

配置ISE 2.2以便與MySQL伺服器整合

目錄

[簡介](#)

[必要條件](#)

[需求](#)

[採用元件](#)

[背景資訊](#)

[設定](#)

[網路圖表](#)

[組態](#)

[1.在Ubuntu上配置MySQL:](#)

[2.配置資料庫和表:](#)

[3.配置儲存過程](#)

[4.將ISE與MySQL整合:](#)

[5.配置身份驗證和授權策略:](#)

[驗證](#)

[疑難排解](#)

[ISE上的調試](#)

[相關資訊](#)

簡介

本文檔介紹如何配置思科身份服務引擎(ISE)2.2以便與MySQL開放資料庫連線(ODBC)外部源整合。本文檔適用於使用MySQL作為ISE身份驗證和授權外部身份源的設定。

必要條件

需求

思科建議您瞭解以下主題：

- 身份服務引擎(ISE)配置
- 基本MySQL配置

採用元件

本檔案中的資訊是根據以下軟體和硬體版本：

- Cisco ISE版本2.2
- 安裝了MySQL的Ubuntu Linux
- 思科無線LAN控制器(WLC)版本8.0.100.0
- Microsoft Windows版本7x64

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。如果您的網路正在作用，請確保您已瞭解任何指令可能造成的影響。

背景資訊

ISE 2.2支援多個ODBC外部源，其中一個是MySQL。可以使用ODBC作為外部身份源來驗證使用者和端點，類似於Active Directory(AD)。ODBC身份源可以在身份庫序列中使用，也可以用於訪客和發起人身份驗證。

這是ISE 2.2支援的清單資料庫引擎：

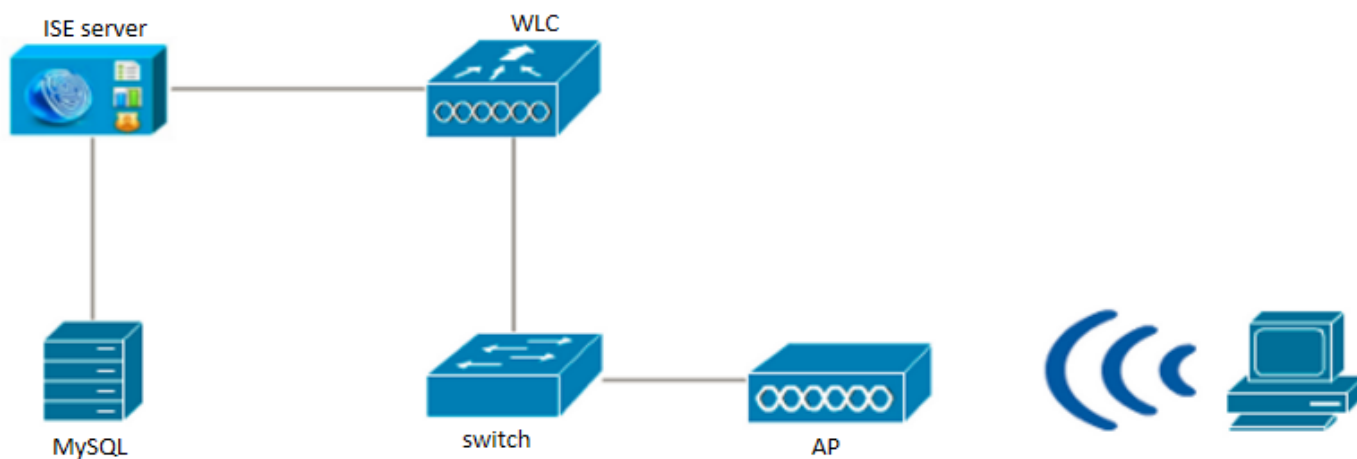
- MySQL
- Oracle
- PostgreSQL
- Microsoft SQL Server
- Sybase

欲知更多資訊，請訪問：https://www.cisco.com/c/en/us/td/docs/security/ise/2-2/admin_guide/b_ise_admin_guide_22/b_ise_admin_guide_22_chapter_01101.html#concept_6EB9B4875CBB47D79168E329696E2C65

設定

網路圖表

在此配置示例中，終端使用無線介面卡以便與無線網路關聯。WLC上的無線LAN(WLAN)設定為透過ISE驗證使用者。在ISE上，MySQL配置為外部身份庫。此圖說明所使用的網路拓撲：



