

# 使用ERS API建立ISE網路裝置

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## 簡介

本文檔介紹使用PostMan作為REST客戶端透過ERS API在ISE上建立網路訪問裝置(NAD)的過程。

## 必要條件

### 需求

思科建議您瞭解以下主題：

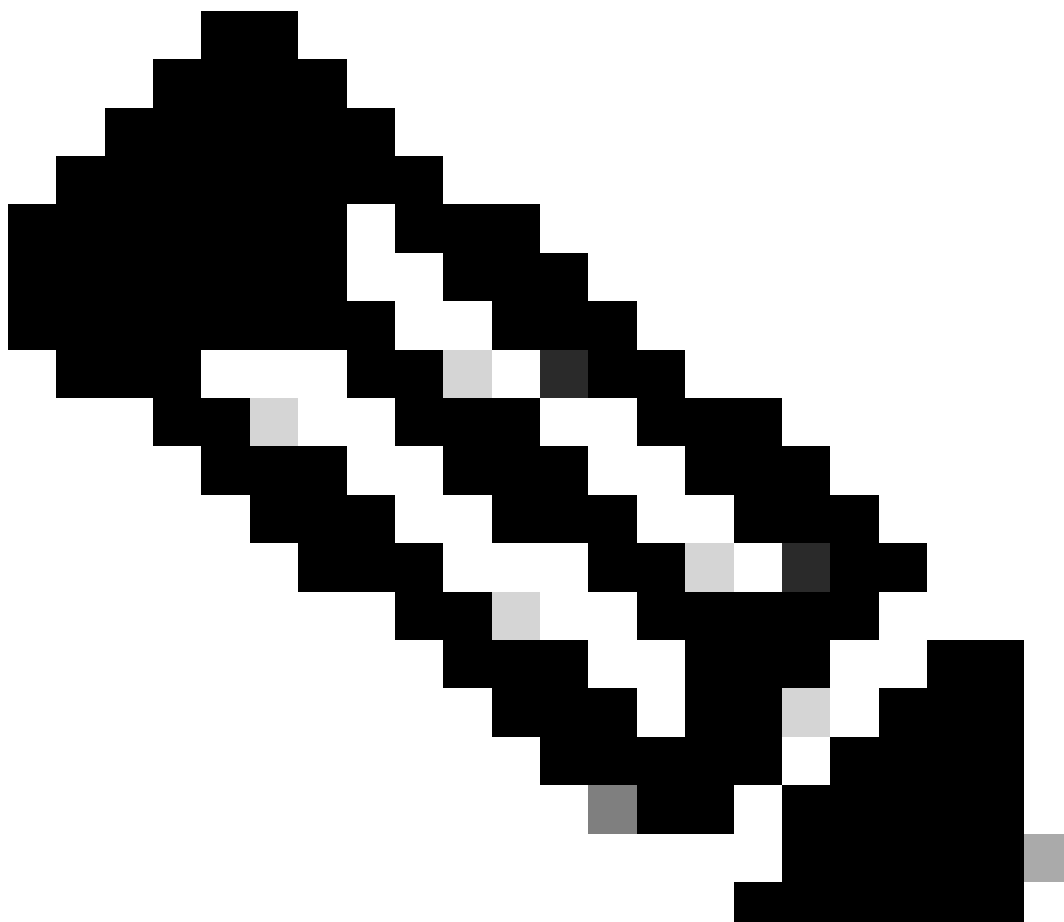
- ISE ( 身份服務引擎 )
- ERS ( 外部RESTful服務 )
- REST客戶包括Postman、REST、Insomnia等。

### 採用元件

本檔案中的資訊是根據以下軟體版本：

- Cisco ISE ( 身份服務引擎 ) 3.1修補6
- Postman REST客戶端v10.17.4

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注意：此過程對於其他ISE版本和REST客戶端相似或相同。除非另有說明，否則您可以在所有2.x和3.x ISE軟體版本上使用這些步驟。

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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

### 啟用ERS（埠9060）

ERS API是僅適用於HTTPS的REST API，透過埠443和埠9060運行。埠9060預設關閉，因此需要首先打開。如果嘗試存取此連線埠的從屬端未先啟用ERS，就會出現伺服器逾時。因此，第一個要求是從思科ISE管理UI啟用ERS。

導航到管理>設定> API設定並啟用ERS（讀/寫）切換按鈕。

- Client Provisioning
  - FIPS Mode
  - Security Settings
  - Alarm Settings
- Feature >
- Profiling
- Protocols >
- Endpoint Scripts >
  - Proxy
  - SMTP Server
  - SMS Gateway
  - System Time
- API Settings**
- Network Success Diagnostics >
  - DHCP & DNS Services
  - Max Sessions
  - Light Data Distribution
  - Interactive Help
  - Enable TAC Support Cases

## API Settings

Overview **API Service Settings** API Gateway Settings

### API Service Settings for Administration Node

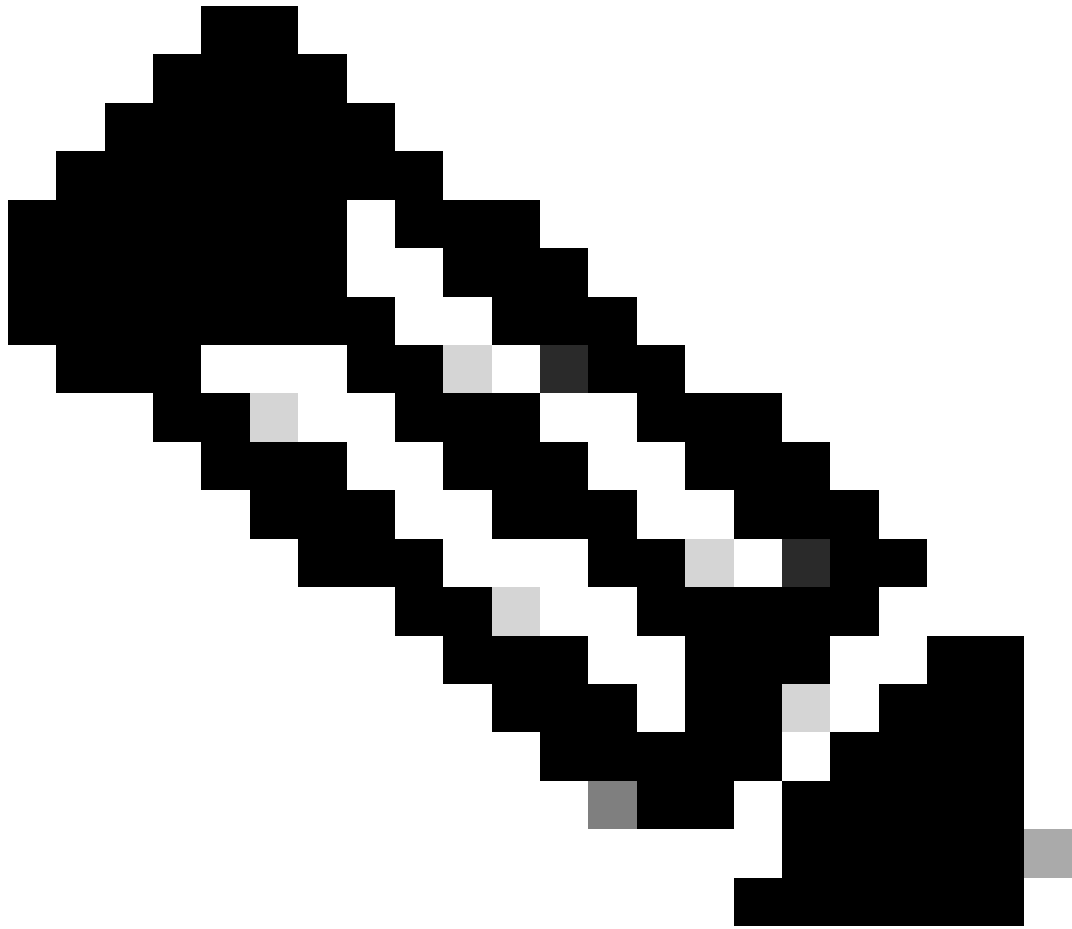
- ERS (Read/Write)** ←
- Open API (Read/Write)

