

通过FTD、ISE、DUO和Active Directory配置SSL VPN身份验证

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简介

本文档介绍使用Cisco ISE和AAA双安全在Firepower威胁防御中集成SSLVPN。

要求

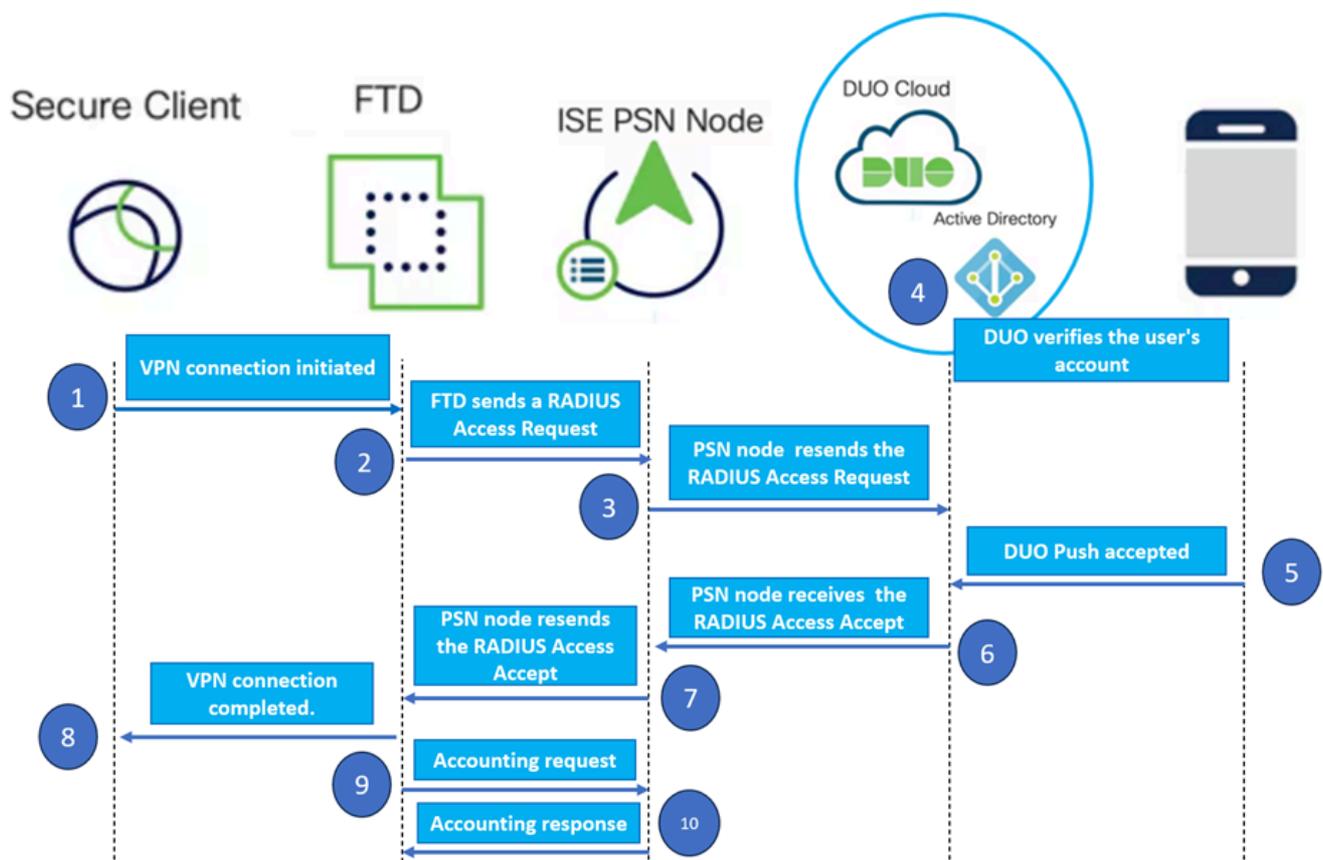
- ISE 3.0或更高版本。
- FMC 7.0或更高版本。
- FTD 7.0或更高版本。
- DUO认证代理。
- ISE基础版许可
- DUO Essentials许可。

使用的组件

- ISE 3.2补丁3
- FMC 7.2.5
- FTD 7.2.5
- Proxy DUO 6.3.0
- Any Connect 4.10.08029

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

网络图



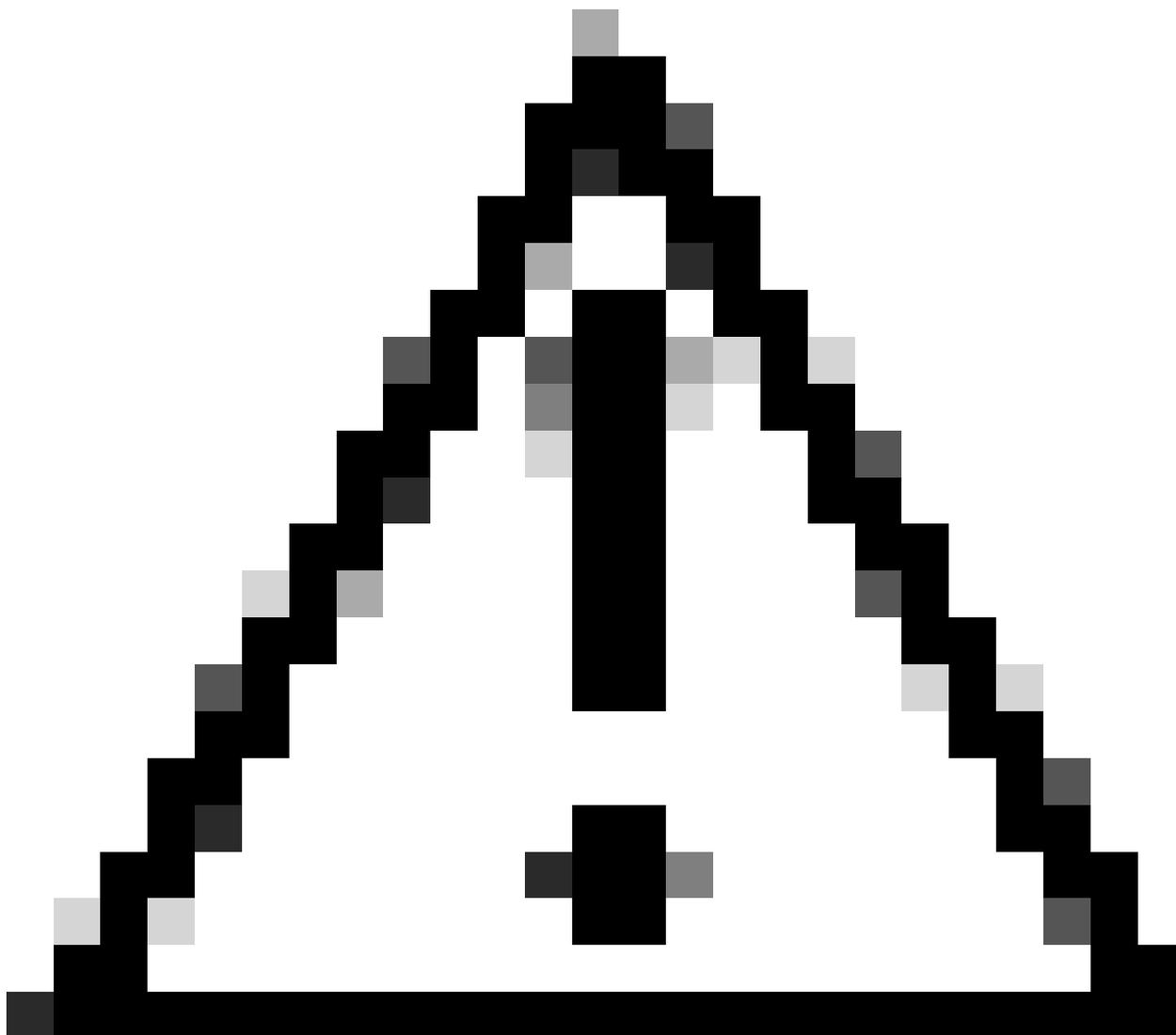
拓扑。

在我们推荐的解决方案中，思科ISE是一个关键的RADIUS服务器代理。ISE配置为将RADIUS数据包从FTD转发到DUO身份验证代理，而不是直接评估身份验证或授权策略。

DUO认证代理在此认证流程中充当专用中介。它安装在Windows服务器上，弥补了Cisco ISE和DUO云之间的差距。代理的主要功能是将身份验证请求（封装在RADIUS数据包内）传输到DUO云。DUO Cloud最终根据双因素身份验证配置允许或拒绝网络访问。

1. 用户通过输入其唯一用户名和密码启动VPN身份验证过程。
2. 防火墙威胁防御(FTD)将身份验证请求发送到思科身份服务引擎(ISE)。

- 策略服务节点(PSN)将身份验证请求转发到DUO身份验证代理服务器。随后，DUO身份验证服务器通过DUO云服务验证凭证。
- DUO Cloud根据同步数据库验证用户名和密码。

