Configurer le mappage de certificat pour l'authentification client sécurisée sur FTD via FMC

Table des matières

Introduction

Ce document décrit comment configurer Cisco Secure Client avec SSL sur FTD via FMC en utilisant le mappage de certificat pour l'authentification.

Conditions préalables

Exigences

Cisco vous recommande de prendre connaissance des rubriques suivantes :

- Cisco Firepower Management Center (FMC)
- Défense contre les menaces de pare-feu (FTD) virtuelle
- Flux d'authentification VPN

Composants utilisés

- Cisco Firepower Management Center pour VMWare 7.4.1
- Cisco Firewall Threat Defense Virtual 7.4.1

- Cisco Secure Client 5.1.3.62

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. Si votre réseau est en ligne, assurez-vous de bien comprendre l’incidence possible des commandes.

Informations générales

Le mappage de certificat est une méthode utilisée dans les connexions VPN où un certificat client est mappé à un compte d'utilisateur local, ou des attributs dans le certificat sont utilisés à des fins d'autorisation.Il s'agit d'un processus où un certificat numérique est utilisé comme moyen d'identifier un utilisateur ou un périphérique. En utilisant le mappage de certificat, il utilise le protocole SSL pour authentifier les utilisateurs sans qu'ils aient besoin d'entrer des informations d'identification.

Ce document décrit comment authentifier le client sécurisé Cisco en utilisant le nom commun d'un certificat SSL.

Ces certificats contiennent un nom commun qui est utilisé à des fins d’autorisation.

- CA : ftd-ra-ca-common-name
- Certificat du client VPN de l'ingénieur : vpnEngineerClientCN
- Certificat du client VPN du gestionnaire : vpnManagerClientCN
- Certificat du serveur : 192.168.1.200

Diagramme du réseau

Cette image présente la topologie utilisée pour l'exemple de ce document.

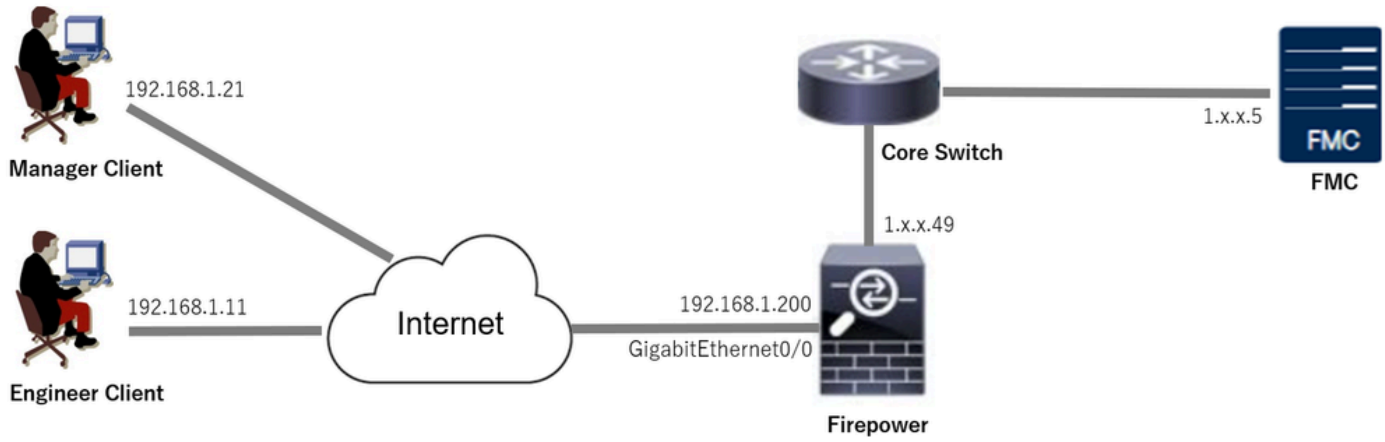


Diagramme du réseau

Configurations

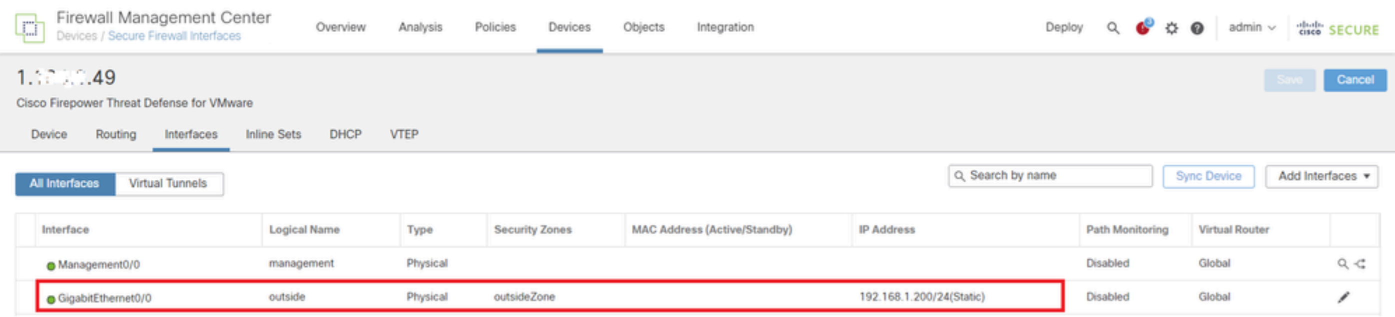
Configuration dans FMC

Étape 1. Configurer l'interface FTD

Accédez à Périphériques > Gestion des périphériques, modifiez le périphérique FTD cible, configurez l'interface externe pour FTD dans l'onglet Interfaces.

Pour GigabitEthernet0/0,

- Nom : extérieur
- Zone de sécurité : outsideZone
- Adresse IP : 192.168.1.200/24



1.[redacted].49

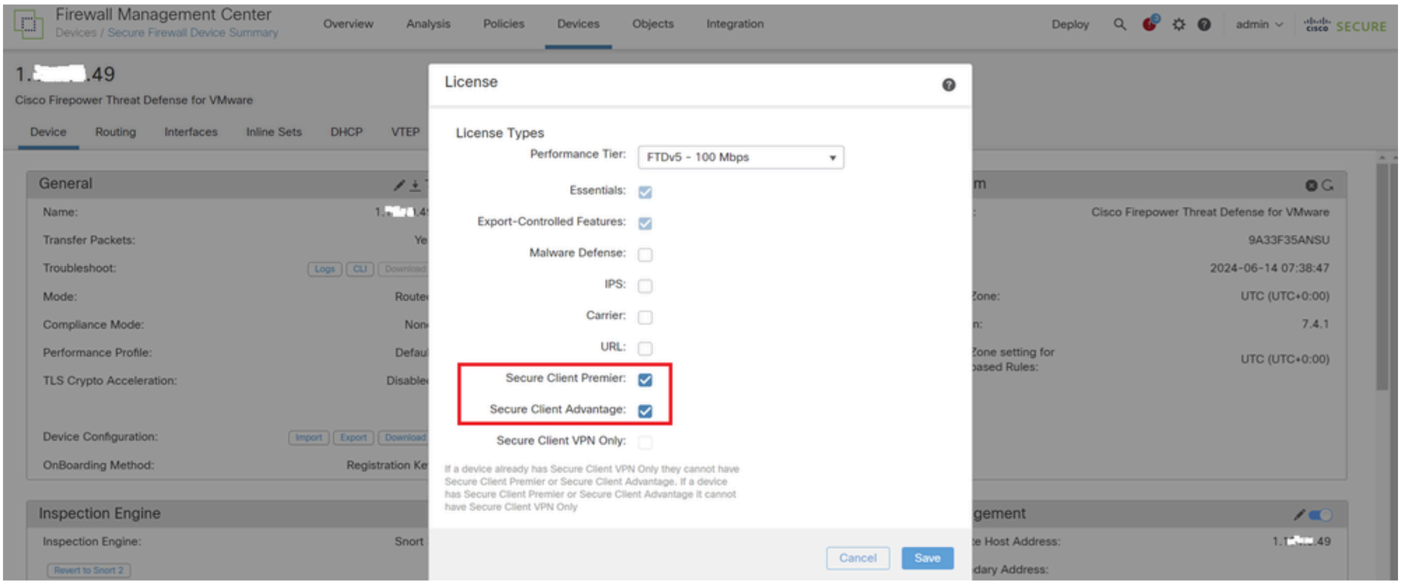
Cisco Firepower Threat Defense for VMware

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

Interface FTD

Étape 2. Confirmer la licence Cisco Secure Client

Accédez à Périphériques > Gestion des périphériques, modifiez le périphérique FTD cible, confirmez la licence Cisco Secure Client dans l'onglet Périphérique.



License

License Types

Performance Tier: FTDv5 - 100 Mbps

Essentials: ☑

Export-Controlled Features: ☑

Malware Defense: □

IPS: □

Carrier: □

URL: □

Secure Client Premier: ☑

Secure Client Advantage: ☑

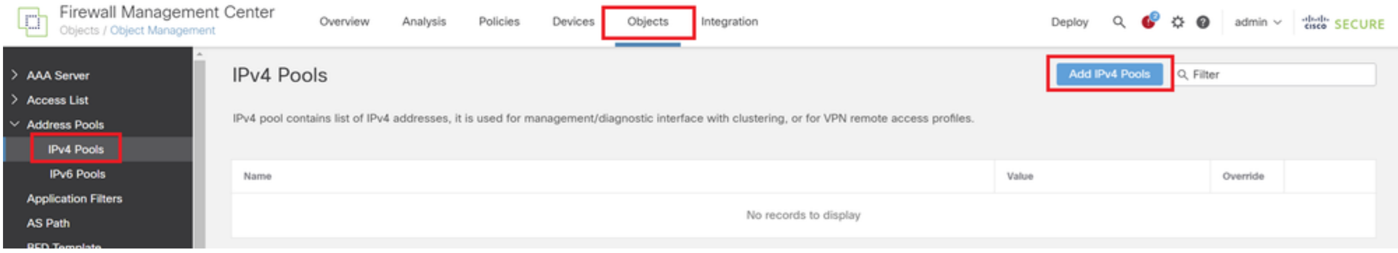
Secure Client VPN Only: □

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

Licence client sécurisée

Étape 3. Ajouter un pool d'adresses IPv4

Accédez à Object > Object Management > Address Pools > IPv4 Pools, cliquez sur Add IPv4 Pools.



IPv4 Pools

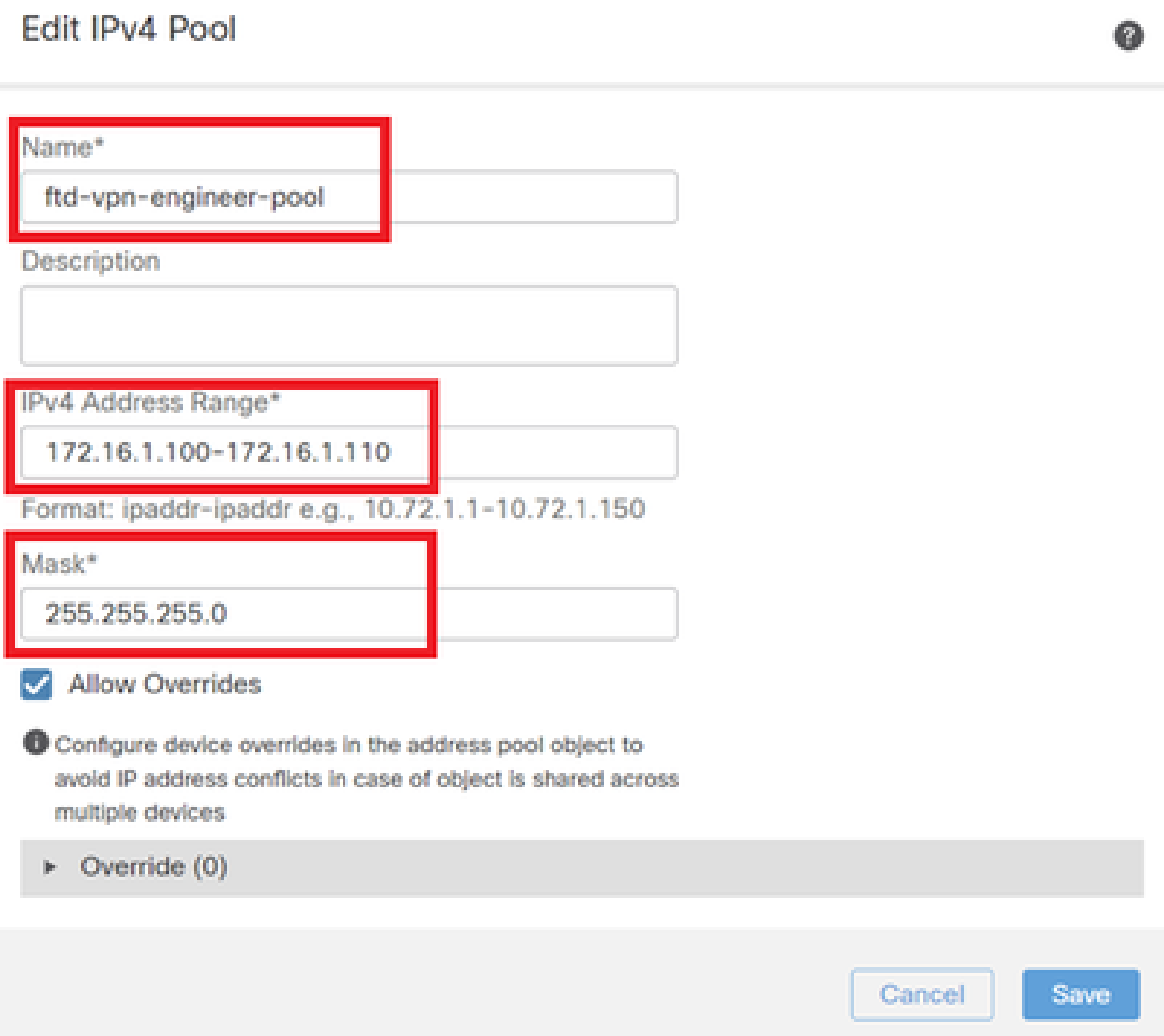
IPv4 pool contains list of IPv4 addresses, it is used for management/diagnostic interface with clustering, or for VPN remote access profiles.

Name	Value	Override
No records to display		

Ajouter un pool d'adresses IPv4

Entrez les informations nécessaires pour créer un pool d'adresses IPv4 pour le client VPN ingénieur.