### CSRF Check ( only for ERS Settings )

- Enable CSRF Check for Enhanced Security (Not compatible with pre ISE 2.3 Clients)
- Disable CSRF For ERS Request (compatible with ERS clients older than ISE 2.3)**

Reset

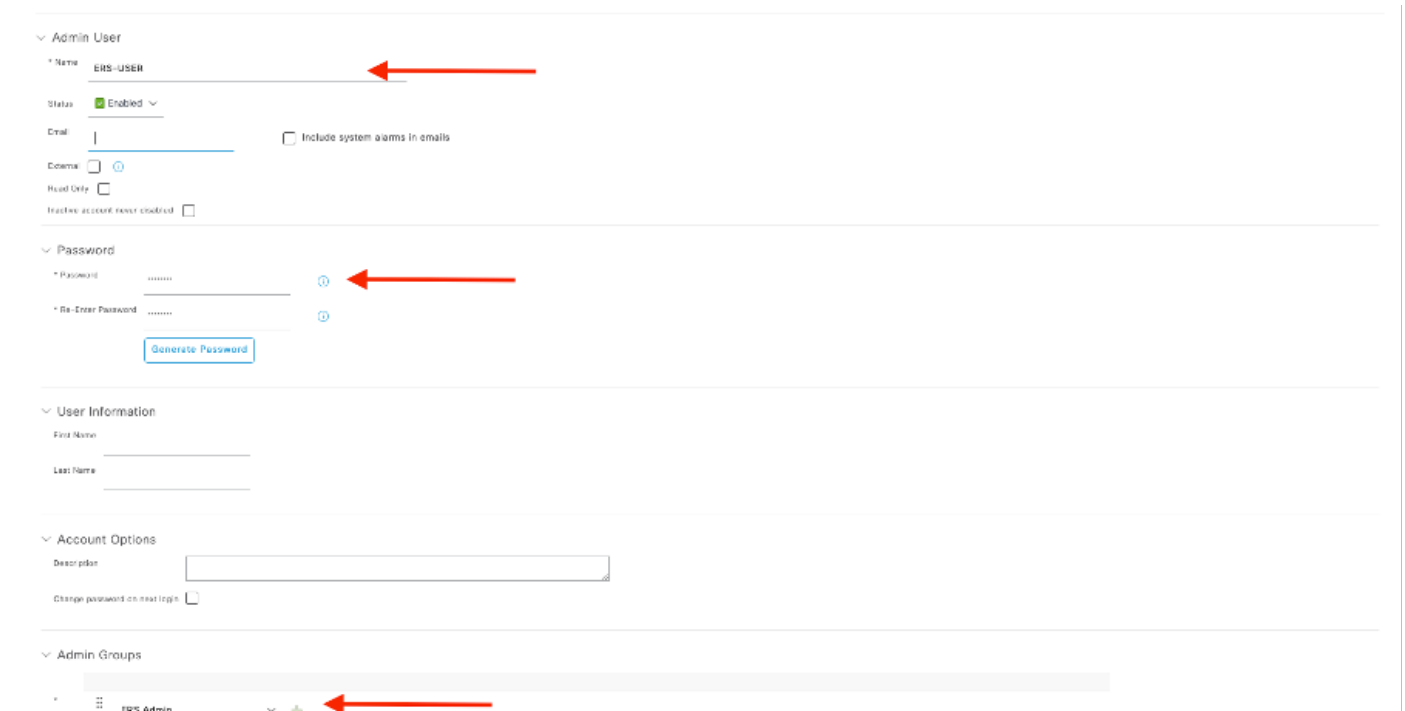
Save



註：ERS API支援TLS 1.1和TLS 1.2。無論在Cisco ISE GUI的Security Settings窗口 (Administration > System > Settings > Security Settings)中啟用TLS 1.0，ERS API都不支援TLS 1.0。在「保安全性設定」視窗中啟用TLS 1.0僅與EAP通訊協定有關，且不會影響ERS API。

## 建立ERS管理員

建立思科ISE管理員，分配密碼，並將使用者作為ERS管理員增加到管理員組。您可以將配置的其餘部分留空。



The screenshot shows the Cisco ISE GUI for creating an Admin User. The form is divided into several sections:

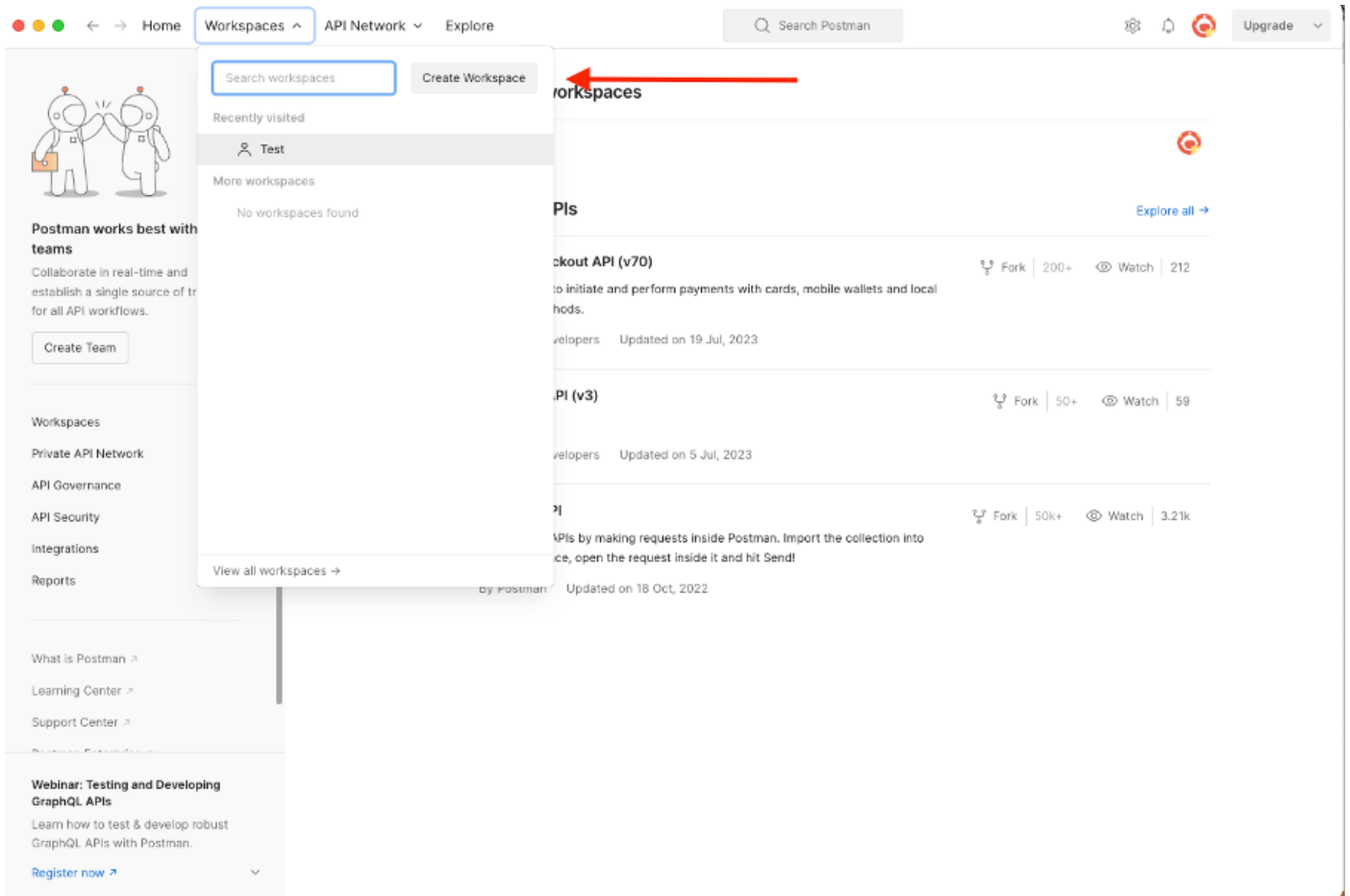
- Admin User:** Name (ERS-USER), Status (Enabled), Email, Include system alarms in emails (checkbox), Contact (checkbox), Read Only (checkbox), Inactive account reset enabled (checkbox).
- Password:** Password, Re-Enter Password, Generate Password button.
- User Information:** First Name, Last Name.
- Account Options:** Description, Change password on next login (checkbox).
- Admin Groups:** A list of groups with a plus sign to add more. The group "ERS Admin" is highlighted.

