

配置ISE 2.4 pxGrid IND 1.6.1集成

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简介

本文档介绍如何配置和排除通过pxGrid (平台交换网格) 的Identity Services Engine(ISE)2.4和Industrial Network Director 1.6.1-4集成故障。 思科IND以pxGrid作为发布者注册，并将有关终端属性的信息发布到IOTASSET词典的ISE。

先决条件

要求

Cisco 建议您具有以下主题的基础知识：

- 思科身份服务引擎

- 思科工业网络导向器

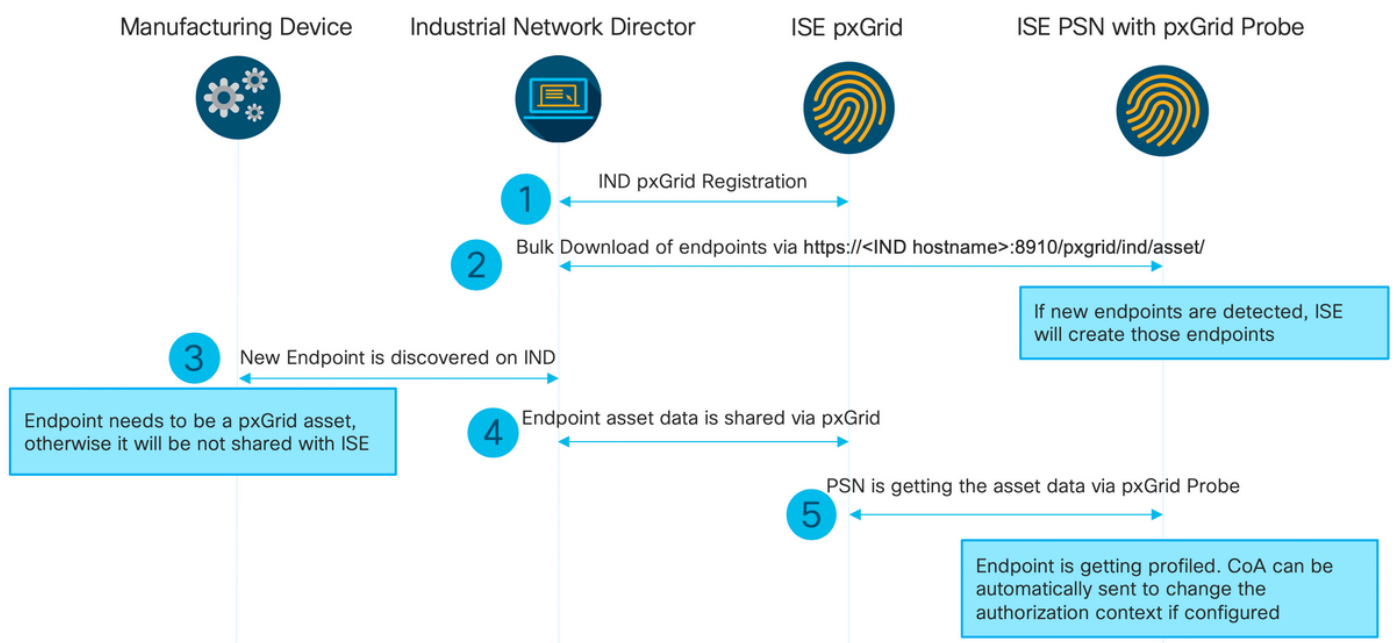
使用的组件

本文档中的信息基于以下软件和硬件版本：

- 思科身份服务引擎版本2.4 p6
- 工业网络导向器1.6.1-4

配置

高级流程图



1. IND通过pxGrid版本2在ISE pxGrid节点上向ISE注册。来自IND(application.log)的相应日志：

```

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::
  
```

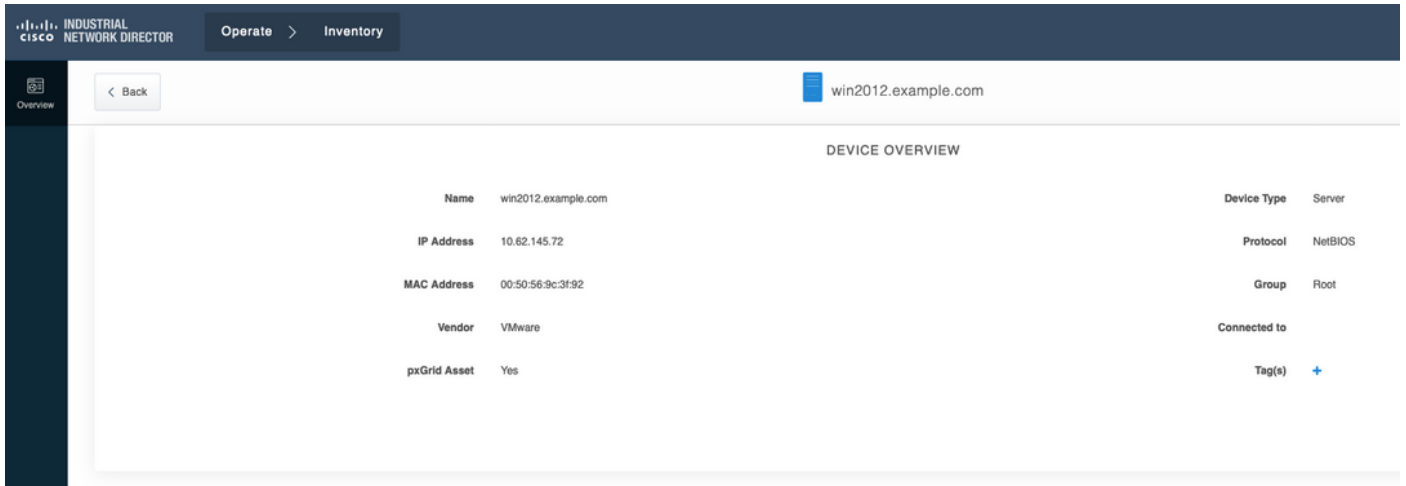
```
Request={"name":"com.cisco.ise.pubsub"}
2019-05-22 14:31:17,911:INFO:qtp281049997-52711:PxgridController::
Response={"services":[{"name":"com.cisco.ise.pubsub","nodeName":"ise-pubsub-ise24-
lek","properties":{"wsUrl":"wss://ISE24-1ek.example.com:8910/pxgrid/ise/pubsub"}}]}
2019-05-22 14:31:17,911:INFO:qtp281049997-52711:PxgridPublisher:: wsUrl=wss://ISE24-
1ek.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
如日志所示，IND已注册assetTopic
```

