

# 配置ISE 3.3 pxGrid Direct并对其进行故障排除

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## 简介

本文档介绍如何使用外部REST API配置思科身份服务引擎3.3 pxGrid直接连接器以获取终端数据。

## 先决条件

### 要求

Cisco 建议您了解以下主题：

- 思科ISE 3.3
- REST API

### 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ISE 3.3
- 为终端属性提供JSON数据的REST API服务器

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

## 背景信息

思科pxGrid Direct帮助您连接到为终端属性提供JSON数据的外部REST API，并将这些数据提取到思科ISE数据库中，从而帮助您更快评估和授权终端。此功能无需在每次必须授权端点时查询端点属性数据。然后，您可以在授权策略中使用提取的数据。

pxGrid Direct有助于根据您在pxGrid Direct配置中指定的属性收集数据。两个必填字段“唯一标识符”和“关联标识符”用于获取相关数据。如果连接器不包含上述任何字段的值，则从连接器获取和保存数据可能会出错。

## 配置pxGrid直接连接器

### 步骤1:添加新的pxGrid直接连接器

要配置pxGrid直接连接器，请从ISE导航到管理>网络资源> pxGrid直接连接器。单击 Add。

打开pxGrid Direct Connect Wizard的Welcome页面后，单击

The screenshot displays the 'Add pxGrid Direct Connector' wizard in the Cisco Identity Services Engine (ISE) interface. The top navigation bar includes the Cisco logo, 'Identity Services Engine', and the wizard title 'Add pxGrid Direct Connector'. A search bar and user profile icon are also present. The left sidebar contains navigation options: Bookmarks, Dashboard, Context Visibility, Operations, Policy, Administration (highlighted), Work Centers, and Interactive Help. The main content area shows a progress bar with steps 1 through 8: Welcome, Connector Definition, URL, Schedule, Parent Object, Attributes, Identifiers, and Summary. Step 1, 'Welcome', is active. The 'Welcome' section contains the following text: 'Add an pxGrid Direct connector to Cisco ISE through this workflow. Configure Cisco ISE to receive from an pxGrid Direct connector additional endpoint data that might not be directly accessible to Cisco ISE from the endpoint. You can then use the advanced attribute data to create authorization policies that better meet your organizational needs.' To the right of the text is an illustration of a person working at a laptop. At the bottom right, there is a prominent blue button labeled 'Let's Do It'. At the bottom left, there is an 'Exit Wizard' button.

### 第二步：定义pxGrid直接连接器

如果需要，请为连接器指定名称和说明。单击 Next。

- Bookmarks
- Dashboard
- Context Visibility
- Operations
- Policy
- Administration**
- Work Centers
- Interactive Help

- Welcome
- 2 Connector Definition**
- 3 URL
- 4 Schedule
- 5 Parent Object
- 6 Attributes
- 7 Identifiers
- 8 Summary

## Define Connector

A new Cisco ISE Dictionary is created at a later step to store the attributes and values that Cisco ISE retrieves from the pxGrid Direct connector. The name that you provide here is the name of the Cisco ISE Dictionary folder for the connector.

Name  
**pxGridConnectorFLSK**

Description (optional)

Connector type: URL Fetcher

### Certificate Validations

Check the Skip Certificate Validations check box to allow Cisco ISE to accept any certificate that a server presents without verifying the hostname or other details. You must check this check box only in a test environment or if you trust the connected server to be highly secure. Typically, skipping certificate validations could make your network vulnerable to machine-in-the-middle attacks.

Skip Certificate Validations



[Exit Wizard](#)

[Back](#)

[Next](#)



警告：选中Skip Certificate Validates复选框以允许思科ISE接受服务器提供的任何证书而不验证主机名或其他详细信息。仅在测试环境中或您信任连接的服务器高度安全时，必须选中此复选框。通常，跳过证书验证会使您的网络容易遭受中间机攻击。

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### 第三步：URL

- 键入为终端属性提供JSON数据的外部REST API的URL。
- 在Authentication下，输入外部REST API服务器的用户名和密码。
- 选择测试连接，等待成功消息，然后单击下一步。

- Bookmarks
- Dashboard
- Context Visibility
- Operations
- Policy
- Administration**
- Work Centers
- Interactive Help

- Welcome
- Connector Definition
- 3 URL**
- 4 Schedule
- 5 Parent Object
- 6 Attributes
- 7 Identifiers
- 8 Summary

### Add URL

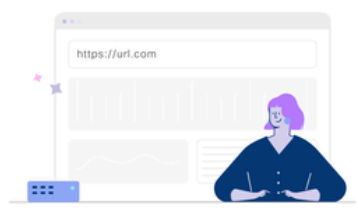
Specify the URLs that Cisco ISE must use to fetch the required endpoint data from the pxGrid Direct connector.

