

使用預定義模板在FTD上設定WCCP並疑難排解

目錄

[簡介](#)

[必要條件](#)

[需求](#)

[採用元件](#)

[設定](#)

[工作方式](#)

[網路圖表](#)

[組態](#)

[驗證](#)

[疑難排解](#)

簡介

本檔案將介紹FTD上WCCP的設定和疑難排解步驟。

必要條件

需求

思科建議您瞭解以下主題：

- 網路快取通訊協定(WCCP)第2版(v2)
- Firepower Management Center (FMC)
- Firepower Threat Defense (FTD)

採用元件

本文中的資訊係根據以下軟體和硬體版本：

- 安全防火牆管理中心(FMCv)v7.4.2
- 安全防火牆威脅防禦虛擬(FTDv)v7.4.2

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路運作中，請確保您瞭解任何指令可能造成的影響。

設定

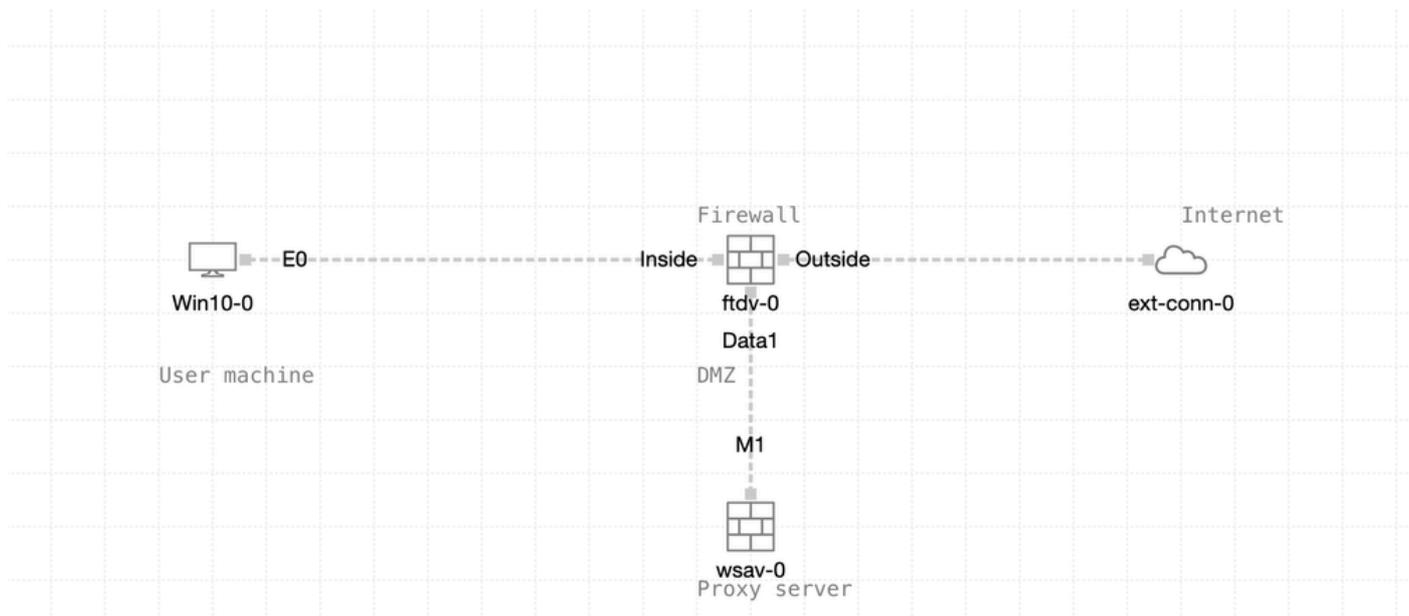
Web快取通訊協定(WCCP)用於將Web流量重新導向到快取伺服器。通常在Cisco路由器和防火牆等網路裝置中實作，將HTTP、HTTPS和FTD over HTTP要求重新導向代理伺服器。

WCCP有不同的版本，包括WCCP v1、v2和v3，每個版本都提供增強的功能和可擴充性。

工作方式

- 使用者電腦Win10-0發出HTTPS請求。
- 這裡，FTD防火牆是使用者PC的閘道。接收HTTP/HTTPS請求。
- FTD瞭解目的地連線埠為443，並將流量重新導向到DMZ
- DMZ使用GRE封裝封包，並將要求轉送到代理伺服器。
- 代理伺服器檢視其快取或發起到原始伺服器的新連線，並直接響應使用者電腦。

網路圖表



網路拓撲

組態

以下步驟演示了FMC上的WCCP配置。必須將連線埠為80和443的流量從Inside區域重新導向到DMZ區域。



附註：本文檔介紹了動態服務ID的步驟。埠資訊已從WCCP客戶端獲取。

步驟 1: 登入到FMC GUI，然後導航到Object > Object Management > Access List > Extended > Add Extended Access List。

