

Configure ISE 3.4 Data Connect Integration with Excel on Windows

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Introduction

This document describes how to integrate Cisco ISE 3.4 with MS Excel over Data Connect to retrieve reporting data from ISE database directly.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

1. Cisco Identity Services Engine (ISE) 3.4
2. Basic knowledge about Oracle queries
3. Microsoft Excel

Components Used

The information in this document is based on these software and hardware versions:

- Cisco ISE Version: 3.4
- MS Excel - Microsoft office 365

- Windows 11 - 21H2
- ODAC Version -23.7.0.25.01

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

ISE deployment used in this setup:

<input type="checkbox"/>	Hostname	Personas	Role(s)
<input type="checkbox"/>	ise341-PAN	Administration, Monitoring	PRI(A), PRI(M)
<input type="checkbox"/>	ise341-SAN	Administration, Monitoring	SEC(A), SEC(M)
<input type="checkbox"/>	ise341-psn1	Policy Service, pxGrid	
<input type="checkbox"/>	ise341-psn2	Policy Service, pxGrid	

ISE Deployment

Background Information

Data Connect is a feature that exposes views from both cepm and mnt ISE db schema. Only read-only access to the data is provided. The Data Connect feature is supported from Cisco ISE release 3.2. You can extract any configuration or operational data about your network depending on your business requirement and use it to generate insightful reports and dashboards.

Configure

Step 1: Configure ISE Data Connect Settings

Enable Data Connect

On ISE, navigate to **Administration > System > Settings > Data Connect > Settings** and toggle the button next to **Data Connect**. Enter the password. Then click **Save**.

Data Connect Overview

This feature provides read-only ODBC access to the ISE database. You can extract any configuration or operational data about your network depending on your business requirement and use it to generate insightful reports and dashboards.

Settings

To allow connection to Cisco ISE Oracle Database, enable the Data Connect toggle button and set a new password.

☒ Data Connect

User Name: dataconnect

Hostname/IP: ise341-SAN.poongarg.local

Port: 2484

Service Name: cpm10

Password Expires on: 16 June 2025 at 09:55 UTC

Change Password

Password: *****

Confirm Password: *****

Password Expiry: 90

[View Password Criteria](#)

[Reset](#) [Save](#)

Data Connect feature enabled on Secondary Monitoring node

Enable Data Connect Feature on ISE

Make a note of Data Connect settings, which include User Name, Hostname, Port, and Service Name. Data Connect by default is enabled on Secondary MNT node in a distributed deployment, more information about failover scenarios can be found in the Administrator Guide.

Export Admin Certificate of the Secondary MNT node (Node as per Data Connect Settings)

ISE certificate needs to be trusted by the clients querying ISE over Data Connect. In order to export the certificate, navigate to **Administration > System > Certificates > Certificate Management > System Certificates** > Select the node > Select the Certificate with **Admin usage**. Click **Export**.

System Certificates

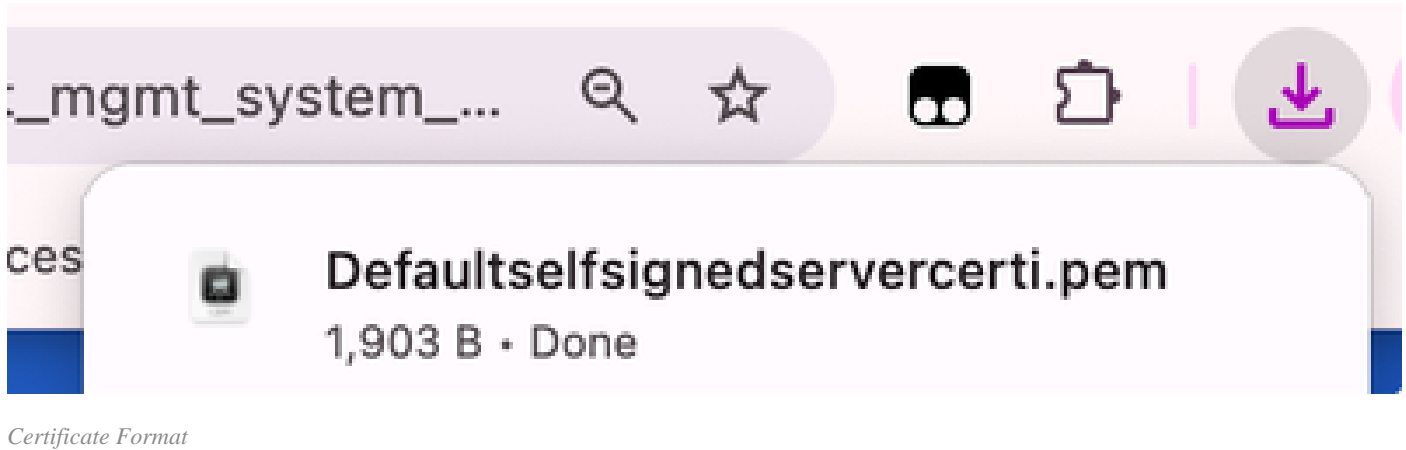
For disaster recovery it is recommended to export certificate and private key pairs of all system certificates.

[Edit](#) [Generate Self Signed Certificate](#) [Import](#) [Export](#) [Delete](#) [View](#)

Friendly Name	Used By	Portal group tag	Issued To	Issued By	Valid From	Expiration Date	Status
ise341-PAN							
ise341-SAN							
Default self-signed saml serve	SAML		SAML_ise341-PAN.poongarg.local	SAML_ise341-PAN.poongarg.local	Mon, 17 Mar 2025	Sat, 16 Mar 2030	Active
Default self-signed server certificate	EAP Authentication, Default Portal Certificate		ise341-SAN.poongarg.local	ise341-SAN.poongarg.local	Mon, 17 Mar 2025	Wed, 17 Mar 2027	Active

Export the Admin Certificate

Certificate is exported in PEM format.



Step 2: Configure Windows Machine

Install ODBC Driver and Oracle 64-bit Client from the [Oracle Website](#)

1. Download the appropriate Instant Client packages for your platform. All installations require the Basic or Basic Light package. Here we are using version 23.7.0.25.01
2. Extract and move the files to the default location for the Oracle client as C:\instantclient_23_7, but if you are changing the location then make sure the location is added to system variable.
3. Add this directory path to the user and System PATH environment variable. In the Windows **Control Panel**, navigate to **Environment variable**.
4. Download the ODBC package for the same version.
5. Install the ODBC driver: Extract the ZIP file and copy its contents to the directory where you had installed the Instant Client (Example: C:\instantclient_23_7)
6. Run the odbc_install.exe file in the instant client directory. If you get a security warning, click More and allow it to run anyway.