Red arrows in the image point to the Name field (ERS-USER), the Password field, and the Admin Groups list (ERS Admin).

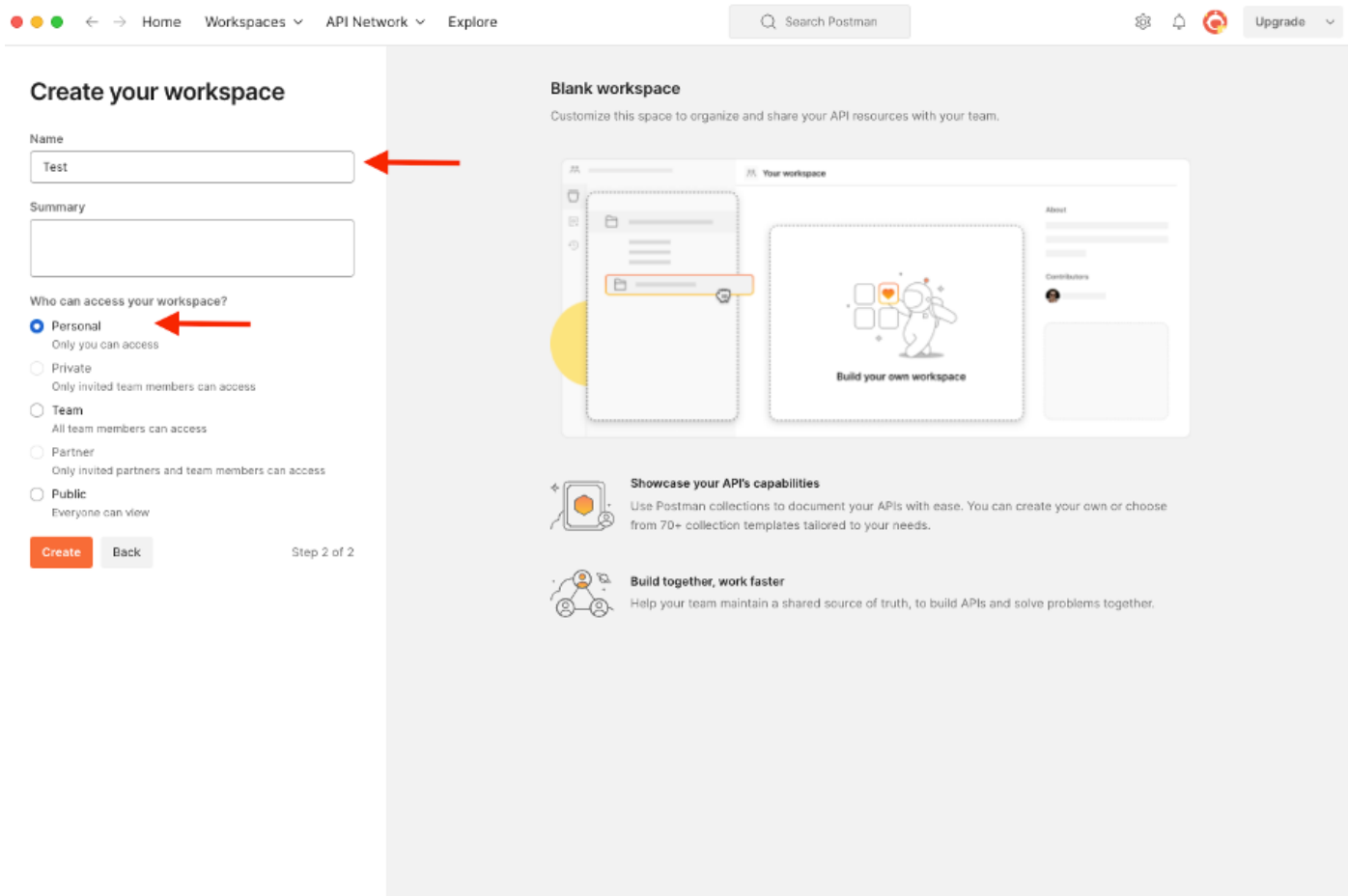
## 設定Postman

下載或使用線上版Postman。

1. 按一下「工作區」標籤底下的「建立工作區」來建立使用者和建立工作區。



2. 選擇空白工作區並為工作區分配名稱。您可以增加描述並將其公之於眾。在本示例中，選擇了「Personalis」。



建立工作區後，現在即可配置API呼叫。

## ISE SDK和基本Postman授權

要配置任何呼叫，請先訪問ISE ERS SDK ( 軟體開發工具包 )。此工具編譯ISE可以執行的所有API呼叫清單：

1. 導航到<https://{ise-ip}/ers/sdk>。
2. 使用您的ISE管理員憑證登入。
3. 展開API Documentation。
4. 向下滾動直至找到Network Device，然後按一下它。
5. 在此選項下，您現在可找到可在ISE上為網路裝置執行的所有可用操作。選擇Create。