- Nom : ftd-vpn-engineering-pool
- Plage d'adresses IPv4 : 172.16.1.100-172.16.1.110
- Masque : 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

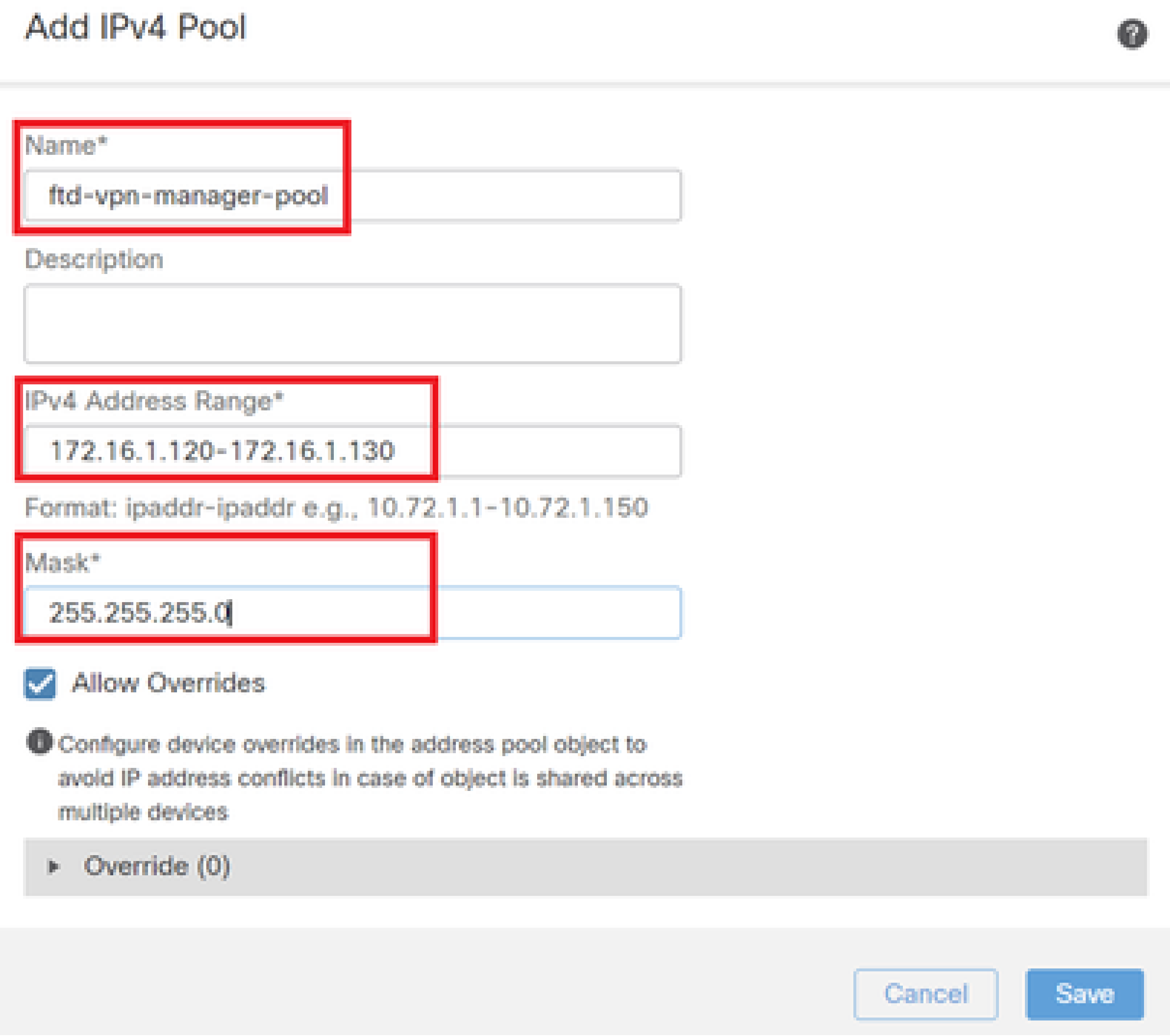
☑ Allow Overrides

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

Pool d'adresses IPv4 pour le client VPN Engineer

Entrez les informations nécessaires pour créer un pool d'adresses IPv4 pour le client VPN du manager.

- Nom : ftd-vpn-manager-pool
- Plage d'adresses IPv4 : 172.16.1.120-172.16.1.130
- Masque : 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

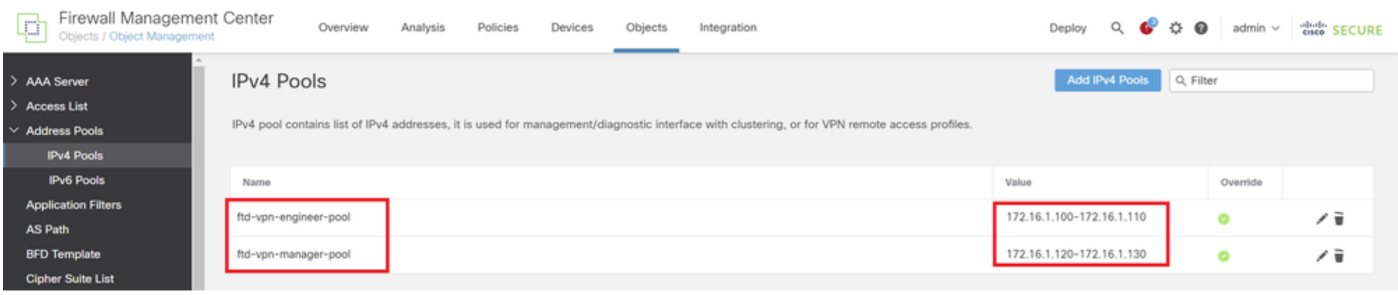
Mask*: 255.255.255.0

☑ 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 d'adresses IPv4 pour le client VPN Manager

Confirmez les nouveaux pools d'adresses IPv4.



IPv4 Pools

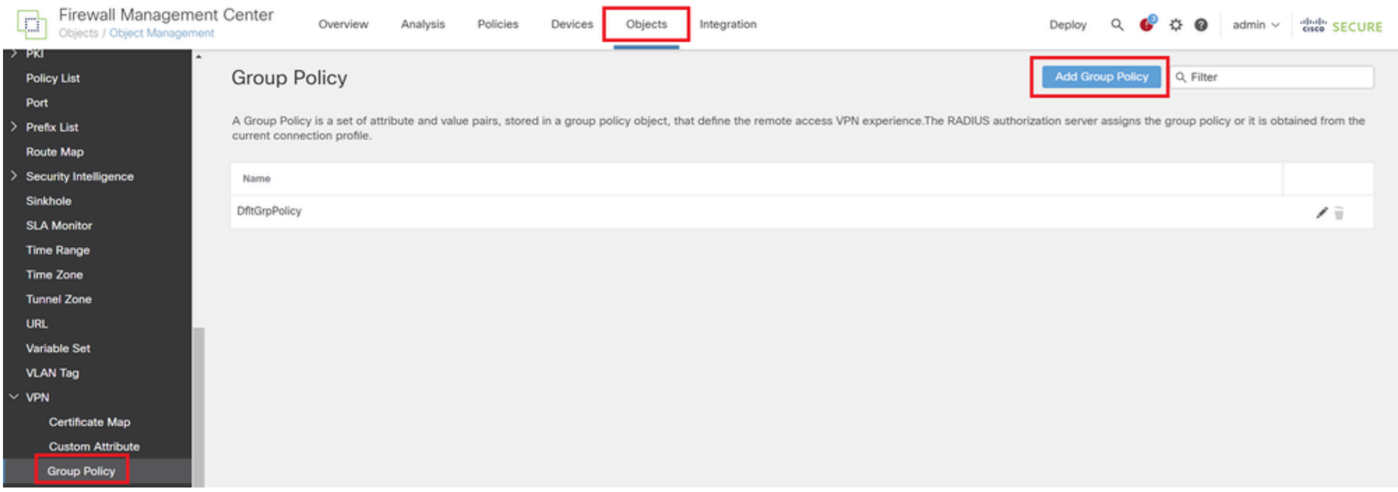
IPv4 pool contains list of IPv4 addresses, it is used for management/diagnostic interface with clustering, or for VPN remote access profiles.

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	●

Nouveaux pools d'adresses IPv4

Étape 4. Ajouter une stratégie de groupe

Accédez à Object > Object Management > VPN > Group Policy, cliquez sur Add Group Policy button.



Group Policy

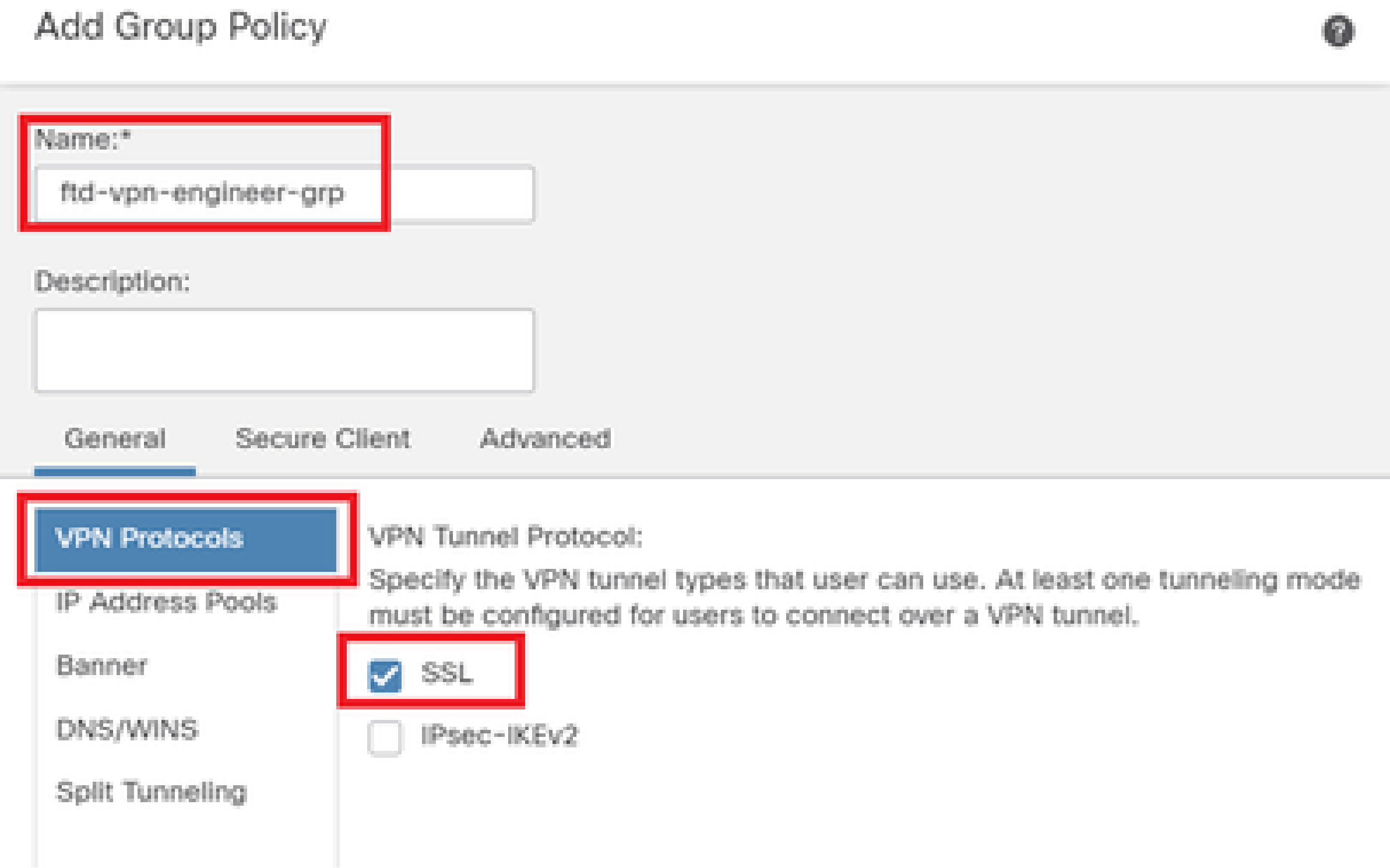
A Group Policy is a set of attribute and value pairs, stored in a group policy object, that define the remote access VPN experience.The RADIUS authorization server assigns the group policy or it is obtained from the current connection profile.

Name
DfltGrpPolicy

Ajouter une stratégie de groupe

Entrez les informations nécessaires pour créer une stratégie de groupe pour le client VPN ingénieur.

- Nom : ftd-vpn-engineering-grp
- Protocoles 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.

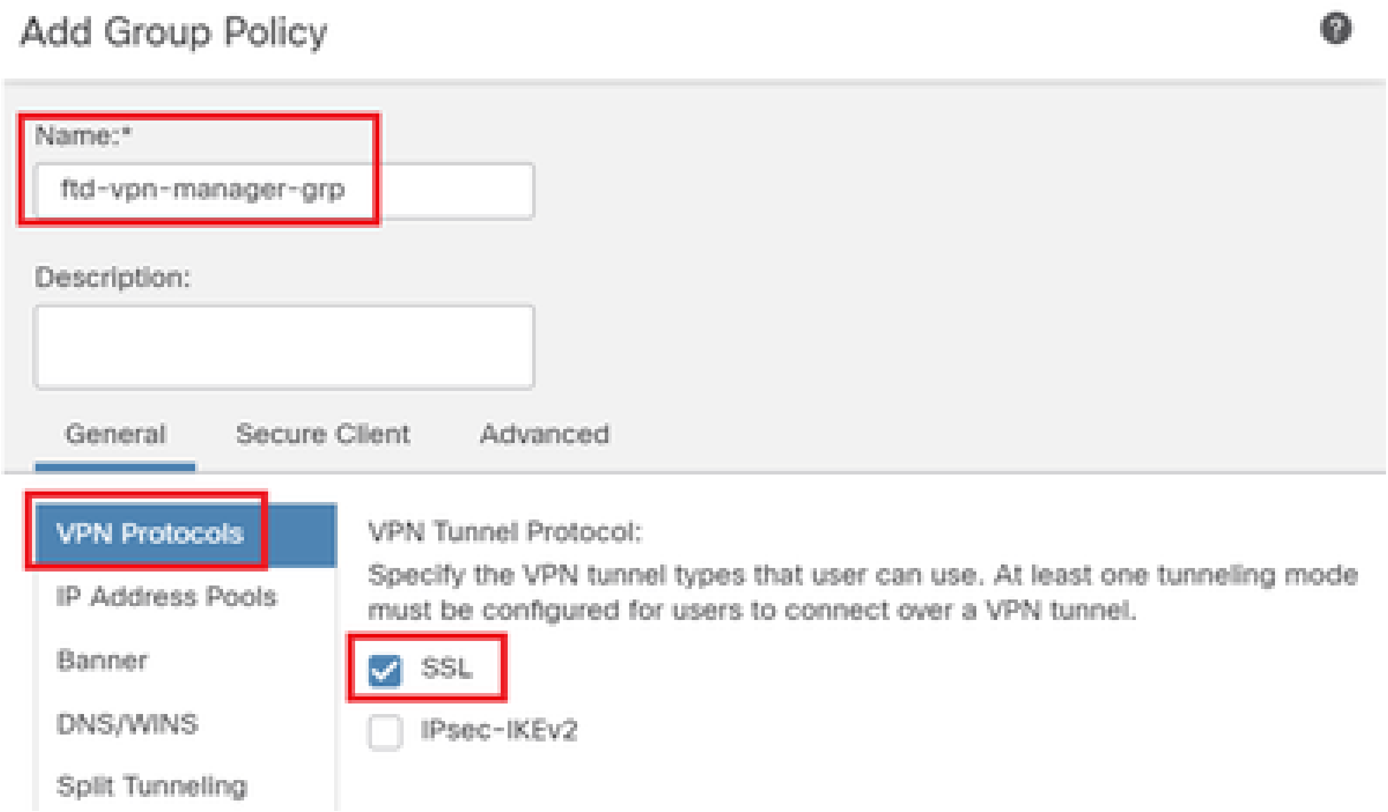
☑ SSL

□ IPsec-IKEv2

Stratégie de groupe pour le client VPN ingénieur

Entrez les informations nécessaires pour créer une stratégie de groupe pour le client VPN du manager.

