Toewijzing van cryptografische gegevens configureren voor beveiligde clientautorisatie op FTD via FMC

Inhoud

Inleiding

In dit document wordt beschreven hoe u een Cisco Secure Client met SSL op FTD via FMC kunt instellen met behulp van certificaattoewijzing voor verificatie.

Voorwaarden

Vereisten

Cisco raadt kennis van de volgende onderwerpen aan:

- Cisco Firepower Management Center (FMC)
- Firewall Threat Defense (FTD) virtueel
- VPN-verificatiestroom

Gebruikte componenten

- Cisco Firepower Management Center voor VMware 7.4.1
- Cisco Firewall Threat Defense Virtual 7.4.1

- Cisco Secure-client 5.1.3.62

De informatie in dit document is gebaseerd op de apparaten in een specifieke laboratoriumomgeving. Alle apparaten die in dit document worden beschreven, hadden een opgeschoonde (standaard)configuratie. Als uw netwerk live is, moet u zorgen dat u de potentiële impact van elke opdracht begrijpt.

Achtergrondinformatie

Certificaatmapping is een methode die wordt gebruikt in VPN-verbindingen waarbij een clientcertificaat wordt toegewezen aan een lokale gebruikersaccount of waarbij kenmerken binnen het certificaat worden gebruikt voor autorisatiedoeleinden. Dit is een proces waarbij een digitaal certificaat wordt gebruikt als middel om een gebruiker of apparaat te identificeren. Door certificaattoewijzing te gebruiken, maakt het gebruik van het SSL-protocol om gebruikers te verifiëren zonder dat ze referenties hoeven in te voeren.

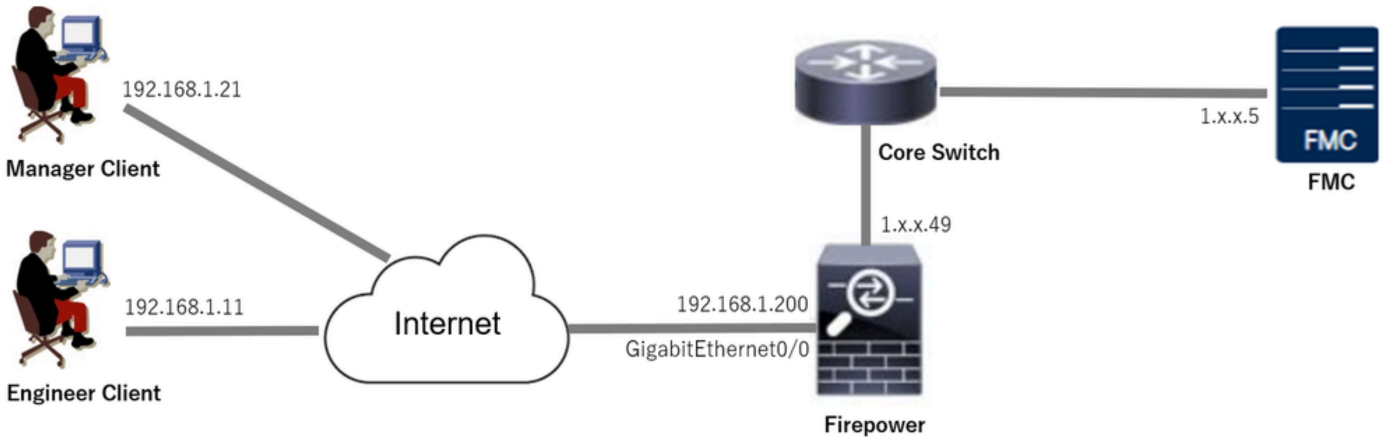
Dit document beschrijft hoe u de Cisco Secure Client kunt verifiëren met behulp van de algemene naam van een SSL-certificaat.

In deze certificaten staat een gemeenschappelijke benaming, die voor vergunningsdoeleinden wordt gebruikt.

- CA : ftd-ra-ca-common-name
- Engineer VPN Clientcertificaat: vpnEngineerClientCN
- VPN-clientcertificaat voor Manager: vpnManagerClientCN
- Servercertificaat: 192.168.1.200

Netwerkdiagram

Dit beeld toont de topologie die bij het voorbeeld van dit document wordt gebruikt.



Netwerkdiagram

Configuraties

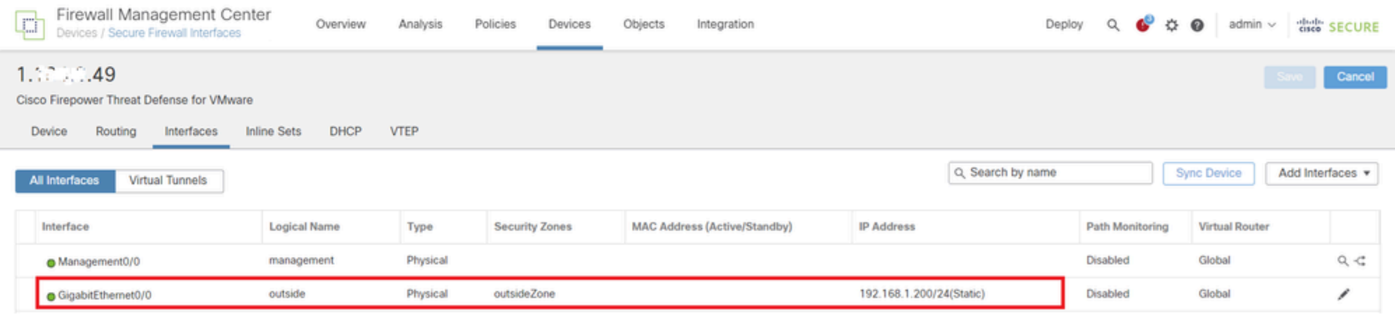
Configuratie in VCC

Stap 1. FTD-interface configureren

Navigeren naar Apparaten > Apparaatbeheer, bewerken van het FTD-doelapparaat, configureren van de buiteninterface voor FTD in Interfacestab.

Voor Gigabit Ethernet0/0,

- Naam: buiten
- Security Zone: buitenZone
- IP-adres: 192.168.1.200/24



1.[redacted].49

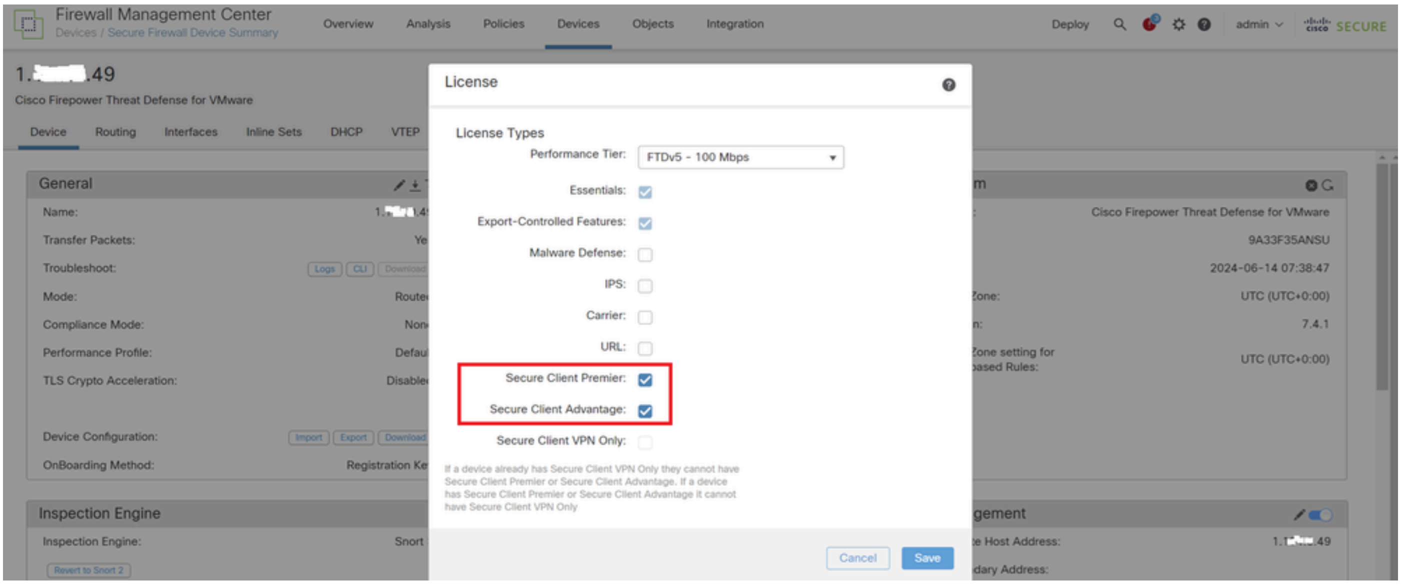
Cisco Firepower Threat Defense for VMware

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

FTD-interface

Stap 2. Cisco Secure-clientlicentie bevestigen

Navigeer naar Apparaten > Apparaatbeheer, bewerk het FTD-doelapparaat en bevestig de Cisco Secure Client-licentie in Devicetab.


Firewall Management Center
Devices / Secure Firewall Device Summary
Overview
Analysis
Policies
Devices
Objects
Integration
Deploy
admin
SECURE

1.[redacted].49

Cisco Firepower Threat Defense for VMware

General

Name: 1.[redacted].4

Transfer Packets: Ye

Troubleshoot: Logs CLI Download

Mode: Route

Compliance Mode: Non

Performance Profile: Defau

TLS Crypto Acceleration: Disable

Device Configuration: Import Export Download

OnBoarding Method: Registration Ke

Inspection Engine

Inspection Engine: Snort

Revert to Snort 2

Cisco Firepower Threat Defense for VMware

9A33F35ANSU

2024-06-14 07:38:47

Zone: UTC (UTC+0:00)

7.4.1

Zone setting for based Rules: UTC (UTC+0:00)

Host Address: 1.[redacted].49

dary Address:

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: □

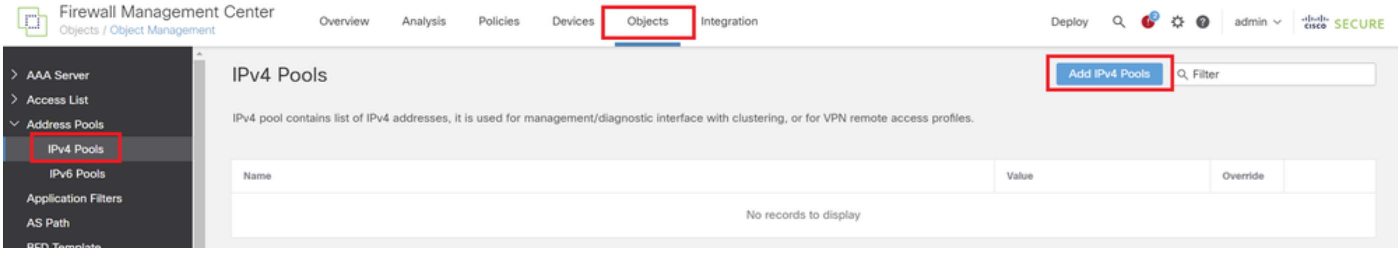
If a device already has Secure Client VPN Only they cannot have Secure Client Premier or Secure Client Advantage. If a device has Secure Client Premier or Secure Client Advantage it cannot have Secure Client VPN Only

Cancel Save

Secure-clientlicentie

Stap 3. IPv4-adresgroep toevoegen

Navigeren naar object > Objectbeheer > Adrespools > IPv4-pools, klik op knop IPv4-pools toevoegen.



IPv4 Pools

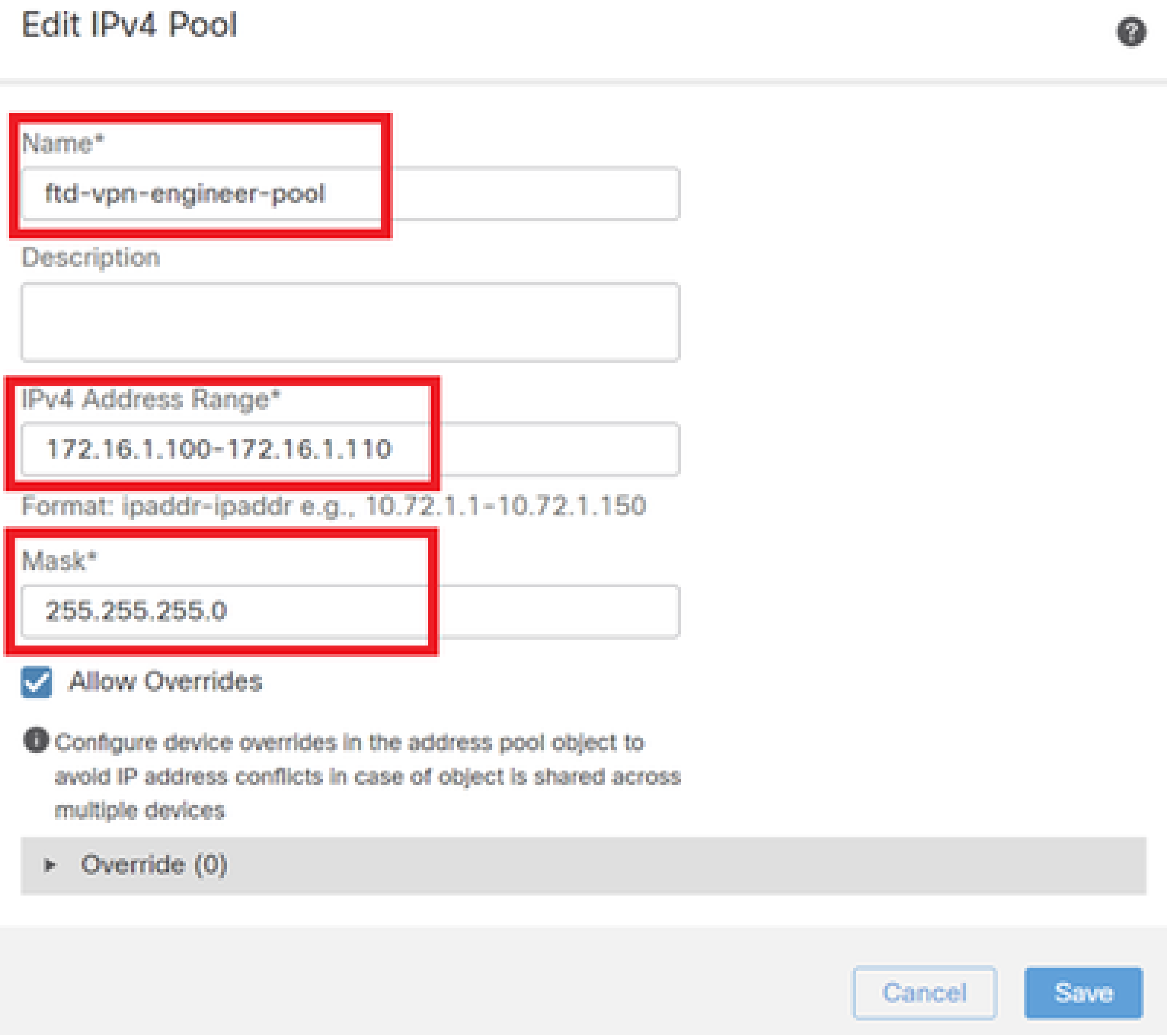
IPv4 pool contains list of IPv4 addresses, it is used for management/diagnostic interface with clustering, or for VPN remote access profiles.

Name	Value	Override
No records to display		

IPv4-adresgroep toevoegen

Voer de benodigde informatie in om een IPv4-adrespool te maken voor een Engineer VPN-client.

