DAT238x

Enabling Data Source Discovery with Azure Data Catalog

Lab 2 | Working with Azure Data Catalog

Estimated time to complete this lab is 90 minutes

Overview

In this lab, you will commence by registering data sources. You will then explore the **Data Catalog Portal** by searching and filtering data assets, exploring properties of data assets, annotating data assets, creating and applying glossary terms, opening data sources in tools, and securing data asset visibility.

Note: The labs in this course are accumulative. You cannot complete this lab if you did not successfully complete **Lab 1**.

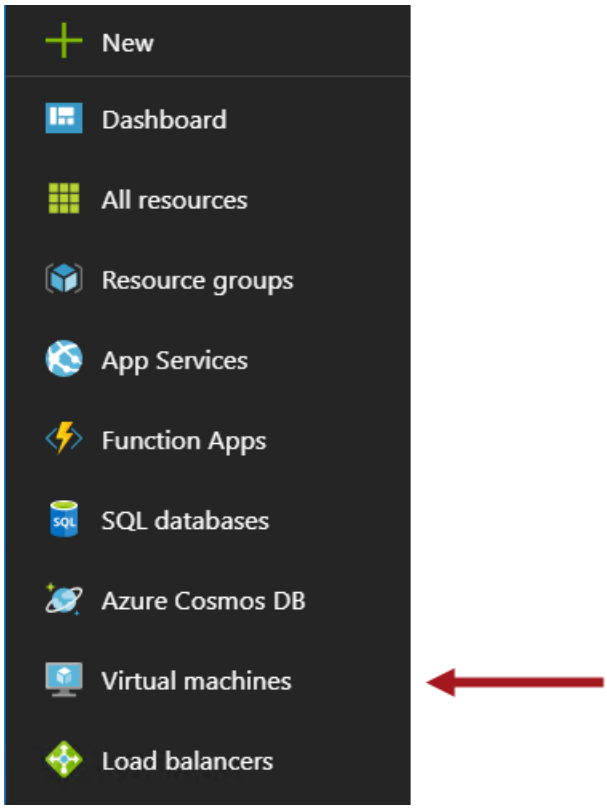
Getting Started

In this exercise, you will start the VM provisioned in **Lab 1**. You will then connect to the VM to complete the exercises in this lab.

1. Open the **MySolutions.txt** file (from your local storage) which you used to store configurations specific to your first lab.

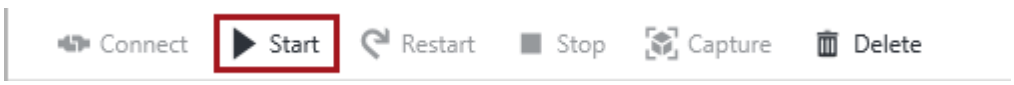
2. Sign in to the **Microsoft Azure Portal** by using your subscription.

3. In the left pane, select **Virtual Machines**.



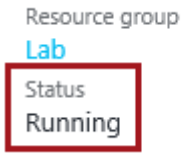
4. In the **Virtual Machines** blade, select the VM you provisioned in **Lab 1**.

5. In the VM blade, click **Start**.

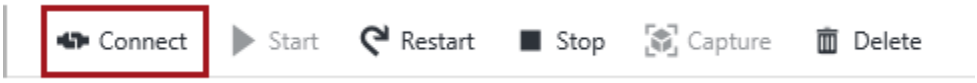


6. Wait for the VM status to update to **Running**.

   It usually takes 1-2 minutes for the VM to start.



7. To connect to the VM, click **Connect**.



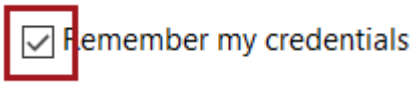
8. When prompted to open the Remote Desktop File, click **Open**.

9. If prompted to connect to the unknown publisher, click **Connect**.

   *You need to enter the VM administrator credentials. If the authentication window defaults to an existing account, you will need to select **More Choices**, and then select **Use a Different Account**.*

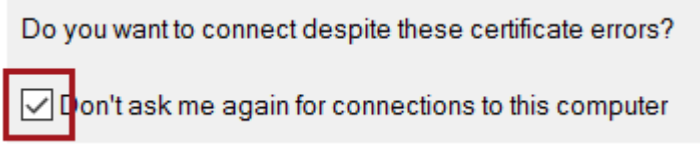
10. In the **Windows Security** window, enter the VM admin credentials (retrieved from **MySolution.txt**: VM admin user name, and VM admin password).

11. Check the **Remember My Credentials** checkbox.



12. Click **OK**.

13. In the **Remote Desktop Connection** dialog window, check the **Don't Ask Me Again for Connections to This Computer** checkbox.



14. Click **Yes**.

Exercise 1: Registering Data Sources

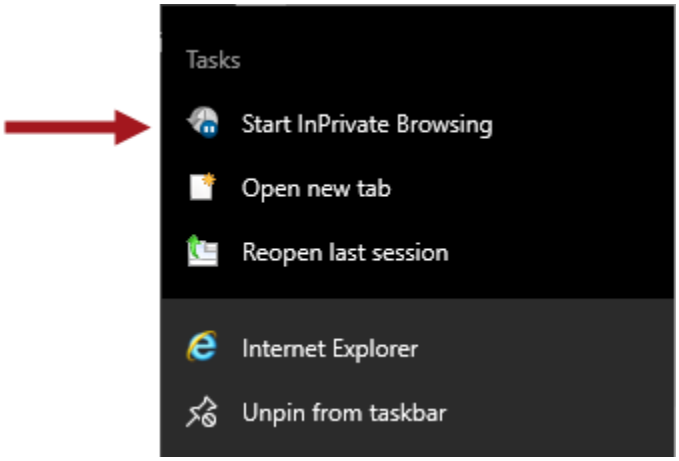
In this exercise, you will register data sources by using manual registration, and also the Azure Data Catalog application.

When registering data sources in this exercise, it is important that you register them exactly as instructed, otherwise later exercises may produce different results. This could also impact on your ability to correctly answer Lab-based Knowledge Checks.

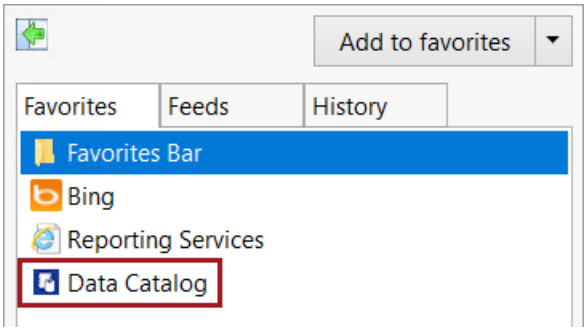
Manually Registering a Data Asset

In this task, you will sign in to the Data Catalog Portal as **Stewart** (Data Steward), and then register your first data asset by using manual registration.

1. To open Internet Explorer using **InPrivate Browsing**, in the taskbar, right-click the **Internet Explorer** shortcut, and then select **Start InPrivate Browsing**.



2. Use the Internet Explorer favorite to open the b favorite.



3. Sign in as **Stewart** (Data Steward).

   *Use the values stores in your **MySolutions.txt** file.*

4. When prompted to update the password, re-enter the initial password, and then set a new password.

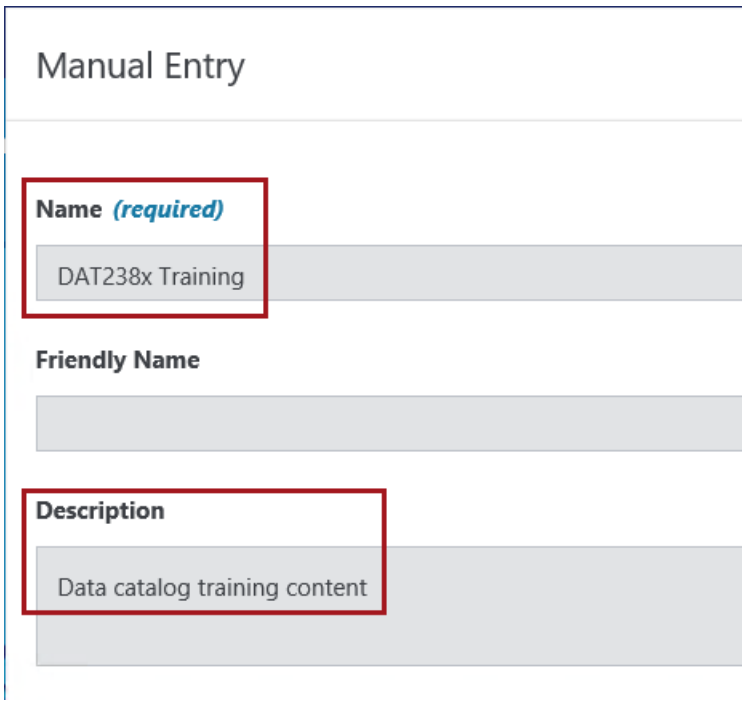
5. In the **MySolution.txt** file, update the new password (Stewart user password).

6. If prompted to stay signed in, click **No**.

7. In the Data Catalog Portal, click **Create Manual Entry**.

8. In the **Manual Entry** window, in the **Name** box, enter **DAT238x Training**.

9. In the **Description** box, enter **Data catalog training content**.



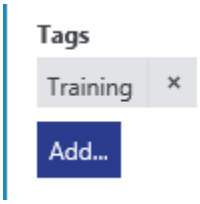
10. In the **Source Type** dropdown list, select **Http**.

11. In the **Object Type** dropdown list, select **Site**.

12. In the **Connection Info** section (scroll vertically down to locate), in the **Url** box, enter https://github.com/MicrosoftLearning/DAT238x-AzureDataCatalog

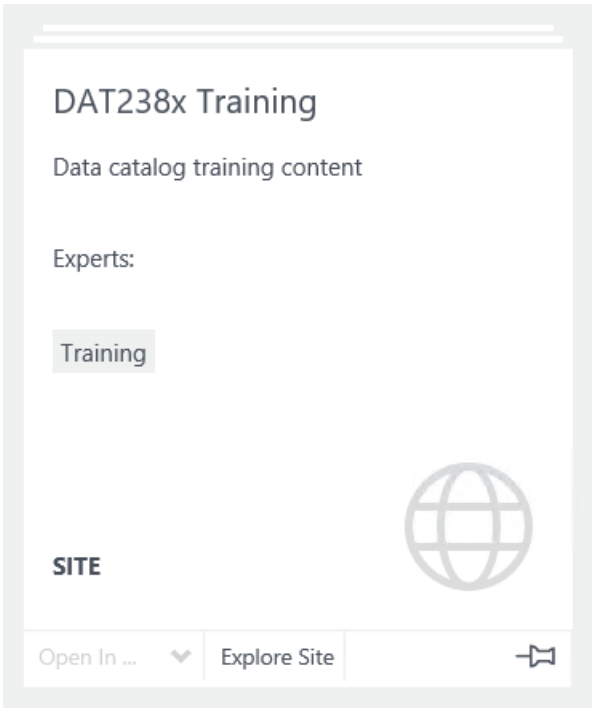
    Tip: You can copy-and-paste the link into the VM.

13. To add a tag, in the **Tags** section, click **Add**, and then in the box, enter **Training**.



14. Click **Create and View Portal**.

15. When the data asset is registered, notice that the Internet Explorer window has loaded a Data Catalog search result displaying the data asset.



Lab-based Knowledge Check

Lab 2 ► Manual Registration Supported Object Types

Which are supported **Object Type** choices when manually configuring an **Odata** source type? (Select three answers.)

You may need data from this step to answer a Lab-based Knowledge Check associated with this module.