- Nom : ftd-vpn-manager-grp
- Protocoles VPN : SSL



Add Group Policy

Name:*

ftd-vpn-manager-grp

Description:

VPN Tunnel Protocol:

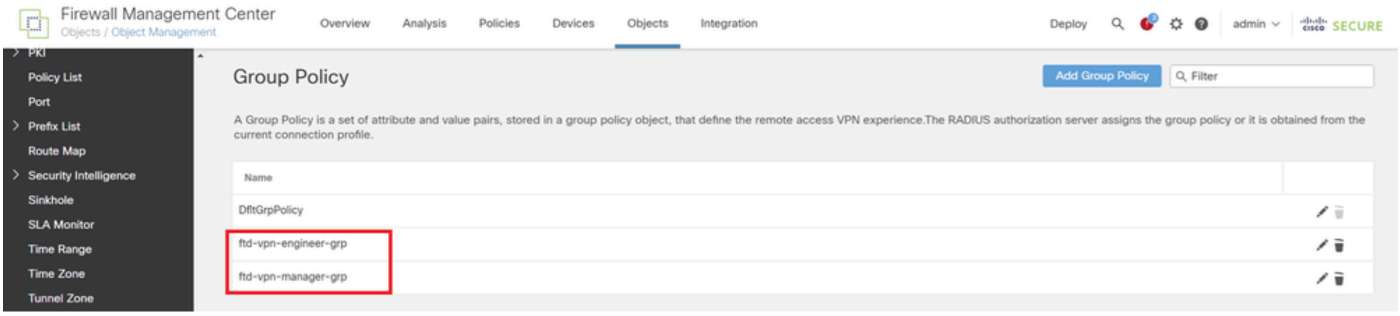
Specify the VPN tunnel types that user can use. At least one tunneling mode must be configured for users to connect over a VPN tunnel.

☑ SSL

□ IPsec-IKEv2

Stratégie de groupe pour le client VPN du gestionnaire

Confirmez les nouvelles stratégies de groupe.



Group Policy

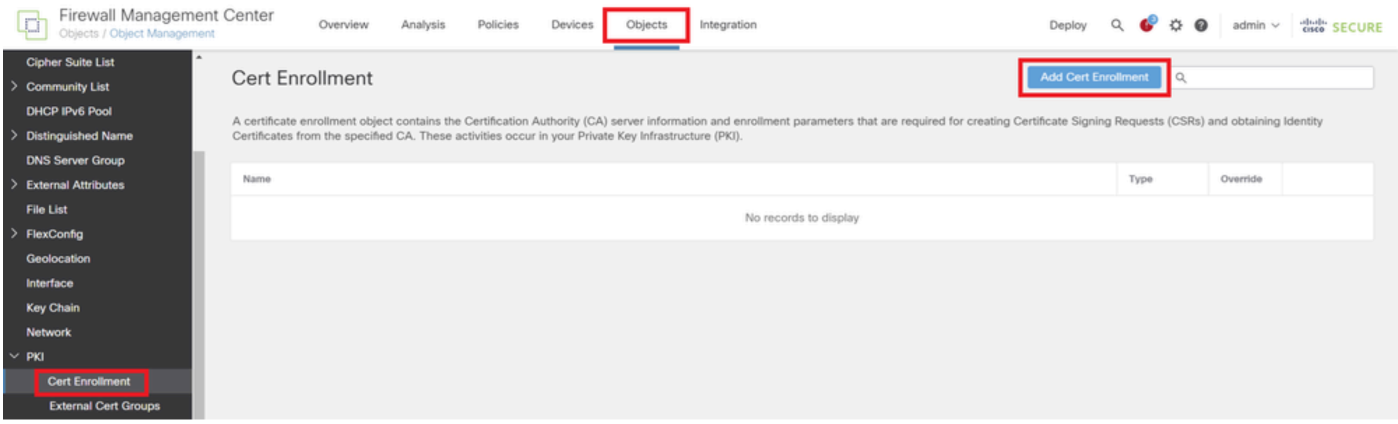
A Group Policy is a set of attribute and value pairs, stored in a group policy object, that define the remote access VPN experience.The RADIUS authorization server assigns the group policy or it is obtained from the current connection profile.

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

Nouvelles stratégies de groupe

Étape 5. Ajouter un certificat FTD

Accédez à Object > Object Management > PKI > Cert Enrollment, cliquez sur le bouton Add Cert Enrollment.

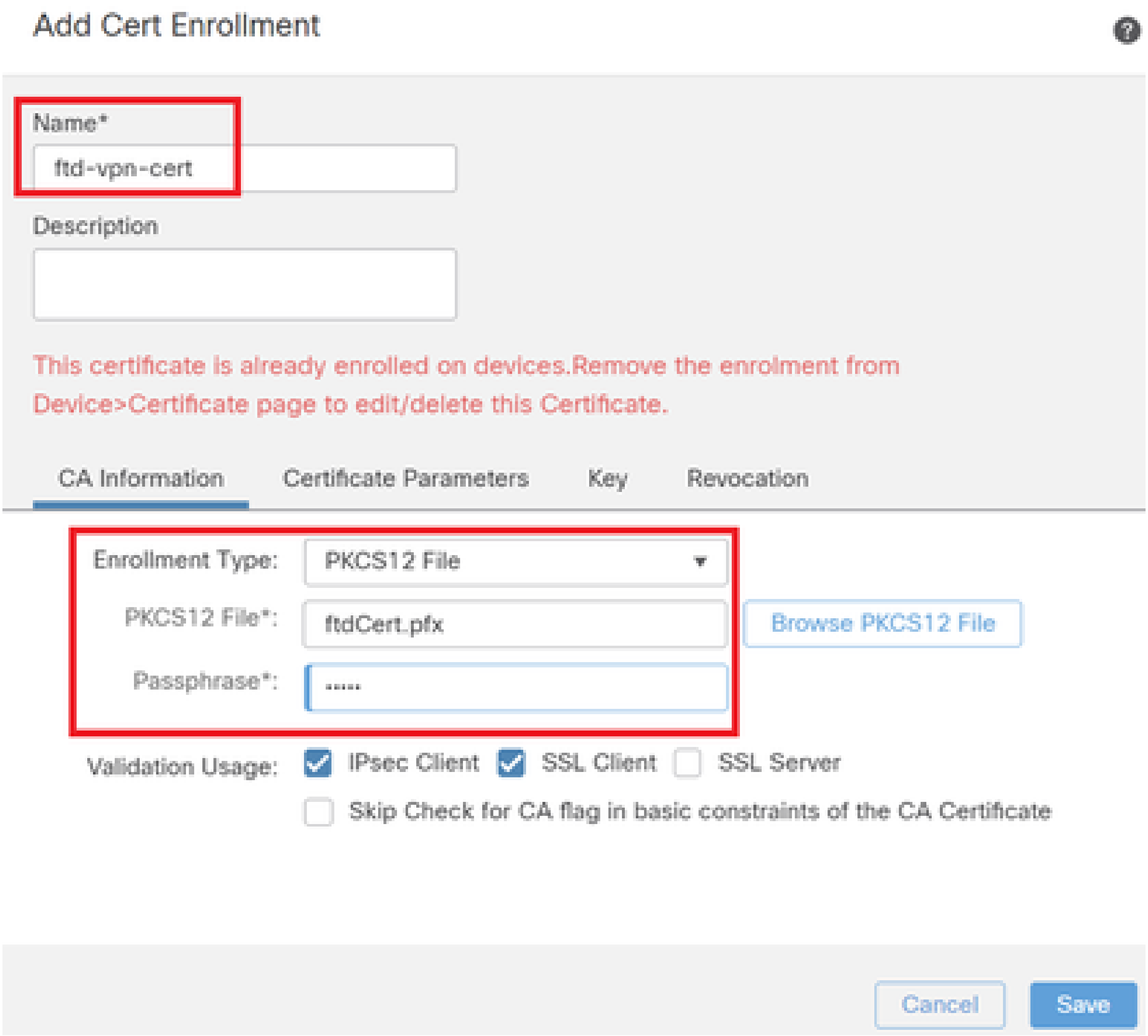


A certificate enrollment object contains the Certification Authority (CA) server information and enrollment parameters that are required for creating Certificate Signing Requests (CSRs) and obtaining Identity Certificates from the specified CA. These activities occur in your Private Key Infrastructure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

Ajouter une inscription de certificat

Entrez les informations nécessaires pour le certificat FTD et importez un fichier PKCS12 depuis l'ordinateur local.

- Nom : ftd-vpn-cert
- Type d'inscription : fichier 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

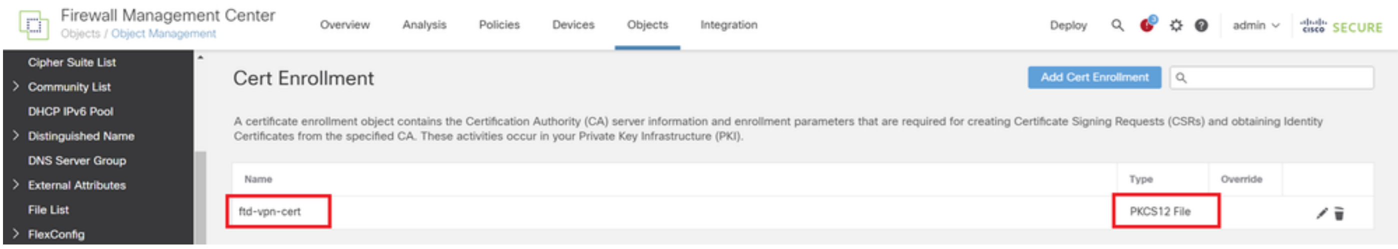
Passphrase*: ·····

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

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

Détails de l'inscription au certificat

Confirmez la nouvelle inscription de certificat.



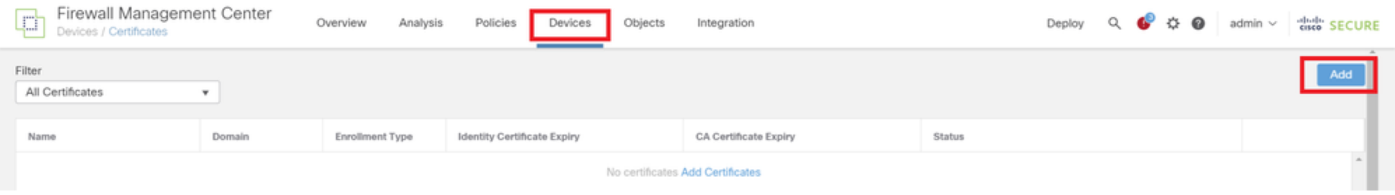
Cert Enrollment

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	

Nouvelle inscription de certificat

Accédez à Périphériques > Certificats, cliquez sur le bouton Ajouter.


Firewall Management Center
Devices / Certificates

Filter: All Certificates

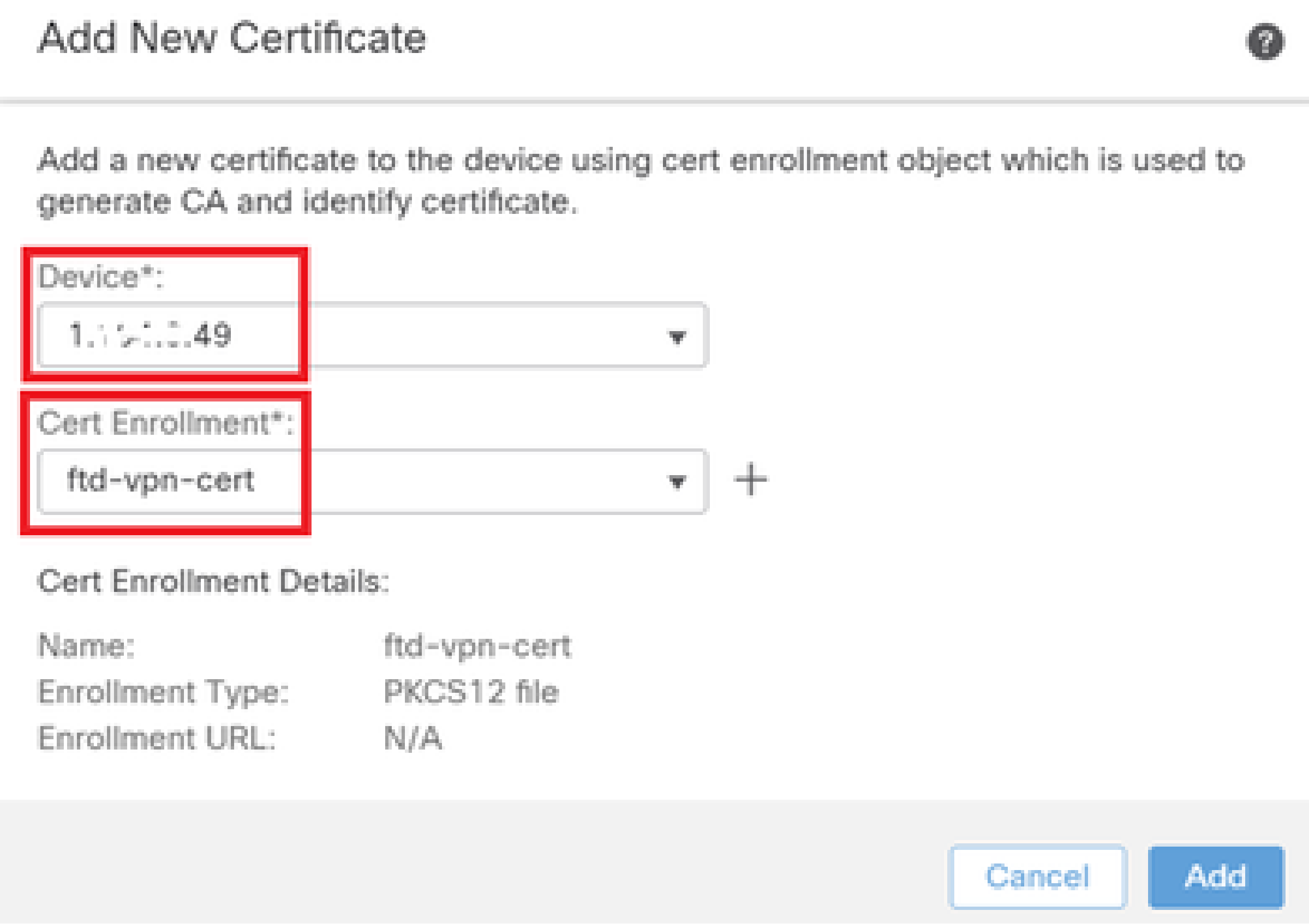
Name	Domain	Enrollment Type	Identity Certificate Expiry	CA Certificate Expiry	Status

No certificates Add Certificates

Ajouter un certificat FTD

Entrez les informations nécessaires pour lier la nouvelle inscription de certificat au FTD.

- Périphérique : 1.x.x.49
- Inscription au certificat : 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

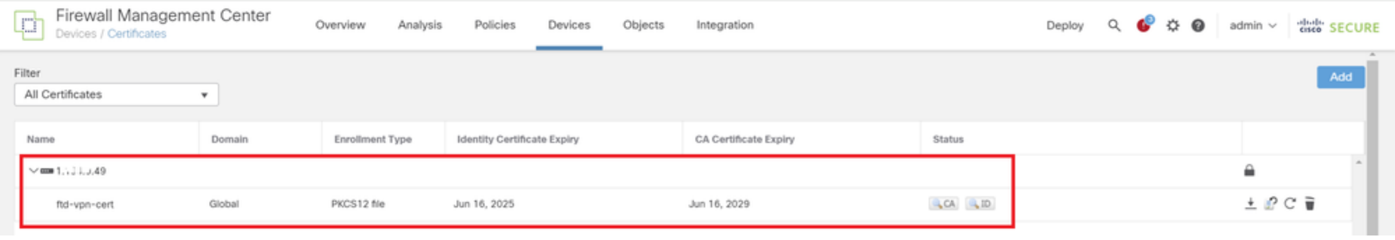
Cert Enrollment*: ftd-vpn-cert

Cert Enrollment Details:

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

Lier le certificat au FTD

Confirmez l'état de la liaison de certificat.


