

# Enterprise Vault 12.4 OData Reporting for Auditing

This whitepaper describes the Enterprise Vault 12.4 OData reporting features for auditing. This document applies to the following version(s) of Enterprise Vault: 12.4 and later. If you have any feedback or questions about this document please email them to [ji-tfe@veritas.com](mailto:ji-tfe@veritas.com) stating the document title.

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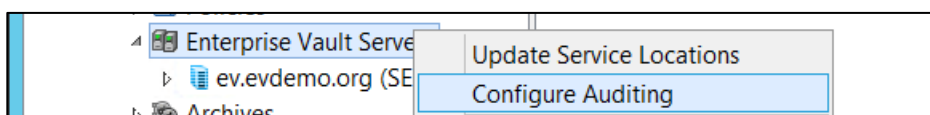
# Terminology

Term	Description
OData	Open Data Protocol
GDPR	General Data Protection Regulation
SAR	Subject Access Request
Power BI	A business analytics service provided by Microsoft
Power Query	Excel Add-in used for accessing data from different sources, including OData
XML	eXtensible Markup Language
JSON	Java Script Object Notation
Dataset	A collection of data, normally associated with the contents of a database table
Endpoint	What is used to access the data, in this case, from the EnterpriseVaultAudit Database. With Enterprise Vault 12.4, there are seven endpoints. (Archives, AuditEntries, Categories, Servers, Statuses, Subcategories, Users)

# Introduction

Enterprise Vault 12.3 introduced a new framework to enhance Enterprise Vault auditing and improve auditing's overall scalability. The enhanced audit entries relate to Admin Activity, improvements in logging detail, and enabling customers to respond to GDPR (General Data Protection Regulation) and (SAR) Subject Access Requests.

To review Enterprise Vault auditing settings, right-click on the **Enterprise Vault Servers** icon within the Enterprise Vault Administration Console and select **Configure Auditing**.



*Figure 1 – Configure Auditing*

Select the categories that you want Enterprise Vault to audit. Each category has a summary level of auditing and some categories have a detailed level. The **Centralized Settings** tab allows you to standardize audit settings for Enterprise Vault Servers across your site. The **Server settings** tab allows you to enable or disable auditing on individual Enterprise Vault servers and apply audit settings that are specific to individual, Enterprise Vault servers.



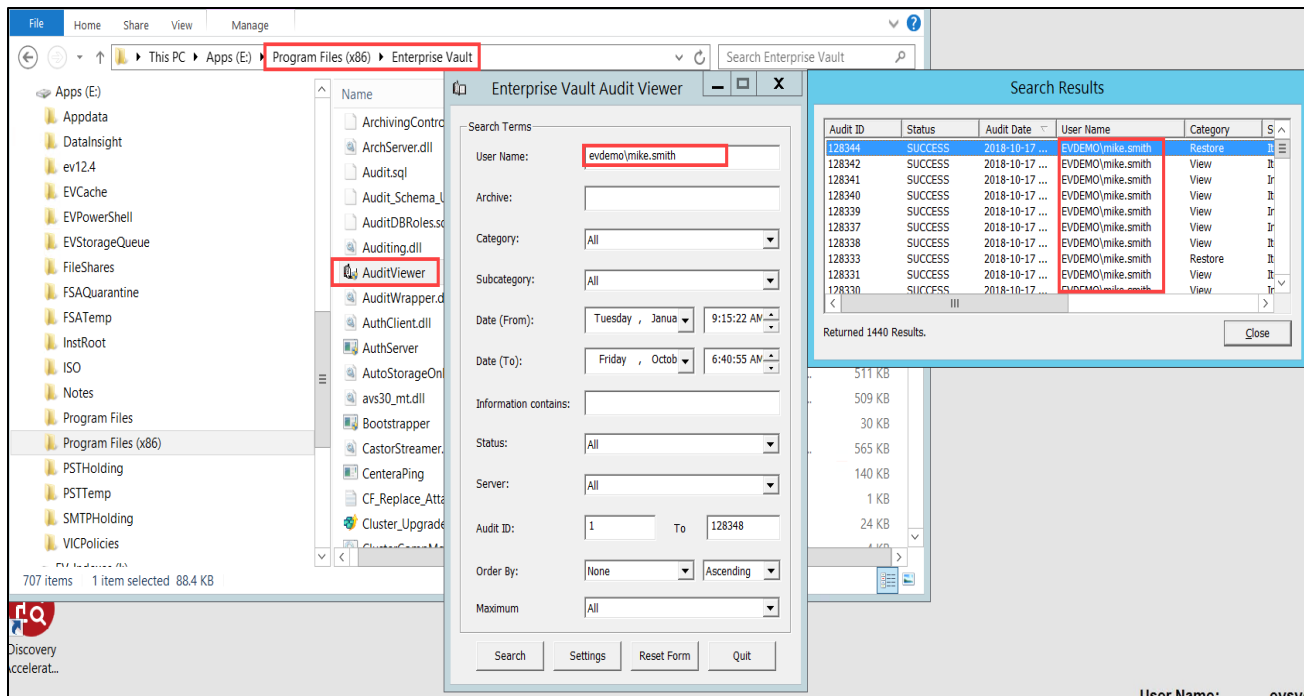
*Figure 2 – Centralized Settings*

**Table 1** below lists all of the auditing categories available with Enterprise Vault 12.4.

Category	Information Recorded
<b>Admin Activity</b>	Configuration changes made in the Enterprise Vault Administration Console or Management Shell, such as adding a new task, creating archives, or enabling mailboxes.
<b>Advanced Search</b>	Searches performed, including the terms used and the number of items found.
<b>Archive</b>	Items archived, either manually or on a scheduled run.
<b>Archive Folder Updates</b>	Archived items moved to a different mailbox folder.
<b>Archive Permissions</b>	Manual changes to user or group access permissions on an archive. Manual permissions on an archive are set using the archive properties dialog, or the Enterprise Vault Policy Manager (EVPM) utility.
<b>Classification</b>	Classification of archived items.
<b>Delete</b>	Archived items deleted because their retention periods have expired, users have chosen to delete them, or third-party applications have requested their deletion for compliance with data protection legislation.
<b>Domino Archive</b>	Any Domino archiving activity.
<b>Domino Restore</b>	Any Domino restore activity.
<b>Exchange Synchronization</b>	Records the details of creation, modification, and deletion of Exchange managed content settings. Enterprise Vault records relevant details when configured to archive from Exchange managed folders and to synchronize with their managed content settings.
<b>FS Archive</b>	File System Archiving activity.
<b>GetOnlineXML</b>	Document retrieval into SharePoint Portal Server.
<b>Indexing operations</b>	When indexing subtasks for managing index volumes start and stop. Also records any critical errors that the subtasks encounter when processing indexes. The Manage Indexes wizard enables you to manage index volumes.
<b>Move Archive</b>	Details of individual Move Archive operations.
<b>NSF Migration</b>	Items being migrated from NSF files.
<b>PST Migration</b>	Items being migrated from PST files.
<b>Restore</b>	Archived items restored.
<b>Retention Category Updates</b>	Changes to the retention category of archived items.
<b>SPS Archive</b>	SharePoint archiving activity.
<b>Saveset Status</b>	(For Support use.) Rarely used. Records whether a saveset file is available.
<b>Subtask Control</b>	The creation and modification of subtasks, such as the subtasks that control Move Archive operations.
<b>Undelete</b>	Deleted items recovered using the option Recover items on the Deleted Items tab of Archive Properties. Shortcuts recovered using the FSAUndelete utility are also recorded.
<b>User</b>	Your own auditing entries.
<b>View</b>	Viewing archived items, either as HTML or in their original formats.
<b>View Attachments</b>	Viewing of archived items from within SharePoint Portal Server.

***Table 1 – Auditing Categories***

**AuditViewer** is the Enterprise Vault utility traditionally used to view audit entries. AuditViewer is an executable located in the **Program Files (x86)\Enterprise Vault** directory. Customers can still access and use AuditViewer.



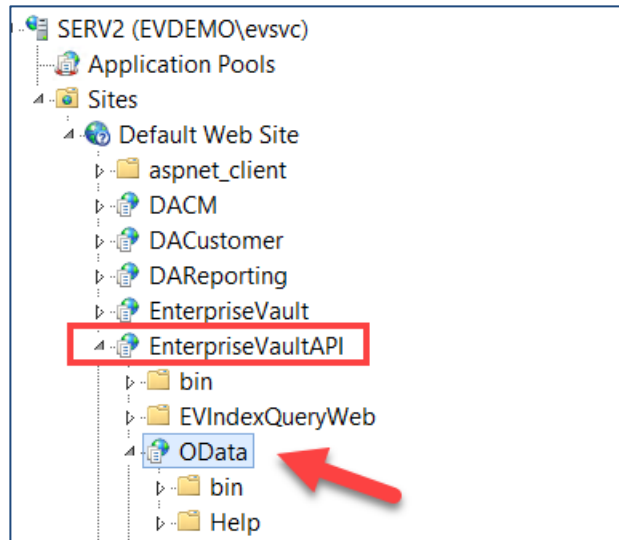
**Figure 3 – Audit Viewer**

Enterprise Vault 12.4 now allows customers to also query the audit database and create custom audit reports using OData (Open Data) datasets. Customer reporting requirements tend to vary widely, depending on an organization's legal and compliance regulations. OData Reporting addresses this need, allowing administrators to create their own custom reports using the OData protocol that exposes information from the Enterprise Vault Audit database.

OData is an open data access protocol for the web that provides a uniform way to structure, query, and manipulate data. With OData, you access datasets by simply typing in a URL path. OData supports both XML and JSON (Java Script Object Notation) formats for storing and exchanging data. OData is a web service which can be consumed by any http client like MS Excel, Postman, SQL Server Reporting Service, and numerous other third-party Business Intelligence applications that offer OData support. Enterprise Vault also exposes CA (Compliance Accelerator) and DA (Discovery Accelerator) OData datasets.

## OData Virtual Directory

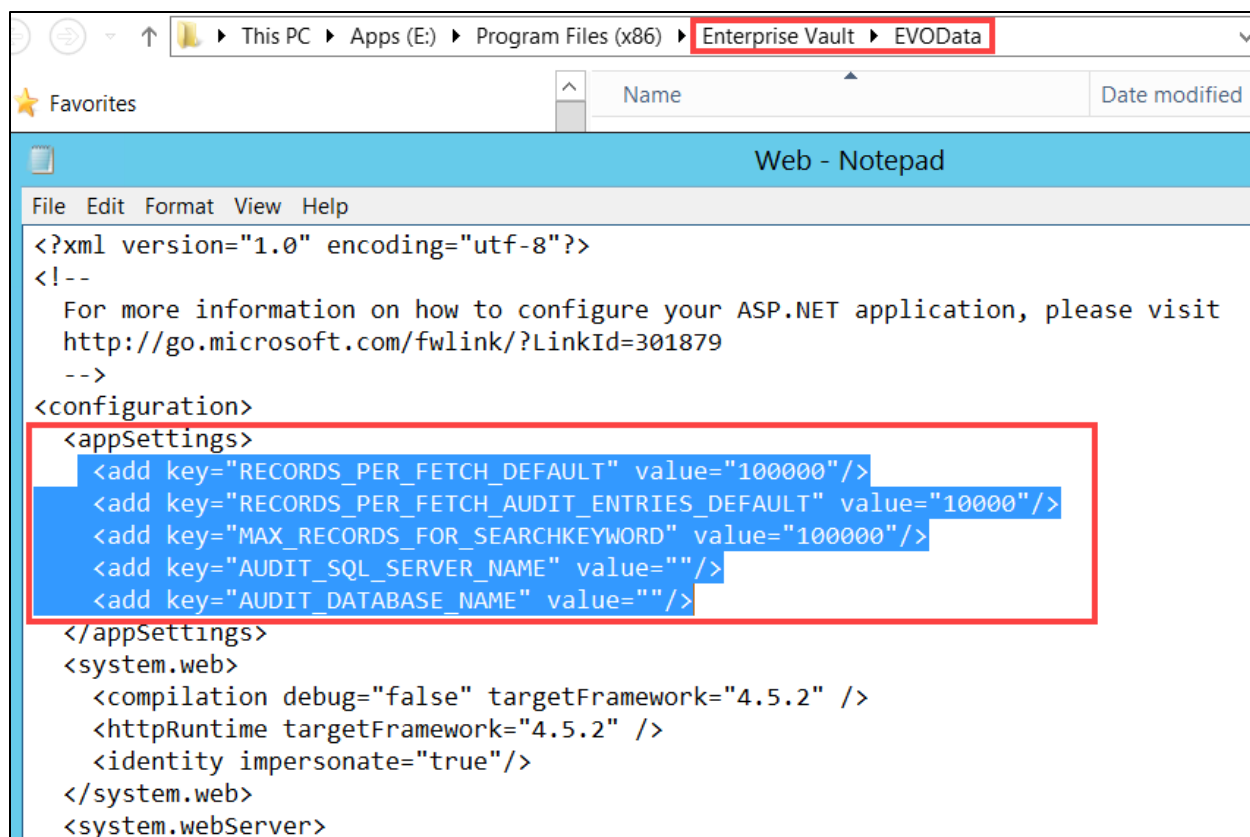
During a new install or upgrade to Enterprise Vault 12.4, the application creates an OData subdirectory under the **EnterpriseVaultAPI** virtual directory.