*Now, we recommend that you open the **Module 4** Lab-based Knowledge Check portion of the course in EdX to answer the questions as you complete this lab.*

Installing the Azure Data Catalog Application

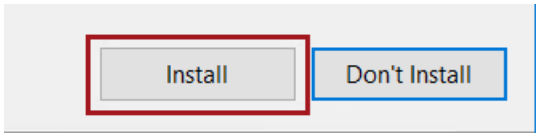
In this task, you will install the Azure Data Catalog application.

1. At the top-right corner, click the **Publish** command.

2. Click **Launch Application**.

The application will be automatically installed by using Click-Once deployment.

3. In the **Application Install – Security Warning** window, click **Install**.



4. When the setup file has downloaded, in the **Open File – Security Warning** window, click **Run**.

5. In the **Data Catalog Registration Tool End User License Agreement** window, if you accept the agreement, click **Accept**.

6. In the welcome window, click **Sign In**.

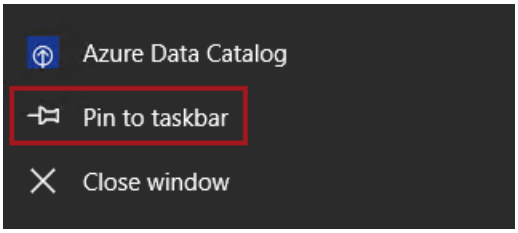
7. Sign in as **Stewart** (Data Steward).

   *Use the values stores in your **MySolutions.txt** file.*

8. If prompted to stay signed in, click **No**.

9. In the taskbar, notice the **Azure Data Catalog** taskbar shortcut icon.

10. Right-click the **Azure Data Catalog** taskbar shortcut, and then select **Pin to Taskbar**.

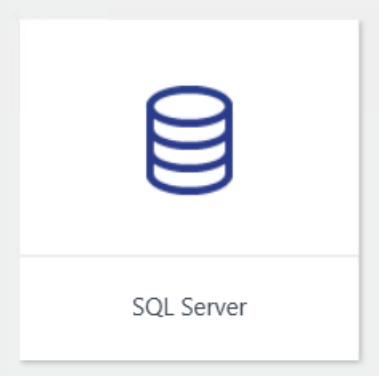


Registering SQL Server Objects

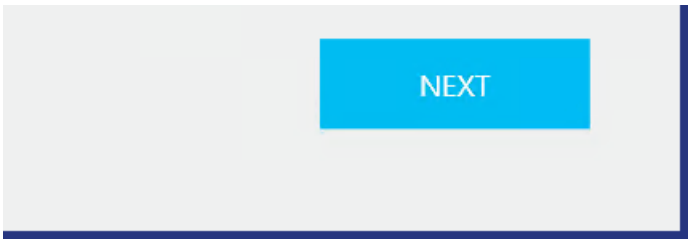
In this task, you will register SQL Server tables, requesting the capture of preview and data profile.

1. In the **Azure Data Catalog** window, use the vertical scrollbar to review all available data source types.

2. Select the **SQL Server** (first) tile.



3. To register SQL Server object, click **Next**.



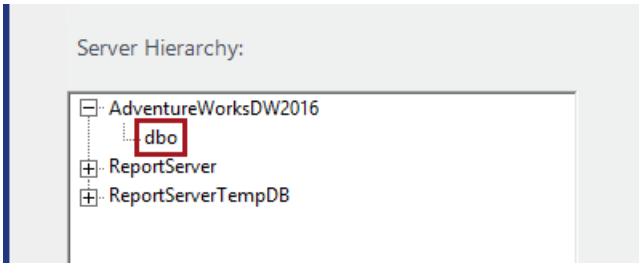
4. In the **Server Name** box, enter the VM name (retrieved from **MySolution.txt**: VM name).

   While it is possible to enter localhost, this should never be the case for real-world registrations.

   *There is no need to change the **Authentication Type** value. When the tool connects to the database server, it will use the credentials you used to sign in to the VM (**VM-Admin** user). This user has **sysadmin** privileges in the lab VM.*

5. Click **Connect**.

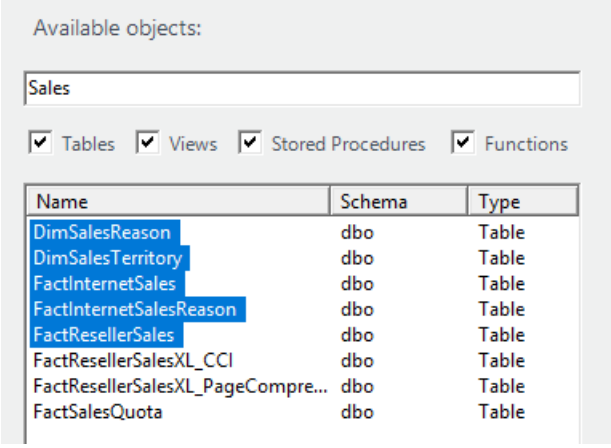
6. In the **Server Hierarchy** list, expand the **AdventureWorksDW2016** database, and then select the **dbo** schema.



7. In the **Filter Objects** box, enter **Sales**.

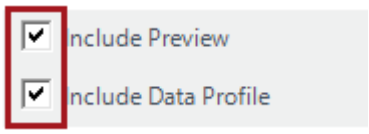
8. While pressing the **Control** key, select the first five tables.

Table
DimSalesReason
DimSalesTerritory
FactInternetSales
FactInternetSalesReason
FactResellerSales



9. To add all tables to **Objects to be Registered** list, click the single-right-pointing arrow.

10. Check the **Include Preview** and the **Include Data Profile** check boxes.



11. In the **Add an Expert** box, enter the user name for **Sally** (Sales Analyst) (retrieved from **MySolution.txt**: Sally user name).

    For the AAD account to be resolved, you must enter the full account name (email address).

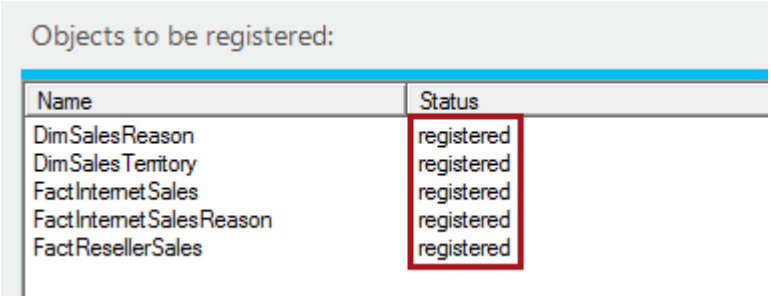
12. In the **Add Tags** box, enter **DW,Sales**.

    This comma-separated list will annotate the database objects with two tags.

13. Click **Register**.

    As requested, the registration collects preview data and data profile statistics for each object which it stores in the Data Catalog.

14. When the registration process has completed, in the grid, review the status of each object.

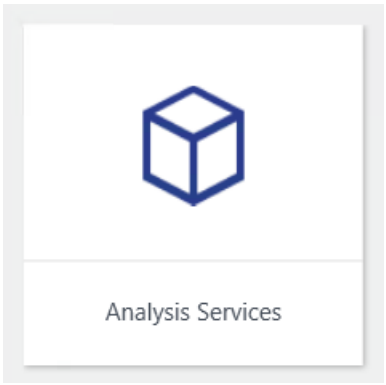


Registering Analysis Services Objects

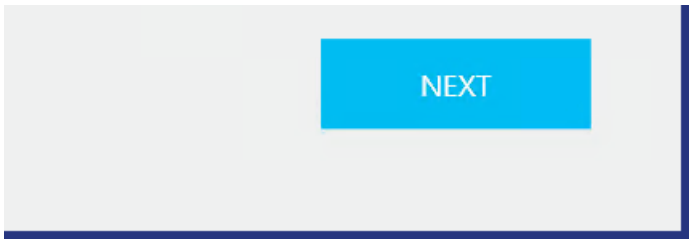
In this task, you will register five measures from an Analysis Services tabular model.

1. Click **Register More Objects**.

2. In the **Azure Data Catalog** window, select the **Analysis Services** tile.



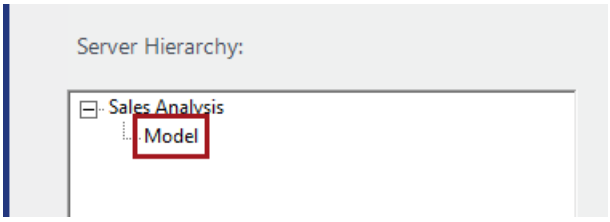
3. Click **Next**.



4. In the **Server Name** box, enter the VM name (retrieved from **MySolution.txt**: VM name).

5. Click **Connect**.

6. In the **Server Hierarchy** list, expand the **Sales Analysis** database, and then select the **Model** model.



*The **Sales Analysis** database only contains a single model. If perspectives were defined on the model, these would be listed also.*

7. To register individual objects, double-click each of the following five measures:

Measure
Cost
Profit
Profitability
Sales
Units

8. Notice that an Analysis Services data source registration does not support data preview nor data profile options.

9. In the **Add an Expert** box, enter the user name for **Sally** (Sales Analyst) (retrieved from **MySolution.txt**: Sally user name).

10. In the **Add Tags** box, enter these three tags: **DW,Model,Sales**.

11. Click **Register**.

12. When the registration process has completed, review the status of each object.

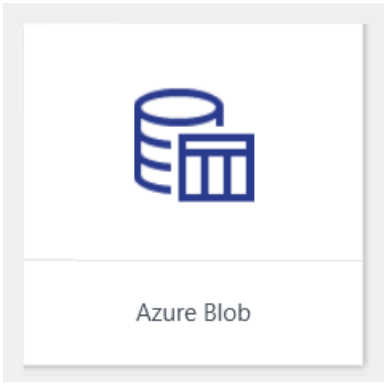
Registering Big Data Objects

In this task, you will register an Azure Storage directory and blob. You will discover—typical for Big Data stores—that the directory stores a time-based folder hierarchy or **SalesOrder.csv** blobs.

1. Click **Register More Objects**.

2. Double-click the **Azure Blob** tile.

   *Tip: Double-clicking avoids having to click **Next**.*

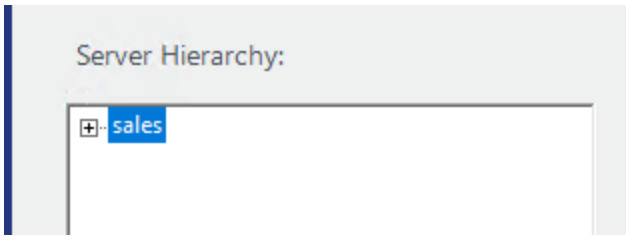


3. In the **Microsoft Azure Storage Account Name** box, enter the Azure storage account name (retrieved from **MySolution.txt**: Azure storage account name).

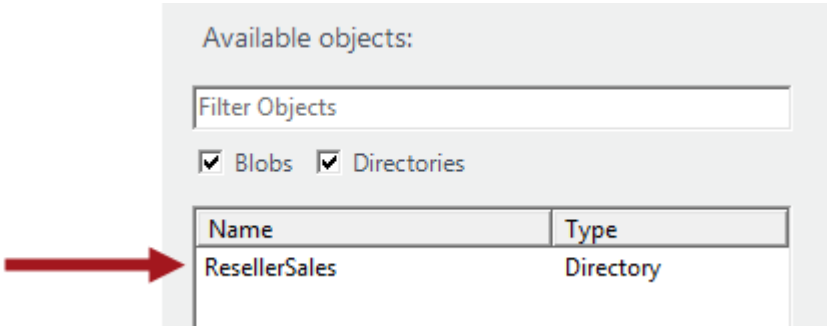
4. In the **Azure Access Key** box, enter Azure storage key (retrieved from **MySolution.txt**: Azure storage key).