Firewall Management Center
Devices / Certificates

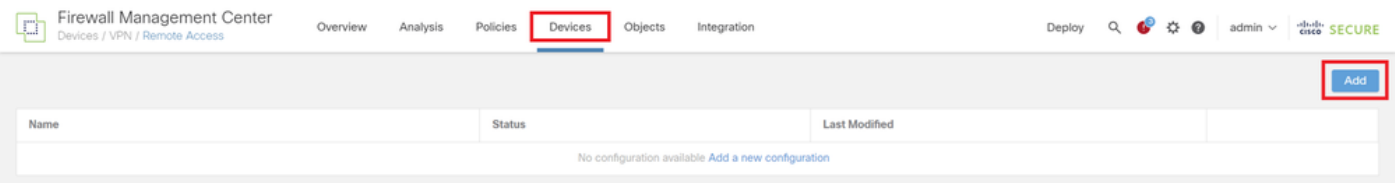
Filter: All Certificates

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

État de la liaison de certificat

Étape 6. Ajouter une affectation de stratégie pour le profil de connexion de l'ingénieur

Accédez à Périphériques > VPN > Accès à distance, cliquez sur le bouton Ajouter.

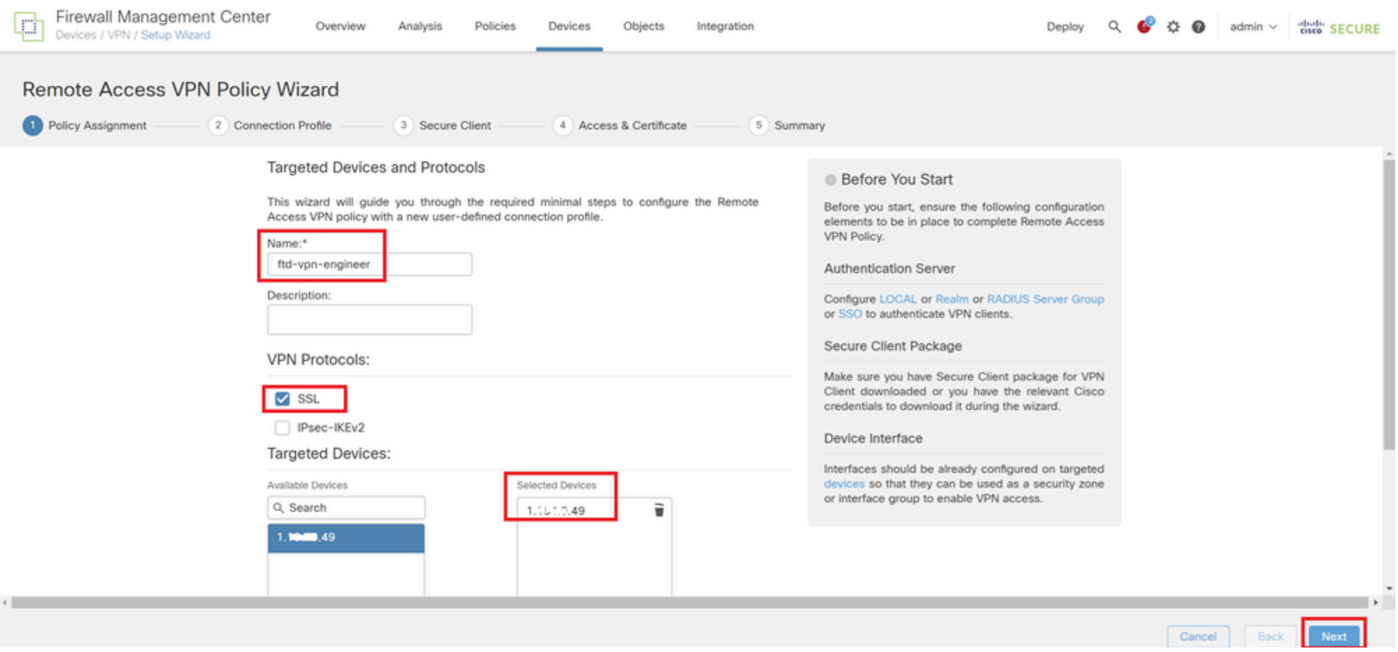


Name	Status	Last Modified
No configuration available Add a new configuration		

Ajouter un VPN d'accès à distance

Saisissez les informations nécessaires et cliquez surBouton Suivant.

- Nom : ftd-vpn-engineering
- Protocoles VPN : SSL
- Périphériques ciblés : 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: [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.

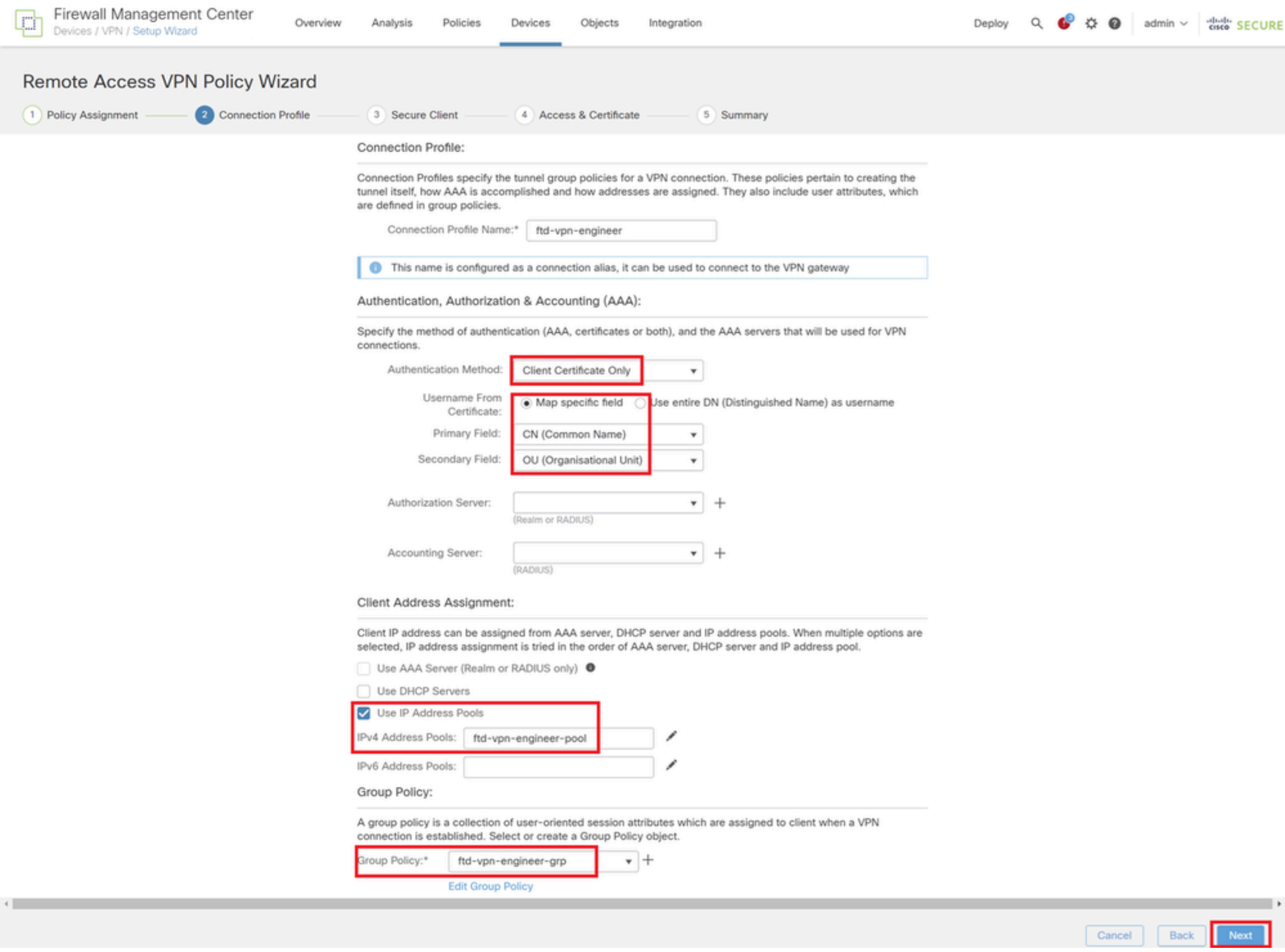
Affectation de stratégie

Étape 7. Configurer les détails du profil de connexion de l'ingénieur

Saisissez les informations nécessaires et cliquez surBouton Suivant.

- Méthode d'authentification : certificat client uniquement
- Nom d'utilisateur du certificat : champ spécifique au mappage
- Champ principal : CN (nom commun)
- Champ secondaire : OU (Unité organisationnelle)

- Pools d'adresses IPv4 : ftd-vpn-engineering-pool
- Stratégie de groupe : 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.

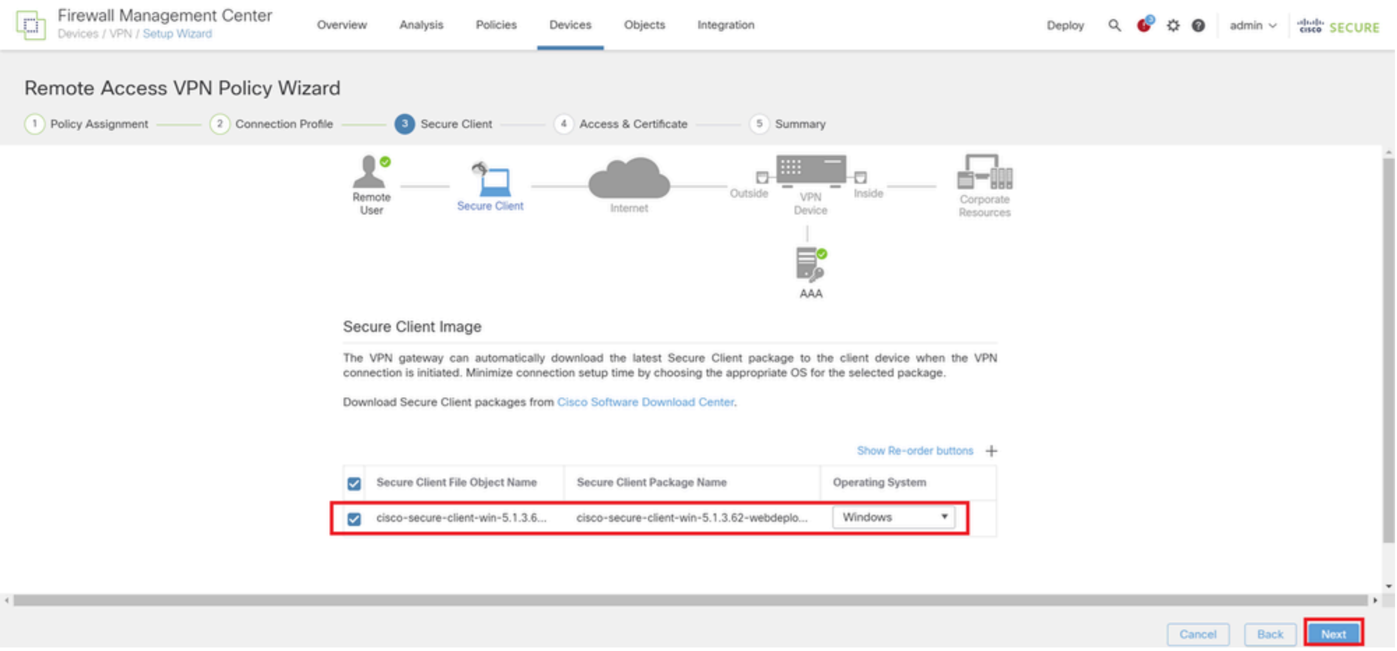
Group Policy:* ftd-vpn-engineer-grp +

Edit Group Policy

Détails du profil de connexion

Étape 8. Configurer l'image client sécurisée pour le profil de connexion de l'ingénieur

Sélectionnez le fichier image client sécurisé et cliquez surBouton Suivant.



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 +

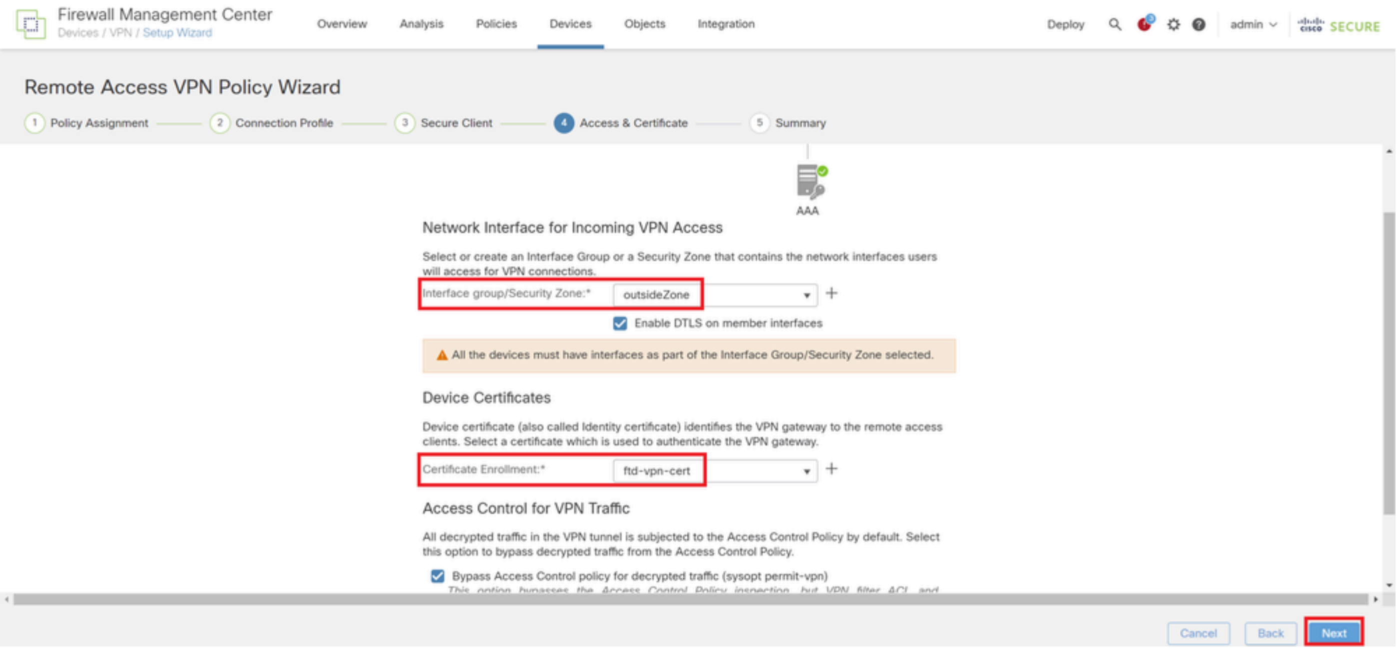
☑	Secure Client File Object Name	Secure Client Package Name	Operating System
☑	cisco-secure-client-win-5.1.3.6...	cisco-secure-client-win-5.1.3.62-webdeplo...	Windows

Sélectionner le client sécurisé

Étape 9. Configurer l'accès et le certificat pour le profil de connexion d'ingénieur

Sélectionnez une valeur pour les éléments Groupe d'interfaces/Zone de sécurité et Inscription de certificat, cliquez sur Next.