*Figure 4 – OData Virtual Directory*

Right clicking on the OData subdirectory within IIS Manager and selecting explore takes you to the **\Enterprise Vault\EVOData** directory. There are a number of hard coded settings in the **Web.Config** file within the EVOData directory. Customers can update the settings, based upon their requirements. The first three values pertain to the number of items fetched based upon default actions, audit entries, and key word searches.

The final two values deal with the Audit SQL Server Name and Audit Database Name. By default, these values are blank. OData always queries the active Enterprise Vault Audit Database. There is typically no need to change these settings. However, if a customer wants to access an inactive or older audit database using OData, customers can update the **AUDIT\_SQL\_SERVER\_NAME** and **AUDIT\_DATABASE\_NAME** entries in the **Web.Config** file.



*Figure 5 – Web.Config*

## Getting Help

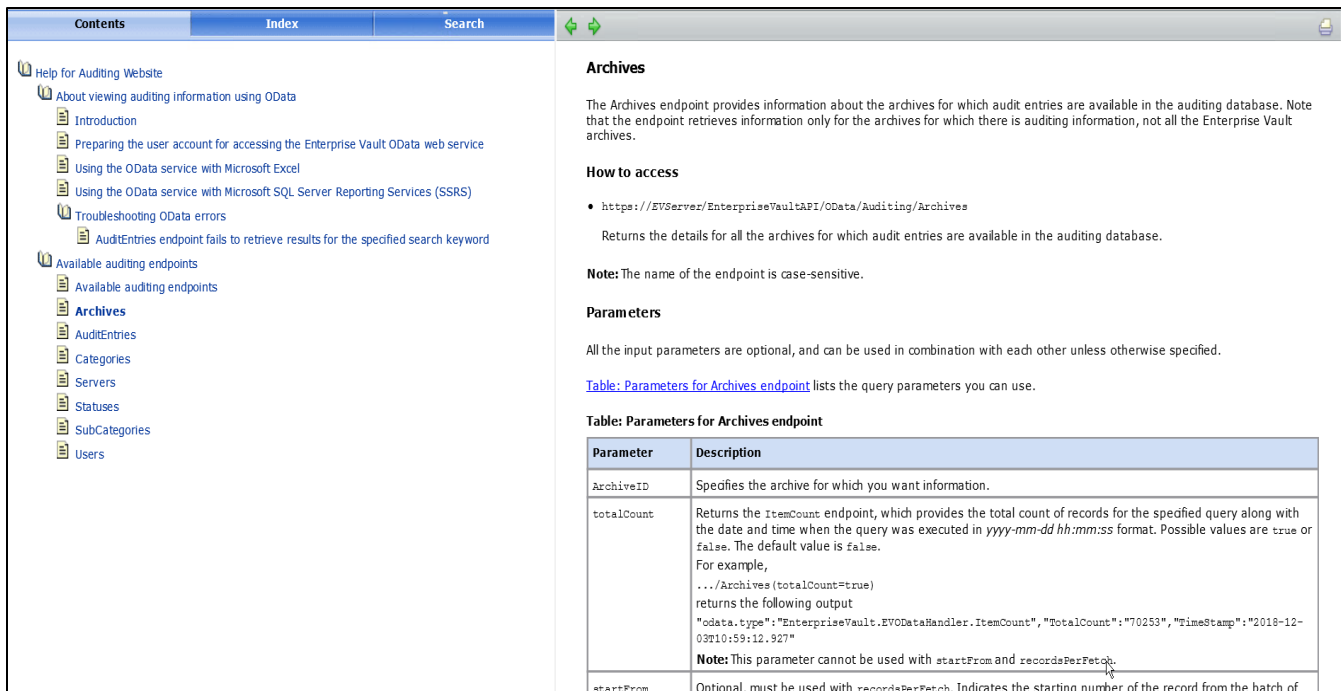
Enter <https://<EVSERVER>/EnterpriseVaultAPI/OData> to access the **Help for Auditing Website**.

Replace **EVSERVER** with the name of your Enterprise Vault Server name. The website provides help on:

- How to prepare users to access the Enterprise Vault OData Web Service
- Using the OData service with Microsoft Excel and Microsoft SQL Server Reporting Services (SSRS)
- Troubleshooting OData Errors
- Auditing Endpoints, fields and parameters

Review the section **Available Auditing Endpoints** to understand each endpoint's fields and parameters.

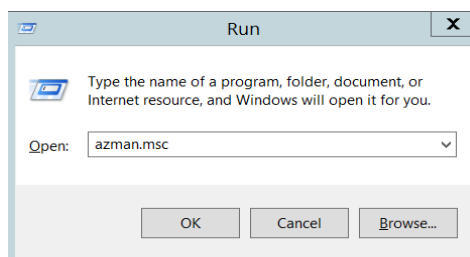




**Figure 6 – Help for Auditing Website**

## Can View Enterprise Vault Auditing OData datasets

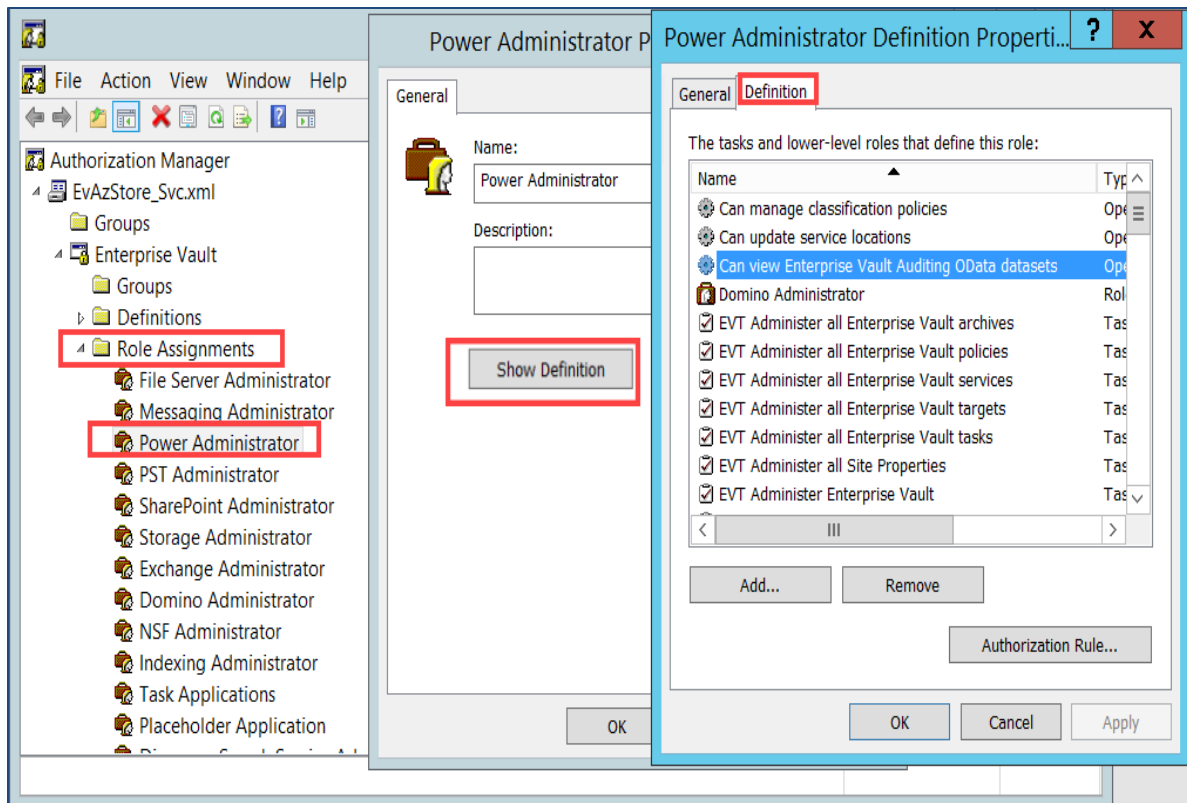
A new RBA (Role-Based Administration) operation **Can View Enterprise Vault Auditing OData datasets** allows users to access audit entries via OData. By default, users with the Power Administrator role are able to access the OData service. From the Enterprise Vault server open the Authorization Manager by typing **azman.msc**. Click **OK**.



**Figure 7 – Opening Authorization Manager**

## Power Administrator

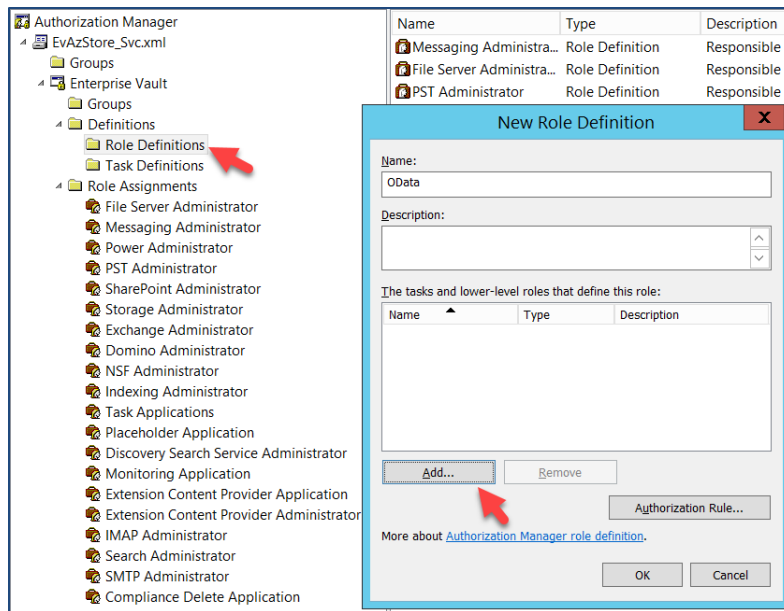
Expand **Role Assignments**. Right-click **Power Administrator** and select **Properties**. Click **Show Definition**. Click the **Definition** tab. You can see that a Power Administrator can view Auditing OData datasets, by default.