External RESTful Services (ERS) Online SDK

Quick Reference

API Documentation

- Filter Policy
- Guest Location
- Guest Sntp Notification Configur
- Guest Ssid
- Guest Type
- Guest User
- Hotspot Portal
- IP To SCT Mapping
- IP To SCT Mapping Group
- ISE Service Information
- Identity Group
- Identity Sequence
- Internal User
- My Device Portal
- Native Supplicant Profile
- Network Device
- Network Device Group
- Node Details
- PSN Node Details with Radius Set
- Portal
- Portal Theme
- Profiler Profile
- Pull Deployment Info
- Pxgrid Node
- Pxgrid Settings
- Radius Server Sequence
- RestID Store
- SMS Server
- SXP Connections
- SXP Local Bindings
- SXP Vpns
- Security Groups
- Security Groups ACLs
- Security Groups to Virtual Netwo
- Self Registered Portal
- Sponsor Group
- Sponsor Group Member
- Sponsor Portal
- Sponsored Guest Portal
- Support Bundle Download

Network Device

- Overview
- Resource definition
- Revision History
- Update-By-Name
- Delete-By-Name
- Get-By-Name
- Get-By-Id
- Update
- Get-All
- Delete
- Create
- Get Version
- Bulk Request
- Monitor Bulk Status

Overview

Network Device API allows the client to add, delete, update, and search Network Devices. In this documentation, for each available API you will find the request syntax including the required headers and a response example of a successful flow. Please note that each API description shows weather the API is supported in bulk operation. The Bulk section is showing only 'create' bulk operation however, all other operation which are bulk supported can be used in same way.

Please note that these examples are not meant to be used as is because they have references to DB data. You should treat it as a basic template and edit it before sending to server.

Back to top

Resource definition

Attribute	Type	Required	Default value	Description
name	String	Yes		Resource name
id	String	No		Resource UUID, mandatory for update

Developer Resources

6. 現在，您可以看到在任何Rest客戶端上使用XML或JSON執行API呼叫所需的配置以及預期響應示例。

Quick Reference

API Documentation

Network Device

Create

Request:

Method: POST

URI: https://10.201.230.99/ers/config/networkdevice

HTTP 'Content-Type' Header: application/xml | application/json

HTTP 'Accept' Header: application/xml | application/json

HTTP 'ERS-Media-Type' Header (Not Mandatory): network.networkdevice.1.1

HTTP 'X-CSRF-TOKEN' Header (Required Only if Enabled from GUI): The Token value from the GET X-CSRF-TOKEN fetch request

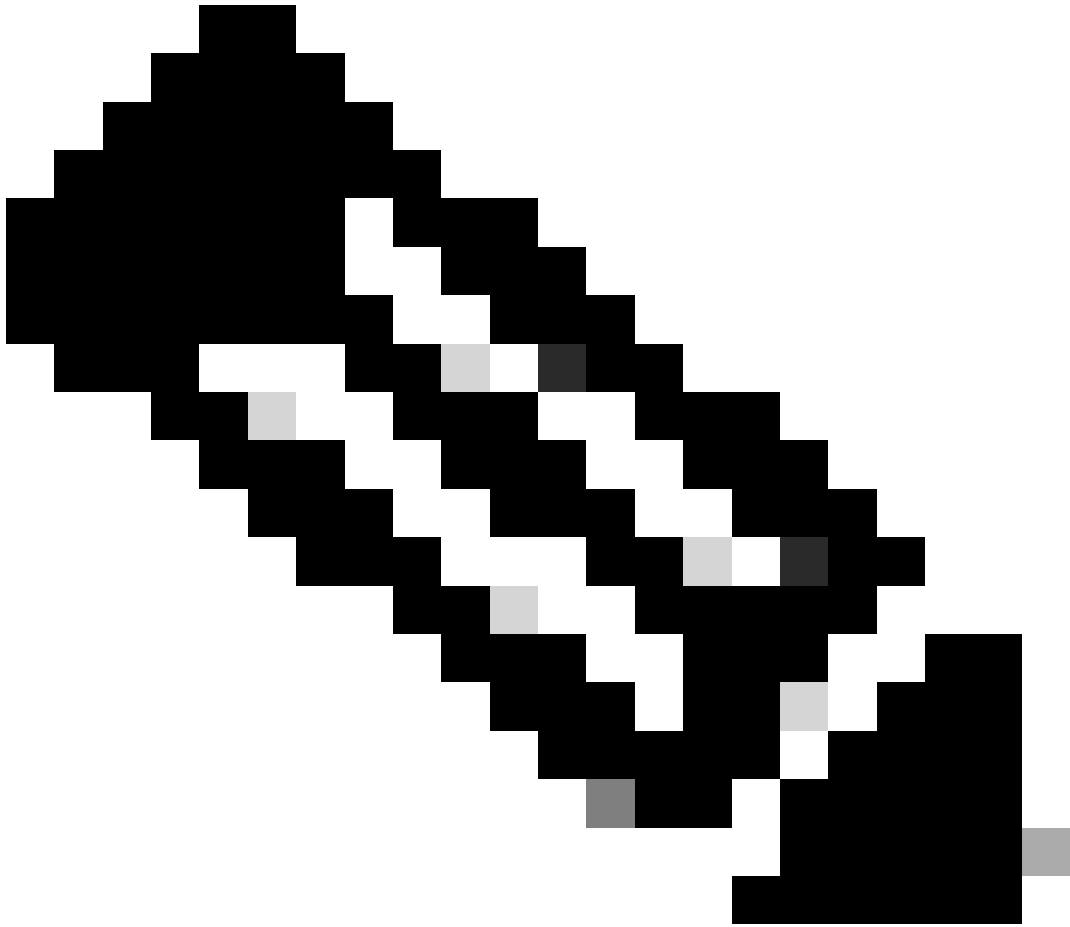
Request Content:

```

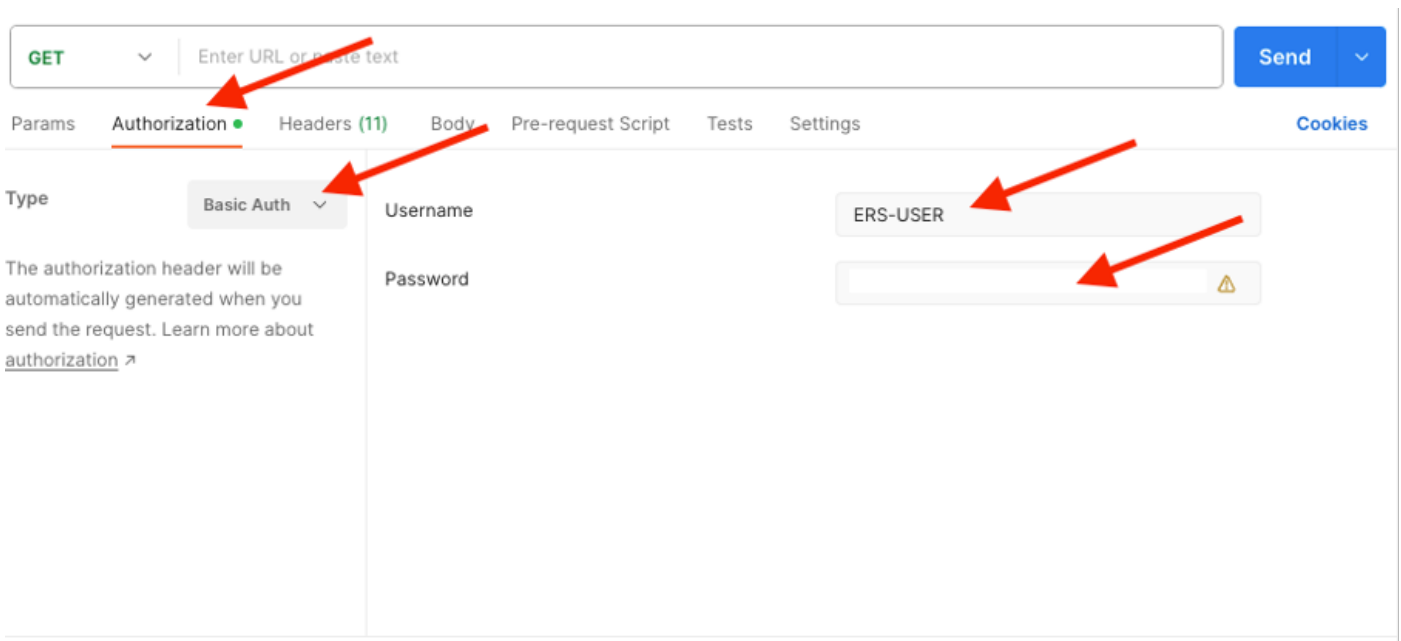
XML
<?xml version="1.0" encoding="UTF-8">
<ns0:networkdevice xmlns:ns0="network.ers.ise.cisco.com" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:ns1="ers.ise.cisco.com" xmlns:ers="ers.ise.cisco.com" description="example nd" ns="">
  <authenticationSettings>
    <dtlsRequired>true</dtlsRequired>
    <enableKeyWrap>true</enableKeyWrap>
    <keyEncryptionKey>1234567890123456</keyEncryptionKey>
    <keyInputFormat>ASCII</keyInputFormat>
    <messageAuthenticatorCodeKey>12345678901234567890</messageAuthenticatorCodeKey>
    <radiusSharedSecret>aaaaa</radiusSharedSecret>
  </authenticationSettings>
  <coaPort>1700</coaPort>
  <dtlsDnsName>ISE111.il.com</dtlsDnsName>
  <NetworkDeviceIPList>
    <NetworkDeviceIP>
      <ipAddress>1.1.1.1</ipAddress>
      <mask>32</mask>
    </NetworkDeviceIP>
  </NetworkDeviceIPList>
  <NetworkDeviceGroupList>
    <NetworkDeviceGroupLocation#All Locations</NetworkDeviceGroup>
    <NetworkDeviceGroupDevice Type#All Device Types</NetworkDeviceGroup>
  </NetworkDeviceGroupList>
  <profileName>Cisco</profileName>
  <amp;settings>
    <linkTrapQuery>true</linkTrapQuery>
    <macTrapQuery>true</macTrapQuery>
    <originatingPolicyServicesNode>autor</originatingPolicyServicesNode>
    <pollingInterval>300</pollingInterval>
    <roCommunity>v0aaa</roCommunity>
  </amp;settings>
</ns0:networkdevice>

