Configurare ISE 2.1 con MS SQL utilizzando ODBC

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Introduzione

In questo documento viene descritto come configurare Identity Services Engine (ISE) con Microsoft Standard Query Language (SQL) Server per l'autenticazione ISE utilizzando Open Database Connectivity (ODBC)

Nota: L'autenticazione Open Database Connectivity (ODBC) richiede che ISE sia in grado di recuperare una password utente in formato testo normale. La password può essere crittografata nel database, ma deve essere decrittografata dalla **stored procedure**.

Prerequisiti

Requisiti

Cisco raccomanda la conoscenza dei seguenti argomenti:

- Concetti su database e ODBC
- Microsoft SQL Server

Componenti usati

Le informazioni fornite in questo documento si basano sulle seguenti versioni software e hardware:

- Identity Services Engine 2.1
- MSSQL Server 2008 R2

Configurazione

Passaggio 1. Configurazione di base di MS SQL

La procedura di configurazione include la creazione di un database e di un utente per ISE con le autorizzazioni di accesso al database.

Nota: ISE supporta solo l'autenticazione SQL, non l'account Windows. Se è necessario modificare la modalità di autenticazione, fare riferimento a <u>Modifica modalità di</u> <u>autenticazione server</u>

1. Aprire SQL Server Management Studio (menu Start > Microsoft SQL Server 2008 R2) e creare un database:



2. Accettare le opzioni predefinite o regolare le impostazioni del database come illustrato nella seguente immagine:

🚪 New Database							_ 🗆 ×
Select a page	🔄 Script 👻 📑 H	lelp					
General							
Filegroups	Database name:		ISEDB				
	Owner:		<default></default>			_	
	_		,				
	Use full-text in	ndexing					
	Database files:						
	Logical Name	File Type	Filegroup	Initial	Autogrowth		Path
	ISEDB	Rows Data	PRIMARY	2	By 1 MB, unrestricted gro		C:\Program Files\Microsoft SQL Server\MS
	ISEDB_log	Log	Not Appli	1	By 10 percent, unrestrict		C:\Program Files\Microsoft SQL Server\MS
Connection							
Server:							
localhost							
Connection: BABALAND\administrator							
view connection properties							
Progress							
db. Beek							F
Ready	<u> </u>					_	
- 4 D.							Add Remove
							OK Cancel

3. Creare un utente e impostare le autorizzazioni come illustrato nelle immagini seguenti:



🚪 Login - New			
Select a page	<u>S</u> Script 👻 📑 Help		
General			Conroh
User Mapping	Login name.	ISEDBOSEF	Search
Securables	O Windows authentication		
	SQL Server authentication		
	Password:	••••	
	Confirm password:	•••••	
	Specify old password		
	Old password:		
	Enforce password policy	/	
	Enforce password expira	ation	
	🗖 User must change pass	word at next login	
	O Mapped to certificate		
	O Mapped to asymmetric key		
	Map to Credential		Add
Connection	Mapped Credentials	Credential Provider	
Server: localhost			
Connection: BABALAND\administrator			
View connection properties			
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	Delaukianguage:		
		ОК	Cancel

Login Properties - ISEDBUse	r			
Select a page	🛒 Script 👻	📑 Help		
🚰 General -				
Server Roles	Users mapp	ed to this login:		
Securables	Map	Database	User	Default Schema
Status		ISEDB	ISEDBUser	
_		master		
		model		
		msdb		
		tempdb		
				·
	_			
	Guest a	ccount enabled for: ISEDB		
	Database ro	ole membership for: ISEDB		
Connection	La dh acc	eceadmin		
2	db_acc	kupoperator		
Server: localhost	db_data	areader		
	✓ db_data	awriter		
Connection: BABALAND\administrator	db_ddla	admin		
	⊔ ab_aen	ydatareader vidatawriter		
View connection properties	db_oen	yddiawniter		
	db_sec	urityadmin		
Progress	🖌 public			
Ready				
We and the second secon				
				OK Cancel

Passaggio 2. Configurazione di base ISE

Creare un'**origine identità ODBC** in **Amministrazione > Origine identità esterna > ODBC** e verificare la connessione:

ODBC List > ISE_ODBC

ODBC Identity Source	e Connection	Stored Procedures	Attributes	Groups
ODBC DB connection de	etails			
* Hostname/IP[:port]	bast-ad-ca.cisco.com	1		
* Database name	ISEDB			
Admin username	ISEDBUser	(i)		
Admin password	•••••			
* Timeout	5	Test connection		×
* Retries	1	Connection succee	ded	^
* Database type	Microsoft SQL Serv	Stored Procedures	ł	
	Test Connection	Plain text password	authentication - No	t Configured
		Plain text password	fetching - Not Conf	igured
		Check username or	r machine exists - No	ot Configured
		Fetch groups - Not	Configured	
		Fetch attributes - N	ot Configured	
				Close

Passaggio 3. Configurazione dell'autenticazione utente

L'autenticazione ISE per ODBC utilizza stored procedure. La stored procedure per l'autenticazione restituisce **il set di risultati** con la seguente sintassi:

Valore	Тіро
Risultato	Numero intero
Group (solo per compatibilità con ACS 4.2)	Numero intero o varchar(255)
Informazioni account	varchar(255)
Stringa di errore	varchar(255)

Per altre procedure, fare riferimento alla <u>Guida all'amministrazione di Cisco Identity Services</u> <u>Engine 2.1</u>

Suggerimento: È possibile restituire parametri denominati invece di resultset. È un tipo di output diverso, la funzionalità è la stessa.