*Figure 8 – Power Administrator Definition*

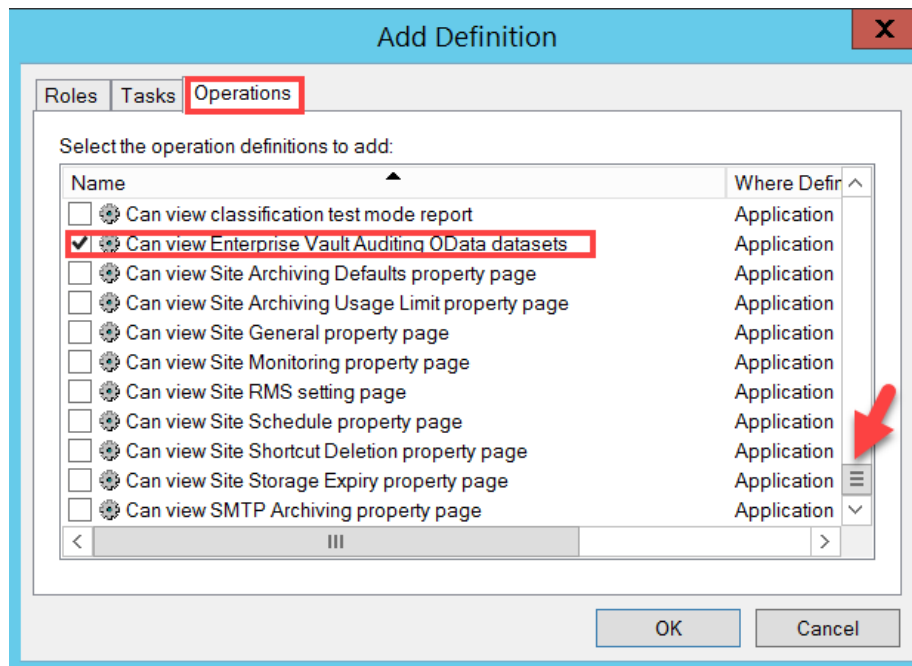
## Allowing other users to View OData Datasets

If customers want to assign users the ability to view Enterprise Vault auditing datasets using OData, without Power Administrator privileges, within **Authorization Manager**, right click on **Role Definitions** and select **New Role Definition**. Enter a name for the New Role Definition (e.g. OData). Click **Add**.



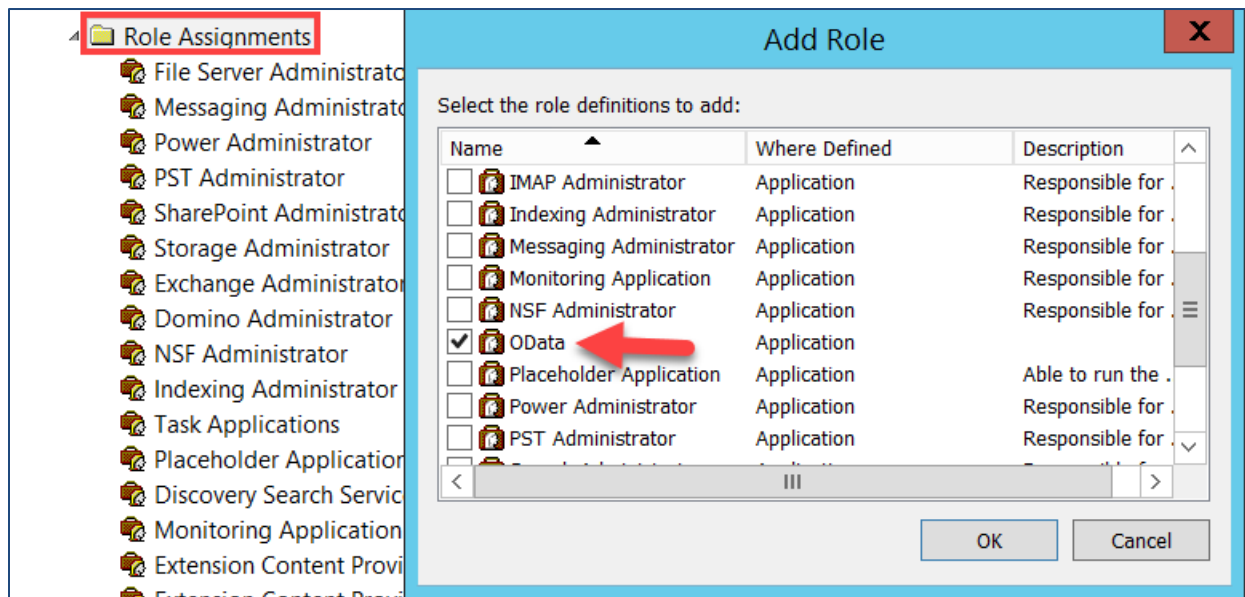
**Figure 9 – Creating a Role Definition**

Click the **Operations** tab. Scroll down to the bottom of the Operations list and check the box beside, **Can view Enterprise Vault Auditing OData datasets**. Click **OK**. Click **OK** again.



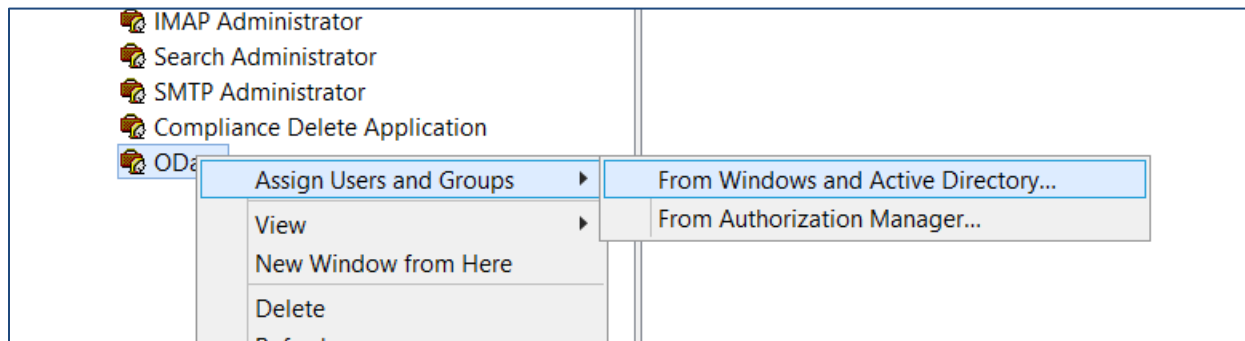
**Figure 10 – Can view Enterprise Vault Auditing OData datasets**

Right click on **Role Assignments** and select **New Role Assignment**. Select the OData Role Definition you created earlier. Click **OK**.



**Figure 11 – Adding a Role Assignment**

Right click the Role. Select **Assign Users and Groups/From Windows and Active Directory**.



**Figure 12 – Assign Users and Groups**

Enter the name of the user(s) or group(s) you would like to assign and click **OK**. Create a new directory (e.g. **RBA**). From the Enterprise Vault Management Shell, type:

**Get-EVRBAzStoreXML C:\RBA**

**Set-EVRBAzStoreXML C:\RBA**

**Get-EVRBARole**

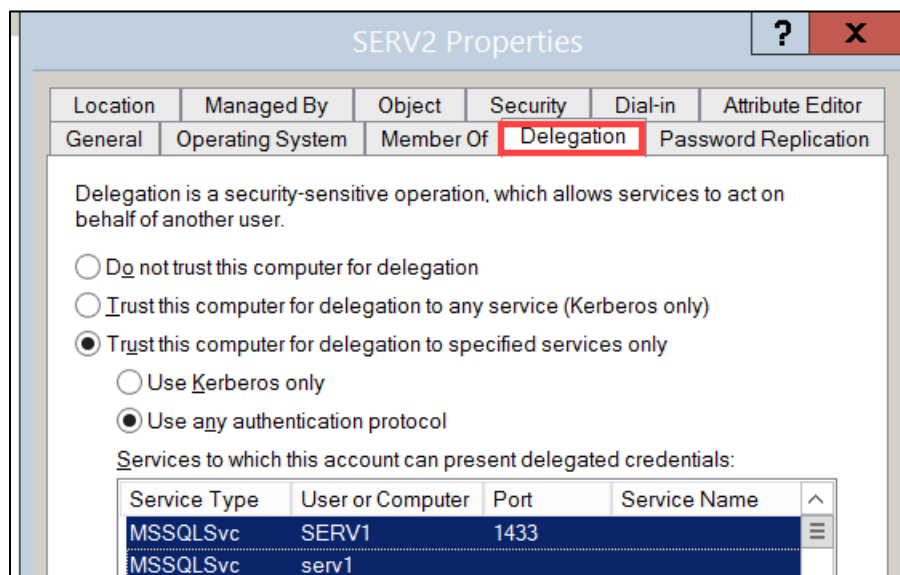
Powershell cmdlets download the Authorization Manager XML file and apply the OData Role

Assignment. **Get-EVRBARole** confirms we created and saved the ODATA role assignment.

## Trusted for Delegation

If Enterprise Vault and SQL are on different servers, as they are in a typical installation, then the Enterprise Vault Server needs to be trusted for delegation.

- 1) Open **Active Directory Users and Computers**.
- 2) Click on the **Computers** node under the Domain node.
- 3) Locate the Enterprise Vault Server. Right-click and select **Properties**.
- 4) Under **Delegation** tab, select **Trust this computer for delegation specified services only** and **Use any authentication protocol**
- 5) Click **Add**.
- 6) Click on **Users or Computers**.
- 7) Enter the SQL Server Name.
- 8) Select the **MSSQLSvc** Services.
- 9) Click **Apply** and **OK**.



*Figure 13 – Trusted for Delegation*

If **MSSQLSvc** does not appear, instead of entering the SQL Server Name in Step 7, add the name of the SQL Service Account associated with **MSSQLSvc**. Right-click on the **SQL Server (MSSQLSvc)** server in **Services**. Right-click to select **Properties**. Click the **Log On** tab. This will identify the service account. Repeat steps 7-9.

## EVODataAdminRole in SQL

A new SQL Database Role created within the Enterprise Vault Audit Database also gives access to view the OData datasets if users or groups are members of the **EVODataAdminRole**. The new role is located under the Enterprise Vault Audit Database, within **\Security\Roles\Database Roles**

If you added user-level access through the Authorization Manager correctly, then those users should appear as users under the **EVODataAdminRole**. Please note that during the upgrade to EV 12.4, you need to run a Powershell cmdlet, **Start-EVDatabaseUpgrade**. If you have not performed this step, then you will not see the new **EVODataAdminRole**. Steps on how to perform this procedure are in the **Upgrade\_Instructions** manual, in a section entitled: **Upgrading the Enterprise Vault Databases**.

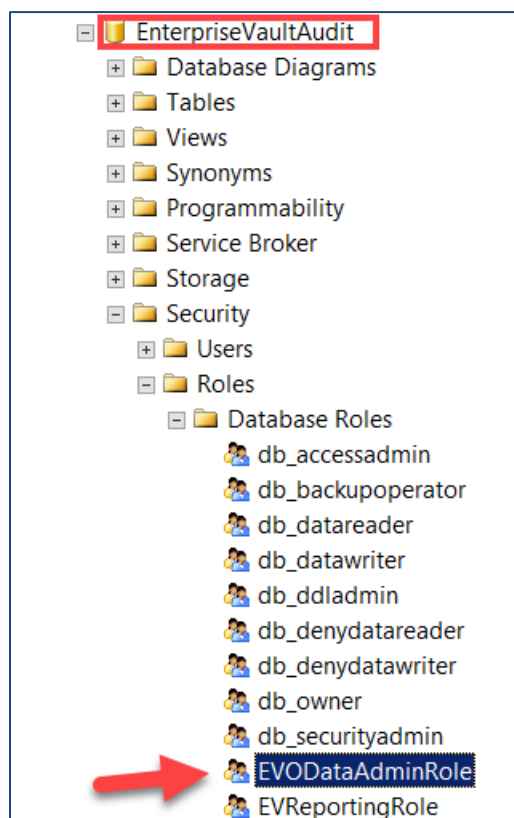


Figure 14 – EVODataAdminRole

## The Enterprise Vault Auditing Datasets

Listed in **Table 2** are the seven OData, Enterprise Vault Auditing Endpoints available with EV 12.4.