5. Click **Connect**.

6. In the **Server Hierarchy** list, select the **sales** container.



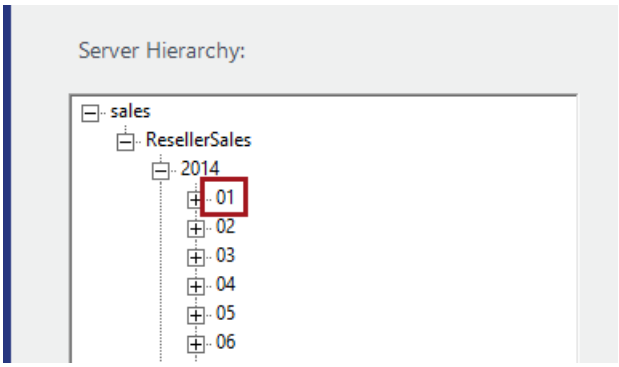
7. To register the only container (directory), in the **Available Objects** list, double-click the **ResellerSales** directory.



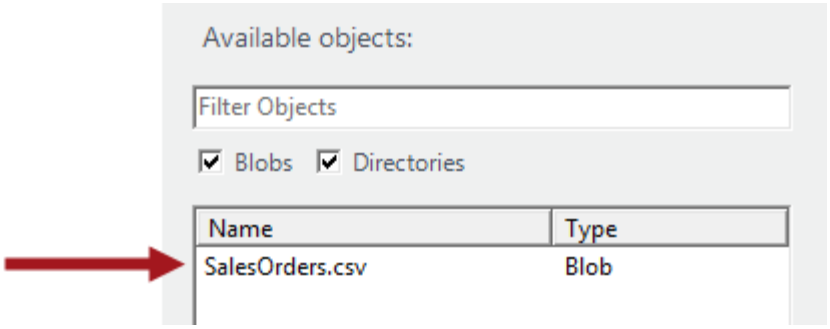
*This will register the directory for all **ResellerSales** Big Data files.*

8. In the **Server Hierarchy** list, expand the **sales** container, and then continue expanding down to select the **ResellerSales | 2014 | 01** folder.

This is the folder for data file storage for January, 2014.



9. To register the only file (blob), in the **Available Objects** list, double-click the **SalesOrders.csv** blob.



*This will register a single blob, enabling the annotation and discovery of a sample **SalesOrder.csv** Big Data file.*

10. In the **Add an Expert** box, enter the user name for **Sally** (Sales Analyst) (retrieved from **MySolution.txt**: Sally user name).

11. In the **Add Tags** box, enter two tags: **Big Data,Sales**.

12. Click **Register**.

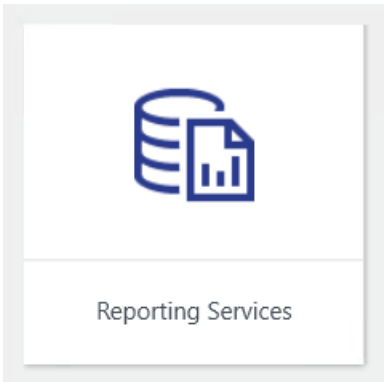
13. When the registration process has completed, review the status of each object.

Registering a Reporting Services Report

In this task, you will register a Reporting Services report.

1. Click **Register More Objects**.

2. Double-click the **Reporting Services** tile.

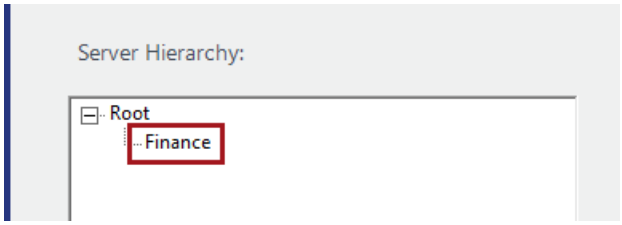


3. In the **Server URL** box, enter the Report Server URL (retrieved from **MySolution.txt**: Report Server URL).

4. Click **Connect**.

5. In the **Server Hierarchy** list, expand the **Root** node, and then select the **Finance** folder.

   *The **Root** node represents the Report Server **Home** folder.*



6. To register the only report, in the **Available Objects** list, double-click the **Organization Expenditures** report.

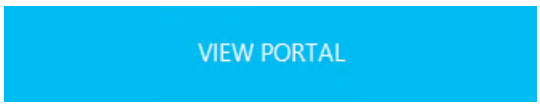
7. In the **Add an Expert** box, enter the user name for **John** (Financial Controller) (retrieved from **MySolution.txt**: John user name).

8. In the **Add Tags** box, enter two tags: **Finance,Expenditures**.

9. Click **Register**.

10. When the registration process has completed, review the status of the single object.

11. When the registration process has completed, click **View Portal**.



    You have now completed all data source registrations.

12. Notice that the Data Catalog Portal opens in Internet Explorer.

    You will explore the Data Catalog in the next exercise.

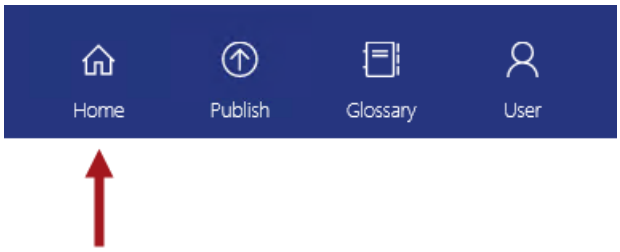
Exercise 2: Exploring the Data Catalog Portal

In this exercise, you will work with the Data Catalog Portal to search and filter data assets. You will also explore the Details pane, and annotate various data assets. Lastly, you will work with saved searches and pinning data assets.

Filtering Data Assets

In this task, you will use filters to refine the default search results.

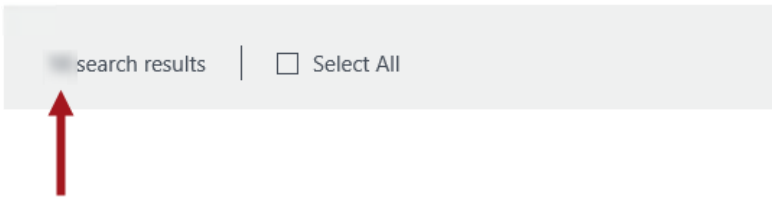
1. In Internet Explorer (Data Catalog Portal), at the top-right corner, select the **Home** page.



2. Click inside the **Search** box (reads **Search Data Catalog**), and then press **Enter**.

This submits an empty search query to retrieve all data assets (or submits your default search, if you have configured one).

3. At the top-left corner of the search results, review the total number of assets returned.



Lab-based Knowledge Check
Lab 2 ► Registered Data Asset Count

What is the total number of registered data assets?

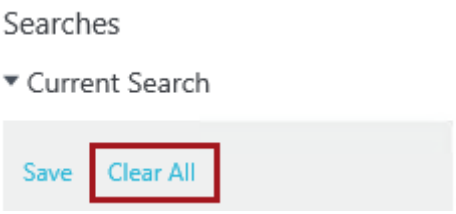
You may need data from this step to answer a Lab-based Knowledge Check associated with this module.

*Now, we recommend that you open the **Module 4** Lab-based Knowledge Check portion of the course in EdX to answer the questions as you complete this lab.*

4. In the left pane, apply filters, by selecting different tag option combinations, and then notice how the search results are refined.

Tag Filters
User Tags: Sales
Object Type: Measure
Source Type: SQL Server
Experts: Sally
FactResellerSales

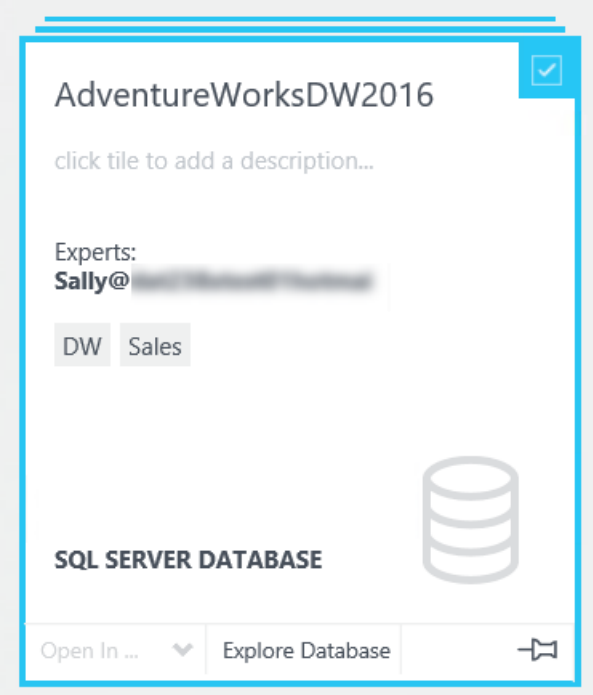
5. In the **Searches** pane, to clear all filters, click **Clear All**.



Exploring Data Assets

In this task, you will explore filtering search results to related data assets.

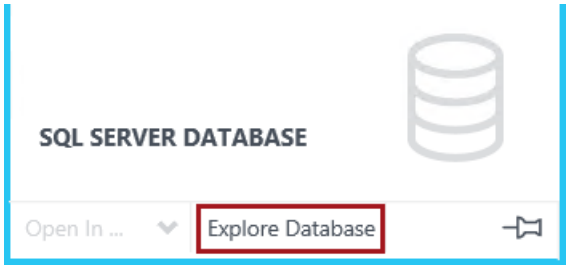
1. In the search results, locate and then select the **AdventureWorksDW2016** tile (a container representing the entire database).



2. Notice that this tile appears to be a stack of tiles.

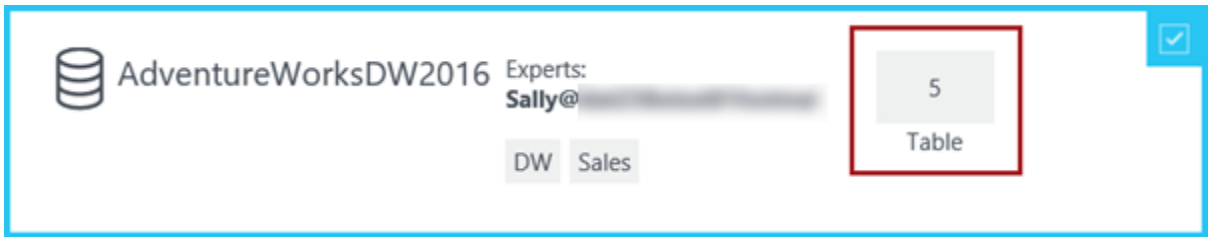
   This represents a container, which is often related to multiple data assets representing the objects registered for that container.

3. To explore the related objects, at the bottom of the tile, click **Explore Database**.

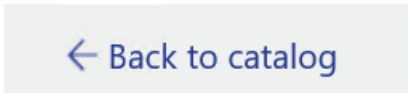


   Tip: It is also possible to click this command on an object to retrieve itself, and its container and sibling objects.

4. Review the banner across the top of the search pane, describing the container, and then notice that five objects (all tables) have been registered.



5. To return to the catalog, at the top of the search pane, click **Back to Catalog** (sometimes you will need to vertically scroll up to locate the command).