1. Passare alle opzioni e deselezionare la casella di controllo **Impedisci salvataggio delle modifiche che richiedono la ricreazione della tabella** (facoltativo):

Options	? ×
 Environment General Fonts and Colors Keyboard Help Text Editor Query Execution Query Results SQL Server Object Explorer Designers Table and Database Designers Maintenance Plans Analysis Services Designers Source Control 	Table Options Image: Override connection string time-out value for table designer updates: Transaction time-out after: 30 seconds Auto generate change scripts Warn on null primary keys Warn about difference detection Warn about tables affected Prevent saving changes that require table re-creation Diagram Options Default table view: Column Names Image: Launch add table dialog on new diagram
	OK Cancel

2. Creare la tabella. Verificare di aver impostato le impostazioni di identità nella **chiave primaria**. Per impostare **user_id** come **chiave primaria**, fare clic con il pulsante destro del mouse sul **nome** della **colonna**:

	SQLQuery2.sqlistrator	(52))* BAST-AD	-CA.ISdbo.ISI	Users*		
	Column Name	Data Type	Allow Nulls			
▶8	user_id	int				
	username	varchar(MAX)				
	password	varchar(MAX)				
			/			
C	olumn Properties					
l r						
	īi Ž↓ I					
[E Full-text Specification				No	<u> </u>
	Has Non-SQL Server Sub	scriber			No	
[Identity Specification				Yes	
	(Is Identity)				Yes	
	Identity Increment				1]
	Identity Seed				1	

SQL finale:

CREATE TABLE [dbo].[ISE_Users]([user_id] [int] IDENTITY(1,1) NOT NULL, [username] [varchar](max) NOT NULL, [password] [varchar](max) NOT NULL,

```
CONSTRAINT [PK_ISE_Users] PRIMARY KEY CLUSTERED
(
[user_id] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS =
ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY]
```

3. Eseguire questa query per inserire un utente:

```
insert into ISE_Users(username,password) values('odbcuser1','odbcpass');
```

4. Creare una procedura di autenticazione con password in testo normale (utilizzata per PAP, metodo interno EAP-GTC, TACACS):

```
CREATE PROCEDURE [dbo].[ISEAuthUserPlainReturnsRecordset]
@username varchar(255), @password varchar(255)
AS
BEGIN
IF EXISTS( SELECT username
FROM ISE_Users
WHERE username = @username
AND password = @password )
SELECT 0,11, 'This is a very good user, give him all access', 'No Error'
FROM ISE_Users
WHERE username = @username
ELSE
SELECT 3,0,'odbc','ODBC Authen Error'
END
```

5. Creare una procedura per il recupero di password in testo normale (utilizzata per i metodi interni CHAP, MSCHAPv1/v2, EAP-MD5, LEAP, EAP-MSCHAPv2, TACACS):

```
CREATE PROCEDURE [dbo].[ISEFetchPasswordReturnsRecordset]
@username varchar(255)
AS
BEGIN
IF EXISTS( SELECT username
FROM ISE_Users
WHERE username = @username)
SELECT 0,11,'This is a very good user, give him all access','No Error',password
FROM ISE_Users
WHERE username = @username
ELSE
SELECT 3,0,'odbc','ODBC Authen Error'
END
```

6. Creare una procedura per verificare se il nome utente o il computer esiste (utilizzata per MAB, riconnessione rapida di PEAP, EAP-FAST ed EAP-TTLS):

AS BEGIN IF EXISTS(SELECT username FROM ISE_Users WHERE username = @username) SELECT 0,11,'This is a very good user, give him all access','No Error' FROM ISE_Users WHERE username = @username ELSE SELECT 3,0,'odbc','ODBC Authen Error' END

