

配置ISE 2.4 pxGrid IND 1.6.1整合

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簡介

本文檔介紹如何配置身份服務引擎(ISE)2.4和工業網路導向器1.6.1-4通過pxGrid (平台交換網格)的整合並對其進行故障排除。Cisco IND在pxGrid中註冊為發佈者，並將終端屬性資訊發佈到ISE for IOTASSET Dictionary。

必要條件

需求

思科建議您瞭解以下主題的基本知識：

- 思科身分識別服務引擎

- Cisco Industrial Network Director

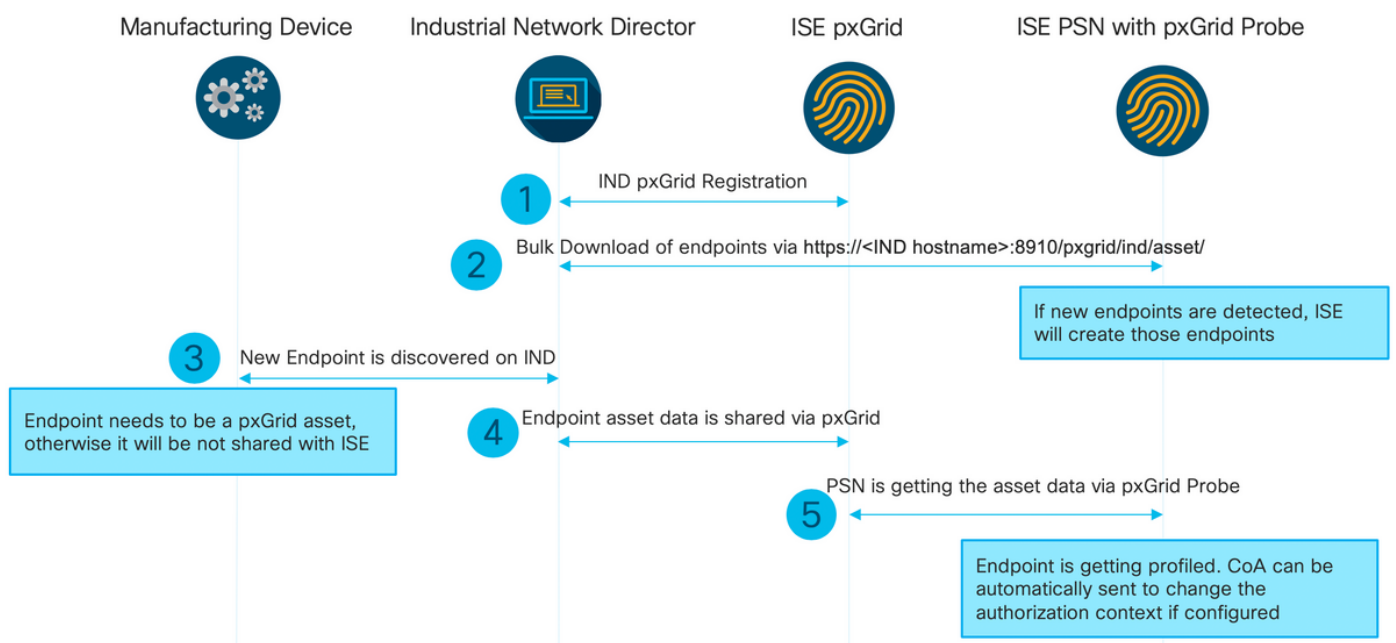
採用元件

本文中的資訊係根據以下軟體和硬體版本：

- 思科身分識別服務引擎版本2.4 p6
- 工業網路導向器1.6.1-4

設定

高級流程圖



1. IND通過ISE pxGrid節點上的pxGrid版本2向ISE註冊。來自IND(application.log)的對應日誌：

```

2019-05-22 14:31:17,770:INFO:qtp281049997-52711:PxgridPublisher:: Connect start
2019-05-22 14:31:17,770:INFO:qtp281049997-52711:PxgridPublisher:: Hostname:WIN2012-AAA
IpAddress:10.62.145.130
2019-05-22 14:31:17,770:INFO:qtp281049997-52711:PxgridPublisher:: pxGrid
RestBaseUrl:https://WIN2012-AAA:8910/pxgrid/ind/asset/
2019-05-22 14:31:17,770:INFO:qtp281049997-52711:PxgridController:: Send Request ServiceRegister
invoked with pxGridServer(s) [ISE24-1ek.example.com]
2019-05-22 14:31:17,770:INFO:qtp281049997-52711:PxgridController:: Sending ServiceRegister
request to pxGridServer ISE24-1ek.example.com
2019-05-22 14:31:17,786:INFO:qtp281049997-52711:PxgridController::
Request={"name": "com.cisco.endpoint.asset", "properties": {"wsPubsubService": "com.cisco.ise.pubsub
", "restBaseUrl": "https://WIN2012-
AAA:8910/pxgrid/ind/asset/", "assetTopic": "/topic/com.cisco.endpoint.asset"}}
2019-05-22 14:31:17,911:INFO:qtp281049997-52711:PxgridController:: Response={"id": "76d4abaf-
9efd-4c68-a046-79e049564902", "reregisterTimeMillis": "300000"}
2019-05-22 14:31:17,911:INFO:qtp281049997-52711:PxgridController:: Send Request ServiceLookup
invoked with pxGridServer(s) [ISE24-1ek.example.com]
2019-05-22 14:31:17,911:INFO:qtp281049997-52711:PxgridController:: Sending ServiceLookup request
to pxGridServer ISE24-1ek.example.com
2019-05-22 14:31:17,911:INFO:qtp281049997-52711:PxgridController::

```

```
Request={"name":"com.cisco.ise.pubsub"}
2019-05-22 14:31:17,911:INFO:qtp281049997-52711:PxgridController::
Response={"services":[{"name":"com.cisco.ise.pubsub","nodeName":"ise-pubsub-ise24-
lek","properties":{"wsUrl":"wss://ISE24-1ek.example.com:8910/pxgrid/ise/pubsub"}}]}
2019-05-22 14:31:17,911:INFO:qtp281049997-52711:PxgridPublisher:: wsUrl=wss://ISE24-
lek.example.com:8910/pxgrid/ise/pubsub
2019-05-22 14:31:17,911:INFO:qtp281049997-52711:PxgridController:: Send Request AccessSecret
invoked with pxGridServer(s) [ISE24-1ek.example.com]
2019-05-22 14:31:17,911:INFO:qtp281049997-52711:PxgridController:: Sending AccessSecret request
to pxGridServer ISE24-1ek.example.com
2019-05-22 14:31:17,926:INFO:qtp281049997-52711:PxgridController:: Request={"peerNodeName":"ise-
pubsub-ise24-1ek"}
2019-05-22 14:31:17,926:INFO:qtp281049997-52711:PxgridController:: Access Secret recieved
2019-05-22 14:31:17,926:INFO:qtp281049997-52711:PxgridPublisher:: Client created
```