Please note that the endpoint names are case sensitive.

Endpoint	Shows
Archives	The list of archives for which audit entries are recorded in the audit database.
AuditEntries	The list of audit entries recorded in the audit database.
Categories	The list of audit categories for which audit entries are recorded in the audit database.
SubCategories	The subcategories on the basis of which audit entries are recorded in the audit database.
Users	The list of users for which audit entries are recorded in the audit database.
Servers	The list of servers for which audit entries are recorded in the audit database.
Statuses	The list of statuses that are recorded in the audit database.

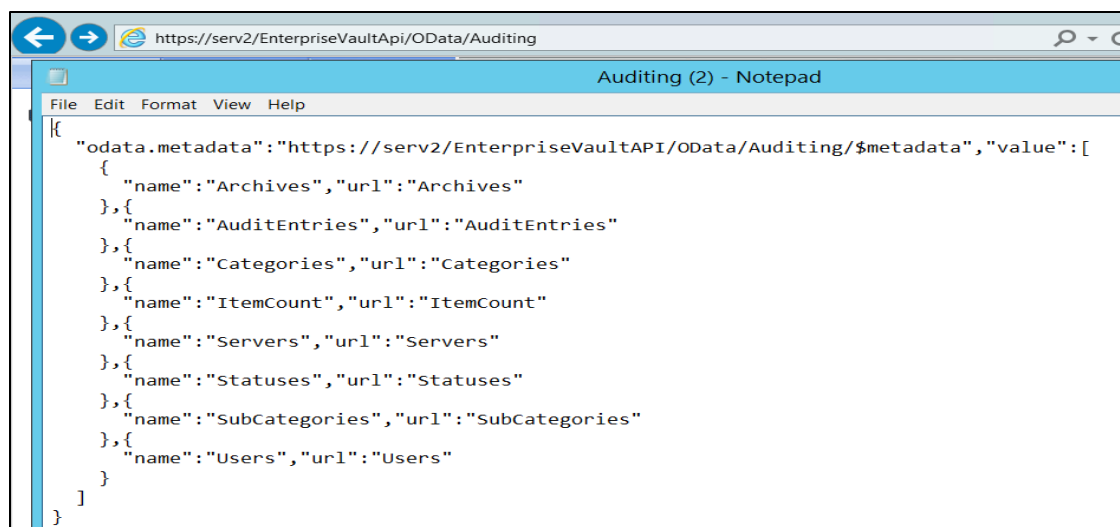
*Table 2 – Enterprise Vault Auditing Datasets*

### Viewing the Datasets

To view the Auditing Dataset names from a web browser, simply type in the following URL, replacing **EVSERVER** with the actual name of your Enterprise Vault server:

<https://<EVSERVER>/EnterpriseVaultAPI/OData/Auditing>

If prompted, click **Open** and select a web browser, (e.g. Internet Explorer), or Notepad, to view the file.



*Figure 15 – OData Auditing Datasets*

## Dataset Fields

It is helpful to review and become familiar with the fields for each dataset. This will help you determine what datasets and fields you would like to include within a specific report. To see the associated fields for each Auditing Dataset, enter the following:

[https://EVservername/EnterpriseVaultAPI/OData/Auditing/\\$metadata](https://EVservername/EnterpriseVaultAPI/OData/Auditing/$metadata)

```
<?xml version="1.0" encoding="utf-8" ?>
- <edmx:Edmx Version="1.0" xmlns:edmx="http://schemas.microsoft.com/ado/2007/06/edmx">
- <edmx:DataService m:DataServiceVersion="3.0" m:MaxDataServiceVersion="3.0" xmlns:m="http://schemas.microsoft.com/ado/2007/08/dataservices/metadata">
- <Schema Namespace="EnterpriseVault.EVODataHandler" xmlns="http://schemas.microsoft.com/ado/2009/11/edm">
- <EntityType Name="Archive">
- <Key>
- <PropertyRef Name="ArchiveID" />
- </Key>
- <Property Name="ArchiveID" Type="Edm.Int32" Nullable="false" />
- <Property Name="ArchiveName" Type="Edm.String" />
- <Property Name="Description" Type="Edm.String" />
- <Property Name="EntryID" Type="Edm.String" />
- </EntityType>
- <EntityType Name="AuditEntry">
- <Property Name="AuditID" Type="Edm.Int32" Nullable="false" />
- <Property Name="AuditDate" Type="Edm.DateTime" Nullable="false" />
- <Property Name="Status" Type="Edm.String" />
- <Property Name="UserName" Type="Edm.String" />
- <Property Name="CategoryName" Type="Edm.String" />
- <Property Name="SubCategoryName" Type="Edm.String" />
- <Property Name="ObjectID" Type="Edm.String" />
- <Property Name="Info" Type="Edm.String" />
- <Property Name="InfoStructured" Type="EnterpriseVault.EVODataHandler.ODataInfoObject" />
- <Property Name="Vault" Type="Edm.String" />
- <Property Name="ServerName" Type="Edm.String" />
- </EntityType>
- <EntityType Name="Category">
- <Key>
- <PropertyRef Name="CategoryID" />
- </Key>
- <Property Name="CategoryID" Type="Edm.Int32" Nullable="false" />
- <Property Name="CategoryName" Type="Edm.String" />
```

*Figure 16 – A partial view of the Auditing Dataset Fields*

For complete listing of each endpoint and their corresponding fields and parameters, go to

<https://<EVServer>/EnterpriseVaultAPI/OData> to access the **Help for Auditing Website**

## Accessing the datasets via OData

### OData Query Syntax

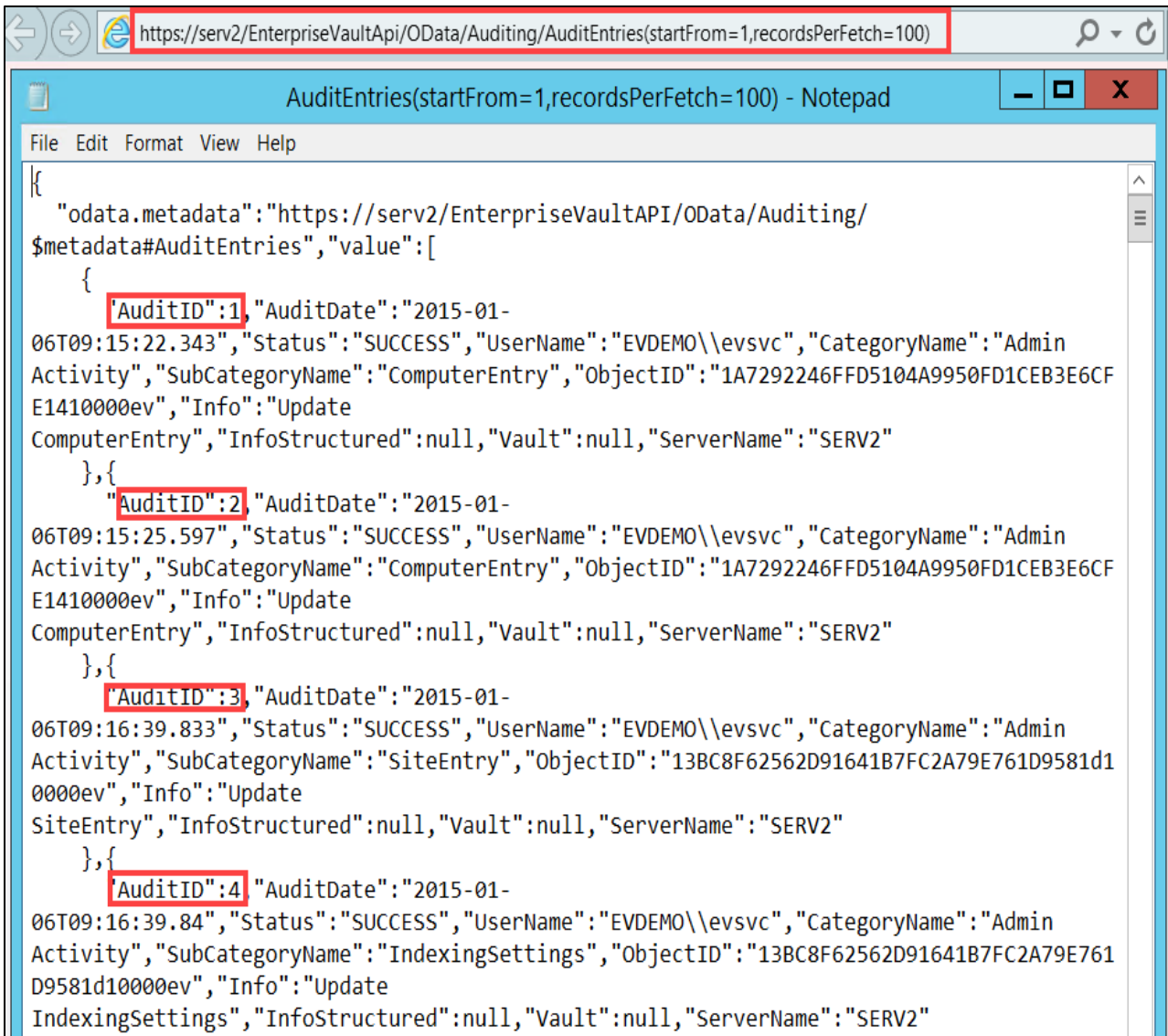
The OData URL path consists of a **Service Root**, a **Resource Path**, and **Query Options**. In **Table 3**, **AuditEntries** refers to the endpoint queried. (**startFrom=1,recordsPerFetch=100**) indicates that we will return the first 100 records within the **AuditEntries** dataset.

Service Root	Resource Path	Query Options
<a href="https://&lt;EVServer&gt;/EnterpriseVaultAPI/OData/Auditing">https://&lt;EVServer&gt;/EnterpriseVaultAPI/OData/Auditing</a>	/AuditEntries	(startFrom=1,recordsPerFetch=100)

*Table 3 – OData Query Syntax*



Listed below are the results of the AuditEntries query. Although you can query OData Auditing Datasets directly from a web browser, just like the example below, customers will create custom auditing reports using OData with Microsoft Excel and Power Query, Microsoft Power BI, or third party Business Intelligence applications of their choice.



```
{
  "odata.metadata":"https://serv2/EnterpriseVaultAPI/OData/Auditing/
$metadata#AuditEntries","value":[
    {
      "AuditID":1,"AuditDate":"2015-01-
06T09:15:22.343","Status":"SUCCESS","UserName":"EVDEMO\\evsvc","CategoryName":"Admin
Activity","SubCategoryName":"ComputerEntry","ObjectID":"1A7292246FFD5104A9950FD1CEB3E6CF
E1410000ev","Info":"Update
ComputerEntry","InfoStructured":null,"Vault":null,"ServerName":"SERV2"
    },{
      "AuditID":2,"AuditDate":"2015-01-
06T09:15:25.597","Status":"SUCCESS","UserName":"EVDEMO\\evsvc","CategoryName":"Admin
Activity","SubCategoryName":"ComputerEntry","ObjectID":"1A7292246FFD5104A9950FD1CEB3E6CF
E1410000ev","Info":"Update
ComputerEntry","InfoStructured":null,"Vault":null,"ServerName":"SERV2"
    },{
      "AuditID":3,"AuditDate":"2015-01-
06T09:16:39.833","Status":"SUCCESS","UserName":"EVDEMO\\evsvc","CategoryName":"Admin
Activity","SubCategoryName":"SiteEntry","ObjectID":"13BC8F62562D91641B7FC2A79E761D9581d1
0000ev","Info":"Update
SiteEntry","InfoStructured":null,"Vault":null,"ServerName":"SERV2"
    },{
      "AuditID":4,"AuditDate":"2015-01-
06T09:16:39.84","Status":"SUCCESS","UserName":"EVDEMO\\evsvc","CategoryName":"Admin
Activity","SubCategoryName":"IndexingSettings","ObjectID":"13BC8F62562D91641B7FC2A79E761
D9581d10000ev","Info":"Update
IndexingSettings","InfoStructured":null,"Vault":null,"ServerName":"SERV2"
    }
  ]
}
```

**Figure 17 – Results from an AuditEntries Query**

**OData Query Examples**

**Table 4** shows some examples of the syntax to return data from the OData Auditing Datasets. Example 1 provides a user count. Example 2 fetches 500 records from AuditEntries. Example 3 returns the top 10 Audit Categories.