7. Procedure create per il test:



Series a page Series Series Ser	🐙 Execute Procedure - [dbo].[ISEAuthUserPlainR	eturnsRecordset]		
Personal Pe	Select a page	🔄 Script 👻 📑 Hel	p			
Parameter Data Type Output Planmeter Pass Null Value adouter1 @usename varchar(25) No odbopase] edbopase] @password varchar(25) No odbopase] odbopase] Sever: coanted odbopase] odbopase] Sever: oanted Connection: B&BALAND Value visuante Sever: obadout OK Cencel OK Cencel OVectorset Sever: obadout obadout obadout obadout obadout obadout obadout obadout obadout <	🚰 General					
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Connection Server: blocathost Connection BABALANDNadministrator BABALANDNadministrator Mexess Progress						
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OK Cancel SQLQuery5.sqlinistrator (57)) BAST-AD-CA.ISdbo.ISE_Users SQLQuery2.sqlistrator (52))* BAST-AD-CA.ISdbo.ISE_Users Image: SQLQuery2.sqlistrator (52))* SQLQuery2.sql	No. of					
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USE [ISEDB] GO DECLARE @return_value int EXEC @return_value = [dbo].[ISEAuthUserPlainReturnsRecordset] @username = N'odbcuser1', @password = N'odbcpass' SELECT 'Return Value' = @return_value GO Results D_Messages (No column name) (No column name) (No column name) 0 11 This is a very good user, give him all access No Error	SQLQuery5.sqlinistrator (57)) B/	AST-AD-CA.ISdbo.ISE_U	Isers SQLQuery2.sc	ılistrator (52))* 🛛 B	AST-AD-CA.ISdbo.IS	E_Users 🗸 👻
<pre>DECLARE @return_value int EXEC @return_value = [dbo][ISEAuthUserPlainReturnsRecordset] @username = N'odbcuser1', @password = N'odbcpass' SELECT 'Return Value' = @return_value GO Results Messages (No column name) (No column name) (No column name) 0 11 This is a very good user, give him all access No Error</pre>	USE [ISEDB] GO					
<pre>DECLARE @return_value int EXEC @return_value = [dbo][ISEAuthUserPlainReturnsRecordset] @username = N'odbcuser1', @password = N'odbcpass' SELECT 'Return Value' = @return_value GO GO Results Messages (No column name) (No column name) (No column name) 0 11 This is a very good user, give him all access No Error</pre>						
EXEC @return_value = [dbol. [ISEAuthUserPlainReturnsRecordset] @username = N'odbcuser1', @password = N'odbcpass' SELECT 'Return Value' = @return_value GO	DECLARE Greturn_value in	τ				
Go SELECT 'Return Value' = @return_value GO Results Messages (No column name) (No column name) (No column name) (No column name) No Error	EXEC @return_value =	[dbo].[ISEAuthUs	erPlainReturnsH	Recordset]		
SELECT 'Return Value' = @return_value GO Results Messages (No column name) (No column name) (No column name) (No column name) 0 11 This is a very good user, give him all access No Error	- @password = N'od	bcpass'				
GO GO GO Results Messages No column name) (No column name) (No column name) 0 11 This is a very good user, give him all access No Error	SELECT 'Return Value' =	@return value				
I Results Messages (No column name) (No column name) 0 11 This is a very good user, give him all access No Error		_				
Results Image: Messages (No column name) (No column name) (No column name) (No column name) 0 11 This is a very good user, give him all access No Error	60					
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	(No column name) (No column nam	e) (No column name) This is a very cood ur	ser, give him all access	(No column name)		
		This is a very good us	ser, give him all access			

Provare altre procedure nello stesso modo.

8. Configurare le procedure su ISE e salvare:

O	DBC List > ISE_ODB	C				
0	DBC Identity So	urce				
	General	Connection	Stored Procedures	Attributes	G	roups
	Store	d procedure type	Returns recordset	-		
	Plain text passwo	rd authentication	ISEAuthUserPlainReturnsReco	ordset	\oplus	
	Plain text p	assword fetching	ISEFetchPasswordReturnsRec	ordset	\oplus	
	Check username o	or machine exists	ISEUserLookupReturnsRecord	lset	\oplus	
		Fetch groups		i	\oplus	
		Fetch attributes		<i>i</i>	\oplus	
	Search for MAC	Address in format	XX-XX-XX-XX-XX	• (i)		

9. Creare una regola di autenticazione semplice utilizzando ODBC e verificarla:

Ŧ	Aut	:hent	tication Policy					
		<u>~</u>	MAB	: If	Wired_MAB OR Wireless_MAB	Allow Protocols : Default Network Access	and	Edit 🕶
			Default		use Internal Endpoints			
		~	Dot1X	: If	Wired_802.1X OR Wireless_802.1X	Allow Protocols : Default Network Access	and	Edit 🕶
			Default		use All_User_ID_Stores			
	ø		test_aaa	: If	Radius:Service-Type EQUALS Login	Allow Protocols : Default Network Access	and	Edit 🕶
			Default		use ISE_ODBC			

b3560#test aaa group ISE236 odbcuser1 odbcpass legacy Attempting authentication test to server-group ISE236 using radius User was successfully authenticated.

Event	5200 Authentication succeeded	
leornamo	odbouser1	
Jaemanie		
Endpoint Id		
Indpoint Profile		
Authentication Policy	Default >> test_aaa >> Default	
and a short on the Heat		
Authorization Policy	Default >> Default	
Authorization Result	PermitAccess	
theatisation Dotails		
thentication Details		
thentication Details	2016-06-08 11:04:07.004	
thentication Details source Timestamp teceived Timestamp	2016-06-08 11:04:07.004 2016-06-08 11:04:07.005	
thentication Details iource Timestamp Received Timestamp Policy Server	2016-06-08 11:04:07.004 2016-06-08 11:04:07.005 bise236	
thentication Details iource Timestamp teceived Timestamp 'olicy Server	2016-08-08 11:04:07.004 2016-06-08 11:04:07.005 bise236 5200 Authentication succeeded	
thentication Details Source Timestamp Received Timestamp Policy Server	2016-06-08 11:04:07.004 2016-06-08 11:04:07.005 bise236 5200 Authentication succeeded	
thentication Details Source Timestamp Received Timestamp Policy Server Event Jsername	2016-06-08 11:04:07.004 2016-06-08 11:04:07.005 bise236 5200 Authentication succeeded odbcuser1	