- Groupe d'interfaces/Zone de sécurité : outsideZone
- Inscription au certificat : 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.

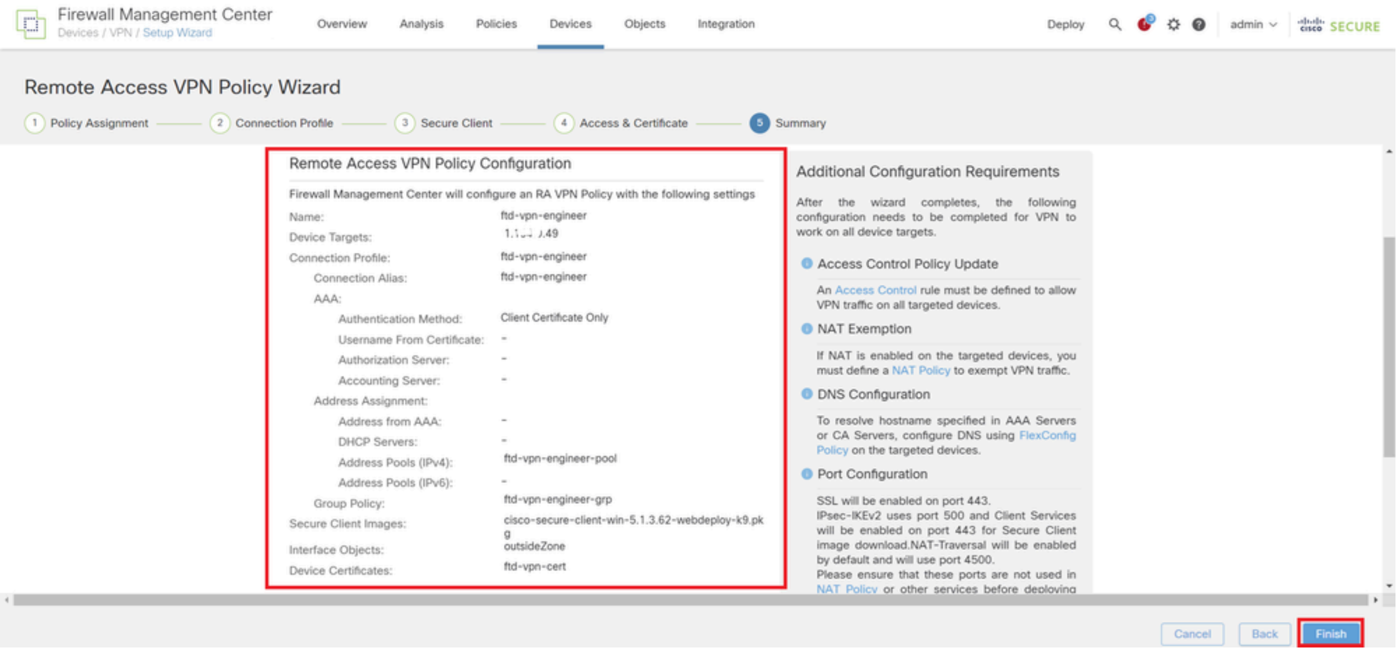
☑ Bypass Access Control policy for decrypted traffic (sysopt permit-vpn)

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

Détails de l'accès et du certificat

Étape 10. Confirmer le résumé du profil de connexion de l'ingénieur

Confirmez les informations entrées pour la stratégie VPN d'accès à distance et cliquez sur Finish button.



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.pkg
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.

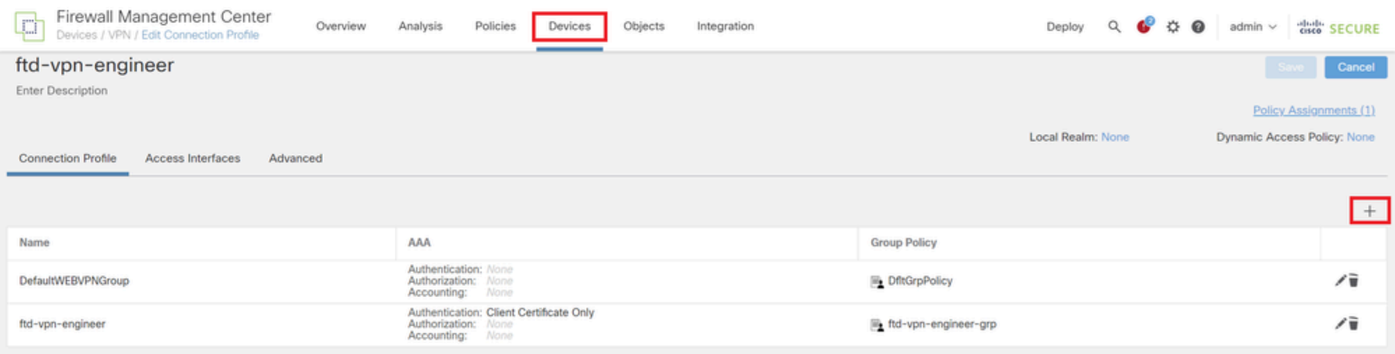
● Port Configuration

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

Détails de la stratégie VPN d'accès à distance

Étape 11. Ajouter un profil de connexion pour le client VPN Manager

Accédez à Périphériques > VPN > Accès à distance > Profil de connexion, cliquez sur + bouton.



ftd-vpn-engineer

Enter Description

Policy Assignments (1)

Local Realm: None

Dynamic Access Policy: None

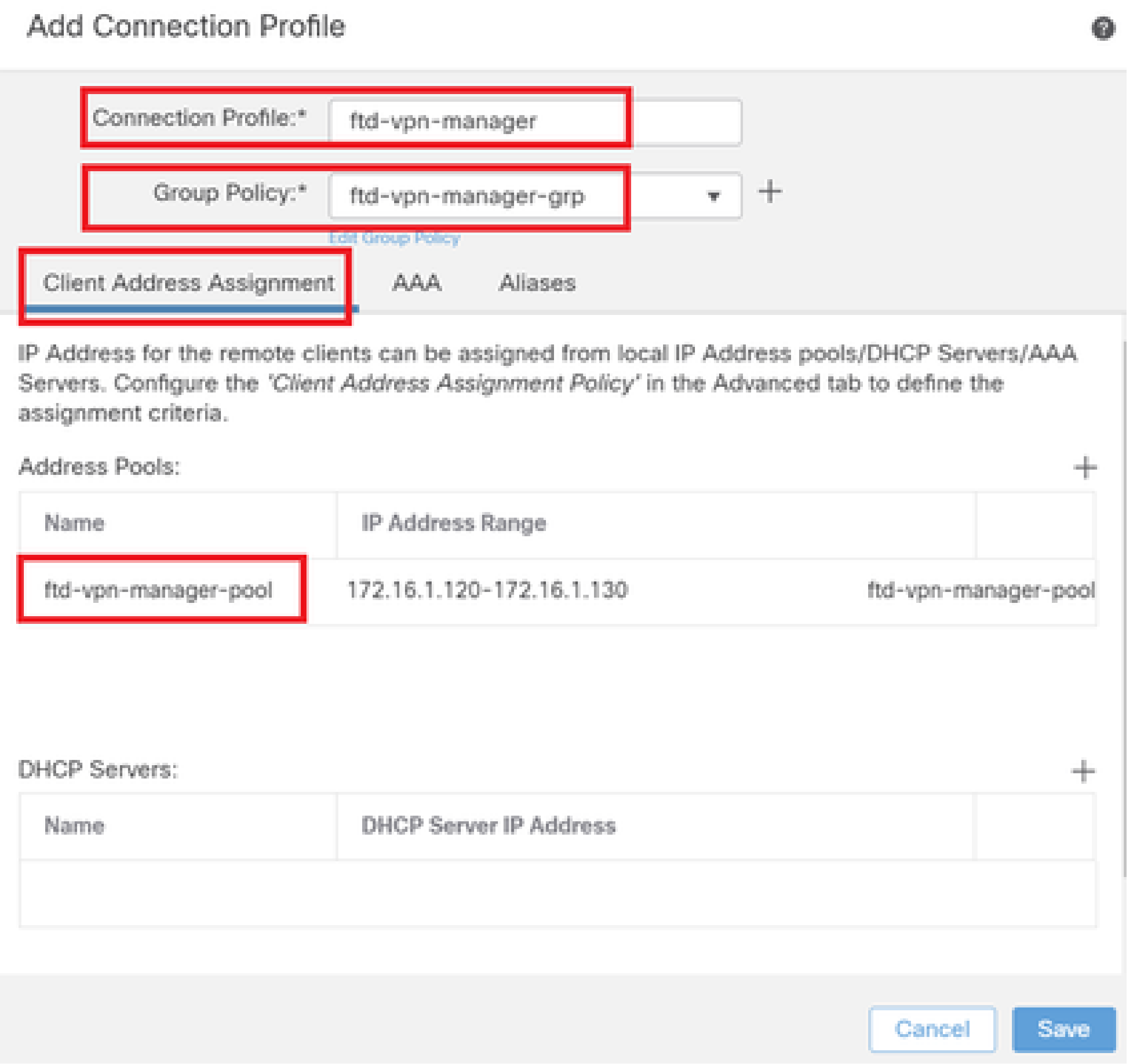
Connection Profile | Access Interfaces | Advanced

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	

Ajouter un profil de connexion pour le client VPN Manager

Entrez les informations nécessaires pour le profil de connexion et cliquez sur le bouton Save.

- Nom : ftd-vpn-manager
- Stratégie de groupe : ftd-vpn-manager-grp
- Pools d'adresses 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:

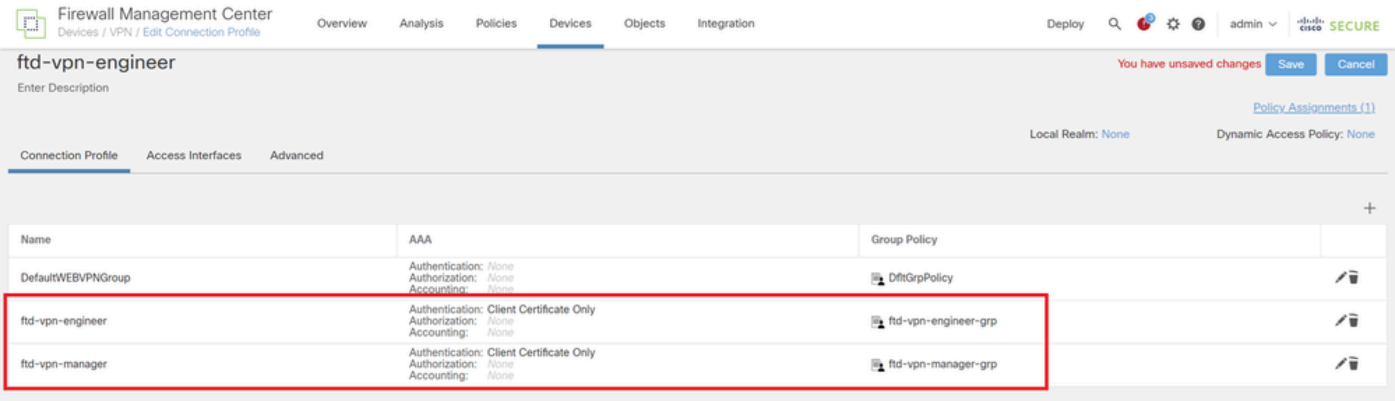
Name	IP Address Range	
ftd-vpn-manager-pool	172.16.1.120-172.16.1.130	ftd-vpn-manager-pool

DHCP Servers:

Name	DHCP Server IP Address	

Détails du profil de connexion pour le client VPN Manager

Confirmez les nouveaux profils de connexion ajoutés.



ftd-vpn-engineer

Enter Description

You have unsaved changes

Local Realm: None

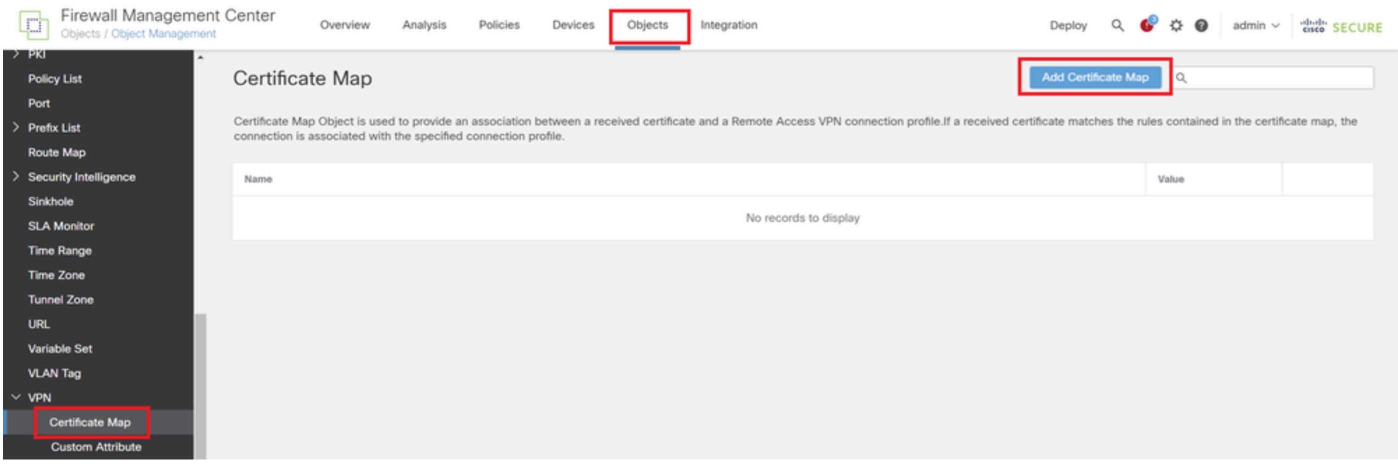
Dynamic Access Policy: None

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

Confirmer les profils de connexion ajoutés

Étape 12. Ajouter un mappage de certificat

Accédez à Objets > Gestion des objets > VPN > Carte de certificat, cliquez sur le bouton Ajouter une carte de certificat.