For complete listing of each endpoint with their corresponding fields and parameters, go to

<https://<EVServer>/EnterpriseVaultAPI/OData> to access the **Help for Auditing Website**

OData Queries with additional parameters
<a href="https://&lt;EVServer&gt;/EnterpriseVaultAPI/OData/Auditing/Users(totalCount=true)">https://&lt;EVServer&gt;/EnterpriseVaultAPI/OData/Auditing/Users(totalCount=true)</a>
<a href="https://&lt;EVServer&gt;/EnterpriseVaultAPI/OData/Auditing/AuditEntries(recordsPerFetch=500)">https://&lt;EVServer&gt;/EnterpriseVaultAPI/OData/Auditing/AuditEntries(recordsPerFetch=500)</a>
<a href="https://&lt;EVServer&gt;/EnterpriseVaultAPI/OData/Auditing/Categories?\$top=10">https://&lt;EVServer&gt;/EnterpriseVaultAPI/OData/Auditing/Categories?\$top=10</a>

Table 4 – OData Dataset Query Syntax

This white paper will now take you through several different examples of creating custom reports and dashboards using Microsoft Power BI and Microsoft Excel Power Query.

Microsoft Power BI

Open Microsoft Power BI and select **Get Data**.

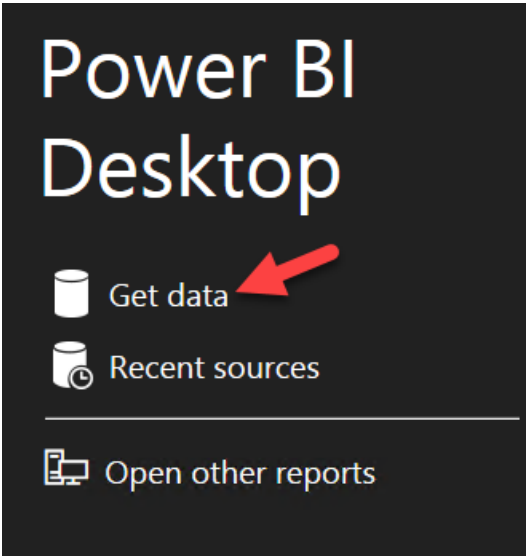
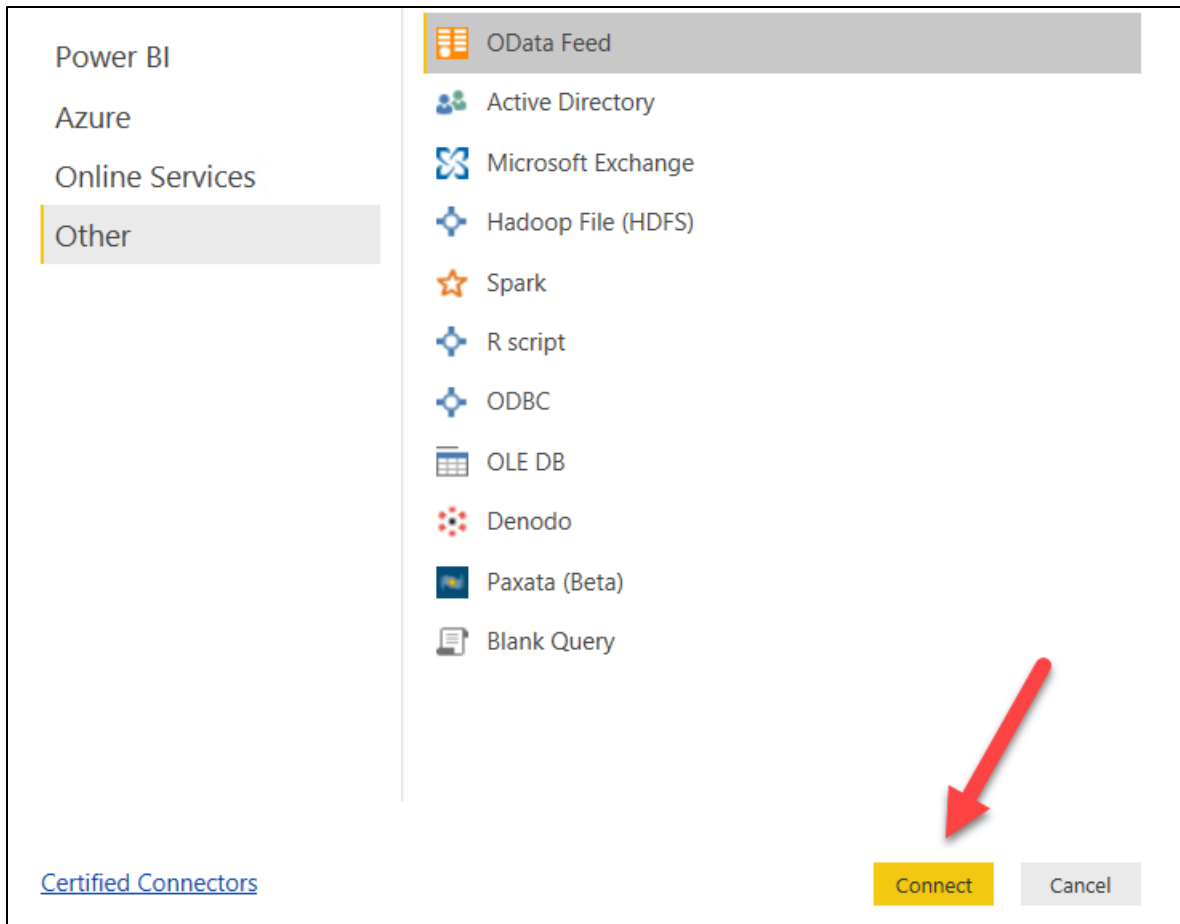


Figure 18 – Get Data

Select **Other/OData Feed**

Click **Connect**



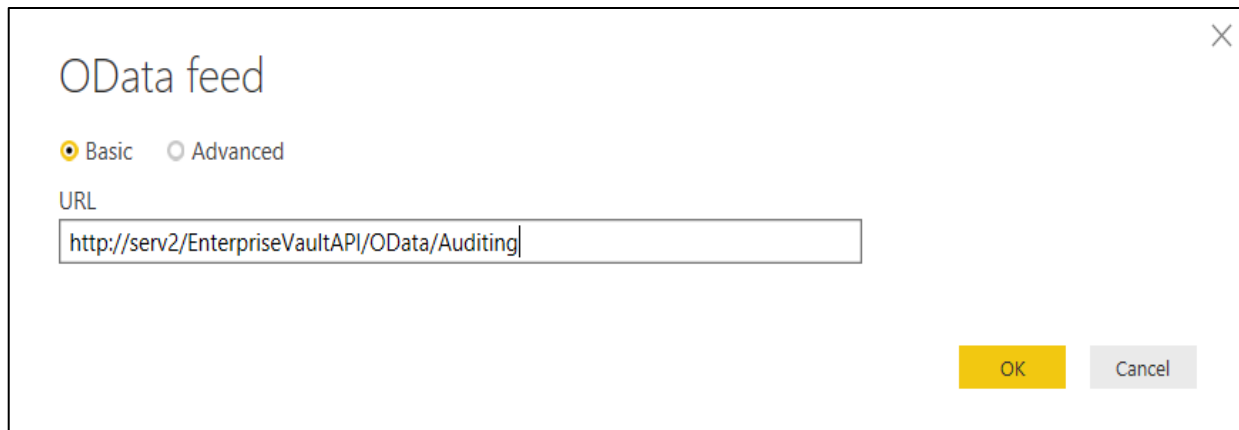
*Figure 19 – Connecting to OData in Power BI*

Enter the OData dataset you are interested in working with. In this case, we will enter:

<http://<EVServer>/EnterpriseVaultAPI/OData/Auditing>

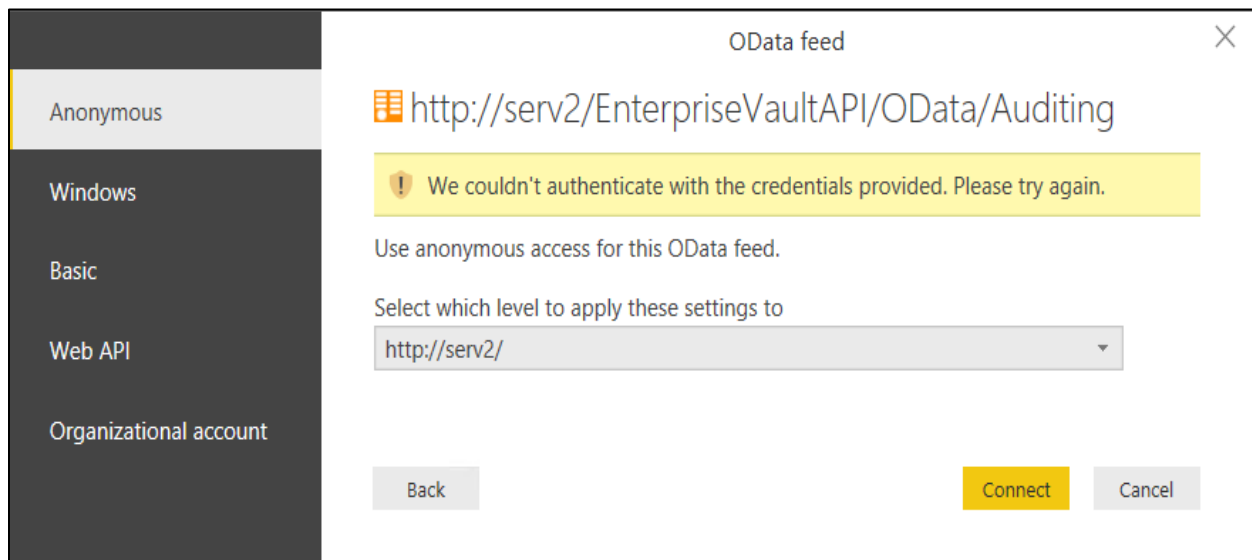
Replace **EVServer** with the actual name of your EV server.

Click **OK**.