- Naam: ftd-vpn-engineer-pool
- IPv4-adresbereik: 172.16.1.100-172.16.1.110
- Masker: 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

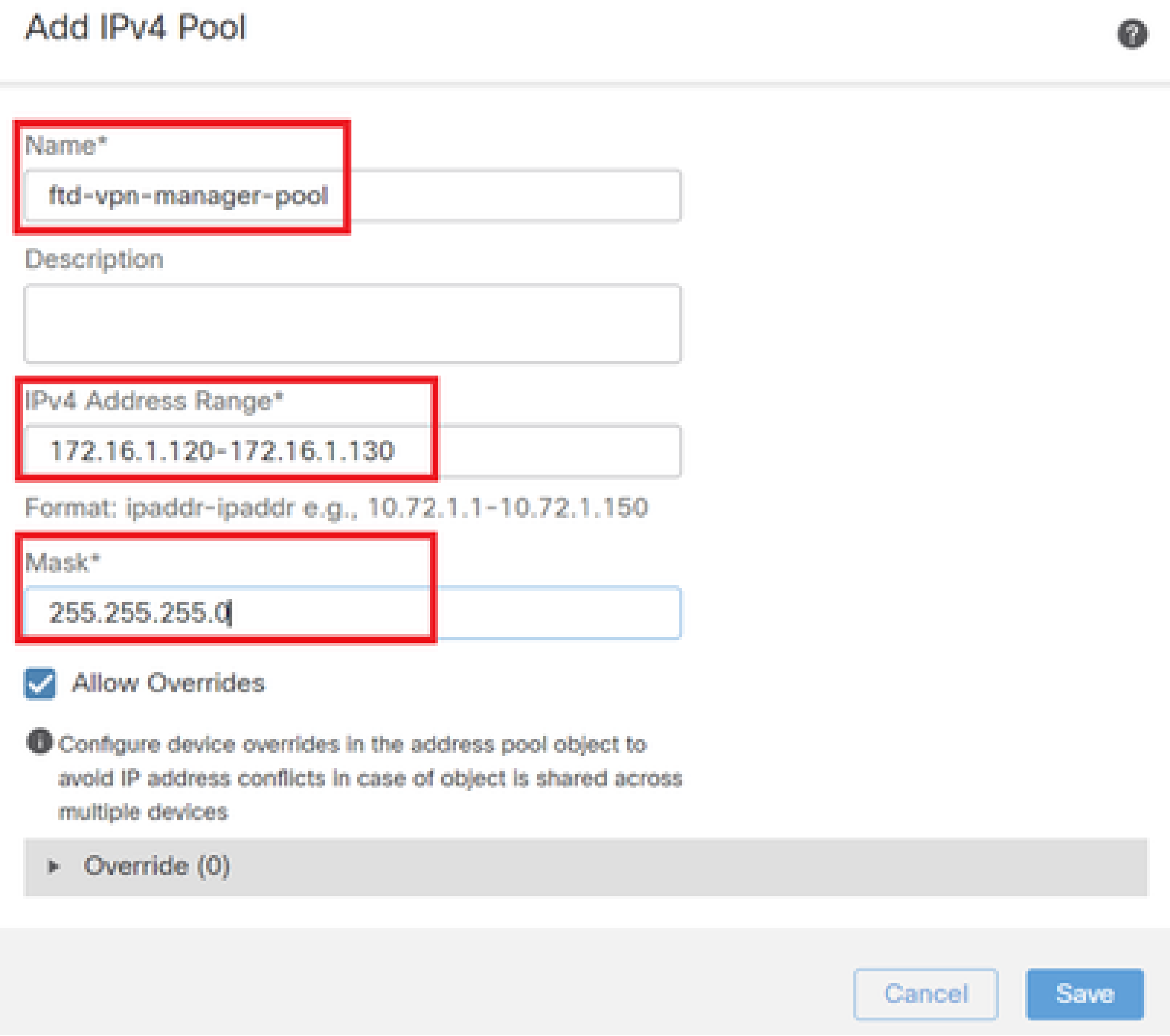
☑ Allow Overrides

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

IPv4-adrespool voor Engineer VPN-client

Voer de benodigde informatie in om een IPv4-adresgroep voor VPN-client voor beheerprogramma te maken.

- Naam: ftd-vpn-manager-pool
- IPv4-adresbereik: 172.16.1.120-172.16.1.130
- Masker: 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*

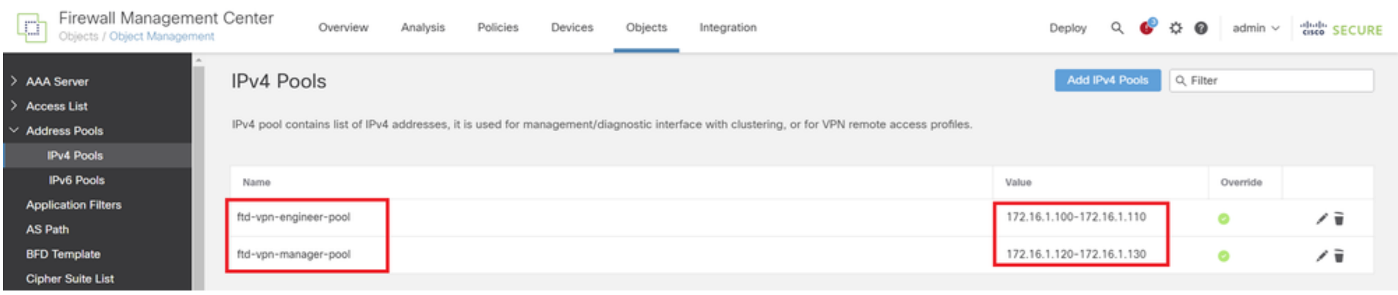
255.255.255.0

☑ Allow Overrides

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

IPv4-adrespool voor VPN-client voor beheer

Bevestig de nieuwe IPv4-adrespools.



IPv4 Pools

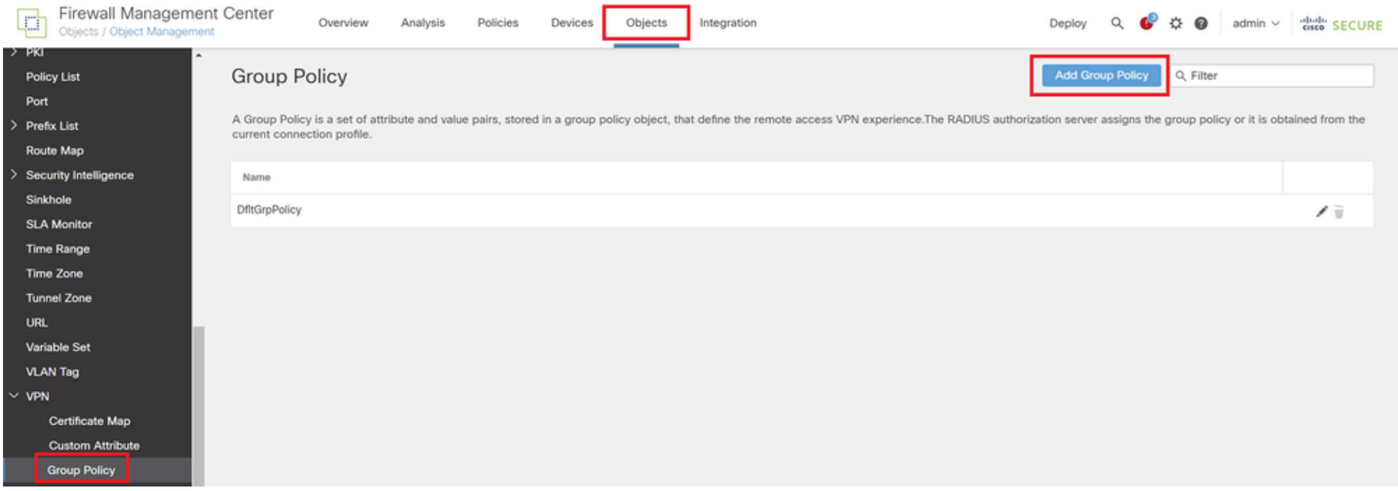
IPv4 pool contains list of IPv4 addresses, it is used for management/diagnostic interface with clustering, or for VPN remote access profiles.

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	●

Nieuwe IPv4-adrespools

Stap 4. Groepsbeleid toevoegen

Navigeer naar object > Objectbeheer > VPN > Groepsbeleid en klik op de knop Groepsbeleid toevoegen.



Group Policy

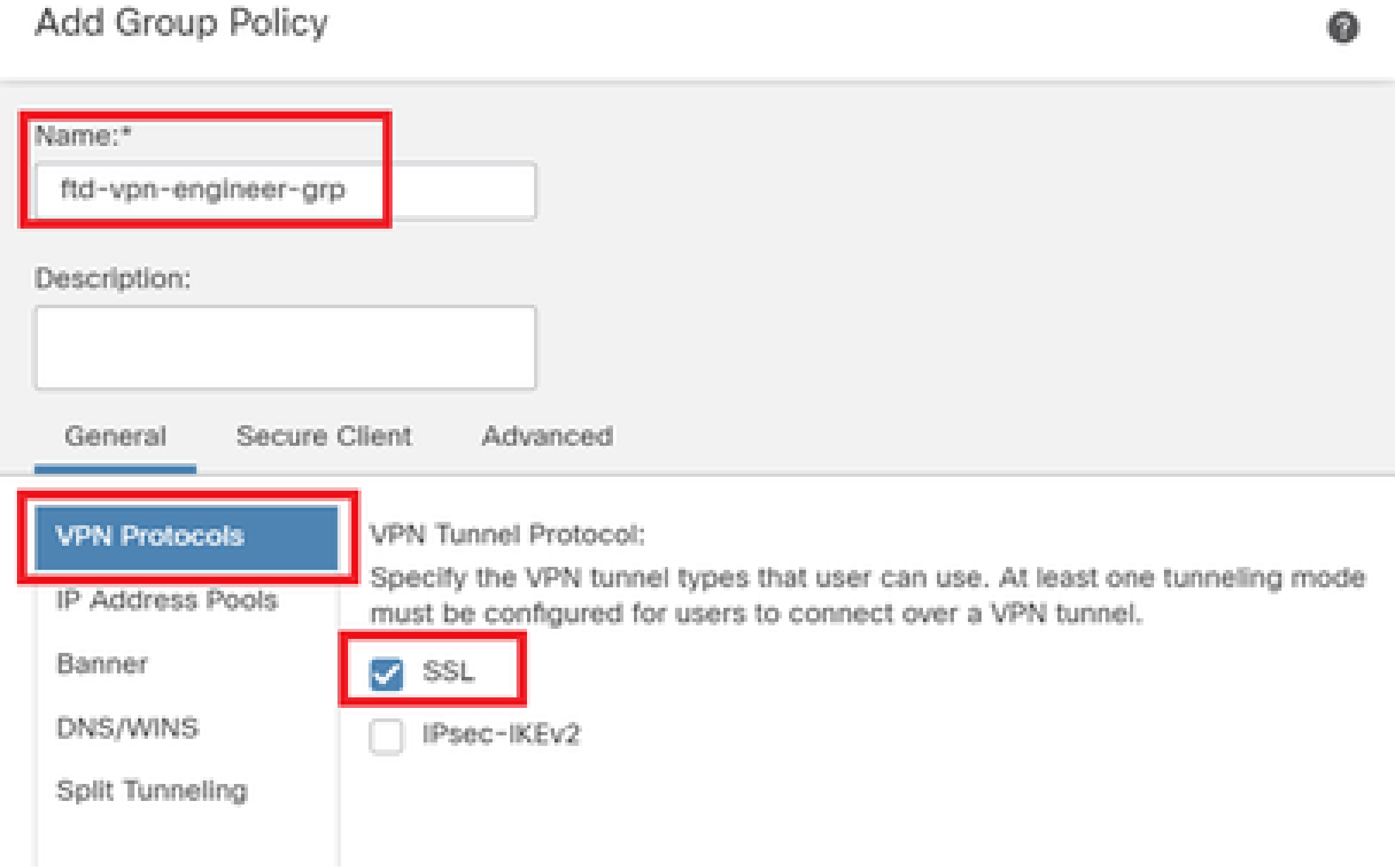
A Group Policy is a set of attribute and value pairs, stored in a group policy object, that define the remote access VPN experience.The RADIUS authorization server assigns the group policy or it is obtained from the current connection profile.

Name
DfltGrpPolicy

Groepsbeleid toevoegen

Voer de benodigde informatie in om een groepsbeleid te maken voor de Engineer VPN client.

- Naam: ftd-vpn-engineer-grp
- VPN-protocollen: 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.

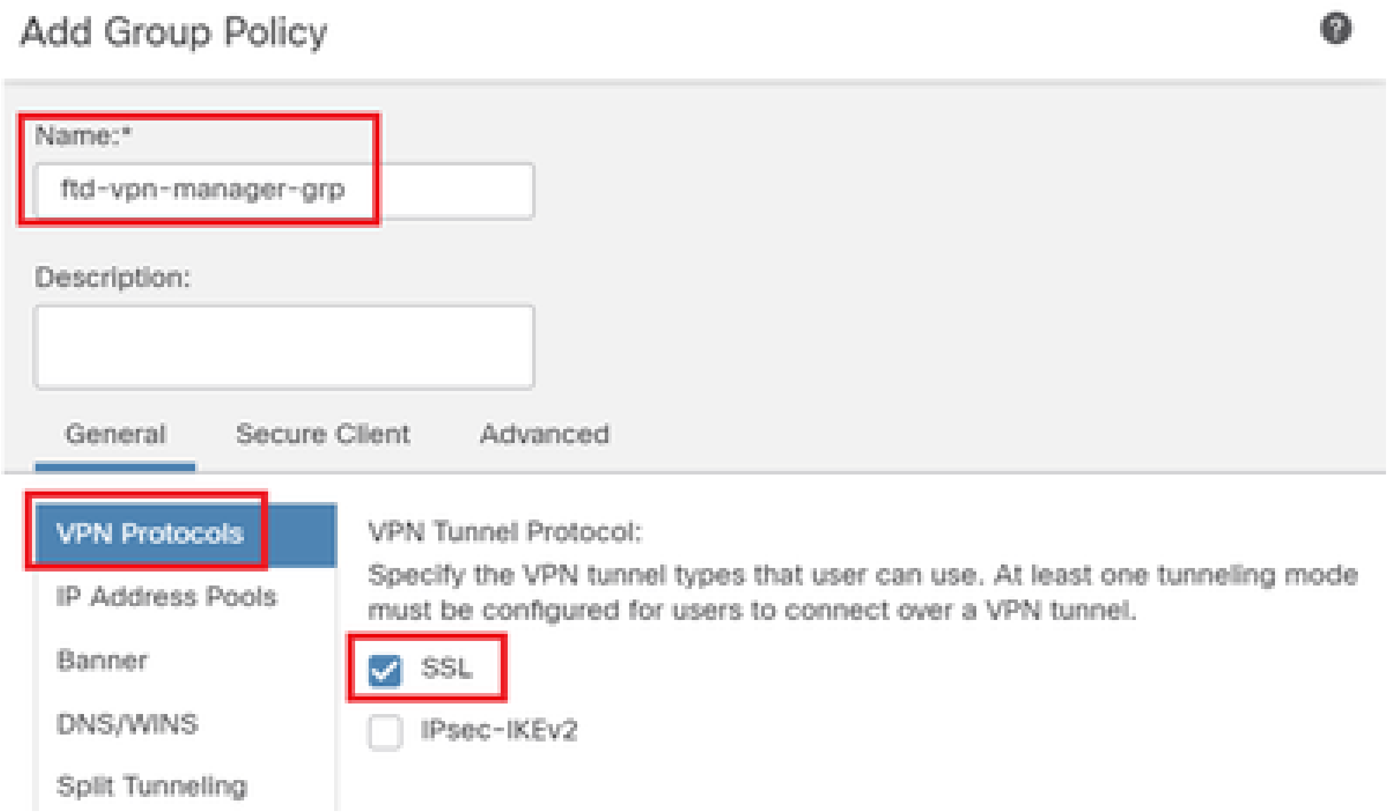
☑ SSL

☐ IPsec-IKEv2

Groepsbeleid voor Engineer VPN-client

Voer de benodigde informatie in om een groepsbeleid te maken voor een VPN-client voor beheerdersbeheer.