建立兩個延伸存取清單。

1) 建立訪問清單以重定向使用者流量，然後點選儲存。

Edit Extended Access List Object



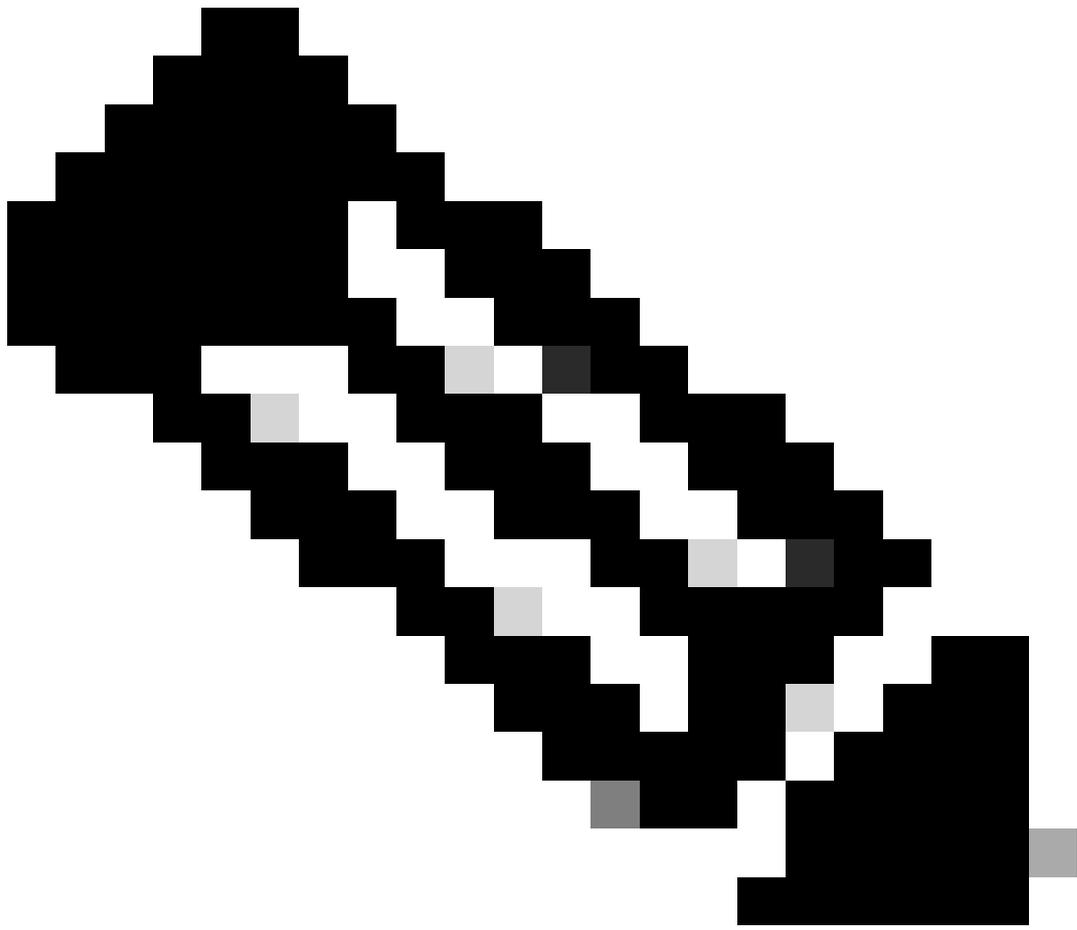
Name

Entries (3) Add

Sequence	Action	Source	Source Port	Destination	Destination Port	Application	Users	SGT	
1	Block	WSA_server	Any	Any	Any	Any	Any	Any	
2	Block	Any	Any	user_LAN	Any	Any	Any	Any	
3	Allow	Any	Any	Any	Any	Any	Any	Any	

Allow Overrides

重新導向使用者流量



附註：此存取清單可確保您具有從WCCP使用者端傳入FTD的流量的Action Block，以避免網路中的回圈。

此外，還可以使用Action Block建立另一條語句，以確保內部主機之間的通訊不會傳送到代理伺服器。

最終語句必須允許符合重定向至Proxy條件的所有其他流量。

2)建立訪問清單以標識WCCP客戶端，然後按一下Save。

Name
WCCP-CLIENT

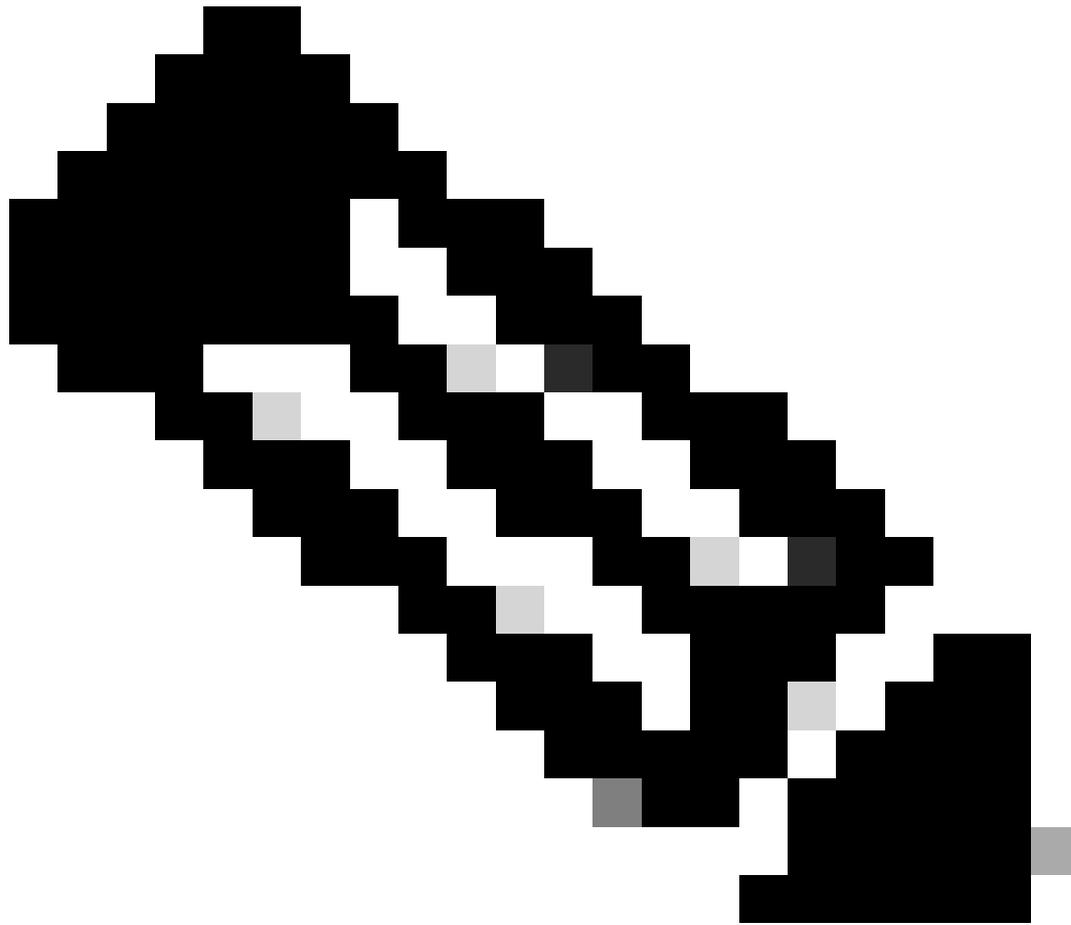
Entries (1) Add

Sequence	Action	Source	Source Port	Destination	Destination Port	Application	Users	SGT	
1	Allow	WSA_server	Any	Any	Any	Any	Any	Any	

Allow Overrides

Cancel Save

用於標識WCCP客戶端的訪問清單



附註：配置擴展訪問清單以包括WCCP伺服器的IP地址。

第2步：導航至對象>對象管理> FlexConfig >文本對象>新增文本對象以新增WCCP服務和儲存。

Edit Text Object



Name:

wccp-service-object

Description:

Variable Type

Single

Count

1

1	97

Allow Overrides

Cancel

Save

正在建立wccp服務對象



附註：在此示例中，服務ID為97。建議選擇介於90和97之間的服务ID，因為這些服務ID通常與分配給特定協定的其他服務ID不衝突。

有關詳細資訊，請參閱[ASA上的WCCP:概念、限制和配置](#)

步驟 3:

- 導覽至Object > Object Management > FlexConfig > Text Object，然後搜尋isServiceIdentifier。

Text Object Add Text Object

Text objects define free-form text strings that you use as variables in a FlexConfig object. These objects can have single values or be a list of multiple values.