組態

所提供的MySQL配置就是一個示例。不被視為思科建議。

1.在Ubuntu上配置MySQL:

更新系統：

```
sudo apt-get update
sudo apt-get upgrade
```

安裝MySQL (在安裝過程中，應提示您輸入根使用者的密碼)：

```
sudo apt-get install mysql-server
```

訪問MySQL資料庫：

```
mysql -u root -p
```

2. 配置資料庫和表：

建立資料庫：

```
mysql>
mysql> CREATE DATABASE demo_db;
Query OK, 1 row affected (0.00 sec)
mysql>
mysql> use demo_db;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A
Database changed
```

建立資料庫使用者並授予其許可權：

```
mysql>
mysql> CREATE USER 'cisco' IDENTIFIED BY 'cisco';
mysql> GRANT USAGE ON *.* TO 'cisco'@'%';
mysql> GRANT ALL PRIVILEGES ON `demo_db`.* TO 'cisco'@'%';
mysql> GRANT SELECT ON *.* TO 'cisco'@'%';
```

建立使用者表：

```
mysql>
mysql> CREATE TABLE `users` (
-> `user_id` int(10) unsigned NOT NULL AUTO_INCREMENT,
-> `username` varchar(50) NOT NULL,
-> `password` varchar(50) NOT NULL,
-> PRIMARY KEY (`user_id`),
-> UNIQUE KEY `username_UNIQUE` (`username`)
-> ) ENGINE=InnoDB DEFAULT CHARSET=utf8;
Query OK, 0 rows affected (0.01 sec)
```

建立使用者並將其新增到表中：

```
mysql>
mysql> INSERT INTO users
-> (user_id, username, password)
-> VALUES
-> (1, "alice", "Krakow123");
Query OK, 1 row affected (0.00 sec)
```

您可以類似地新增其他使用者並列出表的內容 (與使用者一樣，新增MAC地址以進行MAB身份驗證 — 密碼可以保持空白)：

```
mysql>
mysql> select * from users;
+-----+-----+-----+
| user_id | username | password |
+-----+-----+-----+
| 1       | alice   | Krakow123 |
| 2       | bob     | Krakow123 |
| 3       | oscar   | Krakow123 |
+-----+-----+-----+
```

建立組表：

```
mysql>
mysql> CREATE TABLE `groups` (
-> `group_id` int(10) unsigned NOT NULL AUTO_INCREMENT,
-> `groupname` varchar(50) NOT NULL,
-> PRIMARY KEY (`group_id`),
-> UNIQUE KEY `groupname_UNIQUE` (`groupname`)
-> ) ENGINE=InnoDB DEFAULT CHARSET=utf8;
Query OK, 0 rows affected (0.01 sec)
```

建立組並將其新增到表中：

```
mysql>
mysql> INSERT INTO groups
-> (group_id, groupname)
-> VALUES
-> (1, "everyone");
Query OK, 1 row affected (0.00 sec)
```

可以類似地新增其它組，並列出表的內容：

```
mysql>
mysql> select * from groups;
+-----+-----+
| group_id | groupname |
+-----+-----+
| 3        | contractor |
| 2        | employee   |
| 1        | everyone   |
+-----+-----+
```

為使用者和組之間的對映建立表

```
mysql>
mysql> CREATE TABLE `user_group` (
-> `user_id` int(10) unsigned NOT NULL,
-> `group_id` int(10) unsigned NOT NULL,
-> PRIMARY KEY (`user_id`, `group_id`),
-> KEY `group_id` (`group_id`),
```

```

-> CONSTRAINT `user_group_ibfk_1` FOREIGN KEY (`user_id`) REFERENCES `users` (`user_id`)
-> ON DELETE CASCADE,
-> CONSTRAINT `user_group_ibfk_2` FOREIGN KEY (`group_id`) REFERENCES `groups`
-> (`group_id`) ON DELETE CASCADE
) ENGINE=InnoDB DEFAULT CHARSET=utf8;
Query OK, 0 rows affected (0.01 sec)

```

在表中填充使用者和組之間的對映

```

mysql>
mysql> INSERT INTO user_group
-> (user_id, group_id)
-> VALUES
-> (1, 1);
Query OK, 1 row affected (0.00 sec)