- Naam: ftd-vpn-manager-grp
- VPN-protocollen: SSL



Add Group Policy

Name:* ftd-vpn-manager-grp

Description:

VPN Tunnel Protocol:

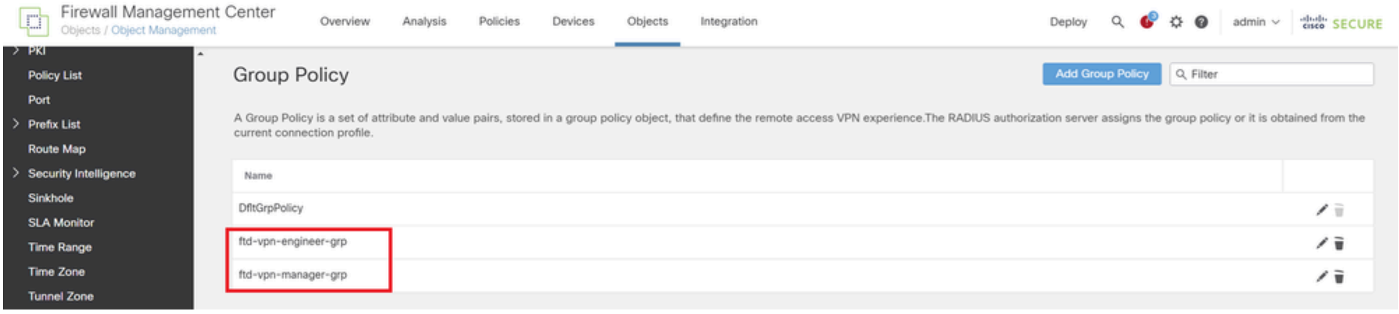
Specify the VPN tunnel types that user can use. At least one tunneling mode must be configured for users to connect over a VPN tunnel.

☑ SSL

□ IPsec-IKEv2

Groepsbeleid voor Manager VPN-client

Bevestig het nieuwe groepsbeleid.



Group Policy

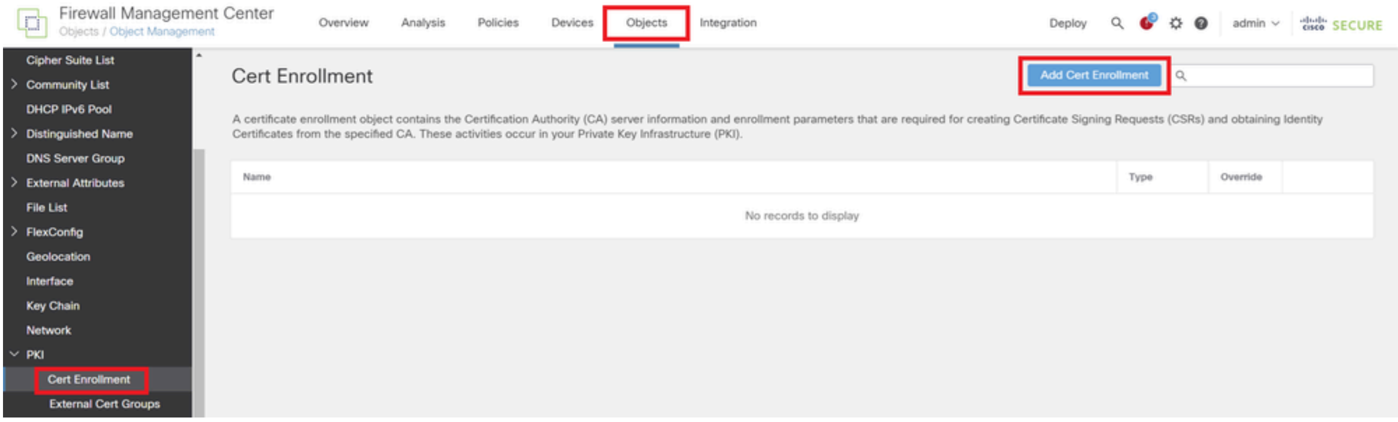
A Group Policy is a set of attribute and value pairs, stored in a group policy object, that define the remote access VPN experience.The RADIUS authorization server assigns the group policy or it is obtained from the current connection profile.

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

Nieuw groepsbeleid

Stap 5. FTD-certificaat toevoegen

Navigeer toObject > Objectbeheer > PKI > Cert-inschrijving, klik op Cert inschrijvingsknop toevoegen.



Cert Enrollment

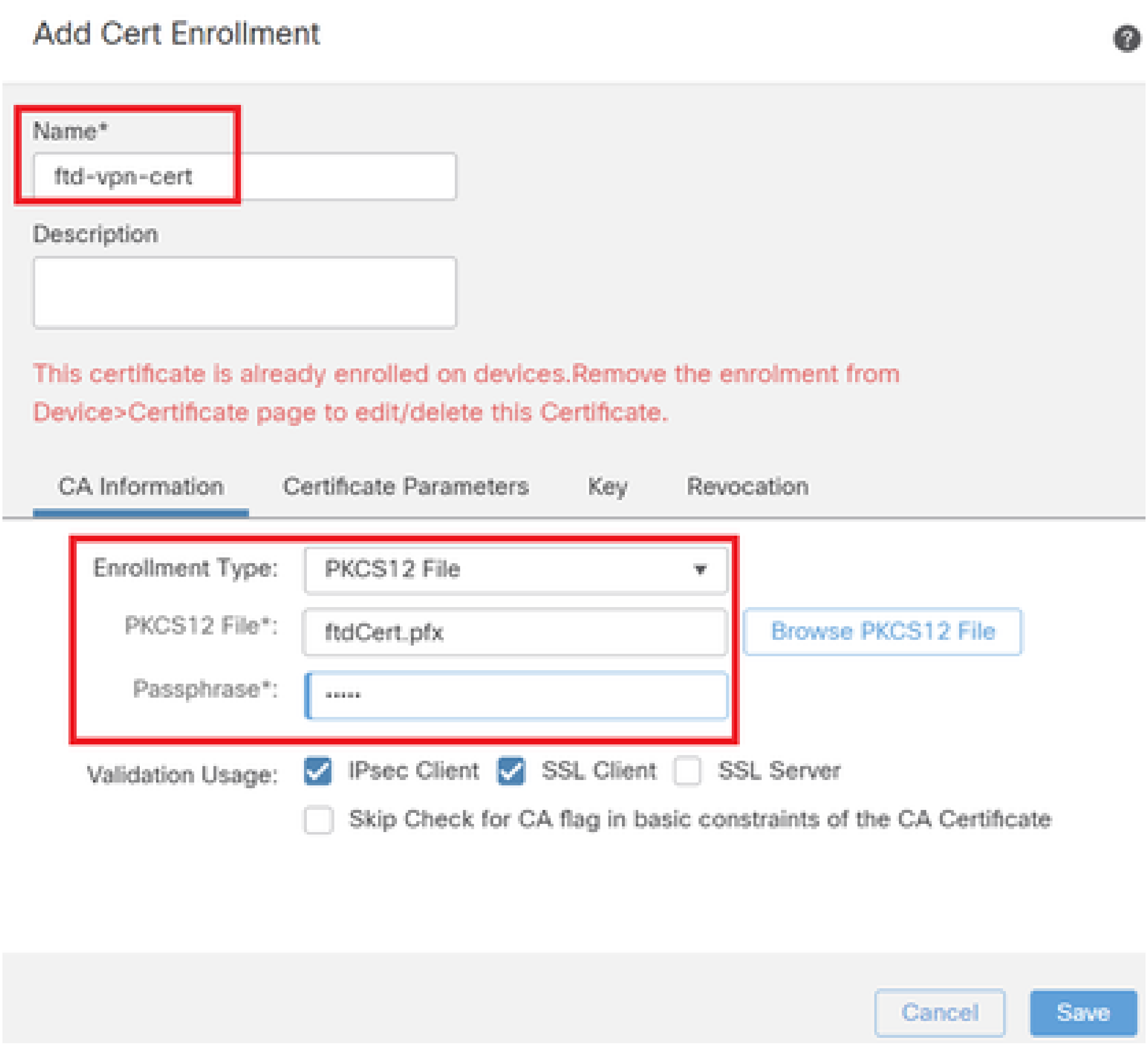
A certificate enrollment object contains the Certification Authority (CA) server information and enrollment parameters that are required for creating Certificate Signing Requests (CSRs) and obtaining Identity Certificates from the specified CA. These activities occur in your Private Key Infrastructure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

Name	Type	Override
No records to display		

Certificaatinschrijving toevoegen

Voer de benodigde informatie voor FTD-certificaat in en importeer een PKCS12-bestand van een lokale computer.

- Naam: ftd-vpn-cert
- Inschrijftype: PKCS12 File



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

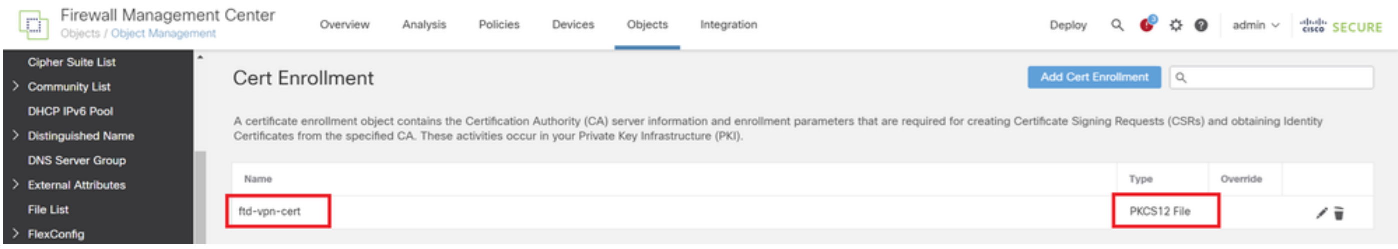
Passphrase*: •••••

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

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

Details van certificaatinschrijving

Bevestig de nieuwe certificaatinschrijving.



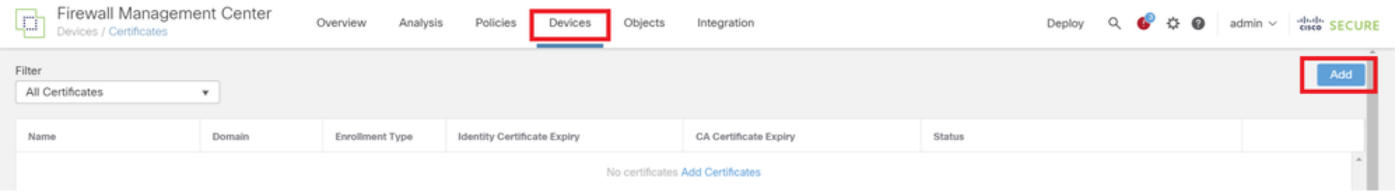
Cert Enrollment

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	

Nieuwe certificaatinschrijving

Navigeer naar Apparaten > Certificaten en klik op de knop Toevoegen.


Firewall Management Center
Devices / Certificates

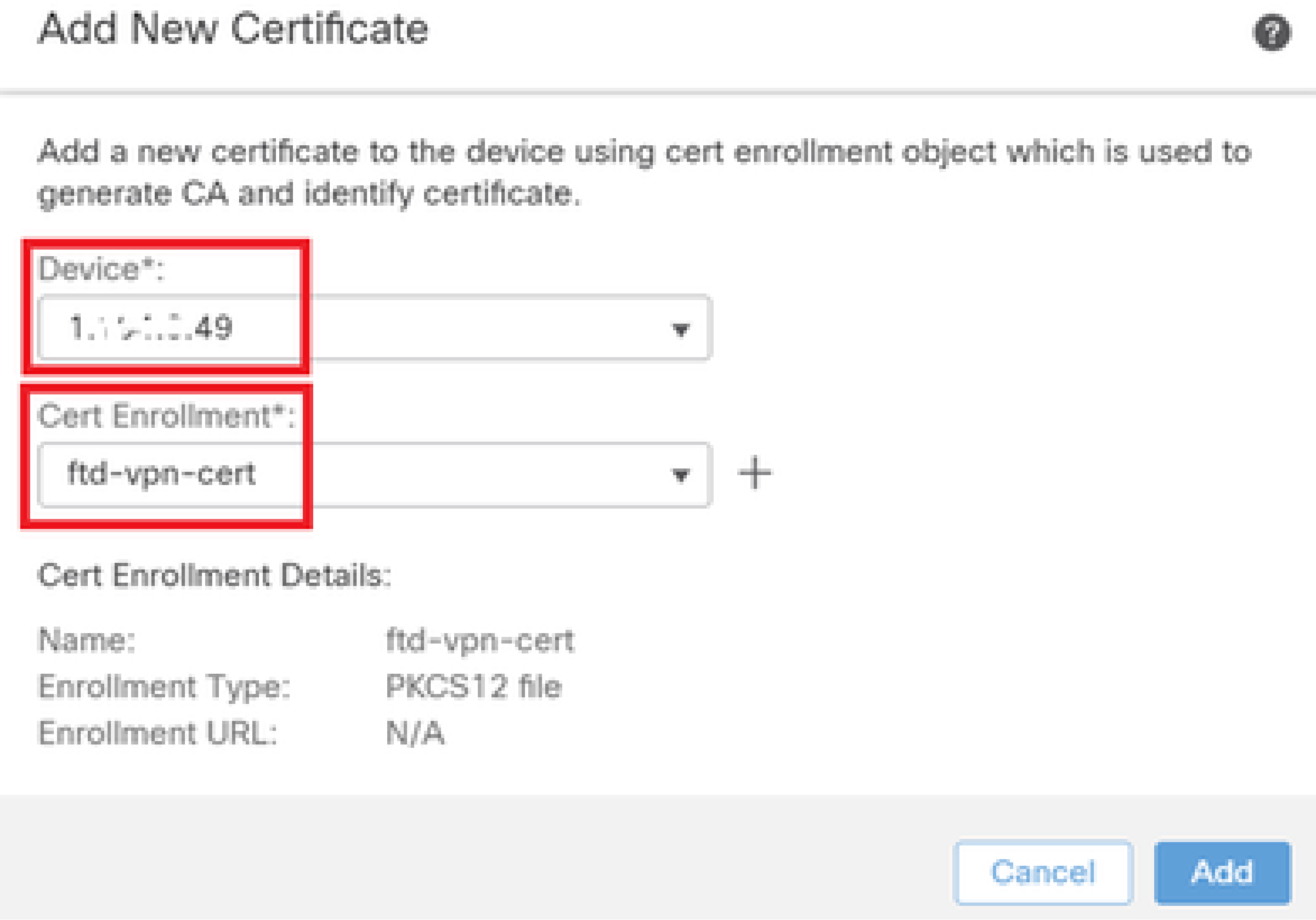
Filter: All Certificates

Name	Domain	Enrollment Type	Identity Certificate Expiry	CA Certificate Expiry	Status
No certificates Add Certificates					

FTD-certificaat toevoegen

Voer de benodigde informatie in om de nieuwe certificaatinschrijving te binden aan FTD.