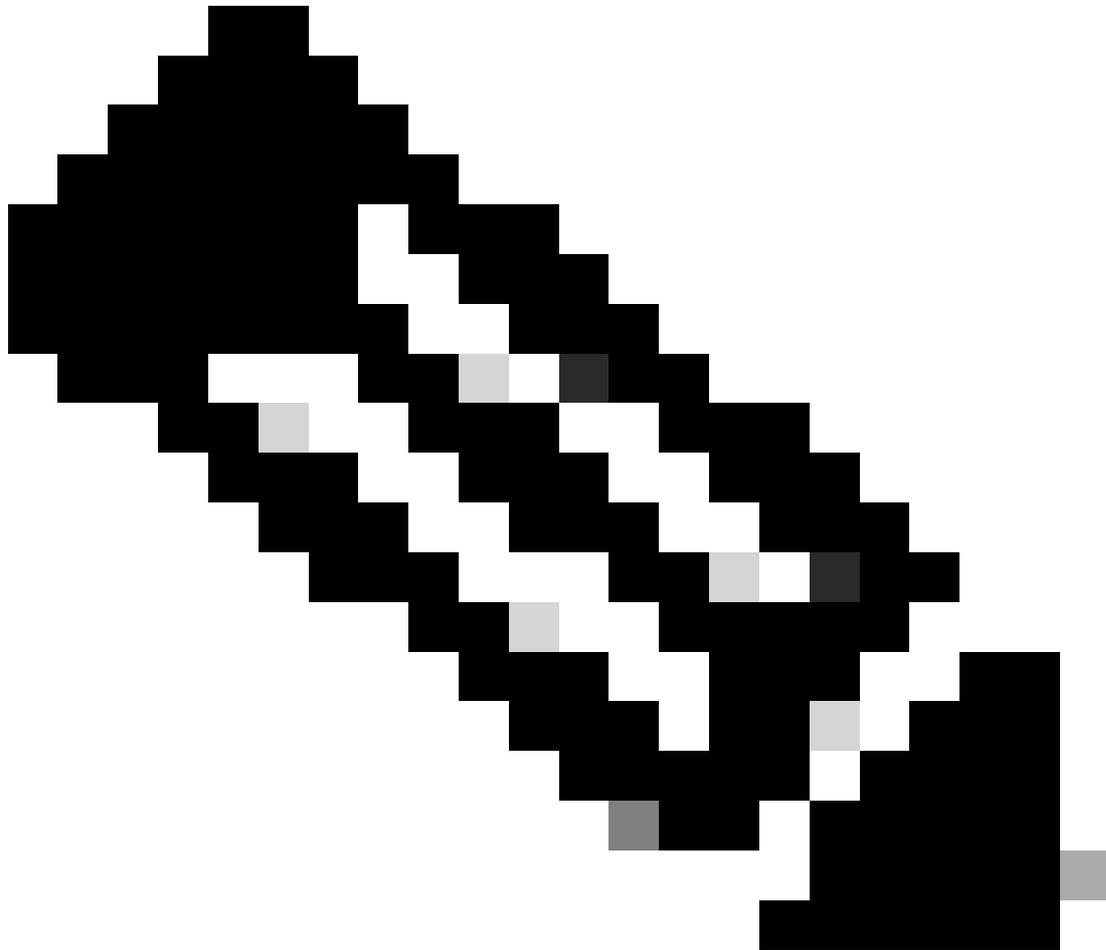


注意：DUO云与组织Active Directory之间的同步需要处于活动状态，以维护DUO云中的最新用户数据库。

- 身份验证成功后，DUO云通过安全的加密推送通知向注册移动设备的用户启动DUO推送。然后，用户必须批准DUO Push以确认其身份并继续。
- 一旦用户批准DUO Push，DUO认证代理服务器就会向PSN发送确认消息，以表明用户已接受认证请求。
- PSN节点将确认发送到FTD，以通知用户已通过身份验证。
- FTD收到身份验证确认，并在采取适当安全措施的情况下与终端建立VPN连接。

9. FTD记录成功的VPN连接的详细信息，并将记账数据安全地传输回ISE节点，以便进行记录和审计。

10. ISE节点在其实时日志中记录会计信息，确保安全地存储所有记录，并可供未来审计或合规性检查使用。



注意：

本指南中的设置使用以下网络参数：

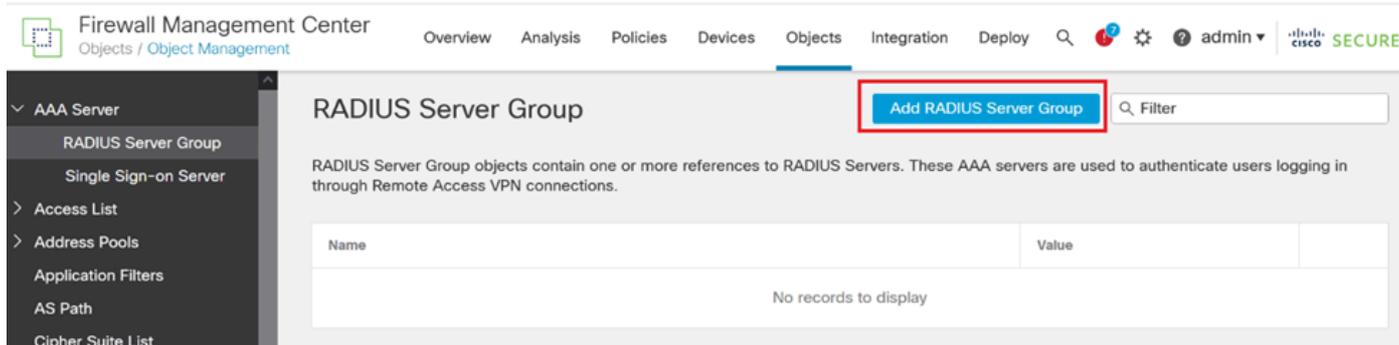
- 主网络服务器(PNS)节点IP：10.4.23.21
- 适用于对等VPN的Firepower威胁防御(FTD) IP：10.4.23.53
- DUO认证代理IP：10.31.126.207
- 域名：testlab.local

配置

FTD配置。

在Firepower管理中心(FMC)中集成RADIUS服务器

1. 通过启动Web浏览器并输入FMC的IP地址以打开图形用户界面(GUI)来访问FMC。
2. 导航到对象菜单，选择AAA服务器，然后继续执行RADIUS服务器组选项。
3. 单击Add RADIUS Server Group按钮以便为RADIUS服务器创建新组。



RADIUS服务器组。

4. 输入新AAA RADIUS服务器组的描述性名称，以确保在您的网络基础设施内进行明确的标识。
5. 选择组配置中的相应选项，继续添加新的RADIUS服务器。

RADIUS Servers (Maximum 16 servers)

IP Address/Hostname
No records to display

RADIUS服务器。

6. 指定RADIUS服务器IP地址并输入共享密钥。



注意：必须确保与ISE服务器安全共享此密钥才能成功建立RADIUS连接。

New RADIUS Server



IP Address/Hostname:*

10.4.23.21

Configure DNS at Threat Defense Platform Settings to resolve hostname

Authentication Port:* (1-65535)

1812

Key:*

●●●●●●●●

Confirm Key:*

●●●●●●●●

Accounting Port: (1-65535)

1813

Timeout: (1-300) Seconds

10

Connect using:

Routing Specific Interface 

Cancel

Save

新建RADIUS服务器。

7. 配置RADIUS服务器详细信息之后，单击Save以保留RADIUS服务器组的设置。

Add RADIUS Server Group



Enable authorize only

Enable interim account update

Interval:* (1-120) hours
24

Enable dynamic authorization

Port:* (1024-65535)
1700

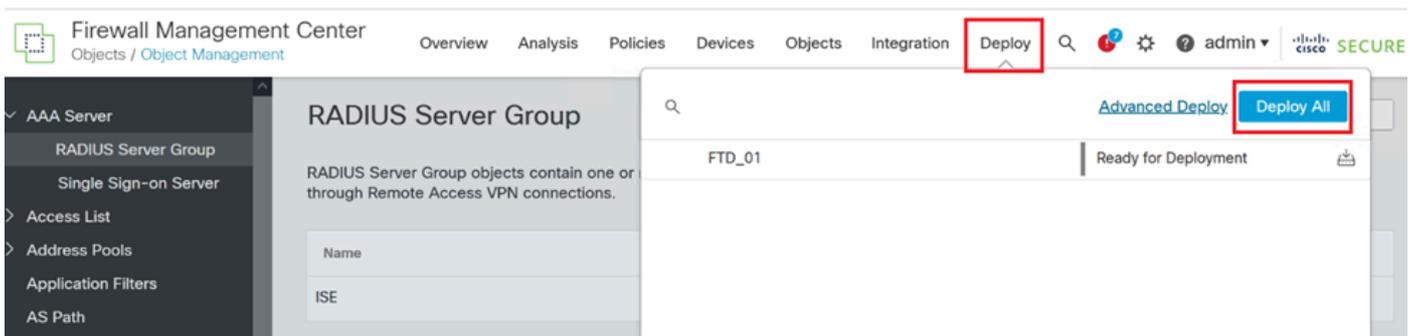
RADIUS Servers (Maximum 16 servers) +

IP Address/Hostname	
10.4.23.21	

服务器组详细信息。

8. 要最终确定并实施网络中的AAA服务器配置，请导航到部署菜单，然后选择全部部署以应用设置

。

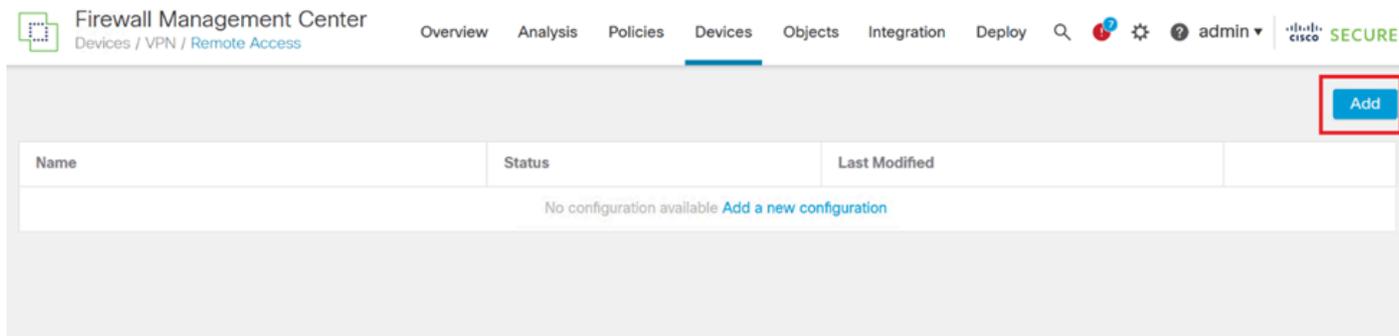


部署AAA服务器。

配置远程VPN。

1. 在FMC GUI中导航到Devices > VPN > Remote Access以开始VPN配置过程。

2. 单击Add按钮创建新的VPN连接配置文件。

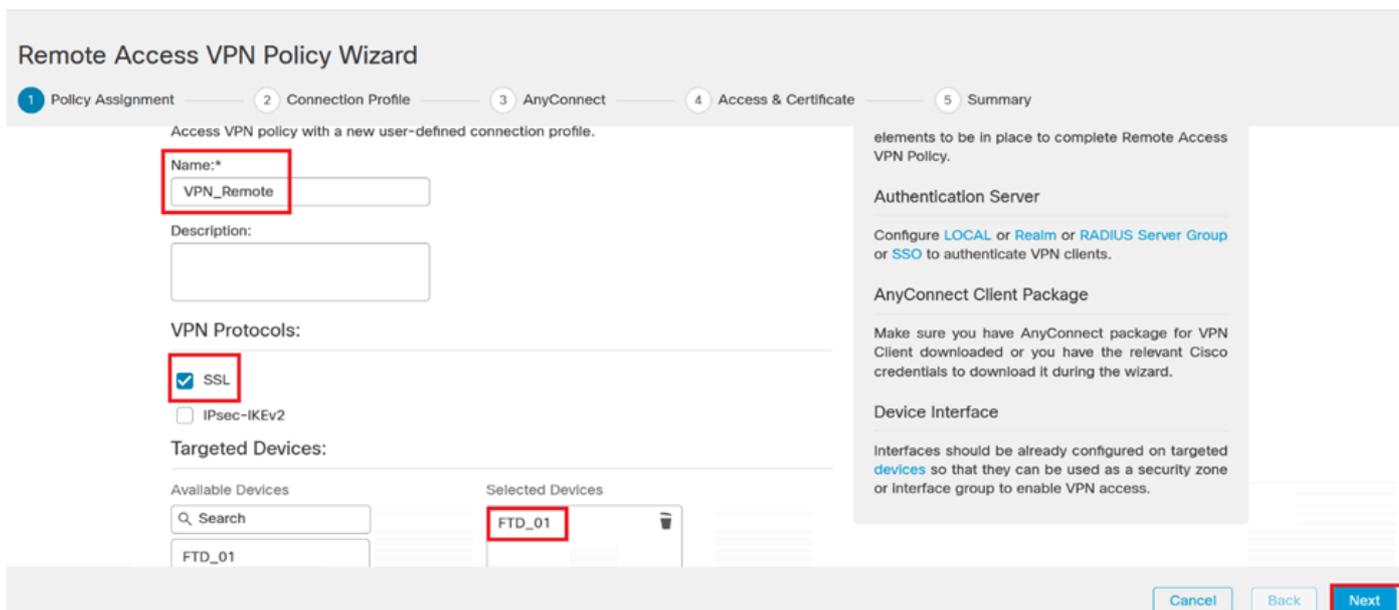


VPN连接配置文件。

3. 输入VPN的唯一描述性名称，以帮助在网络设置中识别它。

4. 选择SSL选项以确保使用SSL VPN协议的安全连接。

5. 从设备列表中选择特定FTD设备。



VPN设置。

6. 将AAA方法配置为在身份验证设置中使用PSN节点。

Remote Access VPN Policy Wizard

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

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: **AAA Only** ▼

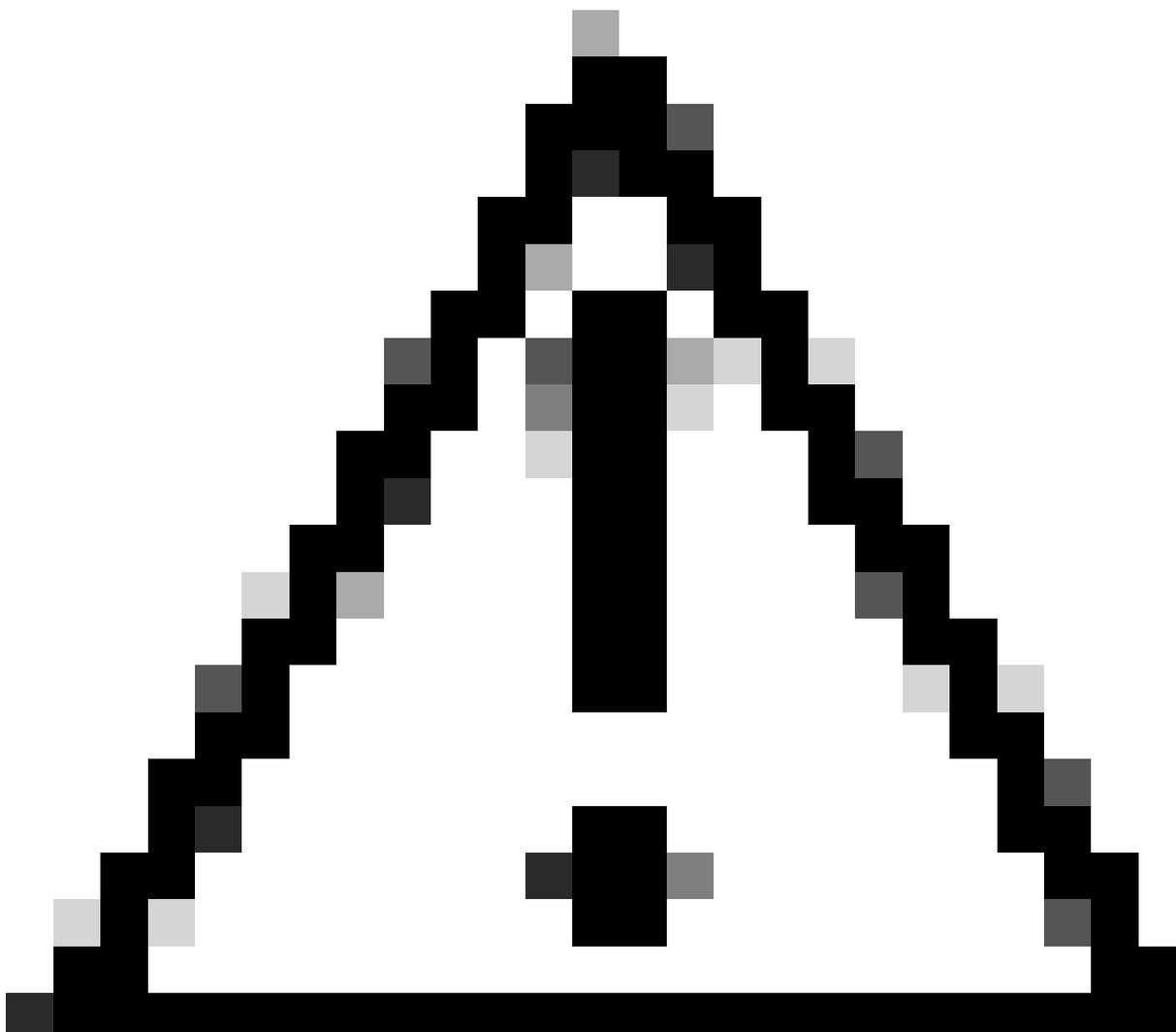
Authentication Server:* **ISE** ▼ +
(LOCAL or Realm or RADIUS)
 Fallback to LOCAL Authentication

Authorization Server: **Use same authentication server** ▼ +
(realm or RADIUS)

Accounting Server: **ISE** ▼ +
(RADIUS)

连接配置文件。

7. 设置VPN的动态IP地址分配。



注意：例如，已选择DHCP VPN池。

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: ⓘ

IPv6 Address Pools: ⓘ

IP Address Pool.

8. 继续创建新的组策略。

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:* 

[Edit Group Policy](#)

组策略。

9. 在组策略设置中，确保选中SSL协议。

Add Group Policy



Name:*

VPN_Remote_Policy

Description:

General

AnyConnect

Advanced

VPN Protocols

IP Address Pools

Banner

DNS/WINS

Split Tunneling

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

Cancel

Save

VPN协议。

10. 创建一个新的VPN池或选择一个现有VPN池，以定义可用于VPN客户端的IP地址范围。

Add Group Policy



Name:*

VPN_Remote_Policy

Description:

General

AnyConnect

Advanced

VPN Protocols

IP Address Pools

Banner

DNS/WINS

Split Tunneling

IP Address Pools:



Name

IP Address Range

Cancel

Save

池VPN。

11. 指定VPN连接的DNS服务器详细信息。

Add Group Policy



Name:*

VPN_Remote_Policy

Description:

General

AnyConnect

Advanced

VPN Protocols

IP Address Pools

Banner

DNS/WINS

Split Tunneling

Primary DNS Server:

+

Secondary DNS Server:

+

Primary WINS Server:

+

Secondary WINS Server:

+

DHCP Network Scope:

+

Only network object with ipv4 address is allowed (Ex: 10.72.3.5)

Default Domain:

Cancel

Save

DNS设置。



警告：请注意，Banner、Split Tunneling、AnyConnect和Advanced选项等其他功能被视为此配置的可选功能。

12. 配置完必要的详细信息后，单击下一步继续下一步的设置。

Remote Access VPN Policy Wizard

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

Use AAA Server (Realm or RADIUS only) ●

Use DHCP Servers

Use IP Address Pools

IPv4 Address Pools:

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:*

[Edit Group Policy](#)

Cancel

Back

Next

组策略。

13. 为VPN用户选择适当的AnyConnect软件包。如果未列出所需的包，您可以选择在此阶段添加所需的包。

Remote Access VPN Policy Wizard

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

The VPN gateway can automatically download the latest AnyConnect 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 AnyConnect Client packages from [Cisco Software Download Center](#).