搜尋isServiceIdentifier

- 將isServiceIdentifier從false修改為true。

- isServiceIdentifier - 如果為false，則使用standardweb-cacheservice識別符號。請參閱 [Firepower管理中心配置指南](#)

Edit Text Object



Name:

isServiceIdentifier

Description:

A flag to identify whether to use service in wccp.

Variable Type

Single

Count

1

1	true

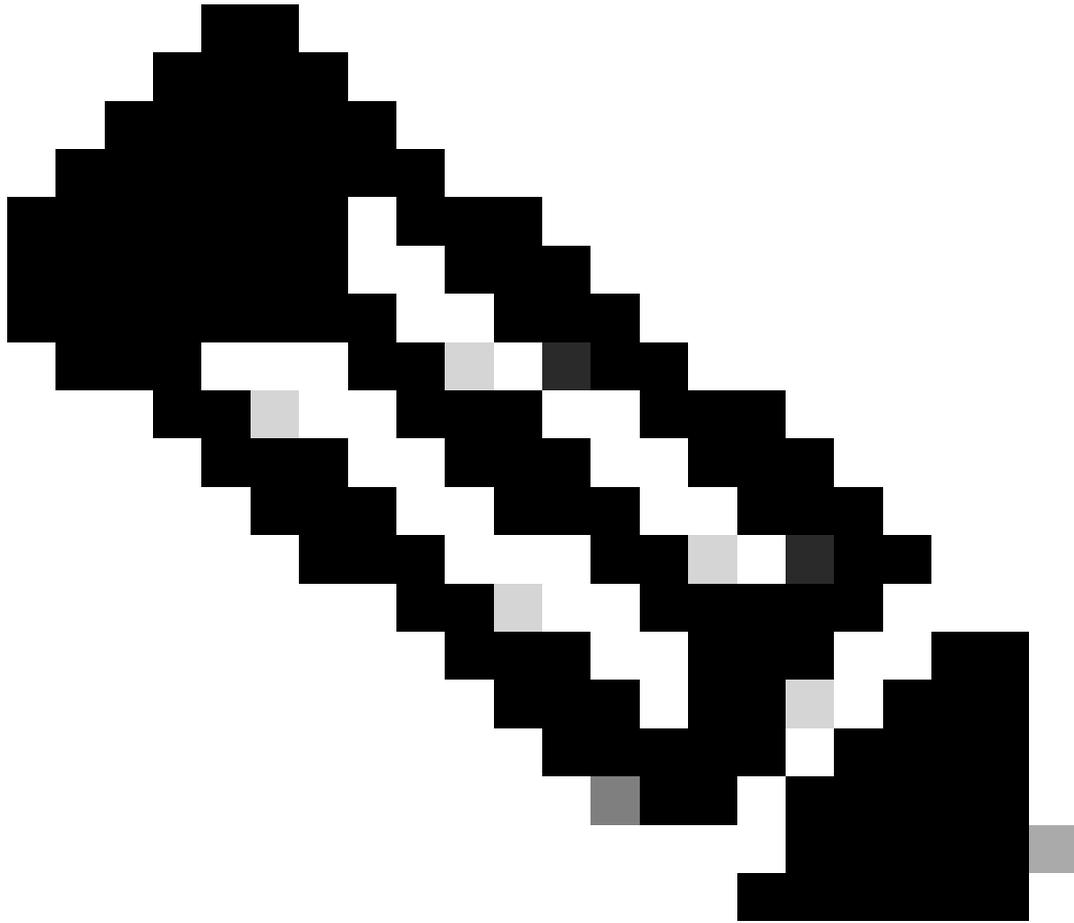
Allow Overrides

► Override (0)

Cancel

Save

將值從false修改為true



附註：此外，還可以建立使用者定義的文本對象，如步驟2所示。

步驟 4:

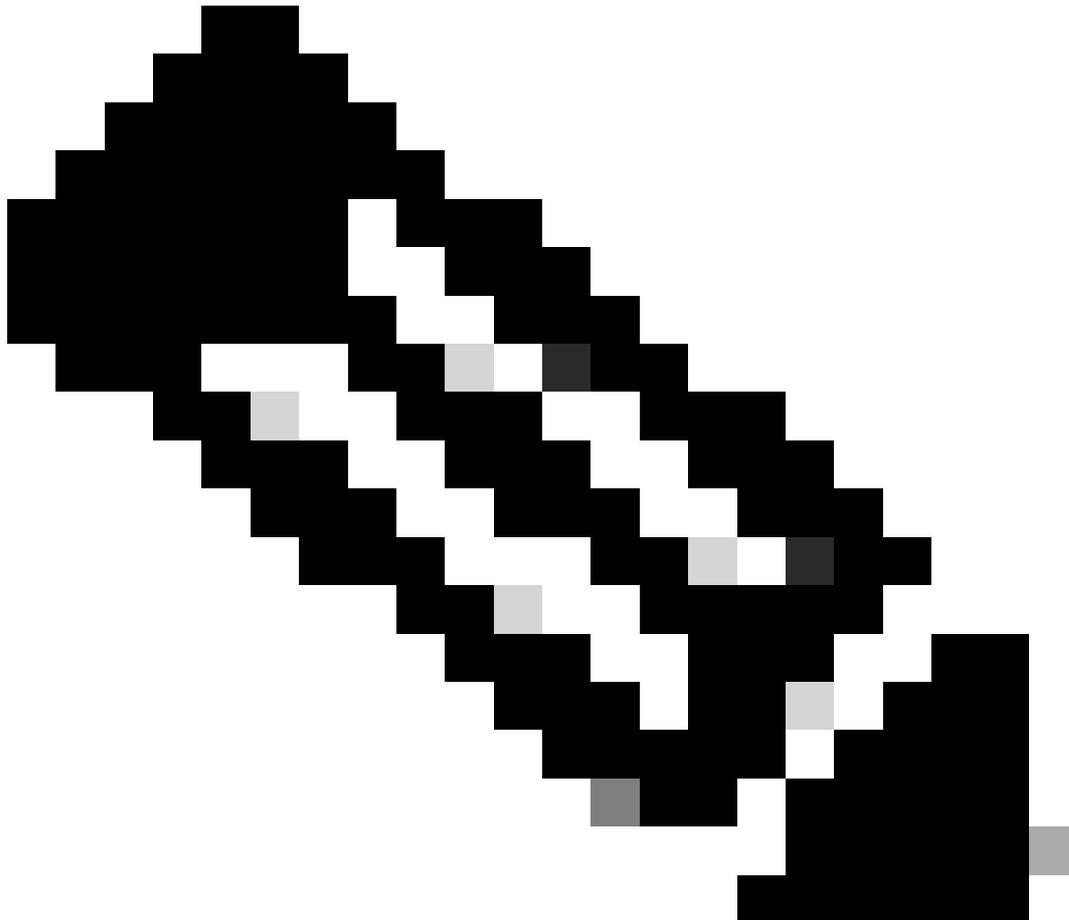
- 導航到對象>對象管理> Flex配置> FlexConfig對象。
- 搜尋關鍵字wccp。
- 按一下Wccp_Configure模板的Clone選項。