**Figure 20 – OData Feed**

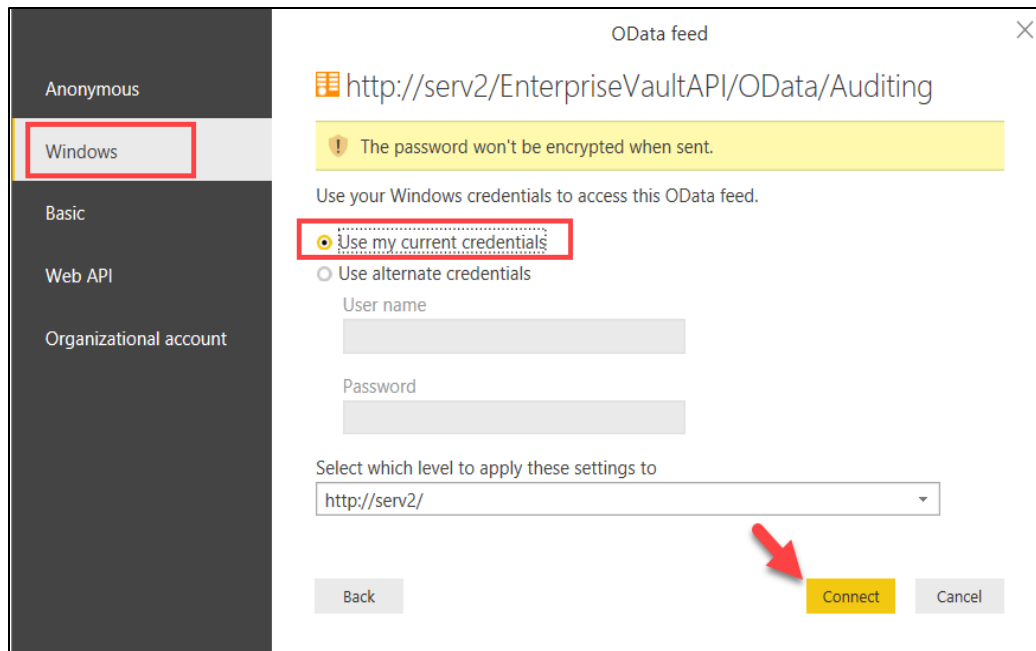
You may receive an authentication error.



**Figure 21 – Authentication Error**

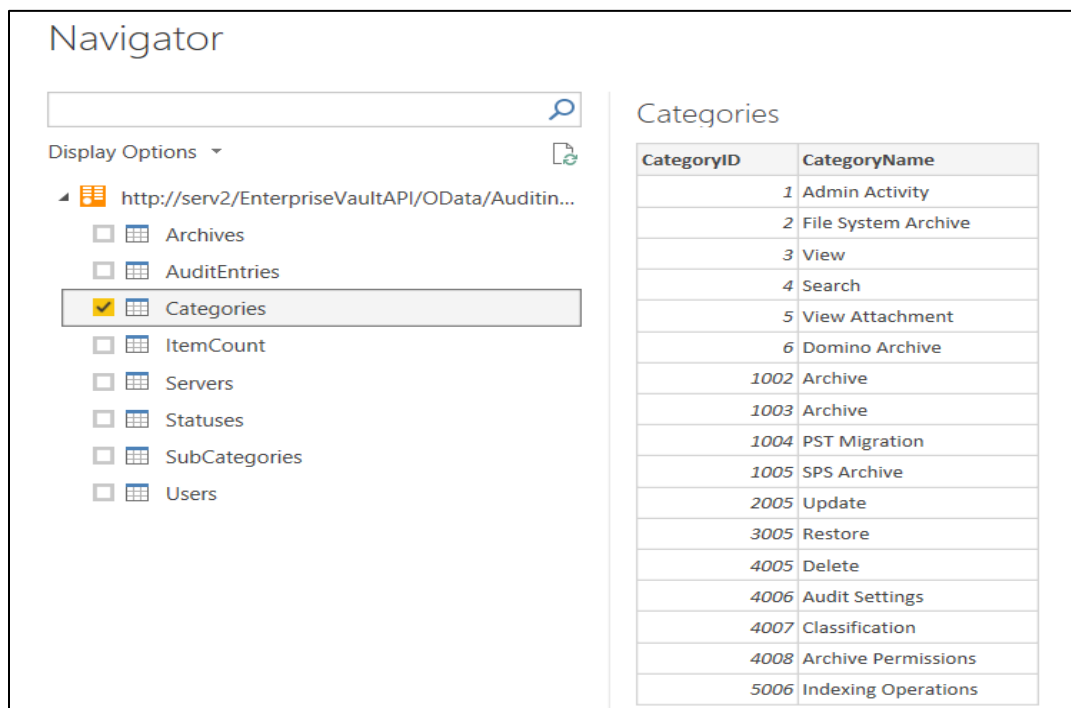
Select **Windows** from the Side Navigation Bar.

Click **Connect**



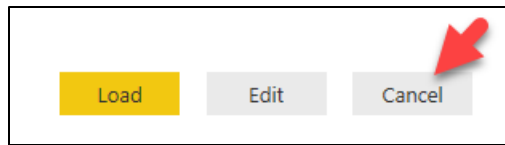
**Figure 22 – Use my current credentials**

Scroll through and familiarize yourself with the different OData datasets. Ignore Item Count.



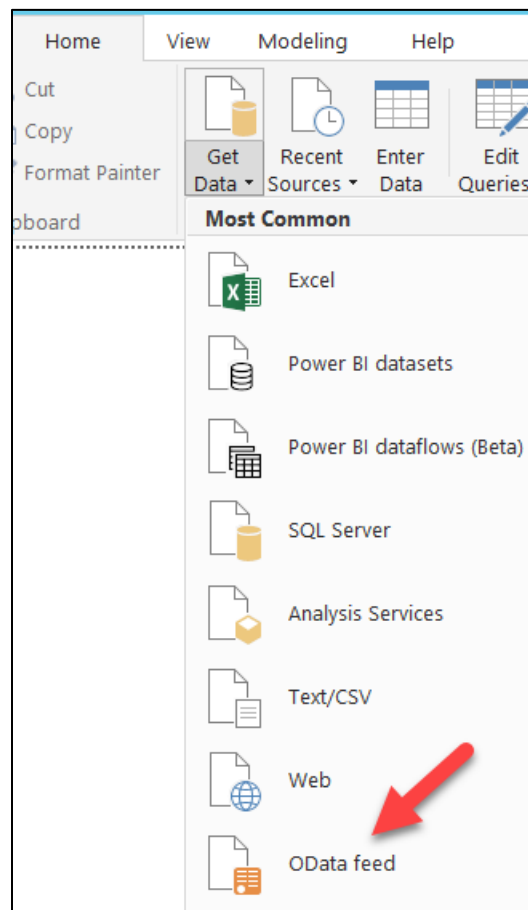
**Figure 23 – Select the Datasets**

Click Cancel at the bottom, right hand corner of the Navigator screen.



**Figure 24 – Cancel**

From the menu bar, select **Get Data/OData feed**



**Figure 25 – Get Data/OData feed**

When the OData feed screen appears, type the following in the URL box

<http://<EVServer>/EnterpriseVaultAPI/OData/Auditing/AuditEntries>

Replace **EVServer** with the name of your Enterprise Vault server.

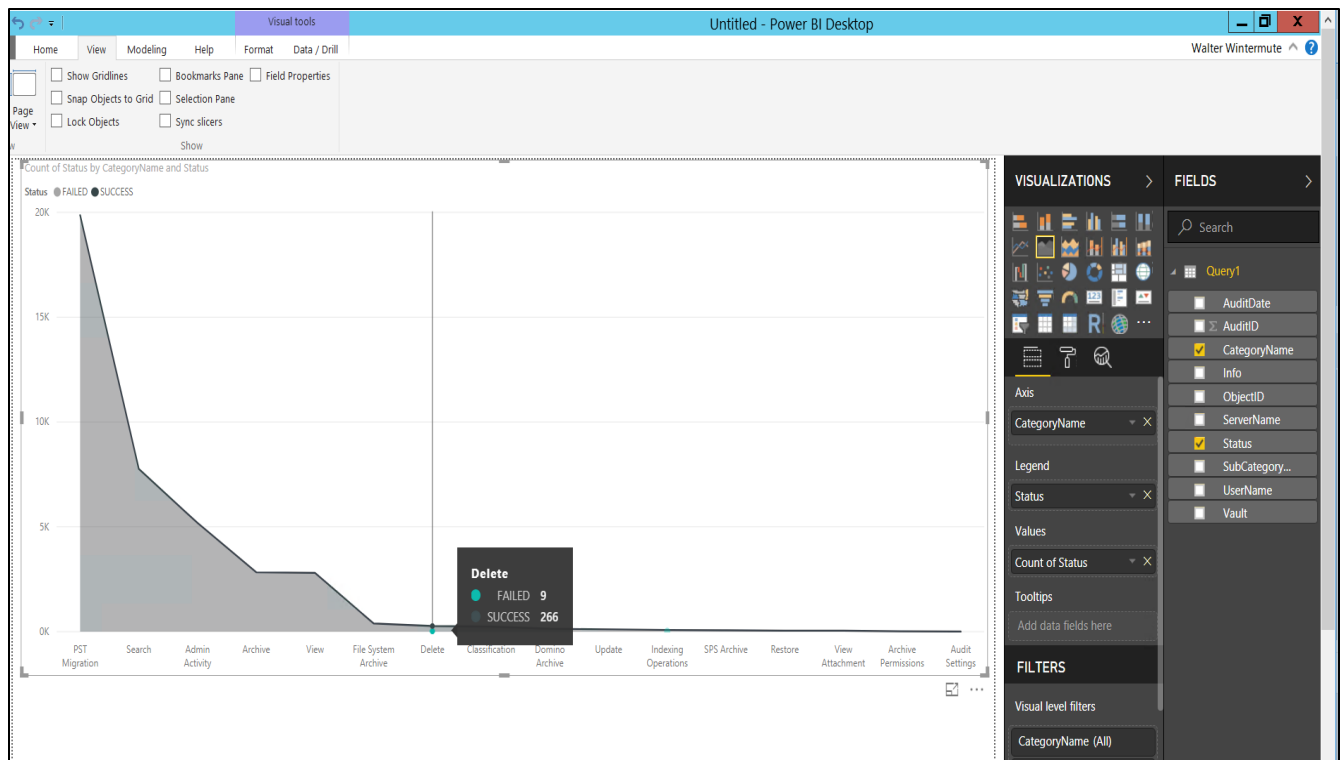
Click **OK**

Click **Load**

Modify the chart as to how you would like to present the data. In this case, we have selected the Fields **CategoryName** and **Status** from the **AuditEntries** table. This chart shows us the number of audit events for each category, and the number of Successes and Failures.

Drag **CategoryName** under **Axis**, **Status** under **Legend**, and **Status** under **Values**.

Highlighting the **Delete** Category, we see 9 Failures and 266 Successes.



**Figure 26 – Chart**

## Microsoft Excel Power Query

Examples in this document use Microsoft Excel 2013. In order to access Enterprise Vault datasets using OData, you will need to install the free, Microsoft Power Query add-in. Power Query allows you to query and retrieve data across a number of different data sources, including OData, directly from within Excel. You can download the add-in from Microsoft via the following URL: <https://www.microsoft.com/en-us/download/details.aspx?id=39379>

## Microsoft Excel Power Pivot

It is also useful to install the Microsoft PowerPivot Add-in for Excel.

To do so, follow the instructions below (the instructions assume that you are using Excel 2013):

1. Within Excel select the **File** tab and choose **Options**.

2. Choose **Add-ins**
3. In the **Manage** list, choose **COM add-ins** and select **Go**
4. Select **Microsoft Office PowerPivot for Excel 2013** and click **OK**.

Once you install the PowerQuery and PowerPivot add-ins, you will see these menu options within Excel.



*Figure 27 – Add-ins*

Prior to creating our custom reporting examples, open a blank workbook within Excel right-click the bottom, right-hand corner of your worksheet and rename the worksheet you have open to **Audit Entries**.