Install JDeveloper Studio for Windows 64-bit from the [Oracle Website](#)

In this Lab, we have used jdev_suite_121300_win64.exe file.

Configure ODAC Files

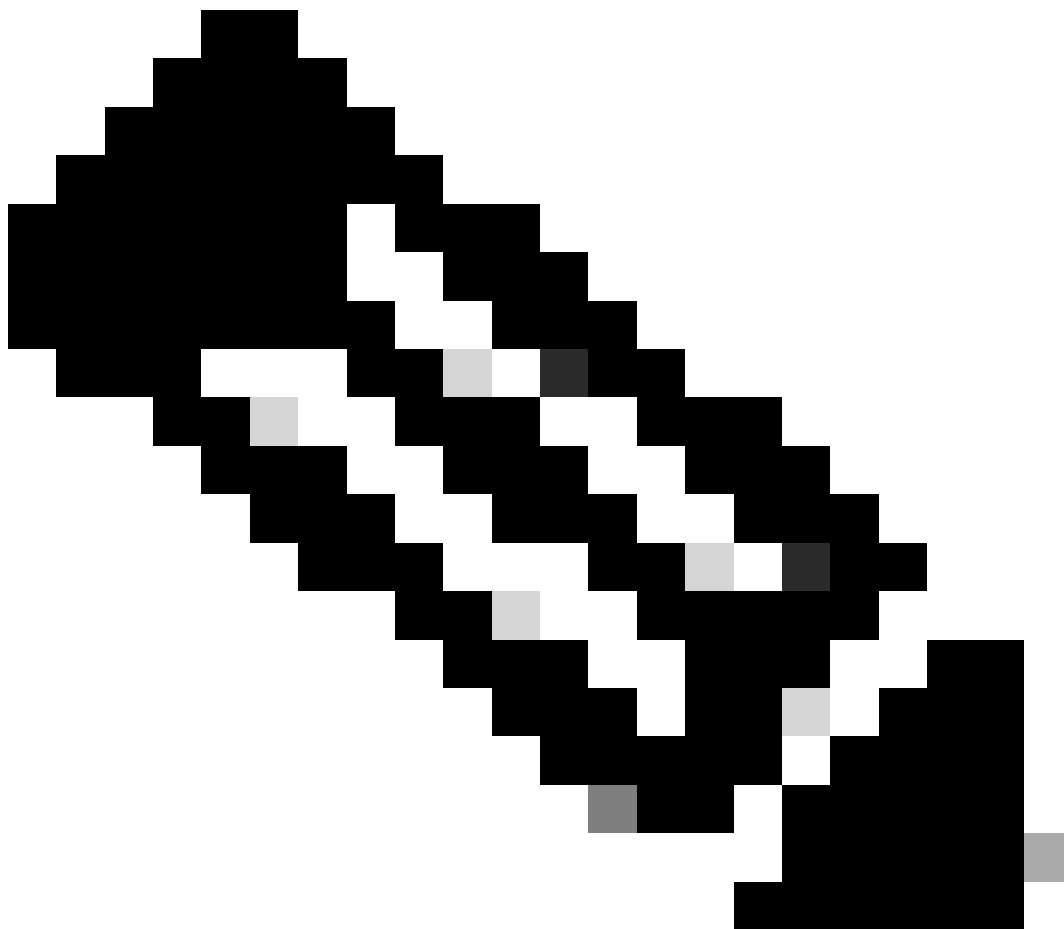
1. In your Windows Control Panel, navigate to Environment Variables.
2. Add a new system variable for storing ODAC files.
3. The variable name to be used is **TNS_ADMIN** and the variable value is the path of the storage files.
4. Add the content as shown to **sqlnet.ora** located at your **TNS_ADMIN** variable (Lab TNS_ADMIN path: C:\instantclient_23_7\network\admin).

```
#SQLNET.AUTHENTICATION_SERVICES= (NTS)
NAMES.DIRECTORY_PATH= (TNSNAMES, EZCONNECT)

WALLET_LOCATION =
  (SOURCE =
    (METHOD = FILE)
    (METHOD_DATA = (DIRECTORY = %path to wallet with the dataconnect certificate which we
  )
SSL_CLIENT_AUTHENTICATION=FALSE
```

5. Add the content as shown to **tnsnames.ora** located at your TNS_ADMIN variable Lab TNS_ADMIN path: C:\instantclient_23_7\network\admin). Replace the host IP with the Data Connect node IP address.