```

7. 返回Postman，配置基本身份驗證到ISE。在授權頁籤下，選擇基本身份驗證作為身份驗證型別，並增加以前在ISE上建立的ISE ERS使用者憑證。



注意：除非在Postman上配置了變數，否則口令顯示為明文。

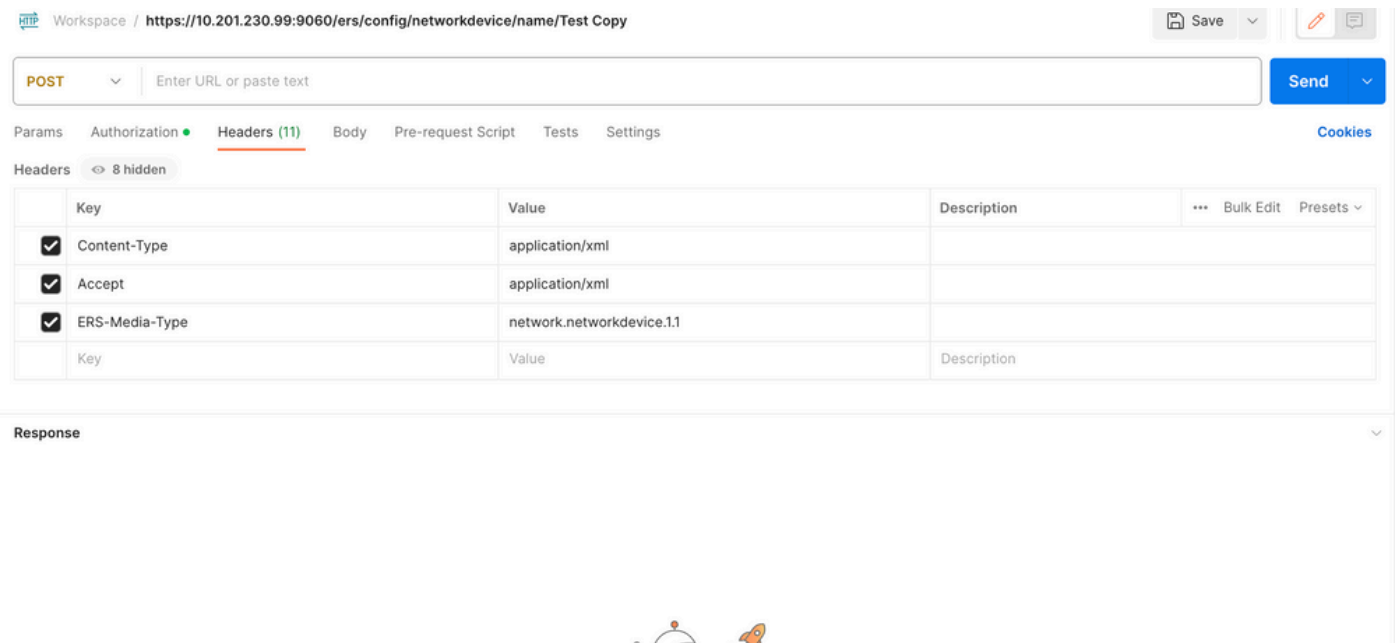




## 使用XML建立並執行NAD

使用XML建立具有RADIUS TACACS、SNMP和TrustSec設定的測試NAD1。

1. 在SDK上的建立下方，是執行呼叫所需的報頭和模板，以及預期響應。
2. 移至Headers 頁籤，為API呼叫配置所需的標頭，如SDK中所示。報頭配置必須如下所示：