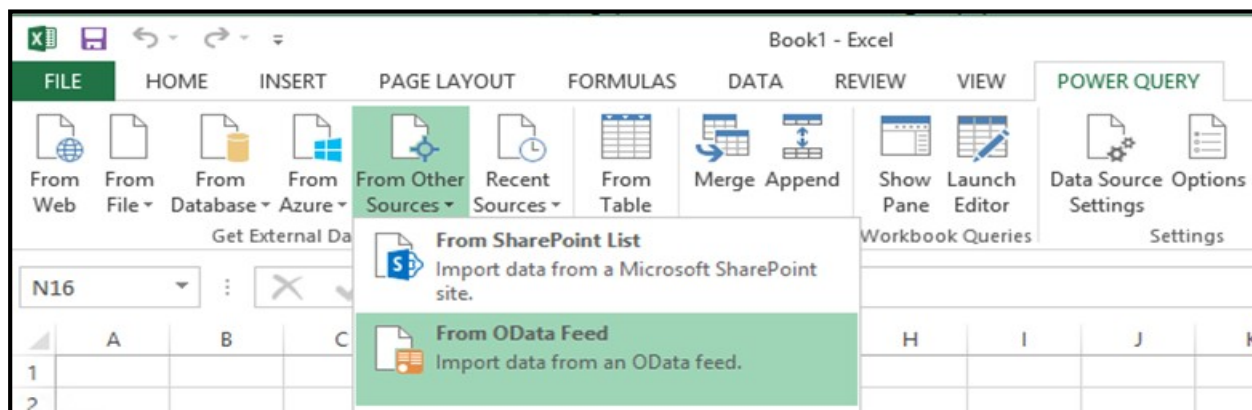


*Figure 28 – Audit Entries*

## Creating Enhanced Reports

### Accessing OData Datasets from Excel

Highlight the Power Query tab. Select **From Other Sources/From OData Feed**



*Figure 29 – OData Feed*

Type in: <http://<EVServer>/EnterpriseVaultAPI/OData/Auditing>. Replace **EVServer** with the name of your Enterprise Vault Server.



**OData feed**

☒ Basic ☐ Advanced

URL

OK Cancel

**Figure 30 – OData URL**

Once you connect, you will see a listing of datasets. Click on each dataset to review. (Ignore the ItemCount.) The refresh button on the top, right-hand corner of the page allows you to refresh the content of each dataset.

**Navigator**

☐ Select multiple items

Display Options ▾

- http://serv2/EnterpriseVaultAPI/ODATA/Auditi...
- Archives
- AuditEntries
- Categories**
- ItemCount
- Servers
- Statuses
- SubCategories
- Users

**Categories**  
Preview downloaded on Friday

CategoryID	CategoryName
1	Admin Activity
2	File System Archive
3	View
4	Search
5	View Attachment
6	Domino Archive
1002	Archive
1003	Archive
1004	PST Migration
1005	SPS Archive
2005	Update
3005	Restore
4005	Delete
4006	Audit Settings
4007	Classification
4008	Archive Permissions
5006	Indexing Operations

**Figure 31 – Customers Dataset**

After reviewing the datasets, click **Cancel**.

23 Item

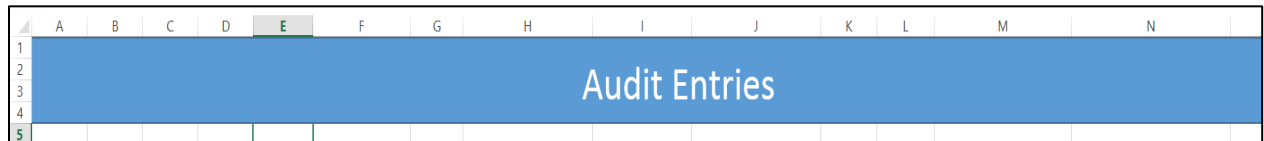
Tables Load Edit Cancel

**Figure 32 – Click Cancel**

## Creating an Auditing Database Dashboard

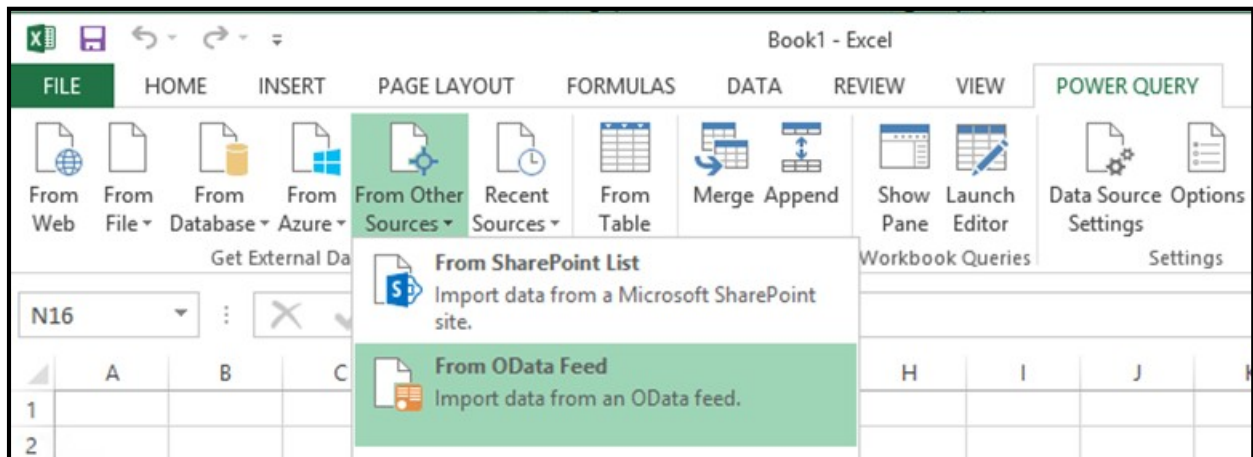
### Adding an AuditEntries Worksheet

Create a banner at the top of the spreadsheet if you wish and then highlight cell E5.



*Figure 33 – Audit Entries*

Highlight the **Power Query** Tab. Select **From Other Sources/From OData Feed**.



*Figure 34 –OData Feed*

In this example, type in the URL:

<http://<EVServer>/EnterpriseVaultAPI/OData/Auditing/AuditEntries> to read the AuditEntries dataset. Replace **EVServer** with the name of your EnterpriseVault server.

×

OData feed

Basic

Advanced

URL

http://serv2/EnterpriseVaultAPI/OData/Auditing/AuditEntries

OK

Cancel

Figure 35 - URL

Click **OK**.

Select **Load/Load To...**

18	1/6/2015 11:04:20 AM	SUCCESS	EVDEMO\evsvc	Admin Activity	IndexingSettings	13BC8F62562D91641B7FC2A79E761D9581d10000ev	U
19	1/6/2015 11:48:27 AM	SUCCESS	EVDEMO\evsvc	Admin Activity	ComputerEntry	1A7292246FFD5104A9950FD1CEB3E6CFE1410000ev	U
1019	1/7/2015 5:51:30 AM	SUCCESS	EVDEMO\evsvc	Admin Activity	ComputerEntry	1A7292246FFD5104A9950FD1CEB3E6CFE1410000ev	U

The data in the preview has been truncated due to size limits.

<

>

Load

▼

Edit

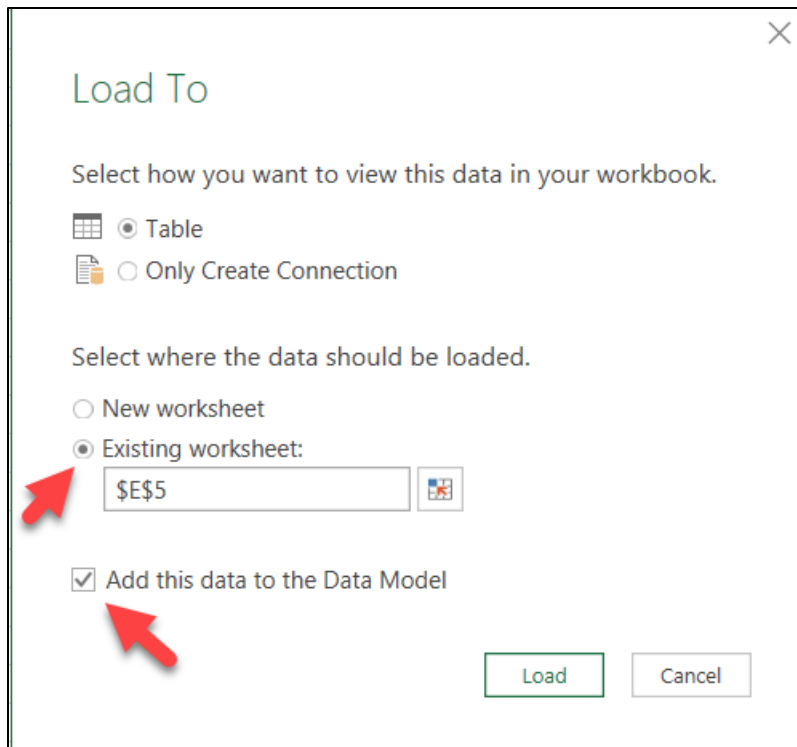
Cancel

Load

Load To...

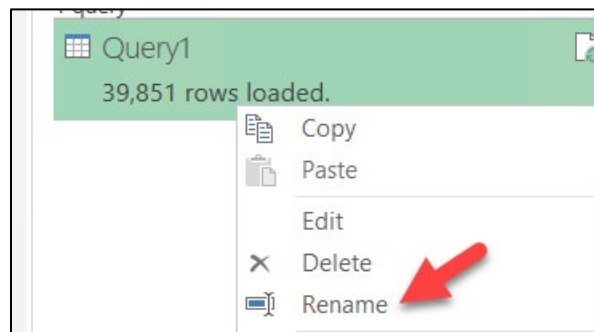
Figure 36 - Load To...

- Select **Existing Worksheet**.
- Check **Add this data to the data model**
- Click **Load**



**Figure 37 – Existing Worksheet**

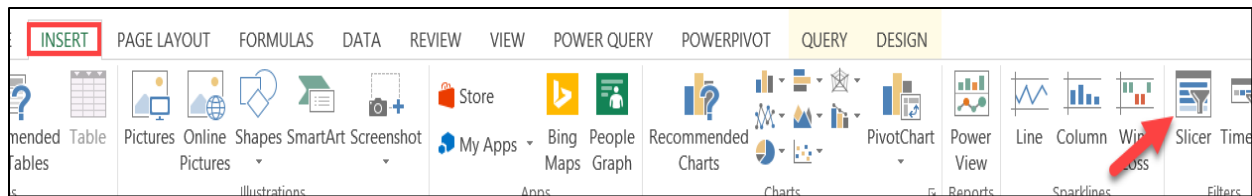
Right click on **Query1** and rename to something more descriptive (e.g. **AuditEntries**)



**Figure 38 – Rename Query1**

Select cell **E5** and click **Ctrl A** to select the entire table

Select **Insert/Slicer**.

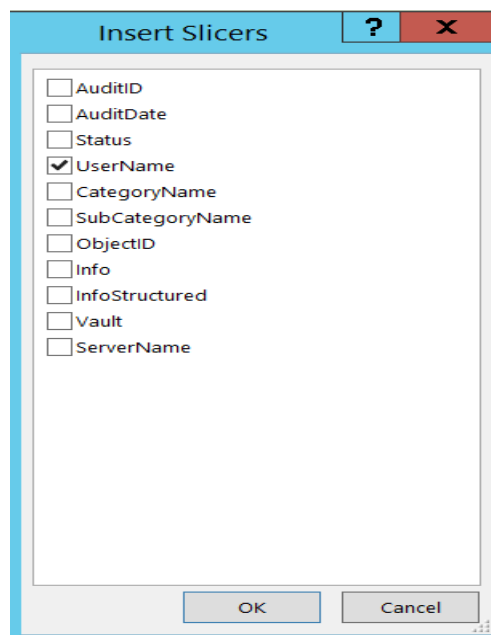


**Figure 39 – Slicer**

In the **Insert Slicers** window, check **UserName**.

Click **OK**.

Repeat steps for **CategoryName**.



**Figure 40 – Insert Slicers**

Move the slicers up to the top, on the left hand side of the AuditEntries table.