```

可以類似地新增其他對映並列出表的內容：

```

mysql>
mysql> select * from user_group;
+-----+-----+
| user_id | group_id |
+-----+-----+
| 1       | 1       |
| 2       | 1       |
| 1       | 2       |
| 2       | 3       |
+-----+-----+
4 rows in set (0.00 sec)

```

3. 配置儲存過程

您必須配置所需的儲存過程，以便根據ODBC身份源對使用者進行身份驗證。根據身份驗證協定，過程執行的任務會有所不同。ISE支援針對ODBC外部儲存的三種不同型別的憑據檢查。您需要為每種檢查型別配置單獨的儲存過程。ISE使用輸入引數呼叫相應的儲存過程並接收輸出。資料庫可以返回記錄集或一組命名引數來響應ODBC查詢。

- **ODBC資料庫中的明文密碼身份驗證** — 在資料庫中進行PAP和PEAP身份驗證。如果過程找到與輸入相匹配的使用者名稱/密碼組合，則使用者成功通過身份驗證。
- **從ODBC資料庫讀取明文密碼** — CHAP、MS-CHAPv1/v2、EAP-MD5、LEAP和EAP-MSCHAPv2的身份驗證（作為PEAP或EAP-FAST的內部方法）在Cisco ISE中發生（ISE檢查使用者提供的密碼，並將其與從儲存過程接收的密碼進行比較）。如果使用者名稱正確，儲存過程將返回密碼。如果未找到使用者名稱，將返回錯誤代碼。
- **Lookup** — 在資料庫中進行MAB身份驗證。如果找到所需的使用者名稱，相關引數將返回到ISE。

每個過程都應使用分隔符進行定義，以便MySQL接受查詢語法：

```

DELIMITER //
CREATE DEFINER=`root`@`localhost` PROCEDURE `ISEGroups`(username varchar(64), OUT result INT)
begin
CASE username
WHEN '*' THEN
select distinct groupname from groups;
ELSE