2. 启用pxgrid探测功能的ISE PSN可批量下载现有pxGrid资产(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":"VMw
are","assetProductId":"Unknown","assetSerialNumber":"","assetDeviceType":"Server","assetSwRevisi
on":"","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.INDSsubscriber -::- 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上发现新终端（终端需要使用协议发现，否则终端不会被识别为pxGrid资产，不会通过pxGrid与ISE共享）。



4. IND将此信息发布到ISE pxGrid节点

5.通过pxGrid探测功能的PSN接收此数据(profiler.log):

```
2019-05-22 15:20:40,616 DEBUG [Grizzly(2)][]
cisco.profiler.infrastructure.probemgr.INDSsubscriber -::- 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.INDSsubscriber -::- 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.使用正确的数据更新情景可视性

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:

General Attributes

Description

Table with 2 columns: Attribute Name, Attribute Value. Rows include Static Assignment (false), Endpoint Policy (IOT_DEVICE2), Static Group Assignment (false), Identity Group Assignment (Profiled).

Custom Attributes

Filter Settings

Table with 2 columns: Attribute Name, Attribute Value. Includes a header row and a row with input fields. Data rows include assetGroup (Root) and assetTag (SEC_TAG2).

Other Attributes

配置

注意：即使您只希望在情景可视性中了解assetGroup和assetTag，也需要步骤1 - 3

步骤1.在ISE上配置终端自定义属性

导航至管理>身份管理>设置>终端自定义属性。根据下图配置自定义属性 (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 Type

assetGroup String -

assetTag String - +

Reset Save

步骤2.使用自定义属性配置分析器策略

导航至工作中心>分析器>分析策略。单击“Add”。配置分析器策略，类似于下图。

Identity Services Engine Home Context Visibility Operations Policy Administration Work Centers

Network Access Guest Access TrustSec BYOD Profiler Posture Device Administration PassiveID

Overview Ext Id Sources Network Devices Endpoint Classification Node Config Feeds Manual Scans Policy Elements Profiling Policies Policy Sets Troubleshoot Reports Settings Dictionaries

Profiling

Profiler Policy List > IOT_DEVICE1

Profiler Policy

* Name IOT_DEVICE1 Description

Policy Enabled

* Minimum Certainty Factor 20 (Valid Range 1 to 65535)

* Exception Action NONE

* Network Scan (NMAP) Action NONE

Create an Identity Group for the policy Yes, create matching Identity Group
 No, use existing Identity Group hierarchy

* Parent Policy NONE

* Associated CoA Type Global Settings

System Type Administrator Created

Rules

If Condition CUSTOMATTRIBUTE_assetTag_EQUALS... Then Certainty Factor Increases 20

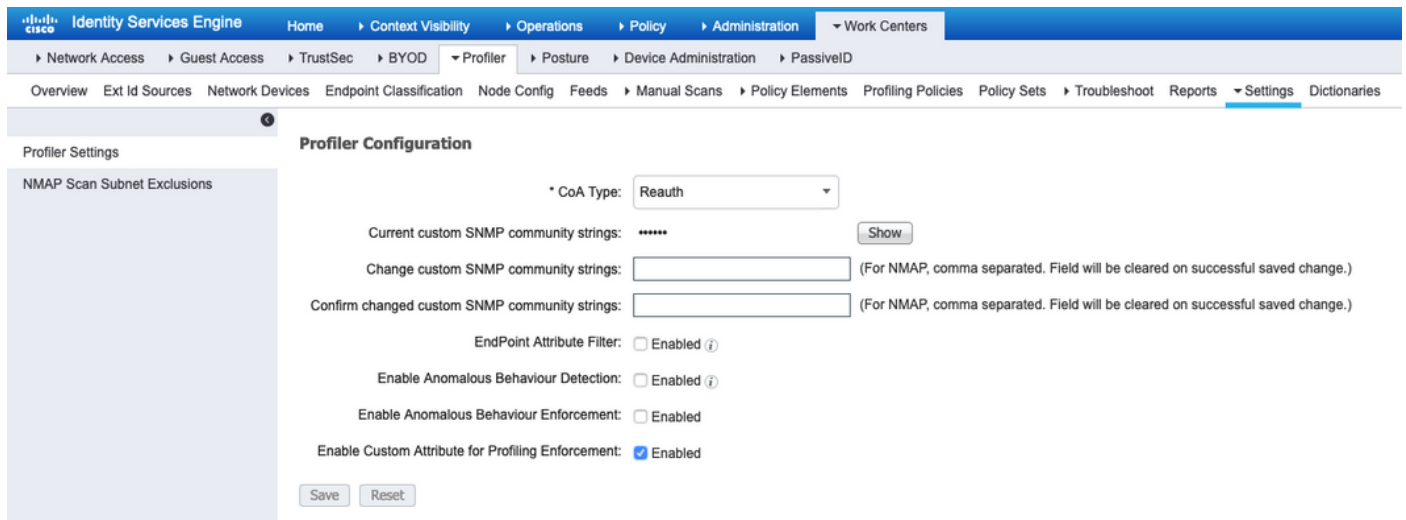
Condition Name Expression