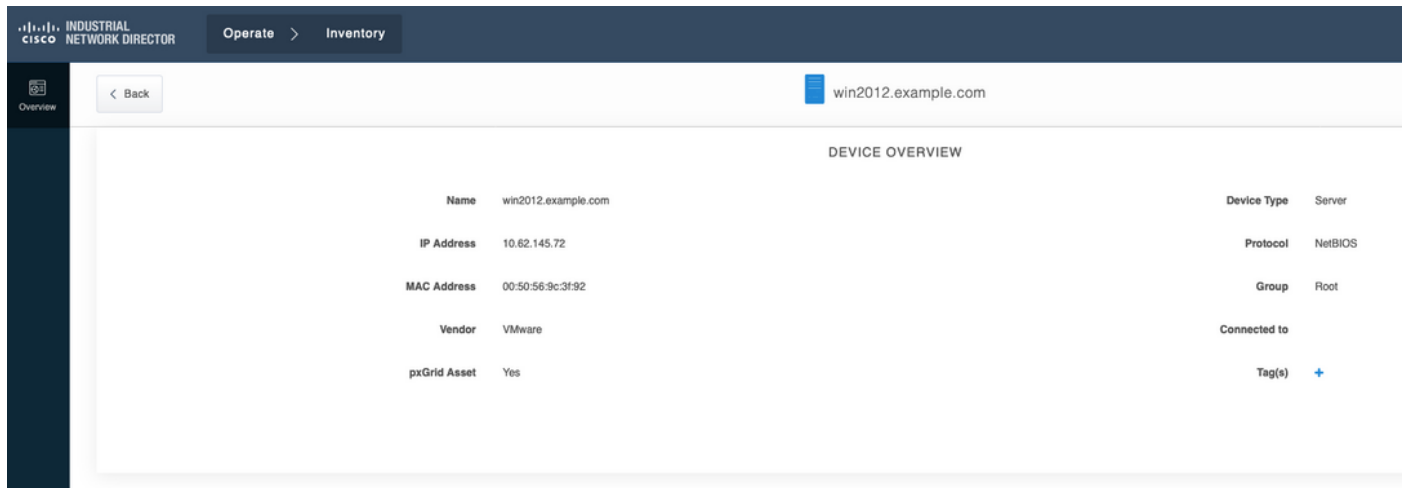
如日誌所示，IND已註冊assetTopic

2.啟用了pxgrid探測的ISE PSN批次下載現有的pxGrid資產(profiler.log):

```
2019-05-22 14:39:25,817 INFO [ProfilerINDSubscriberPoller-56-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- New services are: [Service
[name=com.cisco.endpoint.asset, nodeName=ind2, properties={wsPubsubService=com.cisco.ise.pubsub,
restBaseUrl=https://WIN2012-AAA:8910/pxgrid/ind/asset/,
assetTopic=/topic/com.cisco.endpoint.asset}]]
2019-05-22 14:39:26,011 INFO [ProfilerINDSubscriberPoller-56-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- NODENAME:ind2
2019-05-22 14:39:26,011 INFO [ProfilerINDSubscriberPoller-56-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- REQUEST
BODY{"offset":"0","limit":"500"}
2019-05-22 14:39:26,046 INFO [ProfilerINDSubscriberPoller-56-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- Response status={}200
2019-05-22 14:39:26,046 INFO [ProfilerINDSubscriberPoller-56-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- Content: "OUT_OF_SYNC"
2019-05-22 14:39:26,047 INFO [ProfilerINDSubscriberPoller-56-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- Status is : "OUT_OF_SYNC"
2019-05-22 14:39:26,047 DEBUG [ProfilerINDSubscriberPoller-56-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- Static set after adding new services:
[Service [name=com.cisco.endpoint.asset, nodeName=ind,
properties={wsPubsubService=com.cisco.ise.pubsub, restBaseUrl=https://WIN2012-
AAA:8910/pxgrid/ind/asset/, assetTopic=/topic/com.cisco.endpoint.asset}], Service
[name=com.cisco.endpoint.asset, nodeName=ind2, properties={wsPubsubService=com.cisco.ise.pubsub,
restBaseUrl=https://WIN2012-AAA:8910/pxgrid/ind/asset/,
assetTopic=/topic/com.cisco.endpoint.asset}]]
2019-05-22 14:39:26,052 INFO [ProfilerINDSubscriberBulkRequestPool-80-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- NODENAME:ind2
2019-05-22 14:39:26,052 INFO [ProfilerINDSubscriberBulkRequestPool-80-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- REQUEST
BODY{"offset":"0","limit":"500"}
2019-05-22 14:39:26,111 INFO [ProfilerINDSubscriberBulkRequestPool-80-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- Response status={}200
2019-05-22 14:39:26,111 INFO [ProfilerINDSubscriberBulkRequestPool-80-thread-1][]
cisco.profiler.infrastructure.probemgr.INDSubscriber --- Content:
{"assets":[{"assetId":"100","assetName":"WIN2012-
CHILD","assetIpAddress":"10.62.145.131","assetMacAddress":"00:50:56:b6:46:87","assetVendor":"VMware",
"assetProductId":"Unknown","assetSerialNumber":"","assetDeviceType":"Server","assetSwRevision":
"", "assetHwRevision":"","assetProtocol":"NetBIOS","assetConnectedLinks":[],"assetCustomAttri
butes":[{"key":"assetGroup","value":"Root"}, {"key":"assetTag","value":"SEC_TAG2"}]}, {"assetId":"
101","assetName":"win2012.example.com","assetIpAddress":"10.62.145.72","assetMacAddress":"00:50:
56:9c:3f:92","assetVendor":"VMware","assetProductId":"Unknown","assetSerialNumber":"","assetDevi
ceType":"Server","assetSwRevision":"","assetHwRevision":"","assetProtocol":"NetBIOS","assetConne
ctedLinks":[],"assetCustomAttributes":[{"key":"assetGroup","value":"Root"}, {"key":"assetTag","va
lue":""}]}]}
2019-05-22 14:39:26,111 DEBUG [ProfilerINDSubscriberBulkRequestPool-80-thread-1][]
```

```
cisco.profiler.infrastructure.probemgr.INDSubscriber -::- Parsing bulk response
{"assets":[{"assetId":"100","assetName":"WIN2012-CHILD","assetIpAddress":"10.62.145.131","assetMacAddress":"00:50:56:b6:46:87","assetVendor":"VMware","assetProductId":"Unknown","assetSerialNumber":"","assetDeviceType":"Server","assetSwRevision":"","assetHwRevision":"","assetProtocol":"NetBIOS","assetConnectedLinks":[],"assetCustomAttributes":[{"key":"assetGroup","value":"Root"}, {"key":"assetTag","value":"SEC_TAG2"}]}, {"assetId":"101","assetName":"win2012.example.com","assetIpAddress":"10.62.145.72","assetMacAddress":"00:50:56:9c:3f:92","assetVendor":"VMware","assetProductId":"Unknown","assetSerialNumber":"","assetDeviceType":"Server","assetSwRevision":"","assetHwRevision":"","assetProtocol":"NetBIOS","assetConnectedLinks":[],"assetCustomAttributes":[{"key":"assetGroup","value":"Root"}, {"key":"assetTag","value":""}]}]}
```

3. 在IND上發現新終結點 (需要使用協定發現終結點，否則終結點未標識為pxGrid資產，並且未通過pxGrid與ISE共用)。






4. IND將此資訊發佈到ISE pxGrid節點

5. PSN通過pxGrid探測接收此資料(profiler.log):

```
2019-05-22 15:20:40,616 DEBUG [Grizzly(2)][]
cisco.profiler.infrastructure.probemgr.INDSubscriber -::- Parsing push notification response:
{"asset":{"assetId":"101","assetName":"win2012.example.com","assetIpAddress":"10.62.145.72","assetMacAddress":"00:50:56:9c:3f:92","assetVendor":"VMware","assetProductId":"Unknown","assetSerialNumber":"","assetDeviceType":"Server","assetSwRevision":"","assetHwRevision":"","assetProtocol":"NetBIOS","assetConnectedLinks":[],"assetCustomAttributes":[{"key":"assetGroup","value":"Root"}, {"key":"assetTag","value":"SEC_TAG2"}]}, "opType":"UPDATE"}
2019-05-22 15:20:40,616 DEBUG [Grizzly(2)][]
cisco.profiler.infrastructure.probemgr.INDSubscriber -::- sending endpoint to forwarder{"assetId":"101","assetName":"win2012.example.com","assetIpAddress":"10.62.145.72","assetMacAddress":"00:50:56:9c:3f:92","assetVendor":"VMware","assetProductId":"Unknown","assetSerialNumber":"","assetDeviceType":"Server","assetSwRevision":"","assetHwRevision":"","assetProtocol":"NetBIOS","assetConnectedLinks":[],"assetCustomAttributes":[{"key":"assetGroup","value":"Root"}, {"key":"assetTag","value":"SEC_TAG2"}]}
2019-05-22 15:20:40,617 INFO [Grizzly(2)][] cisco.profiler.infrastructure.probemgr.Forwarder -::- Forwarder Mac 00:50:56:9C:3F:92 MessageCode null epSource PXGRIDPROBE
2019-05-22 15:20:40,617 DEBUG [forwarder-2][]
cisco.profiler.infrastructure.probemgr.ForwarderHelper -:ProfilerCollection:- sequencing Radius message for mac = 00:50:56:9C:3F:92
2019-05-22 15:20:40,617 DEBUG [forwarder-2][] cisco.profiler.infrastructure.probemgr.Forwarder -:ProfilerCollection:- Processing endpoint:00:50:56:9C:3F:92
2019-05-22 15:20:40,618 DEBUG [forwarder-2][] com.cisco.profiler.im.EndPoint -:ProfilerCollection:- filtered custom attributes are:{assetGroup=Root, assetTag=SEC_TAG2}
2019-05-22 15:20:40,618 DEBUG [forwarder-2][] cisco.profiler.infrastructure.probemgr.Forwarder -:ProfilerCollection:- Filtering:00:50:56:9C:3F:92
2019-05-22 15:20:40,618 DEBUG [forwarder-2][] cisco.profiler.infrastructure.probemgr.Forwarder -:ProfilerCollection:- Endpoint Attributes:EndPoint[id=<null>,name=<null>]
```

MAC: 00:50:56:9C:3F:92
Attribute:BYODRegistration value:Unknown
Attribute:DeviceRegistrationStatus value:NotRegistered
Attribute:EndPointProfilerServer value:ISE24-1ek.example.com
Attribute:EndPointSource value:PXGRIDPROBE
Attribute:MACAddress value:00:50:56:9C:3F:92
Attribute:NmapSubnetScanID value:0
Attribute:OUI value:VMware, Inc.
Attribute:PolicyVersion value:0
Attribute:PortalUser value:
Attribute:PostureApplicable value:Yes
Attribute:assetDeviceType value:Server
Attribute:assetGroup value:Root
Attribute:assetHwRevision value:
Attribute:assetId value:101
Attribute:assetIpAddress value:10.62.145.72
Attribute:assetMacAddress value:00:50:56:9c:3f:92
Attribute:assetName value:win2012.example.com
Attribute:assetProductId value:Unknown
Attribute:assetProtocol value:NetBIOS
Attribute:assetSerialNumber value:
Attribute:assetSwRevision value:
Attribute:assetTag value:SEC_TAG2
Attribute:assetVendor value:VMware
Attribute:b310a420-78a5-11e9-a189-9ac8f4107843 value:Root
Attribute:b8e73d50-78a5-11e9-a189-9ac8f4107843 value:SEC_TAG2
Attribute:ip value:10.62.145.72
Attribute:SkipProfiling value:false