URL

Incremental URL (optional)

Authentication  
 Login  
  
 Password

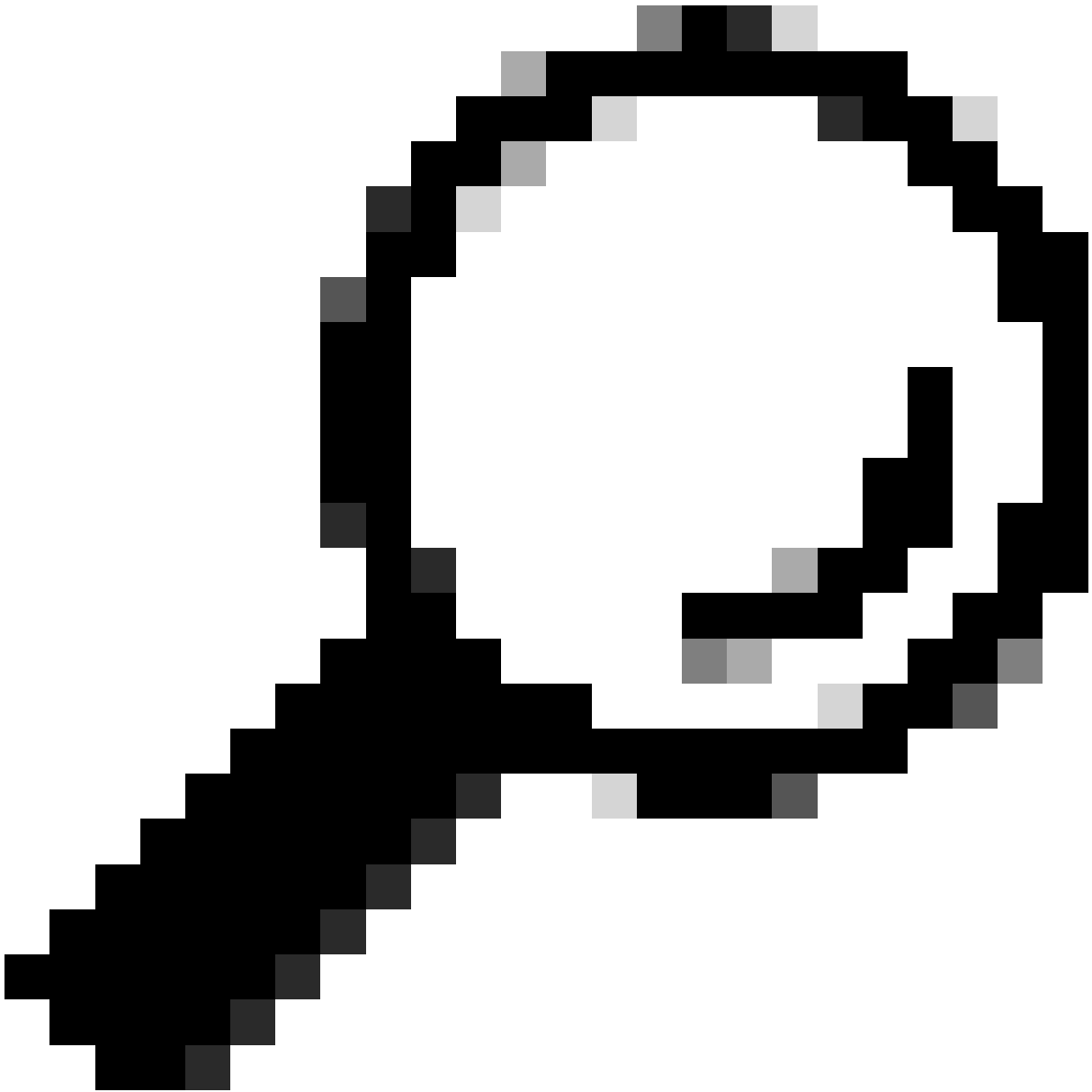
[Test Connection](#) ✔ Successful



[Exit Wizard](#)

[Back](#)

[Next](#)



提示：增量URL对于配置是可选的。如果外部REST API具有请求参数，可以使用这些参数通过特定参数过滤而不是请求所有数据来获取最新信息。确保Request参数与外部REST API服务器的文档一起存在。