11001	Received RADIUS Access-Request
11017	RADIUS created a new session
11117	Generated a new session ID for a 3rd party NAD
15049	Evaluating Policy Group
15008	Evaluating Service Selection Policy
15048	Queried PIP - Radius.NAS-Port-Type
15048	Queried PIP - Normalised Radius.RadiusFlowType (4 times)
15048	Queried PIP - Radius.Service-Type
15004	Matched rule - test_aaa
15041	Evaluating Identity Policy
15006	Matched Default Rule
15013	Selected Identity Source - ISE_ODBC
24852	Perform plain text password authentication in external ODBC database - $\ensuremath{ISE}\xspace_{ODBC}$
24849	Connecting to external ODBC database - ISE_ODBC
24850	Successfully connected to external ODBC database - ISE_ODBC
24855	Expect external ODBC database stored procedure to return results in a recordset - ISE_ODBC
22037	Authentication Passed
15036	Evaluating Authorization Policy
15048	Queried PIP - Radius.User-Name
15048	Queried PIP - Network Access.UseCase
15048	Queried PIP - Normalised Radius.RadiusFlowType (5 times)
15004	Matched rule - Default

Passaggio 4. Configurare il recupero del gruppo

1. Creare tabelle contenenti gruppi di utenti e un'altra tabella utilizzata per il mapping molti-a-molti:

```
CREATE TABLE [dbo].[Groups](
[Group_ID] [int] IDENTITY(1,1) NOT NULL,
[Group_Name] [varchar] (max) NOT NULL,
[Group_Desc] [text] NOT NULL,
CONSTRAINT [PK_Groups] PRIMARY KEY CLUSTERED
(
[Group_ID] ASC
)WITH (PAD_INDEX = OFF, STATISTICS_NORECOMPUTE = OFF, IGNORE_DUP_KEY = OFF, ALLOW_ROW_LOCKS =
ON, ALLOW_PAGE_LOCKS = ON) ON [PRIMARY]
) ON [PRIMARY] TEXTIMAGE_ON [PRIMAR
CREATE TABLE [dbo].[User_Groups_Mapping](
[user_id] [int] NOT NULL,
[group_id] [int] NOT NULL
) ON [PRIMARY]
ALTER TABLE dbo.User_Groups_Mapping ADD CONSTRAINT
FK_User_Groups_Mapping_Groups FOREIGN KEY
(
group_id
) REFERENCES dbo.Groups
(
Group_ID
) ON UPDATE CASCADE
ON DELETE CASCADE
GO
ALTER TABLE dbo.User_Groups_Mapping ADD CONSTRAINT
FK_User_Groups_Mapping_ISE_Users FOREIGN KEY
(
user_id
```

) REFERENCES dbo.ISE_Users
(
user_id
) ON UPDATE CASCADE
ON DELETE CASCADE

2. Aggiungere gruppi e mapping in modo che ODBCUSER1 appartenga a entrambi i gruppi:

```
INSERT [dbo].[Groups] ([Group_ID], [Group_Name], [Group_Desc]) VALUES (1, N'ODBCGroup1', N'My
Nice Group1')
INSERT [dbo].[User_Groups_Mapping] ([user_id], [group_id]) VALUES (1, 1)
INSERT [dbo].[Groups] ([Group_ID], [Group_Name], [Group_Desc]) VALUES (2, N'ODBCGroup2', N'My
Nice Group2')
INSERT [dbo].[User_Groups_Mapping] ([user_id], [group_id]) VALUES (1, 2)
```

3. Creare la procedura di recupero dei gruppi:

```
CREATE PROCEDURE [dbo].[ISEGroupsRetrieval]
@username varchar(255), @result int output
AS
BEGIN
if exists (select * from ISE_Users where username = @username)
begin
set @result = 0
select Group_Name from Groups where group_id in (select group_ID from User_Groups_Mapping where
User_Groups_Mapping.USER_ID IN (select USER_ID from ISE_Users where username=@username ) )
end
else
set @result = 1
END
4. Mappare ai gruppi Fetch:
```

ODBC List > ISE_ODBC

ODBC Identity Source

General	Connection	Stored Procedures	Attributes	Groups
	Stored procedure type	Returns recordset	Ψ	
Plain text pa	ssword authentication	ISEAuthUserPlainReturnsRec	cordset	\oplus
Plain	text password fetching	ISEFetchPasswordReturnsRe	cordset	\oplus
Check userna	ame or machine exists	ISEUserLookupReturnsRecor	rdset	\oplus
	Fetch groups	ISEGroupsRetrieval	<i>i</i>	\oplus
	Fetch attributes	ISEAttrsRetrieval	(1)	\oplus
Search for	MAC Address in format	xx-xx-xx-xx-xx	• ()	

5. Recuperare i gruppi e aggiungerli all'origine identità ODBC:

ODBC List > ISE_ODB	C				
ODBC Identity So	ource				
General	Connection	Stored Procedures Attribute	5 Groups		
/ Edit 🕂 Add 👻	🗙 Delete				
Name		Name in ISE			
		No	data available		
		Select Groups from ODBC			х
		Sample User or Machine odbo	cor1	Retrieve Groups	
				() [Redieve Gloups	
		Name Name in IS	E		
		ODBCGroup1 ODBCGrou	.p1		
		ODBCGroup2 ODBCGrou	p2		
				ОК	Cancel

6. Aggiungere un altro utente che non appartiene ad alcun gruppo:

insert into ISE_Users(username,password) values('odbcuser2','odbcpass');
7. Creare un set di criteri e un test specifici:

Policy Sets Profiling Posture Client Provisio	ning			
Policy Sets Search policy names & descriptions.	Define the Policy Sets by configuring rules For Policy Export go to Administration > S	s based on conditions. Drag and drop sets system > Backup & Restore > Policy Export	on the left hand side to change the order. Page	
+• ₽₀• ↑ ↓ × œ	Status Name	Description	Conditions Radius:Service-Type EQUALS Login	Edit
Summary of Policies A list of all your policies	Authentication Policy			
Rules across entire deployment	Default Rule (If no match) : Allow Protocols : Default Network	Access and use : ISE_ODBC	Edit 🕶
TestAAA	- Authorization Policy			
VPN	Automization Policy			
Default Default	Standard			
Save Urder Keset Order	Status Rule Name	Conditions (identity groups and if ISE_ODBC:ExternalGroups EQ ODBCGroup1	other conditions) Permissions UALS then PermitAccess	Edit 🕶
	🛃 Default	if no matches, then DenyAccess	3	Edit 🕶

b3560#test aaa group ISE236 odbcuser2 odbcpass legacy Attempting authentication test to server-group ISE236 using radius User authentication request was rejected by server.

```
b3560#test aaa group ISE236 odbcuser1 odbcpass legacy
Attempting authentication test to server-group ISE236 using radius
User was successfully authenticated.
```

AuthorizationPolicyMatchedRule	Group1Access
CPMSessionID	0a3027eci0HeVTM3/bn5vLXkWMcJ0em5rzUDaOSnbMmAvL7jcfY
ISEPolicySetName	TestAAA
AllowedProtocolMatchedRule	Default
IdentitySelectionMatchedRule	Default
Network Device Profile	Cisco
Location	Location#All Locations
Device Type	Device Type#All Device Types
ExternalGroups	ODBCGroup1
ExternalGroups	ODBCGroup2
RADIUS Username	odbcuser1

Passaggio 5. Configurazione del recupero degli attributi

1. Per semplificare questo esempio, viene utilizzata una tabella semplice per gli attributi:

```
CREATE TABLE [dbo].[User_Attributes](
[user_id] [int] NOT NULL,
[Attribute_Name] [varchar](max) NOT NULL,
[Attribute_Value] [varchar](max) NOT NULL
) ON [PRIMARY]
```

GO

ALTER TABLE [dbo].[User_Attributes] WITH CHECK ADD CONSTRAINT [FK_User_Attributes_ISE_Users] FOREIGN KEY([user_id]) REFERENCES [dbo].[ISE_Users] ([user_id]) ON UPDATE CASCADE ON DELETE CASCADE GO

2. Creare un attributo per uno degli utenti:

INSERT [dbo].[User_Attributes] ([user_id], [Attribute_Name], [Attribute_Value]) VALUES (2, N'AwsomenessLevel', N'100') INSERT [dbo].[User_Attributes] ([user_id], [Attribute_Name], [Attribute_Value]) VALUES (2, N'UserType', N'admin')

3. Creare una stored procedure:

CREATE PROCEDURE [dbo].[ISEAttrsRetrieval] @username varchar(255), @result int output AS BEGIN if exists (select * from ISE_Users where username = @username) begin

```
set @result = 0
select attribute_name , attribute_value from user_attributes where USER_ID in(SELECT USER_ID
from ISE_Users where username = @username)
end
else
set @result = 1
END
```

4. Mappare agli attributi Fetch:

ODBC List > ISE_ODBC

ODBC Identity Source

General	Connection	Stored Procedures	Attributes	Groups
	Stored procedure type	Returns recordset	•	
Plain text p	assword authentication	ISEAuthUserPlainReturnsRec	cordset	\oplus
Plair	text password fetching	ISEFetchPasswordReturnsRe	cordset	\oplus
Check user	name or machine exists	ISEUserLookupReturnsRecor	rdset	\oplus
	Fetch groups	ISEGroupsRetrieval	<i>i</i>	\oplus
	Fetch attributes	ISEAttrsRetrieval	i	\oplus
Search fo	r MAC Address in format	xx-xx-xx-xx-xx	• (i)	

5. Recuperare gli attributi:

Select Attributes from ODBC								
Sample User or Machine	odbcuser2		(i) Retrieve Attributes					
Name	Туре 🔺	Default Value	Name in ISE					
AwsomenessLevel	STRING	100	AwsomenessLevel					
UserType	STRING	admin	UserType					



6. Regolare le regole ISE:

	Status	Group1Access	if	Conditions (id ISE_ODBC:E ODBCGroup	dentity grou xternalGrou 1	ps and other conditions ups EQUALS) then	Permissions PermitAcces	s			Edit 🕶
		AwesomeUser		ISE_ODBC:A	wsomenes	Level EQUALS 100		PermitAcces	s			Edit 🕶
		Default	if no	matches, the	en Deny	Access						Edit 🔻
C Re	fresh	Reset Repeat Counts								<u> </u>		Ţ Filter ▼
	Time		Status	Details	Repeat	Identity	Endpoint	ID	Endpoint Pr	Authenticat	Authorization Policy	Authorizatio
×			\$			Identity	Endpoint	ID	Endpoint Profi	Authentication	Authorization Policy	Authorization
	Jun 08, 2	016 12:21:45.596 PM	~	0		odbcuser2				TestAAA >>	TestAAA >> AwesomeUser	PermitAccess

Risoluzione dei problemi

Se la connessione non riesce, controllare il registro eventi di Windows. Su ISE usare il comando **show logging application prrt-management.log tail** durante il tentativo di connessione.