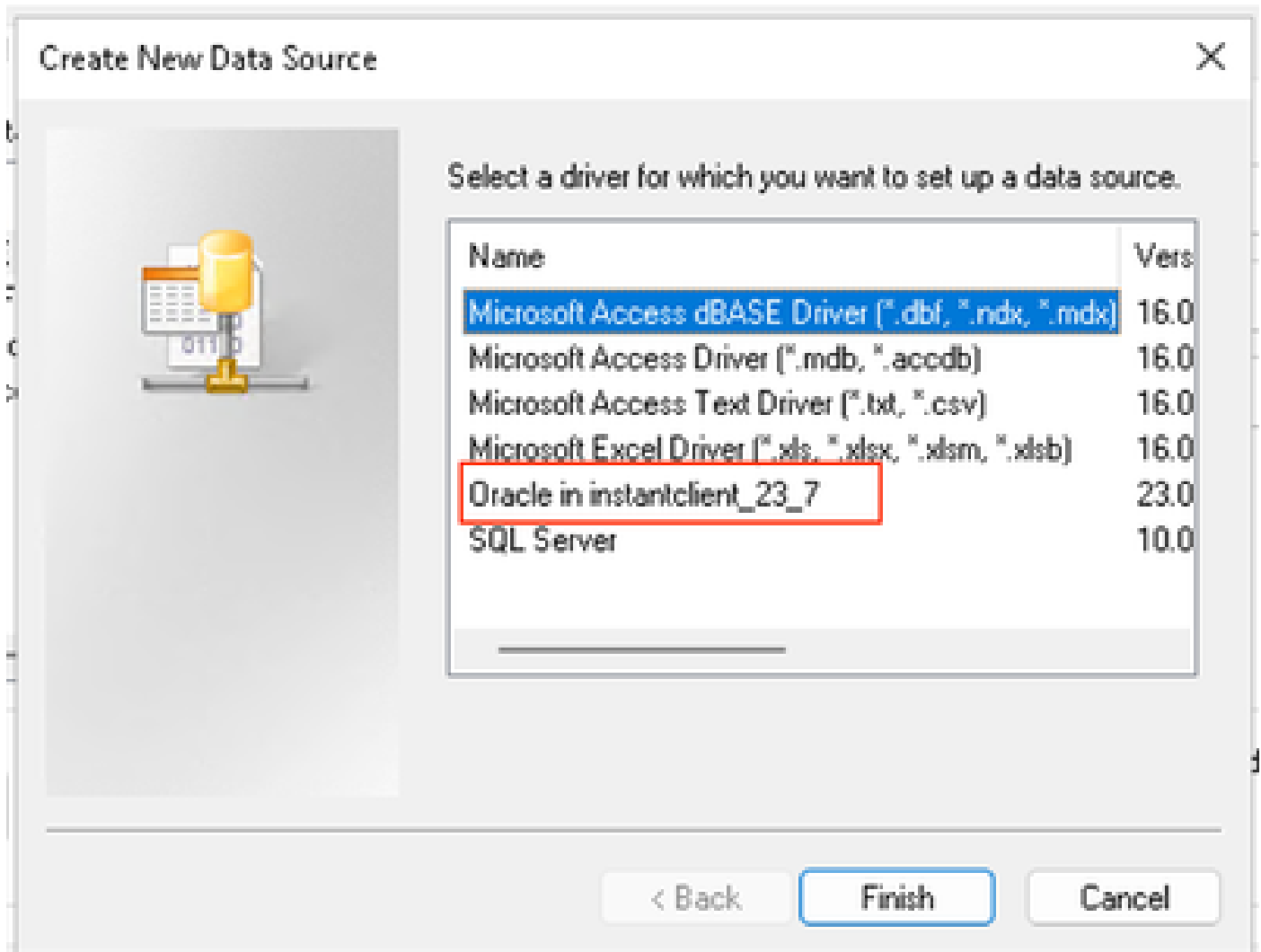
```
TestDB =  
  (DESCRIPTION =  
    (ADDRESS = (PROTOCOL = TCPS)(HOST = host ip)(PORT = 2484))  
    (CONNECT_DATA =  
      (SERVER = DEDICATED)  
      (SERVICE_NAME = cpm10)  
    )  
  )  
)
```



Note: Please take care of indentation of configuration of these files while modifying. For more details, refer to [Oracle Website](#)

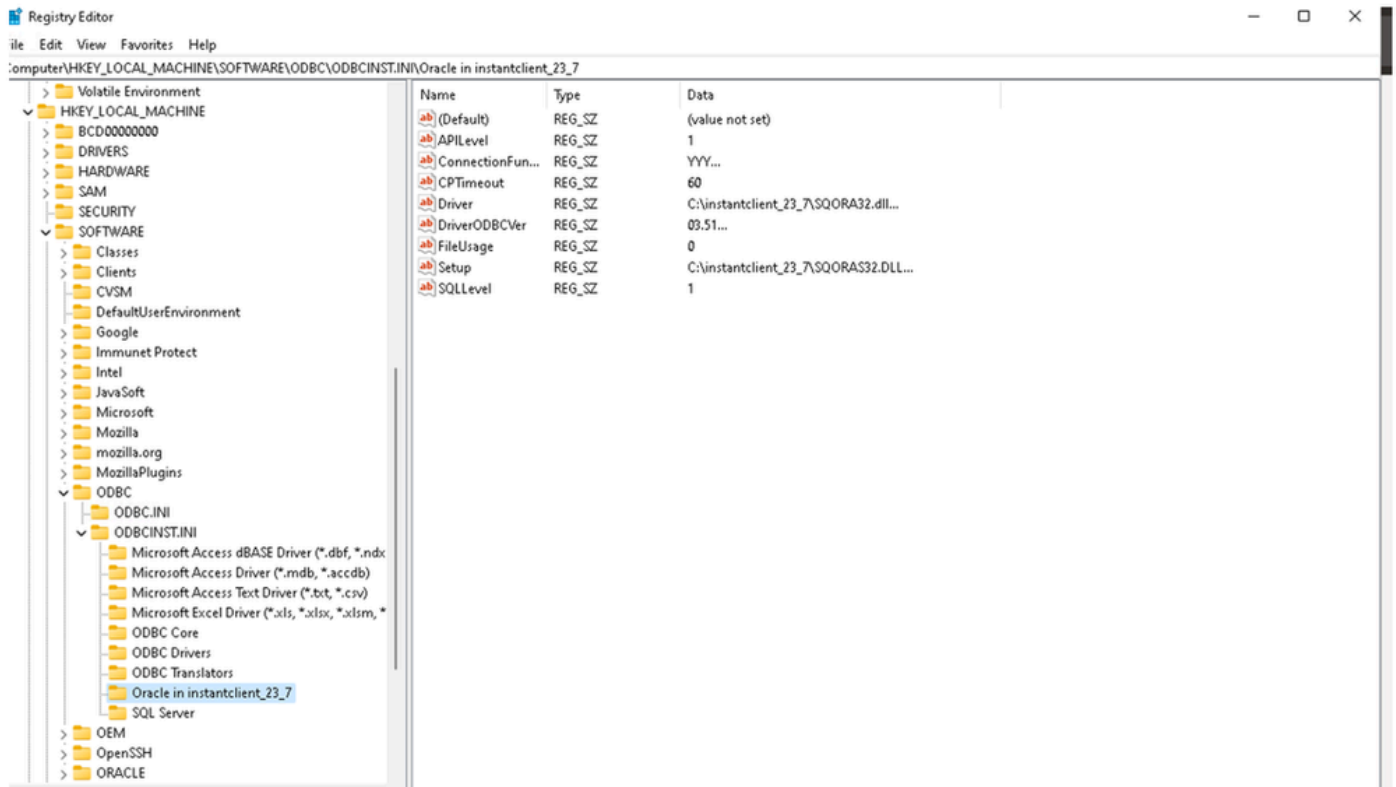
Add New Data Source for ODBC

1. The Microsoft ODBC Data Source Administrator manages database drivers and data sources. This application is located in the Windows Control Panel under Administrative Tools. Open **ODBC data sources 64 bit application** from the Windows start bar or search bar. Or you can directly open 64-bit application located under path “C:\windows\system32\odbcad32.exe”.
2. Select either User DSN or System DSN tab, Click **Add**. Select the newly added oracle driver **Oracle in instantclient_23_7** in the **Create New Data Source window** that opens up.