The screenshot shows the 'FlexConfig Object' management page in the Firewall Management Center. The left sidebar lists various object types, with 'FlexConfig' expanded to show 'FlexConfig Object' and 'Text Object'. The main content area displays a table of FlexConfig objects:

Name	Description	Actions
Wccp_Configure	The template is an example of wccp configur...	[Clone] [Search] [Delete]
Wccp_Configure_Clear	Clears wccp configurations.	[Clone] [Search] [Delete]

A red arrow points to the clone icon (two overlapping squares) for the 'Wccp_Configure' object.

克隆wccp_configure模板



附註：FlexConfig對象具有預定義的模板：Wccp_Configure。無法將模板附加到裝置。您必須克隆它。

步驟 5:

- 從第三行刪除\$serviceIdentifier變數，並提供您自己的變數。

Add FlexConfig Object

Name:
Wccp_Configure_clone

Description:
The template is an example of wccp configuration. It can not be

⚠ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Insert | Deployment: Once | Type: Append

```
#set( $service = "web-cache")
#if( $isServiceIdentifier == "true")
#set( $service = "$serviceIdentifier")
#end
#set ( $wccpCli = "wccp")
#set ( $wccpCli = "$wccpCli $service")
###wccpGroupList is place-holder for extended ACL.
###Replace wccpGroupList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpGroupList )
#set( $wccpCli = "$wccpCli group-list $wccpGroupList")
#end
###wccpRedirectList is place-holder for extended ACL.
###Replace wccpRedirectList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpRedirectList )
#set( $wccpCli = "$wccpCli redirect-list $wccpRedirectList")
#end
```

▼ Variables

Name	Dimension	Default Value	Property (Type:Name)	Override	Description
isServiceIdentifier	SINGLE	true	FREEFORM:i...	false	A flag to determine if service ...
serviceIdentifier	SINGLE	1	FREEFORM:...	false	service identifier number is to...

Cancel Save

刪除服務識別符號

- 將Text Objectwccp-service插入為步驟2中建立的變數。
- 從下拉選單中，選擇「插入」>「插入策略對象」>「文本對象」

Add FlexConfig Object

Name:

Description:

⚠ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Insert ▾ |  | Deployment: ▾ | Type:

Insert Policy Object ▸ Text Object
Insert System Variable ▸ Network
Insert Secret Key Security Zones

```
#set ( $wccpCli = "$wccpCli\n#####wccpGroupList is place-holder for extended ACL.\n#####Replace wccpGroupList with extended ACL defined in FMC by inserting policy-object of type extended ACL.\n#if( $wccpGroupList )\n#set( $wccpCli = "$wccpCli\n#end\n#####wccpRedirectList is place-holder for extended ACL.\n#####Replace wccpRedirectList with extended ACL defined in FMC by inserting policy-object of type extended ACL.\n#if( $wccpRedirectList )\n#set( $wccpCli = "$wccpCli redirect-list $wccpRedirectList")\n#end
```

Standard ACL Object
Extended ACL Object
Route Map

將wccp-service對象作為變數插入

- 提供變數Name wccp-service。
- 在Available Object中搜尋wccp-service-object。
- 新增對象並儲存。

Insert Text Object Variable



Variable Name:

Description:

Available Objects 



wccp-service-object

wccpPassword

Add

Selected Object

wccp-service-object



Cancel

Save

新增wccp服務對象

步驟 6:

- 複製wccpGroupList變數名稱並提供您自己的變數。

Add FlexConfig Object

Name:

Description:

⚠ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Insert | Deployment: Type:

```
#set( $service = "web-cache")
#if( $isServiceIdentifier == "true")
#set( $service = "$wccp-service")
#end
#set ( $wccpCli = "wccp")
#set ( $wccpCli = "$wccpCli $service")
###wccpGroupList is place-holder for extended ACL.
###Replace wccpGroupList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpGroupList )
#set( $wccpCli = "$wccpCli group-list $wccpGroupList")
#end
###wccpRedirectList is place-holder for extended ACL.
###Replace wccpRedirectList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpRedirectList )
#set( $wccpCli = "$wccpCli redirect-list $wccpRedirectList")
#end
```

▼ Variables

刪除預定義的wccpGroupList變數

- 從下拉選單Insert > Insert Policy Object > Extended ACL Object。

Name:

Description:

⚠ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Insert | Deployment: Type:

- Insert Policy Object
 - Text Object
 - Network
 - Security Zones
 - Standard ACL Object
 - Extended ACL Object**
 - Route Map
- Insert System Variable
- Insert Secret Key

```
#set ( $wccpCli = "$wccpCli $service")
###wccpGroupList is place-holder for extended ACL.
###Replace wccpGroupList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpGroupList )
#set( $wccpCli = "$wccpCli group-list $wccpGroupList")
#end
###wccpRedirectList is place-holder for extended ACL.
###Replace wccpRedirectList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpRedirectList )
#set( $wccpCli = "$wccpCli redirect-list $wccpRedirectList")
#end
```

▼ Variables

新增wccpGroupList擴展ACL

- 貼上您在上一個步驟中在變數名稱部分複製的名稱wccpGroupList。

- 在步驟1中建立的可用對象中搜尋WCCP-CLIENT。
- Add和Save它。

Insert Extended Access List Object Variable ?