Select at least one AnyConnect Client image

[Show Re-order buttons](#)

<input type="checkbox"/>	AnyConnect File Object Name	AnyConnect Client Package Name	Operating System
<input type="checkbox"/>	anyconnect-win-4.10.08029-we...	anyconnect-win-4.10.08029-webdeploy-k9...	Windows

Cancel

Back

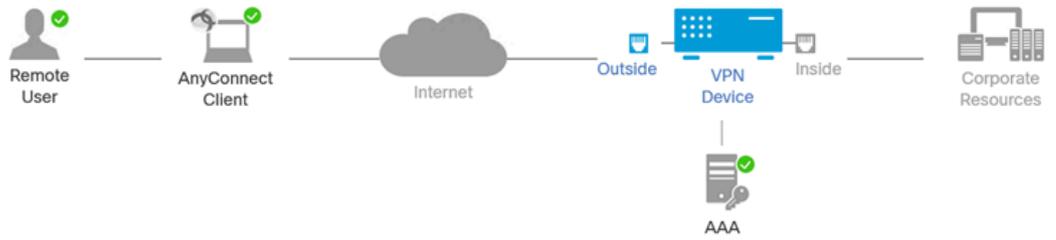
Next

软件包安装。

14. 选择要启用VPN Remote功能的FTD设备上的网络接口。

Remote Access VPN Policy Wizard

1 Policy Assignment — 2 Connection Profile — 3 AnyConnect — 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.

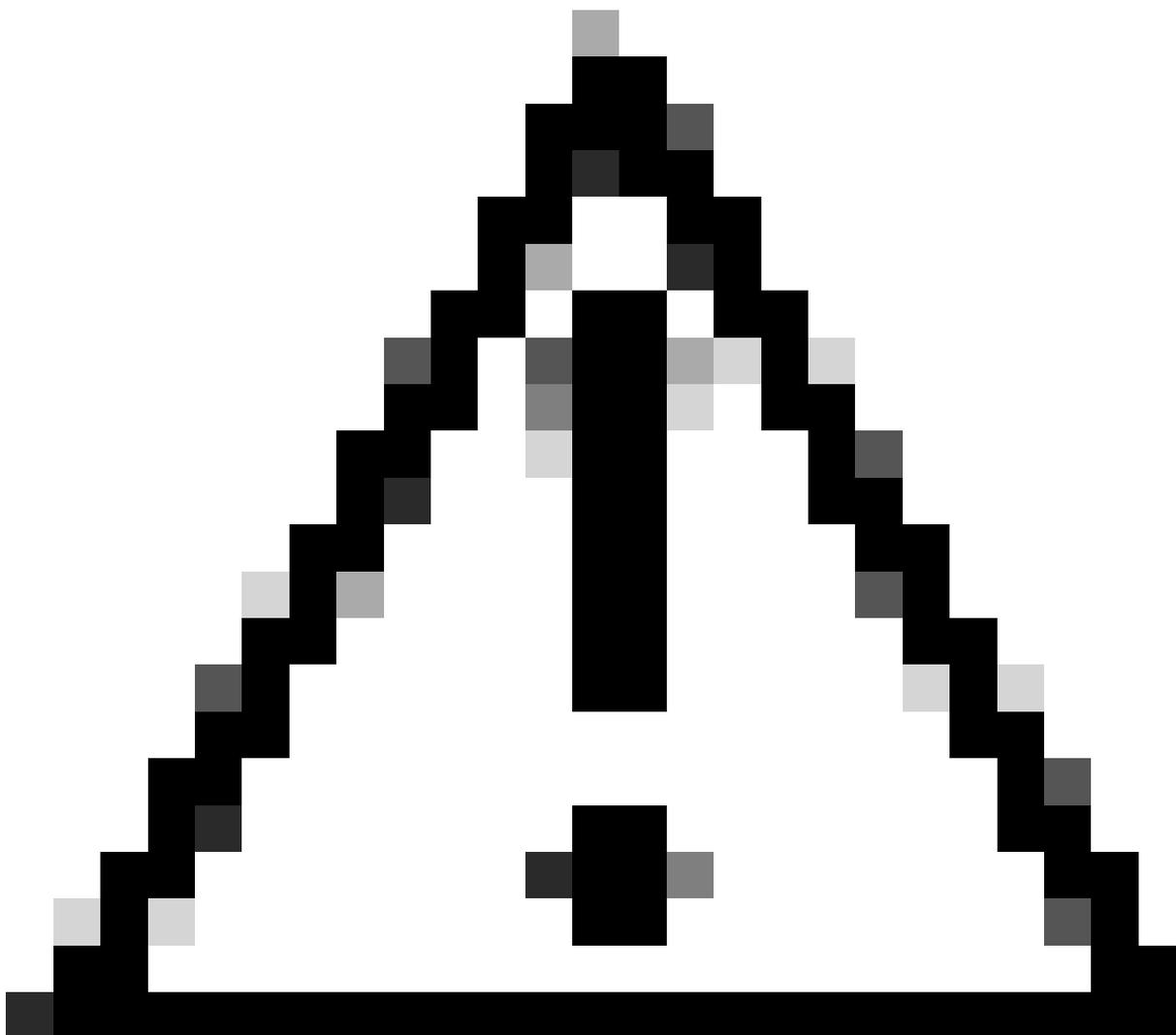
Interface group/Security Zone:* +

Enable DTLS on member interfaces

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

VPN接口

15. 选择一种可用方法创建证书并将其安装在防火墙上，从而建立证书注册流程，这对安全VPN连接至关重要。



注意：例如，本指南中选择一个自签名证书。

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:*

 +

设备证书。

Add Cert Enrollment



Name*

Description

CA Information

Certificate Parameters

Key

Revocation

Enrollment Type:

SCEP

Enrollment URL:*

Self Signed Certificate

EST

Challenge Password:

SCEP

Confirm Password:

Manual

PKCS12 File

Retry Period:

1 (Range 0-60)

Retry Count:

10

(Range 0-100)

Fingerprint:

Cancel

Save

证书注册。

16. 配置证书注册后，单击Next。

Remote Access VPN Policy Wizard

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

will access for VPN connections.

Interface group/Security Zone:* +

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:* +

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.

Cancel

Back

Next

访问和服务摘要

17. 审核所有配置的摘要，确保它们准确无误并反映您预期的设置。

Remote Access VPN Policy Wizard

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

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

Name:	VPN_Remote
Device Targets:	FTD_01
Connection Profile:	VPN_Remote
Connection Alias:	VPN_Remote
AAA:	
Authentication Method:	AAA Only
Authentication Server:	ISE (RADIUS)
Authorization Server:	ISE (RADIUS)
Accounting Server:	ISE
Address Assignment:	
Address from AAA:	-
DHCP Servers:	-
Address Pools (IPv4):	Pool_VPN
Address Pools (IPv6):	-
Group Policy:	VPN_Remote_Policy
AnyConnect Images:	anyconnect-win-4.10.08029-webdeploy-k9.pkg
Interface Objects:	Outside
Device Certificates:	Cert_Enrollment

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

1 Access Control Policy Update

An [Access Control](#) rule must be defined to allow VPN traffic on all targeted devices.

2 NAT Exemption

If NAT is enabled on the targeted devices, you must define a [NAT Policy](#) to exempt VPN traffic.

3 DNS Configuration

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

4 Port Configuration

SSL will be enabled on port 443. Please ensure that these ports are not used in [NAT Policy](#) or other services before deploying the configuration.

▲ Network Interface Configuration

Make sure to add interface from targeted

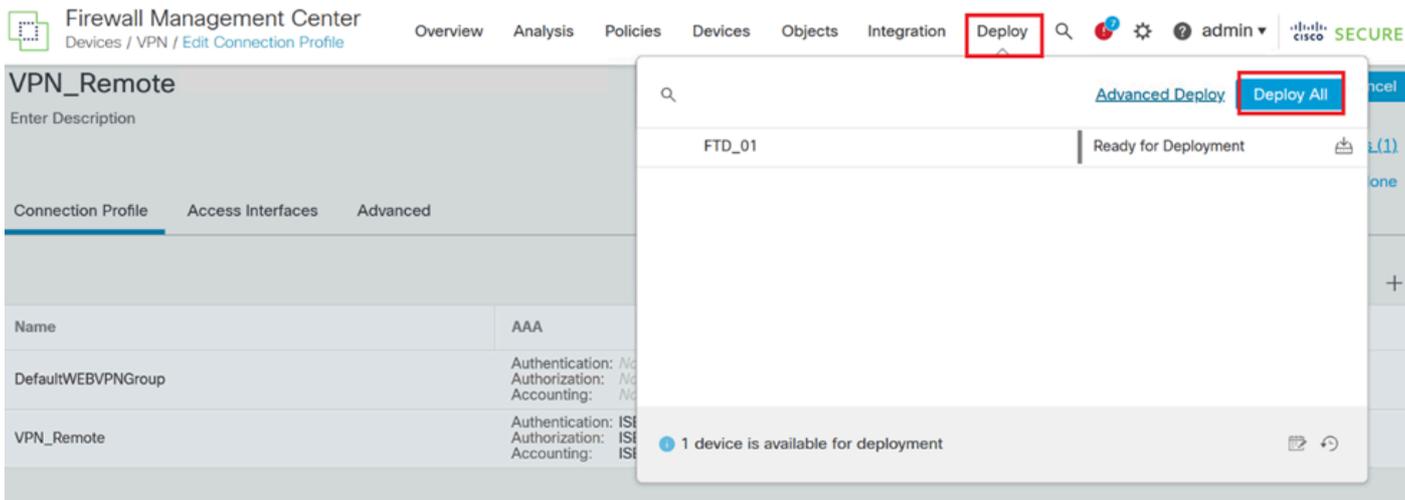
Cancel

Back

Finish

VPN设置摘要。

18. 要应用和激活VPN远程访问配置，请导航到部署>全部部署，然后对选定的FTD设备执行部署。



部署VPN设置。

ISE配置

集成DUO作为外部Radius服务器。

1. 在Cisco ISE管理界面导航到管理>网络资源>外部RADIUS服务器。
2. 单击Add按钮以配置新的外部RADIUS服务器。

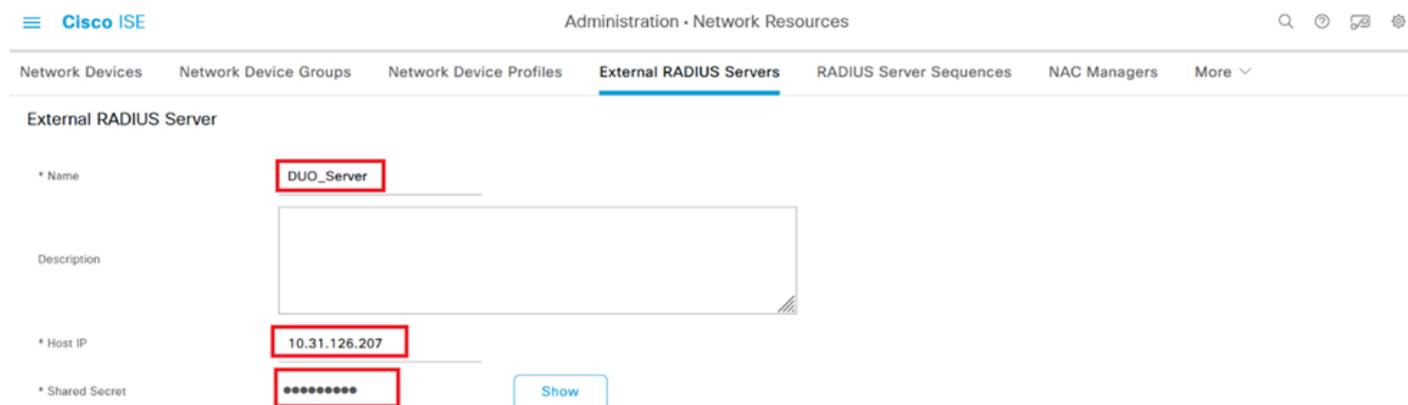


外部Radius服务器

3. 输入Proxy DUO Server的名称。
4. 输入代理DUO服务器的正确IP地址，以确保ISE和DUO服务器之间的通信正确。
5. 设置共享密钥。

注意：必须在代理DUO服务器中配置此共享密钥才能成功建立RADIUS连接。

6. 正确输入所有详细信息后，单击Submit保存新的Proxy DUO Server配置。



The screenshot shows the Cisco ISE Administration interface for configuring an External RADIUS Server. The breadcrumb navigation is Administration > Network Resources > External RADIUS Servers. The form fields are as follows:

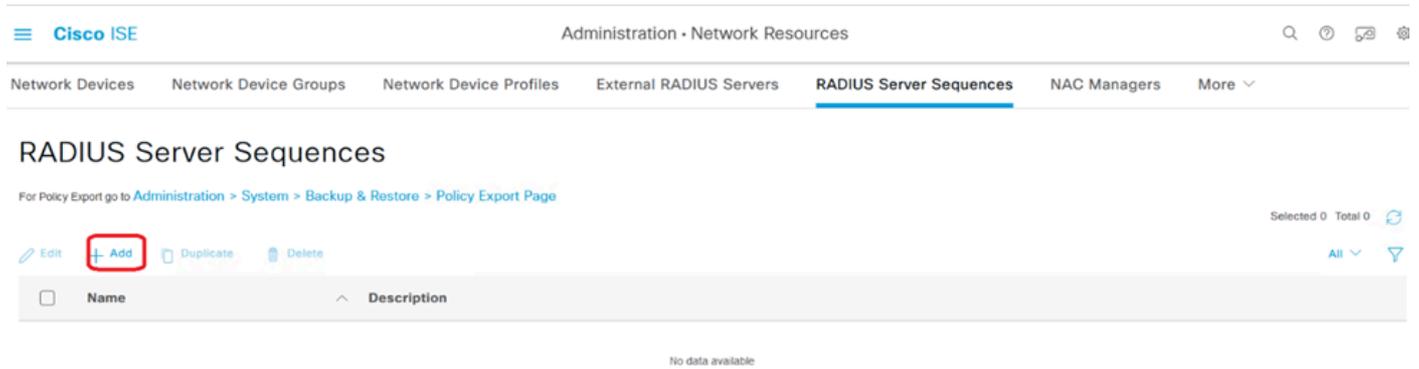
Field	Value
* Name	DUO_Server
Description	
* Host IP	10.31.126.207
* Shared Secret	*****

A "Show" button is located next to the Shared Secret field.

外部RADIUS服务器

7. 继续执行管理> RADIUS服务器序列。

8. 单击Add创建新的RADIUS服务器序列。

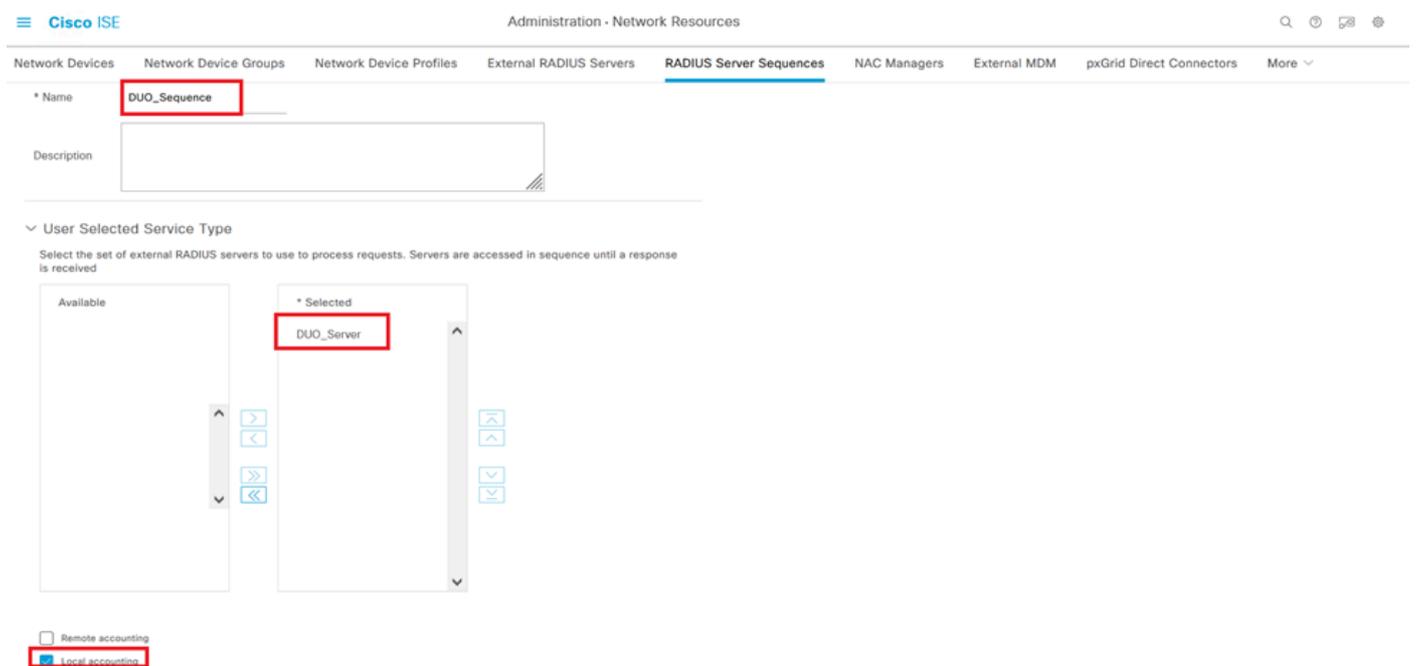


RADIUS服务器序列

9. 为RADIUS服务器序列提供一个不同的名称以便于识别。

10. 找到以前配置的DUO RADIUS服务器(在本指南中称为DUO_Server)，然后将其移动到右侧的选定列表中并在序列中包含它。

11. 单击Submit以完成并保存RADIUS Server Sequence配置。



Radius服务器序列配置。

将FTD集成为网络接入设备。

1. 导航到系统界面中的管理部分，然后从该部分选择网络资源以访问网络设备的配置区域。

2. 在网络资源部分中，找到并单击添加按钮以开始添加新网络接入设备的过程。

Network Devices

Network Device Groups Network Device Profiles External RADIUS Servers RADIUS Server Sequences NAC Managers More ▾

Network Devices

Default Device

Device Security Settings

Network Devices

Selected 0 Total 0

ⓘ + Add Duplicate Import Export ▾ Generate PAC Delete ▾ All ▾ 🔍

<input type="checkbox"/>	Name	IP/Mask	Profile Name	Location	Type	Description
No data available						

网络访问设备。

3. 在提供的字段中，输入网络接入设备名称以标识网络中的设备。
4. 继续指定FTD（Firepower威胁防御）设备的IP地址。
5. 输入之前在FMC（Firepower管理中心）设置期间建立的密钥。此密钥对于设备之间的安全通信至关重要。
6. 单击Submit按钮完成此流程。

Network Devices List > FTD

Network Devices

Name **FTD**

Description

IP Address ▾ * IP : **10.4.23.53** / **32** ⚙

添加FTD作为需要。

RADIUS Authentication Settings

RADIUS UDP Settings

Protocol **RADIUS**

Shared Secret

●●●●●●●●

Show

Use Second Shared Secret ⓘ

Second Shared Secret

Show

CoA Port **1700**

Set To Default

RADIUS设置

DUO配置。

DUO代理安装。

通过单击下一个链接访问DUO代理下载和安装指南：

<https://duo.com/docs/authproxy-reference>

将DUO Proxy与ISE和DUO Cloud集成。

1. 使用您的凭证登录到DUO Security网站<https://duo.com/>。

2. 定位至核销部分，然后选择保护核销以继续。

The screenshot shows the Duo Security dashboard. On the left is a navigation menu with 'Applications' highlighted in a red box. The main content area is titled 'Applications' and includes a 'Protect an Application' button in a red box. Below the title, there is a message about the Universal Prompt experience and two buttons: 'See My Progress' and 'Get More Information'. At the bottom, there are two statistics: '0 All Applications' and '0 End of Support'. The bottom right corner has an 'Export' button and a search bar.

3. 在列表中搜索“Cisco ISE RADIUS”选项，并单击Protect将其添加到您的应用。

The screenshot shows the Duo Applications management interface. On the left is a navigation menu with categories like Applications, Users, Groups, etc. The main content area has a search bar containing 'Cisco ISE RADIUS'. Below the search bar is a table of applications:

Application	Protection Type	Documentation	Action
Cisco ISE Administrative Web Login	2FA with SSO hosted by Duo (Single Sign-On)	Documentation	Configure
Cisco ISE RADIUS	2FA	Documentation	Protect
Cisco RADIUS VPN	2FA	Documentation	Protect