Add New Data Source

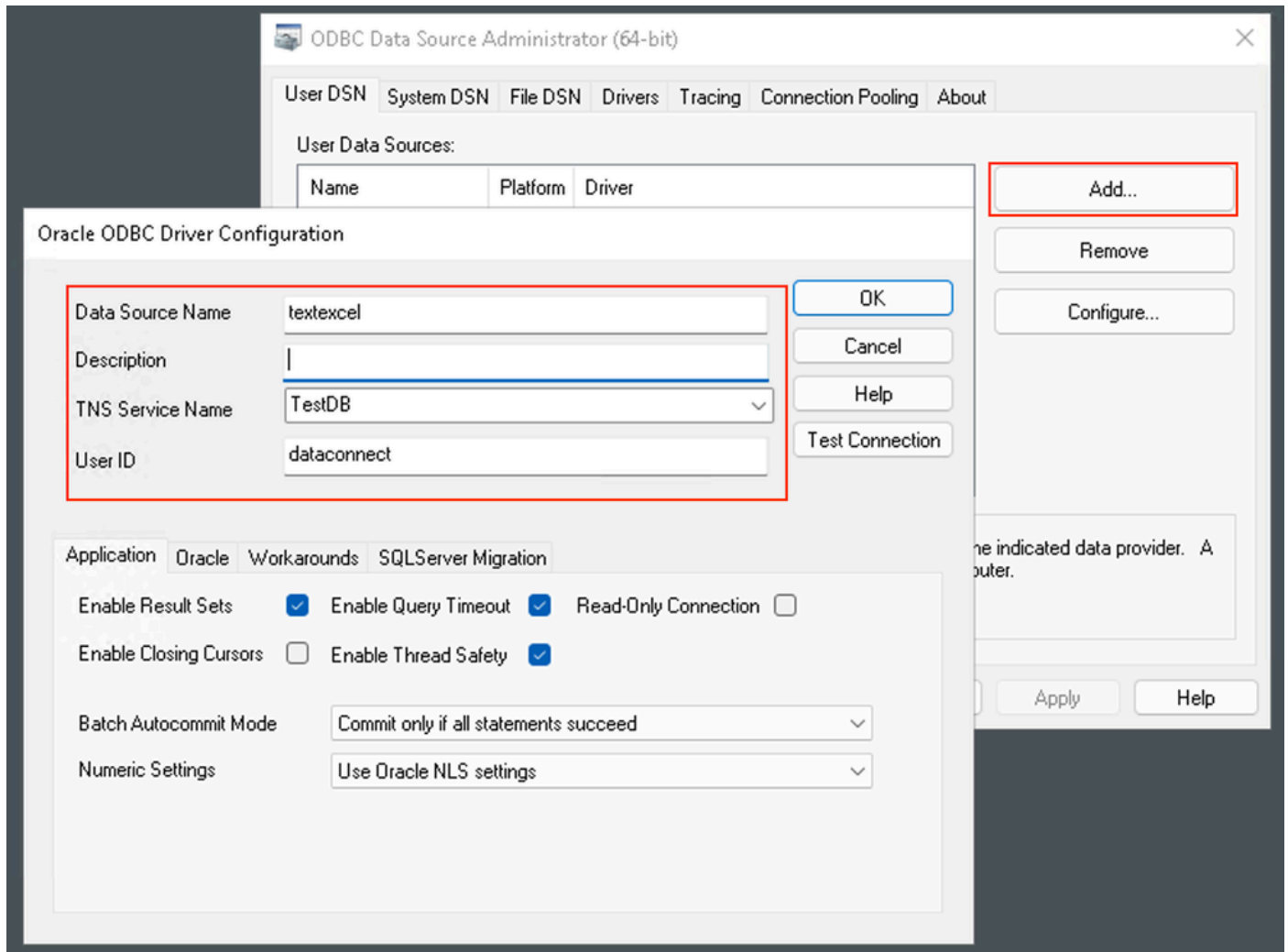
If you do not see this driver in ODBC window, check the Windows registry to confirm if it is showing there or not. Here is the path in the Windows registry:



Registry Setting

If Registry do not show the drivers, try restarting the windows; otherwise, check the ODBC driver installation steps:

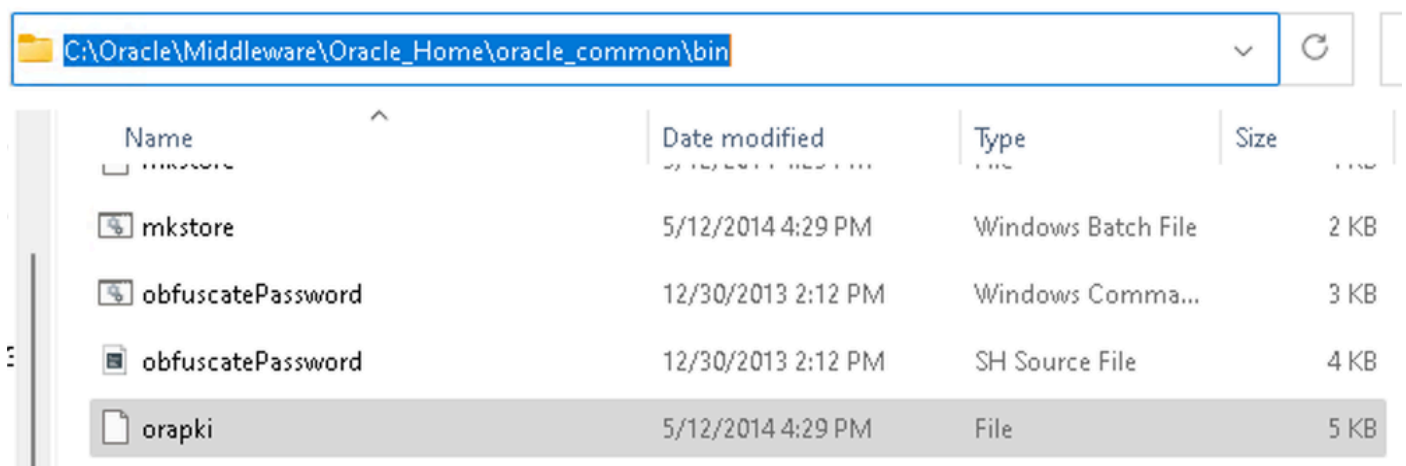
1. Enter a Data Source Name. For example, **textexcel**.
2. Enter the TNS Service name as given in **tnsnames.ora**. Example; TestDB is used in this document.
3. Enter **dataconnect** as the User ID which is the default username to connect to ISE DB.
4. Click **OK**.