CUSTOMATTRIB... EQUALS SEC_TAG1

Save Reset

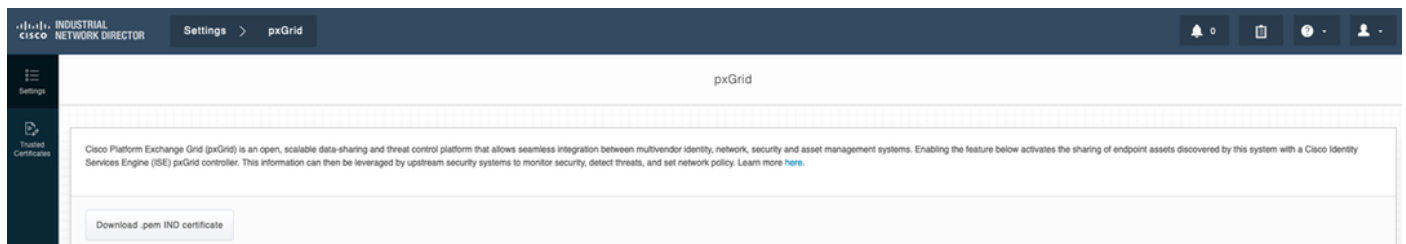
步骤3.为分析实施启用自定义属性

导航至工作中心>分析器>设置>分析器设置。确保 为分析实施启用自定义属性 复选框。



步骤4.导出IND身份证书

导航至“设置”> pxGrid。单击“Download .pem IND certificate(下载.pem IND证书)”。此证书在 pxGrid注册期间使用，因此ISE应信任它。



步骤5.将IND身份证书上传到ISE受信任存储

导航到管理>证书>证书管理>受信任证书。单击“Import”。单击“浏览”，然后从步骤3中选择IND证书。单击“提交”。

Import a new Certificate into the Certificate Store

* Certificate File ind(1).pem

Friendly Name

Trusted For:

- Trust for authentication within ISE
- Trust for client authentication and Syslog
- Trust for authentication of Cisco Services
- Validate Certificate Extensions

Description

步骤6.为IND生成证书

IND不使用ISE CA颁发的客户端证书。相反，目标是填充IND受信任存储，因此当ISE发送其pxGrid证书（在TLS交换期间）时，IND会信任它。

导航至**Administration > pxGrid Services > Certificates**。根据下图填充字段。CN字段是必填项，因为ISE CA的目标是颁发身份证书。理想情况下，您应输入IND的FQDN，但由于IND未使用身份证书，因此CN字段值不重要。

Generate pxGrid Certificates

I want to

Common Name (CN)

Description

Certificate Template [PxGrid_Certificate_Template](#)

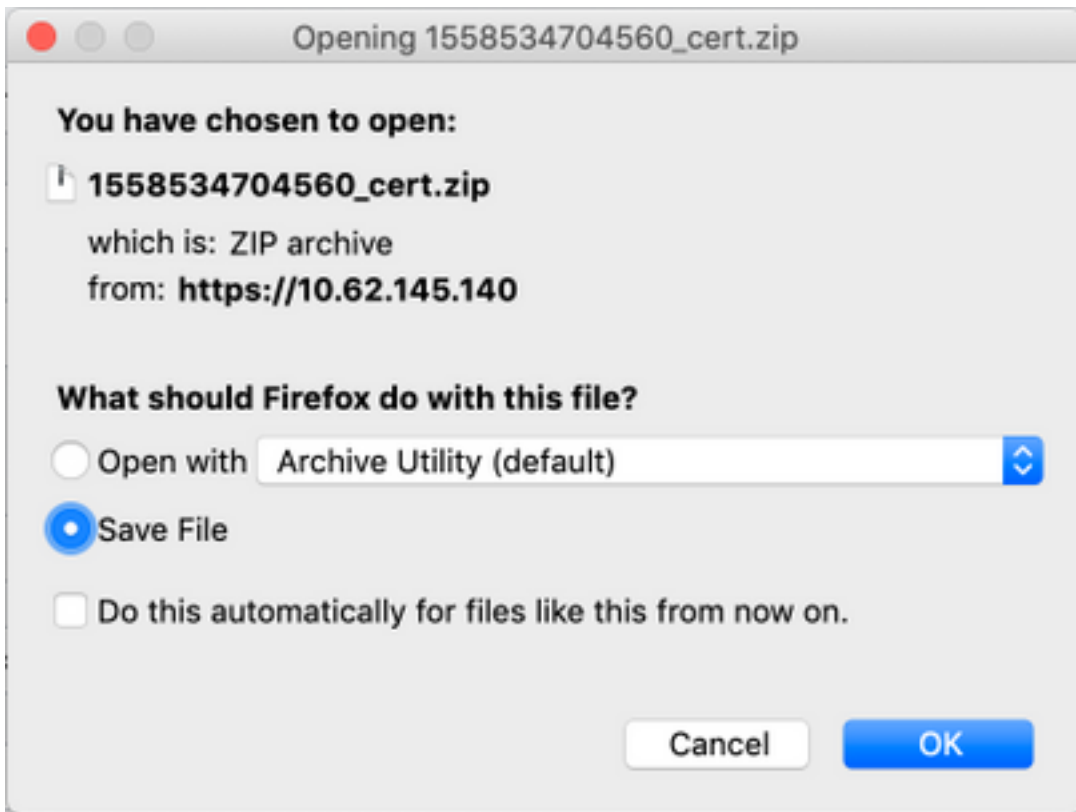
Subject Alternative Name (SAN)

Certificate Download Format

Certificate Password

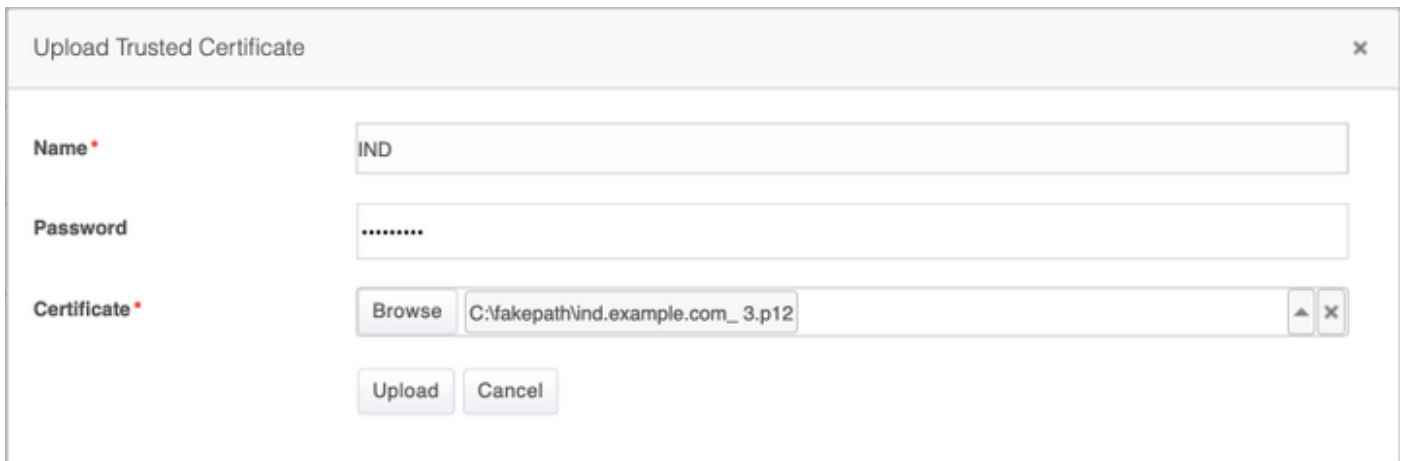
Confirm Password

步骤7.下载PKCS12格式的证书链



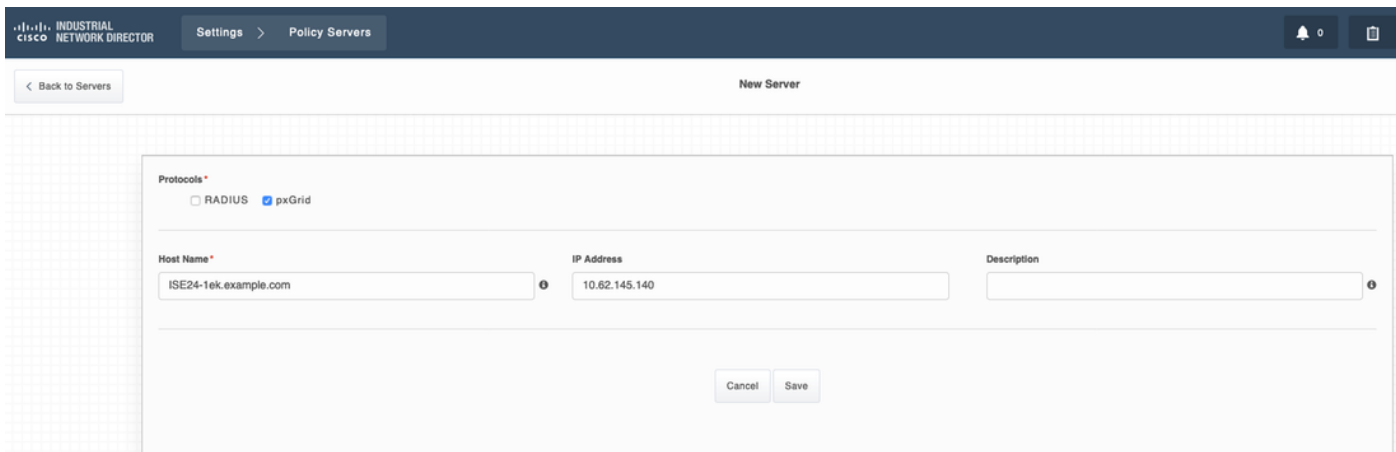