ISE RADIUS选项

4. 成功添加后，您将看到DUO应用程序的详细信息。向下滚动并单击Save。

5. 复制提供的集成密钥、密钥和API主机名；这些对于后续步骤至关重要。

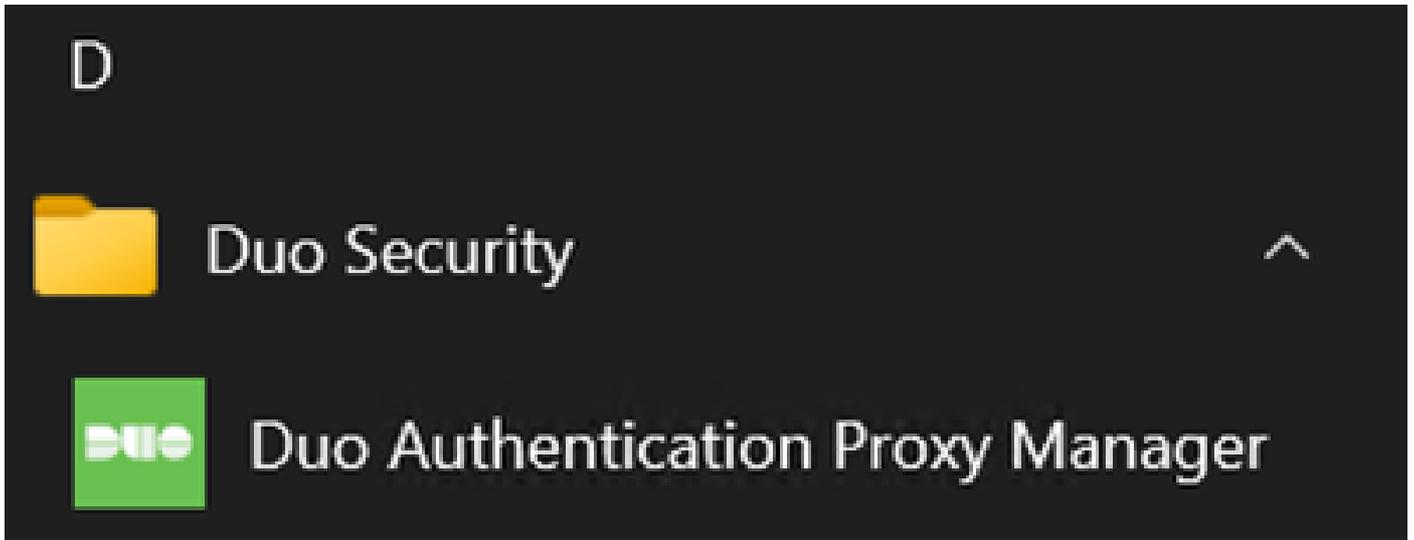
The screenshot shows the 'Cisco ISE RADIUS' application details page. At the top, there is a success message: 'Application modified successfully.' Below this is a breadcrumb trail: 'Dashboard > Applications > Cisco ISE RADIUS'. The main heading is 'Cisco ISE RADIUS' with links for 'Authentication Log' and 'Remove Application'. A link to 'Follow the Cisco ISE RADIUS instructions' is also present. Under the 'Details' section, there are three fields:

- Integration key:** A text field containing 'DIX' followed by a masked key, with a 'Copy' button.
- Secret key:** A text field containing a masked key ending in 'ywLM', with a 'Copy' button. Below it is a warning: 'Don't write down your secret key or share it with anyone.'
- API hostname:** A text field containing a masked hostname followed by 'duosecurity.com', with a 'Copy' button.

A 'Reset Secret Key' button is located in the top right corner of the details section.

ISE服务器详细信息

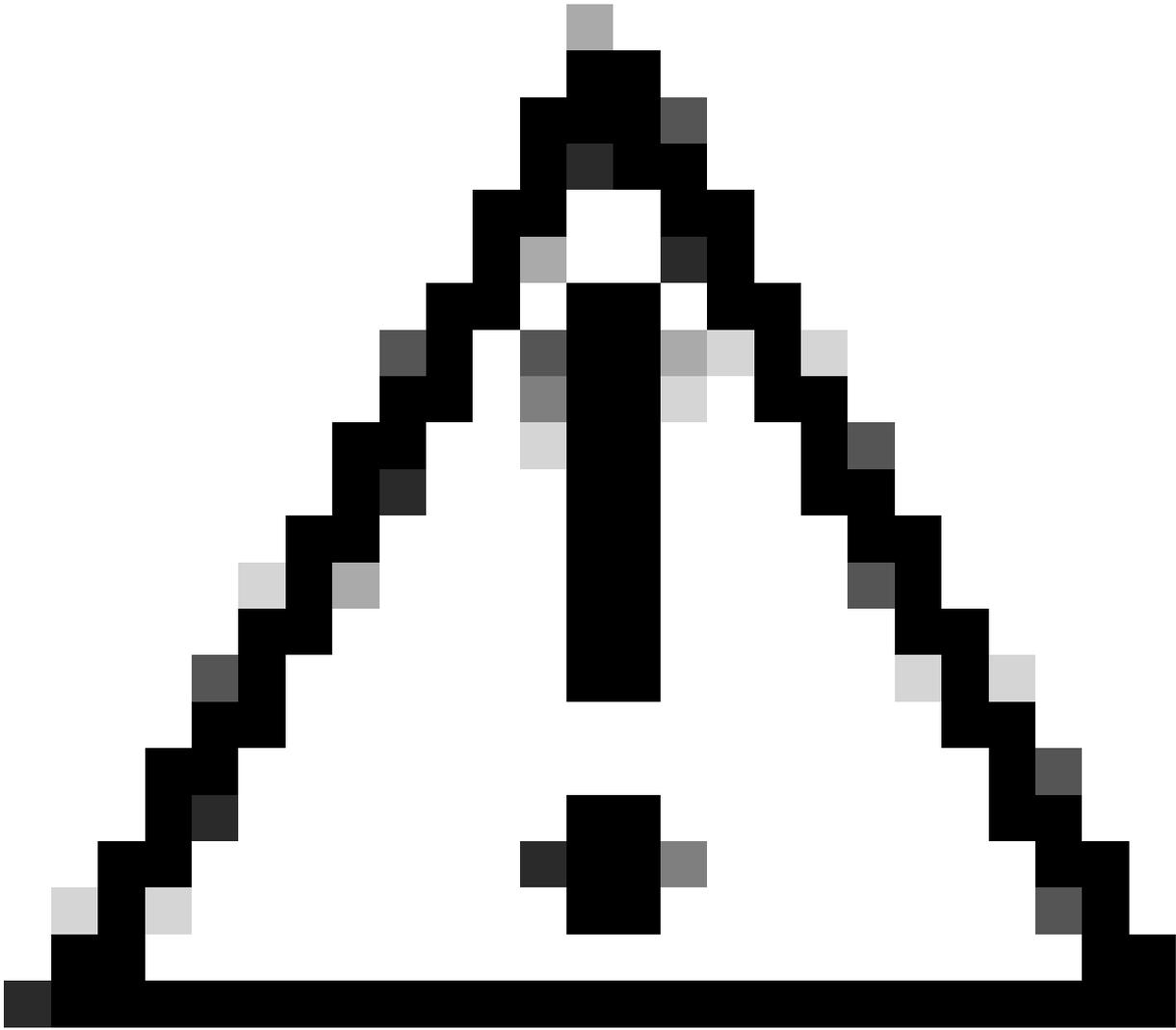
6. 在系统上启动DUO代理管理器以继续设置。



DUO代理管理器

7. (可选) 如果您的DUO代理服务器需要代理配置才能连接到DUO云，请输入以下参数：

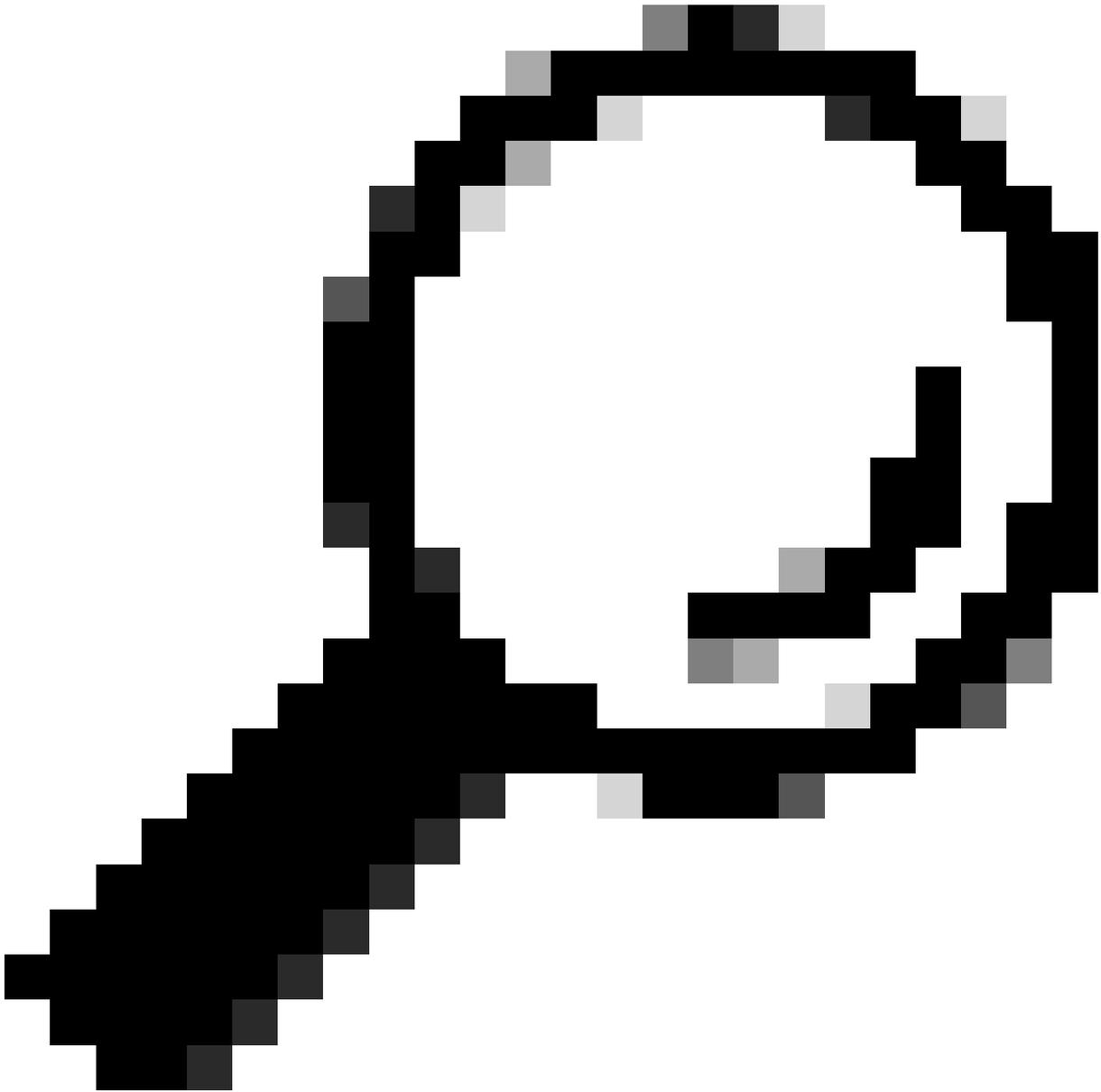
```
[main]
http_proxy_host=<Proxy IP Address or FQDN >
http_proxy_port=<port>
```



注意：请确保使用实际代理详细信息替换和。

8. 现在，使用您之前复制的信息完成集成配置。

```
[radius_server_auto]
ikey=<integration key>
skey=<secret key>
api_host=<API hostname>
radius_ip_1=<ISE IP address>
radius_secret_1=<secret key configured in the external RADIUS server section>
failmode=safe
port=1812
client=ad_client
```



提示：line client=ad_client表示DUO代理使用Active Directory帐户进行身份验证。确保此信息正确无误以完成与Active Directory的同步。

将DUO与Active Directory集成。

1. 将DUO身份验证代理与Active Directory集成。

```
[ad_client]
host=<AD IP Address>
service_account_username=<service_account_username>
service_account_password=<service_account_password>
search_dn=DC=<domain>,DC=<TLD>
```

2. 使用DUO云服务加入Active Directory。登录<https://duo.com/>。

3. 导航到“用户”并选择“目录同步”以管理同步设置。

Dashboard > Users

Users

Directory Sync | Import Users | Bulk Enroll Users | Add User

Need to activate a replacement phone? [Learn more about Reactivating Duo Mobile](#).