Oracle ODBC Driver Configuration

Create Wallet with Orapki Command Line Utility

After successful installation of JDeveloper, orapki become available at **C:\Oracle\Middleware\Oracle_Home\oracle_common\bin**.



Orapki Path

1. Add the path for orapki to the Windows path variable (optional).
2. We have manually created a directory name **Wallet** as Orapki wallet in the path C:\Users\cisco\Documents\Wallet, before running the orapki command.
3. Open power shell and run **orapki wallet create -wallet %path to wallet% -auto_login** to create the orapki wallet.
4. Enter a new trust store password when prompted for the same.

```
PS C:\Users\cisco> cd C:\Oracle\Middleware\Oracle_Home\oracle_common\bin
PS C:\Oracle\Middleware\Oracle_Home\oracle_common\bin> .\orapki wallet create -wallet C:\Users\cisco\Documents\Wallet
Oracle PKI Tool : Version 12.1.3.0.0
Copyright (c) 2004, 2014, Oracle and/or its affiliates. All rights reserved.

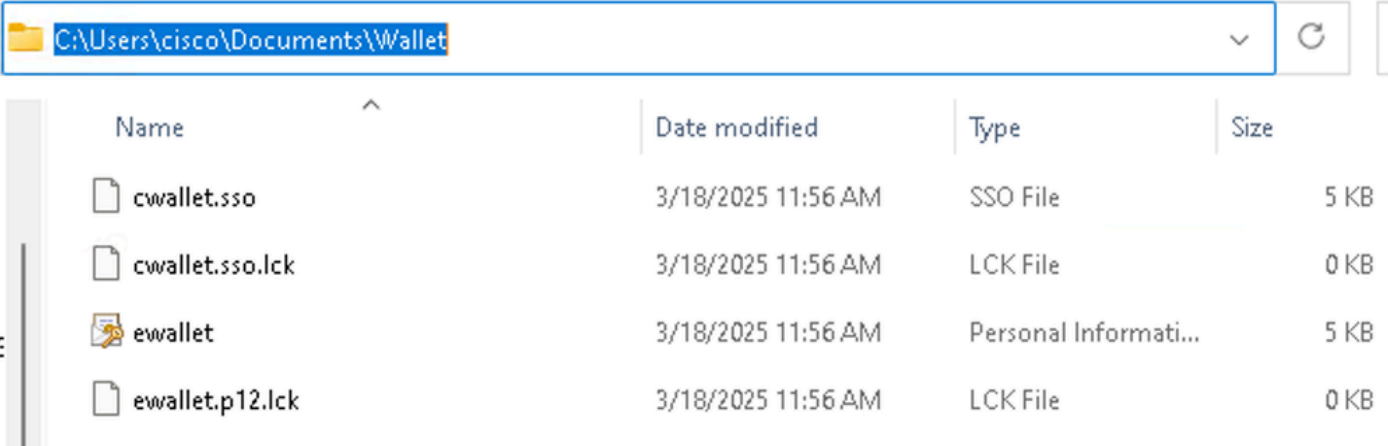
Enter password:
Enter password again:
PS C:\Oracle\Middleware\Oracle_Home\oracle_common\bin>
```

Import Admin Certificate of Data Connect Node to Orapki Wallet

1. Transfer the downloaded ISE certificate in Step 1 to local client and modify the cert name (optional) something easy to identify (In LAB, we have changed to secmoncert.pem) and add it to orapki client as per the snippet.
2. Run **orapki wallet add -wallet %Path to orapki wallet% -trusted_cert -cert %Path to certificate%** on PowerShell.
3. Enter a new trust store password when prompted for the same.

```
PS C:\Oracle\Middleware\Oracle_Home\oracle_common\bin> .\orapki wallet add -wallet C:\Users\cisco\Documents\Wallet -trusted_cert -cert C:\Users\cisco\Documents\Wallet\secmoncert.pem
Oracle PKI Tool : Version 12.1.3.0.0
Copyright (c) 2004, 2014, Oracle and/or its affiliates. All rights reserved.

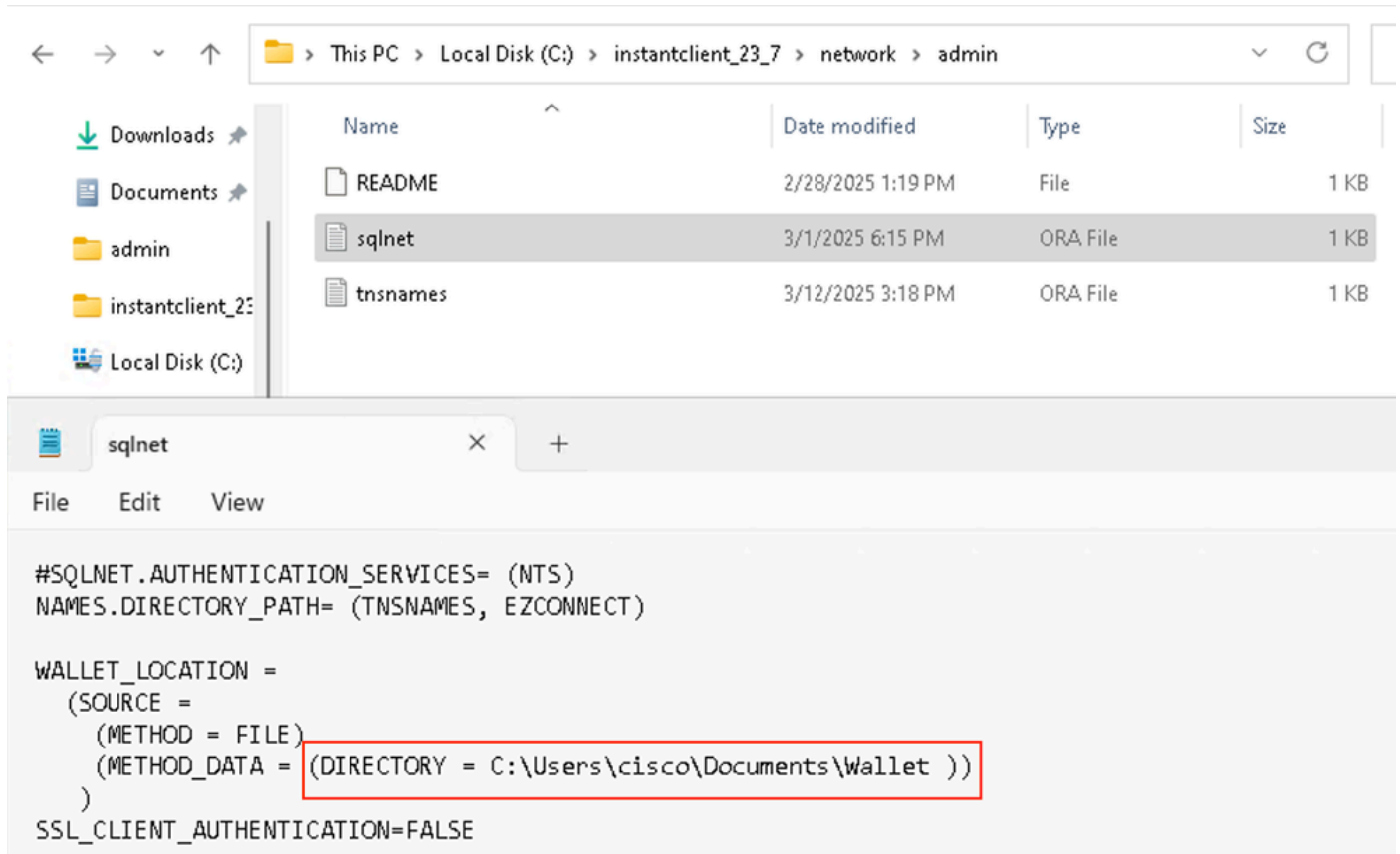
Cannot modify auto-login (sso) wallet
Enter wallet password:
PS C:\Oracle\Middleware\Oracle_Home\oracle_common\bin>
```