6.使用正確資料更新情景可視性

00:50:56:9C:3F:92   



MAC Address: 00:50:56:9C:3F:92
Username:
Endpoint Profile: IOT_DEVICE2
Current IP Address: 10.62.145.72
Location:

Applications **Attributes** Authentication Threats Vulnerabilities

General Attributes

Description

Static Assignment false
Endpoint Policy IOT_DEVICE2
Static Group Assignment false
Identity Group Assignment Profiled

Custom Attributes

Filter 

Attribute Name	Attribute Value
<input type="text" value="Attribute Name"/>	<input type="text" value="Attribute Value"/>
assetGroup	Root
LogicalProfile	
assetTag	SEC_TAG2

Other Attributes

組態

附註：即使您希望在情景可視性中僅能看到assetGroup和assetTag，也需要步驟1 - 3

步驟1.在ISE上配置終端自定義屬性

導航到管理>身份管理>設定>端點自定義屬性。根據以下影象配置自定義屬性 (assetGroup和assetTag)。

Identity Services Engine Home Context Visibility Operations Policy Administration Work Centers

System Identity Management Network Resources Device Portal Management pxGrid Services Feed Service Threat Centric NAC

Identities Groups External Identity Sources Identity Source Sequences Settings

User Custom Attributes
User Authentication Settings
Endpoint Purge
Endpoint Custom Attributes

Endpoint Custom Attributes

Endpoint Attributes (for reference)

Mandatory	Attribute Name	Data Type
	PostureApplicable	STRING
	EndPointPolicy	STRING
	AnomalousBehaviour	STRING
	OperatingSystem	STRING
	BYODRegistration	STRING
	PortalUser	STRING
	LastAUPAcceptanceHours	INT
	LogicalProfile	STRING

Endpoint Custom Attributes

Attribute name

assetGroup

assetTag

Type

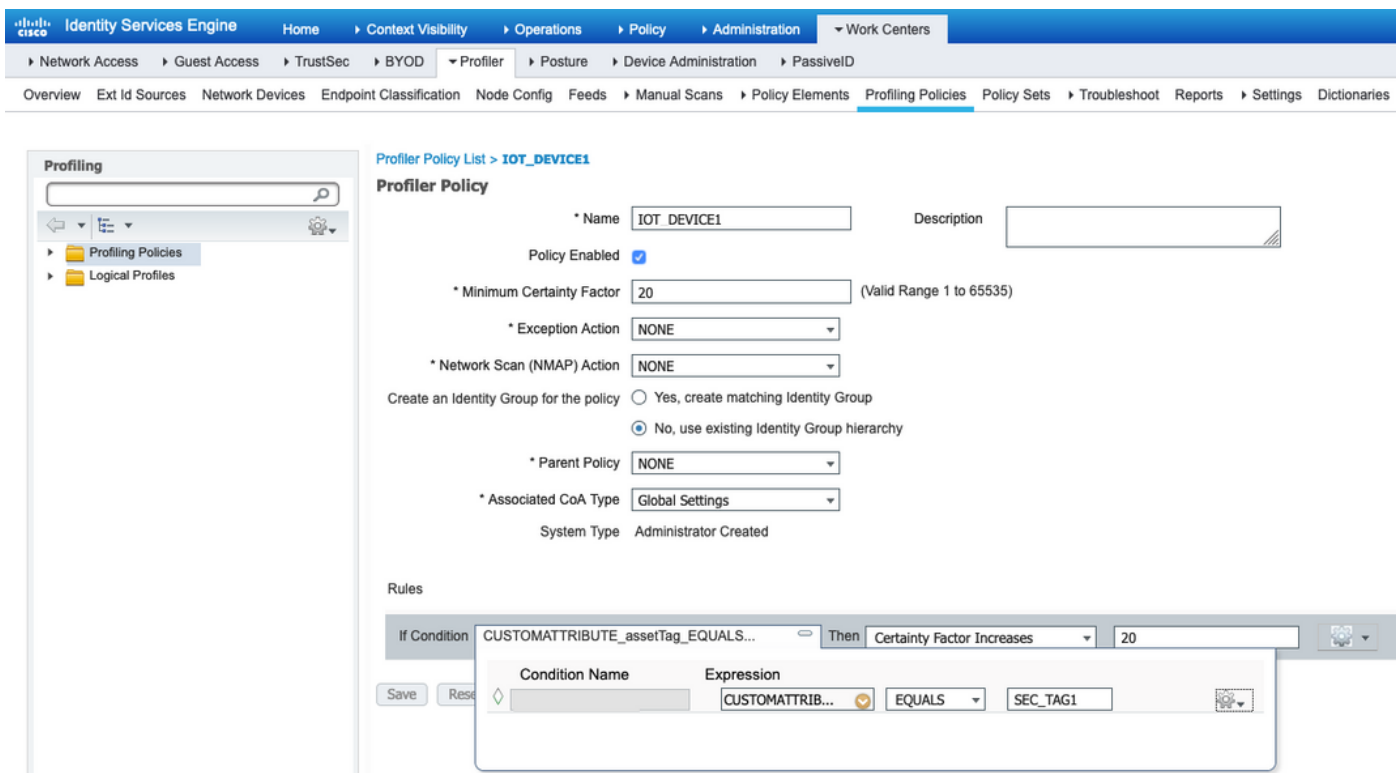
String -

String +

Reset Save

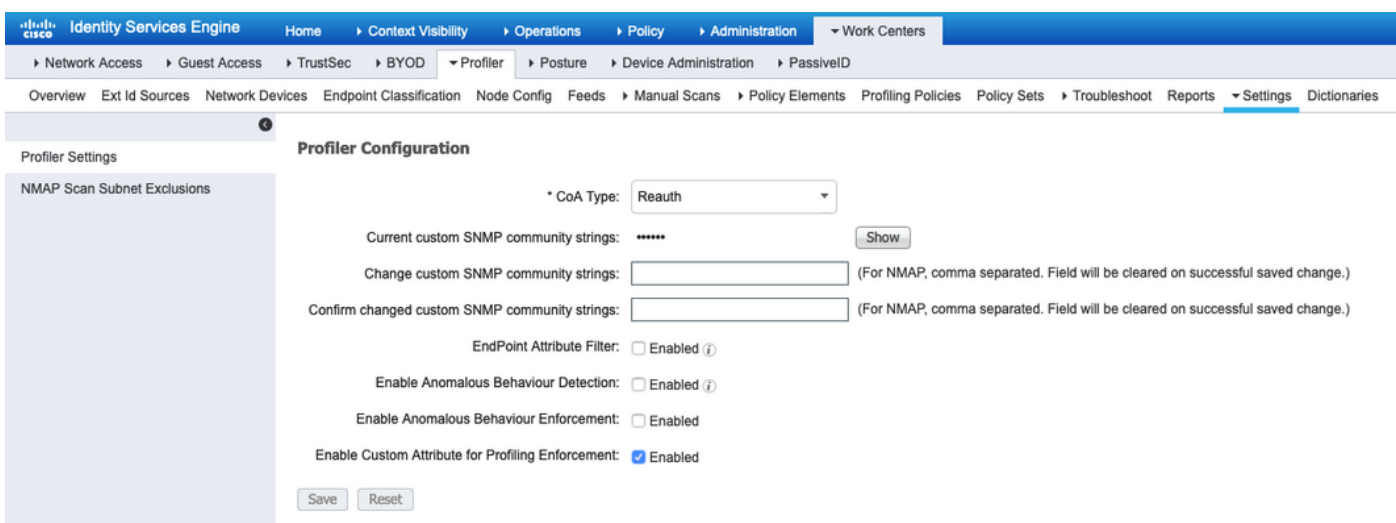
步驟2.使用自定義屬性配置Profiler策略

導航到工作中心(Work Centers)> Profiler(Profiler)>分析策略(Profiling Policies)。按一下「Add」。配置探查器策略，如下圖所示。