```

```

select groupname from user_group
inner join users ON users.user_id = user_group.user_id
inner join groups ON groups.group_id = user_group.group_id
where users.username = username;
END CASE;
SET result = 0;
end //

DELIMITER //
CREATE DEFINER=`root`@`localhost` PROCEDURE `ISEAuthUserPlainReturnsRecordset`(username
varchar(64), password varchar(255))
begin
IF EXISTS (select * from users where users.username = username and users.password = password )
THEN
select 0,11,'This is a very good user, give him all access','no error';
ELSE
select 3, 0, 'odbc','ODBC Authen Error';
END IF;
end //

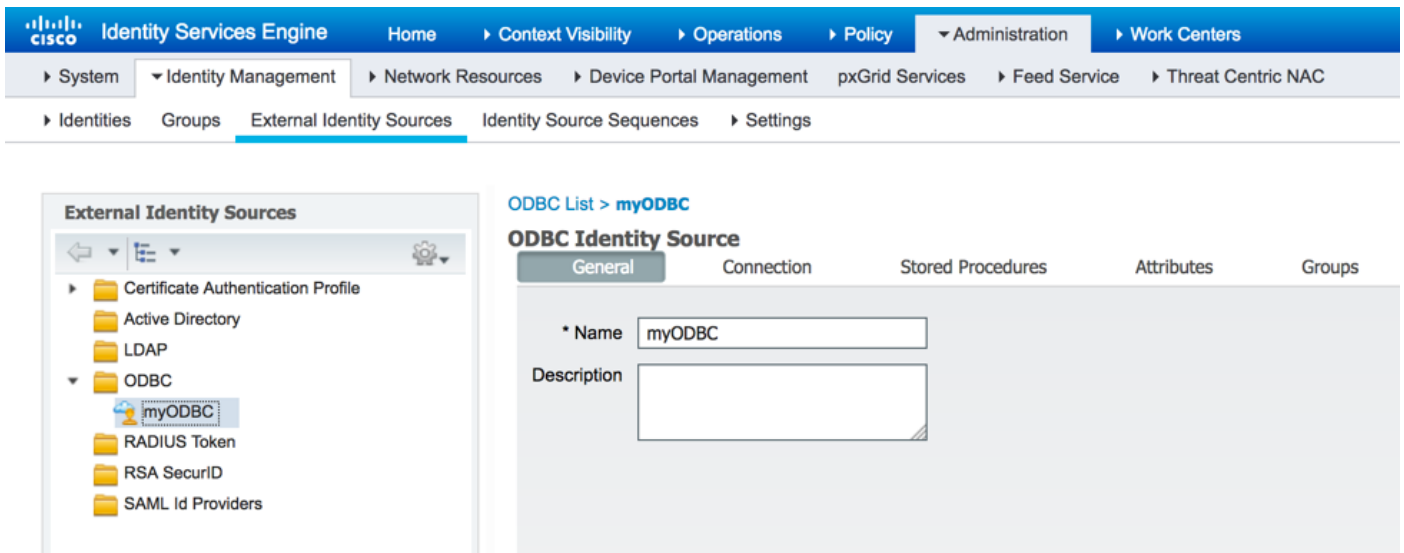
DELIMITER //
CREATE DEFINER=`root`@`localhost` PROCEDURE `ISEFetchPasswordReturnsRecordset`(username
varchar(64))
begin
IF EXISTS (select * from users where users.username = username) THEN
select 0,11,'This is a very good user, give him all access','no error',password from users where
users.username = username;
ELSE
select 3, 0, 'odbc','ODBC Authen Error';
END IF;
end //

DELIMITER //
CREATE DEFINER=`root`@`localhost` PROCEDURE `ISEUserLookupReturnsRecordset`(username
varchar(64))
begin
IF EXISTS (select * from users where users.username = username) THEN
select 0,11,'This is a very good user, give him all access','no error';
ELSE
select 3, 0, 'odbc','ODBC Authen Error';
END IF;
end //

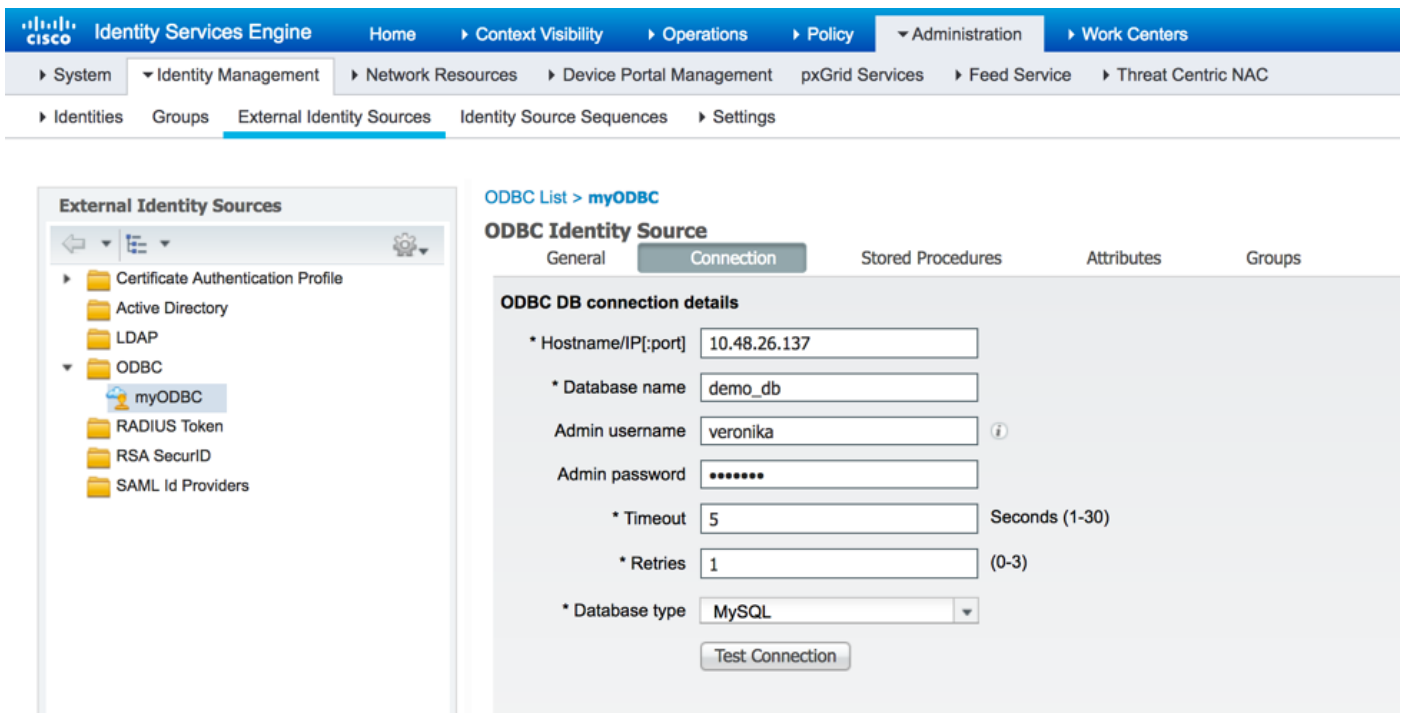
```