Certificate Map

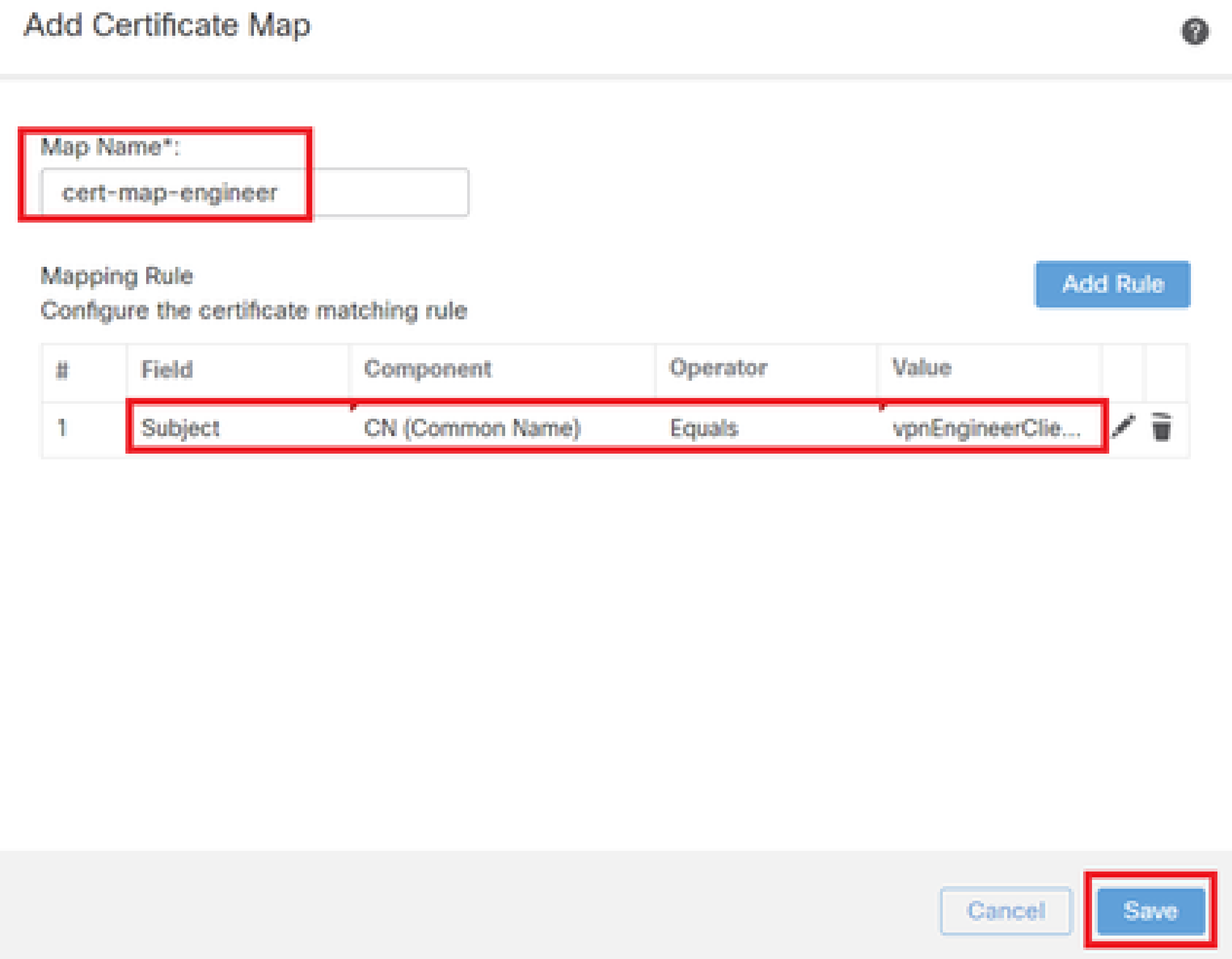
Certificate Map Object is used to provide an association between a received certificate and a Remote Access VPN connection profile.If a received certificate matches the rules contained in the certificate map, the connection is associated with the specified connection profile.

Name	Value
No records to display	

Ajouter un mappage de certificat

Entrez les informations nécessaires pour le mappage de certificat du client VPN ingénieur et cliquez sur le bouton Save.

- Nom de la carte : cert-map-engineering
- Règle de mappage : CN (nom commun) équivaut à vpnEngineerClientCN



Add Certificate Map

Map Name*:

cert-map-engineer

Mapping Rule

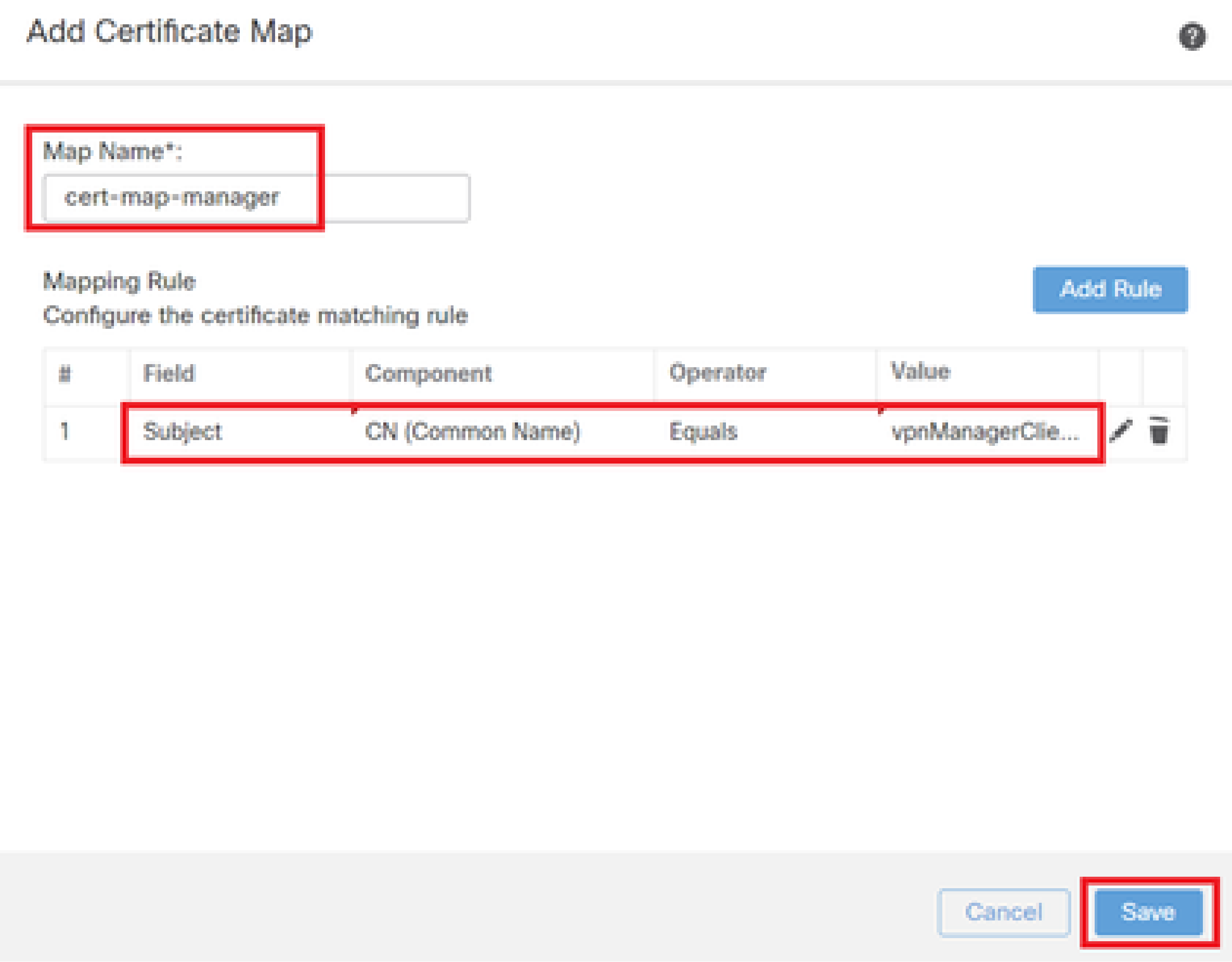
Configure the certificate matching rule

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

Mappage de certificat pour le client ingénieur

Entrez les informations nécessaires pour le mappage de certificat du client VPN du gestionnaire et cliquez sur le bouton Save.

- Nom de la carte : cert-map-manager
- Règle de mappage : CN (Common Name) équivaut à vpnManagerClientCN



Add Certificate Map

Map Name*: cert-map-manager

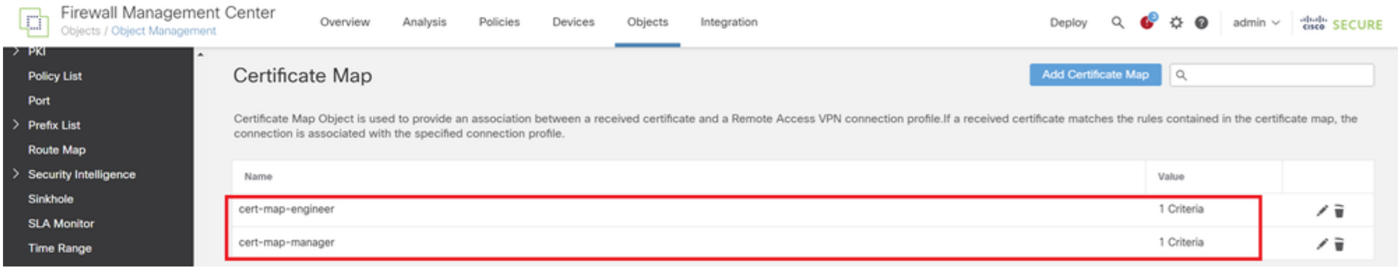
Mapping Rule

Configure the certificate matching rule

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

Mappage de certificat pour le client Manager

Confirmez les nouveaux mappages de certificats ajoutés.



Certificate Map

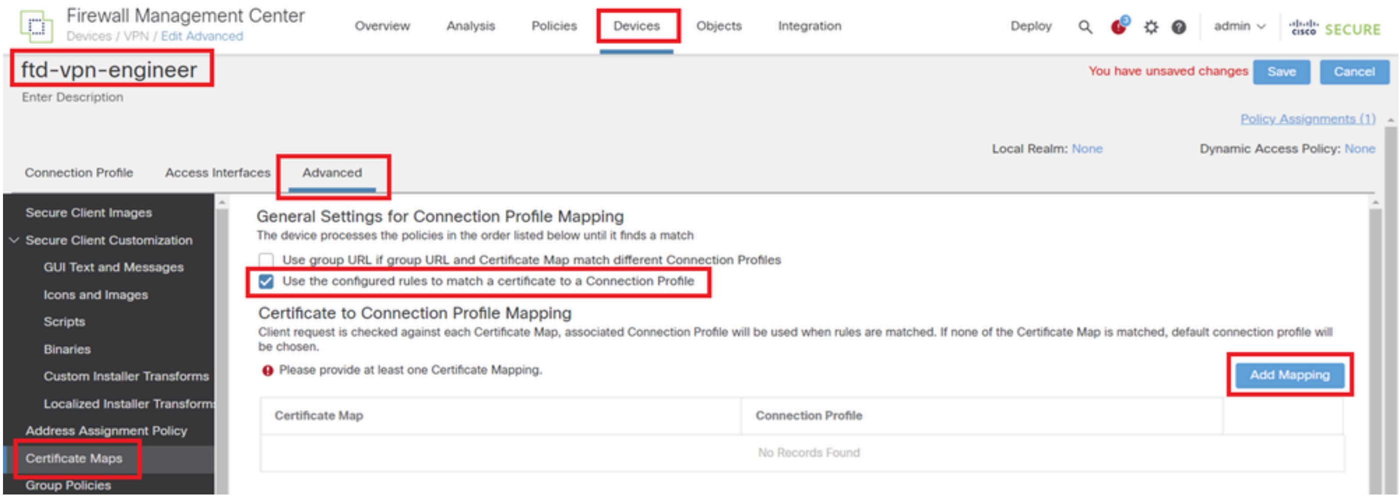
Certificate Map Object is used to provide an association between a received certificate and a Remote Access VPN connection profile.If a received certificate matches the rules contained in the certificate map, the connection is associated with the specified connection profile.

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

Nouveaux mappages de certificats

Étape 13. Lier le mappage de certificat au profil de connexion

Accédez à Devices > VPN > Remote Access, edit ftd-vpn-engineering. Ensuite, accédez à Advanced > Certificate Maps, cliquez sur Add Mapping button.



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.

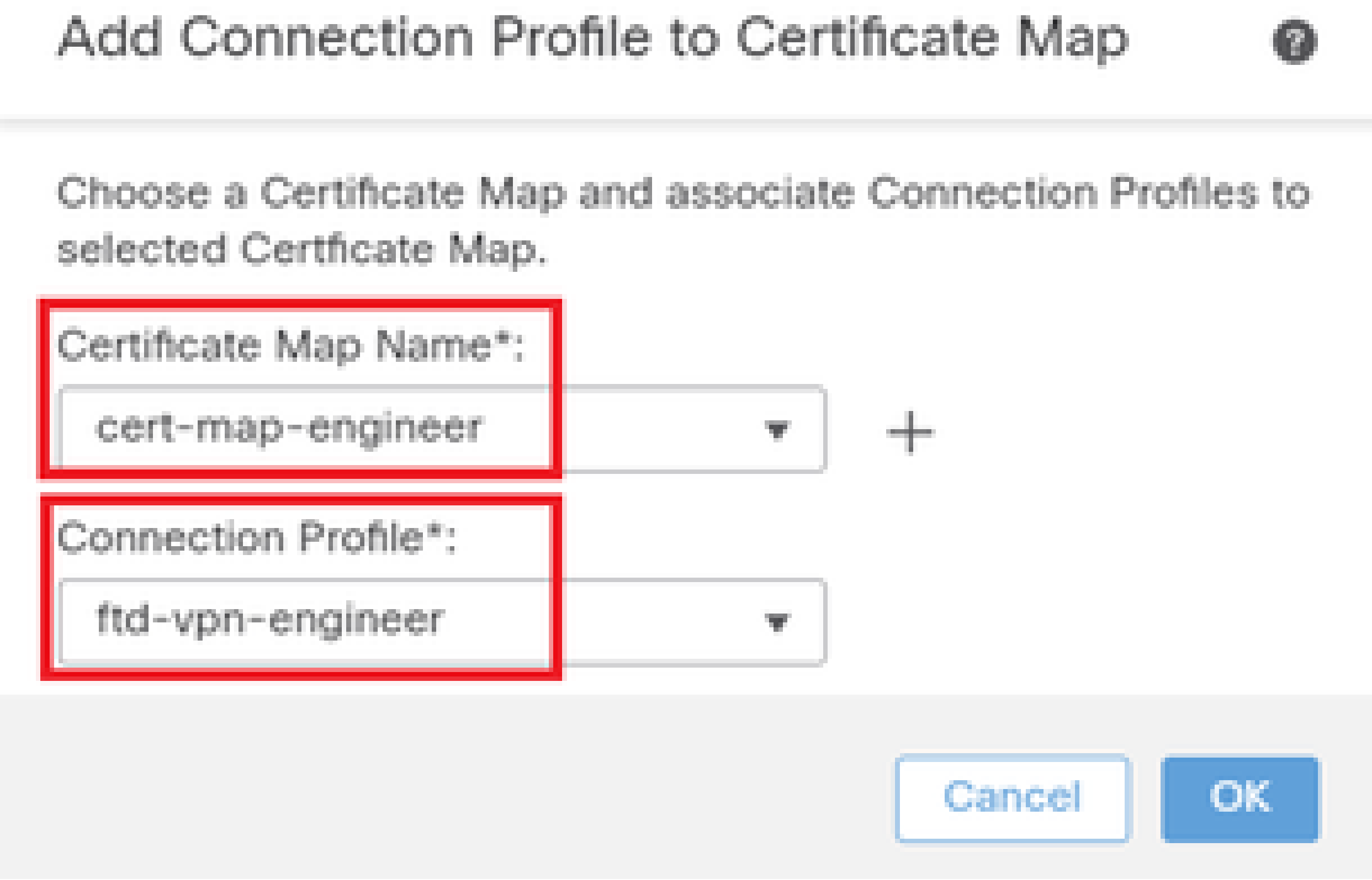
Please provide at least one Certificate Mapping.

Certificate Map	Connection Profile	
	No Records Found	

Lier une carte de certificat

Liaison du mappage de certificat au profil de connexion pour le client VPN ingénieur.