- Apparaat: 1.x.x.49
- Cert Inschrijving: ftd-vpn-cert


Add New Certificate

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

Device*: 1.[redacted].49

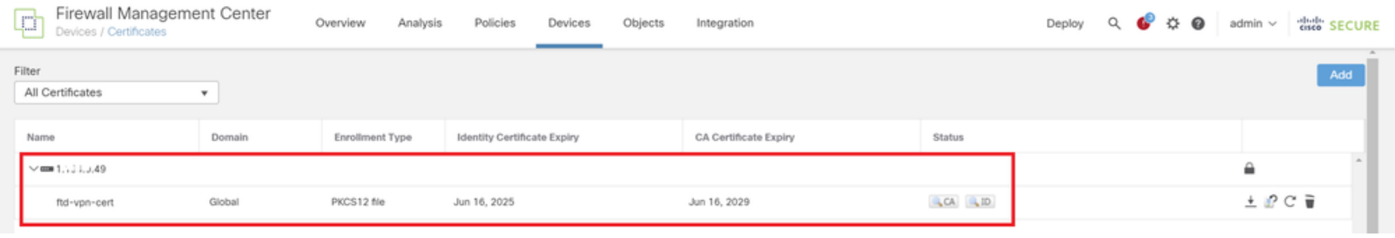
Cert Enrollment*: ftd-vpn-cert

Cert Enrollment Details:

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

Certificaat binden aan FTD

Bevestig de status van het bindende certificaat.


Firewall Management Center
Devices / Certificates

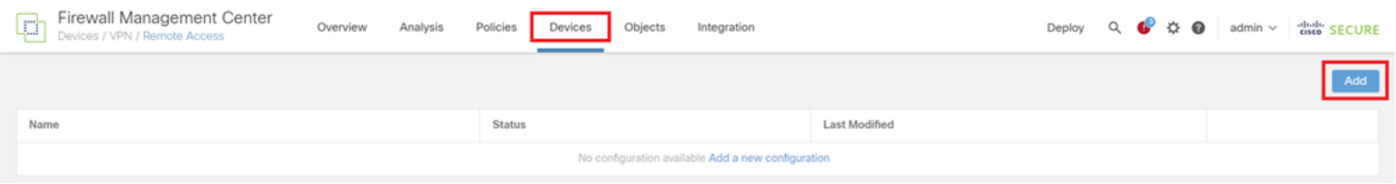
Filter: All Certificates

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

Status van certificaatbinding

Stap 6. Beleidstoewijzing voor engineer-verbindingsprofiel toevoegen

Navigeer naar Apparaten > VPN > Externe toegang en klik op Toevoegen.



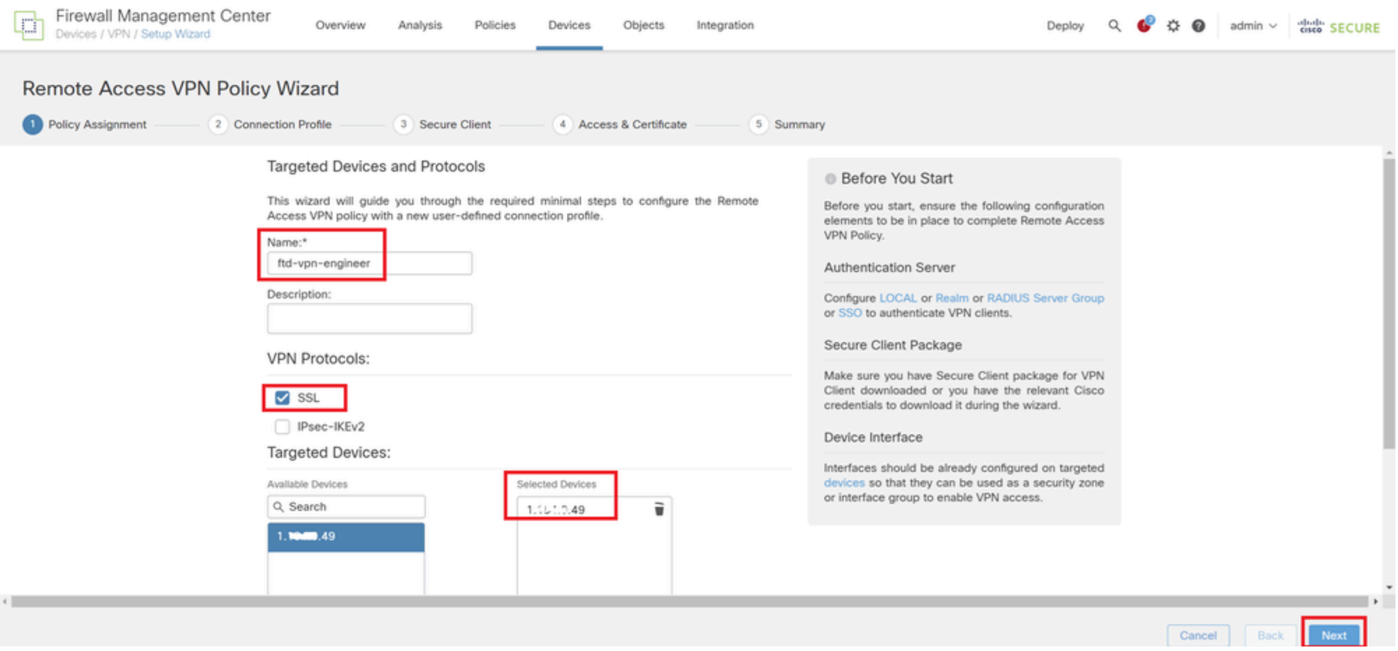
Name	Status	Last Modified

No configuration available Add a new configuration

Voeg externe toegang toe aan VPN

Voer de gewenste informatie in en klik op Volgende.

- Naam: ftd-vpn-engineer
- VPN-protocollen: SSL
- Gerichte apparaten: 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

Search

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.

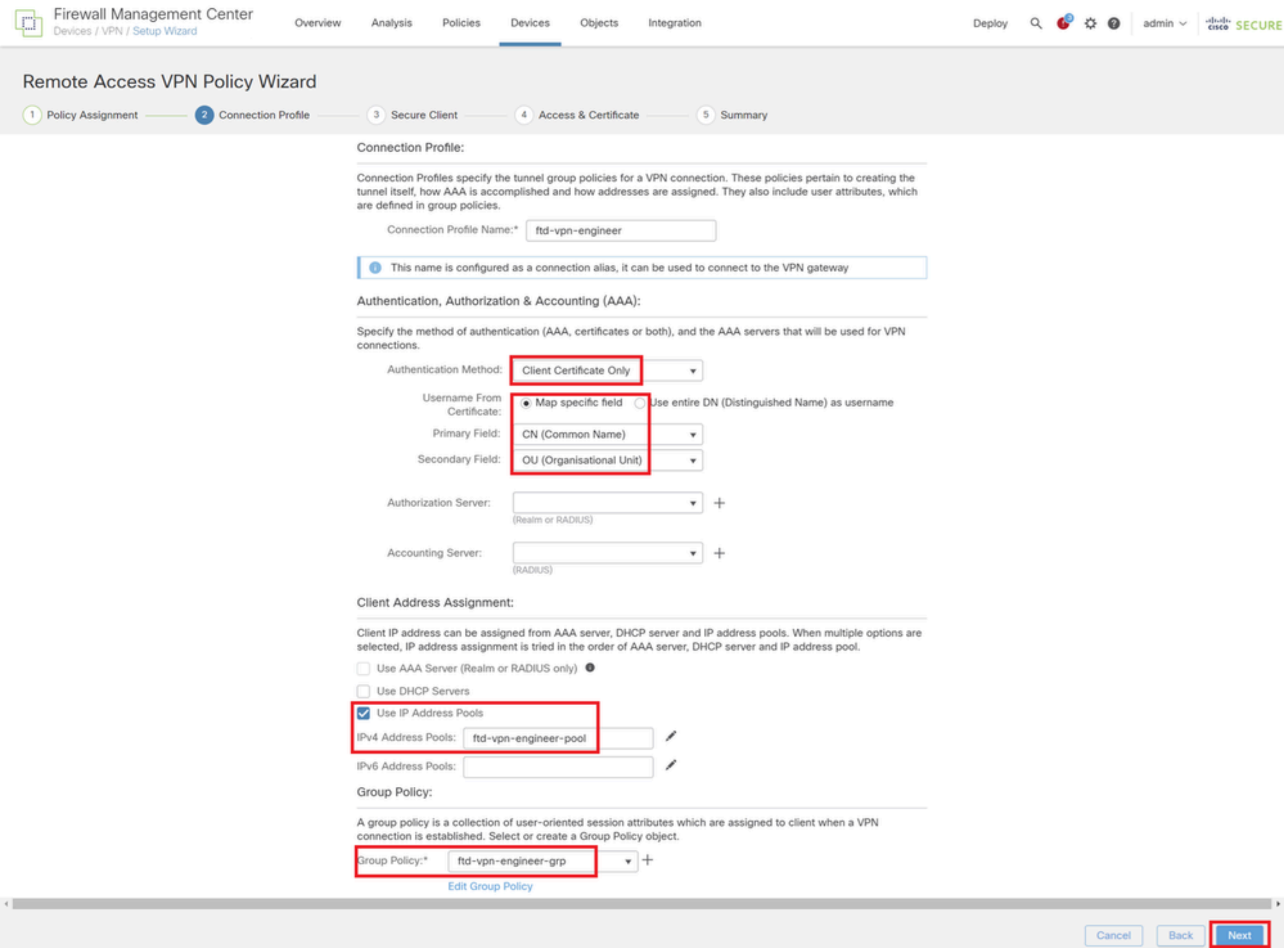
Beleidstoewijzing

Stap 7. Details configureren voor engineer-verbindingsprofiel

Voer de gewenste informatie in en klik op Volgende.

- Verificatiemethode: alleen clientcertificaat
- Gebruikersnaam van certificaat: Kaartspecifiek veld
- Primair veld: CN (algemene naam)
- Secundair veld: OU (organisatorische eenheid)

- IPv4-adresgroepen: ftd-vpn-engineer-pool
- Groepsbeleid: ftd-vpn-engineer-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:

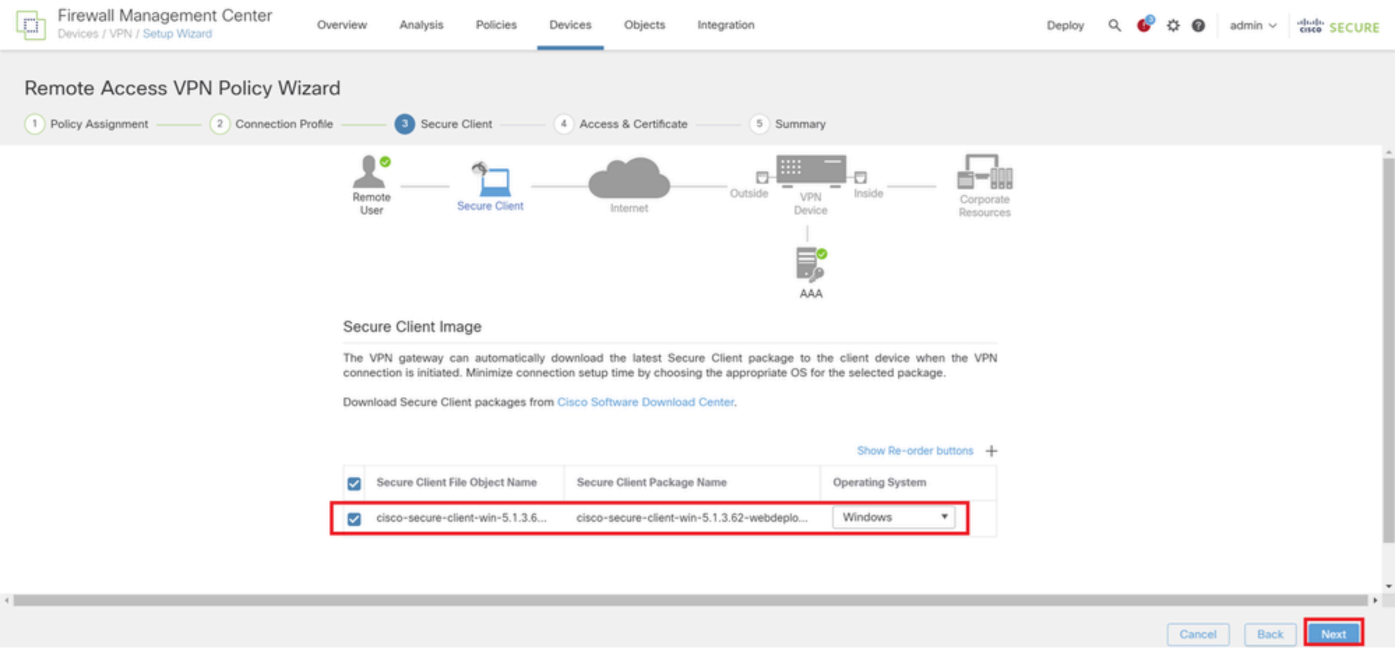
A group policy is a collection of user-oriented session attributes which are assigned to client when a VPN connection is established. Select or create a Group Policy object.

Group Policy:* ftd-vpn-engineer-grp

Details van verbindingsprofiel

Stap 8. Beveiligde clientafbeelding voor engineer-verbindingsprofiel configureren

Selecteer een beveiligd clientbeeldbestand en klik op Volgende.



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.

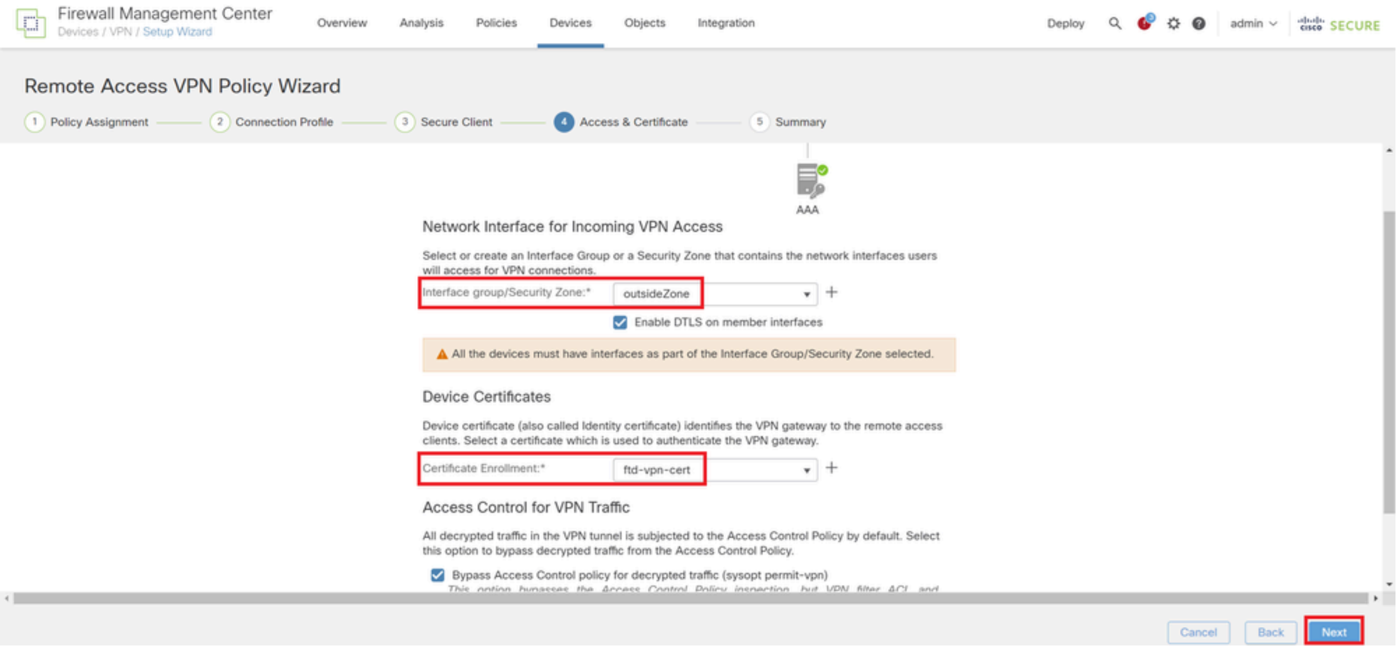
☑	Secure Client File Object Name	Secure Client Package Name	Operating System
☑	cisco-secure-client-win-5.1.3.6...	cisco-secure-client-win-5.1.3.62-webdeplo...	Windows

Selecteer een beveiligde client

Stap 9. Toegang en certificaat configureren voor engineer-verbindingsprofiel

Selecteer de waarde voor de opties Interfacegroep/Beveiligingszone en certificaatinschrijving en klik op Volgende.