4.將ISE與MySQL整合：

使用以下資訊將MySQL與思科ISE整合。導航到**管理>身份管理>外部身份源> ODBC**，然後新增新儲存：



使用運行MySQL資料庫的Ubuntu的IP地址作為以下主機名/IP地址。指定資料庫的型別（在這種情況下，使用MySQL），同時插入先前建立的資料庫名稱和資料庫使用者憑據：



指定在MySQL中建立的過程的名稱 — 您需要小心MAC地址格式（在本例中它被更改為不同的格式）：

Identity Services Engine Administration > External Identity Sources > ODBC List > myODBC

ODBC Identity Source

General | Connection | **Stored Procedures** | Attributes | Groups

Stored procedure type: Returns recordset

Plain text password authentication: ISEAuthUserPlainReturnsRecordset

Plain text password fetching: ISEFetchPasswordReturnsRecordset

Check username or machine exists: ISEUserLookupReturnsRecordset

Fetch groups: ISEGroups

Fetch attributes: ISEAttrSH

Search for MAC Address in format: xx:xx:xx:xx:xx:xx

完成後，返回Connection頁籤並測試連線：

Identity Services Engine Administration > External Identity Sources > ODBC List > myODBC

ODBC Identity Source

General | **Connection** | Stored Procedures | Attributes | Groups

ODBC DB connection details

* Hostname/IP[:port]: 10.48.26.137

* Database name: demo_db

Admin username: veronika

Admin password: *****

* Timeout: 5

* Retries: 1

* Database type: MySQL

Test Connection

Test connection

✓ Connection succeeded

Stored Procedures

✓ Plain text password authentication - Exists

✓ Plain text password fetching - Exists

✓ Check username or machine exists - Exists

✓ Fetch groups - Exists

✓ Fetch attributes - Exists

Close

從MySQL獲取屬性，按一下Attributes選項卡：

Identity Services Engine Administration Work Centers License Warning

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

Identities Groups External Identity Sources Identity Source Sequences Settings

External Identity Sources

- Certificate Authentication Profile
- Active Directory
- LDAP
- ODBC
 - myODBC
 - RADIUS Token
 - RSA SecurID
 - SAML Id Providers

ODBC List > myODBC

ODBC Identity Source

General Connection Stored Procedures Attributes Groups

Edit + Add Delete

Name	Type	Default Value	Name in ISE
<input type="checkbox"/> eye_color	STRING	green	eye_color
<input type="checkbox"/> floor	STRING	1	floor
<input type="checkbox"/> is_certified	STRING	true	is_certified

Select Attributes from ODBC

Sample User or Machine: Retrieve Attributes

Name	Type	Default Value	Name in ISE
<input checked="" type="checkbox"/> eye_color	STRING	green	eye_color
<input checked="" type="checkbox"/> floor	STRING	1	floor
<input checked="" type="checkbox"/> is_certified	STRING	true	is_certified

OK Cancel

以相同方式獲取組：

Identity Services Engine Administration Work Centers License Warning

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

Identities Groups External Identity Sources Identity Source Sequences Settings

External Identity Sources

- Certificate Authentication Profile
- Active Directory
- LDAP
- ODBC
 - myODBC
 - RADIUS Token
 - RSA SecurID
 - SAML Id Providers

ODBC List > myODBC

ODBC Identity Source

General Connection Stored Procedures Attributes Groups

Edit + Add Delete

Name	Name in ISE
<input type="checkbox"/> contractor	contractor
<input type="checkbox"/> employee	employee
<input type="checkbox"/> everyone	everyone

