200

Inicio de la conexión VPN desde el cliente de ingeniería

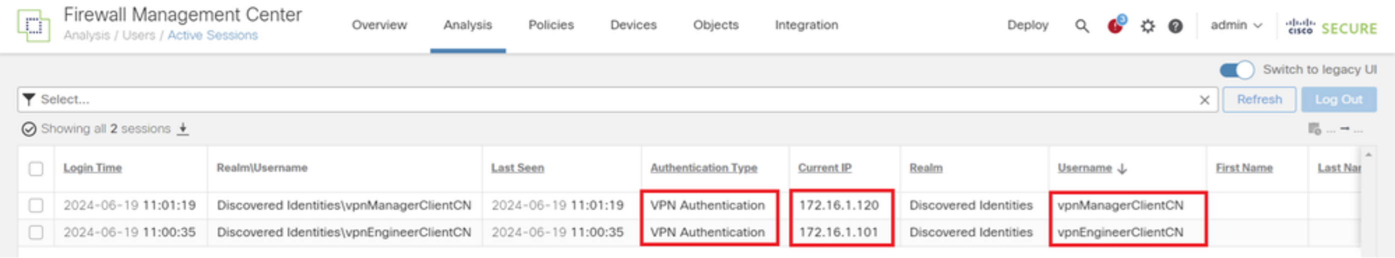
En manager VPN client, inicie la conexión de Cisco Secure Client. No es necesario introducir el nombre de usuario y la contraseña, ya que la VPN se ha conectado correctamente.



Inicio de la conexión VPN desde el cliente Manager

Paso 2. Confirmar sesiones activas en FMC

Vaya a Analysis > Users > Active Sessions, verifique la sesión activa para la autenticación VPN.



Showing all 2 sessions

☐	Login Time	Realm\Username	Last Seen	Authentication Type	Current IP	Realm	Username	First Name	Last Na
☐	2024-06-19 11:01:19	Discovered Identities\vpnManagerClientCN	2024-06-19 11:01:19	VPN Authentication	172.16.1.120	Discovered Identities	vpnManagerClientCN		
☐	2024-06-19 11:00:35	Discovered Identities\vpnEngineerClientCN	2024-06-19 11:00:35	VPN Authentication	172.16.1.101	Discovered Identities	vpnEngineerClientCN		