- Interfacegroep/Security Zone: buitenkantZone
- Certificaatinschrijving: ftd-vpn-cert



Remote Access VPN Policy Wizard

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.

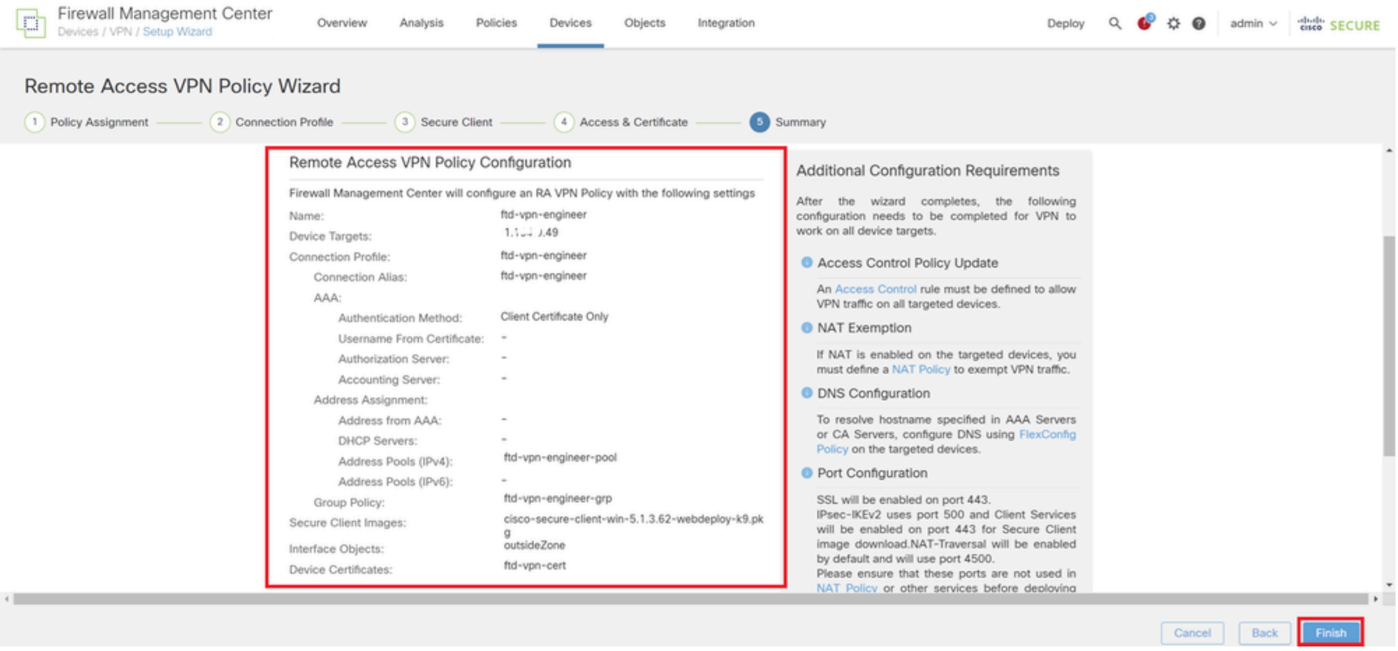
☑ Bypass Access Control policy for decrypted traffic (sysopt permit-vpn)

This option bypasses the Access Control Policy inspection, but VPN filter ACL and

Details van toegang en certificaat

Stap 10. Samenvatting voor engineer-verbindingsprofiel bevestigen

Bevestig de informatie die u hebt ingevoerd voor het VPN-beleid voor externe toegang en klik op Finish.



Remote Access VPN Policy Wizard

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.

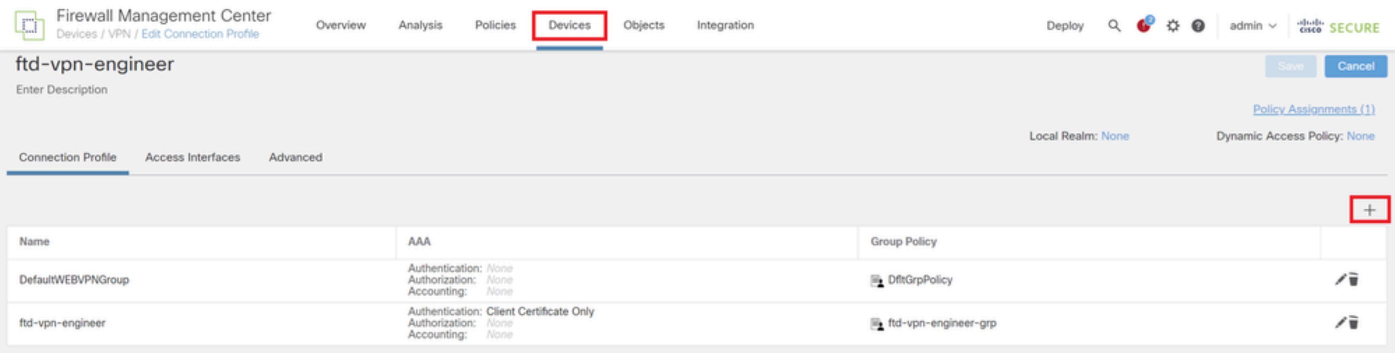
Port Configuration

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 deploying

Details van VPN-beleid voor externe toegang

Stap 11. Verbindingsprofiel voor VPN-client voor Manager toevoegen

Navigeer naar Apparaten > VPN > Externe toegang > Verbindingsprofiel en klik op +.



ftd-vpn-engineer

Enter Description

Local Realm: None

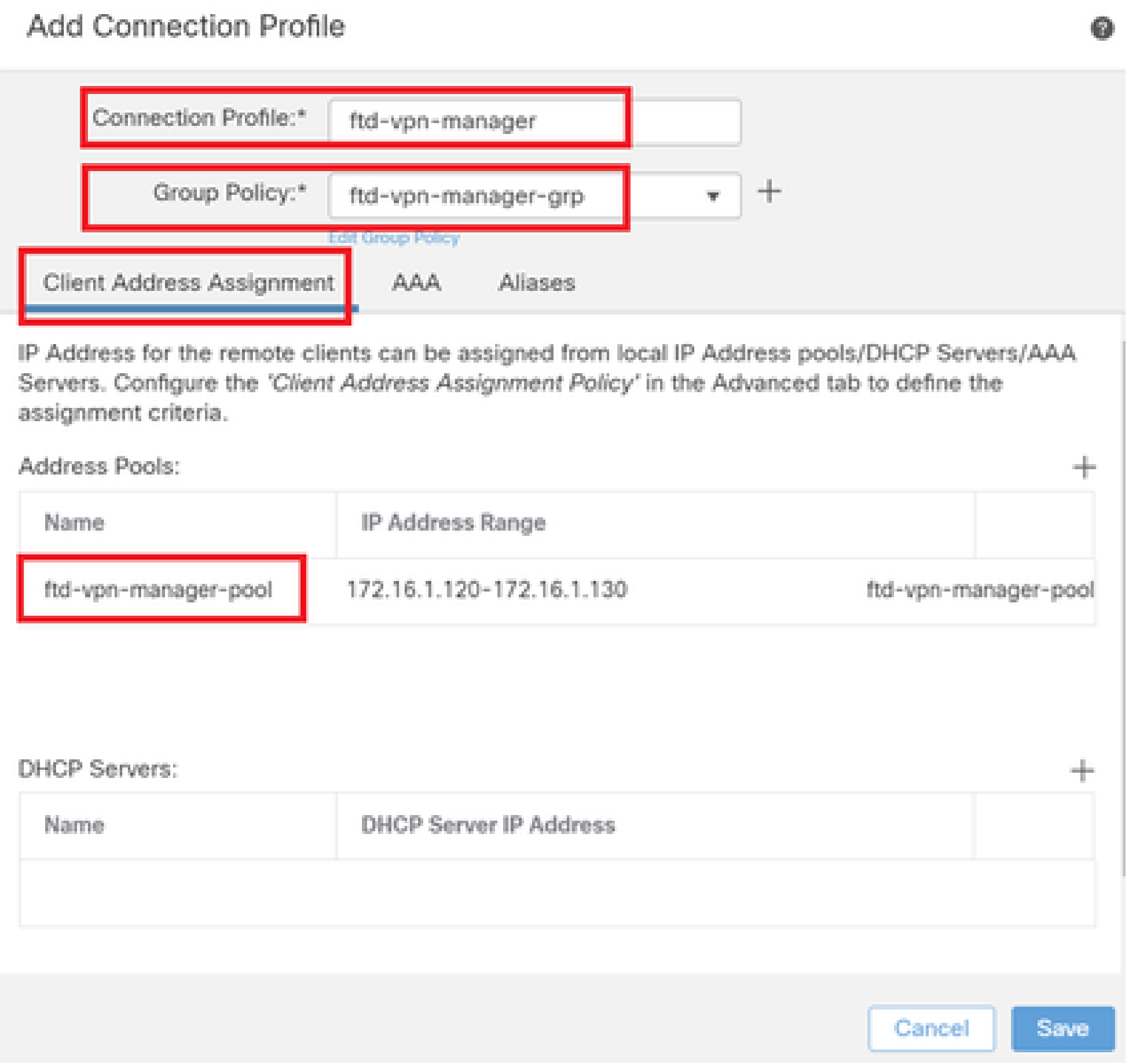
Dynamic Access Policy: None

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

Verbindingsprofiel voor VPN-client voor Manager toevoegen

Voer de benodigde informatie voor het verbindingsprofiel in en klik op Opslaan.

- Naam: ftd-vpn-manager
- Groepsbeleid: ftd-vpn-manager-grp
- IPv4-adresgroepen: ftd-vpn-manager-pool



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:

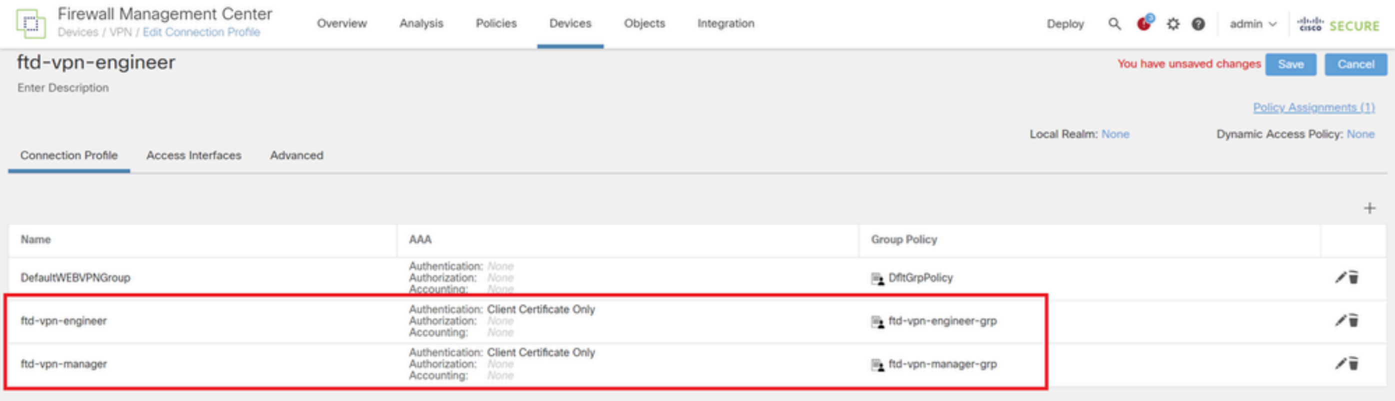
Name	IP Address Range	
ftd-vpn-manager-pool	172.16.1.120-172.16.1.130	ftd-vpn-manager-pool

DHCP Servers:

Name	DHCP Server IP Address	

Details van verbindingsprofiel voor VPN-client voor Manager

Bevestig nieuwe verbindingsprofielen.



ftd-vpn-engineer

Enter Description

You have unsaved changes

Policy Assignments (1)

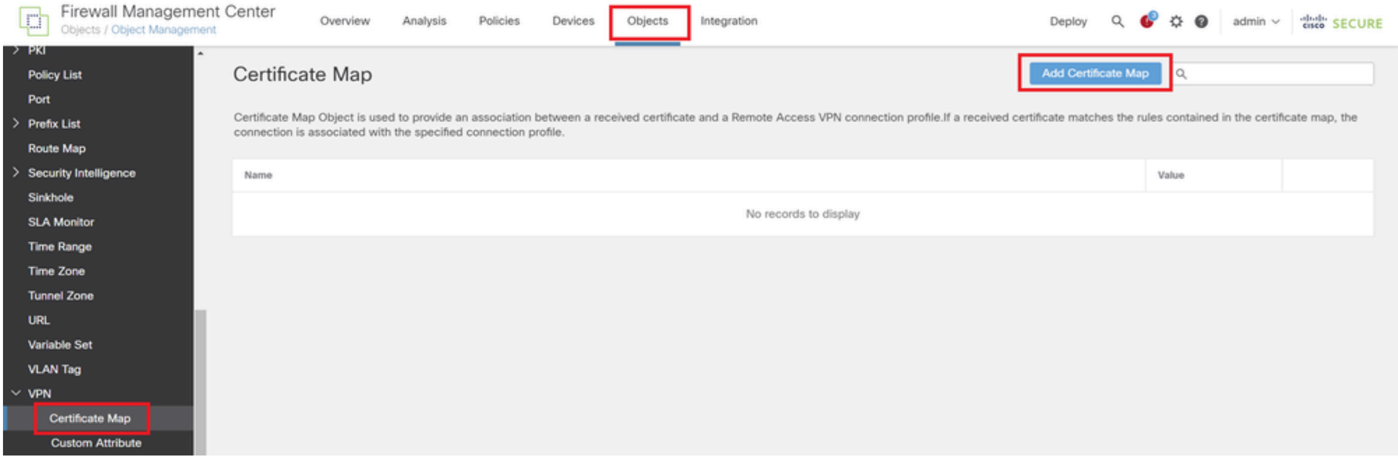
Local Realm: None Dynamic Access Policy: None

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

Toegevoegd verbindingsprofielen bevestigen

Stap 12. Certificaatkaart toevoegen

Navigeer naar Objecten > Objectbeheer > VPN > certificaatkaart, klik op AddCertificate Map knop.