6. Select the **AdventureWorksDW2016** tile again.

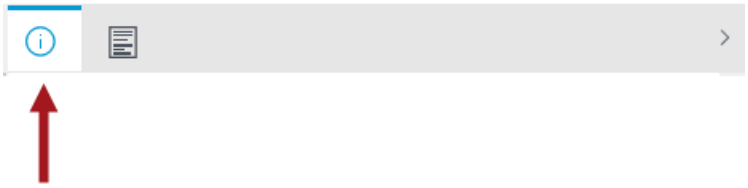
Managing Data Assets

In this task, you will explore the Details pane, and its tabs. You will also manage data assets by adding annotations.

1. In the **Details** pane (located at the right), notice that the **Properties** tab is selected.

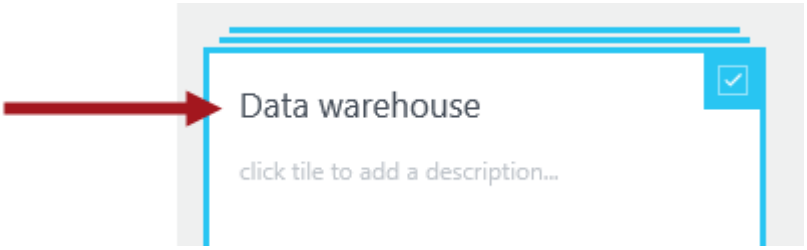
   *If your screen size is sufficiently wide, or the **Details** pane is more fully expanded, you may see expand icons with text labels of the tab names.*

   Tip: If necessary, you can hover your cursor over the icon to reveal a tooltip describing the tab name.

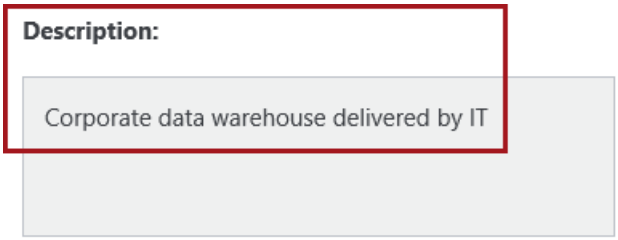


2. In the **Friendly Name** box, enter **Data warehouse**, and then press **Enter**.

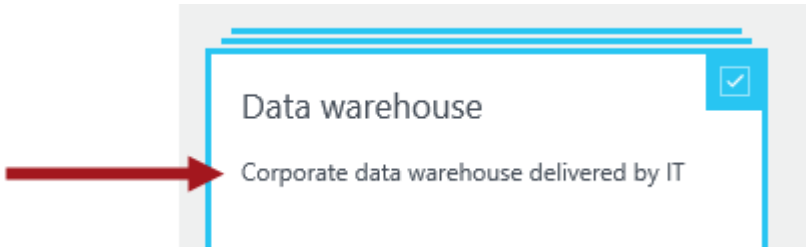
3. In the search results pane, notice that the **AdventureWorksDW2016** tile has now been retitled to the friendly name.



4. In the **Description** box, enter **Corporate data warehouse delivered by IT**, and then press **Enter**.



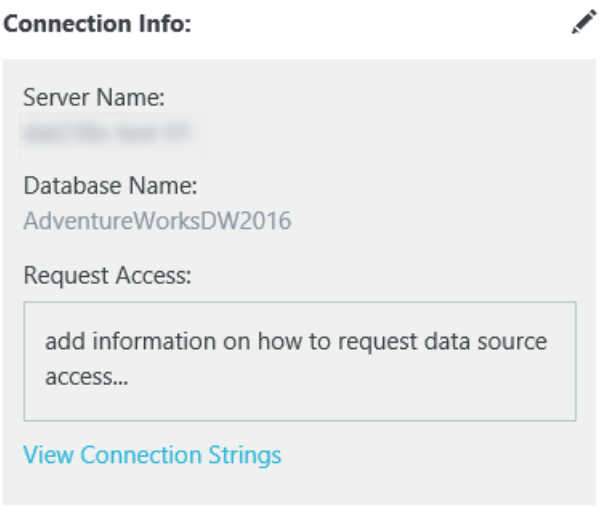
5. Notice that the description appears in the database tile.



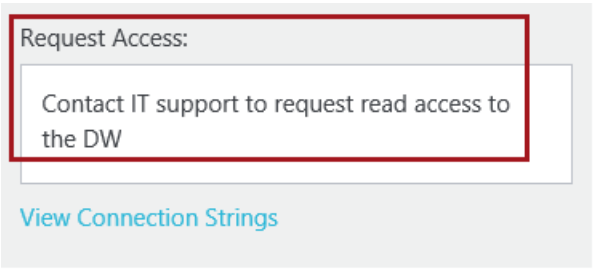
6. Notice that the **Experts** and **Tags** can be revised—do not make any modifications to these properties yet.

   You will add experts to a multi-selection of data assets later in this exercise.

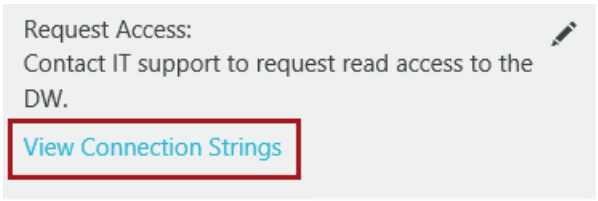
7. Scroll down and view the **Connection Info** section.



8. Click inside the **Request Access** box, enter **Contact IT support to request read access to the DW**, and then click anywhere outside the box.



9. Click **View Connection Strings**.



Connection strings are only available for relational database sources.

10. In the **Connection Strings** window, review the connection strings for different data providers, and that the **Copy** commands allow quick and easy copying of the connection strings to the clipboard.

11. To close the window, click **OK**.

12. In the **Management** section, notice the **Take Ownership** command.

You will work with this feature later in this lab. It is used to assign an owner to a data source, and then configure access permissions.

13. Scroll to the bottom of the **Details** pane and review the timestamps and last updated details.

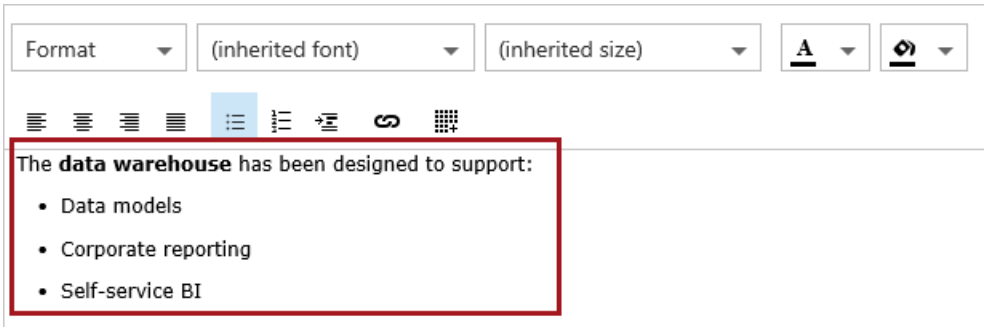
14. In the **Details** pane, select the **Documentation** tab.

15. Enter and format some text, along of the lines of:

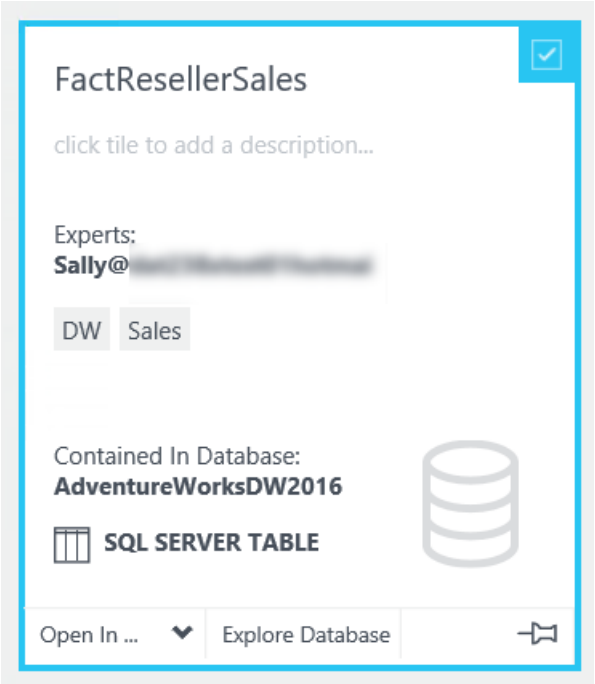
The **data warehouse** has been designed to support:

- Data models
- Corporate reporting
- Self-service BI

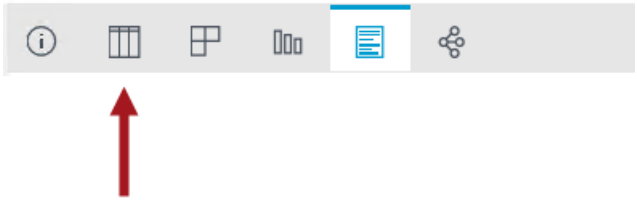
Tip: You can copy-and-paste this formatted text into the documentation area.



16. In the search results pane, use filtering techniques to locate and then select the **FactResellerSales** table.



17. In the **Details** pane, select the **Preview** tab.



18. Review the preview data, consisting of 20 rows.

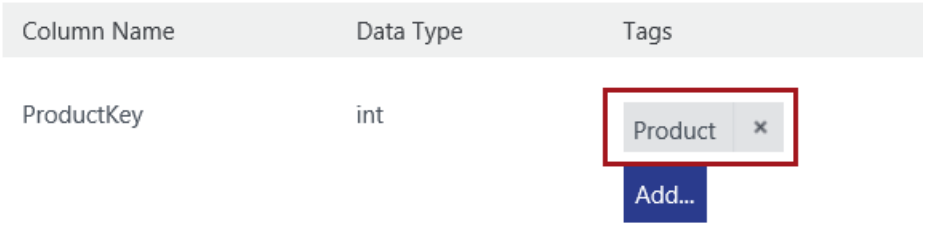
19. Notice the **Remove Preview** button that allows removing the preview data.

20. In the **Details** pane, select the **Columns** tab.

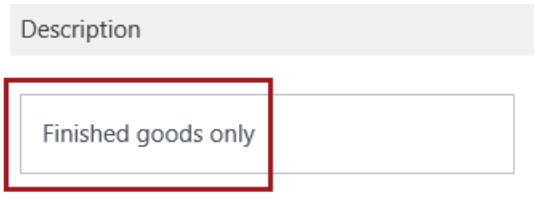
21. Review the column registrations.

22. To add a tag to the **ProductKey** column, click **Add**.

23. Enter **Product**, and then press **Enter**.



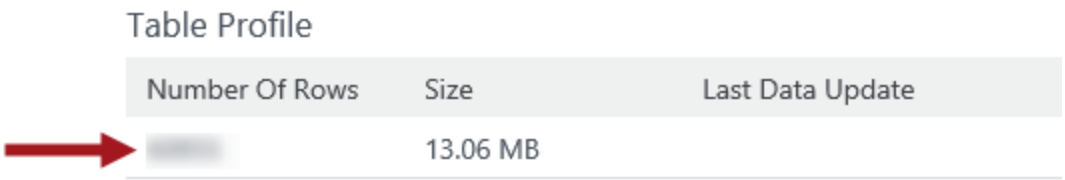
24. For the **ProductKey** column, in the corresponding **Description** box, enter **Finished goods only**, and then click anywhere outside the box.



25. Notice the **Edit Columns** button that allows editing columns, and also allows adding new columns.

26. In the **Details** pane, select the **Data Profile** tab.

27. Review the **Table Profile** section, describing table statistics.



Lab-based Knowledge Check

Lab 2 ► Number of FactResellerSales Rows

What is the total number of rows profiled in the **FactResellerSales** table?