步骤8.在IND上上传证书链

导航至 **Settings > pxGrid > Trusted Certificates**。单击“New(新建)”。输入名称（链将在IND上以此名称显示）。密码是步骤1中的密码。



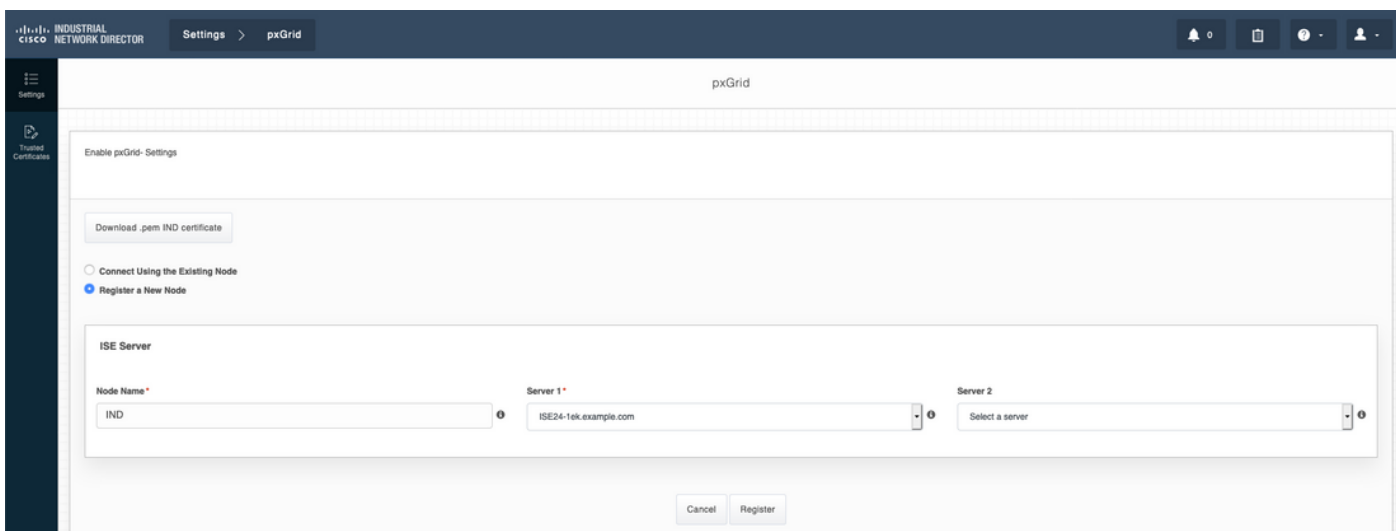
步骤9.在IND上配置策略服务器

导航至 **设置>策略服务器**，单击**新建**。输入ISE pxGrid节点的ISE FQDN和IP地址。



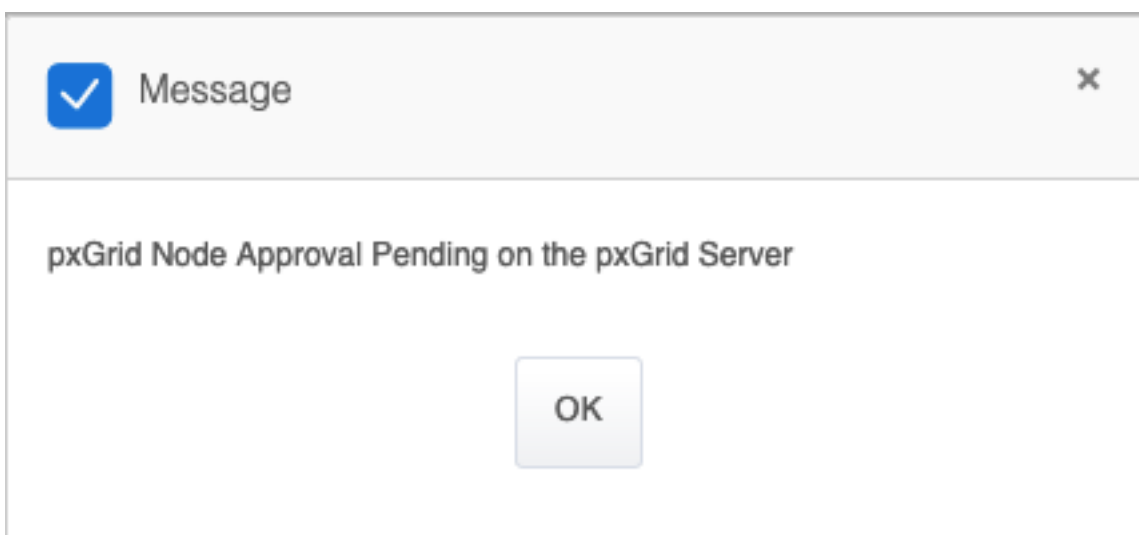
步骤10.在IND上配置pxGrid集成

导航至**Settings > pxGrid**并启用pxGrid集成。单击切换按钮。输入节点名称，此主机名是ISE上pxGrid客户端的名称。从Server 1字段的下拉菜单中选择之前配置的ISE。单击“**Register(注册)**”。



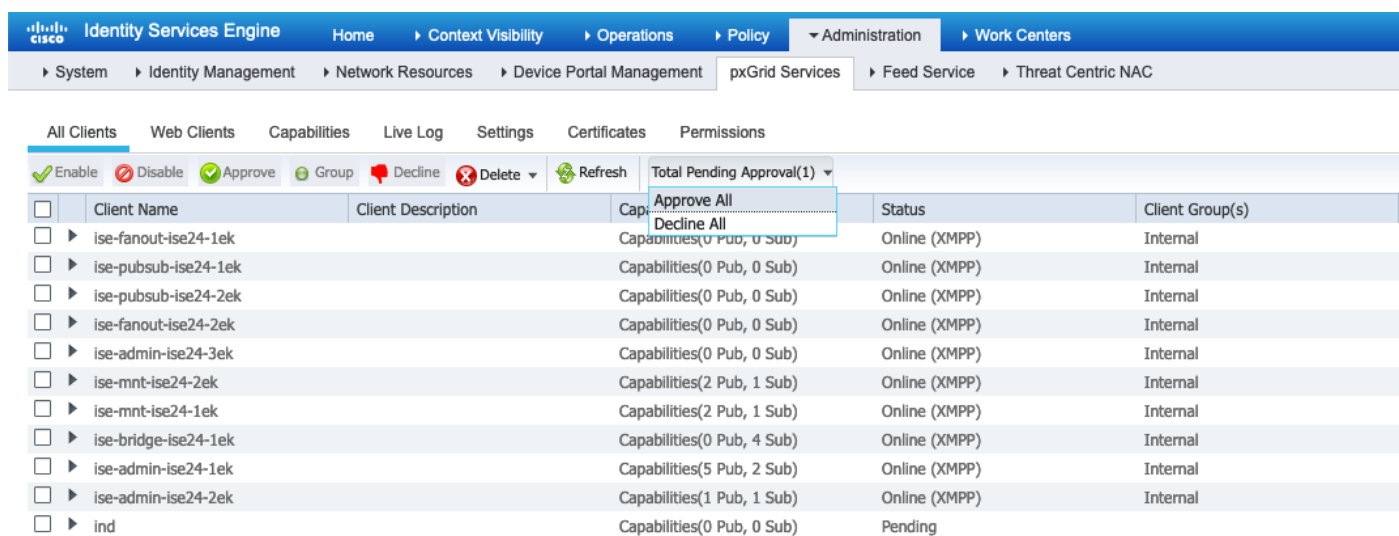
注意：如果ISE上启用了Automatically approve new certificate-based accounts设置，则步骤11 - 12可能会被忽略。

成功注册后，IND上会显示以下消息：



步骤11.批准ISE上的IND

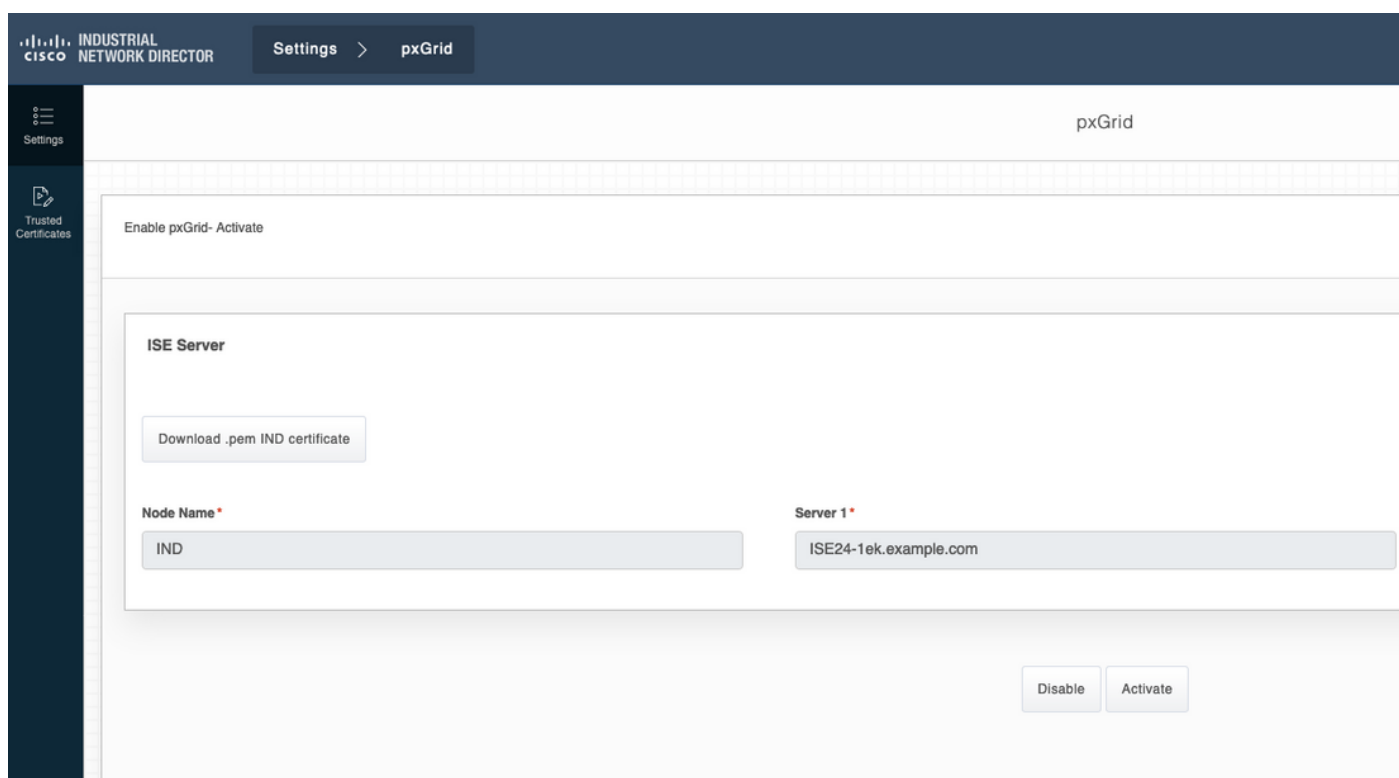
导航至“管理”>“pxGrid服务”>“所有客户端”。打开“待审批总额(1)”下拉菜单。单击“全部批准”。



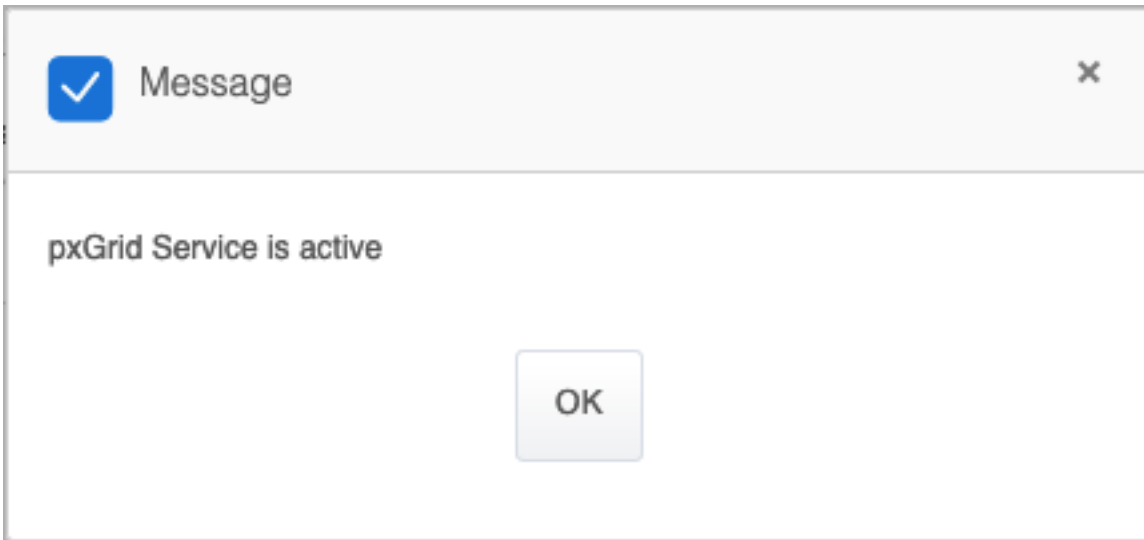
Client Name	Client Description	Cap...	Status	Client Group(s)
ise-fanout-ise24-1ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-pubsub-ise24-1ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-pubsub-ise24-2ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
ise-fanout-ise24-2ek		Capabilities(0 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)	Pending	

步骤12.在IND上激活pxGrid服务

导航至“设置”> pxGrid。单击“激活”。



成功激活后，IND上显示以下消息：



验证

ISE验证

导航至“管理”>“pxGrid服务”>“所有客户端”。在“所有客户端”中，IND使用pxGrid版本2,IND客户端应显示为脱机(XMPP)。