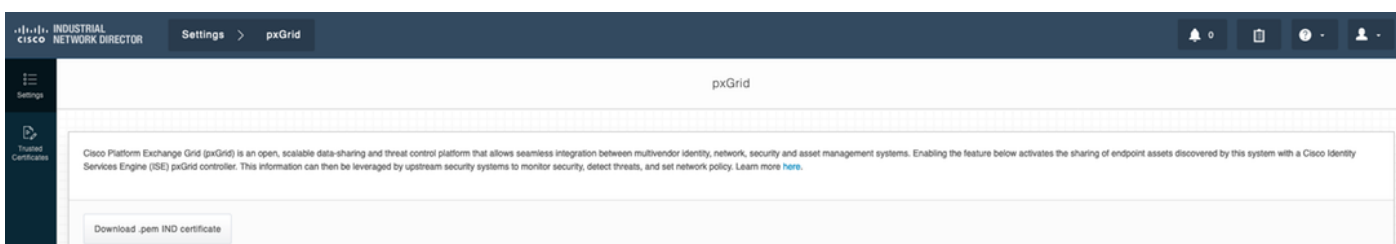
步驟3. 啟用用於分析實施的自定義屬性

導航到工作中心 > Profiler > Settings > Profiler Settings。確保 啟用分析強制的自定義屬性 覈取方塊已選中。



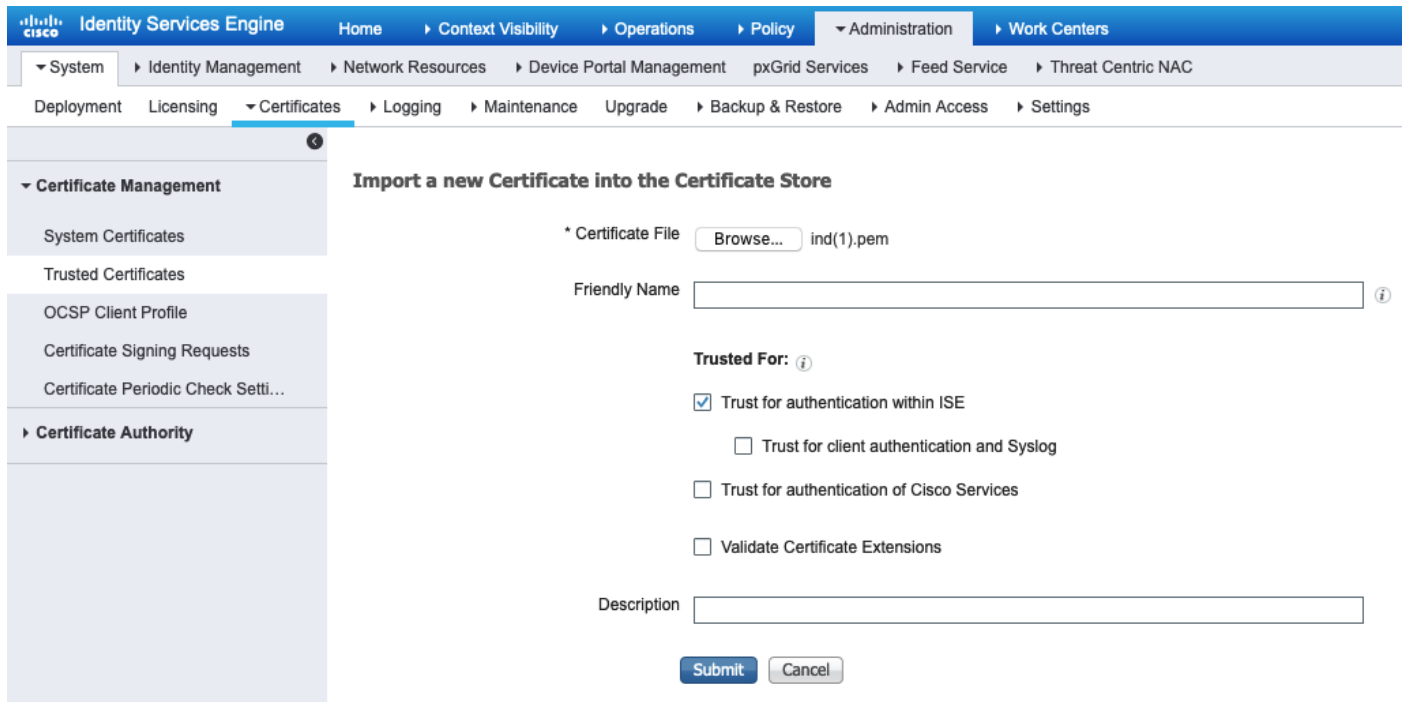
步驟4. 匯出IND身份證書

導覽至 Settings > pxGrid。按一下「Download .pem IND certificate」。此證書在pxGrid註冊期間使用，因此ISE應信任它。



步驟5.將IND身份證書上傳到ISE受信任庫

導航到**管理>證書>證書管理>受信任證書**。按一下**Import**。按一下**Browse**，然後從步驟3中選擇IND證書。按一下**Submit**。



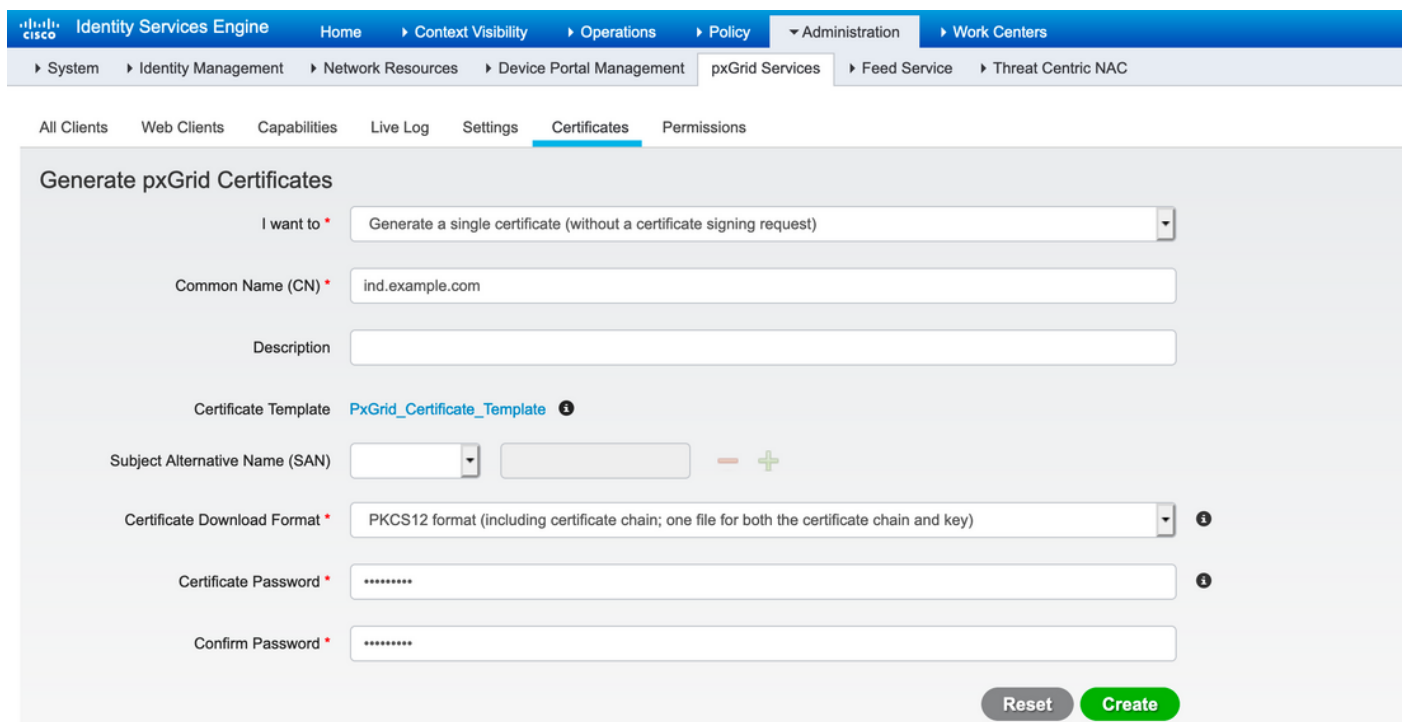
The screenshot shows the Cisco Identity Services Engine (ISE) Administration console. The breadcrumb navigation is: Home > Context Visibility > Operations > Policy > Administration > Work Centers. The left sidebar shows the navigation menu with 'Certificate Management' expanded. The main content area is titled 'Import a new Certificate into the Certificate Store'. The form includes the following fields and options:

- * Certificate File: Browse... ind(1).pem
- Friendly Name: [Empty text box]
- Trusted For: [Info icon]
- Trust for authentication within ISE
- Trust for client authentication and Syslog
- Trust for authentication of Cisco Services
- Validate Certificate Extensions
- Description: [Empty text box]
- Submit and Cancel buttons.

步驟6.為IND生成證書

IND不使用ISE CA頒發的客戶端證書。相反，目標是填充IND受信任儲存，因此ISE傳送其pxGrid證書時（在TLS交換期間），它受IND信任。

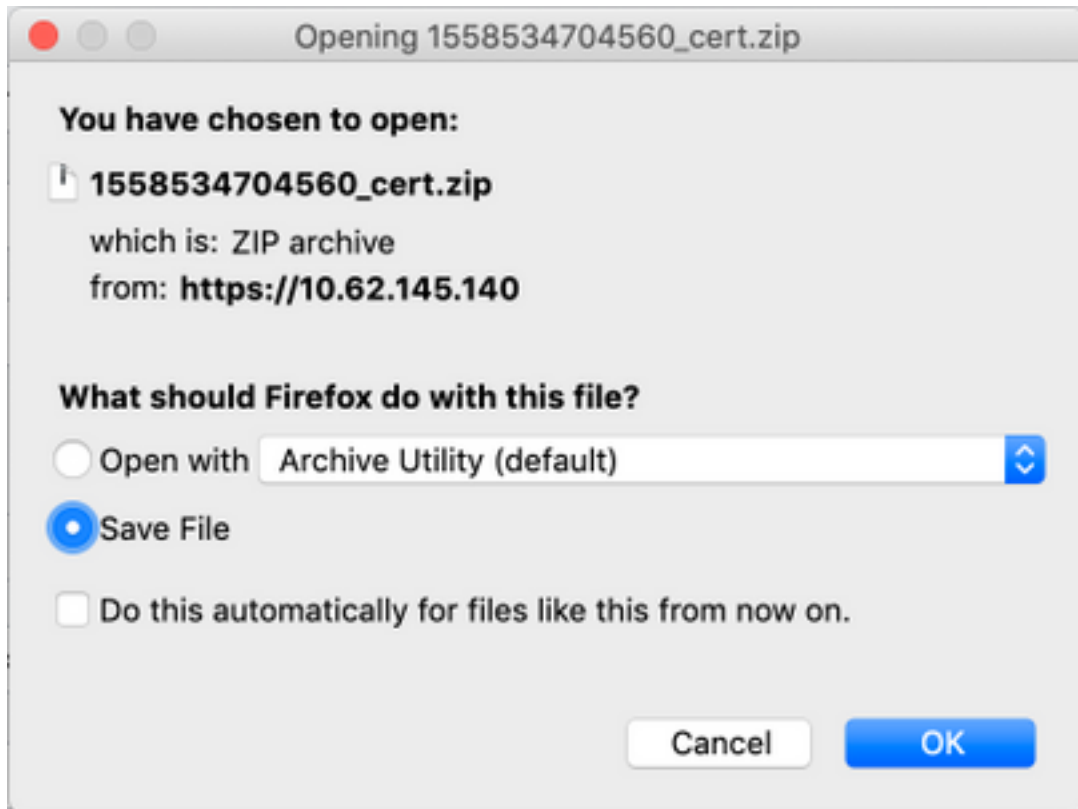
導航到**管理> pxGrid服務>證書**。根據以下影象填充欄位。CN欄位是必填欄位，因為ISE CA的目標是頒發身份證書。理想情況下，應輸入IND的FQDN，但由於身份證書不被IND使用，因此CN欄位值不重要。