Select Groups from ODBC

Sample User or Machine: Retrieve Groups

Name	Name in ISE
<input checked="" type="checkbox"/> contractor	contractor
<input checked="" type="checkbox"/> employee	employee
<input checked="" type="checkbox"/> everyone	everyone

OK Cancel

5. 配置身份驗證和授權策略：

配置ISE以從MySQL資料庫驗證和授權使用者。導覽至Policy > Authentication和Policy > Authorization:

Identity Services Engine Home Context Visibility Operations Policy Administration Work Centers

Authentication Authorization Profiling Posture Client Provisioning Policy Elements

Authentication Policy

Define the Authentication Policy by selecting the protocols that ISE should use to communicate with the network devices, and the identity sources that it should use for authentication. For Policy Export go to Administration > System > Backup & Restore > Policy Export Page

Policy Type Simple Rule-Based

<input checked="" type="checkbox"/>	MAB	: If Wired_MAB OR
	Wireless_MABAllow Protocols : Default Network Access and	
<input checked="" type="checkbox"/>	Default	:use myODBC
<input checked="" type="checkbox"/>	Dot1X	: If Wired_802.1X OR
	Wireless_802.1XAllow Protocols : Default Network Access and	
<input checked="" type="checkbox"/>	Default	:use myODBC
<input checked="" type="checkbox"/>	Default Rule (If no match)	: Allow Protocols : Default Network Access and use : All_User_ID_Stores

Identity Services Engine Home Context Visibility Operations Policy Administration Work Centers License Warning

Authentication Authorization Profiling Posture Client Provisioning Policy Elements

Authorization Policy

Define the Authorization Policy by configuring rules based on identity groups and/or other conditions. Drag and drop rules to change the order. For Policy Export go to Administration > System > Backup & Restore > Policy Export Page

First Matched Rule Applies

Exceptions (0)

Standard

Status	Rule Name	Conditions (identity groups and other conditions)	Permissions	
<input checked="" type="checkbox"/>	Wireless Black List Default	if Blacklist AND Wireless_Access	then Blackhole_Wireless_Access	Edit
<input checked="" type="checkbox"/>	Contractor	if myODBC:ExternalGroups EQUALS contractor	then for_contractor	Edit
<input checked="" type="checkbox"/>	Employee	if myODBC:ExternalGroups EQUALS employee	then for_employee	Edit
<input checked="" type="checkbox"/>	Profiled Cisco IP Phones	if Cisco-IP-Phone	then Cisco_IP_Phones	Edit
<input checked="" type="checkbox"/>	Profiled Non Cisco IP Phones	if Non_Cisco_Profiled_Phones	then Non_Cisco_IP_Phones	Edit
<input type="checkbox"/>	Compliant_Devices_Access	if (Network_Access_Authentication_Passed AND Compliant_Devices)	then PermitAccess	Edit
<input type="checkbox"/>	Employee_EAP-TLS	if (Wireless_802.1X AND BYOD_is_Registered AND EAP-TLS AND MAC_in_SAN)	then PermitAccess AND BYOD	Edit
<input type="checkbox"/>	Employee_Onboarding	if (Wireless_802.1X AND EAP-MSCHAPv2)	then NSP_Onboard AND BYOD	Edit
<input type="checkbox"/>	Wi-Fi_Guest_Access	if (Guest_Flow AND Wireless_MAB)	then PermitAccess AND Guests	Edit
<input type="checkbox"/>	Wi-Fi_Redirect_to_Guest_Login	if Wireless_MAB	then Cisco_WebAuth	Edit

Save Reset

驗證

測試了兩個身份驗證流程：PEAP-MSCHAPv2和MAB。Alice是MySQL上的員工組的一部分，Bob是承包商組的一部分：

Identity Services Engine Home Context Visibility Operations Policy Administration Work Centers License Warning

RADIUS Threat-Centric NAC Live Logs TACACS Troubleshoot Adaptive Network Control Reports

Live Logs Live Sessions

Misconfigured Supplicants 0 Misconfigured Network Devices 0 RADIUS Drops 0 Client Stopped Responding 1 Repeat Counter 0