<input type="checkbox"/>	Client Name	Client Description	Capabilities	Status	Client Group(s)
<input type="checkbox"/>	▶ ise-fanout-ise24-1ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
<input type="checkbox"/>	▶ ise-pubsub-ise24-1ek	Client Name: Not Sortable	Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
<input type="checkbox"/>	▶ ise-pubsub-ise24-2ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
<input type="checkbox"/>	▶ ise-fanout-ise24-2ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
<input type="checkbox"/>	▶ ise-admin-ise24-3ek		Capabilities(0 Pub, 0 Sub)	Online (XMPP)	Internal
<input type="checkbox"/>	▶ ise-mnt-ise24-2ek		Capabilities(2 Pub, 1 Sub)	Online (XMPP)	Internal
<input type="checkbox"/>	▶ ise-mnt-ise24-1ek		Capabilities(2 Pub, 1 Sub)	Online (XMPP)	Internal
<input type="checkbox"/>	▶ ise-bridge-ise24-1ek		Capabilities(0 Pub, 4 Sub)	Online (XMPP)	Internal
<input type="checkbox"/>	▶ ise-admin-ise24-1ek		Capabilities(5 Pub, 2 Sub)	Online (XMPP)	Internal
<input type="checkbox"/>	▶ ise-admin-ise24-2ek		Capabilities(1 Pub, 1 Sub)	Online (XMPP)	Internal
<input type="checkbox"/>	▶ ind		Capabilities(0 Pub, 0 Sub)	Offline (XMPP)	

单击Web客户端，确认IND客户端的状态为ON，并且/topic/com.cisco.endint.asset是订用的一部分。

。

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.exa ...	/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.exa ...	/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.exa ...	/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.exa ...			127.0.0.1	OFF	2019-05-23 09:30
ise-fanout-ise24-1ek	ISE24-1ek	ISE24-1ek:190	CN=ISE24-1ek.exa ...	/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.exa ...	/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.exa ...			127.0.0.1	OFF	2019-05-23 10:04
ise-bridge-ise24-1ek	ISE24-1ek	ISE24-1ek:194	CN=ISE24-1ek.exa ...			127.0.0.1	ON	2019-05-23 10:09

IND验证

IND应转换到In Sync (正在同步) 状态。如果ISE上的批量下载成功，如果不是IND将停滞在Out of Sync (不同步) 状态，则完成此操作。

The screenshot shows the 'pxGrid' configuration page in Cisco Industrial Network Director. It includes a 'Download .pem IND certificate' button, a green toggle switch, and an 'ISE Server' section with three input fields: 'Node Name' (IND), 'Server 1' (ISE24-1ek.example.com), and 'Server 2'. Below this is a 'Statistics' section with a table showing sync status and asset counts.

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

故障排除

IND上同步状态停滞在不同步状态

如果ISE上的批量下载成功，则会发生从不同步到不同步的转换。下面是IND application.log。