Workspace / <https://10.201.230.99:9060/ers/config/networkdevice/name/Test Copy>

POST Enter URL or paste text Send

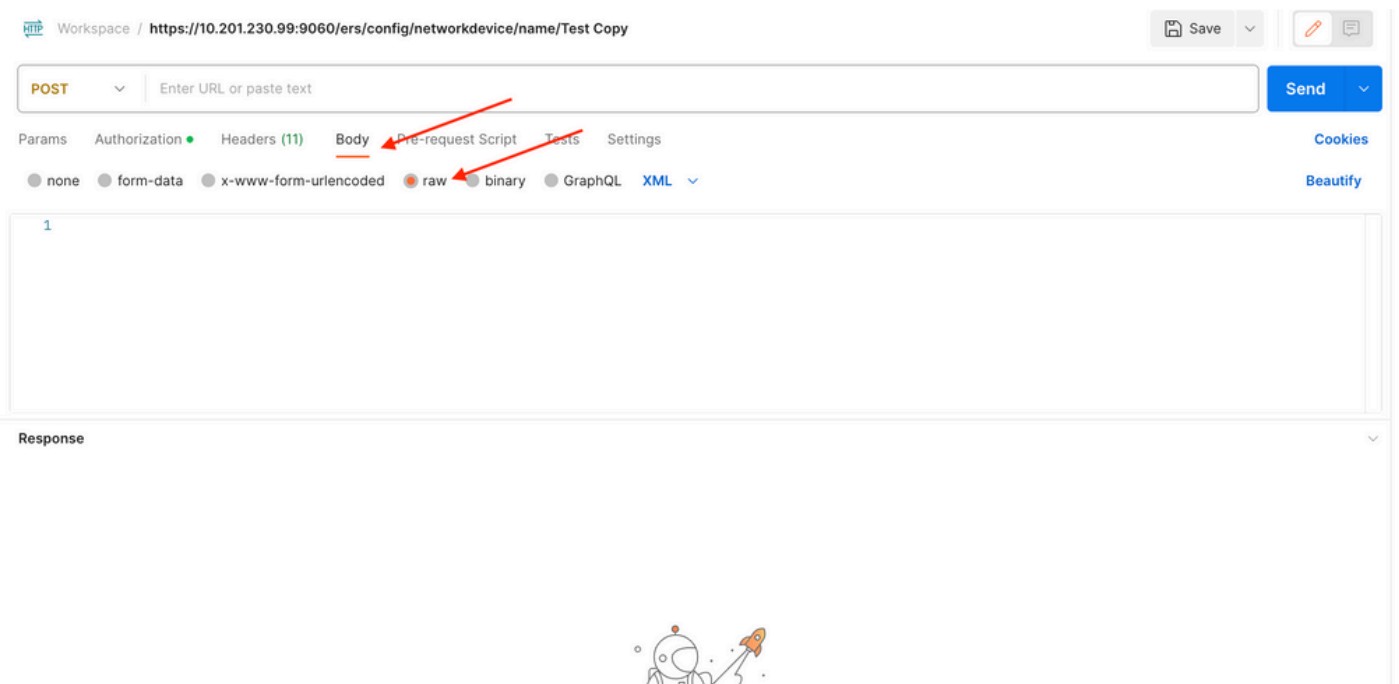
Params Authorization Headers (11) Body Pre-request Script Tests Settings Cookies

Headers 8 hidden

Key	Value	Description	...	Bulk Edit	Presets
<input checked="" type="checkbox"/>	Content-Type	application/xml			
<input checked="" type="checkbox"/>	Accept	application/xml			
<input checked="" type="checkbox"/>	ERS-Media-Type	network.networkdevice.1.1			
Key	Value	Description			

Response

3. 移至「主體」表頭，然後選取原始。這可讓您貼上建立NAD所需的XML範本。



Workspace / <https://10.201.230.99:9060/ers/config/networkdevice/name/Test Copy>

POST Enter URL or paste text Send

Params Authorization Headers (11) Body Pre-request Script Tests Settings Cookies

none form-data x-www-form-urlencoded raw binary GraphQL XML

1

Response

4. XML樣版如下所示（視需要變更值）：

```
<?xml version="1.0" encoding="UTF-8"?> <ns0:networkdevice xmlns:ns0="network.ers.ise.cisco.com" xmlns:xs="Schema XML File"
xmlns:ns1="ers.ise.cisco.com" xmlns:ers="ers.ise.cisco.com" description="This NAD was added via ERS API" name="TESTNAD1">
<authenticationSettings> <dtlsRequired>true</dtlsRequired> <enableKeyWrap>true</enableKeyWrap>
```

```
<keyEncryptionKey>1234567890123456</keyEncryptionKey> <keyInputFormat>ASCII</keyInputFormat>
<messageAuthenticatorCodeKey>12345678901234567890</messageAuthenticatorCodeKey>
<radiusSharedSecret>cisco123</radiusSharedSecret> </authenticationSettings> <coaPort>1700</coaPort>
<dtlsDnsName>Domain</dtlsDnsName> <NetworkDeviceIPList> <NetworkDeviceIP> <ipaddress>NAD IP Address</ipaddress>
<mask>32</mask> </NetworkDeviceIP> </NetworkDeviceIPList> <NetworkDeviceGroupList> <NetworkDeviceGroup>Location#All
Locations#LAB</NetworkDeviceGroup> <NetworkDeviceGroup>Device Type#All Device Types#Access-Layer</NetworkDeviceGroup>
</NetworkDeviceGroupList> <profileName>Cisco</profileName> <snmpsettings> <linkTrapQuery>true</linkTrapQuery>
<macTrapQuery>true</macTrapQuery> <originatingPolicyServicesNode>Auto</originatingPolicyServicesNode>
<pollingInterval>3600</pollingInterval> <roCommunity>aaa</roCommunity> <version>ONE</version> </snmpsettings> <tacacsSettings>
<connectModeOptions>ON_LEGACY</connectModeOptions> <sharedSecret>cisco123</sharedSecret> </tacacsSettings> <trustsecsettings>
<deviceAuthenticationSettings> <sgaDeviceId>TESTNAD1</sgaDeviceId> <sgaDevicePassword>cisco123</sgaDevicePassword>
</deviceAuthenticationSettings> <deviceConfigurationDeployment> <enableModePassword>cisco123</enableModePassword>
<execModePassword>cisco123</execModePassword> <execModeUsername>Admin</execModeUsername>
<includeWhenDeployingSGTUpdates>true</includeWhenDeployingSGTUpdates> </deviceConfigurationDeployment>
<pushIdSupport>false</pushIdSupport> <sgaNotificationAndUpdates> <coaSourceHost>ise3-1test</coaSourceHost>
<downloadEnvironmentDataEveryXSeconds>86400</downloadEnvironmentDataEveryXSeconds>
<downloadPeerAuthorizationPolicyEveryXSeconds>86400</downloadPeerAuthorizationPolicyEveryXSeconds>
<downloadSGACLListsEveryXSeconds>86400</downloadSGACLListsEveryXSeconds>
<otherSGADevicesToTrustThisDevice>false</otherSGADevicesToTrustThisDevice>
<reAuthenticationEveryXSeconds>86400</reAuthenticationEveryXSeconds>
<sendConfigurationToDevice>false</sendConfigurationToDevice>
<sendConfigurationToDeviceUsing>ENABLE_USING_COA</sendConfigurationToDeviceUsing> </sgaNotificationAndUpdates>
</trustsecsettings> </ns0:networkdevice>
```

---

注意：請注意，只有在`<enableKeyWrap>{false|true}</enableKeyWrap>`設定為`true`時才需要後面幾行。否則，可從XML範本中刪除相同內容：

```
<keyEncryptionKey>1234567890123456</keyEncryptionKey> <keyInputFormat>ASCII</keyInputFormat>
<messageAuthenticatorCodeKey>12345678901234567890</messageAuthenticatorCodeKey>
```