Name	Date modified	Type	Size
cwallet.sso	3/18/2025 11:56 AM	SSO File	5 KB
cwallet.sso.lck	3/18/2025 11:56 AM	LCK File	0 KB
ewallet	3/18/2025 11:56 AM	Personal Information...	5 KB
ewallet.p12.lck	3/18/2025 11:56 AM	LCK File	0 KB

Verify Files in Wallet Path

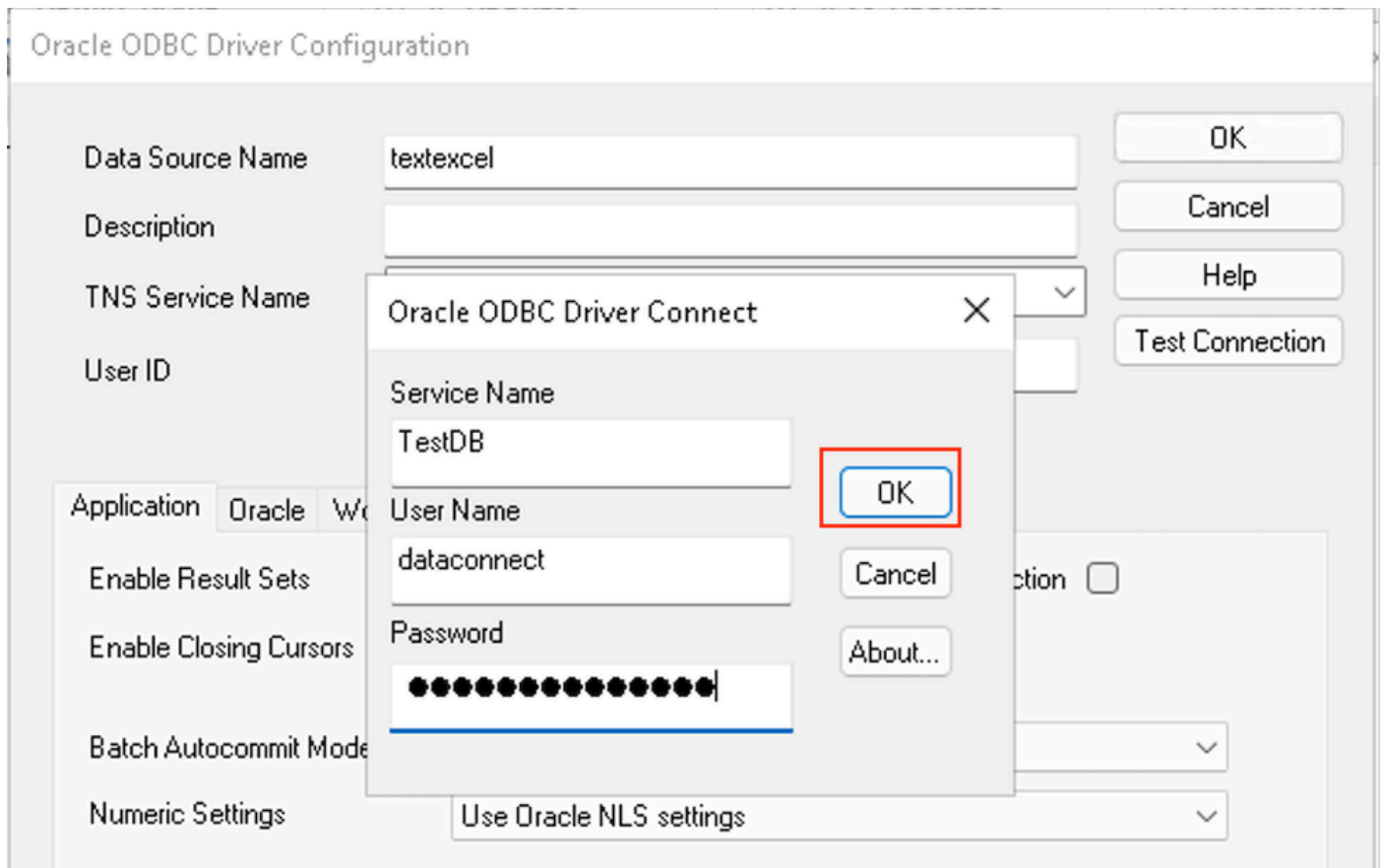
4. Add the wallet path to **sqlnet.ora** file.