Certificate Map

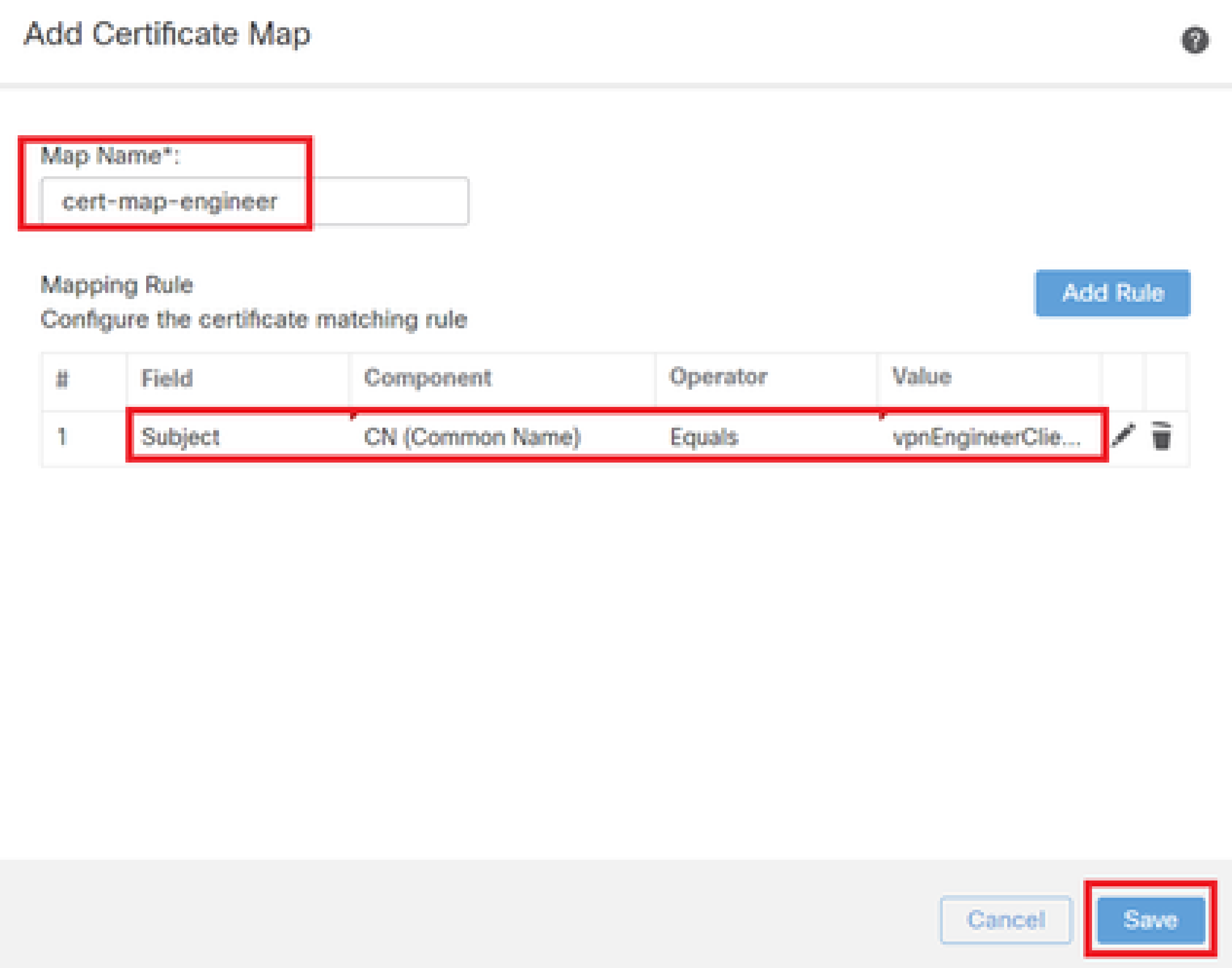
Certificate Map Object is used to provide an association between a received certificate and a Remote Access VPN connection profile.If a received certificate matches the rules contained in the certificate map, the connection is associated with the specified connection profile.

Name	Value
No records to display	

Certificaatkaart toevoegen

Voer de benodigde informatie in voor de certificaatkaart van de Engineer VPN-client en klik op Opslaan.

- Kaartnaam: cert-map-engineer
- Toepassingsregel: CN (algemene naam) staat gelijk aan vpnEngineerClientCN



Add Certificate Map

Map Name*: cert-map-engineer

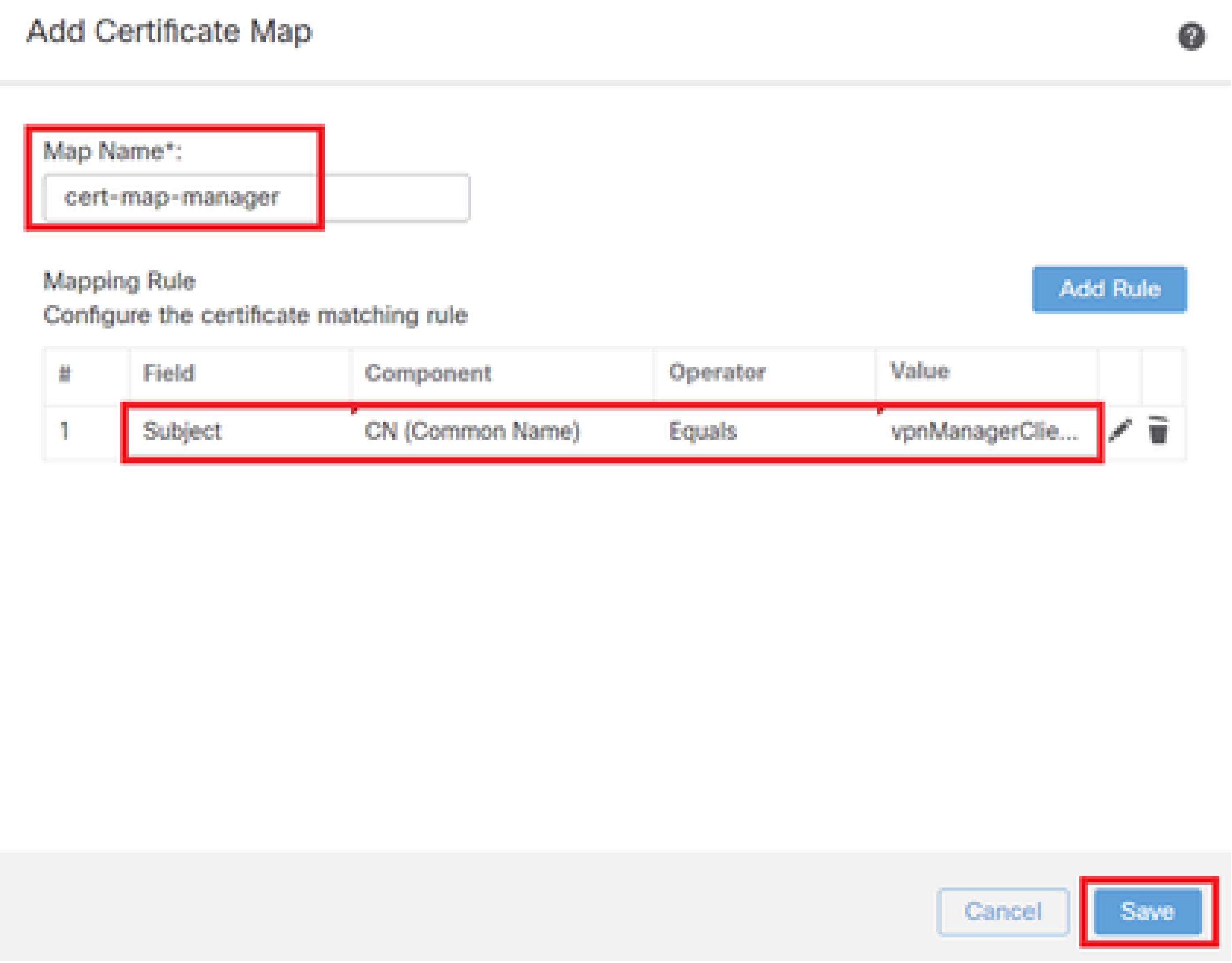
Mapping Rule
Configure the certificate matching rule

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

Certificaatkaart voor Engineer-client

Voer de benodigde informatie in voor de certificaatkaart van de VPN-client voor het beheer en klik op de knop Opslaan.

- Kaartnaam: cert-map-manager
- Toepassingsregel: CN (algemene naam) staat gelijk aan vpnManagerClientCN


Add Certificate Map

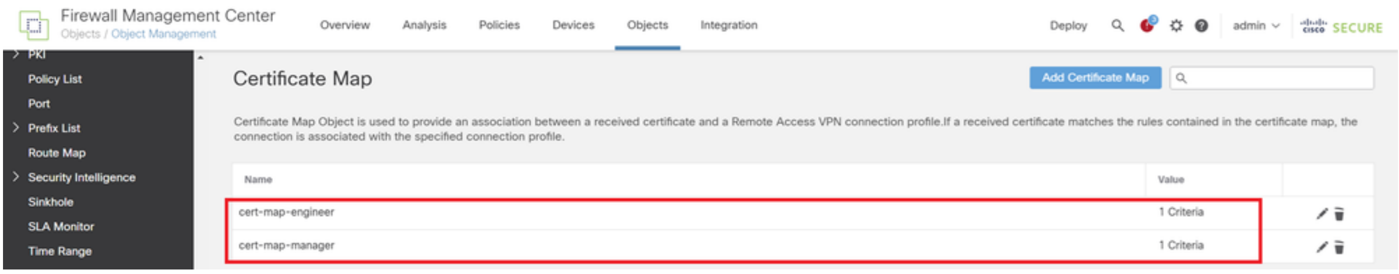
Map Name*:
cert-map-manager

Mapping Rule
Configure the certificate matching rule

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

Certificaatkaart voor beheerclient

Bevestig nieuwe toegevoegde certificaatkaarten.



Certificate Map

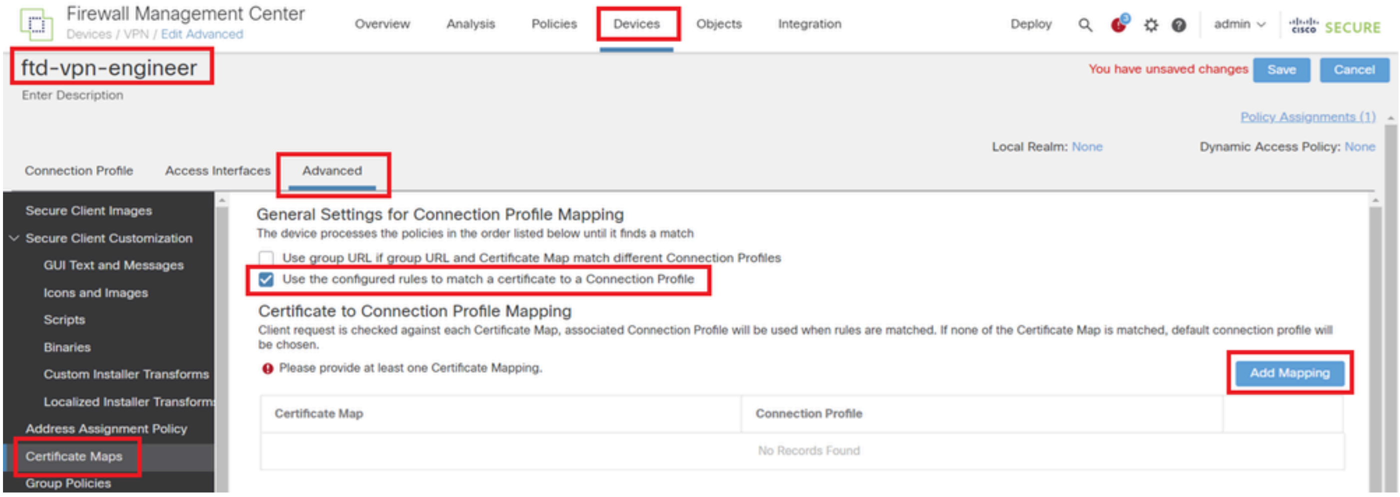
Certificate Map Object is used to provide an association between a received certificate and a Remote Access VPN connection profile.If a received certificate matches the rules contained in the certificate map, the connection is associated with the specified connection profile.

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

Nieuwe certificaatkaarten

Stap 13. Certificaatkaart aan verbindingsprofiel binden

Navigeer naar Apparaten > VPN > Externe toegang, bewerk ftd-vpn-engineer. Navigeer vervolgens naar Geavanceerd > Certificaattoewijzingen en klik op de knop Toewijzing toevoegen.



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.

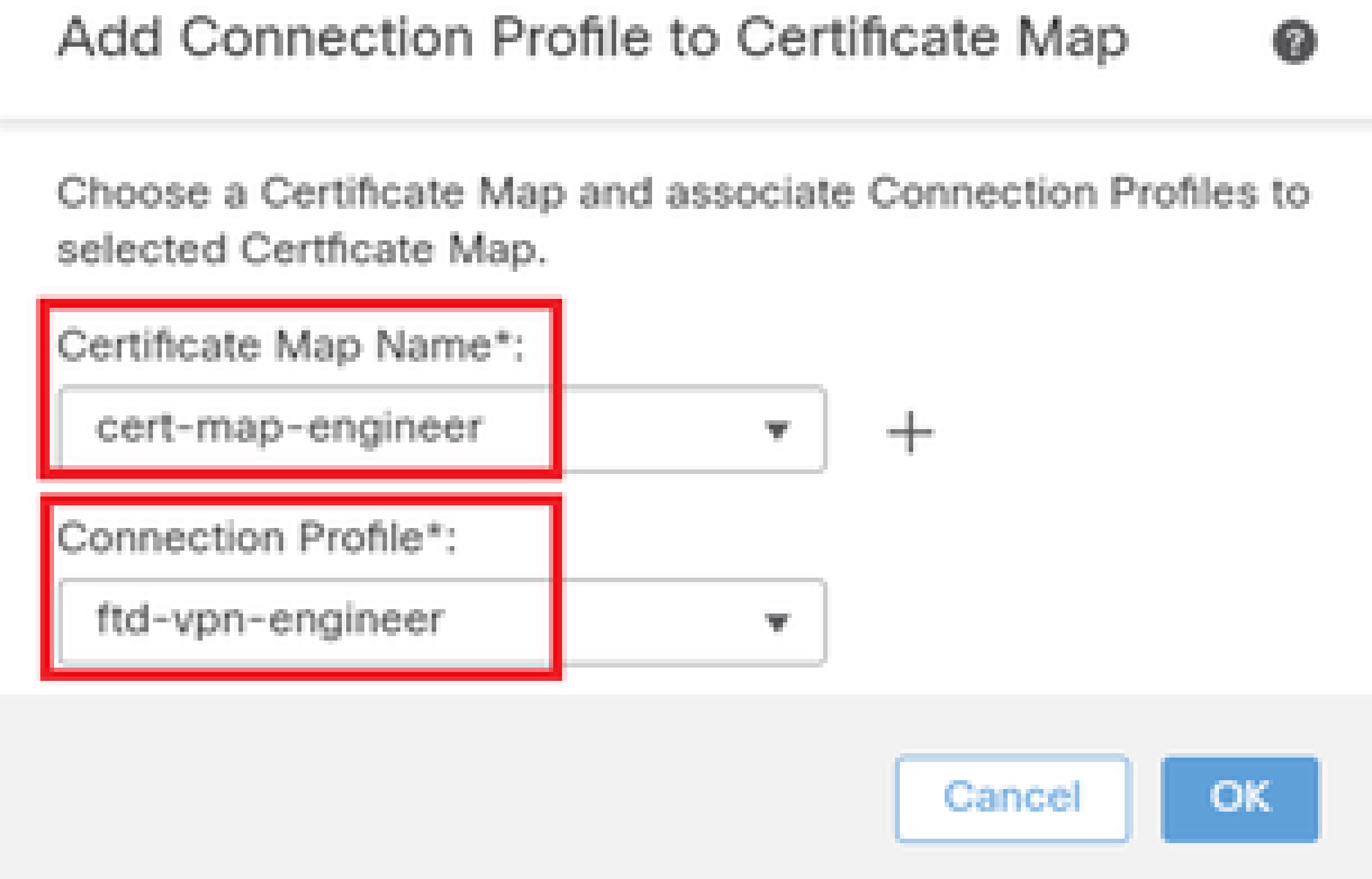
Please provide at least one Certificate Mapping.