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#### 第四步：进度

选择完全同步计划。

- 默认值- 1周
- 最小值- 12小时
- 最大值- 1个月

选择增量同步计划。仅当在步骤3中配置了此选项时，才会显示此选项。

- 默认值- 1天
- 最小值- 1小时
- 最大值- 1周

单击 Next。

Identity Services Engine Add pxGrid Direct Connector

Welcome Connector Definition URL **4** Schedule 5 Parent Object 6 Attributes 7 Identifiers 8 Summary

### Set Up Synchronization Schedule

Schedule the sync interval with the connector. The time that you choose is configured in the system time zone.  
System time zone: Etc/GMT-6

#### SCHEDULE FULL SYNC

Cisco ISE retrieves all the endpoint data that is available with the pxGrid Direct connector at the time of the sync.

Synchronize Every  
1 Week(s)

Start Date Start Time  
09/26/2023 4:00 AM

#### SCHEDULE INCREMENTAL SYNC

Cisco ISE retrieves specific endpoint data from the pxGrid Direct connector, based on additional parameters defined by you. For example, you could only retrieve data that has been updated since the last full sync.

Synchronize Every  
1 Day(s)

Start Date Start Time  
09/26/2023 4:00 AM

Exit Wizard Back Next

## 第五步：父对象

必须键入JSON密钥才能搜索属性。

Identity Services Engine Add pxGrid Direct Connector

Navigation: Welcome Connector Definition URL Schedule **5 Parent Object** 6 Attributes 7 Identifiers 8 Summary


### Parent Object

Configure the JSON data object that must be used to search for the rest of the attributes. You can read more information and example at [Page Level Help](#).

Parent Object result

Successful

```
{
  "asset": "Unknown",
  "asset_tag": "",
  "assigned": "",
  "assigned_to": "Jenna.Santos@example.org",
  "assignment_group": "",
  "attestation_score": "",
  "attested": "false",
  "attested_by": "",
  "attested_date": "",
  "attributes": "",
  "can_print": "false",
  "category": "Hardware",
  "cd_rom": "false",
  "cd_speed": "",
  "change_control": "",
  "chassis_type": null,
  "checked_in": "",
  "checked_out": "",
  "comments": ""
}
```



[Exit Wizard](#) Back

## 第六步：Attributes

选择JSON的属性以配置可用于策略的字典项目。

在本场景中，词典中包含的属性包括：

- 资产
- ip\_address
- mac\_address
- os\_version
- sys\_id
- sys\_update
- u\_segmentation\_group\_tag

单击 Next。



Identity Services Engine Add pxGrid Direct Connector

Navigation: Welcome Connector Definition URL Schedule Parent Object **6 Attributes** 7 Identifiers 8 Summary

### Select Attributes Configure Dictionary Items

Add the attributes that Cisco ISE must retrieve from the pxGrid Direct connector. Choose attributes that should be included to the Cisco ISE Dictionary by clicking the toggle switch next to an attribute. Enter the attribute name that you want displayed in the Cisco ISE Dictionary. All the attributes that are retrieved from the pxGrid Direct connector persist in Cisco ISE even if they are not included in the Cisco ISE Dictionary.

[Add Attribute](#) [Delete](#) [Exclude all from Dictionary](#)

External Name	Include in Dictionary	Name in Dictionary
<input type="checkbox"/> \$.asset	<input checked="" type="checkbox"/>	asset
<input type="checkbox"/> \$.ip_address	<input checked="" type="checkbox"/>	ip_address
<input type="checkbox"/> \$.mac_address	<input checked="" type="checkbox"/>	mac_address
<input type="checkbox"/> \$.model_id	<input type="checkbox"/>	model_id
<input type="checkbox"/> \$.os_version	<input checked="" type="checkbox"/>	os_version
<input type="checkbox"/> \$.sys_id	<input checked="" type="checkbox"/>	sys_id
<input type="checkbox"/> \$.sys_updated_on	<input checked="" type="checkbox"/>	sys_updated_on
<input type="checkbox"/> \$.u_segmentation_group_te	<input checked="" type="checkbox"/>	u_segmentation_group_tag

[Exit Wizard](#) [Back](#) [Next](#)

## 步骤 7.标识符

- 从CMDB数据库中选择对终端唯一且外部REST API服务器获取JSON的唯一标识符属性。
- 选择ISE独有的能够将终端与授权策略匹配的Correlation Identifier属性。

单击 Next。

Identity Services Engine Add pxGrid Direct Connector

Navigation: Welcome Connector Definition URL Schedule Parent Object Attributes **7 Identifiers** 8 Summary

### Identifiers

**Unique Identifiers:** Attributes that are unique keys to CMDB database. For example, sys\_id .  
**Version Identifiers:** Attributes that help record the version of the endpoint data. For example, the timestamp of a data update. You can use version identifiers to better schedule incremental updates from a connector.  
**Correlation Identifiers:** Attributes that are unique to ise and that can be used to match endpoint auth policy. For example, mac-address, ip-address, serial-number, and so on.