You may need data from this step to answer a Lab-based Knowledge Check associated with this module.

Now, we recommend that you open the **Module 4** Lab-based Knowledge Check portion of the course in EdX to answer the questions as you complete this lab.

28. Review the **Column Profile** section, describing column statistics.

Lab-based Knowledge Check

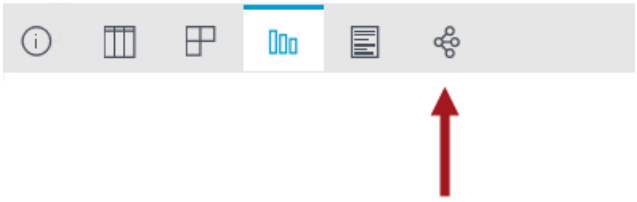
Lab 2 ► Distinct ResellerKey Values

What is the distinct number of values profiled in the **ResellerKey** column?

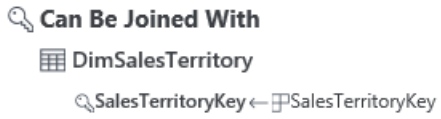
You may need data from this step to answer a Lab-based Knowledge Check associated with this module.

Now, we recommend that you open the **Module 4** Lab-based Knowledge Check portion of the course in EdX to answer the questions as you complete this lab.

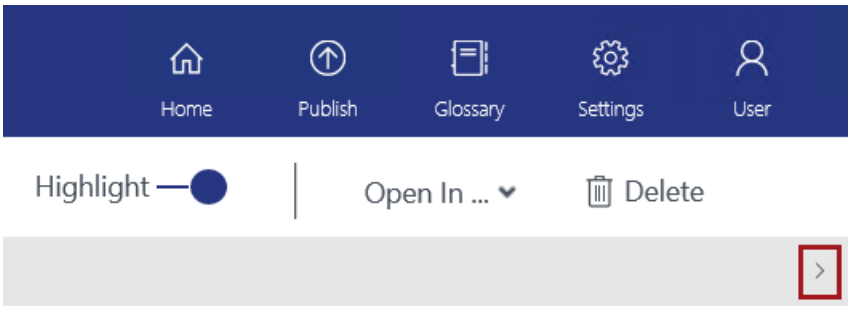
29. In the **Details** pane, select the **Related Data** tab.



30. Review the details describing registered tables that have a relationship to this data asset.



31. At the top-right corner, to collapse the **Details** pane, click the right-pointing arrow.



32. Filter to produce a search result of only **SQL Server** data assets.

33. Verify that six search results were obtained.

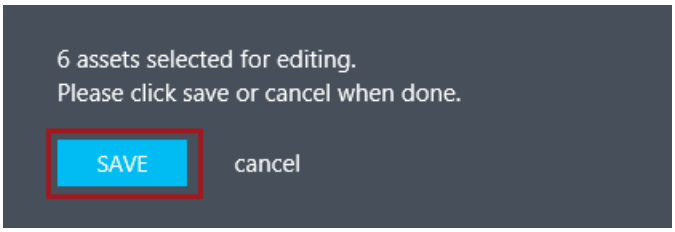
34. To select all retrieved data assets, check the **Select All** checkbox.

35. To add a new expert to all selected data assets, to open the **Details** pane, click the left-pointing arrow.

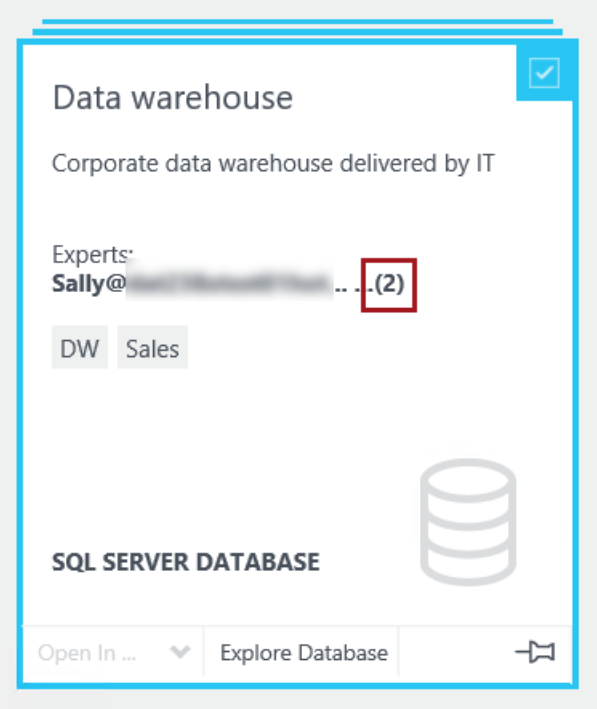
36. In the **Details** pane, in the **Properties** tab, in the **Experts** section, click **Add**.

37. In the box, enter the user name for **Anna** (Sales Analyst) (retrieved from **MySolution.txt**: Anna user name), and then press **Enter**.

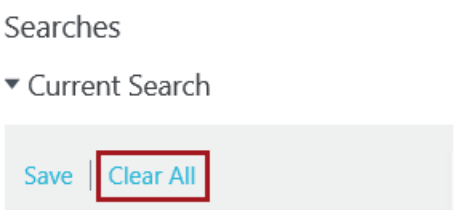
38. At the top-right corner, to process the multi-object update, click **Save**.



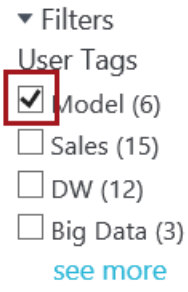
39. In the search results pane, notice that all tiles indicate there are two experts.



40. Clear all search filters.



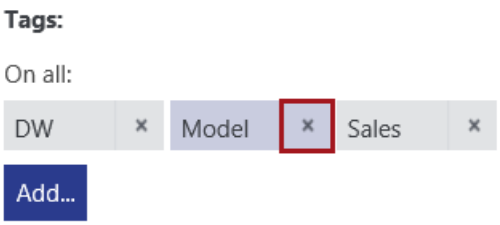
41. Filter to retrieve a search result of all six data assets tagged with **Model**.



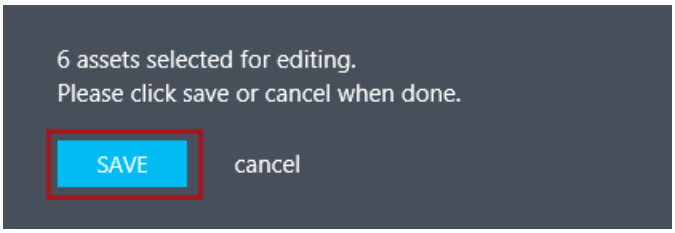
42. Select all six data assets.

43. In the **Details** pane, in the **Properties** tab, in the **Tags** section, hover over the **Model** tag, and review the tooltip describing that the tag was added by **Stewart**.

44. To remove the **Model** tag for all selected objects, click the **X** to the right of the tag.



45. At the top-right corner, to process the multi-object update, click **Save**.

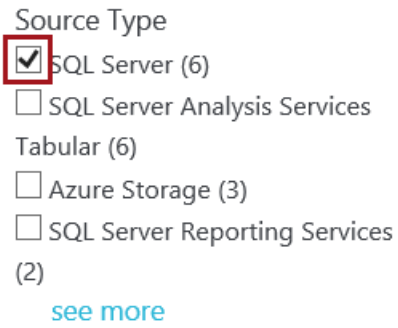


Managing "My Assets"

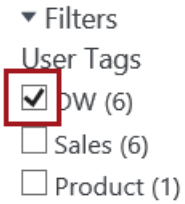
In this task, you will create a search, and also pin a data asset.

1. Clear the search filters.

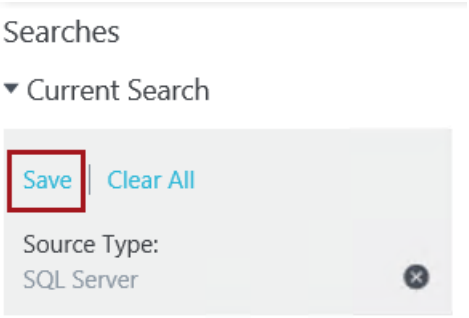
2. Filter by source type **SQL Server**.



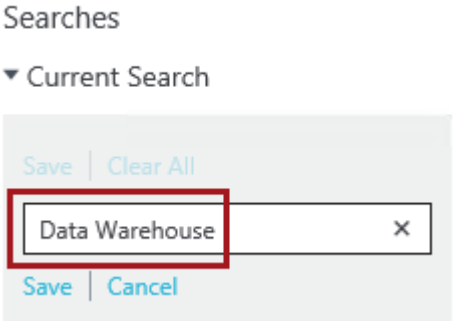
3. Filter by tag **DW**.



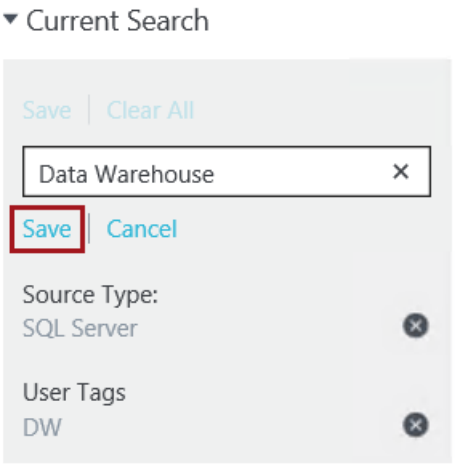
4. To save the search for future use, in the **Searches** pane, click **Save**.



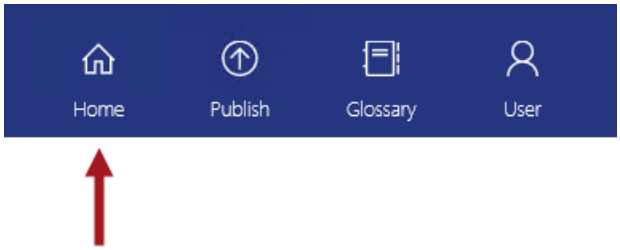
5. In the box enter **Data Warehouse**.



6. Click **Save**.

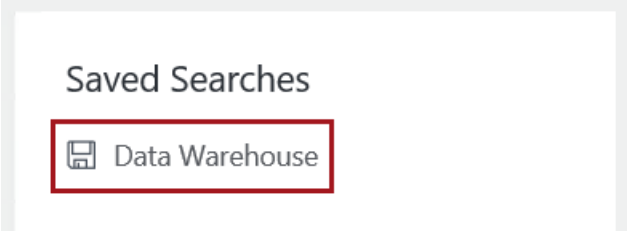


7. Navigate to the **Home** page.



8. If there is no **My Assets** section, press **F5** to reload the web browser.

9. In the **My Assets** section, in the **Saved Searches** section, notice the **Data Warehouse** saved search.

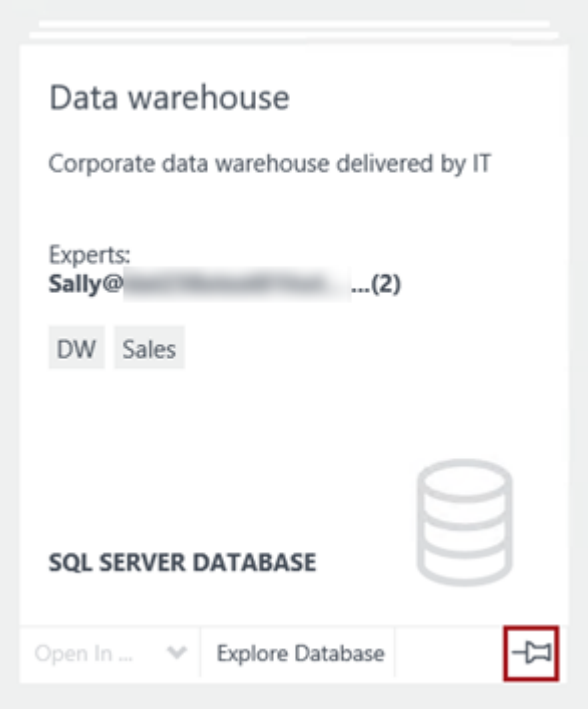


It is possible to search the Data Catalog by clicking the saved search. It is also accessible from within the search box.