Esempio di modalità di autenticazione non valida:

```
bise236/admin# sh logg app prrt-management.log tail
2016-06-08 09:03:59,822 WARN [admin-http-pool177][]
cisco.cpm.odbcidstore.impl.MSSQLServerDbAccess -: bastien::- Connection to ODBC DB failed.
Exception: com.microsoft.sqlserver.jdbc.S
QLServerException: Login failed for user 'babaland\administrator'. ClientConnectionId:c74ade15-
4f34-415a-9a94-4c54c58c0fc3
com.microsoft.sqlserver.jdbc.SQLServerException: Login failed for user 'babaland\administrator'.
ClientConnectionId:c74ade15-4f34-415a-9a94-4c54c58c0fc3
at
com.microsoft.sqlserver.jdbc.SQLServerException.makeFromDatabaseError(SQLServerException.java:21
6)
at com.microsoft.sqlserver.jdbc.TDSTokenHandler.onEOF(tdsparser.java:254)
at com.microsoft.sqlserver.jdbc.TDSParser.parse(tdsparser.java:84)
at com.microsoft.sqlserver.jdbc.SQLServerConnection.sendLogon(SQLServerConnection.java:2908)
at com.microsoft.sqlserver.jdbc.SQLServerConnection.logon(SQLServerConnection.java:2234)
at com.microsoft.sqlserver.jdbc.SQLServerConnection.access$000(SQLServerConnection.java:41)
at
com.microsoft.sqlserver.jdbc.SQLServerConnection$LogonCommand.doExecute(SQLServerConnection.java
:2220)
at com.microsoft.sqlserver.jdbc.TDSCommand.execute(IOBuffer.java:5696)
at
com.microsoft.sqlserver.jdbc.SQLServerConnection.executeCommand(SQLServerConnection.java:1715)
at com.microsoft.sqlserver.jdbc.SQLServerConnection.connectHelper(SQLServerConnection.java:1326)
```

🛃 Event Viewer						
File Action View Help						
🗢 🔿 📶 📘 🗊						
Event Viewer (Local)	Application Number o	fevents: 29,048 (!) New events available				
Custom Views	Louis	Date and Time	Saurea	Event ID	Task Catagory	
Windows Logs		6/9/2016 11:08:07 AM	MSCOL SERVER	22000	Fask Category	
Application	Information	6/8/2016 11:08:07 AM	MSSOLSERVER	19456	Logon	
Seturn	Information	6/8/2016 11:03:39 AM	MSSQLSERVER MSSQLSERVER	18456	Logon	
System	Information	6/8/2016 11:02:23 AM	MSSOLSERVER	5084	Server	
Forwarded Events	(i) Information	6/8/2016 11:02:23 AM	MSSOLSERVER	5084	Server	
Applications and Services Logs	(1) Information	6/8/2016 11:02:23 AM	MSSOL SERVER	5084	Server	
Active Directory Web Services	(i) Information	6/8/2016 11:02:23 AM	MSSOLSERVER	5084	Server	
E DFS Replication	(i) Information	6/8/2016 11:02:23 AM	MSSOLSERVER	5084	Server	
E Directory Service	(i) Information	6/8/2016 11:02:23 AM	MSSOLSERVER	5084	Server	
DNS Server	(i) Information	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
Hardware Events	(i) Information	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
Internet Explorer	(1) Information	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
Key Management Service	(i) Information	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
Microsoft Windows	 Information 	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
E API-Tracing	 Information 	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
	 Information 	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
Application Server-Applications	 Information 	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
Application-Experience	 Information 	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
🕀 🧰 AppLocker	 Information 	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
🕀 🛄 Audio	 Information 	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
Authentication User Interface	 Information 	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
Bits-Client	(i) Information	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
	Information	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	
CertificateServicesClient-Creden	1 Information	6/8/2016 11:02:23 AM	MSSQLSERVER	5084	Server	-
	(i) Information	6/8/2016 11:02:23 AM	MSSOLSEDVED	5084	Server	
	Event 18456, MSSQLSEF	RVER				×
	General D					
	General Details					1
🕀 🧮 DeviceSync						
🗉 🧮 Dhcp-Client	Login failed for use	r 'babaland\administrator'. Reason: An attem	pt to login using SQL authentication fa	ailed. Server is configured for	Windows	
🗉 🧮 Dhcp-Nap-Enforcement-Client	authentication only	/. [CLIENT: 10.48.39.236]				
IF I DHCP-Server	,					

Esempio di autorizzazioni mancanti per aprire il database:

```
2016-06-08 09:13:57,842 WARN [admin-http-pool159][]
cisco.cpm.odbcidstore.impl.MSSQLServerDbAccess -:bastien::- Connection to ODBC DB failed.
Exception: com.microsoft.sqlserver.jdbc.SQLServerException: Cannot open database "ISEDB"
requested by the login. The login failed. ClientConnectionId:299c2956-6946-4282-b3ca-
2aa86642a821
com.microsoft.sqlserver.jdbc.SQLServerException: Cannot open database "ISEDB" requested by the
login. The login failed. ClientConnectionId:299c2956-6946-4282-b3ca-2aa86642a821
at
com.microsoft.sqlserver.jdbc.SQLServerException.makeFromDatabaseError(SQLServerException.java:21
6)
at com.microsoft.sqlserver.jdbc.TDSTokenHandler.onEOF(tdsparser.java:254)
at com.microsoft.sqlserver.jdbc.SQLServerConnection.sendLogon(SQLServerConnection.java:2908)
at com.microsoft.sqlserver.jdbc.SQLServerConnection.sendLogon(SQLServerConnection.java:2908)
at com.microsoft.sqlserver.jdbc.SQLServerConnection.logon(SQLServerConnection.java:2234)
```

at com.microsoft.sqlserver.jdbc.SQLServerConnection.access\$000(SQLServerConnection.java:41)