Unique Identifier:

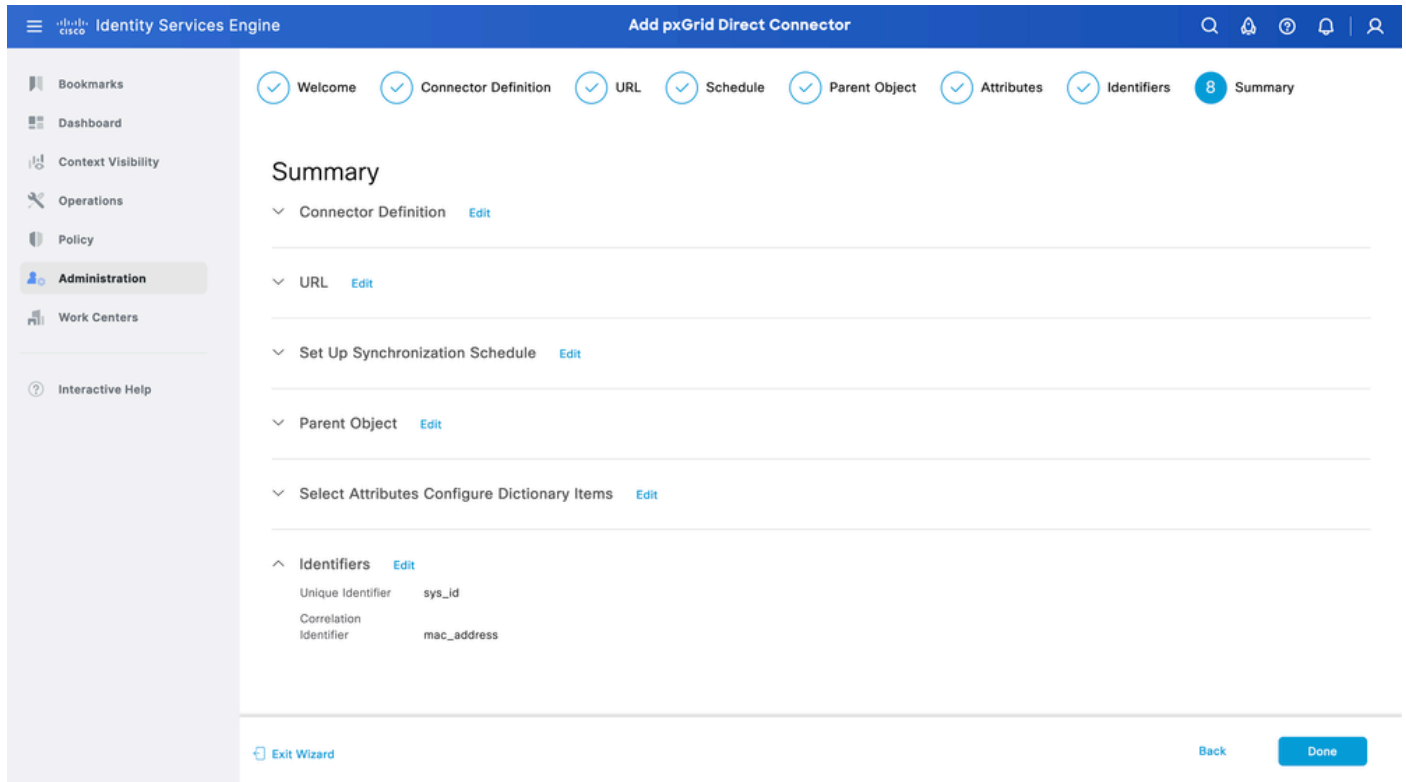
Correlation Identifier:

Version Identifier (optional):