The screenshot shows the Cisco Identity Services Engine (ISE) Administration console. The breadcrumb navigation is: Home > Context Visibility > Operations > Policy > Administration > Work Centers. The left sidebar shows the navigation menu with 'Certificates' selected. The main content area is titled 'Generate pxGrid Certificates'. The form includes the following fields and options:

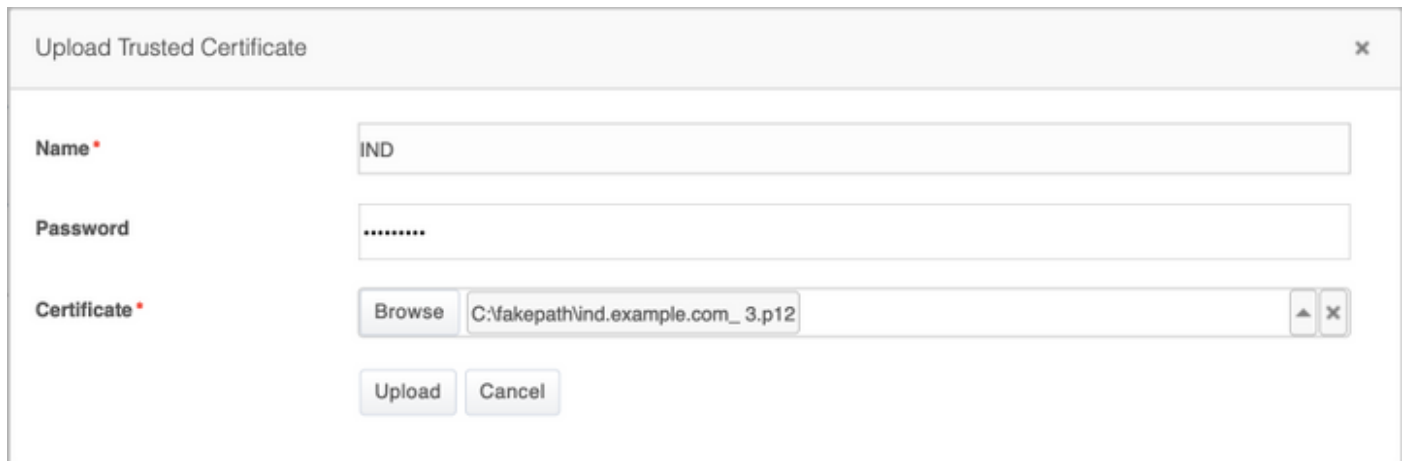
- I want to: Generate a single certificate (without a certificate signing request)
- Common Name (CN): ind.example.com
- Description: [Empty text box]
- Certificate Template: PxGrid_Certificate_Template [Info icon]
- Subject Alternative Name (SAN): [Empty text box] [Add button]
- Certificate Download Format: PKCS12 format (including certificate chain; one file for both the certificate chain and key) [Info icon]
- Certificate Password: [Masked password]
- Confirm Password: [Masked password]
- Reset and Create buttons.