10. Click inside the **Search** box, and notice that the **Data Warehouse** saved search is available.

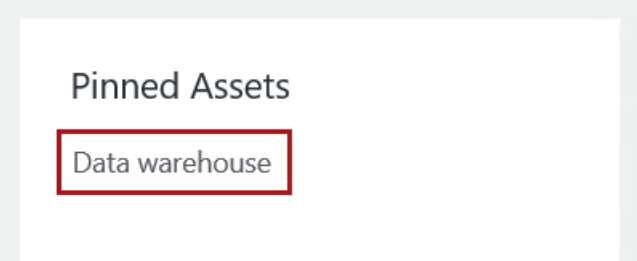
11. Select the **Data Warehouse** saved search.

12. For the **Data Warehouse** data asset, at the bottom-right corner, click the **Pin** command.



13. Return to the **Home** page.

14. In the **Pinned Assets** section, notice the **Data Warehouse** asset.



Pinned assets are an easy way to navigate directly to a single data asset, without the need to enter a search.

15. Click the **Data Warehouse** pinned asset to open it directly with a targeted search result.

Exercise 3: Working with the Business Glossary

In this exercise, you will create a hierarchy of glossary terms. You will annotate various data assets with glossary terms, and then filter the catalog by the terms.

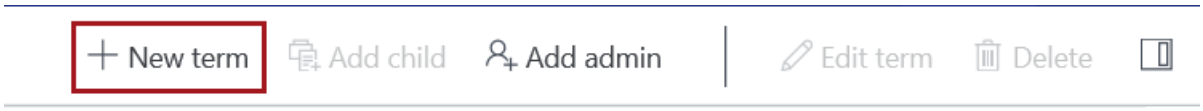
Creating Glossary Terms

In this task, you will create three glossary terms that will form a hierarchy of terms.

1. At the top-right corner, click the **Glossary** command.

   *Recall that **Stewart** was assigned to the **Glossary Administrators** role.*

2. To add a new term, click **+New Term**.



3. In the **New Business Term** pane, in the **Term Name** box, enter **Sales**.
4. In the **Definition** box, enter **Adventure Works sales**.
5. To add a stakeholder, click **Add**.
6. Add the user account for **Sally** (Sales Analyst), and then press **Enter**.
7. Click **Create and New**.

8. In the **Term Name** box, enter **Internet**.
9. Click inside the **Parent** box, and then select **Sales**.
10. In the **Definition** box, enter **Internet sales channel**.
11. Add **Sally** (Sales Analyst) as a stakeholder.

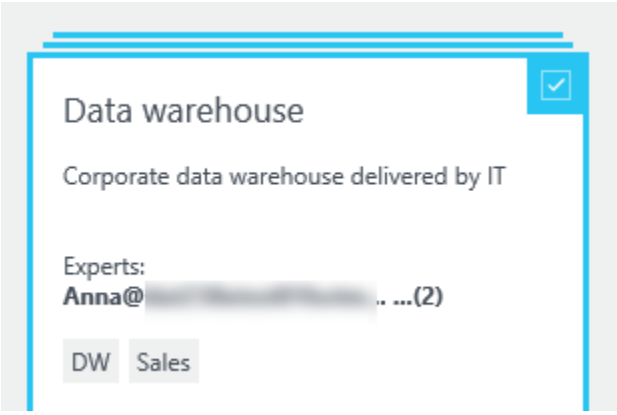
12. Click **Create and New**.

13. In the **Term Name** box, enter **Reseller**.
14. Click inside the **Parent** box, and then select **Sales**.
15. In the **Definition** box, enter **Reseller sales channel**.
16. Add **Sally** (Sales Analyst) as a stakeholder.
17. Click **Create**.

Tagging with Glossary Terms

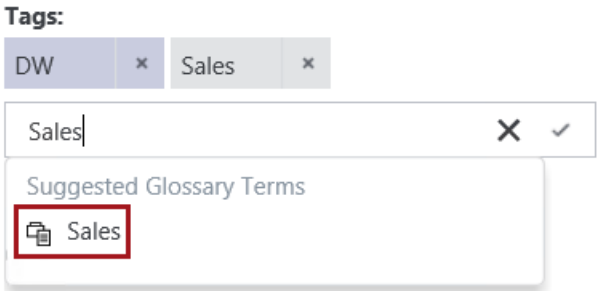
In this task, you will tag various data assets with glossary terms, and then explore the **Glossary** page for reviewing terms.

1. Return to the **Home** page, and then perform the **Data Warehouse** saved search.
2. Select the **Data Warehouse** asset.



3. In the **Details** pane, in the **Properties** tab, in the **Tags** sections, click **Add**.

4. Commence typing the word **Sales**, and then select the **Sales** glossary term.



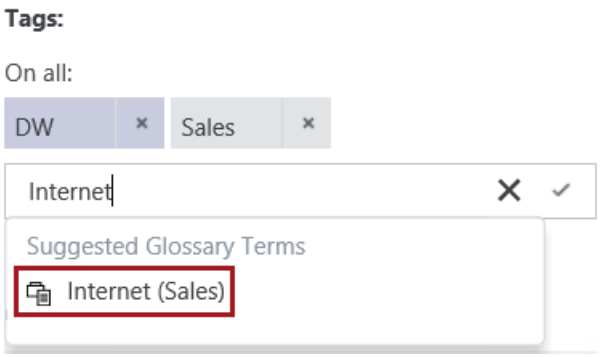
5. Remove the **Sales** tag (user-annotated).

6. In the search results pane, to multi-select assets, at the top-right corner, check only the checkboxes of the following three assets.

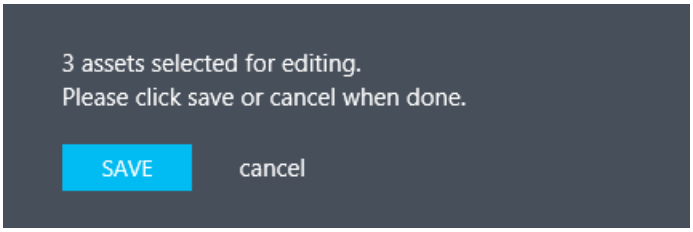
Data Asset
DimSalesReason
FactInternetSales
FactInternetSalesReason

7. In the **Details** pane, in the **Properties** tab, in the **Tags** sections, click **Add**.

8. Commence typing the word **Internet**, and then select the **Internet (Sales)** glossary term.



9. To confirm the multi-update save, when prompted, click **Save**.



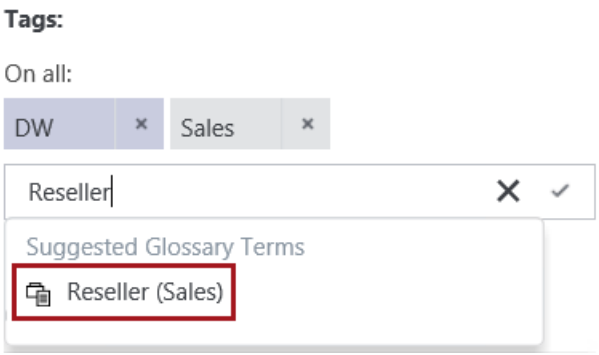
10. Remove the **Sales** tag.

11. Confirm the multi-update save.

12. In the search results pane, multi-select the following two assets.

Data Asset
DimSalesTerritory
FactResellerSales

13. Tag the selection with the **Reseller (Sales)** glossary term.



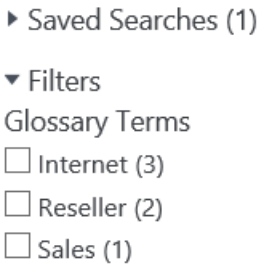
14. Confirm the multi-update save.

15. Remove the **Sales** tag.

16. Confirm the multi-update save.

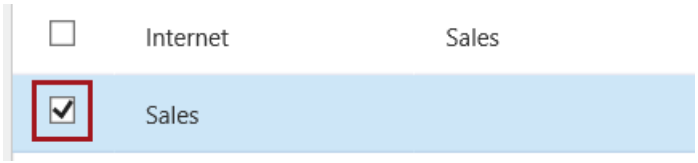
17. In the **Searches** pane, clear all filters.

18. Notice that **Glossary Terms** are available for filtering.



19. Return to the **Glossary** page.

20. Check the checkbox to select the **Sales** term.



21. In the **Details** pane (located at the right), review the details, including the information in the **Relationships** and **Associated Assets** sections.

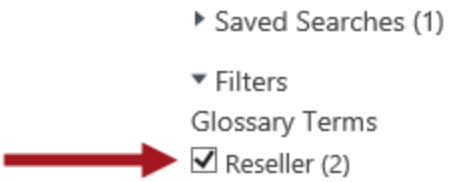
22. To review the details for the **Reseller** term, in the **Relationships** section, click the **Reseller** link.

23. Review the details of the **Reseller** term, including the information in the **Relationships** and **Associated Assets** sections.

24. In the **Associated Assets** section, click on the **FactResellerSales** asset.

25. Notice that you are directed to a search result

26. In the **Searches** pane, notice that the filter is set to the **Reseller** glossary term.



27. In the search results, notice that the **FactResellerSales** asset is selected.

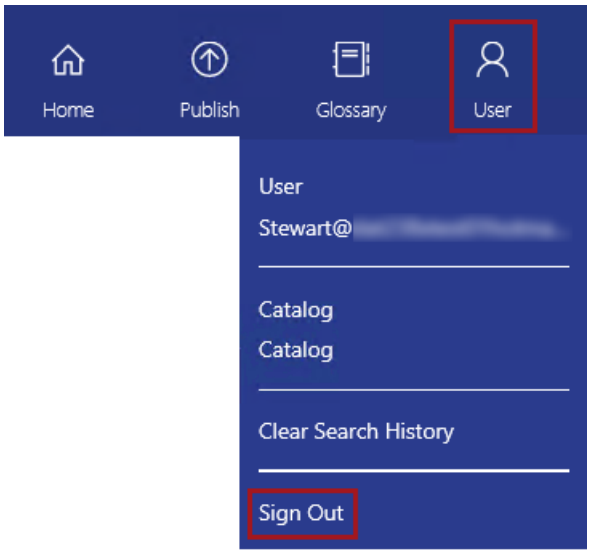
Exercise 4: Discovering Data Catalog Assets

In this exercise, you will work with global search, and more complex search queries. You will also open a data asset in Power BI Desktop.

Creating a Global Search

In this task, you will sign in as **Ben** (IT Administrator), and then create a global search.

1. At the top-right corner, click **User**, and the select **Sign Out**.



2. When prompted to sign in to the portal, sign in as **Ben** (IT Administrator).

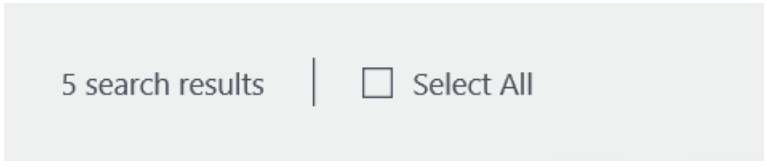
3. If prompted to stay signed in, click **No**.