0 Total Users | 0 Not Enrolled | 0 Inactive Users | 0 Trash | 0 Bypass Users | 0 Locked Out

Select (0) | ... | Export | Search

No users shown based on your search.

目录同步

4. 单击Add New Sync，然后从所提供的选项中选择“Active Directory”。

Dashboard > Users > Directory Sync

Directory Sync

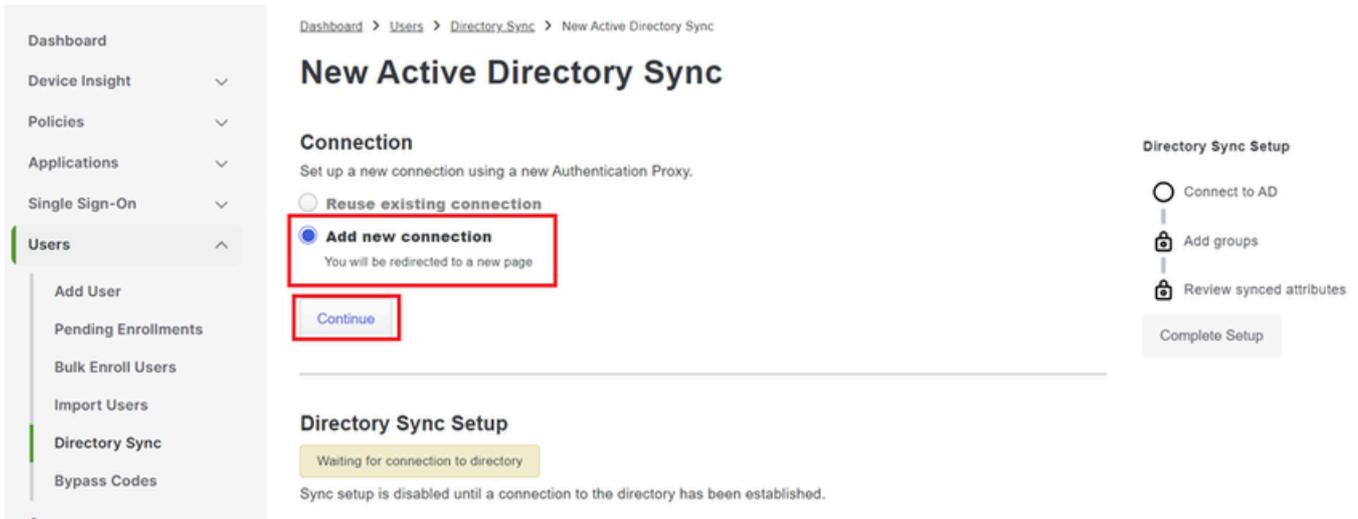
Directory Syncs | Connections

Add New Sync

You don't have any directories yet.

添加新同步

5. 选择添加新连接并单击继续。



添加新的Active Directory

6. 复制生成的集成密钥、密钥和API主机名。

Authentication Proxy

Configuration metadata

1. To set up this directory, you need to install the Duo Authentication Proxy software on a machine that Duo can connect to and that can connect to your LDAP server. [View instructions](#)
2. Configure your Authentication Proxy. Update the `ikey`, `skey`, and `api_host` entries in the `[cloud]` section of your configuration, or [download a pre-configured file](#).

Integration key [Copy](#)

Secret key [Copy](#)

Don't write down your secret key or share it with anyone.

[Reset Secret Key](#)

API hostname [Copy](#)

3. If you are using NTLM or plain authentication, update the `[cloud]` section of your configuration with the username and password for the LDAP account that has read access for your LDAP directory.

[Delete Connection](#) [No Changes](#)

Status

Not connected

- Add Authentication Proxy
- Configure Directory

Connected Directory Syncs

User Syncs

[AD_Sync](#)

身份验证代理详细信息

7. 返回DUO身份验证代理配置并使用您获得的新参数以及Active Directory管理员的服务帐户凭证配置[云]部分：

[cloud]

`ikey=<integration key>`

`skey=<secret key>`

`api_host=<API hostname>`

`service_account_username=<your domain>\<service_account_username>`

`service_account_password=<service_account_password>`

8. 选择“验证”选项验证您的配置，以确保所有设置都正确。

Authentication Proxy is running Up since: 4/20/2024, 5:43:21 PM Version: 6.3.0 Restart Service Stop Service

Configure: authproxy.cfg Unsaved Changes Output

```
1 [main]
2 http_proxy_host=cx[redacted]
3 http_proxy_port=3128
4
5 [radius_server_auto]
6 ikey=DIX[redacted]
7 skey=[redacted]uXWYwLM
8 api_host=[redacted].duosecurity.com
9 radius_ip_1=10.4.23.21
10 radius_secret_1=po[redacted]
11 failmode=safe
12 port=1812
13 client=ad_client
14
15 [ad_client]
16 host=10.4.23.42
17 service_account_username=administrator
18 service_account_password=[redacted]
```

Validate Save

Proxy DUO的配置。

9. 验证后，保存配置并重新启动DUO认证代理服务以应用更改。

Authentication Proxy is running Up since: 4/20/2024, 5:43:21 PM Version: 6.3.0 Restart Service Stop Service

Validation passed
Configuration has passed validation and is ready to be saved

Configure: authproxy.cfg Unsaved Changes Output

```
1 [main]
2 http_proxy_host=cx[redacted]
3 http_proxy_port=3128
4
5 [radius_server_auto]
6 ikey=DIX[redacted]
7 skey=[redacted]wLM
8 api_host=[redacted].duosecurity.com
9 radius_ip_1=10.4.23.21
10 radius_secret_1=po[redacted]
11 failmode=safe
12 port=1812
13 client=ad_client
14
15 [ad_client]
```

Running The Duo Authentication Proxy Connectivity Tool. This may take several minutes...
[info] Testing section 'main' with configuration:
[info] {'http_proxy_host': 'cx[redacted]', 'http_proxy_port': '3128'}
[info] There are no configuration problems
[info] -----
[info] Testing section 'radius_server_auto' with configuration:
[info] {'api_host': '[redacted].duosecurity.com', 'client': 'ad_client', 'failmode': 'safe', 'http_proxy_host': '[redacted]', 'http_proxy_port': '3128', 'ikey': 'DI[redacted]'

Validate Save

重新启动服务选项。

10. 返回DUO管理控制面板，输入Active Directory服务器的IP地址以及用户同步的基本DN。

Directory Configuration

Domain controller(s)

Hostname or IP address (1) *

10.4.23.42

Port (1) *

389

[+ Add Domain controller](#)

The port is typically 389 for cleartext LDAP or STARTTLS, and 636 for LDAPS.

Base DN *

DC=testlab,DC=local

Enter the full distinguished name (DN) of the directory location to search for users and groups. We recommend setting this to the directory root (example: DC=domain,DC=local). If specifying the DN of an OU or container, ensure it is **above both the users and groups to sync**.

目录设置。

11. 选择Plain选项以配置用于非NTLMv2身份验证的系统。

Authentication type



Integrated

Performs Windows authentication from a domain-joined system.



NTLMv2

Performs Windows NTLMv2 authentication.



Plain

Performs username-password authentication.

认证类型。

12. 保存新设置以确保更新配置。

 Delete Connection

Save

Status

Not connected

Add Authentication Proxy



Configure Directory

Connected Directory Syncs

User Syncs

[AD Sync](#)

保存选项

13. 使用“测试连接”功能验证DUO云服务可以与您的Active Directory通信。

Authentication Proxy

1. To set up this directory, you need to install the Duo Authentication Proxy software on a machine that Duo can connect to and that can connect to your LDAP server. [View instructions](#)
2. Configure your Authentication Proxy. Update the `ikey`, `skey`, and `api_host` entries in the `[cloud]` section of your configuration, or [download a pre-configured file](#).

Integration key [Copy](#)

Secret key [Copy](#)

Don't write down your secret key or share it with anyone.

[Reset Secret Key](#)

API hostname [Copy](#)

3. If you are using NTLM or plain authentication, update the `[cloud]` section of your configuration with the username and password for the LDAP account that has read access for your LDAP directory.

```
service_account_username=myusername  
service_account_password=mypassword
```

4. Restart your Authentication Proxy.

5. [Test Connection](#).