Certificate Map	Connection Profile
No Records Found	

Kaart van bind certificaat

Bindende certificaatkaart aan verbindingsprofiel voor ingenieur VPN-client.

- Certificaat Kaart Naam: cert-map-engineer
- Connection Profile: ftd-vpn-engineer


Add Connection Profile to Certificate Map

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

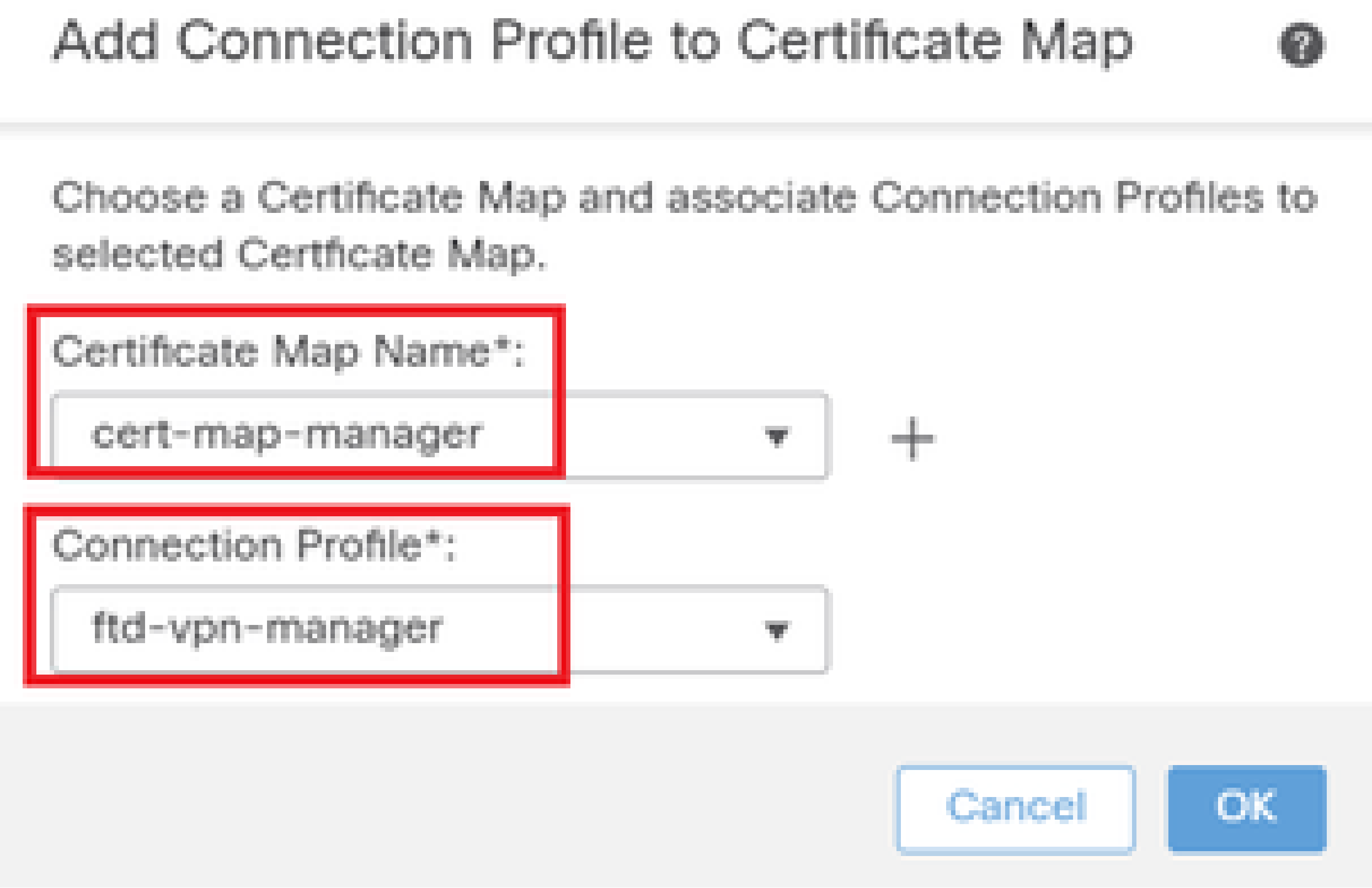
Certificate Map Name*: cert-map-engineer

Connection Profile*: ftd-vpn-engineer

Bindende certificaatkaart voor Engineer VPN-client

Bindende certificaatkaart aan verbindingsprofiel voor beheerder VPN-client.

- Certificaatplattegrond Naam: cert-map-manager
- Verbindingsprofiel: ftd-vpn-manager



Add Connection Profile to Certificate Map

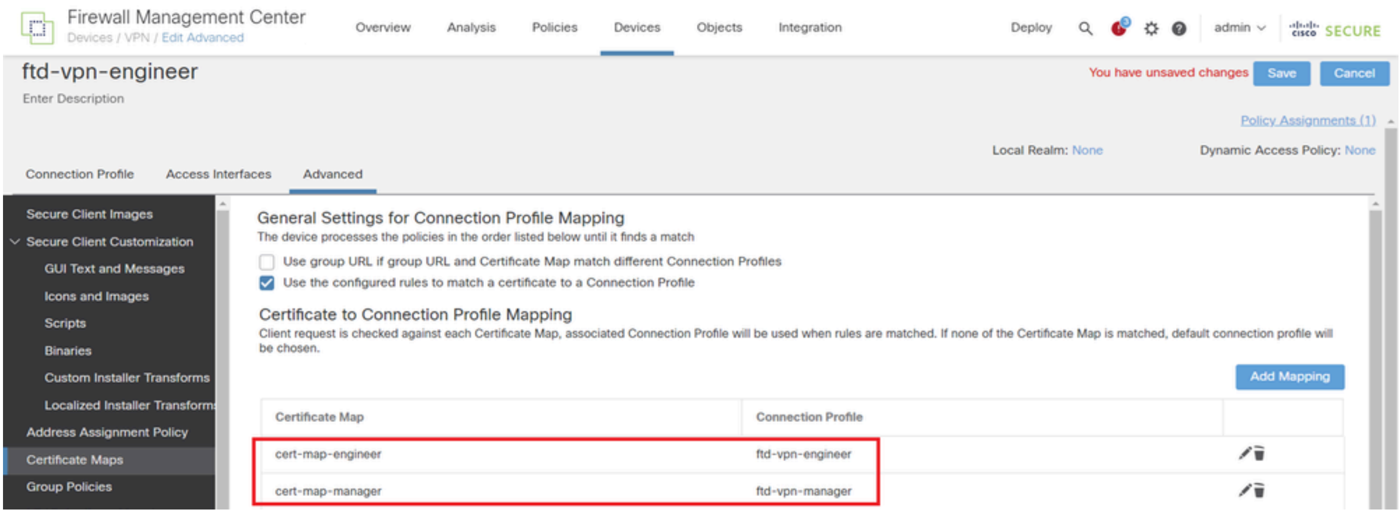
Choose a Certificate Map and associate Connection Profiles to selected Certficate Map.

Certificate Map Name*: cert-map-manager

Connection Profile*: ftd-vpn-manager

Bindende certificaatkaart voor VPN-client voor Manager

Bevestig de instelling van de certificaatbinding.



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

Certificaatbinding bevestigen

Bevestigen in FTD CLI

Bevestig de instellingen van de VPN-verbinding in de FTD CLI na implementatie vanuit het FMC.

```
// Defines IP of interface
interface GigabitEthernet0/0
```

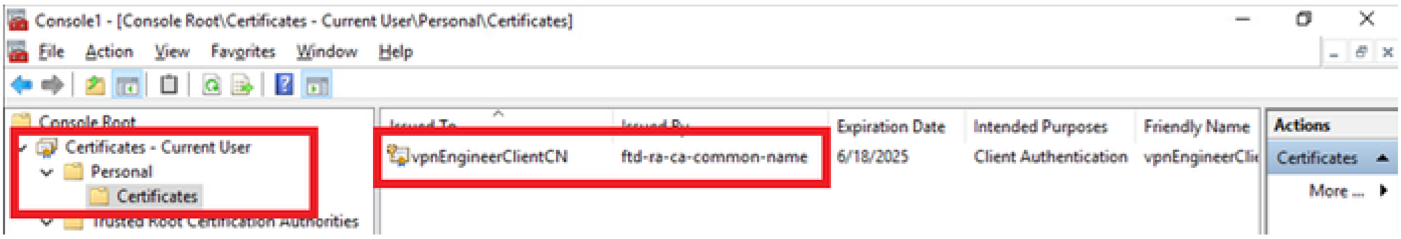
```
nameif outside
security-level 0
ip address 192.168.1.200 255.255.255.0

// 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
```

Bevestigen in VPN-client

Stap 1. Clientcertificaat bevestigen

In ingenieur VPN client, navigeer naar Certificaten - Huidige Gebruiker > Persoonlijk > Certificaten, controleer het clientcertificaat dat wordt gebruikt voor verificatie.



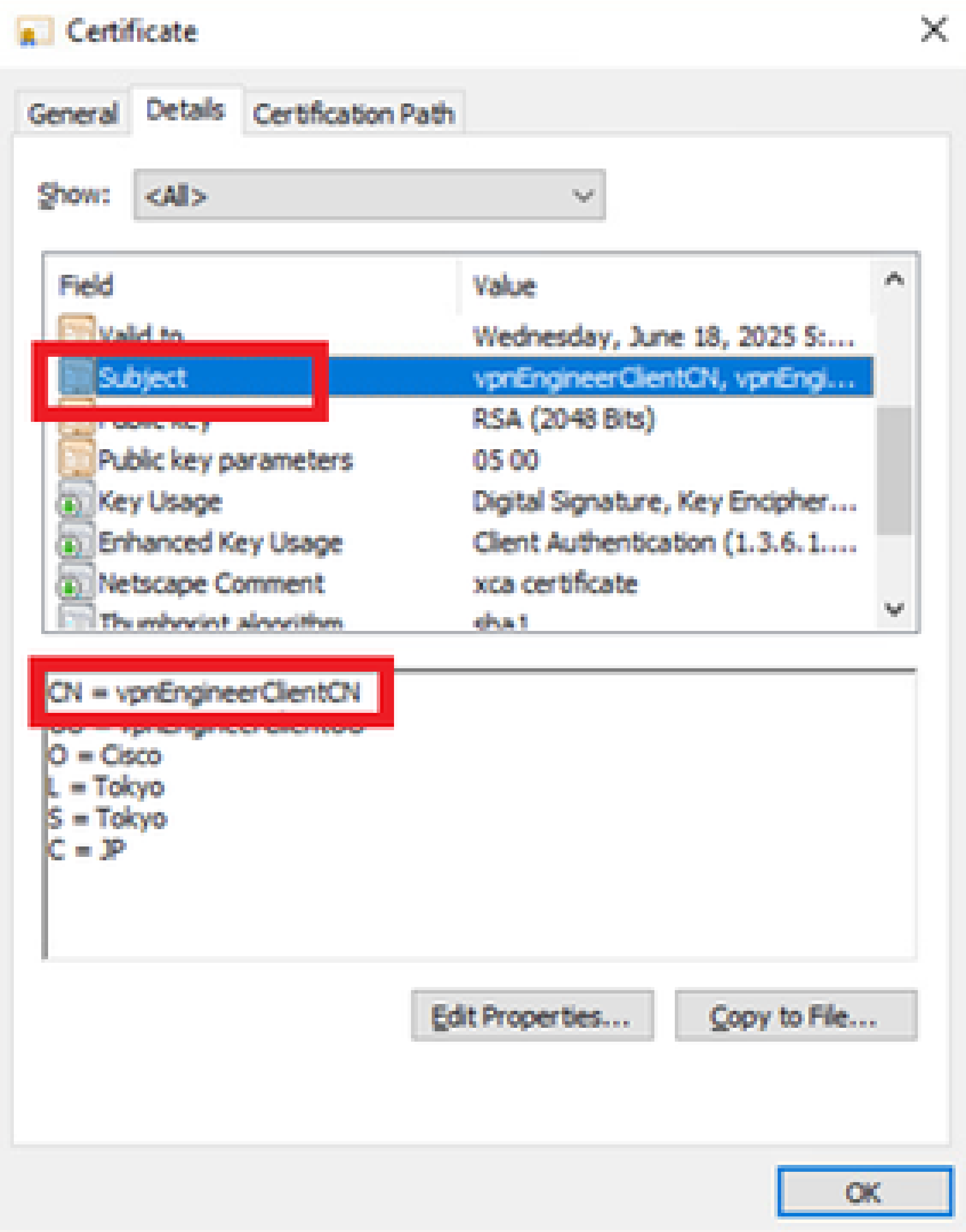
Console1 - [Console Root\Certificates - Current User\Personal\Certificates]

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

Certificaat voor Engineer VPN-client bevestigen

Dubbelklik op het clientcertificaat, navigeer naar Details, controleer de details van Onderwerp.