步驟7.下載PKCS12格式的證書鍵



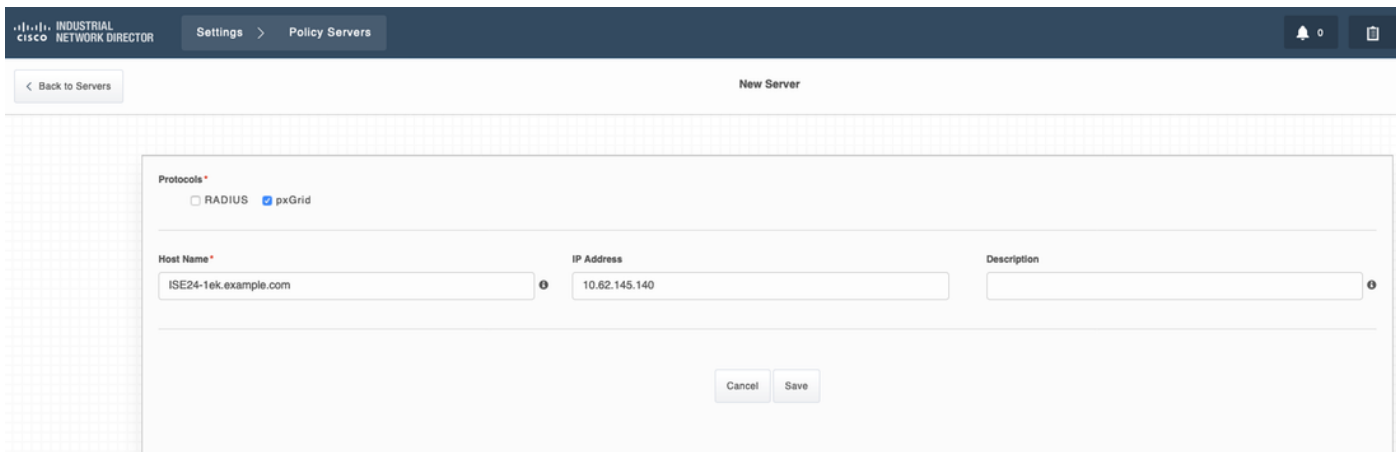
步驟8.在IND上傳憑證鏈結

導航到設定> pxGrid >受信任證書。按一下New。輸入Name (在IND上可以看到帶有此名稱的鏈)。密碼是步驟1中的密碼。



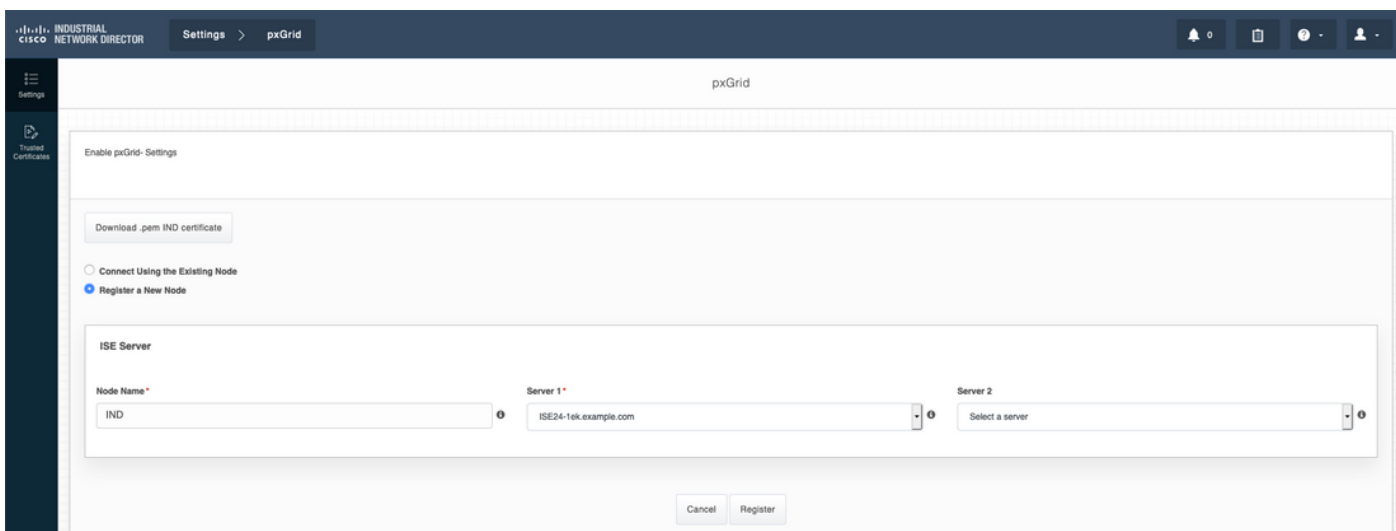
步驟9.在IND上配置策略伺服器

導航到設定>策略伺服器，按一下新建。輸入ISE pxGrid節點的ISE FQDN和IP地址。



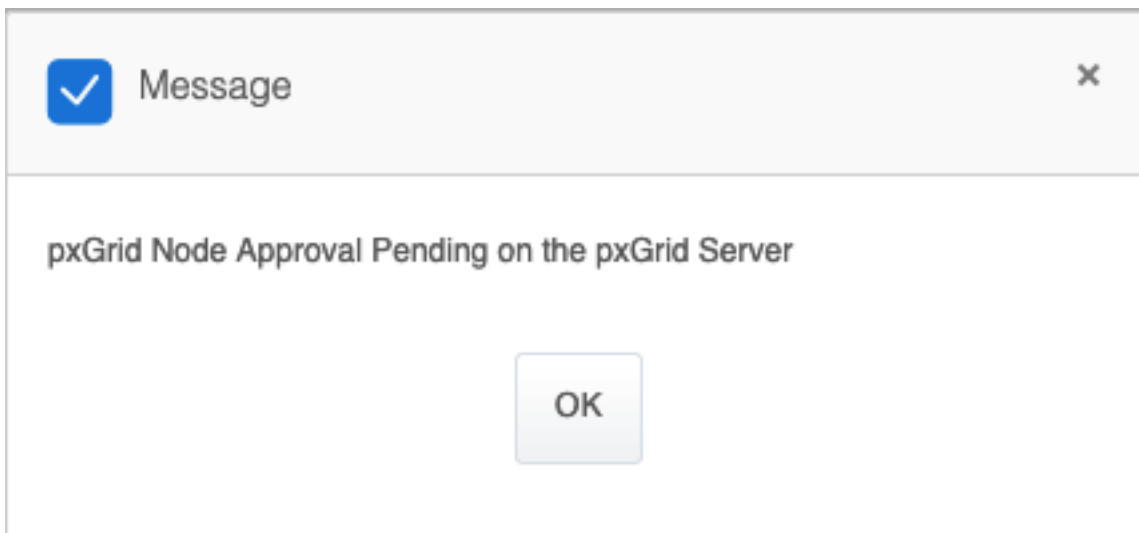
步驟10.在IND上配置pxGrid整合

導航到設定> pxGrid並啟用pxGrid整合。按一下切換按鈕。輸入節點名稱，此主機名稱是ISE上的pxGrid客戶端的名稱。從伺服器1欄位的下拉選單中選擇之前配置的ISE。按一下「Register」。



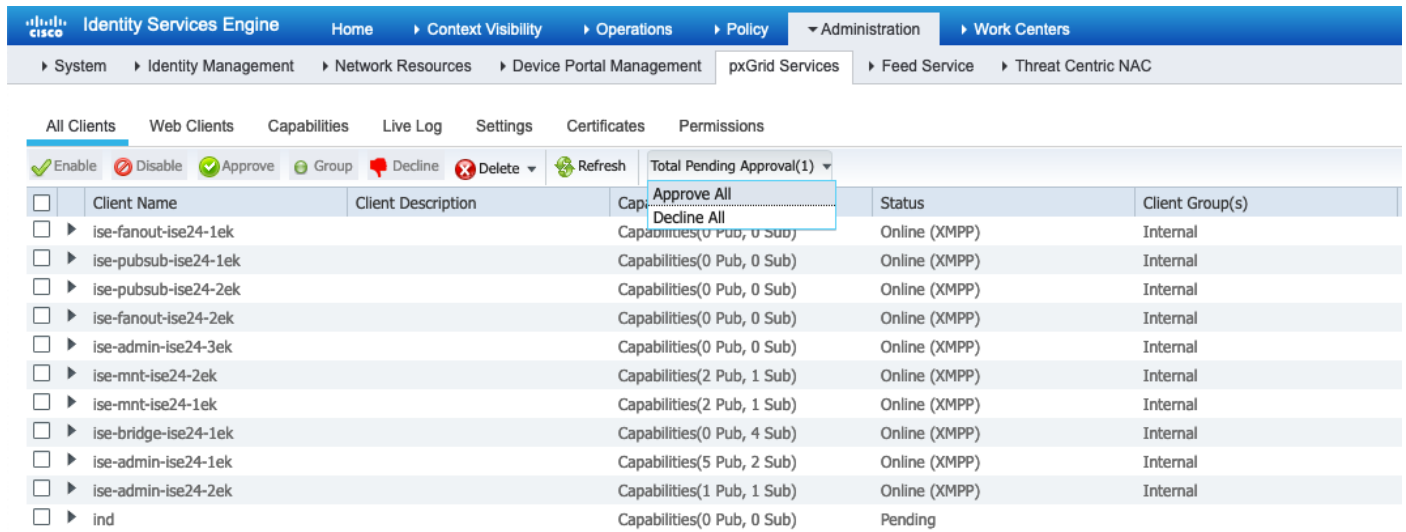
附註：如果在ISE上啟用自動批准基於證書的新帳戶設定，則忽略步驟11 - 12。

成功註冊後，IND上顯示以下消息：



步驟11.在ISE上批准IND

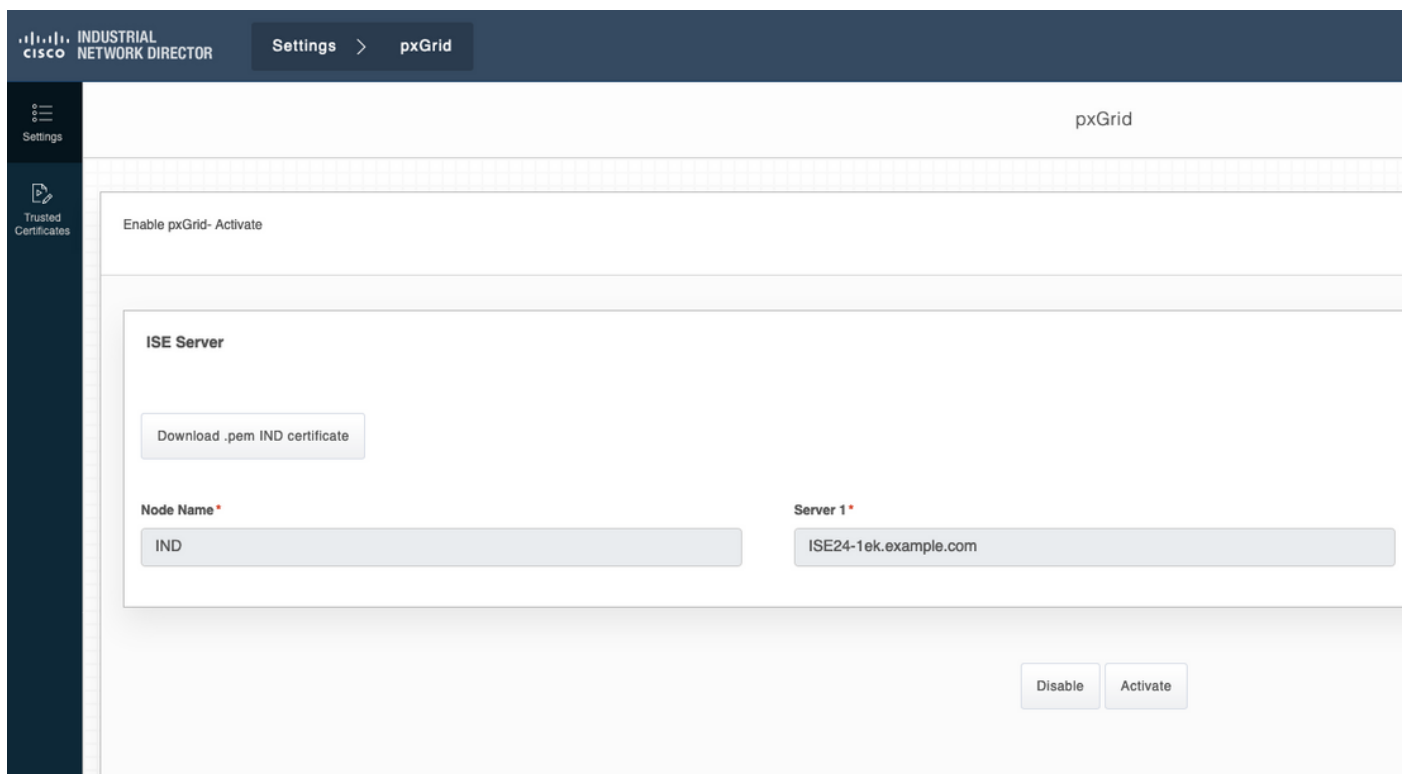
導航到**管理 > pxGrid服務 > 所有客戶端**。開啟「等待批准的總數(1)」下拉選單。按一下「Approve All」。