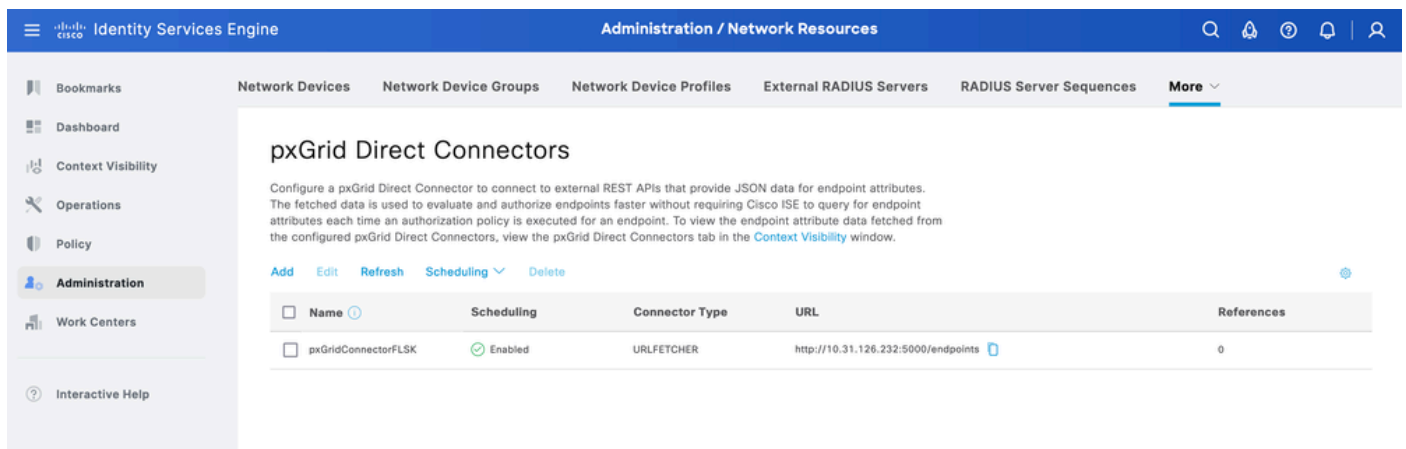
[Exit Wizard](#) [Back](#) [Next](#)