Variable Name:

Description:

Available Objects ↻

✕

- Redirect_traffic
- WCCP-CLIENT**

Selected Object

WCCP-CLIENT 🗑️

新增WCCP客戶端擴展清單

步驟 7:

- 選擇wccpRedirectList以複製和提供您自己的變數。

Add FlexConfig Object

Name:

Wccp_Configure_clone

Description:

The template is an example of wccp configuration. It can not be

▲ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Insert ▾

Deployment:

Once

Type:

Append

```
#set( $service = "web-cache")
#if( $isServiceIdentifier == "true")
#set( $service = "$wccp-service")
#end
#set ( $wccpCli = "wccp")
#set ( $wccpCli = "$wccpCli $service")
####wccpGroupList is place-holder for extended ACL.
####Replace wccpGroupList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpGroupList )
#set( $wccpCli = "$wccpCli group-list $wccpGroupList")
#end
####wccpRedirectList is place-holder for extended ACL.
####Replace wccpRedirectList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
→ #if( $wccpRedirectList )
#set( $wccpCli = "$wccpCli redirect-list $wccpRedirectList")
#end
```

刪除wccpRedirectList

- 從下拉選單中，選擇插入>插入策略對象>擴展ACL對象。

Add FlexConfig Object

Name:

Wccp_Configure_clone

Description:

The template is an example of wccp configuration. It can not be

▲ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Insert ▾

Deployment:

Once

Type:

Append

```
#set ( $wccpCli = "$wccpCli $service")
####wccpGroupList is place-holder for extended ACL.
####Replace wccpGroupList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpGroupList )
#set( $wccpCli = "$wccpCli group-list $wccpGroupList")
#end
####wccpRedirectList is place-holder for extended ACL.
####Replace wccpRedirectList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpRedirectList )
#set( $wccpCli = "$wccpCli redirect-list $wccpRedirectList")
#end
```

▼ Variables

為wccpRedirectList選擇擴展ACL對象

- 在變數名中貼上wccpRedirectList。

- 在可用對象中搜尋Redirect_traffic。
- 選擇Add並Save。

Insert Extended Access List Object Variable ?

Variable Name:

Description:

Available Objects ↻

✕

- Redirect_traffic
- WCCP-CLIENT

Add

Selected Object

Redirect_traffic 🗑️

Cancel Save

新增Redirect_traffic ACL

步驟 8:

- 刪除@wccpPassword

Add FlexConfig Object

Name:

Wccp_Configure_clone

Description:

The template is an example of wccp configuration. It can not be

⚠ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Insert ▾



Deployment:

Once ▾

Type:

Append ▾

```
####wccpGroupList is place-holder for extended ACL.
####Replace wccpGroupList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpGroupList )
#set( $wccpCli = "$wccpCli group-list $wccpGroupList")
#end
####wccpRedirectList is place-holder for extended ACL.
####Replace wccpRedirectList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if( $wccpRedirectList )
#set( $wccpCli = "$wccpCli redirect-list $wccpRedirectList")
#end

#set( $wccpCli = "$wccpCli password @wccpPassword ")

$wccpCli

#### Assiging wccp onto interface
#foreach( $interfaceName in $security-zone)
```

已刪除預定義的wccppassword

- 從插入>插入金鑰(Insert > Insert Secret Key)下拉選單中選擇金鑰。

Add FlexConfig Object

Name:

Wccp_Configure_clone

Description:

The template is an example of wccp configuration. It can not be

⚠ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Insert ▾



Deployment:

Once ▾

Type:

Append ▾

Insert Policy Object ▶

ace-holder for extended ACL.
st with extended ACL defined in FMC by inserting policy-object of type extended ACL.

Insert System Variable ▶

Cli group-list \$wccpGroupList")

Insert Secret Key

place-holder for extended ACL.
####Replace wccpRedirectList with extended ACL defined in FMC by inserting policy-object of type extended ACL.
#if(\$wccpRedirectList)
#set(\$wccpCli = "\$wccpCli redirect-list \$wccpRedirectList")
#end

#set(\$wccpCli = "\$wccpCli password ")

\$wccpCli

Assiging wccp onto interface
#foreach(\$interfaceName in \$security-zone)

Variables

選擇金鑰

- 按一下「Add Secret Key」。

Insert Secret Key ?

[Add Secret Key](#)

	Name	
<input type="checkbox"/>	wccpPassword	 

[Cancel](#) [Save](#)

新增金鑰

- 在金鑰名稱中輸入名稱。
- 輸入密碼。
- 在Confirm Password中輸入相同的密碼，然後按一下Add。

Add Secret Key



Secret Key name:*

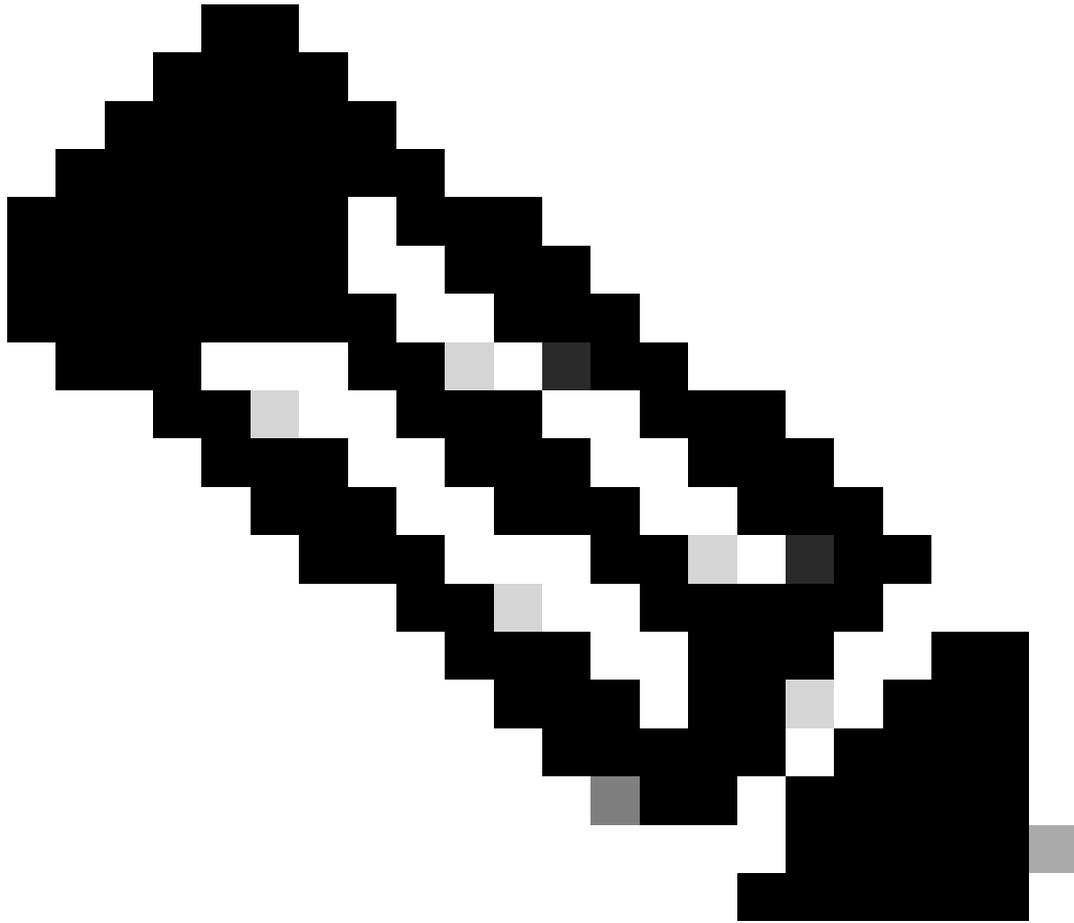
Password:*

Confirm Password *:*

Cancel

Add

新增使用者定義的金鑰



附註：在本示例中，內部介面屬於中的Security Zone in。

步驟 9:

- 複製預定義的security-zone，並將\$security-zone替換為您自己的變數。

Edit FlexConfig Object



Name:

Wccp_Configure_clone

Description:

The template is an example of wccp configuration. It can not

⚠ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Insert ▾



Deployment: Once ▾

Type: Append ▾

```
#####  
#set( $wccpCli = "$wccpCli group-list $wccpGroupList")  
#end  
###wccpRedirectList is place-holder for extended ACL.  
###Replace wccpRedirectList with extended ACL defined in FMC by inserting policy-object of type extended ACL.  
#if( $wccpRedirectList )  
#set( $wccpCli = "$wccpCli redirect-list $wccpRedirectList")  
#end  
  
#set( $wccpCli = "$wccpCli password @wccppassword ")  
  
$wccpCli  
  
### Assigning wccp onto interface  
#foreach( $interfaceName in $security-zone)  
wccp interface $interfaceName $service redirect in  
#end
```

Variables

Name	Dimension	Default Value	Property (Type:Name)	Override	Description
wccpGroupList	SINGLE	WCCP-CLIENT	EXD_ACL:W...	false	
wccp-service	SINGLE	97	FREEFORM:...	false	
interfaceName	SINGLE	in	SECURITYZ...	false	
security-zone	SINGLE	in	SECURITYZ...	false	

複製名稱security-zone

- 從下拉選單中選擇Security Zones，然後選擇Insert > Insert Policy Object。

Add FlexConfig Object

Name:

Wccp_Configure_clone

Description:

The template is an example of wccp configuration. It can not be

⚠ Copy-pasting any rich text might introduce line breaks while generating CLI. Please verify the CLI before deployment.

Insert ▾ |  | Deployment: ▾ | Type:

Insert Policy Object ▸ | Text Object | `oupList")`

Insert System Variable ▸ | Network | `nded ACL.`

Insert Secret Key | **Security Zones** | `defined in FMC by inserting policy-object of type extended ACL.`

| Standard ACL Object | `RedirectList")`

| Extended ACL Object | `word ")`

| Route Map

```
#set( $wccpCli = "$wccp
#end

#set( $wccpCli = "$wccp
$wccpCli

#### Assigning wccp onto interface
#foreach( in $security-zone)
wccp interface $interfaceName $service redirect in
#end
```

▾ Variables

選擇安全區域

- 將變數名稱貼上為security-zone
- 在Available Objects中，選擇要新增的介面。
- 按一下「Save」。

Insert Security Zone Variable



Variable Name:

Description:

Available Objects

dmz

in

out

Add

Selected Object

in

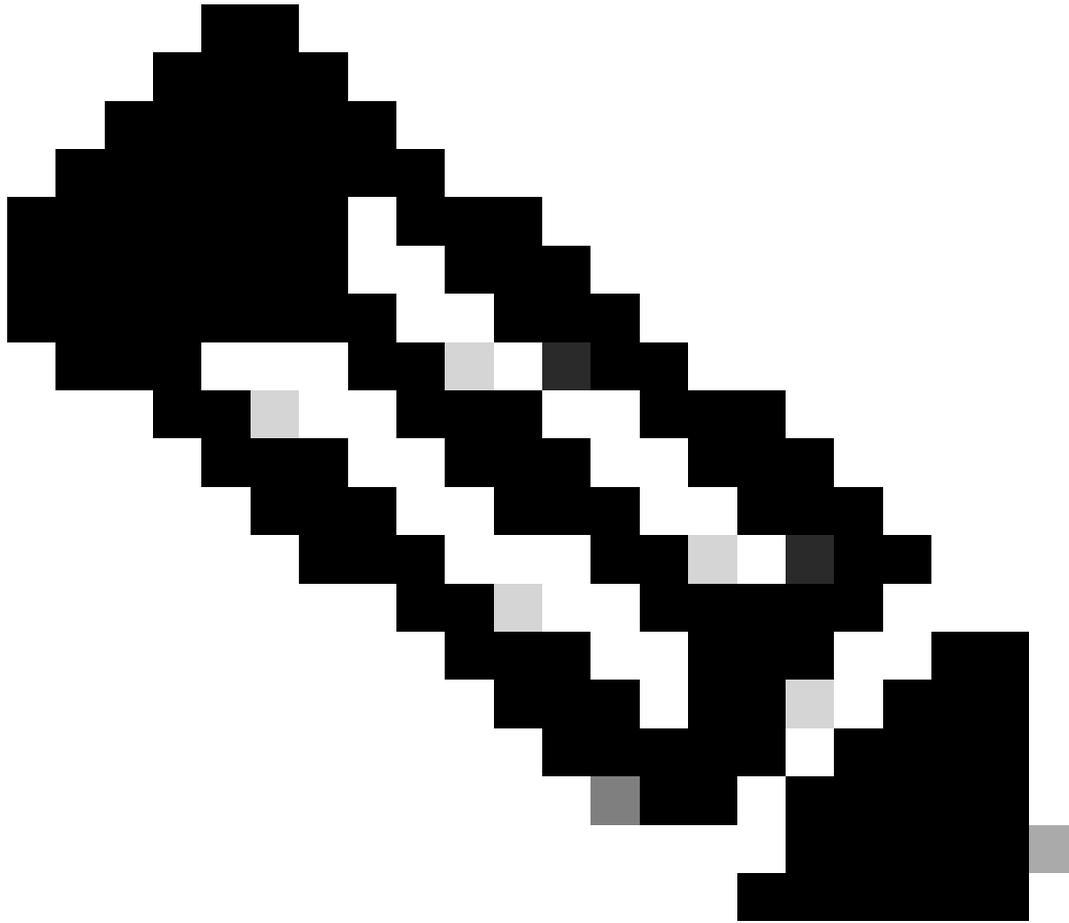
Cancel

Save

新增安全區域

步驟 10:

- 導覽至Devices > FlexConfig，按一下New Policy或Edit現有策略。
- 選擇已配置的Wccp_configure_clone對象，然後按一下>進行分配。
- 按一下「Save」。



附註：對於新策略，請確保將策略分配給FTD裝置。對於現有策略，必須已分配該策略。

WCCP_config

Enter Description

Migrate Config Preview Config Save Cancel

Policy Assignments (1)

Available FlexConfig FlexConfig Object

User Defined

- Wccp_Configure_clone

System Defined

- Default_DNS_Configure
- Default_Inspection_Protocol_Disable
- Default_Inspection_Protocol_Enable
- DHCPv6_Prefix_Delegation_Configure
- DHCPv6_Prefix_Delegation_UnConfigure
- DNS_Configure
- DNS_UnConfigure
- Eigrp_Configure
- Eigrp_Interface_Configure
- Eigrp_UnConfigure
- Eigrp_Unconfigure_All

Selected Prepend FlexConfigs

#	Name	Description
---	------	-------------

Selected Append FlexConfigs

#	Name	Description
1	Wccp_Configure_clone	The template is an example of wccp configuration. It can not be used as it is for deployment. User needs to copy this, modify text-object and create objects expected by the templa...