- Onderwerp: CN = vpnEngineerClientCN



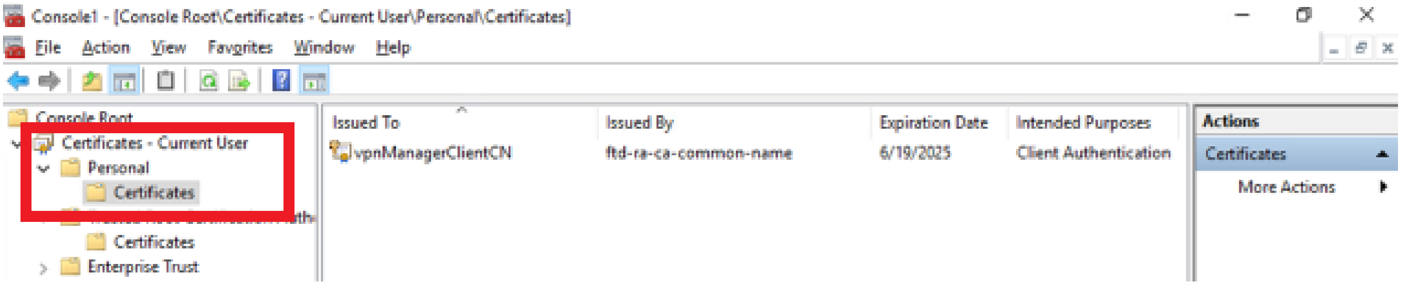
Show: <All>

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
```

Details van Engineer client certificaat

Ga in de VPN-client voor het beheer naar Certificaten - Huidige gebruiker > Persoonlijk > Certificaten, controleer het clientcertificaat dat wordt gebruikt voor verificatie.

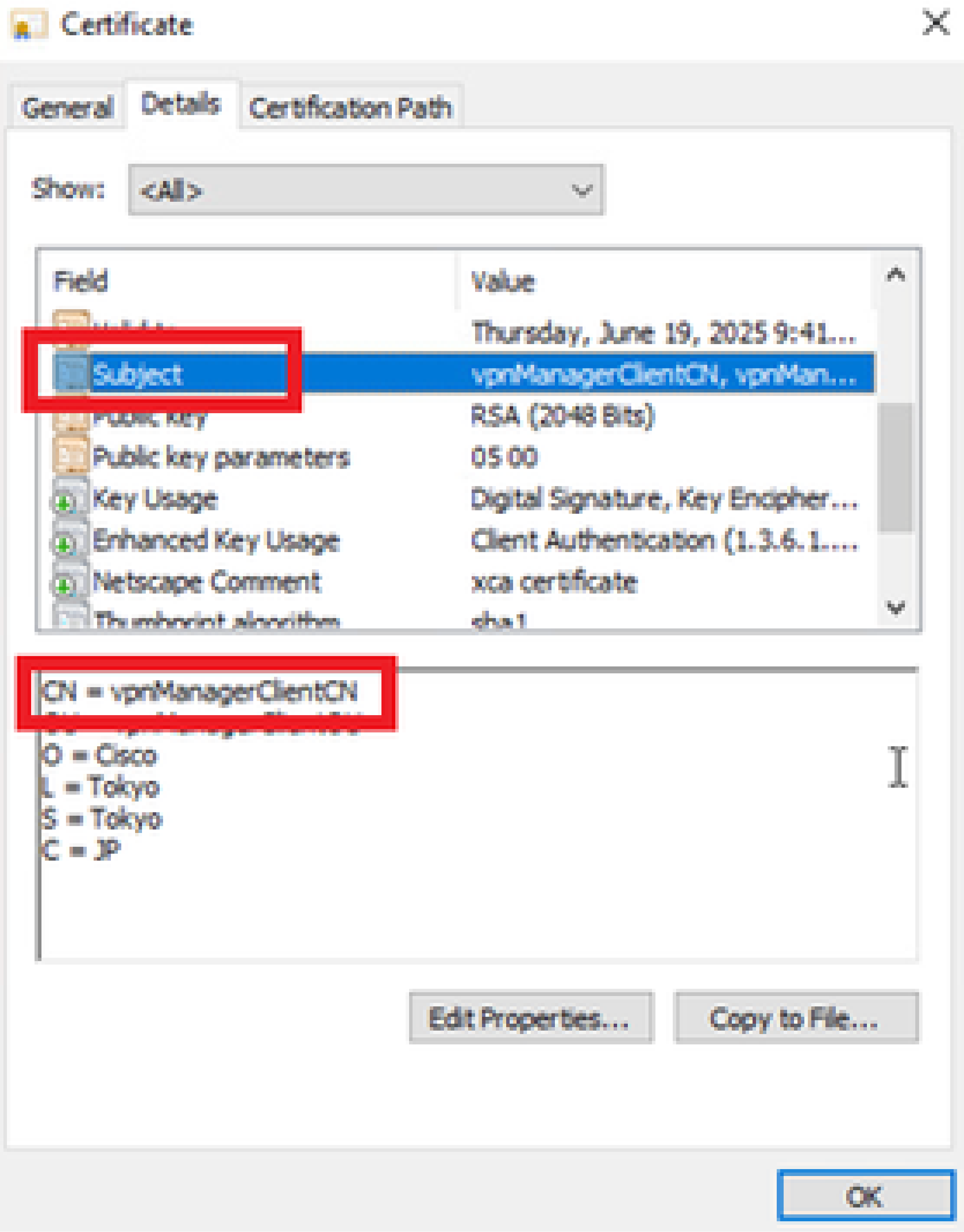


Issued To	Issued By	Expiration Date	Intended Purposes
vpnManagerClientCN	ftd-ra-ca-common-name	6/19/2025	Client Authentication

Certificaat voor beheer VPN-client bevestigen

Dubbelklik op het clientcertificaat, navigeer naar Details, controleer de details van Onderwerp.

- Onderwerp: CN = vpnManagerClientCN



Field	Value
Validity	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

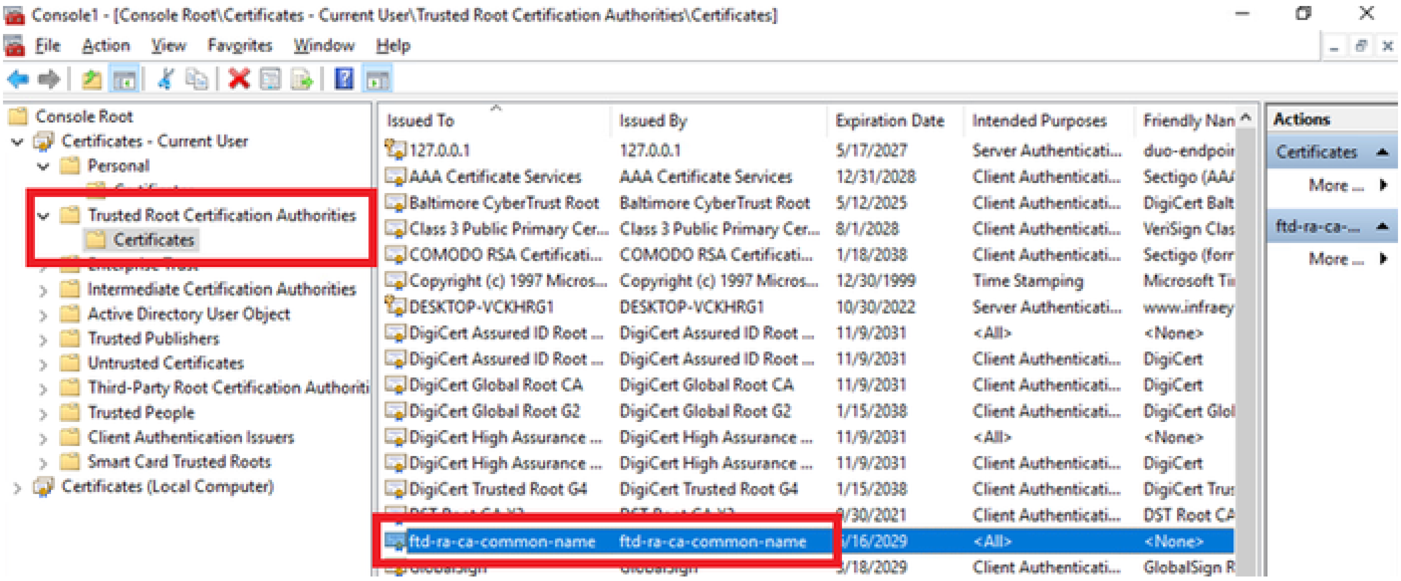
```
CN = vpnManagerClientCN
OU = vpnManagerClientOU
O = Cisco
L = Tokyo
S = Tokyo
C = JP
```

Details van clientcertificaat van Manager

Stap 2. Bevestig CA

In zowel de client van ingenieur VPN als de client van manager VPN, navigeer naar Certificaten - Huidige Gebruiker > Trusted Root Certification Authorities > Certificates, controleer de CA die gebruikt wordt voor verificatie.

- Afgegeven door: ftd-ra-ca-common-name



Console1 - [Console Root\Certificates - Current User\Trusted Root Certification Authorities\Certificates]

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)

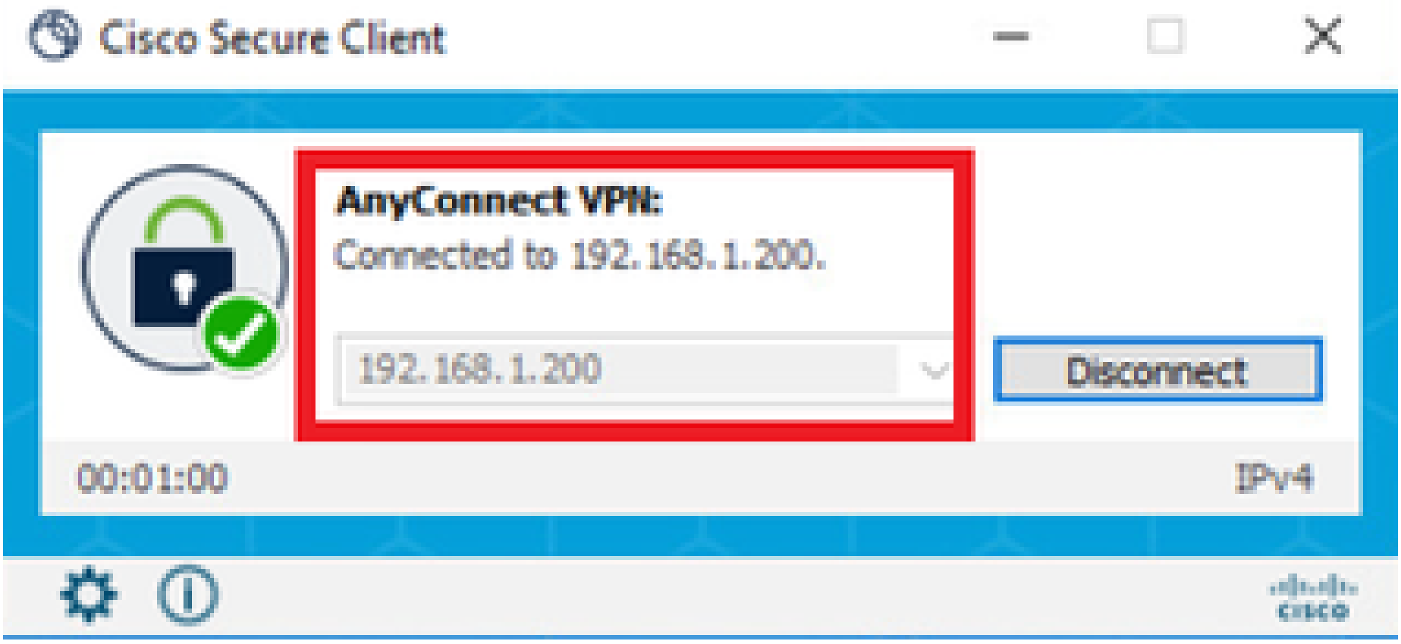
Issued To	Issued By	Expiration Date	Intended Purposes	Friendly Nan
127.0.0.1	127.0.0.1	5/17/2027	Server Authenticati...	duo-endpoi
AAA Certificate Services	AAA Certificate Services	12/31/2028	Client Authenticati...	Sectigo (AA/
Baltimore CyberTrust Root	Baltimore CyberTrust Root	5/12/2025	Client Authenticati...	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 (forr
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 Glol
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 Trus
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

Bevestig CA

Verifiëren

Stap 1. VPN-verbinding starten

Start in Engineer VPN client de Cisco Secure Client-verbinding. U hoeft de gebruikersnaam en het wachtwoord niet in te voeren, de VPN is met succes verbonden.



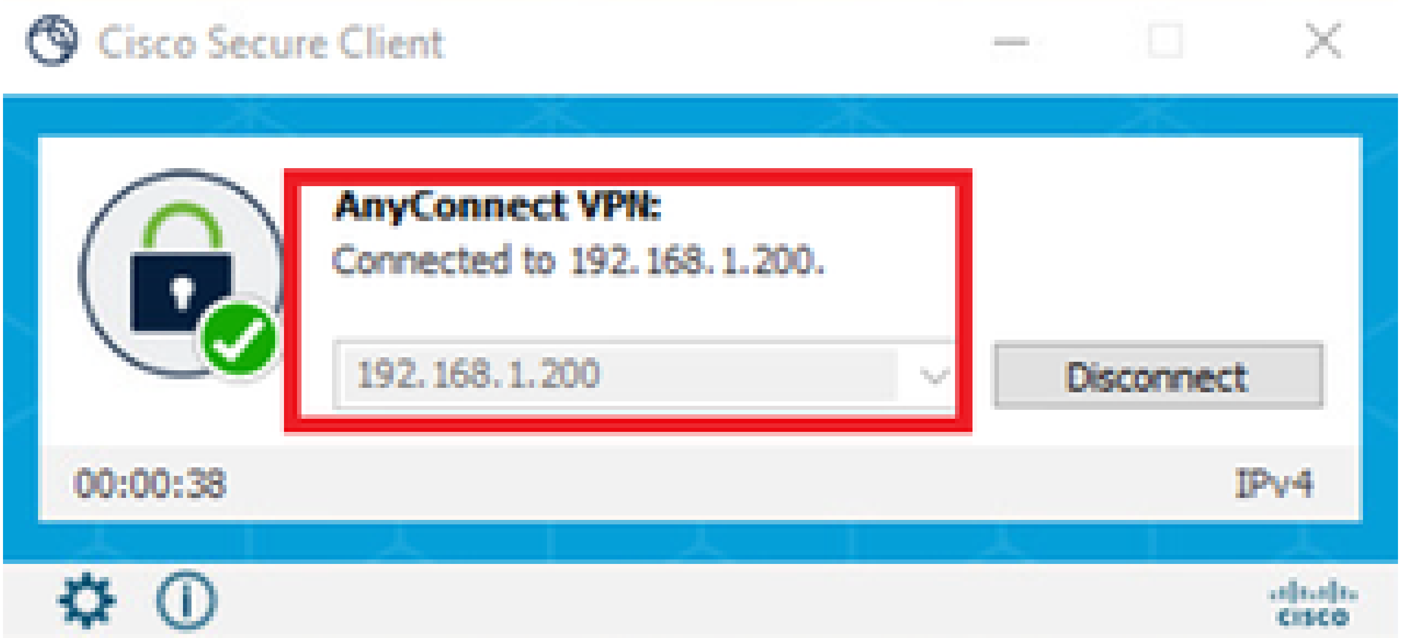
Cisco Secure Client

AnyConnect VPN:
Connected to 192.168.1.200.

192.168.1.200

VPN-verbinding starten vanaf engineer-client

Start bij een VPN-client voor beheerprogramma de Cisco Secure-clientverbinding. U hoeft de gebruikersnaam en het wachtwoord niet in te voeren, de VPN is met succes verbonden.



AnyConnect VPN:
Connected to 192.168.1.200.

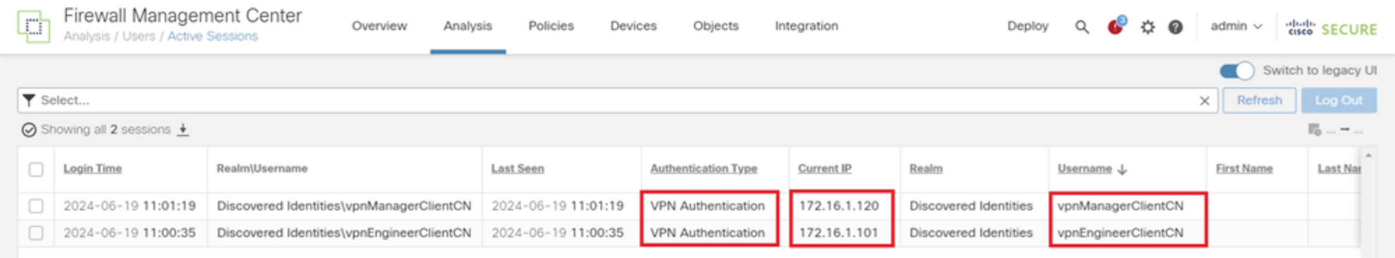
192.168.1.200

00:00:38

VPN-verbinding starten vanaf beheerclient

Stap 2. Bevestig actieve sessies in VCC

Navigeer naar analyse > Gebruikers > Actieve sessies en controleer de actieve sessie op VPN-verificatie.



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		

Bevestig actieve sessie

Stap 3. VPN-sessies in FTD CLI bevestigen

Startshow vpn-sessiondb detail anyconnect de opdracht in FTD (Lina) CLI om de VPN-sessies van engineer en manager te bevestigen.

```
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
```

Problemen oplossen

U kunt informatie over VPN-verificatie verwachten in de debug-syslog van Lina engine en in het DART-bestand op Windows PC.

Dit is een voorbeeld van debug logs in de Lina engine tijdens VPN verbinding van engineer client.

```
<#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
```

Dit is een voorbeeld van debug-logbestanden in de Lina-engine tijdens VPN-verbinding van de beheerclient.

```
<#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
```

Gerelateerde informatie

AnyConnect-certificaatgebaseerde verificatie voor mobiele toegang configureren

Over deze vertaling

Cisco heeft dit document vertaald via een combinatie van machine- en menselijke technologie om onze gebruikers wereldwijd ondersteuningscontent te bieden in hun eigen taal. Houd er rekening mee dat zelfs de beste machinevertaling niet net zo nauwkeurig is als die van een professionele vertaler. Cisco Systems, Inc. is niet aansprakelijk voor de nauwkeurigheid van deze vertalingen en raadt aan altijd het oorspronkelijke Engelstalige document (link) te raadplegen.