## 步骤 8摘要

确保pxGrid直接连接器已正确配置。单击完成。

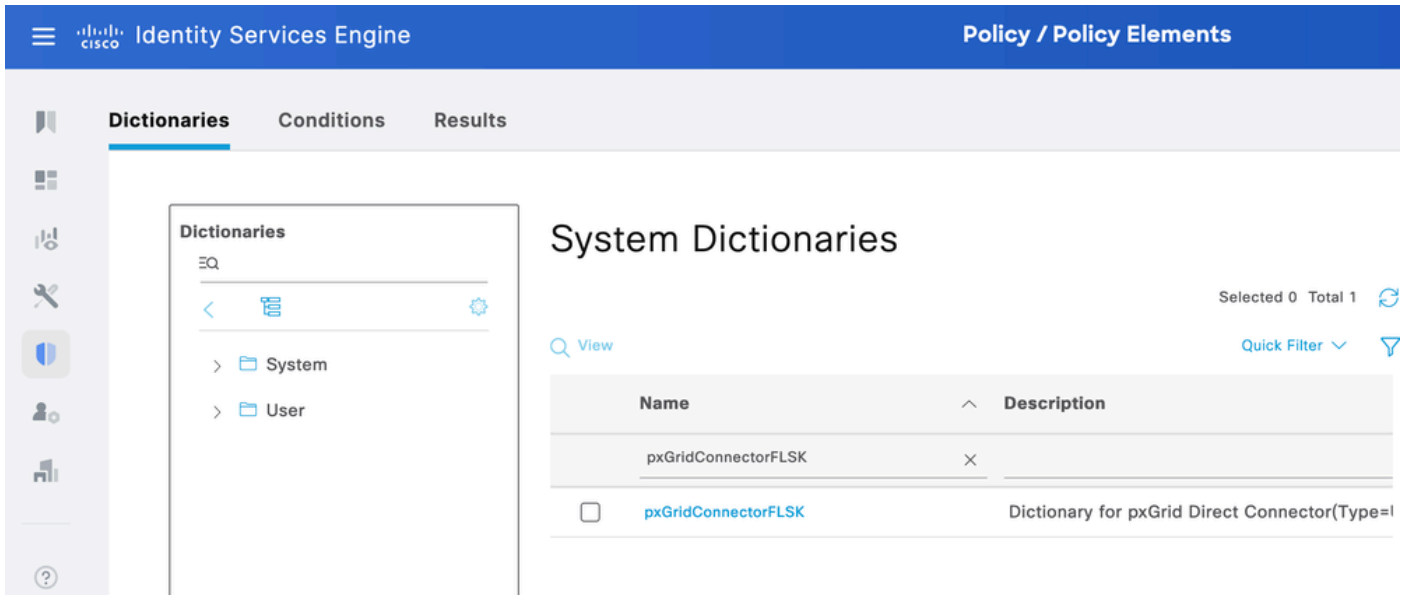


连接器完成后，将显示在“pxGrid直接连接器”(pxGrid Direct Connectors)页面下。

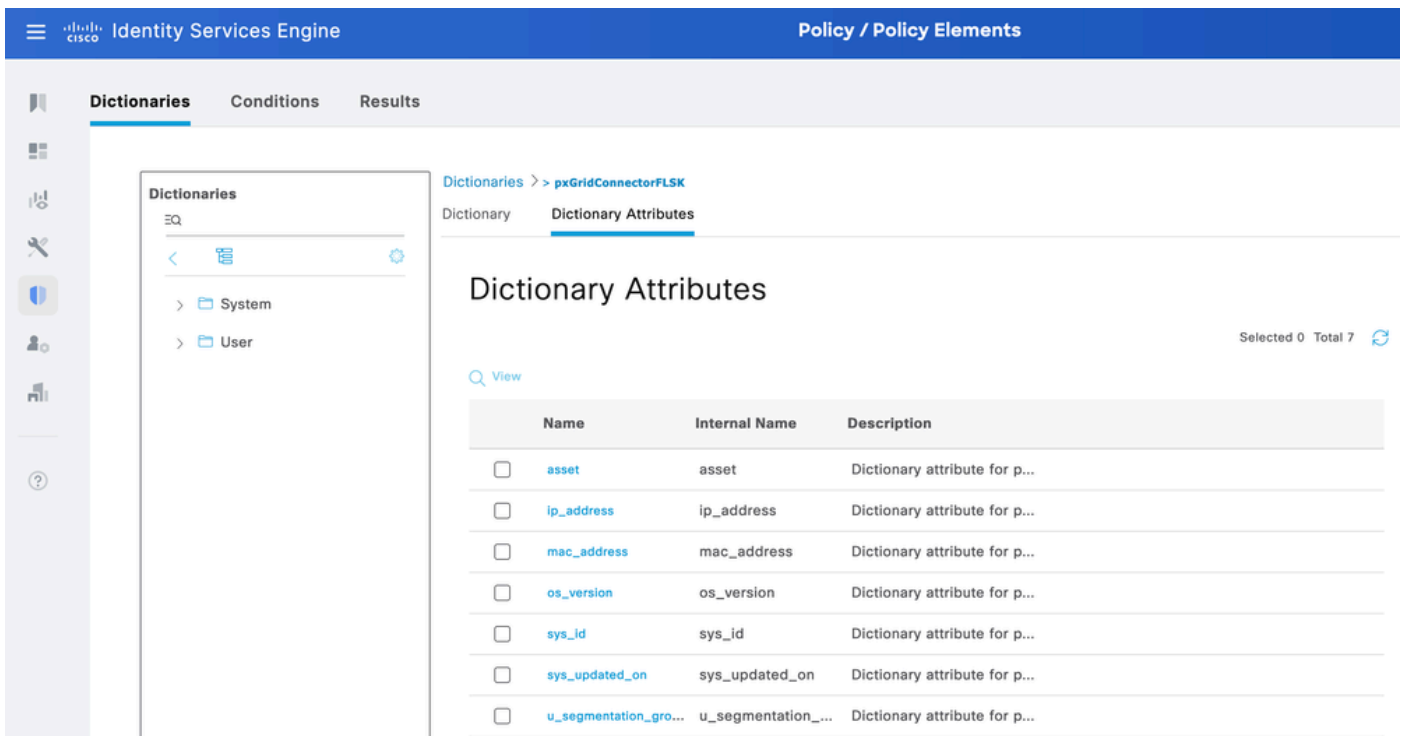


## 步骤 9 确认

从ISE中，导航到策略>Policy元素>词典>系统词典。按pxGrid直接连接器的名称过滤。选择该窗口并单击View。



导航到字典属性并查看配置为字典项目的属性列表在第6步下。



## 情景可视性pxGrid直接控制面板

从ISE中，导航至情景可视性>终端>更多> pxGrid直接终端。系统将显示终端的列表，其中已为关联和唯一标识符选择值。

点击相关ID查看详情，或者下载特定端点的属性。

The screenshot shows the Cisco Identity Services Engine (ISE) interface. The main content area displays a table of pxGrid Direct Endpoints. The table has columns for Correlation ID, Unique ID, Version ID, and Connector. Below the table, there is a details panel for a selected endpoint, showing various attributes such as asset, assigned\_to, and category.