- Nom du mappage de certificat : cert-map-engineering
- Connexion Profile: ftd-vpn-engineer



Add Connection Profile to Certificate Map

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

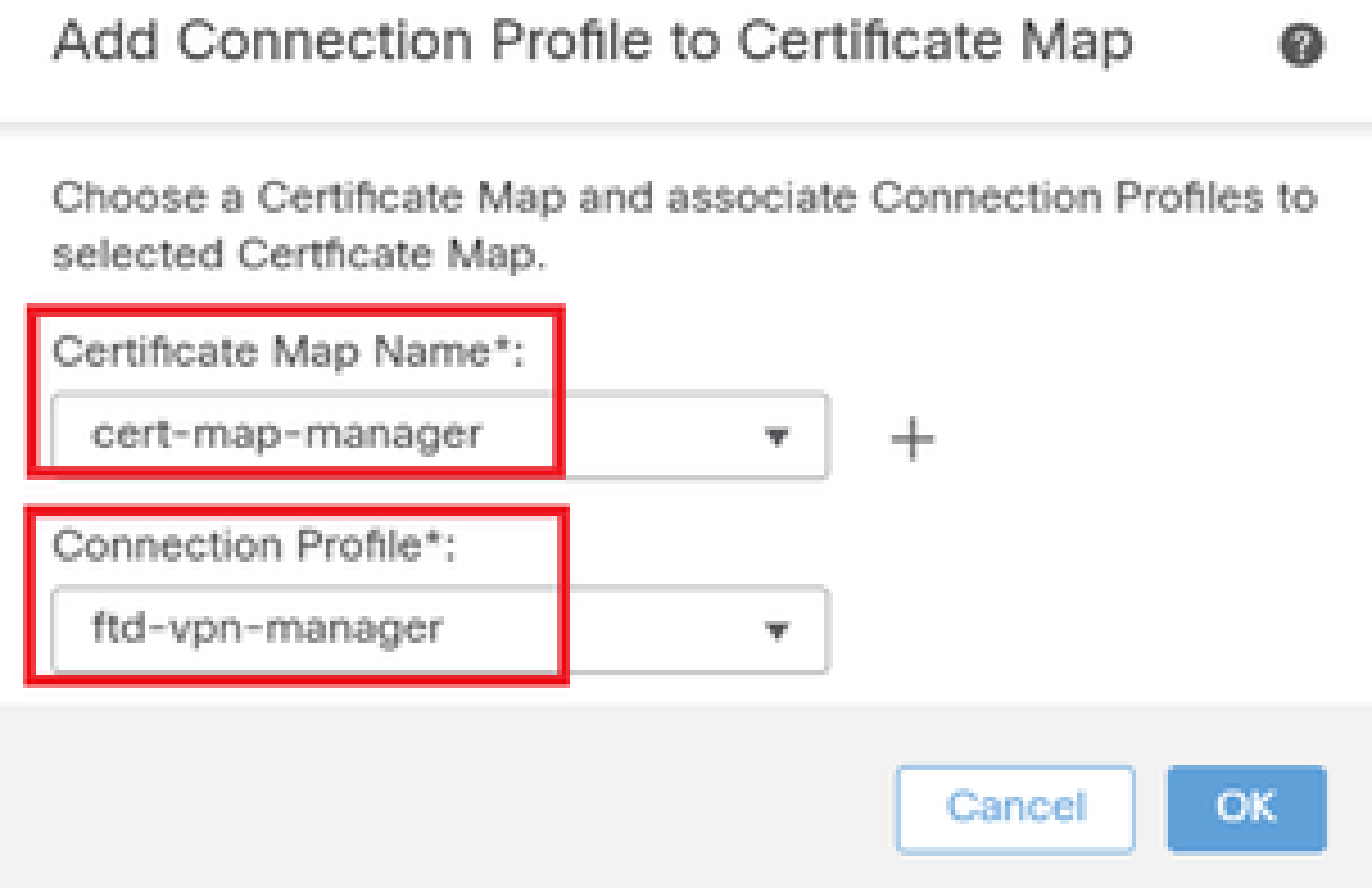
Certificate Map Name*: cert-map-engineer

Connection Profile*: ftd-vpn-engineer

Mappage de certificat de liaison pour le client VPN ingénieur

Liaison du mappage de certificat au profil de connexion pour le client VPN du gestionnaire.

- Nom du mappage de certificat : cert-map-manager
- Profil de connexion : ftd-vpn-manager



Add Connection Profile to Certificate Map

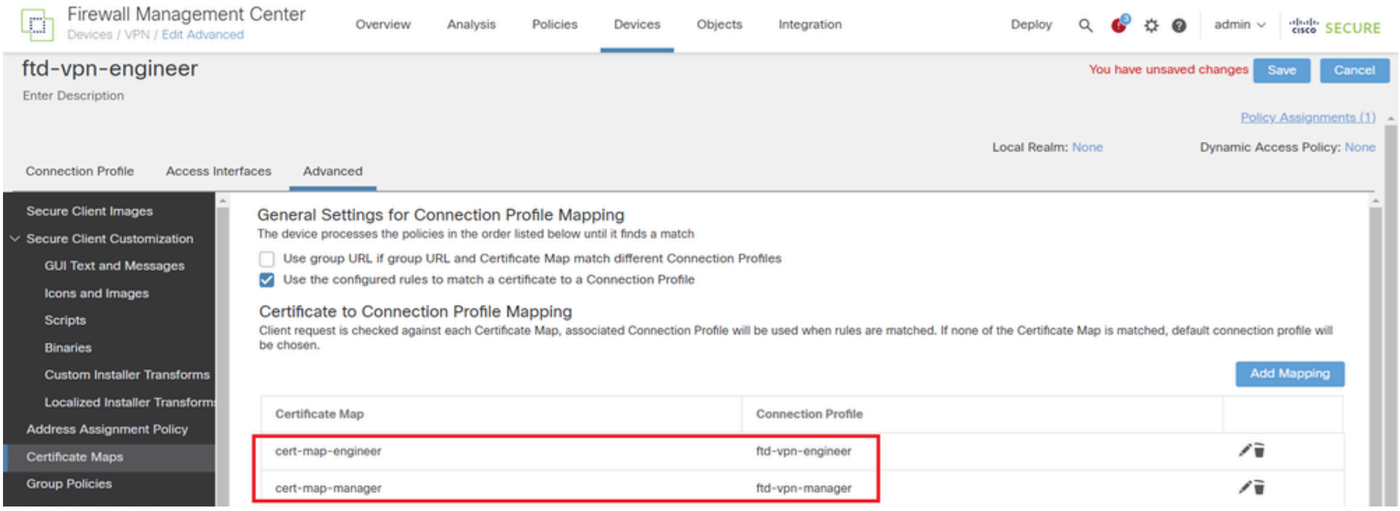
Choose a Certificate Map and associate Connection Profiles to selected Certficate Map.

Certificate Map Name*: cert-map-manager

Connection Profile*: ftd-vpn-manager

Mappage de certificat de liaison pour le client VPN Manager

Confirmez le paramètre de liaison de certificat.



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

Confirmer la liaison de certificat

Confirmer dans FTD CLI

Confirmez les paramètres de connexion VPN dans l'interface de ligne de commande du FTD après le déploiement à partir du FMC.

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

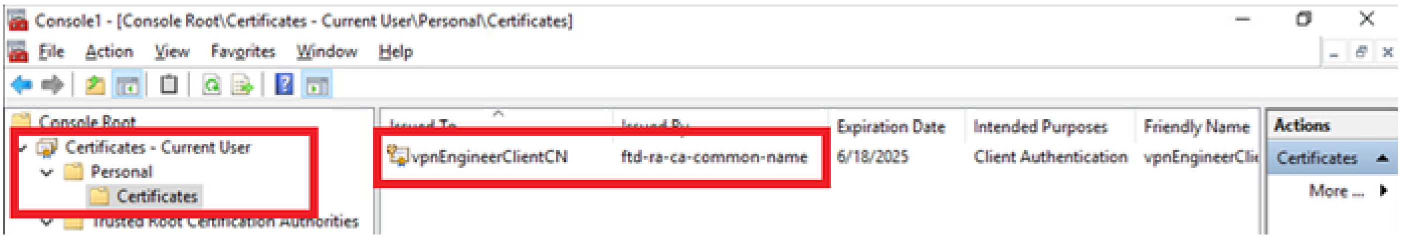
```
interface GigabitEthernet0/0
nameif outside
security-level 0
ip address 192.168.1.200 255.255.255.0

// 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
```

Confirmer dans le client VPN

Étape 1. Confirmer le certificat client

Dans Engineer VPN Client, accédez à Certificates - Current User > Personal > Certificates, vérifiez le certificat client utilisé pour l'authentification.

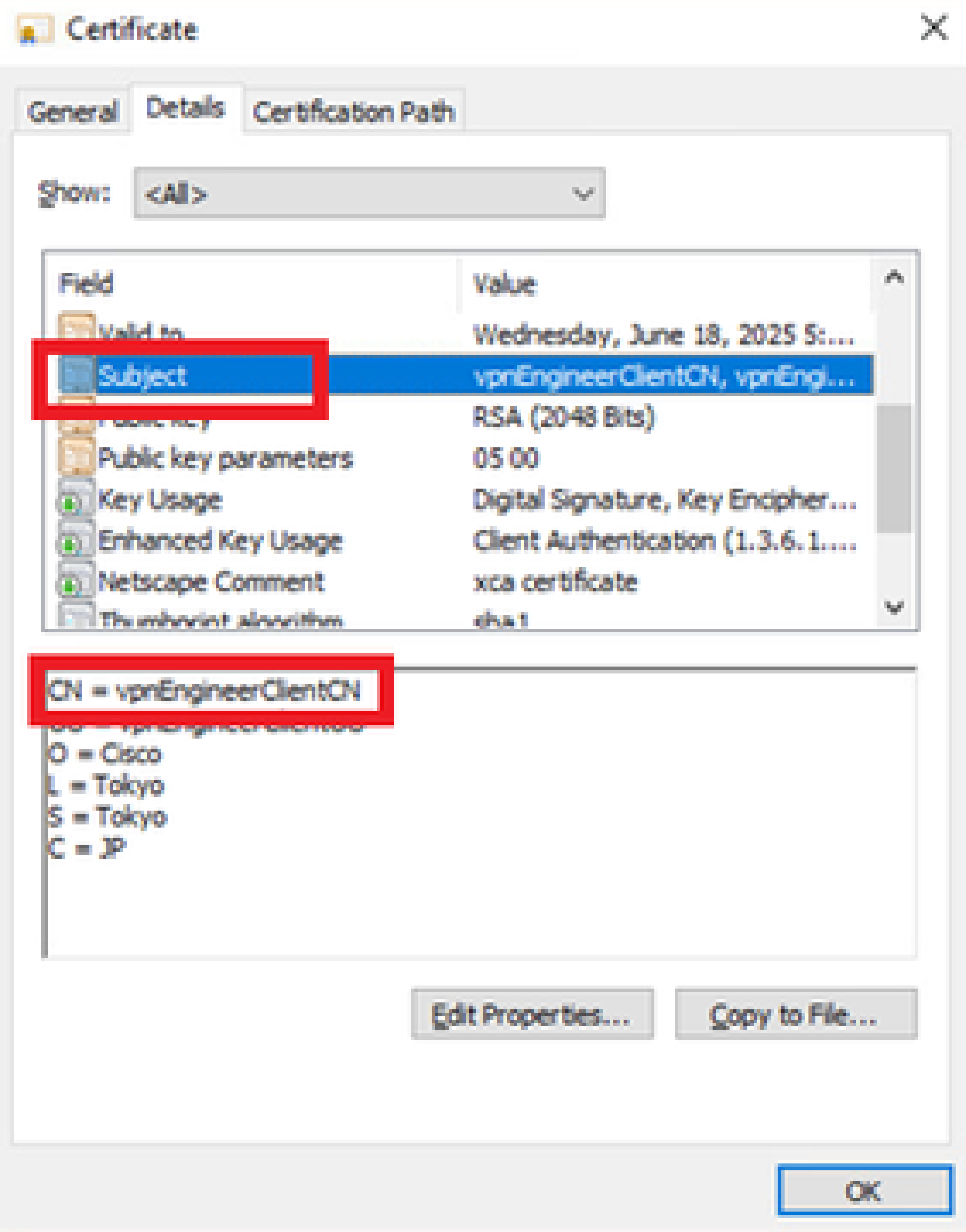

Console1 - [Console Root\Certificates - Current User\Personal\Certificates]
File
Action
View
Favorites
Window
Help
Console Root
Certificates - Current User
Personal
Certificates
Trusted Root Certification Authorities
Actions
Certificates
More ...

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

Confirmer le certificat du client VPN de l'ingénieur

Double-cliquez sur le certificat client, accédez à Détails, vérifiez les détails de Objet.

- Objet : CN = vpnEngineerClientCN

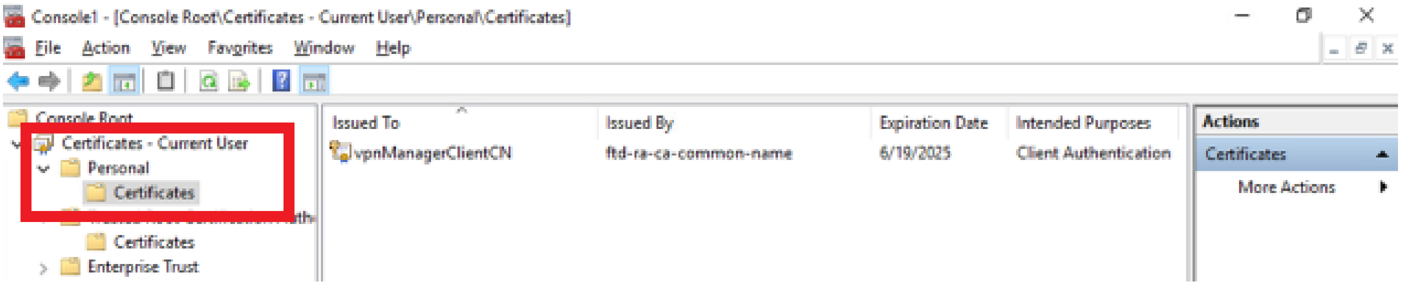


Field	Value
Valid to	Wednesday, June 18, 2025 5:...
Subject	vpnEngineerClientCN, vpnEngi...
Public key	RSA (2048 Bits)
Public key parameters	05 00
Key Usage	Digital Signature, Key Encipher...
Enhanced Key Usage	Client Authentication (1.3.6.1....
Netscape Comment	xca certificate
Thumbprint algorithm	sha1

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

Détails du certificat du client ingénieur

Dans le client VPN du gestionnaire, accédez à Certificates - Current User > Personal > Certificates, vérifiez le certificat client utilisé pour l'authentification.