Refresh Never Show Latest 20 records Within Last 3 hours

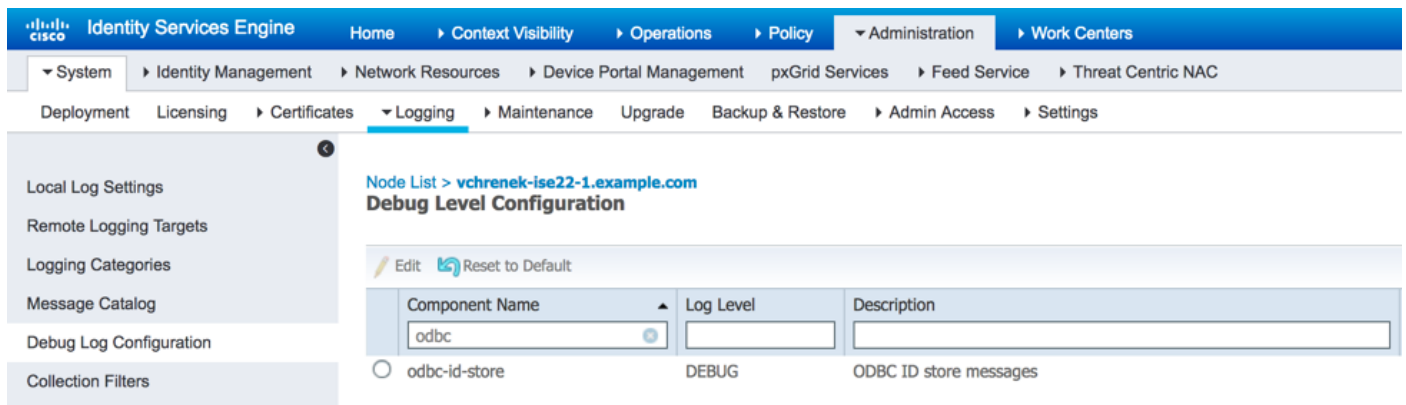
Refresh Reset Repeat Counts Export To Filter

Time	Status	Details	Identity	Authentication ...	Authorization P...	Authorization P...	Event	Failure Reason
Feb 18, 2017 02:13:38.0...	<input type="checkbox"/>		bob	Default >> Dot1X...	Default >> Contr...	for_contractor	Session State is Started	
Feb 18, 2017 02:13:37.8...	<input checked="" type="checkbox"/>		bob	Default >> Dot1X...	Default >> Contr...	for_contractor	Authentication succeeded	
Feb 18, 2017 02:12:19.4...	<input checked="" type="checkbox"/>		alice	Default >> Dot1X...	Default >> Emplo...	for_employee	Authentication succeeded	

疑難排解

ISE上的調試

要在ISE上啟用調試，請導航到Administration > System > Logging > Debug Log Configuration，選擇PSN節點，並將odbc-id-store元件的日誌級別更改為DEBUG:



The screenshot shows the Cisco Identity Services Engine (ISE) Administration console. The navigation menu includes System, Identity Management, Network Resources, Device Portal Management, pxGrid Services, Feed Service, and Threat Centric NAC. The main content area is titled "Node List > vchrenek-ise22-1.example.com Debug Level Configuration". It features a table with columns for Component Name, Log Level, and Description. The component "odbc-id-store" is selected, and its log level is set to "DEBUG". The description is "ODBC ID store messages".

Component Name	Log Level	Description
odbc-id-store	DEBUG	ODBC ID store messages

要檢查的日誌 — prrt-server.log和prrt-management.log。您可以直接從ISE的CLI對其進行跟蹤：

```
vchrenek-ise22-1/admin# show logging application prrt-management.log tail
```