4. Navigate to the **Home** page.

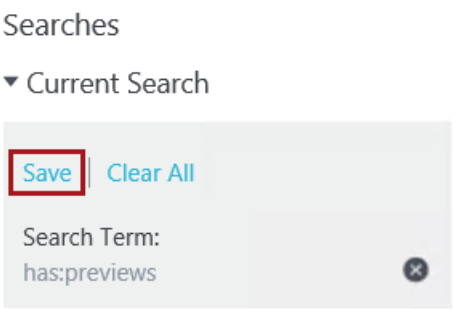
5. In the search box, enter **has:previews**.

6. Press **Enter**.

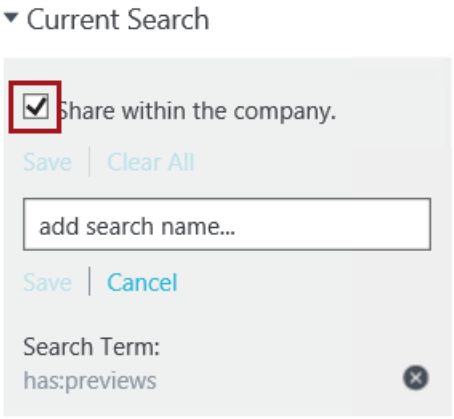
7. Verify that five search results were returned.



8. To save the search, in the **Search** pane, click **Save**.



9. Check the **Share Within the Company** checkbox.



This option is only available to Catalog Administrators. The search is now available to all Data Catalog users.

10. In the search name box, enter **Assets with Preview Data**, and then click **Save**.

Global searches will appear along user saved searches. You will explore this in the next task.

Exploring Search Techniques

In this task, you will work with search techniques. You will first perform a global search, and then create search queries to find exactly what is needed.

1. Sign out of the Data Catalog.
2. Sign in to the Data Catalog as **Anna** (Business Analyst).
3. If prompted to stay signed in, click **No**.

4. Navigate to the **Glossary** page.

5. Notice that the glossary terms are listed, and that it is not possible to manage (create, edit or delete) the terms.

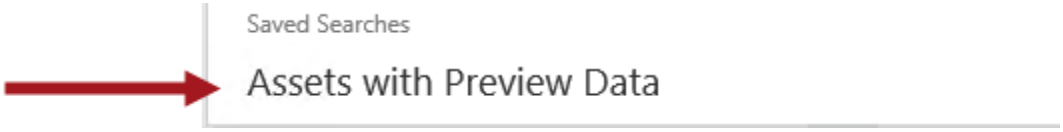
   *Recall that Anna does not belong to the **Glossary Administrators** role.*

6. Select the **Internet** term, and notice that it is possible to review the detail, and also click links to commence a search.

7. Return to the **Home** page.

8. Click inside the search box.

9. Notice that the global saved search **Assets with Preview Data** is available.

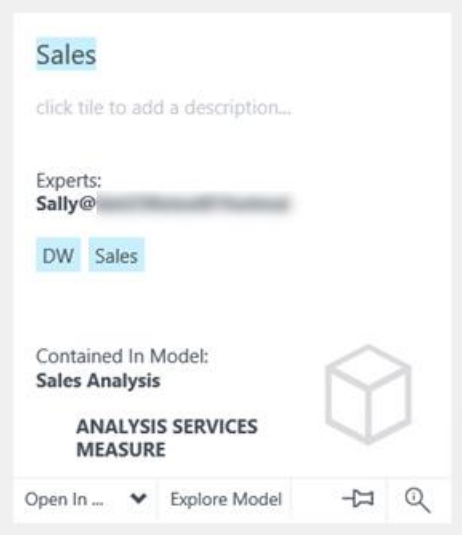


10. To search for assets with the word **sales** in their name, and with a tag named **DW**, in the search box, enter: **name:sales AND tags:DW** and then press **Enter**.

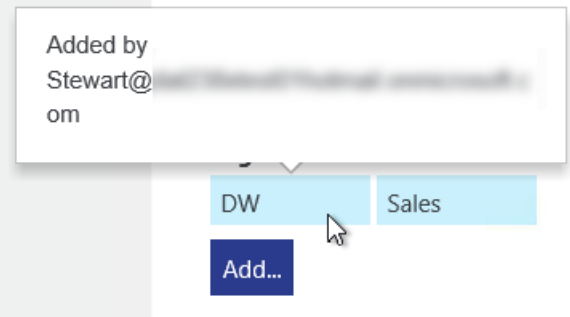
    *The search result represents any data asset that has **sales** in its name, and has the **DW** tag.*

11. Verify that one search result is returned.

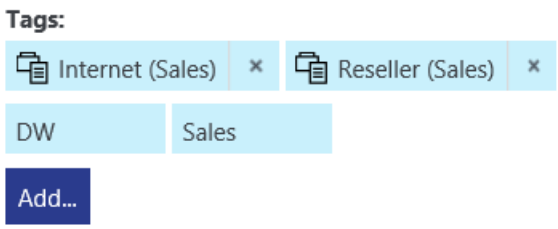
12. In the search result, select the **Sales** data asset.



13. In the **Details** pane, in the **Properties** tab, in the **Tags** section, hover over the two existing tags to reveal a tooltip describing who added the tag.



14. Add the **Internet (Sales)** and **Reseller (Sales)** glossary terms.



15. In the **Search** box, replace the current search with **name:Fact AND (termName:Internet OR termName:Reseller)**.

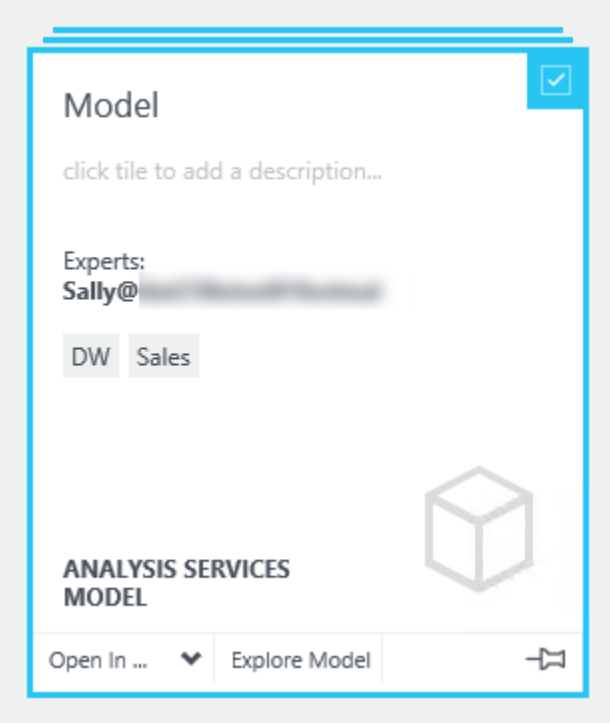
    *The search result represents any data asset that has **Fact** in its name, and has either the **Internet** or **Reseller** glossary terms.*

16. Verify that the search result returns three assets.

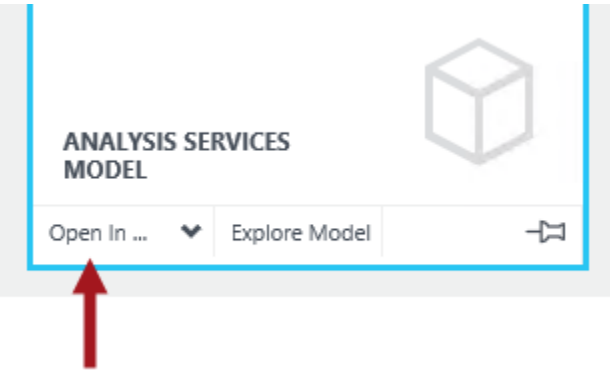
Opening Data Sources

In this task, you will open a data asset in Power BI Desktop, and then create a query based on the connection. You will also open a report.

1. Perform a search to locate and select the Analysis Services **Model** data asset.

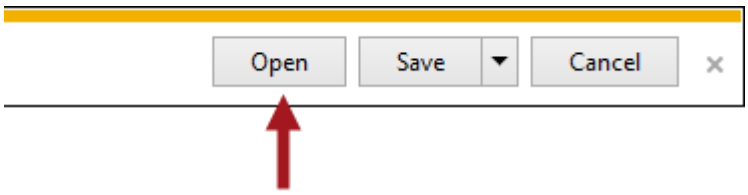


2. At the bottom-left corner, click **Open In**, and then select **Power BI Desktop**.

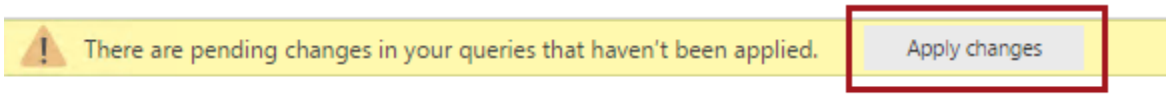


Data Catalog Portal *will download a Power BI Desktop file (.pbix) with a connection to the data model.*

3. When prompted by Internet Explorer, click **Open**.



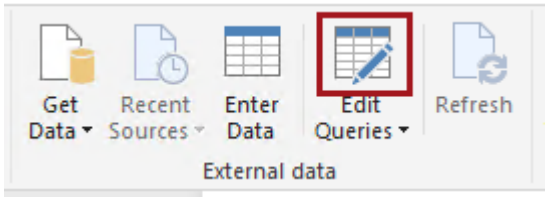
4. When Power BI Desktop opens, at the top-left, in the yellow banner, click **Apply Changes**.



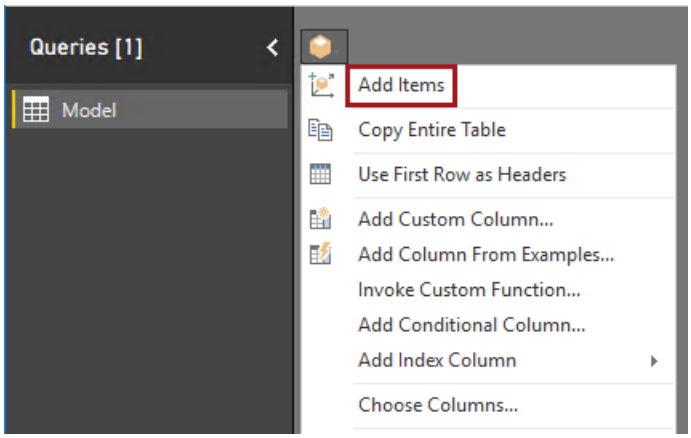
5. In the **Access SQL Server Analysis Services** window, click **Connect**.

Data Catalog allows you to connect with your own credentials. Data Catalog does not connect on your behalf.

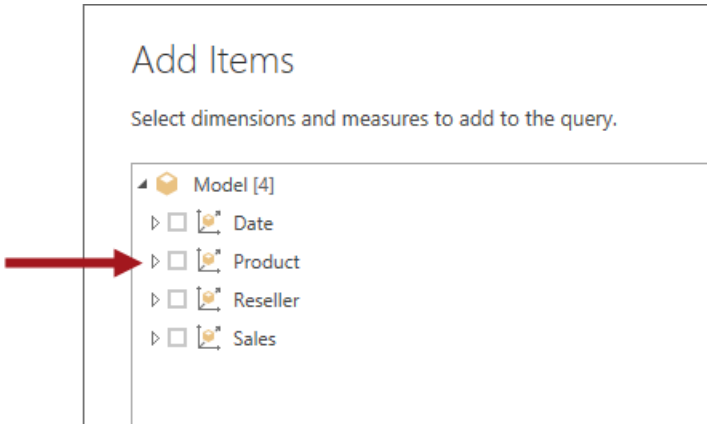
6. To create a query, on the **Home** ribbon, from inside the **External Data** group, click the **Edit Queries** icon.