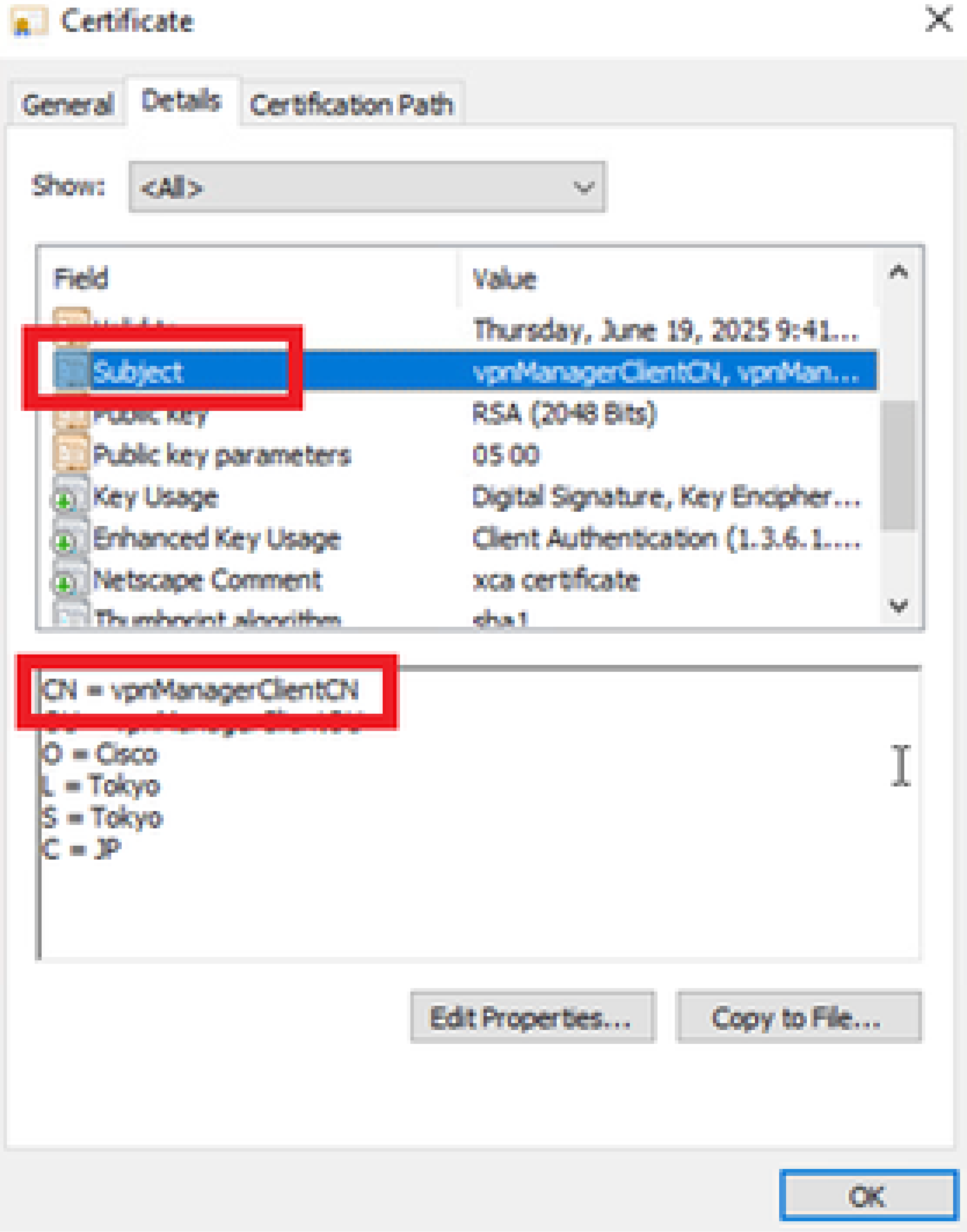


Issued To	Issued By	Expiration Date	Intended Purposes
vpnManagerClientCN	ftd-ra-ca-common-name	6/19/2025	Client Authentication

Confirmer le certificat pour le client VPN Manager

Double-cliquez sur le certificat client, accédez à Détails, vérifiez les détails de Objet.

- Objet : 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

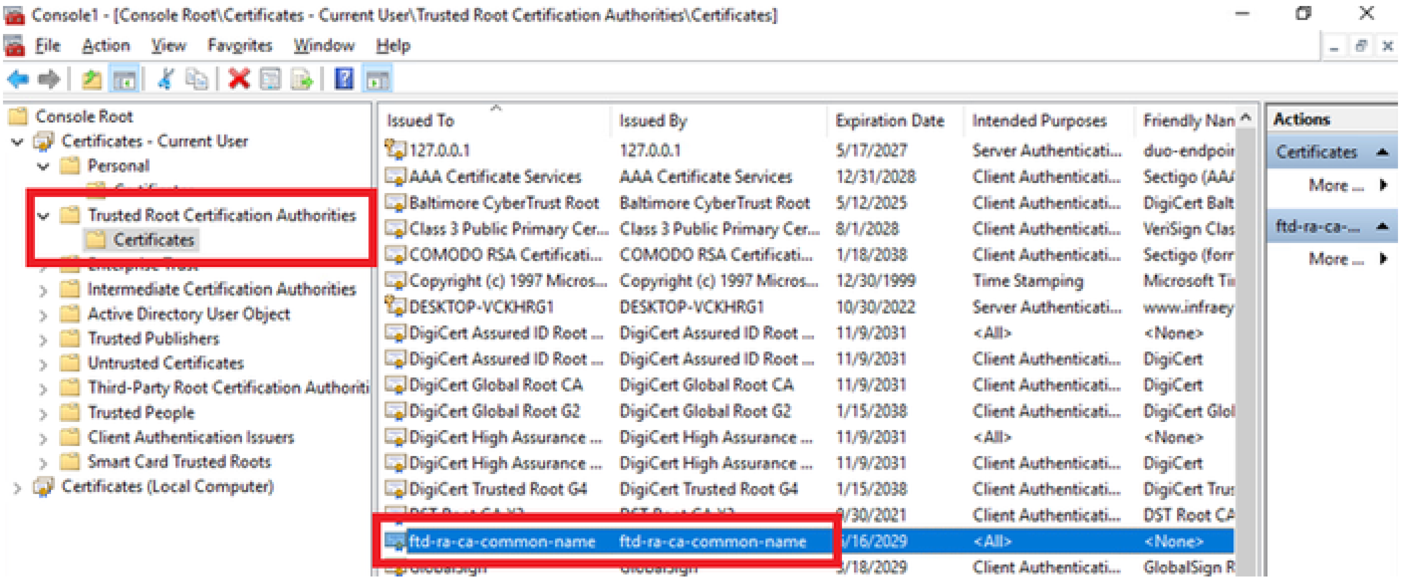
```
CN = vpnManagerClientCN
OU = vpnManagerClientOU
O = Cisco
L = Tokyo
S = Tokyo
C = JP
```

Détails du certificat client du manager

Étape 2. Confirmer CA

Dans le client VPN ingénieur et le client VPN gestionnaire, accédez à Certificats - Utilisateur actuel > Autorités de certification racine de confiance > Certificats, vérifiez l'autorité de certification utilisée pour l'authentification.

- Émis par : 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 ...

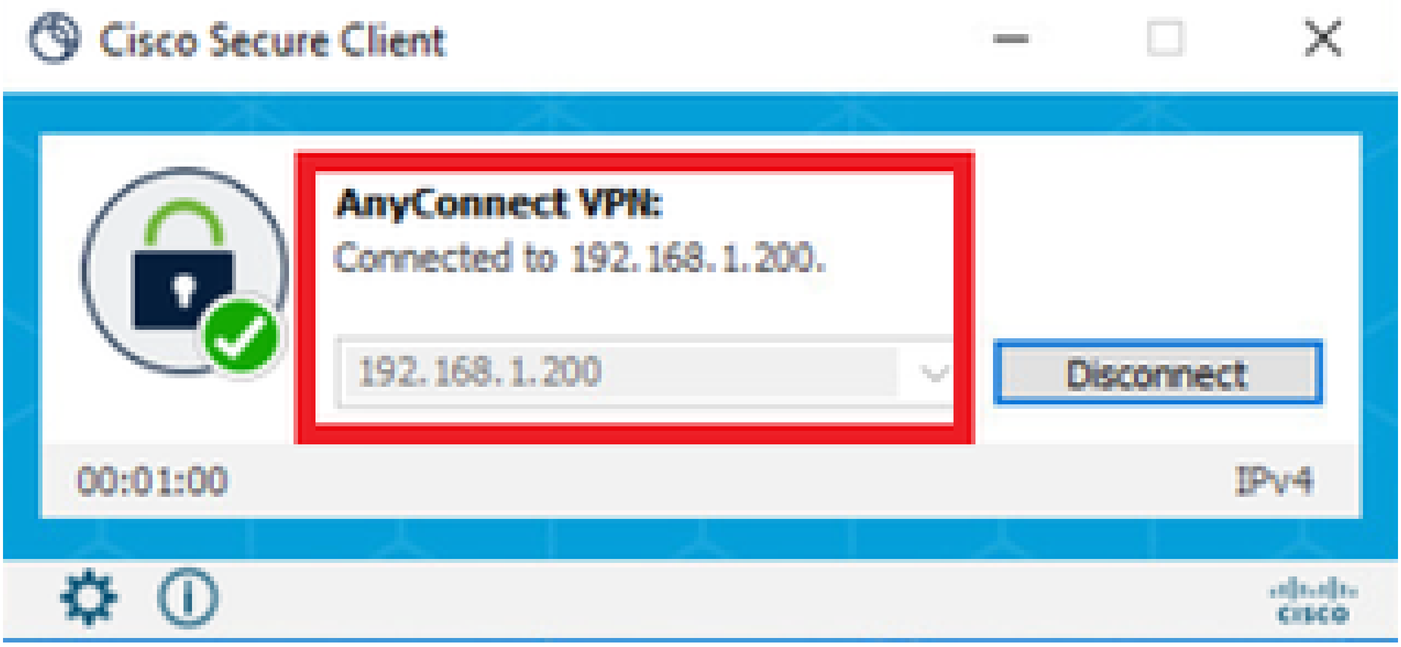
Issued To	Issued By	Expiration Date	Intended Purposes	Friendly Nan
127.0.0.1	127.0.0.1	5/17/2027	Server Authenticati...	duo-endpoi
AAA Certificate Services	AAA Certificate Services	12/31/2028	Client Authenticati...	Sectigo (AA
Baltimore CyberTrust Root	Baltimore CyberTrust Root	5/12/2025	Client Authenticati...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

Confirmer CA

Vérifier

Étape 1. Initiation de la connexion VPN

Dans Engineer VPN Client, initiez la connexion Cisco Secure Client. Pas besoin d'entrer le nom d'utilisateur et le mot de passe, le VPN s'est connecté avec succès.

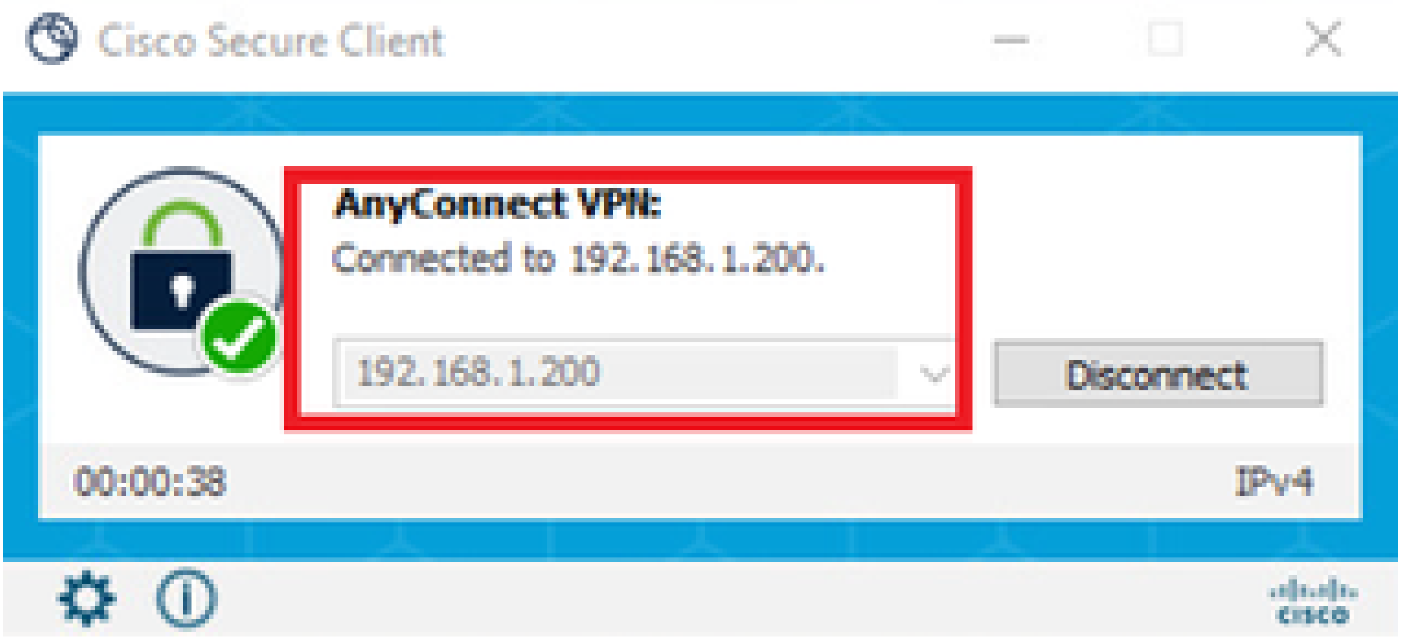


AnyConnect VPN:
Connected to 192.168.1.200.

192.168.1.200

Établir une connexion VPN à partir du client Engineer

Dans le client VPN du manager, lancez la connexion Cisco Secure Client. Pas besoin d'entrer le nom d'utilisateur et le mot de passe, le VPN s'est connecté avec succès.



AnyConnect VPN:
Connected to 192.168.1.200.

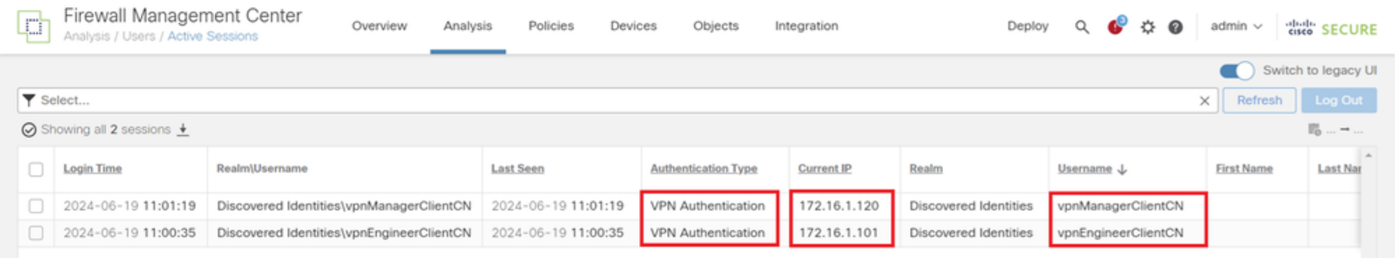
192.168.1.200

00:00:38

Initiation de la connexion VPN à partir du client Manager

Étape 2. Confirmer les sessions actives dans FMC

Accédez à Analysis > Users > Active Sessions, vérifiez l'authentification VPN pour la session active.



Showing all 2 sessions

□	Login Time	Realm\Username	Last Seen	Authentication Type	Current IP	Realm	Username ↓	First Name	Last Nar
□	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		

Confirmer la session active

Étape 3. Confirmer les sessions VPN dans FTD CLI

Exécutezshow vpn-sessiondb detail anyconnect la commande dans l'interface de ligne de commande FTD (Lina) pour confirmer les sessions VPN de l'ingénieur et du gestionnaire.

```
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

Dépannage

Vous pouvez vous attendre à trouver des informations sur l'authentification VPN dans le syslog de débogage du moteur Lina et dans le fichier DART sur le PC Windows.

Ceci est un exemple de journaux de débogage dans le moteur Lina pendant la connexion VPN du client ingénieur.

<#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

Ceci est un exemple de journaux de débogage dans le moteur Lina pendant la connexion VPN du client manager.

<#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
```

Informations connexes

Configurer l'authentification basée sur certificat Anyconnect pour l'accès mobile

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