將配置的FlexConfig分配給裝置

第11步：導航到部署>選擇FTD裝置>點選部署。

驗證

步驟 1: 驗證運行配置。

登入FTD CLI並執行命令 `show running-config wccp`。

組態範例:

```
wccp 97 redirect-list Redirect_traffic group-list WCCP-CLIENT password *****  
wccp interface inside 97 redirect in
```

要確保配置具有正確的密碼，請運行命令。

- 1) `system support diagnostic-cli`
- 2) `enable`
- 3) 不輸入密碼按Enter鍵
- 4) `more system:running-config | include wccp`

步驟 2: 驗證WCCP狀態

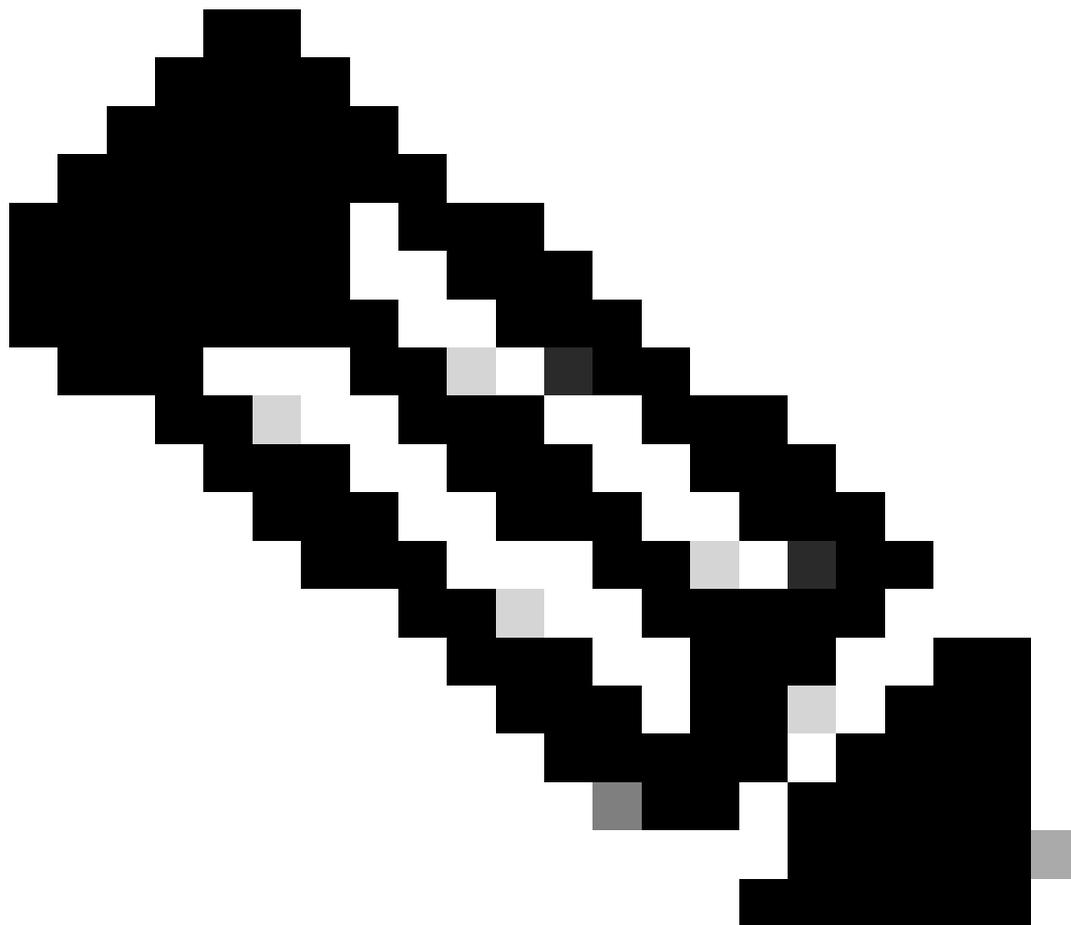
執行命令 `show wccp`

```
Global WCCP information:  
  Router information:  
    Router Identifier:          -not yet determined-  
    Protocol Version:          2.0  
  
  Service Identifier: 97  
    Number of Cache Engines:    1  
    Number of routers:         2  
    Total Packets Redirected:   0  
    Redirect access-list:      Redirect_traffic  
    Total Connections Denied Redirect: 0  
    Total Packets Unassigned:   0  
    Group access-list:         WCCP-CLIENT  
    Total Messages Denied to Group: 0  
    Total Authentication failures: 0  
    Total Bypassed Packets Received: 0
```

執行命令 `show wccp 97 service`

WCCP service information definition:

```
Type:      Dynamic
Id:        97
Priority:   240
Protocol:  6
Options:   0x00000012
-----
Hash:      DstIP
Alt Hash:  -none-
Ports:     Destination:: 80 443 0 0 0 0 0 0
```