🛃 Event Viewer					
File Action View Help					
🗢 🔿 🖄 🖬 🔽 🕞					
🛃 Event Viewer (Local)	Application Number of	events: 29,048 (!) New events available			Ac
🕀 📑 Custom Views					
🖃 🚉 Windows Logs	Level	Date and Time	Source	Event ID Task Category	
Application	Information	6/8/2016 11:13:56 AM	MSSQLSERVER	18456 Logon	
E Security	Information	6/8/2016 11:13:21 AM	MSSQLSERVER	3408 Server	
Setup	Information	6/8/2016 11:13:21 AM	MSSQLSERVER	9688 Server	
System	1 Information	6/8/2016 11:13:21 AM	MSSQLSERVER	9666 Server	
Forwarded Events	Information	6/8/2016 11:13:21 AM	MSSQLSERVER	9666 Server	
Applications and Services Logs	(1) Information	6/8/2016 11:13:21 AM	MSSQLSERVER	17137 Server	
Active Directory Web Services	(1) Information	6/8/2016 11:13:21 AM	MSSQLSERVER	17126 Server	The second secon
Disastery Service	(i) Information	6/8/2016 11:13:21 AM	MSSQLSERVER	26059 Server	
Directory Service	(i) Information	6/8/2016 11:13:21 AM	MSSQLSERVER	26059 Server	- M
Division Server	(i) Information	6/8/2016 11:13:21 AM	MSSQLSERVER	17201 Server	
Tataget Events	 Information 	6/8/2016 11:13:21 AM	MSSQLSERVER.	26022 Server	
Key Management Service	 Information 	6/8/2016 11:13:21 AM	MSSQLSERVER	26022 Server	
	 Information 	6/8/2016 11:13:21 AM	MSSQLSERVER	26048 Server	
Windows	 Information 	6/8/2016 11:13:21 AM	MSSQLSERVER	26048 Server	
API-Tracing	 Information 	6/8/2016 11:13:21 AM	MSSQLSERVER	26022 Server	
	 Information 	6/8/2016 11:13:21 AM	MSSQLSERVER	26022 Server	
Application Server-Applications	 Information 	6/8/2016 11:13:21 AM	MSSQLSERVER	17136 Server	?
Application-Experience	 Information 	6/8/2016 11:13:21 AM	MSSQLSERVER	26013 Server	
+ 🧰 AppLocker	 Information 	6/8/2016 11:13:21 AM	MSSQLSERVER	17137 Server	Ev
🕀 🚞 Audio	(i) Information	6/8/2016 11:13:21 AM	MSSQLSERVER	17137 Server	
🕀 🚞 Authentication User Interface	(i) Information	6/8/2016 11:13:21 AM	MSSQLSERVER	17663 Server	
🕀 🚞 Bits-Client	Information	6/8/2016 11:13:21 AM	MSSOLSERVER	17137 Server	2
🕀 🚞 CAPI2	(i) Information	6/8/2016 11:13:20 AM	MSSOLSERVER	958 Server	
🕀 🧮 CertificateServicesClient-Creden	(i) Information	6/8/2016 11:13:20 AM	MSSOLSERVER	17137 Server	
🕀 🧰 CertPolEng	Information	6/8/2016 11:13:20 AM	MSSOLSED//ED	19030 Server	–
🕀 🧰 CodeIntegrity	Event 18456 MSSOLSER	(ER			<u> </u>
🕀 🚞 CorruptedFileRecovery-Client		EN			<u> </u>
🕀 🧮 CorruptedFileRecovery-Server	General Details				
	(County				1
DeviceSync	Leavin failed for	ICEDRILLER' Research Failed to any stiller with	site and the second states of the second states and the second sta	20 2261	
🕀 🛄 Dhcp-Client	Login tailed for user	iscubuser . Reason: Failed to open the expli	city specified database. [CLIENT: 10.48	0.59.250]	
Dhcp-Nap-Enforcement-Client					
F DHCP-Server	,				

Per risolvere i problemi relativi alle operazioni del database, abilitare i componenti di log **odbc-id**store a livello DEBUG in Amministrazione > Sistema > Log > Configurazione log di debug.

I registri vengono inseriti nel file port-management.log.