您可以從模板中刪除您不需要的配置，只需保留您在建立NAD期間實際需要增加的資料。例如，以下是相同的模板，但僅適用於TACACS配置。無論所需的配置如何，確保模板以`</ns0 : networkdevice>` 結尾。

```
<?xml version="1.0" encoding="UTF-8"?> <ns0:networkdevice xmlns:ns0="network.ers.ise.cisco.com" xmlns:xs="Schema XML File"
xmlns:ns1="ers.ise.cisco.com" xmlns:ers="ers.ise.cisco.com" description="This NAD was added via ERS API" name="TESTNAD1">
<NetworkDeviceIPList> <NetworkDeviceIP> <ipaddress>NAD IP Address</ipaddress> <mask>32</mask> </NetworkDeviceIP>
```

```
</NetworkDeviceIPList> </NetworkDeviceGroupList> </NetworkDeviceGroup>Location#All Locations#LAB</NetworkDeviceGroup>
</NetworkDeviceGroup>Device Type#All Device Types#Access-Layer</NetworkDeviceGroup> </NetworkDeviceGroupList>
<profileName>Cisco</profileName> <tacacsSettings> <connectModeOptions>ON_LEGACY</connectModeOptions>
<sharedSecret>cisco123</sharedSecret> </tacacsSettings> </ns0:networkdevice>
```

5. 將raw的XML樣版貼到「主體」標頭下。

6. 選擇POST作為方法，貼上https://{ISE-ip}/ers/config/networkdevice，然後按一下傳送。如果已正確配置所有內容，則您必須看到201 Created消息且結果為空。

The screenshot shows a REST client interface with the following details:

- Workspace / <https://10.201.230.99:9060/ers/config/networkdevice/name/Test Copy>
- Method: POST
- URL: <https://10.201.230.99/ers/config/networkdevice>
- Body: raw (XML)
- Status: 201 Created
- Time: 791 ms
- Size: 1.22 KB

```
50 ..... <downloadEnvironmentDataEveryXSeconds>00400</downloadEnvironmentDataEveryXSeconds>
51 ..... <downloadPeerAuthorizationPolicyEveryXSeconds>86400</downloadPeerAuthorizationPolicyEveryXSeconds>
52 ..... <downloadSGACLListsEveryXSeconds>86400</downloadSGACLListsEveryXSeconds>
53 ..... <otherSGADevicesToTrustThisDevice>>false</otherSGADevicesToTrustThisDevice>
54 ..... <reAuthenticationEveryXSeconds>86400</reAuthenticationEveryXSeconds>
55 ..... <sendConfigurationToDevice>>false</sendConfigurationToDevice>
56 ..... <sendConfigurationToDeviceUsing>ENABLE_USING_COA</sendConfigurationToDeviceUsing>
57 ..... </sgaNotificationAndUpdates>
58 ..... </trustsecsettings>
59 ..... </ns0:networkdevice>
```

7. 透過執行NAD的GET呼叫確認NAD是否已建立，或者檢查ISE NAD清單。

Workspace / <https://10.201.230.99:9060/ers/config/networkdevice/name/Test Copy>

GET <https://10.201.230.99/ers/config/networkdevice> Send

Params Authorization Headers (13) Body Pre-request Script Tests Settings Cookies

Headers 10 hidden

Key	Value	Description
Content-Type	application/json	
Accept	application/json	
ERS-Media-Type	network.networkdevice.1.1	
Key	Value	Description

Body Cookies (2) Headers (15) Test Results Status: 200 OK Time: 237 ms Size: 3.13 KB Save as Example

Pretty Raw Preview Visualize JSON

```

52     "type": "application/json"
53   }
54 }
55 {
56   "id": "afe572d0-5bcc-11ee-9ab7-9a446445bd4f",
57   "name": "TESTNAD1",
58   "description": "This NAD was added via ERS API",
59   "link": {
60     "rel": "self",
61     "href": "https://10.201.230.99/ers/config/networkdevice/afe572d0-5bcc-11ee-9ab7-9a446445bd4f",
62     "type": "application/json"
63   }
64 },
65 {
66   "id": "63efbc20-4f5a-11ed-b560-6e7768fe732e",
67   "name": "Wireless-9800",
68   "description": "Wireless Controller C9800",
69   "link": {
70     "rel": "self"

```

Cisco ISE Administration - Network Resources

Network Devices Network Device Groups Network Device Profiles External RADIUS Servers RADIUS Server Sequences NAC Managers External MDM Location Services

Network Devices

Default Device Device Security Settings

Network Devices

Selected 0 Total 6

Edit + Add Duplicate Import Export Generate PAC Delete

Name	IP/Mask	Profile Name	Location	Type	Description
TESTNAD1	1.1.1.1/32	Cisco	LAB	Access-Layer	This NAD was added via ERS API

## 使用JSON建立NAD

使用JSON建立具有RADIUS TACACS、SNMP和TrustSec設定的TESTAND2。

1. 在SDK上的建立下方，是執行呼叫所需的報頭和模板，以及預期響應。
2. 移至**Headers** 頁籤，為API呼叫配置所需的標頭，如SDK中所示。報頭配置必須如下所示：

Workspace / <https://10.201.230.99:9060/ers/config/networkdevice/name/Test> Save Send

POST Enter URL or paste text

Params Authorization Headers (12) Body Pre-request Script Tests Settings Cookies

Headers 9 hidden

Key	Value	Description	Bulk Edit	Presets
<input checked="" type="checkbox"/> Content-Type	application/json			
<input checked="" type="checkbox"/> Accept	application/json			
<input checked="" type="checkbox"/> ERS-Media-Type	network.networkdevice.1.1			
Key	Value	Description		

3. 移至「主體」表頭，然後選取原始。這允許您貼上建立NAD所需的JSON模板。

Workspace / <https://10.201.230.99:9060/ers/config/networkdevice/name/Test Copy> Save Send


POST Enter URL or paste text

Params Authorization Headers (11) Body Pre-request Script Tests Settings Cookies

none form-data x-www-form-urlencoded raw binary GraphQL XML

1

Response



4. JSON模板必須如下所示（根據需要更改值）：

```
{ "NetworkDevice": { "name": "TESTNAD2", "description": "This NAD was added via ERS API", "authenticationSettings": {
"radiusSharedSecret": "cisco123", "enableKeyWrap": true, "dtlsRequired": true, "keyEncryptionKey": "1234567890123456",
"messageAuthenticatorCodeKey": "12345678901234567890", "keyInputFormat": "ASCII" }, "snmpsettings": { "version": "ONE",
"roCommunity": "aaa", "pollingInterval": 3600, "linkTrapQuery": true, "macTrapQuery": true, "originatingPolicyServicesNode": "Auto" },
"trustsecsettings": { "deviceAuthenticationSettings": { "sgaDeviceId": "TESTNAD2", "sgaDevicePassword": "cisco123" },
"sgaNotificationAndUpdates": { "downloadEnvironmentDataEveryXSeconds": 86400, "downloadPeerAuthorizationPolicyEveryXSeconds":
86400, "reAuthenticationEveryXSeconds": 86400, "downloadSGACLListsEveryXSeconds": 86400, "otherSGADevicesToTrustThisDevice":
false, "sendConfigurationToDevice": false, "sendConfigurationToDeviceUsing": "ENABLE_USING_COA", "coaSourceHost": "ise3-1test" },
"deviceConfigurationDeployment": { "includeWhenDeployingSGTUpdates": true, "enableModePassword": "cisco123", "execModePassword":
"cisco123", "execModeUsername": "Admin" }, "pushIdSupport": "false" }, "tacacsSettings": { "sharedSecret": "cisco123",
"connectModeOptions": "ON_LEGACY" }, "profileName": "Cisco", "coaPort": 1700, "dtlsDnsName": "Domain", "NetworkDeviceIPList": [ {
"ipaddress": "NAD IP Adress", "mask": 32 } ], "NetworkDeviceGroupList": [ "Location#All Locations", "Device Type#All Device Types" ] }
```