Correlation ID	Unique ID	Version ID	Connector
00:50:56:9B:2D:25	c50e2e34db4c85901f0f174b13961914		pxGridConn
00:C8:F2:AC:37:D3	f4ff17bcd80f01101f0f174b139619b2		pxGridConn
00:F0:DF:06:1C:82	e7eb377cdb8341101f0f174b13961957		pxGridConn
01:71:B2:C5:0C:42	d74ffb4dbc341101f0f174b139619b7		pxGridConn
01:7A:EB:FA:62:91	fcf697b8db4b01101f0f174b139619b7		pxGridConn
01:9C:12:FA:A3:CE	bb493b74db8341101f0f174b139619f3		pxGridConn
01:CB:06:53:F2:2F	eff30005db0741101f0f174b13961950		pxGridConn
01:ED:A1:A9:73:17	d49b5f78dbcb01101f0f174b1396191d		pxGridConn
02:02:3F:6A:9B:AE	ca4bf78db8341101f0f174b1396199b		pxGridConn
02:04:1E:0E:BC:0A	e44d2730db0341101f0f174b13961988		pxGridConn

The details panel on the right shows the following attributes:

- asset: Unknown
- asset\_tag:
- assigned:
- assigned\_to: Victoria.Stokes@example.org
- assignment\_group:
- attestation\_score:
- attested: false
- attested\_by:
- attested\_date:
- attributes:
- can\_print: false
- category: Hardware
- cd\_rom: false
- cd\_speed:
- change\_control:
- chassis\_type:
- checked\_in:
- checked\_out:
- comments:
- company:

## 使用pxGrid直接词典的授权策略配置

从ISE中，导航到策略> 策略集>选择策略集 > 授权策略。点击任何授权策略中的齿轮图标，然后选择插入。

为规则指定名称并添加新条件以打开条件工作室。

单击添加新属性，导航到未分类，然后在词典下按pxGrid直接连接器的名称进行过滤。



选择可在授权策略下处理的属性，并设置值。单击Use。



## Overview

Event	5200 Authentication succeeded
Username	94:DA:5F:96:74:63
Endpoint Id	94:DA:5F:96:74:63 ⓘ
Endpoint Profile	
Authentication Policy	Default >> MAB
Authorization Policy	Default >> pxGrid_Direct_attribute
Authorization Result	PermitAccess

## Authentication Details

Source Timestamp	2023-09-27 09:30:44.753
Received Timestamp	2023-09-27 09:30:44.753
Policy Server	ise-demo-1
Event	5200 Authentication succeeded
Username	94:DA:5F:96:74:63
Endpoint Id	94:DA:5F:96:74:63
Calling Station Id	94:da:5f:96:74:63
Authentication Method	mab
Authentication Protocol	Lookup
Service Type	Call Check
Network Device	SPRT

## Steps

Step ID	Description	Latency (ms)
11001	Received RADIUS Access-Request	
11017	RADIUS created a new session	0
11117	Generated a new session ID	0
11027	Detected Host Lookup UseCase (Service-Type = Call Check (10))	0
15049	Evaluating Policy Group	1
15008	Evaluating Service Selection Policy	0
15041	Evaluating Identity Policy	10
15048	Queried PIP - Normalised Radius.RadiusFlowType	1
15013	Selected Identity Source - Internal Endpoints	4
24209	Looking up Endpoint in Internal Endpoints IDStore - 94:DA:5F:96:74:63	0
24217	The host is not found in the internal endpoints identity store	4
22056	Subject not found in the applicable identity store(s)	0
22058	The advanced option that is configured for an unknown user is used	0
22060	The 'Continue' advanced option is configured in case of a failed authentication request	0
15036	Evaluating Authorization Policy	0
24209	Looking up Endpoint in Internal Endpoints IDStore - 94:DA:5F:96:74:63	1
24217	The host is not found in the internal endpoints identity store	2
15048	Queried PIP - Radius.NAS-Port-Type	6
15048	Queried PIP - Network Access.UserName	8
15048	Queried PIP - IdentityGroup.Name	3
15048	Queried PIP - EndPoints.LogicalProfile	2
15048	Queried PIP - pxGridConnectorFLSK.mac_address	4
15016	Selected Authorization Profile - PermitAccess	4