Add the Wallet location in Sqlnet.ora File

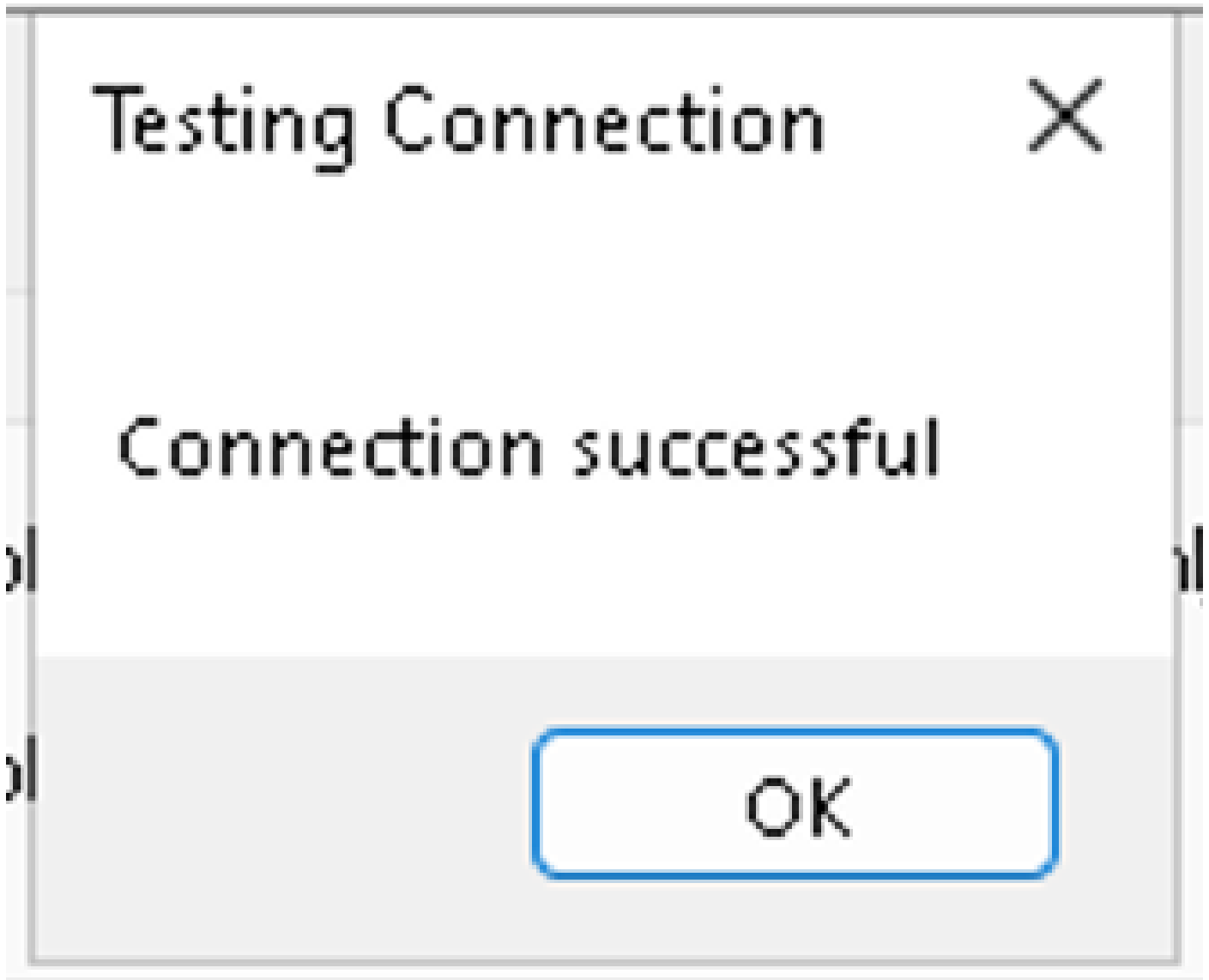
Test Oracle ODBC Driver Configuration

Navigate to **C:\windows\system32\odbcad32.exe** and select the newly created Data Source **testexcel**. Click **Configure**. Click **Test Connection**. Add the password and click **OK**.



Test ODBC Connection

The test connection is successful.



Successful Connection

Configure Windows MS Excel

1. Restart/Start **MS Excel**.
2. Navigate to the Data tab and click **Get data > From other Sources > From ODBC**.



AutoSave



Book1 - Excel

File

Home

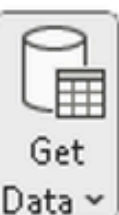
Insert

Page Layout

Formulas

Data

Review



From Text/CSV

From Picture

From Web

Recent Sources

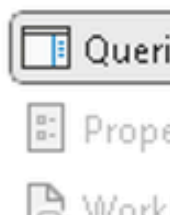
From Table/Range

Existing Connections



Refresh

All



Queries & Connections

Properties

Workbooks

From FileFrom DatabaseFrom AzureFrom Power PlatformFrom One ServicesFrom Other SourcesCombine Queries

Launch Power Query Editor...

Data Source Settings...

Query Options

From Table/RangeFrom WebFrom SharePoint ListFrom OData FeedFrom Hadoop File (HDFS)From Active DirectoryFrom Microsoft ExchangeFrom ODBC

as the user ID. Enter the password configured for the dataconnect user through openapi or UI when prompted. MS Excel now has direct access to the ISE. You can extract any configuration or operational data about your network depending on your business requirement and use it to generate insightful reports and dashboards. Select the required Database view and click **Load** or **Transform** data.

Navigator

Select multiple items

Display Options ▾

ODBC (dsn=textexcel) [9]

- CEPM
- CTXSYS
- DATACONNECT [70]**
 - AAA_DIAGNOSTICS_VIEW
 - ADAPTER_STATUS
 - ADAPTIVE_NETWORK_CONTROL
 - ADMIN_USERS
 - ADMINISTRATOR_LOGINS**
 - AUP_ACCEPTANCE_STATUS
 - AUTHORIZATION_PROFILES
 - CHANGE_CONFIGURATION_AUDIT
 - COA_EVENTS
 - ENDPOINT_IDENTITY_GROUPS
 - ENDPOINT_PURGE_VIEW
 - ENDPOINTS_DATA
 - EXT_ID_SRC_ACTIVE_DIRECTORY
 - EXT_ID_SRC_CERT_AUTH_PROFILE
 - EXT_ID_SRC_LDAP