附註：這裡97是服務ID。確保可以在埠中看到從WCCP客戶端獲知的埠號：部分。

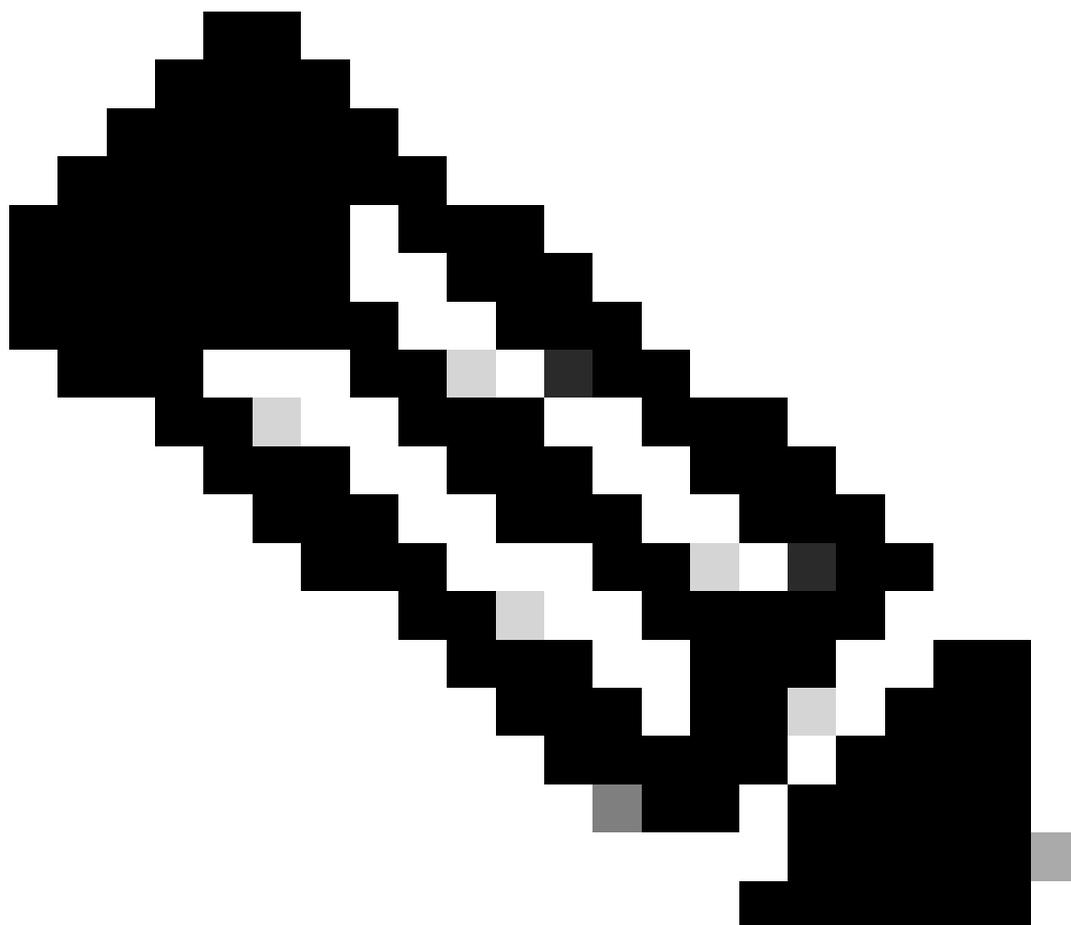
3) Run the command `show wccp 97 view`

疑難排解

步驟 1: 確認FTD具有來自從代理伺服器接收WCCP要求的相同介面的路由。

在本範例中，流量重新導向到thedmz介面。

```
>show route  
S      10.xx.xx.xx 255.yyy.yyy.yyy [1/0] via 10.zz.zz.z, dmz
```



附註：此處10.xx.xx.xx是代理伺服器IP，255.yyy.yyy.yyy是Netmask，10.zz.zz.z是下一跳網關。

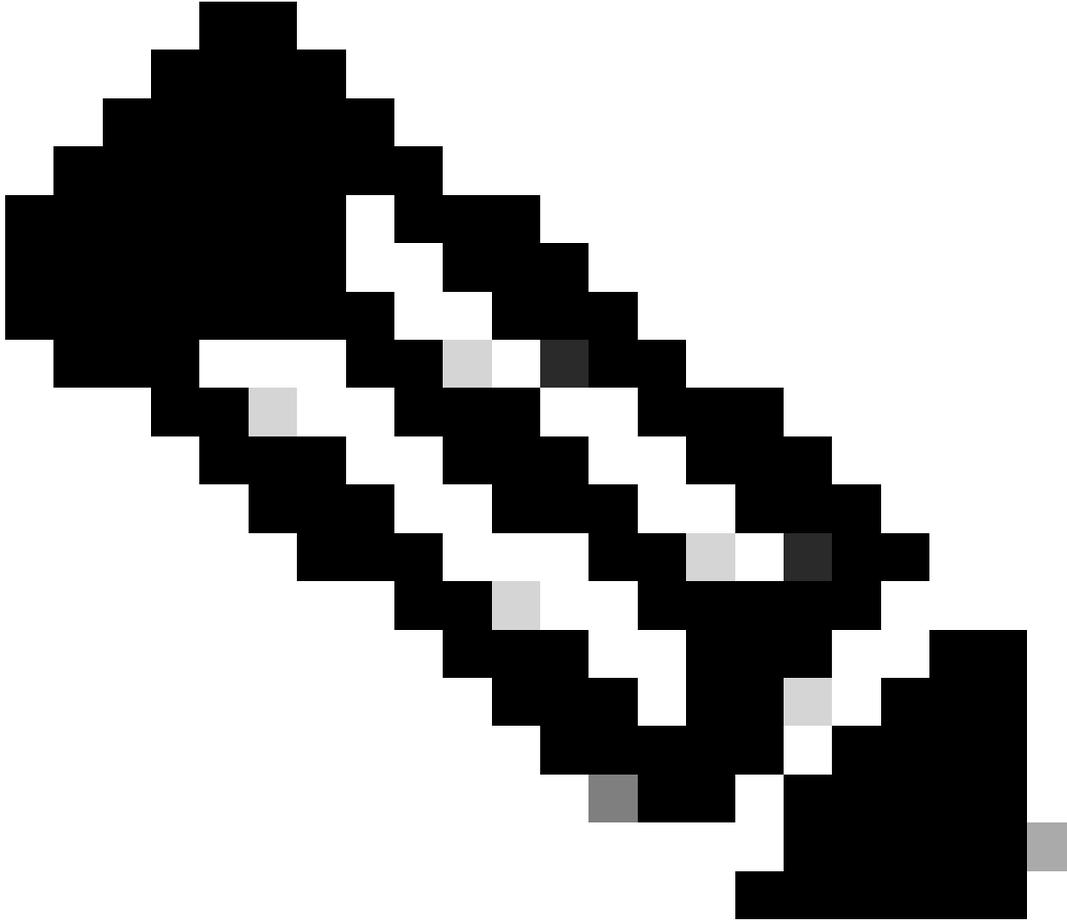
步驟 2:在inside和dmz介面上取得擷取，以確保流量重新導向。

在埠443的內部介面上捕獲

```
capture capinside interface inside trace detail match tcp any any eq 443
```

在dmz介面上擷取：

```
capture capdmz interface dmz trace detail match gre any any
```



附註：在dmz介面上，必須使用GRE通訊協定進行過濾。重新導向封包會封裝在GRE封包中，傳給wccp使用者端。

步驟 3:針對wccp的偵錯

運行命令：

```
debug wccp event debu wccp packet
```

已提出Cisco錯誤[IDCSCvn90518](#)，用於增強功能，以便為WCCP配置提供FDM和FMC本機模式支援。

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。