## 故障排除

从ISE中，导航到操作>故障排除>调试向导>调试日志配置。选择您的主管理节点(PAN)，然后点击编辑。

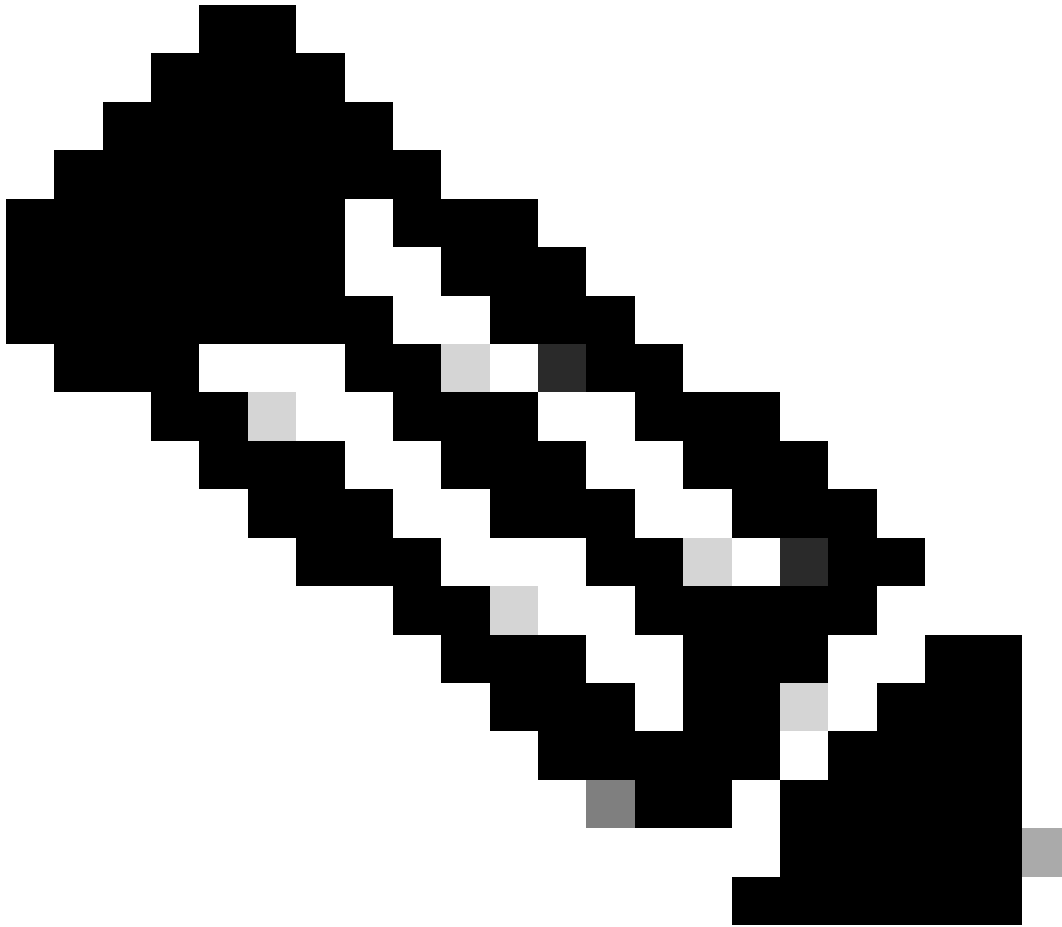
按pxGrid Direct过滤组件名称，然后选择所需的日志级别。Click Save.

The screenshot shows the 'Debug Wizard' interface in Cisco ISE. The 'Debug Log Configuration' tab is selected, showing a table of log configurations. The table has columns for Component Name, Log Level, Description, Log file Name, and Log Filter. The 'pxGrid Direct' component is highlighted, with a log level of 'DEBUG' and a log filter of 'Disabled'. There are buttons for 'Edit', 'Reset to Default', 'Log Filter Enable', 'Log Filter Disable', and 'Quick Filter'.

- 在ISE PAN CLI上，日志位于：

```
admin#show logging application pxgriddirect-service.log
admin#show logging application pxgriddirect-connector.log
```

- 在ISE GUI上，导航到操作>故障排除>下载日志>选择ISE PAN >调试日志> 调试日志类型> 应用日志。下载pxgriddirect-service.log和pxgriddirect-connector.log的压缩文件。
- 



注意：

pxgriddirect-service的日志包含有关已提取的终端数据是否已接收并保存到Cisco ISE数据库的信息。

pxgriddirect连接器的日志包含指示pxGrid定向连接器是否成功添加到思科ISE的信息。

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## 关于此翻译

思科采用人工翻译与机器翻译相结合的方式将此文档翻译成不同语言，希望全球的用户都能通过各自的语言得到支持性的内容。

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