```

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

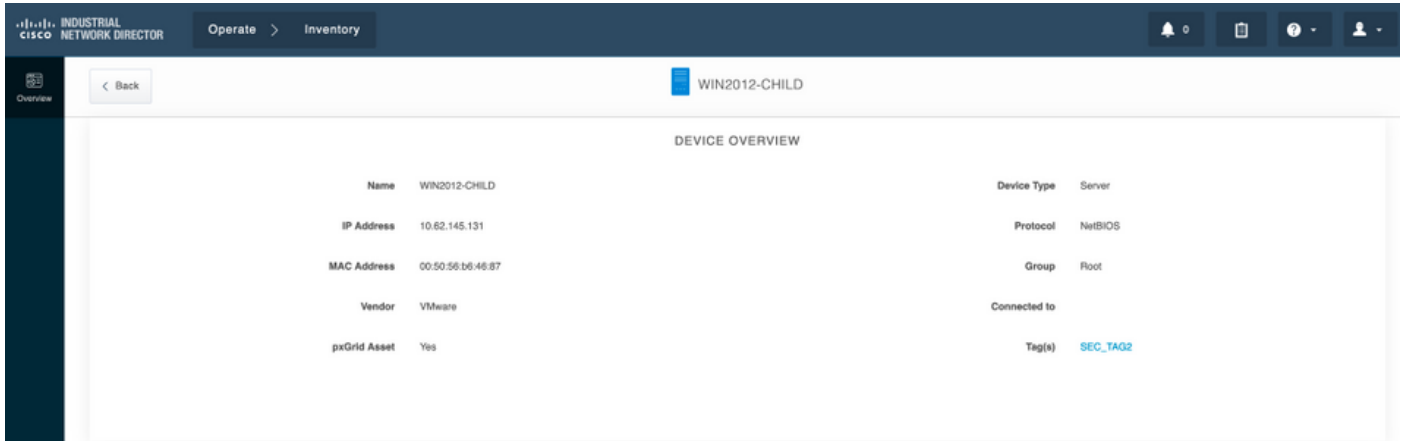
2019-05-22 22:09:06,918:INFO:qtp281049997-53444:PxGridServiceRestController:: getAssets
Completed

ISE必须能够解析由IND共享的IND主机名。否则，ISE无法批量下载，IND将永远不会转换到In Sync状态。如果批量下载失败（WIN2012-AAA无法由ISE解析），您可以在profiler.log中看到以下异常。要触发批量下载，可取消选中并检查PSN上的pxGrid探测功能。

```
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.HttpsURLConnectionImpl.getOutputStream(HttpsURLConnectionImpl.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)
```

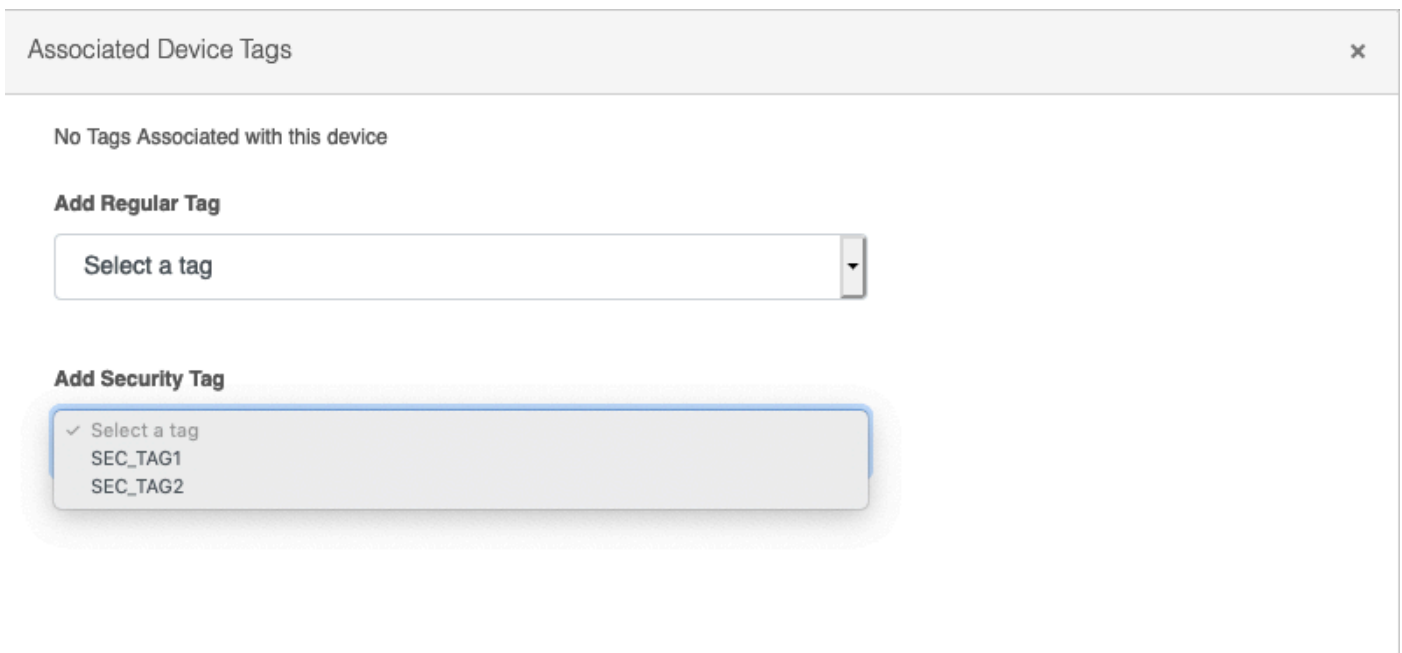
并非所有终端都与ISE共享

只有pxGrid资产标志为“是”(Yes)时，IND上的终端才与ISE共享，MAC地址也应可用，否则ISE没有足够的数据来创建终端。



assetTag和AssetGroup在ISE上不可用

如果assetTag仅不可用，则在使用错误的TAG类型时可能会出现这种情况。更新终端时，需要使用安全标记（而非常规标记）。



如果AssetTag和AssetGroup都不可用，则可能有多种原因

1.未使用自定义属性配置分析策略（请参阅文档配置部分的步骤1-3）

2.因CSCvn66106缺陷 端点属性过滤器：应禁用。否则，它会从分类器过滤自定义属性。在 profiler.log中可以看到以下日志。

```
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}
```