ADMINISTRATOR_LOGINS

TIMESTAMP_TIMEZONE	TIMESTAMP	ISE_NODE	ADMIN_NAME	IP
3/17/2025 1:08:52 AM	3/17/2025 8:08:52 AM	ise341-SAN	admin	
3/17/2025 1:56:31 AM	3/17/2025 8:56:31 AM	ise341-SAN	admin	
3/17/2025 2:09:12 AM	3/17/2025 9:09:12 AM	ise341-SAN	admin	
3/17/2025 2:55:04 AM	3/17/2025 9:55:04 AM	ise341-psn2	admin	
3/17/2025 2:55:11 AM	3/17/2025 9:55:11 AM	ise341-SAN	admin	
3/17/2025 3:06:46 AM	3/17/2025 10:06:46 AM	ise341-psn1	admin	
3/17/2025 3:23:28 AM	3/17/2025 10:23:28 AM	ise341-PAN	admin	
3/17/2025 3:25:04 AM	3/17/2025 10:25:04 AM	ise341-psn2	admin	
3/17/2025 4:02:23 AM	3/17/2025 11:02:23 AM	ise341-psn2	admin	
3/17/2025 4:02:26 AM	3/17/2025 11:02:26 AM	ise341-PAN	admin	
3/17/2025 4:02:36 AM	3/17/2025 11:02:36 AM	ise341-SAN	admin	
3/17/2025 4:02:40 AM	3/17/2025 11:02:40 AM	ise341-psn1	admin	
3/17/2025 4:34:43 AM	3/17/2025 11:34:43 AM	ise341-SAN	admin	
3/17/2025 5:30:51 AM	3/17/2025 12:30:51 PM	ise341-psn2	admin	
3/16/2025 10:46:18 PM	3/17/2025 5:46:18 AM	ise341-SAN	admin	
3/16/2025 11:51:47 PM	3/17/2025 6:51:47 AM	ise341-SAN	admin	
3/18/2025 2:28:27 AM	3/18/2025 9:28:27 AM	ise341-SAN	admin	
3/18/2025 2:29:46 AM	3/18/2025 9:29:46 AM	ise341-PAN	admin	
3/18/2025 2:57:46 AM	3/18/2025 9:57:46 AM	ise341-SAN	admin	
3/18/2025 7:03:26 AM	3/18/2025 2:03:26 PM	ise341-PAN	admin	
3/18/2025 8:35:23 AM	3/18/2025 3:35:23 PM	ise341-PAN	admin	
3/17/2025 12:43:39 AM	3/17/2025 7:43:39 AM	ise341-SAN	admin	
3/17/2025 6:08:49 AM	3/17/2025 1:08:49 PM	ise341-SAN	admin	

Select Related Tables

Load ▾ Transform Data Cancel

MS Excel connected to ISE Read onlyDatabase

5. Select the **Transform Data** option, and customize the data report as per your need. In this example, we are leveraging the **RADIUS_AUTHENTICATION_SUMMARY** view to filter **Authentications by ISE Node**.

Filter the column **ISE_NODE** and select the specific PSN.

Here is the query:

```
= Table.SelectRows(RADIUS_AUTHENTICATION_SUMMARY_View, each ([ISE_NODE] = "ise341-psn1"))
```

Power Query Editor interface showing a table of authentication data. The table has columns: TIMESTAMP, ISE_NODE, USERNAME, CALLING_STATION_ID, IDENTITY_STORE, IDENTITY_GROUP, DEVICE_NAME, DEVICE_TYPE, and LOCATION. The data is filtered by ISE_NODE = "ise341-psn1".

	TIMESTAMP	ISE_NODE	USERNAME	CALLING_STATION_ID	IDENTITY_STORE	IDENTITY_GROUP	DEVICE_NAME	DEVICE_TYPE	LOCATION
1	3/18/2025 5:52:00 PM	ise341-psn1	15-1A-52-49-AA-7A	15-1A-52-49-AA-7A	null	null	10.48.26.61	All Device Types	All Location
2	3/18/2025 5:52:00 PM	ise341-psn1	FC-FF-AB-3A-D1-D7	FC-FF-AB-3A-D1-D7	null	null	10.48.26.61	All Device Types	All Location
3	3/18/2025 5:52:00 PM	ise341-psn1	51-B3-6E-3C-A4-C7	51-B3-6E-3C-A4-C7	null	null	10.48.26.61	All Device Types	All Location
4	3/18/2025 5:51:00 PM	ise341-psn1	4A-25-85-8E-F0-0C	4A-25-85-8E-F0-0C	null	null	10.48.26.61	All Device Types	All Location
5	3/18/2025 5:51:00 PM	ise341-psn1	50-43-AF-43-C3-47	50-43-AF-43-C3-47	null	null	10.48.26.61	All Device Types	All Location
6	3/18/2025 5:51:00 PM	ise341-psn1	52-5D-EA-76-46-37	52-5D-EA-76-46-37	null	null	10.48.26.61	All Device Types	All Location
7	3/18/2025 5:51:00 PM	ise341-psn1	AA-AC-FF-1F-48-80	AA-AC-FF-1F-48-80	null	null	10.48.26.61	All Device Types	All Location
8	3/18/2025 5:52:00 PM	ise341-psn1	74-88-A9-10-93-A9	74-88-A9-10-93-A9	null	null	10.48.26.61	All Device Types	All Location
9	3/18/2025 5:52:00 PM	ise341-psn1	27-DE-B1-6F-35-57	27-DE-B1-6F-35-57	null	null	10.48.26.61	All Device Types	All Location
10	3/18/2025 5:52:00 PM	ise341-psn1	52-0E-24-CE-43-51	52-0E-24-CE-43-51	null	null	10.48.26.61	All Device Types	All Location
11	3/18/2025 5:52:00 PM	ise341-psn1	D8-77-A0-71-7F-A6	D8-77-A0-71-7F-A6	null	null	10.48.26.61	All Device Types	All Location
12	3/18/2025 5:52:00 PM	ise341-psn1	A6-57-A6-74-DC-30	A6-57-A6-74-DC-30	null	null	10.48.26.61	All Device Types	All Location
13	3/18/2025 5:52:00 PM	ise341-psn1	BF-4A-F4-CB-70-81	BF-4A-F4-CB-70-81	null	null	10.48.26.61	All Device Types	All Location
14	3/18/2025 5:52:00 PM	ise341-psn1	65-C4-55-FF-A8-62	65-C4-55-FF-A8-62	null	null	10.48.26.61	All Device Types	All Location
15	3/18/2025 5:52:00 PM	ise341-psn1	31-6F-FE-B3-01-59	31-6F-FE-B3-01-59	null	null	10.48.26.61	All Device Types	All Location

Filter Authentication by ISE Node

Troubleshoot

There is currently no specific troubleshooting information available for this configuration.