Confirmar sesión activa

Paso 3. Confirmar sesiones VPN en CLI de FTD

Ejecuteshow vpn-sessiondb detail anyconnect el comando en la CLI de FTD (Line) para confirmar las sesiones VPN del ingeniero y el administrador.

```
ftd702# show vpn-sessiondb detail anyconnect

Session Type: AnyConnect Detailed

Username : vpnEngineerClientCN Index : 13
Assigned IP : 172.16.1.101 Public IP : 192.168.1.11
Protocol : AnyConnect-Parent SSL-Tunnel DTLS-Tunnel
License : AnyConnect Premium
Encryption : AnyConnect-Parent: (1)none SSL-Tunnel: (1)AES-GCM-128 DTLS-Tunnel: (1)AES-GCM-256
Hashing : AnyConnect-Parent: (1)none SSL-Tunnel: (1)SHA256 DTLS-Tunnel: (1)SHA384
Bytes Tx : 14782 Bytes Rx : 12714
```

```
Pkts Tx : 2 Pkts Rx : 32
Pkts Tx Drop : 0 Pkts Rx Drop : 0
Group Policy : ftd-vpn-engineer-grp Tunnel Group : ftd-vpn-engineer
Login Time : 02:00:35 UTC Wed Jun 19 2024
Duration : 0h:00m:55s
Inactivity : 0h:00m:00s
VLAN Mapping : N/A VLAN : none
Audt Sess ID : cb0071820000d00066723bc3
Security Grp : none Tunnel Zone : 0

AnyConnect-Parent Tunnels: 1
SSL-Tunnel Tunnels: 1
DTLS-Tunnel Tunnels: 1

AnyConnect-Parent:
Tunnel ID : 13.1
Public IP : 192.168.1.11
Encryption : none Hashing : none
TCP Src Port : 50225 TCP Dst Port : 443
Auth Mode : Certificate
Idle Time Out: 30 Minutes Idle TO Left : 29 Minutes
Client OS : win
Client OS Ver: 10.0.15063
Client Type : AnyConnect
Client Ver : Cisco AnyConnect VPN Agent for Windows 5.1.3.62
Bytes Tx : 7391 Bytes Rx : 0
Pkts Tx : 1 Pkts Rx : 0
Pkts Tx Drop : 0 Pkts Rx Drop : 0

SSL-Tunnel:
Tunnel ID : 13.2
Assigned IP : 172.16.1.101 Public IP : 192.168.1.11
Encryption : AES-GCM-128 Hashing : SHA256
Ciphersuite : TLS_AES_128_GCM_SHA256
Encapsulation: TLSv1.3 TCP Src Port : 50232
TCP Dst Port : 443 Auth Mode : Certificate
Idle Time Out: 30 Minutes Idle TO Left : 29 Minutes
Client OS : Windows
Client Type : SSL VPN Client
Client Ver : Cisco AnyConnect VPN Agent for Windows 5.1.3.62
Bytes Tx : 7391 Bytes Rx : 1775
Pkts Tx : 1 Pkts Rx : 2
Pkts Tx Drop : 0 Pkts Rx Drop : 0

DTLS-Tunnel:
Tunnel ID : 13.3
Assigned IP : 172.16.1.101 Public IP : 192.168.1.11
Encryption : AES-GCM-256 Hashing : SHA384
Ciphersuite : ECDHE-ECDSA-AES256-GCM-SHA384
Encapsulation: DTLSv1.2 UDP Src Port : 50825
UDP Dst Port : 443 Auth Mode : Certificate
Idle Time Out: 30 Minutes Idle TO Left : 29 Minutes
Client OS : Windows
Client Type : DTLS VPN Client
Client Ver : Cisco AnyConnect VPN Agent for Windows 5.1.3.62
Bytes Tx : 0 Bytes Rx : 10939
Pkts Tx : 0 Pkts Rx : 30
Pkts Tx Drop : 0 Pkts Rx Drop : 0
```

```
Username : vpnManagerClientCN Index : 14
Assigned IP : 172.16.1.120 Public IP : 192.168.1.21
Protocol : AnyConnect-Parent SSL-Tunnel DTLS-Tunnel
License : AnyConnect Premium
Encryption : AnyConnect-Parent: (1)none SSL-Tunnel: (1)AES-GCM-128 DTLS-Tunnel: (1)AES-GCM-256
Hashing : AnyConnect-Parent: (1)none SSL-Tunnel: (1)SHA256 DTLS-Tunnel: (1)SHA384
Bytes Tx : 14782 Bytes Rx : 13521
Pkts Tx : 2 Pkts Rx : 57
Pkts Tx Drop : 0 Pkts Rx Drop : 0
Group Policy : ftd-vpn-manager-grp Tunnel Group : ftd-vpn-manager
Login Time : 02:01:19 UTC Wed Jun 19 2024
Duration : 0h:00m:11s
Inactivity : 0h:00m:00s
VLAN Mapping : N/A VLAN : none
Audt Sess ID : cb0071820000e00066723bef
Security Grp : none Tunnel Zone : 0

AnyConnect-Parent Tunnels: 1
SSL-Tunnel Tunnels: 1
DTLS-Tunnel Tunnels: 1

AnyConnect-Parent:
Tunnel ID : 14.1
Public IP : 192.168.1.21
Encryption : none Hashing : none
TCP Src Port : 49809 TCP Dst Port : 443
Auth Mode : Certificate
Idle Time Out: 30 Minutes Idle TO Left : 29 Minutes
Client OS : win
Client OS Ver: 10.0.15063
Client Type : AnyConnect
Client Ver : Cisco AnyConnect VPN Agent for Windows 5.1.3.62
Bytes Tx : 7391 Bytes Rx : 0
Pkts Tx : 1 Pkts Rx : 0
Pkts Tx Drop : 0 Pkts Rx Drop : 0

SSL-Tunnel:
Tunnel ID : 14.2
Assigned IP : 172.16.1.120 Public IP : 192.168.1.21
Encryption : AES-GCM-128 Hashing : SHA256
Ciphersuite : TLS_AES_128_GCM_SHA256
Encapsulation: TLSv1.3 TCP Src Port : 49816
TCP Dst Port : 443 Auth Mode : Certificate
Idle Time Out: 30 Minutes Idle TO Left : 29 Minutes
Client OS : Windows
Client Type : SSL VPN Client
Client Ver : Cisco AnyConnect VPN Agent for Windows 5.1.3.62
Bytes Tx : 7391 Bytes Rx : 3848
Pkts Tx : 1 Pkts Rx : 25
Pkts Tx Drop : 0 Pkts Rx Drop : 0

DTLS-Tunnel:
Tunnel ID : 14.3
Assigned IP : 172.16.1.120 Public IP : 192.168.1.21
Encryption : AES-GCM-256 Hashing : SHA384
Ciphersuite : ECDHE-ECDSA-AES256-GCM-SHA384
Encapsulation: DTLSv1.2 UDP Src Port : 65501
UDP Dst Port : 443 Auth Mode : Certificate
Idle Time Out: 30 Minutes Idle TO Left : 30 Minutes
```