Esempio di odbuser2:

```
2016-06-08 12:26:56,009 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC
ID Store Operation: Authenticate Plain Text Password. Username=odbcuser2,
SessionID=0a3027ecLA_rJLKsS5QAzuRvluGWzdYe67rIgcG3MMQcpE8yKnw
2016-06-08 12:26:56,012 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write
customer log message: 24852
2016-06-08 12:26:56,012 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - get connection
2016-06-08 12:26:56,012 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - use existing connection
2016-06-08 12:26:56,013 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -
:::- OdbcConnectionPool - connections in use: 1
2016-06-08 12:26:56,013 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Authenticate plain text password
2016-06-08 12:26:56,013 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Prepare stored procedure call, procname=ISEAuthUserPlainReturnsRecordset
2016-06-08 12:26:56,013 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Using recordset to obtain stored procedure result values
2016-06-08 12:26:56,013 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write
customer log message: 24855
2016-06-08 12:26:56,013 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Text: {call ISEAuthUserPlainReturnsRecordset(?, ?)}
2016-06-08 12:26:56,013 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Setup stored procedure input parameters, username=odbcuser2, password=***
2016-06-08 12:26:56,014 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
Execute stored procedure call
2016-06-08 12:26:56,017 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-
```

Process stored procedure results 2016-06-08 12:26:56,017 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Obtain stored procedure results from recordset 2016-06-08 12:26:56,017 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Received result recordset, number of columns=4 2016-06-08 12:26:56,017 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Results successfully parsed from recordset 2016-06-08 12:26:56,018 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::- OdbcConnectionPool - release connection 2016-06-08 12:26:56,018 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::- OdbcConnectionPool - connections in use: 0 2016-06-08 12:26:56,018 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- Call to ODBC DB succeeded 2016-06-08 12:26:56,018 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.OdbcAuthResult -:::-Authentication result: code=0, Conection succeeded=false, odbcDbErrorString=No Error, odbcStoredProcedureCustomerErrorString=null, accountInfo=This is a very good user, give him all access, group=11 2016-06-08 12:26:56,019 DEBUG [Thread-4051][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write customer log message: 24853 2016-06-08 12:26:56,026 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC ID Store Operation: Get all user groups. Username=odbcuser2, SessionID=0a3027ecLA_rJLKsS5QAzuRvluGWzdYe67rIgcG3MMQcpE8yKnw 2016-06-08 12:26:56,029 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC ID Store Operation: Fetch user groups. Username=odbcuser2, SessionID=0a3027ecLA_rJLKsS5QAzuRvluGWzdYe67rIgcG3MMQcpE8yKnw 2016-06-08 12:26:56,029 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write customer log message: 24869 2016-06-08 12:26:56,029 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::-OdbcConnectionPool - get connection 2016-06-08 12:26:56,029 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::-OdbcConnectionPool - use existing connection 2016-06-08 12:26:56,029 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::-OdbcConnectionPool - connections in use: 1 2016-06-08 12:26:56,029 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Fetch user groups 2016-06-08 12:26:56,029 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Prepare stored procedure call, procname=ISEGroupsRetrieval 2016-06-08 12:26:56,029 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Text: {call ISEGroupsRetrieval(?,?)} 2016-06-08 12:26:56,029 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Setup stored procedure input parameters, username=odbcuser2 2016-06-08 12:26:56,029 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Execute stored procedure call 2016-06-08 12:26:56,031 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Process stored procedure results 2016-06-08 12:26:56,032 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Received epmty result set, no groups/attributes data can be obtained 2016-06-08 12:26:56,032 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Result code indicates success 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::-OdbcConnectionPool - release connection 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::-OdbcConnectionPool - connections in use: 0 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- Call to ODBC DB succeeded 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write customer log message: 24870 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC ID Store Operation: Get all user groups. Got groups... 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC ID Store Operation: Get all user groups. Username=odbcuser2, ExternalGroups=[] 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC ID Store Operation: Fetch user attributes. Username=odbcuser2, SessionID=0a3027ecLA_rJLKsS5QAzuRvluGWzdYe67rIgcG3MMQcpE8yKnw

2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write customer log message: 24872 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::-OdbcConnectionPool - get connection 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::-OdbcConnectionPool - use existing connection 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::-OdbcConnectionPool - connections in use: 1 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Fetch user attributes 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Prepare stored procedure call, procname=ISEAttrsRetrieval 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Text: {call ISEAttrsRetrieval(?,?)} 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Setup stored procedure input parameters, username=odbcuser2 2016-06-08 12:26:56,033 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Execute stored procedure call 2016-06-08 12:26:56,035 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Process stored procedure results 2016-06-08 12:26:56,035 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Received result recordset, total number of columns=2 2016-06-08 12:26:56,035 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-According to column number expect multiple rows (vertical attributes/groups retured result) 2016-06-08 12:26:56,035 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Fetched data: AwsomenessLevel=100 2016-06-08 12:26:56,035 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Fetched data: UserType=admin 2016-06-08 12:26:56,035 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Results successfully parsed from recordset 2016-06-08 12:26:56,035 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnection -:::-Result code indicates success 2016-06-08 12:26:56,036 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::-OdbcConnectionPool - release connection 2016-06-08 12:26:56,036 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcConnectionPool -:::-OdbcConnectionPool - connections in use: 0 2016-06-08 12:26:56,036 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- Call to ODBC DB succeeded 2016-06-08 12:26:56,036 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.CustomerLog -:::- Write customer log message: 24873 2016-06-08 12:26:56,036 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC ID Store Operation: Get all user attrs. Username=odbcuser2, Setting ISE_ODBC.AwsomenessLevel to 100 2016-06-08 12:26:56,036 DEBUG [Thread-84][] cisco.cpm.odbcidstore.impl.OdbcIdStore -:::- ODBC ID Store Operation: Get all user attrs. Username=odbcuser2, Setting ISE_ODBC.UserType to admin