测试连接选项。

14. 确认Active Directory的状态显示为“已连接”，表示已成功集成。

Status

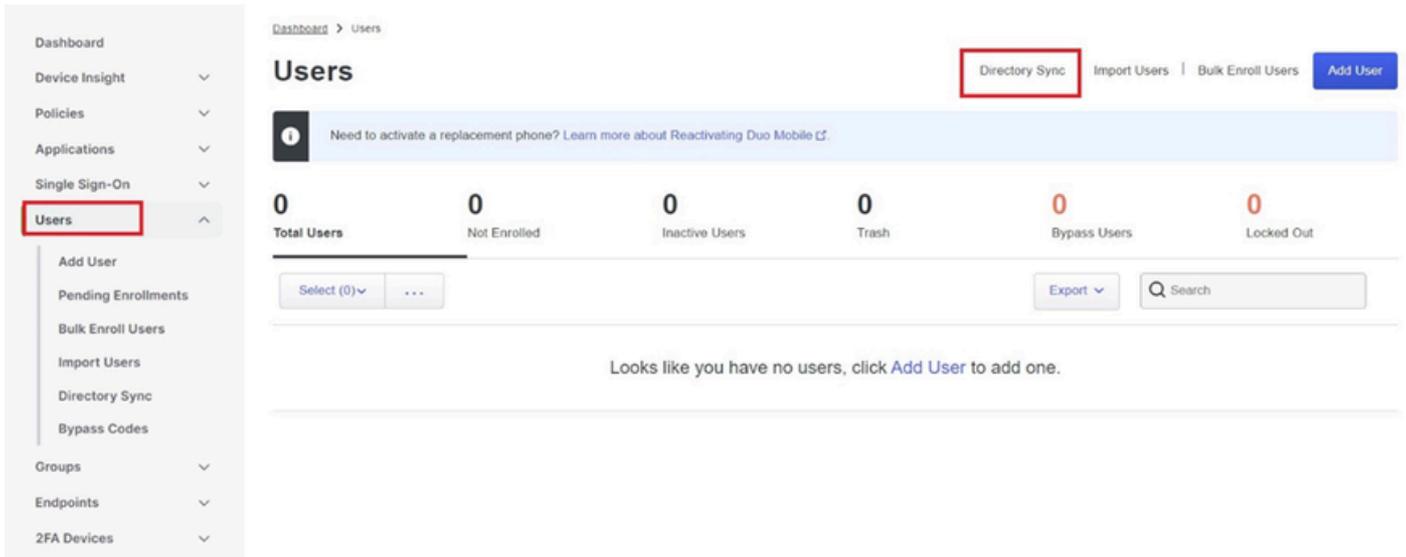
Connected

状态成功。

通过DUO云从Active Directory (AD)导出用户帐户。

1. 在Duo管理面板中导航到用户>目录同步，以查找与使用Active Directory进行目录同步相关的设置

o

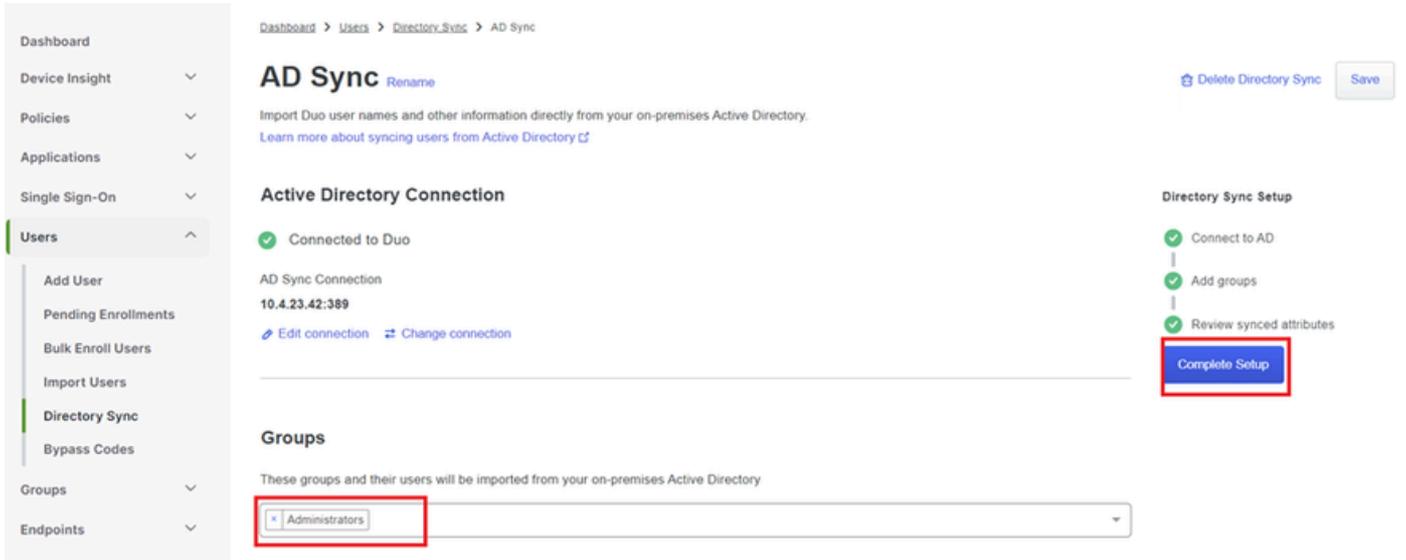


用户列表。

2. 选择要管理的Active Directory配置。

3. 在配置设置中，确定并选择Active Directory中要与Duo Cloud同步的特定组。考虑使用过滤选项进行选择。

4. 单击完成设置。



AD同步。

5. 要立即启动同步，请单击立即同步。这会将用户帐户从Active Directory中的指定组导出到Duo Cloud，从而允许在Duo Security环境中对其进行管理。

AD Sync Rename

Delete Directory Sync No Changes

Import Duo user names and other information directly from your on-premises Active Directory.
[Learn more about syncing users from Active Directory](#)

Sync Controls

Sync status

Scheduled to automatically synchronize every 12 hours, next around 2:00 AM UTC [Pause automatic syncs](#)

Sync Now

[Troubleshooting](#)

Active Directory Connection

✓ Connected to Duo

AD Sync Connection

10.4.23.42:389

[Edit connection](#)

[Change connection](#)

正在启动同步

在Cisco DUO云中注册用户。

用户注册通过各种方法启用身份验证，例如代码访问、DUO推送、SMS代码和令牌。

1. 导航至思科云控制面板中的用户部分。
2. 查找并选择您要注册的用户帐户。

Dashboard > Users

Users

Directory Sync | Import Users | Bulk Enroll Users [Add User](#)

1 Total Users **1** Not Enrolled **1** Inactive Users **0** Trash **0** Bypass Users **0** Locked Out

Select (0) ... Export Search

<input type="checkbox"/>	Username	Name	Email	Phones	Tokens	Status	Last Login
<input checked="" type="checkbox"/>	administrator		oteg[REDACTED]			Active	Never authenticated

1 total

用户帐户列表。

3. 单击Send Enrollment Email按钮以启动登记流程。

administrator

Logs

Send Enrollment Email

Sync This User



This user has not enrolled yet. See our [enrollment documentation](#) to learn more about enrolling users.



This user was synced from the directory **AD Sync**. Some fields are read-only.

Username

administrator

Username aliases

[+ Add a username alias](#)

Users can have up to 8 aliases.

Optionally, you may choose to reserve using an alias number for a specific alias

(e.g., Username alias 1 should only be used for Employee ID).

通过电子邮件进行注册。

4. 检查电子邮件收件箱并打开登记邀请以完成验证过程。

有关注册流程的其他详细信息，请参阅以下资源：

- 通用注册指南：<https://guide.duo.com/universal-enrollment>
- 传统注册指南：<https://guide.duo.com/traditional-enrollment>

配置验证过程。

为确保您的配置准确且可操作，请验证以下步骤：

1. 启动Web浏览器并输入Firepower威胁防御(FTD)设备的IP地址以访问VPN接口。

Not secure | https://10.4.23.53/+CSCOE+/logon.html#form_title_text

Logon

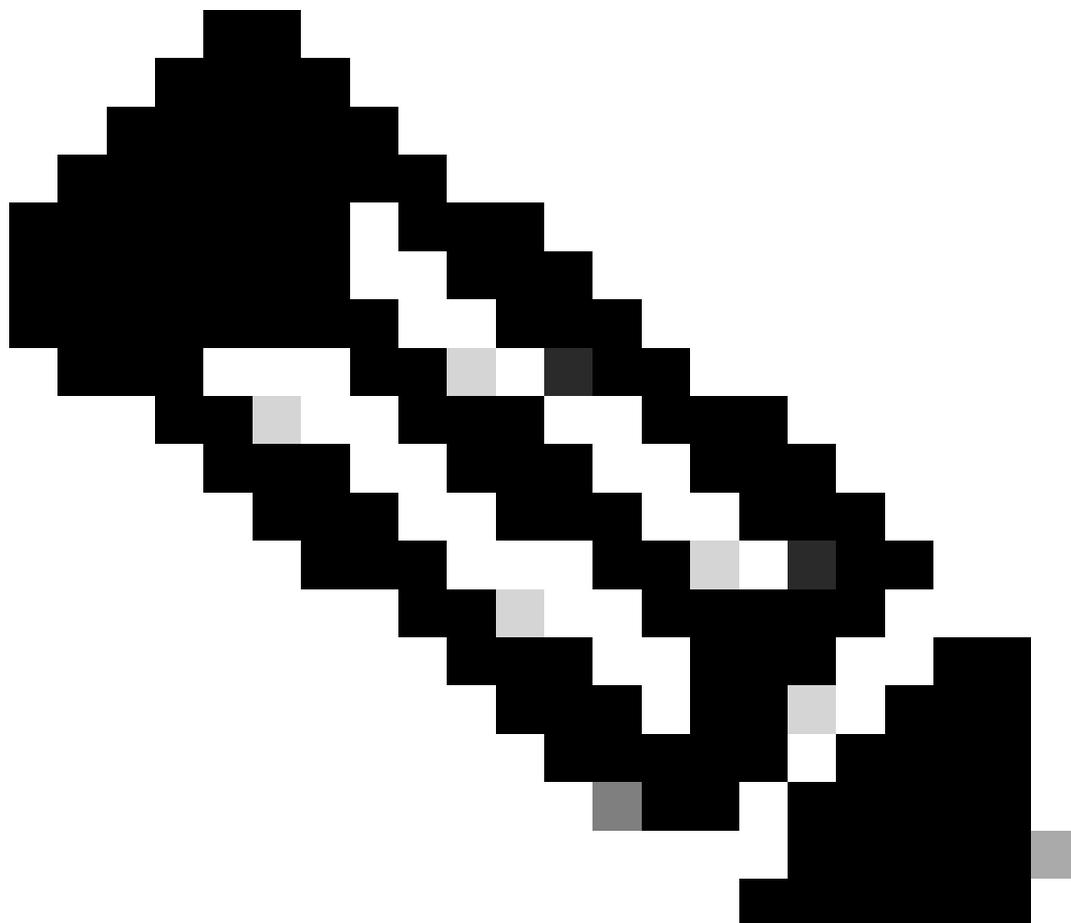
Group

Username

Password

VPN登录。

2. 根据提示输入您的用户名和密码。



注意：凭证是Active Directory帐户的一部分。

3. 当您收到DUO Push通知时，请使用DUO Mobile软件批准该通知，以继续验证过程。



(1) Login request waiting.

[Respond](#)



Are you logging in to Cisco ISE
RADIUS?



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