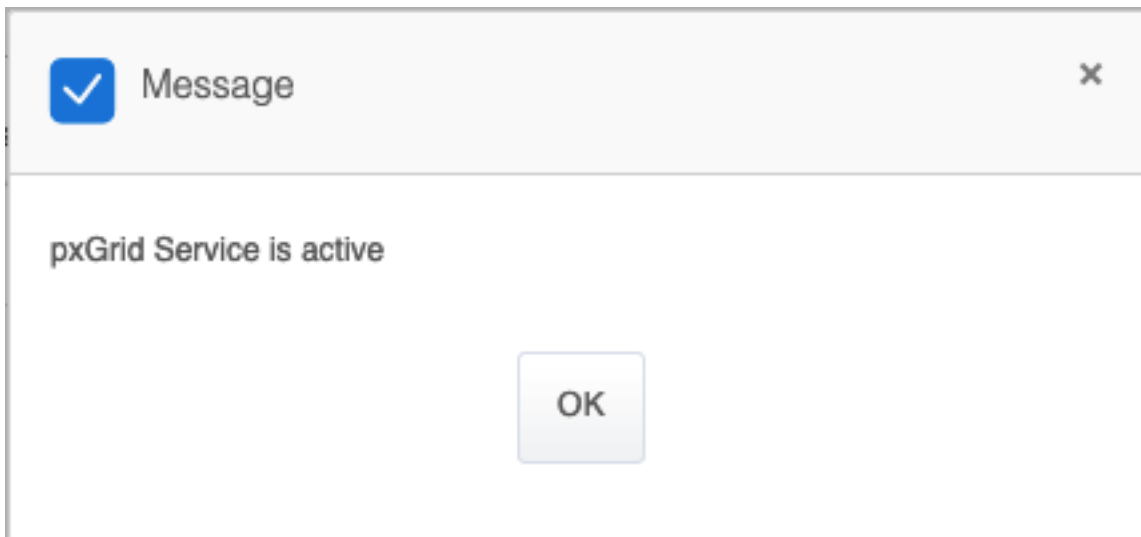
Client Name	Client Description	Cap	Status	Client Group(s)
ise-fanout-ise24-1ek	Capabilities(0 Pub, 0 Sub)	Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-pubsub-ise24-1ek	Capabilities(0 Pub, 0 Sub)	Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-pubsub-ise24-2ek	Capabilities(0 Pub, 0 Sub)	Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-fanout-ise24-2ek	Capabilities(0 Pub, 0 Sub)	Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-admin-ise24-3ek	Capabilities(0 Pub, 0 Sub)	Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-mnt-ise24-2ek	Capabilities(2 Pub, 1 Sub)	Capabilities(2 Pub, 1 Sub)	Online (XMPP)	Internal
ise-mnt-ise24-1ek	Capabilities(2 Pub, 1 Sub)	Capabilities(2 Pub, 1 Sub)	Online (XMPP)	Internal
ise-bridge-ise24-1ek	Capabilities(0 Pub, 4 Sub)	Capabilities(0 Pub, 4 Sub)	Online (XMPP)	Internal
ise-admin-ise24-1ek	Capabilities(5 Pub, 2 Sub)	Capabilities(5 Pub, 2 Sub)	Online (XMPP)	Internal
ise-admin-ise24-2ek	Capabilities(1 Pub, 1 Sub)	Capabilities(1 Pub, 1 Sub)	Online (XMPP)	Internal
ind	Capabilities(0 Pub, 0 Sub)	Capabilities(0 Pub, 0 Sub)	Pending	

步驟12.在IND上啟用pxGrid服務

導覽至**Settings > pxGrid**。按一下「Activate」。



成功啟用後，IND上顯示以下消息：



驗證

ISE驗證

導航到**管理 > pxGrid服務 > 所有客戶端**。在All Clients中，IND會將IND客戶端視為Offline(XMPP),IND使用pxGrid版本2。

Client Name	Client Description	Capabilities	Status	Client Group(s)
ise-fanout-ise24-1ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-pubsub-ise24-1ek	Client Name: Not Sortable	Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-pubsub-ise24-2ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-fanout-ise24-2ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-admin-ise24-3ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-mnt-ise24-2ek		Capabilities(2 Pub, 1 Sub)	Online (XMPP)	Internal
ise-mnt-ise24-1ek		Capabilities(2 Pub, 1 Sub)	Online (XMPP)	Internal
ise-bridge-ise24-1ek		Capabilities(0 Pub, 4 Sub)	Online (XMPP)	Internal
ise-admin-ise24-1ek		Capabilities(5 Pub, 2 Sub)	Online (XMPP)	Internal
ise-admin-ise24-2ek		Capabilities(1 Pub, 1 Sub)	Online (XMPP)	Internal
ind		Capabilities(0 Pub, 0 Sub)	Offline (XMPP)	

按一下**Web Clients**，確認IND客戶端的狀態為ON，並且/topic/com.cisco.endpoint.asset是Subscriptions的一部分。

Client Name	Connect To	Session Id	Certificate	Subscriptions	Publications	IP Address	Status	Start time
IND	ISE24-1ek	ISE24-1ek:181	CN=WIN2012-AAA, ...			10.62.145.130	ON	2019-05-23 08:27
ise-mnt-ise24-1ek	ISE24-1ek	ISE24-1ek:182	CN=ISE24-1ek.exe ...	/topic/com.cisco.ise.session.internal		10.62.145.140	ON	2019-05-23 08:28
ise-fanout-ise24-1ek	ISE24-1ek	ISE24-1ek:183	CN=ISE24-1ek.exe ...	/topic/distributed	/topic/distributed	10.62.145.140	ON	2019-05-23 08:28
ise-admin-ise24-1ek	ISE24-1ek	ISE24-1ek:184	CN=ISE24-1ek.exe ...	/topic/com.cisco.endpoint.asset		10.62.145.140	OFF	2019-05-23 08:28
ise-mnt-ise24-2ek	ISE24-1ek	ISE24-1ek:185	No Certificate	/topic/com.cisco.ise.session.internal	/topic/com.cisco.ise.session.internal	10.62.145.141	OFF	2019-05-23 08:59
ise-admin-ise24-2ek	ISE24-1ek	ISE24-1ek:188	No Certificate			10.62.145.141	ON	2019-05-23 09:30
ise-bridge-ise24-1ek	ISE24-1ek	ISE24-1ek:189	CN=ISE24-1ek.exe ...			127.0.0.1	OFF	2019-05-23 09:30
ise-fanout-ise24-1ek	ISE24-1ek	ISE24-1ek:190	CN=ISE24-1ek.exe ...	/topic/wildcard		127.0.0.1	ON	2019-05-23 09:30
ise-mnt-ise24-2ek	ISE24-1ek	ISE24-1ek:191	No Certificate	/topic/com.cisco.ise.session.internal	/topic/com.cisco.ise.session.internal	10.62.145.141	ON	2019-05-23 09:43
ise-admin-ise24-1ek	ISE24-1ek	ISE24-1ek:192	CN=ISE24-1ek.exe ...	/topic/com.cisco.endpoint.asset		10.62.145.140	ON	2019-05-23 09:43
ise-bridge-ise24-1ek	ISE24-1ek	ISE24-1ek:193	CN=ISE24-1ek.exe ...			127.0.0.1	OFF	2019-05-23 10:04
ise-bridge-ise24-1ek	ISE24-1ek	ISE24-1ek:194	CN=ISE24-1ek.exe ...			127.0.0.1	ON	2019-05-23 10:09

IND驗證

IND應轉換為「同步」狀態。如果ISE上的批次下載成功，則完成，如果不是IND將停滯在「不同步」狀態。

The screenshot displays the pxGrid configuration interface. At the top, there's a 'Download .pem IND certificate' button and a green toggle switch. The 'ISE Server' section contains a table with columns for 'Node Name', 'Server 1', and 'Server 2'. The 'Node Name' is 'IND', 'Server 1' is 'ISE24-1ek.example.com', and 'Server 2' is empty. The 'Statistics' section at the bottom provides a summary of sync operations:

Sync. Status	In Sync	Last Sync. Status Probe Time
Number of Assets Shared via Last Bulk Request	2	2019-05-23 10:19:16
Last Update Operation	Update	Last Bulk Request Time
Total pxGrid Asset Count	2	2019-05-23 08:29:14
		Last Update Time
		2019-05-22 20:17:36

疑難排解

IND上的同步狀態停滯在「不同步」狀態

如果在ISE上成功進行批次下載，則會發生從不同步到同步的轉換。IND application.log (位於下方)。

```
2019-05-22 22:09:06,902:INFO:qtp281049997-53444:PxgridConfigMgr:: Pxgrid Statistics Start:: Bulk Request : bulkReqAssetCount:2 add: false
2019-05-22 22:09:06,902:INFO:qtp281049997-53444:PxgridConfigMgr:: Pxgrid Statistics updated::
```

Bulk Request : AssetCount:2

2019-05-22 22:09:06,902:INFO:qtp281049997-53444:PxgridConfigMgr:: Sync Status transition to IN_SYNC

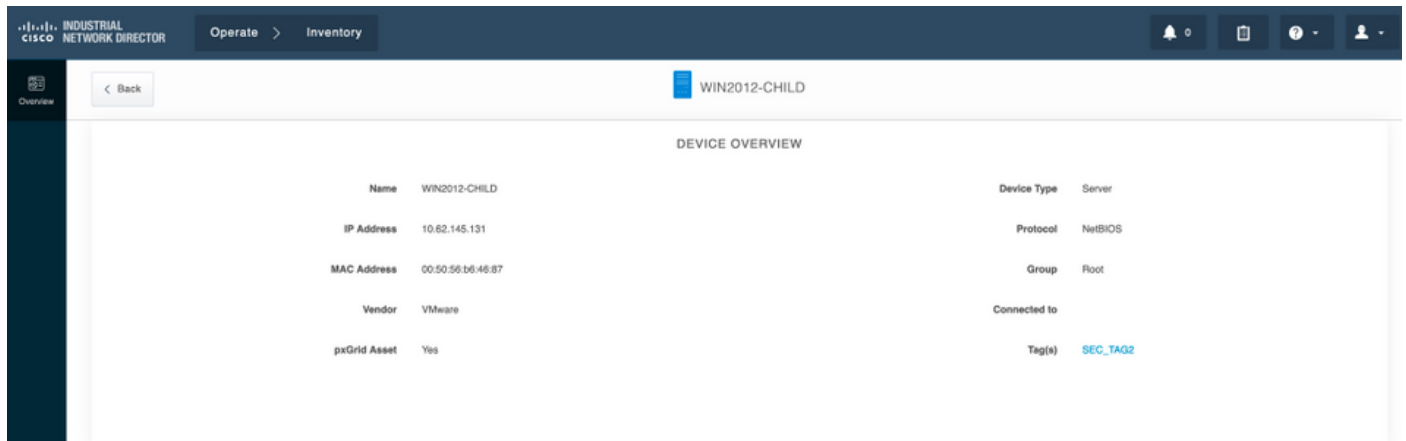
2019-05-22 22:09:06,918:INFO:qtp281049997-53444:PxGridServiceRestController:: getAssets Completed