注意：請務必注意，只有在`enableKeyWrap`「：`{false|true}`」設定為`true`時，才需要以下幾行。否則，可從JSON模板中刪除相同內容：

---

`"keyEncryptionKey": "1234567890123456", "messageAuthenticatorCodeKey": "12345678901234567890", "keyInputFormat": "ASCII"` 您也可以從模板中刪除不需要的配置，並保留您在建立NAD期間實際需要增加的資料。

5. 將`raw`的JSON模板貼上到`Body`標頭下。

6. 選擇`POST`作為方法，貼上`https://{ISE-ip}/ers/config/networkdevice`，然後按一下傳送。如果已正確配置所有內容，則您必須看到`201 Created`消息且結果為空。

Workspace / <https://10.201.230.99:9060/ers/config/networkdevice/name/Test Copy> Save

POST <https://10.201.230.99/ers/config/networkdevice> Send

Params Authorization Headers (13) **Body** Pre-request Script Tests Settings Cookies Beautify

none form-data x-www-form-urlencoded raw binary GraphQL JSON

```
1 {
2   "NetworkDevice": {
3     "name": "TESTNAD2",
4     "description": "This NAD was added via ERS API",
5     "authenticationSettings": {
6       "radiusSharedSecret": "cisco123",
7       "enableKeyWrap": true,
8       "dtlsRequired": true,
9       "keyEncryptionKey": "1234567890123456",
10      "messageAuthenticatorCodeKey": "12345678901234567890",
11      "keyFormat": "ASCII"
12    }
13  }
14 }
```

Body Cookies (2) Headers (17) Test Results Status: 201 Created Time: 678 ms Size: 1.03 KB Save as Example

Pretty Raw Preview Visualize JSON

1

7. 透過執行NAD的GET呼叫或檢查ISE NAD清單確認NAD是否已建立。

Workspace / <https://10.201.230.99:9060/ers/config/networkdevice/name/Test Copy> Save

GET <https://10.201.230.99/ers/config/networkdevice> Send

Params Authorization Headers (13) **Body** Pre-request Script Tests Settings Cookies Beautify

none form-data x-www-form-urlencoded raw binary GraphQL JSON

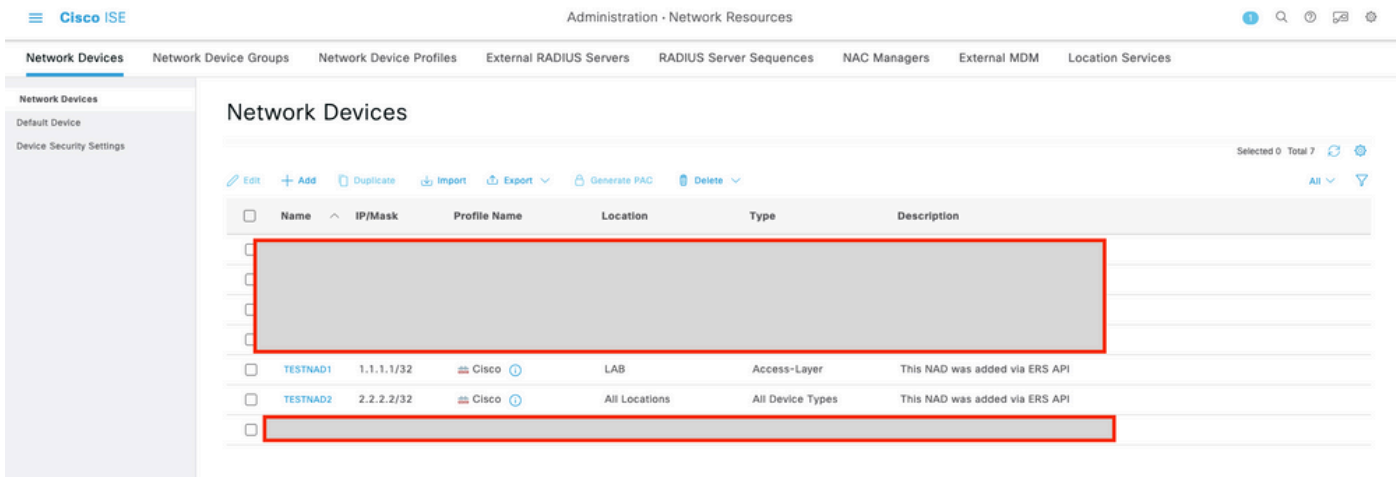
```
1 {
2   "NetworkDevice": {
3     "name": "TESTNAD2",
4     "description": "This NAD was added via ERS API",
5     "authenticationSettings": {
6       "radiusSharedSecret": "cisco123",
7       "enableKeyWrap": true,
8       "dtlsRequired": true,
9       "keyEncryptionKey": "1234567890123456",
10      "messageAuthenticatorCodeKey": "12345678901234567890",
11      "keyFormat": "ASCII"
12    }
13  }
14 }
```

Body Cookies (2) Headers (18) Test Results Status: 200 OK Time: 659 ms Size: 3.74 KB Save as Example

Pretty Raw Preview Visualize JSON

```
57   "name": "TESTNAD1",
58   "description": "This NAD was added via ERS API",
59   "link": {
60     "rel": "self",
61     "href": "https://10.201.230.99/ers/config/networkdevice/afe572d0-5bcc-11ee-9ab7-9a446445bd4f",
62     "type": "application/json"
63   }
64 },
65 {
66   "id": "9dd45a60-5bd7-11ee-9ab7-9a446445bd4f",
67   "name": "TESTNAD2",
68   "description": "This NAD was added via ERS API",
69   "link": {
70     "rel": "self",
71     "href": "https://10.201.230.99/ers/config/networkdevice/9dd45a60-5bd7-11ee-9ab7-9a446445bd4f",
72     "type": "application/json"
73   }
74 },
75 }
```





## 驗證

如果能夠訪問API服務GUI頁，例如<https://{iseip} : {port}/api/swagger-ui/index.html>或<https://{iseip} : 9060/ers/sdk>，則表示API服務正在按預期工作。

## 疑難排解

- 所有REST操作都經過稽核，並且日誌記錄在系統日誌中。
- 要排除與打開API相關的問題，請在調試日誌配置窗口中將apiservice元件的日誌級別設定為調試。
- 要排除與ERS API相關的問題，請在調試日誌配置窗口中將ers元件的日誌級別設定為調試。要檢視此窗口，請導航到思科ISE GUI，點選選單圖示並選擇操作>故障排除>調試嚮導>調試日誌配置。
- 您可以從下載日誌窗口下載日誌。要檢視此窗口，請導航到思科ISE GUI，點選選單圖示並選擇操作>故障排除>下載日誌。
- 您可以選擇從Support Bundle頁籤下載支援捆綁包(透過按一下頁籤下的Download按鈕)，或透過按一下api-service debug log日誌的Log File值從Debug Logs頁籤下載api-service debug logs。

## 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）。