在驗證使用者bob期間，ISE必須獲取純文字檔案密碼，並且以下儲存過程使用ISEFetchPasswordReturnsRecordset:

```
2017-02-18 14:13:37,565 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC ID Store Operation: Fetch Plain Text Password. Username=bob, SessionID=0a3e9466000090658a8487f
2017-02-18 14:13:37,566 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write customer log message: 24861
2017-02-18 14:13:37,567 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::- OdbcConnectionPool - get connection
2017-02-18 14:13:37,567 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::- OdbcConnectionPool - use existing connection
2017-02-18 14:13:37,568 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::- OdbcConnectionPool - connections in use: 1
2017-02-18 14:13:37,568 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::- Fetch plain text password
2017-02-18 14:13:37,568 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::- Prepare stored procedure call, procname=ISEFetchPasswordReturnsRecordset
2017-02-18 14:13:37,568 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::- Using recordset to obtain stored procedure result values
2017-02-18 14:13:37,568 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write customer log message: 24855
2017-02-18 14:13:37,568 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::- Text: {call ISEFetchPasswordReturnsRecordset(?)}
```

```
:::- OdbcConnectionPool - connections in use: 0
2017-02-18 14:13:37,572 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- Call
to ODBC DB succeeded
2017-02-18 14:13:37,572 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.OdbcAuthResult -:::-
Authentication result: code=0, Connection succeeded=false, odbcDbErrorString=no error,
odbcStoredProcedureCustomerErrorString=null, accountInfo=This is a very good user, give him all
access, group=11
```

因為ISE必須檢查ODBC組分配，所以它必須檢索組：

```
2017-02-18 14:13:37,572 DEBUG [Thread-493][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write
customer log message: 24862
2017-02-18 14:13:37,728 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Get all user groups. Username=bob, SessionID=0a3e9466000090658a8487f
2017-02-18 14:13:37,728 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Fetch user groups. Username=bob, SessionID=0a3e9466000090658a8487f
2017-02-18 14:13:37,728 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write
customer log message: 24869
2017-02-18 14:13:37,729 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - get connection
2017-02-18 14:13:37,729 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - use existing connection
2017-02-18 14:13:37,729 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - connections in use: 1
2017-02-18 14:13:37,729 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Fetch user groups
2017-02-18 14:13:37,729 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Prepare stored procedure call, procname=ISEGroups
2017-02-18 14:13:37,729 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Text: {call ISEGroups(?,?) }
2017-02-18 14:13:37,733 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Setup stored procedure input parameters, username=bob
2017-02-18 14:13:37,733 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Execute stored procedure call
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Process stored procedure results
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Received result recordset, total number of columns=1
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
According to column number expect multiple rows (vertical attributes/groups returned result)
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Fetch data: ExternalGroup=everyone
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Fetch data: ExternalGroup=contractor
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Results successfully parsed from recordset
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Result code indicates success
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - release connection
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - connections in use: 0
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- Call
to ODBC DB succeeded
2017-02-18 14:13:37,740 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write
customer log message: 24870
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Get all user groups. Got groups...
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Get all user groups. Got groups(0) = everyone
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Get all user groups. Setting Internal groups(0) = everyone
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
```

```
ID Store Operation: Get all user groups. Got groups(1) = contractor
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Get all user groups. Setting Internal groups(1) = contractor
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Get all user groups. Username=bob, ExternalGroups=[everyone, contractor]
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Fetch user attributes. Username=bob, SessionID=0a3e9466000090658a8487f
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write
customer log message: 24872
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - get connection
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - use existing connection
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - connections in use: 1
```

這同樣適用於屬性：

```
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Fetch user attributes
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Prepare stored procedure call, procname=ISEAttrSH
2017-02-18 14:13:37,741 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Text: {call ISEAttrSH(?,?) }
2017-02-18 14:13:37,745 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Setup stored procedure input parameters, username=bob
2017-02-18 14:13:37,746 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Execute stored procedure call
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Process stored procedure results
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Received result recordset, total number of columns=3
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
According to column number expect multiple columns (horizontal attributes/groups returned result)
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Fetch data: eye_color=green
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Fetch data: floor=1
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Fetch data: is_certified=true
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Results successfully parsed from recordset
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Result code indicates success
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - release connection
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - connections in use: 0
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- Call
to ODBC DB succeeded
2017-02-18 14:13:37,749 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write
customer log message: 24873
2017-02-18 14:13:37,750 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Get all user attrs. Username=bob, Setting myODBC.eye_color to green
2017-02-18 14:13:37,750 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Get all user attrs. Username=bob, Setting myODBC.floor to 1
2017-02-18 14:13:37,750 DEBUG [Thread-259][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Get all user attrs. Username=bob, Setting myODBC.is_certified to true
```

相關資訊

- [技術支援與文件 - Cisco Systems](#)

- [ISE 2.2版本說明](#)
- [ISE 2.2硬體安裝指南](#)
- [ISE 2.2升級指南](#)
- [ISE 2.2引擎管理員指南](#)