ISE能夠解析IND共用的IND主機名至關重要。否則ISE無法執行批次下載，並且IND永遠不會轉換到「同步」狀態。如果批次下載失敗 (WIN2012-AAA無法由ISE解決)，您可在profiler.log中看到以下異常。要觸發批次下載，可以取消選中並檢查PSN上的pxGrid探測器。

```
2019-04-30 13:59:50,708 INFO [ProfilerINDSubscriberPoller-60-thread-1][  
cisco.profiler.infrastructure.probemgr.INDSubscriber -::- New services are: []  
2019-04-30 13:59:50,714 INFO [ProfilerINDSubscriberPoller-60-thread-1][  
cisco.profiler.infrastructure.probemgr.INDSubscriber -::- NODENAME:ind  
2019-04-30 13:59:50,714 INFO [ProfilerINDSubscriberPoller-60-thread-1][  
cisco.profiler.infrastructure.probemgr.INDSubscriber -::- REQUEST  
BODY{"offset":"0","limit":"500"}  
2019-04-30 13:59:50,716 ERROR [ProfilerINDSubscriberPoller-60-thread-1][  
cisco.profiler.infrastructure.probemgr.INDSubscriber -::- Unable to get sync statusWIN2012-  
AAA:WIN2012-AAA  
java.net.UnknownHostException: WIN2012-AAA  
at java.net.AbstractPlainSocketImpl.connect(AbstractPlainSocketImpl.java:184)  
at java.net.SocksSocketImpl.connect(SocksSocketImpl.java:392)  
at java.net.Socket.connect(Socket.java:589)  
at sun.security.ssl.SSLSocketImpl.connect(SSLSocketImpl.java:673)  
at sun.security.ssl.BaseSSLSocketImpl.connect(BaseSSLSocketImpl.java:173)  
at sun.net.NetworkClient.doConnect(NetworkClient.java:180)  
at sun.net.www.http.HttpClient.openServer(HttpClient.java:463)  
at sun.net.www.http.HttpClient.openServer(HttpClient.java:558)  
at sun.net.www.protocol.https.HttpsClient.<init>(HttpsClient.java:264)  
at sun.net.www.protocol.https.HttpsClient.New(HttpsClient.java:367)  
at  
sun.net.www.protocol.https.AbstractDelegateHttpsURLConnection.getNewHttpClient(AbstractDelegateH  
ttpsURLConnection.java:191)  
at sun.net.www.protocol.http.HttpURLConnection.plainConnect0(HttpURLConnection.java:1156)  
at sun.net.www.protocol.http.HttpURLConnection.plainConnect(HttpURLConnection.java:1050)  
at  
sun.net.www.protocol.https.AbstractDelegateHttpsURLConnection.connect(AbstractDelegateHttpsURLCo  
nnection.java:177)  
at sun.net.www.protocol.http.HttpURLConnection.getOutputStream0(HttpURLConnection.java:1334)  
at sun.net.www.protocol.http.HttpURLConnection.getOutputStream(HttpURLConnection.java:1309)  
at  
sun.net.www.protocol.https.HttpURLConnectionImpl.getOutputStream(HttpURLConnectionImpl.java:25  
9)  
at com.cisco.profiler.infrastructure.probemgr.INDSubscriber.getRequest(INDSubscriber.java:362)  
at com.cisco.profiler.infrastructure.probemgr.INDSubscriber.isInSync(INDSubscriber.java:500)  
at  
com.cisco.profiler.infrastructure.probemgr.INDSubscriber.populateIOTServiceList(INDSubscriber.ja  
va:462)  
at  
com.cisco.profiler.infrastructure.probemgr.INDSubscriber$WorkerThread.run(INDSubscriber.java:441  
)  
at java.util.concurrent.Executors$RunnableAdapter.call(Executors.java:511)  
at java.util.concurrent.FutureTask.runAndReset(FutureTask.java:308)  
at  
java.util.concurrent.ScheduledThreadPoolExecutor$ScheduledFutureTask.access$301(ScheduledThreadP  
oolExecutor.java:180)  
at  
java.util.concurrent.ScheduledThreadPoolExecutor$ScheduledFutureTask.run(ScheduledThreadPoolExec  
utor.java:294)  
at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1149)  
at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:624)  
at java.lang.Thread.run(Thread.java:748)
```

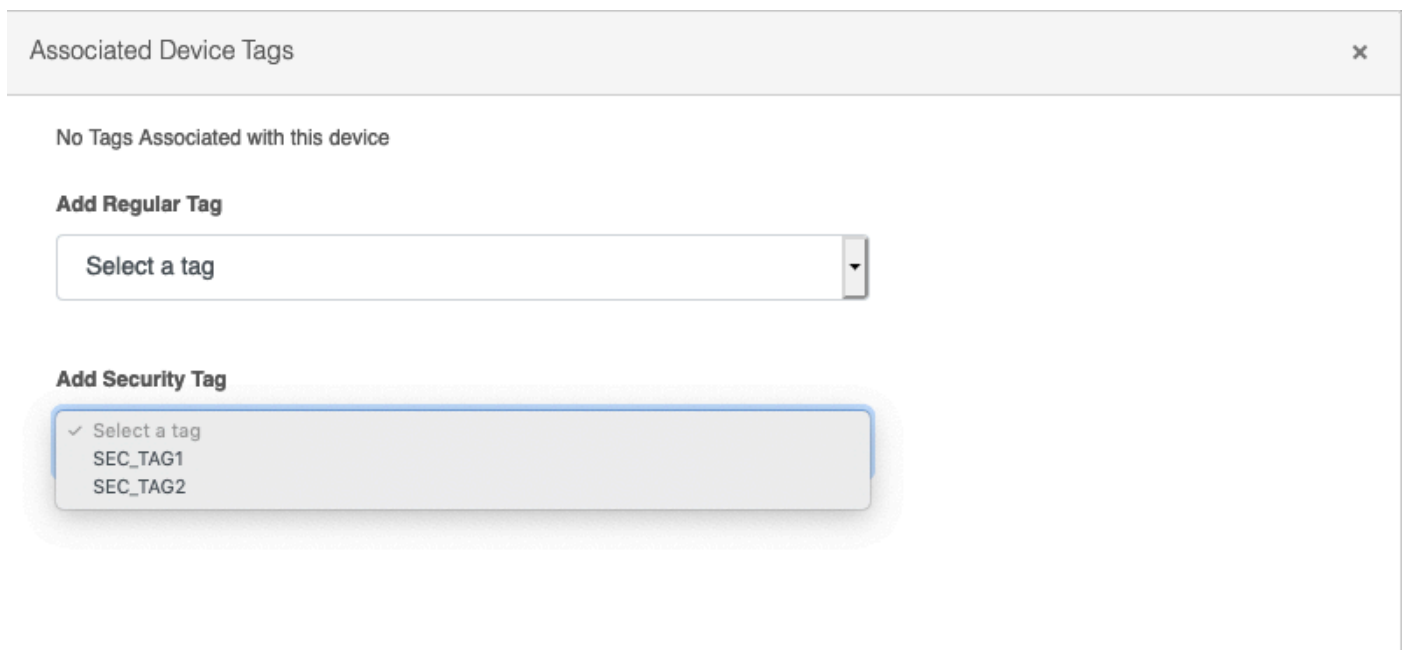
並非所有終端都與ISE共用

僅當pxGrid Asset標誌為Yes時，IND上的終端才與ISE共用，MAC地址也應可用，否則ISE沒有足夠的資料建立終端。



assetTag和AssetGroup在ISE上不可用

如果assetTag僅不可用，則可能會出現使用錯誤TAG型別的情況。更新端點時，需要使用安全標籤（非常規標籤）。



如果AssetTag和AssetGroup均不可用，則可能有多個原因

1. 未使用自定義屬性配置分析策略（請參閱本文檔配置部分中的步驟1-3）

2. 由於CSCvn [缺陷66106](#) 端點屬性篩選器：應該禁用。否則，它會從分類器中過濾自定義屬性。在 profiler.log 中可以看到以下日誌。

```
2019-05-22 11:20:11,796 DEBUG [PersistentWorker-8-18-thread-1][] com.cisco.profiler.im.EndPoint-:Profiling:- filtered custom attributes are:{assetGroup=Root, assetTag=SEC_TAG2, b310a420-78a5-11e9-a189-9ac8f4107843=Root, b8e73d50-78a5-11e9-a189-9ac8f4107843=SEC_TAG2}
```