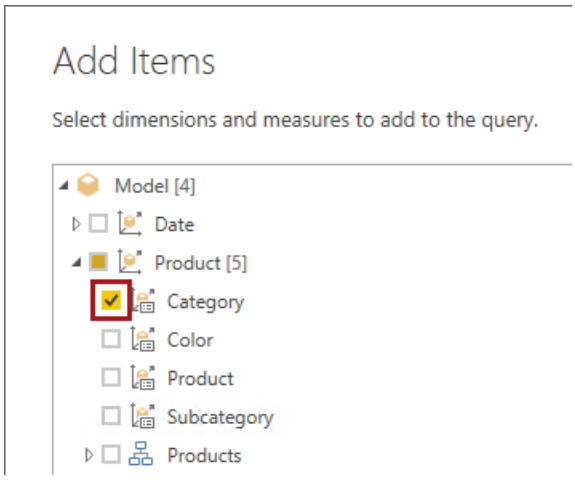
7. In the **Query Editor** window, click the model icon, and then select **Add Items**.



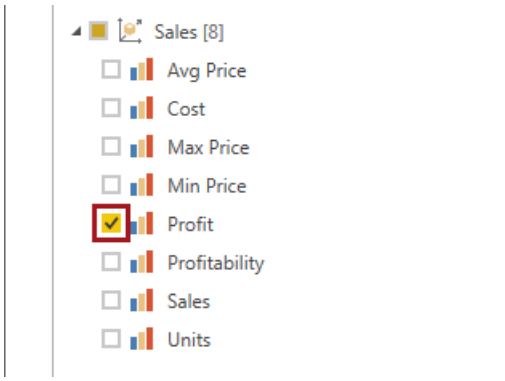
8. In the **Add Items** window, expand **Product**.



9. Check the **Category** attribute.



10. Expand **Sales**, and then check **Profit**.



11. Click **OK**.

12. Review the query result.

Lab-based Knowledge Check

Lab 2 ► Clothing Profit

What is the profit amount for the **Clothing** sales?

You may need data from this step to answer a Lab-based Knowledge Check associated with this module.

*Now, we recommend that you open the **Module 4** Lab-based Knowledge Check portion of the course in EdX to answer the questions as you complete this lab.*

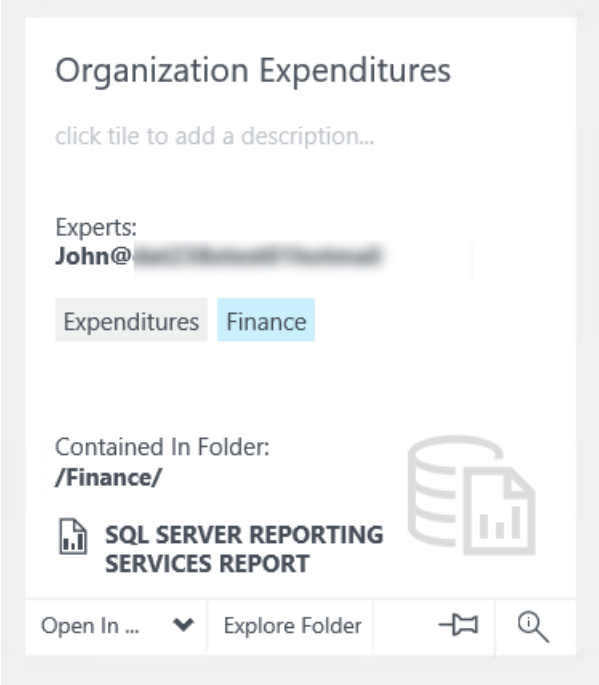
13. To close the **Query Editor** window, at the top-right corner, click **X**.

14. When prompted to apply changes, click **Not Now**.

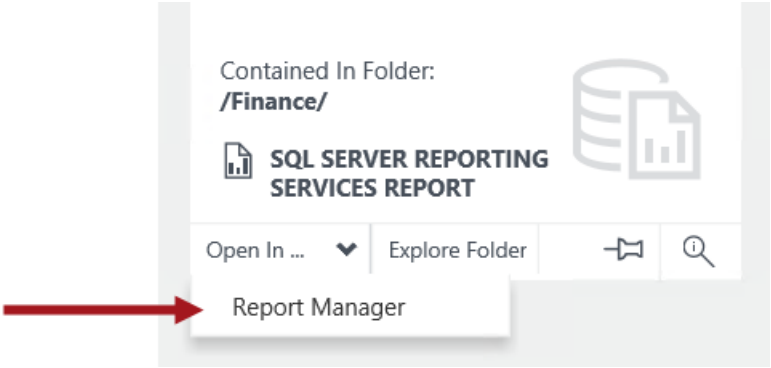
15. To close Power BI Desktop, on the **File** menu, select **Exit**.

16. When prompted to apply changes, click **Don't Save**.

17. Perform a search to locate and select the **Organization Expenditures** data asset.



18. At the bottom-left corner, click **Open In**, and then select **Report Manager**.



19. Review the report.

20. Close the Internet Explorer (Report Manager) session.

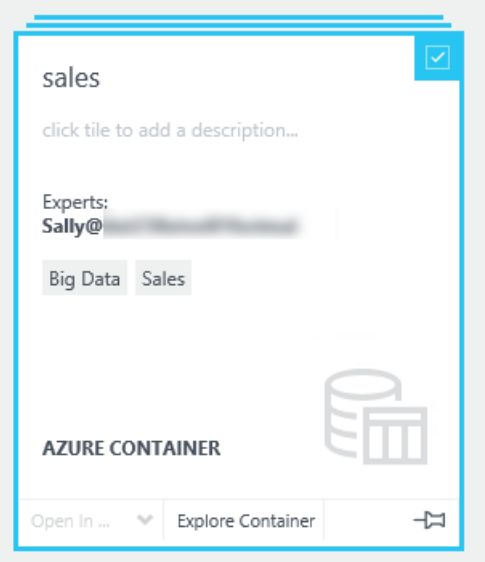
Exercise 5: Securing Data Catalog Assets

In this exercise, you will secure data catalog assets.

Securing Data Catalog Assets

In this task, you will work with taking ownership of data assets, and then limiting visibility to users.

1. Perform a search to locate the Azure container **sales** data asset.



This is evidence that Anna can currently access the data asset.

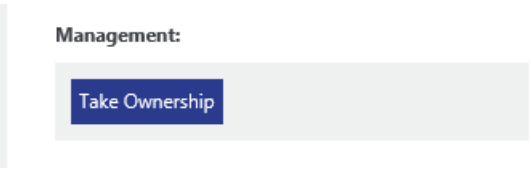
2. Sign out of the Data Catalog Portal.

3. Sign in to the Data Catalog Portal as **Stewart** (Data Steward).

4. Perform the same search to locate the Azure container **sales** data asset.

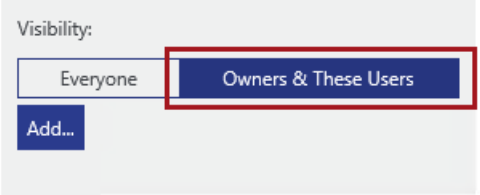
5. Select the **sales** data asset.

6. In the **Details** pane, in the **Properties** tab, scroll down to locate the **Management** section.



7. Click **Take Ownership**.

8. In the **Visibility** section, select **Owners & These Users**.



9. Beneath the **Visibility** setting, click **Add**.

10. In the **Add** box, enter the user name for **Sally** (Sales Analyst) (retrieved from **MySolution.txt**: Sally user name).

11. This configuration will ensure that only Catalog Adminstrators, the data asset owner (**Stewart**), and **Sally** can discover the data asset.

    It is also possible to add security groups.

12. Sign out of the Data Catalog Portal.

13. Sign in to the Data Catalog Portal as **Anna** (Business Analyst).

14. Perform the same search to locate the Azure container **sales** data asset.

15. Confirm that it is no longer possible to access the **sales** data asset.

    You have now completed all labs. You can continue to work in the VM to continue exploring Data Catalog.

    *When you are ready, you should complete the following **Finishing Up** exercise to delete the VM.*

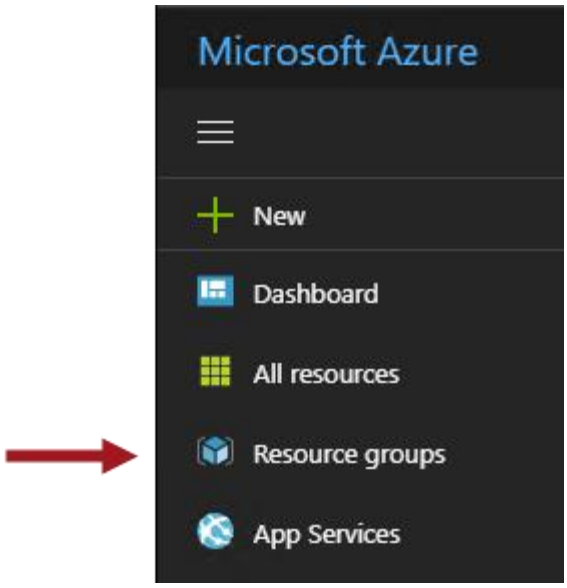
    Be sure to answer all Lab-based Knowledge Check questions before deleting the VM.

Finishing Up

In this exercise, you will delete the **Lab** resource group, which will delete the VM.

1. Close the remote desktop window.

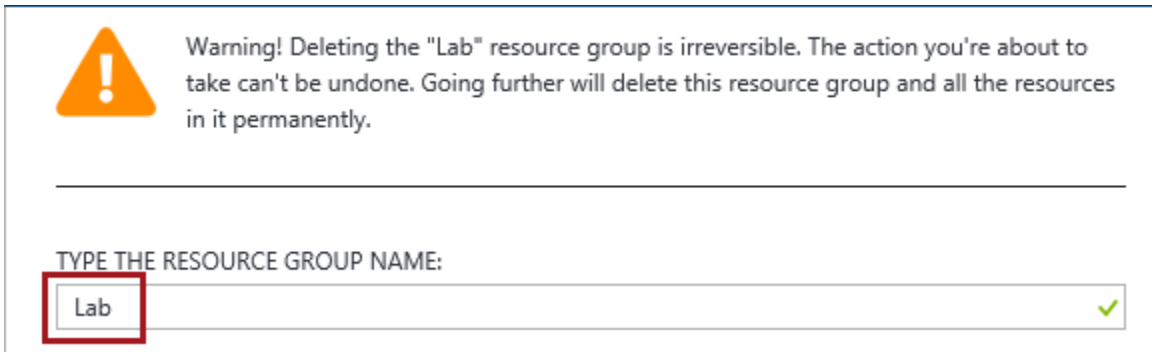
2. In the **Azure Portal** browser page, select **Resource Groups**.



3. In the **Resource Groups** blade, select the **Lab** resource group.

4. In the **Lab** blade, click **Delete Resource Group**.

5. When prompted to delete the resource group, in the **Type the Resource Group Name** box, enter **Lab**.



6. Click **Delete**.

7. Sign out of the **Azure Portal**.

8. Consider returning to the Outlook web site to delete the account you created: https://aka.ms/edx-dat238x-ol