Client OS : Windows
Client Type : DTLS VPN Client
Client Ver : Cisco AnyConnect VPN Agent for Windows 5.1.3.62
Bytes Tx : 0 Bytes Rx : 9673
Pkts Tx : 0 Pkts Rx : 32
Pkts Tx Drop : 0 Pkts Rx Drop : 0

Troubleshoot

Puede esperar encontrar información sobre la autenticación VPN en el registro del sistema de depuración del motor de línea y en el archivo DART en la PC con Windows.

Este es un ejemplo de los registros de depuración en el motor de línea durante la conexión VPN desde el cliente de ingeniería.

<#root>

```
Jun 19 2024 02:00:35: %FTD-7-717029: Identified client certificate within certificate chain. serial number: 7AF1C78ADCC8F941, subject name: CN=vpn
Jun 19 2024 02:00:35: %FTD-6-717022:

Certificate was successfully validated

. serial number: 7AF1C78ADCC8F941, subject name:

CN=vpnEngineerClientCN

,OU=vpnEngineerClientOU,O=Cisco,L=Tokyo,ST=Tokyo,C=JP.
Jun 19 2024 02:00:35: %FTD-7-717038: Tunnel group match found.

Tunnel Group: ftd-vpn-engineer

, Peer certificate: serial number: 7AF1C78ADCC8F941, subject name: CN=vpnEngineerClientCN,OU=vpnEnginee
Jun 19 2024 02:00:35: %FTD-6-113009: AAA retrieved default group policy (ftd-vpn-engineer-grp) for user
Jun 19 2024 02:00:46: %FTD-6-725002: Device completed SSL handshake with client outside:192.168.1.11/50
```

Este es un ejemplo de los registros de depuración en el motor de línea durante la conexión VPN desde el cliente administrador.

<#root>

```
Jun 19 2024 02:01:19: %FTD-7-717029: Identified client certificate within certificate chain. serial number: 1AD1B5EAE28C6D3C, subject name: CN=vp
Jun 19 2024 02:01:19: %FTD-6-717022:

Certificate was successfully validated

. serial number: 1AD1B5EAE28C6D3C, subject name:

 CN=vpnManagerClientCN

,OU=vpnManagerClientOU,O=Cisco,L=Tokyo,ST=Tokyo,C=JP.
Jun 19 2024 02:01:19: %FTD-7-717038: Tunnel group match found.

Tunnel Group: ftd-vpn-manager

, Peer certificate: serial number: 1AD1B5EAE28C6D3C, subject name: CN=vpnManagerClientCN,OU=vpnManagerC
Jun 19 2024 02:01:19: %FTD-6-113009: AAA retrieved default group policy (ftd-vpn-manager-grp) for user
Jun 19 2024 02:01:25: %FTD-6-725002: Device completed SSL handshake with client outside:192.168.1.21/65
```

Información Relacionada

Configuración de la Autenticación Basada en Certificados de Anyconnect para el Acceso Móvil