Audit Entries

UserName	AuditID	AuditDate	Status	UserName	CategoryName	SubCategoryName	Object	Info	InfoStructured	Vault	ServerName
EVDEMO\carlos.diaz	10395	1/8/2015 9:33	SUCCESS	EVDEMO\evsvc	PST Migration	Information	20150108C	PST File: '\\SERV2\ES\Files\Shares\users 1A37E00FA0C1F34BA5D0E3E		SERV2	
	15245	1/8/2015 9:35	SUCCESS	EVDEMO\evsvc	PST Migration	Information	20150108C	PST File: '\\SERV2\ES\Files\Shares\users 16180B14CF7EC3D48BFF2F83		SERV2	
	16865	1/8/2015 9:36	SUCCESS	EVDEMO\evsvc	PST Migration	Information	20150108C	PST File: '\\SERV2\ES\Files\Shares\users 1C66F059467DC004CB69114E1		SERV2	
EVDEMO\evsvc	28507	1/9/2015 14:30	SUCCESS	EVDEMO\evsvc	Admin Activity	ExchangeMailboxEntry	1617EC94I	Update ExchangeMailboxEntry		SERV2	
	56100	1/20/2016 7:01	SUCCESS	EVDEMO\evsvc	Admin Activity	ExchangeMailboxEntry	14CCE99B	Update ExchangeMailboxEntry		SERV2	
EVDEMO\joshua.lambert	82989	3/2/2017 13:12	SUCCESS	EVDEMO\evsvc	Search	Searches		Query "name" 0 "chris.wess@evdmc	17BD51973C3655643A658250C	SERV2	
EVDEMO\mike.smith	82776	3/2/2017 13:12	SUCCESS	EVDEMO\evsvc	Search	Searches		Query "name" 0 "Mike Smith" date	8 18D9837F310893E458815CAF4	SERV2	
	82891	3/2/2017 13:12	SUCCESS	EVDEMO\evsvc	Search	Searches		Query "name" 0 "Mike Smith" date	8 12201D92C1F191044B6071992	SERV2	
EVDEMO\phyllis.herbert	109618	10/11/2017 13:27	SUCCESS	EVDEMO\evsvc	Search	Searches		Query "name" 0 "chris.wess@evdmc	11B33B0891F75E641B3D466F1	SERV2	
EVDEMO\tamara.kramer	18863	1/8/2015 9:36	SUCCESS	EVDEMO\evsvc	PST Migration	Item	20150108C			1A6C28C99043BBF4EBD325DC	SERV2
	21676	1/8/2015 9:38	SUCCESS	EVDEMO\evsvc	PST Migration	Item	20150108C			1A6C28C99043BBF4EBD325DC	SERV2
	4148	1/8/2015 7:17	SUCCESS		Archive	Item	20150108C			11A1AB315FF2E21468E99A541	SERV2
CategoryName	31793	1/12/2015 10:05	SUCCESS	EVDEMO\mike.smith	View	Item	20150108C			1C74389F0E0B54543AF5C2C05	SERV2
Archive Permissions	11023	1/8/2015 9:33	SUCCESS	EVDEMO\evsvc	PST Migration	Information	20150108C	PST File: '\\SERV2\ES\Files\Shares\users 1A6C28C99043BBF4EBD325DC		SERV2	
Audit Settings	25178	1/8/2015 9:39	SUCCESS	EVDEMO\evsvc	PST Migration	Information	20150108C	PST File: '\\SERV2\ES\Files\Shares\users 1A6C28C99043BBF4EBD325DC		SERV2	
Classification	9689	1/8/2015 9:33	SUCCESS	EVDEMO\evsvc	PST Migration	Information	20150108C	PST File: '\\SERV2\ES\Files\Shares\users 1A37E00FA0C1F34BA5D0E3E		SERV2	
Delete	55587	1/8/2016 6:45	SUCCESS	EVDEMO\evsvc	Admin Activity	ExchangeMailboxEntry	1EDA6644	Update ExchangeMailboxEntry		SERV2	
	55780	1/8/2016 8:38	SUCCESS	EVDEMO\evsvc	Admin Activity	ExchangeMailboxEntry	150AC287I	Update ExchangeMailboxEntry		SERV2	
	57041	1/21/2016 10:13	SUCCESS	EVDEMO\evsvc	Admin Activity	ExchangeMailboxEntry	1A0E935C	Update ExchangeMailboxEntry		SERV2	
Domino Archive	62693	8/15/2016 12:55	SUCCESS	EVDEMO\evsvc	Search	Searches		Query "name" 0 "chris.wess@evdmc	12201D92C1F191044B6071992	SERV2	
File System Archive	5534	1/8/2015 9:31	SUCCESS	EVDEMO\evsvc	PST Migration	Item	20150108C			1A6C28C99043BBF4EBD325DC	SERV2
	20968	1/8/2015 9:37	SUCCESS	EVDEMO\evsvc	PST Migration	Item	20150108C			1A6C28C99043BBF4EBD325DC	SERV2
Indexing Operations	27402	1/9/2015 7:38	SUCCESS	<N/A>	SPS Archive	Item	urn:kvslpc-https://serv4.evdemo.org/Style Librar	1EEC10A7C63B6B94E91E38A8		SERV2	
PST Migration	16579	1/8/2015 9:35	SUCCESS	EVDEMO\evsvc	PST Migration	Information	20150108C	PST File: '\\SERV2\ES\Files\Shares\users 1A6C28C99043BBF4EBD325DC		SERV2	
Restore	17309	1/8/2015 9:36	SUCCESS	EVDEMO\evsvc	PST Migration	Information	20150108C	PST File: '\\SERV2\ES\Files\Shares\users 1902981716DC3884EBE8206D		SERV2	
	37701	4/16/2015 0:00	SUCCESS	EVDEMO\evsvc	Admin Activity	DominoMailboxEntry	1BEEC755	Update DominoMailboxEntry		SERV2	

Figure 41 – Audit Entries

Now let's say we want to view just the deletions for the user, Mike Smith.

Select **Mike.Smith** under **UserName**.

Select **Delete** under **CategoryName**.

Now only **Delete** events for **Mike.Smith** appear in the Auditing Dashboard.

Audit Entries

UserName

EVDEMO\admin

EVDEMO\evsvc

EVDEMO\mike.smith

(blank)

\*Administrator

<N/A>

admin

CategoryName

Archive

Delete

Restore

Search

Update

View

View Attachment

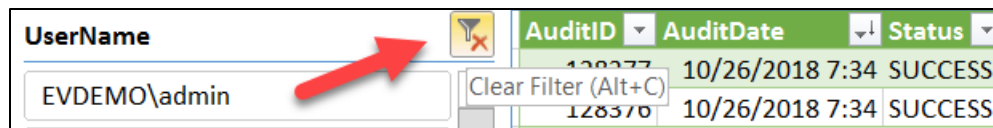
Admin Activity

Archive Permissions

AuditID	AuditDate	Status	UserName	CategoryName	SubCategoryName	Object	Info	InfoStructured	Vault	ServerName
128377	10/26/2018 7:34	SUCCESS	EVDEMO\mike.smith	Delete	Information	#587851C8FB786F611	[Record]		1C8FB786F61156A4986800637	SERV2
128376	10/26/2018 7:34	SUCCESS	EVDEMO\mike.smith	Delete	Item	#587851C8FB786F611	[Record]		1C8FB786F61156A4986800637	SERV2
128373	10/26/2018 7:34	SUCCESS	EVDEMO\mike.smith	Delete	Information	#588151C8FB786F611	[Record]		1C8FB786F61156A4986800637	SERV2
128372	10/26/2018 7:34	SUCCESS	EVDEMO\mike.smith	Delete	Item	#588151C8FB786F611	[Record]		1C8FB786F61156A4986800637	SERV2
74306	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Item	#58395104			104D9B248C44775429303F36C	SERV2
74307	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Information	#58395104	Saveset ID: #58395104D9B248C44775		104D9B248C44775429303F36C	SERV2
74305	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Information	#58585104	Saveset ID: #58585104D9B248C44775		104D9B248C44775429303F36C	SERV2
74304	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Item	#58585104			104D9B248C44775429303F36C	SERV2
74302	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Item	#58595104			104D9B248C44775429303F36C	SERV2
74303	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Information	#58595104	Saveset ID: #58595104D9B248C44775		104D9B248C44775429303F36C	SERV2
74301	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Information	#58375104	Saveset ID: #58375104D9B248C44775		104D9B248C44775429303F36C	SERV2
74300	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Item	#58375104			104D9B248C44775429303F36C	SERV2
74298	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Item	#58385104			104D9B248C44775429303F36C	SERV2
74299	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Information	#58385104	Saveset ID: #58385104D9B248C44775		104D9B248C44775429303F36C	SERV2
74296	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Item	#58605104			104D9B248C44775429303F36C	SERV2
74297	11/1/2016 7:48	SUCCESS	EVDEMO\mike.smith	Delete	Information	#58605104	Saveset ID: #58605104D9B248C44775		104D9B248C44775429303F36C	SERV2
74240	11/1/2016 7:42	SUCCESS	EVDEMO\mike.smith	Delete	Information	#585651C8FB786F61156A	1C8FB786F61156A4986800637		1C8FB786F61156A4986800637	SERV2
74239	11/1/2016 7:42	SUCCESS	EVDEMO\mike.smith	Delete	Item	#585651C8			1C8FB786F61156A4986800637	SERV2
74238	11/1/2016 7:42	SUCCESS	EVDEMO\mike.smith	Delete	Information	#584151C8FB786F61156A	1C8FB786F61156A4986800637		1C8FB786F61156A4986800637	SERV2
74237	11/1/2016 7:42	SUCCESS	EVDEMO\mike.smith	Delete	Item	#584151C8			1C8FB786F61156A4986800637	SERV2
74236	11/1/2016 7:42	SUCCESS	EVDEMO\mike.smith	Delete	Information	#584051C8FB786F61156A	1C8FB786F61156A4986800637		1C8FB786F61156A4986800637	SERV2
74235	11/1/2016 7:42	SUCCESS	EVDEMO\mike.smith	Delete	Item	#584051C8			1C8FB786F61156A4986800637	SERV2
74234	11/1/2016 7:42	SUCCESS	EVDEMO\mike.smith	Delete	Information	#585751C8FB786F61156A	1C8FB786F61156A4986800637		1C8FB786F61156A4986800637	SERV2
74233	11/1/2016 7:42	SUCCESS	EVDEMO\mike.smith	Delete	Item	#585751C8			1C8FB786F61156A4986800637	SERV2
74232	11/1/2016 7:42	SUCCESS	EVDEMO\mike.smith	Delete	Information	#586151C8FB786F61156A	1C8FB786F61156A4986800637		1C8FB786F61156A4986800637	SERV2
74231	11/1/2016 7:42	SUCCESS	EVDEMO\mike.smith	Delete	Item	#586151C8			1C8FB786F61156A4986800637	SERV2

Figure 42 – Delete Events

Once done, simply click the Clear Filters icon.



UserName	AuditID	AuditDate	Status
EVDEMO\admin	128377	10/26/2018 7:34	SUCCESS
	128378	10/26/2018 7:34	SUCCESS

*Figure 43 – Clear Filter*

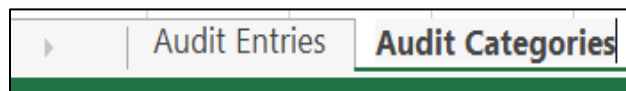
#### Adding an AuditCategories Worksheet

Click the **+** icon at the bottom left-hand corner to add an additional worksheet.



*Figure 44 – Add Worksheet*

Right click to rename this worksheet, **Audit Categories**.



*Figure 45 – Audit Categories*

Create a banner at the top of the spreadsheet if you wish and then highlight cell A5.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1	Audit Categories																					
2																						
3																						
4																						
5																						

*Figure 46 – Audit Categories Header*

Create a table that looks like the following:

Audit Categories									
CategoryName	Total	Percentage							
PST Migration									
File System Archive									
Domino Archive									
Delete									
SPS Archive									
View									
Archive									
Audit Settings									
Restore									
Search									
Classification									
Admin Activity									
View Attachment									
Indexing Operations									
Update									
Archive Permissions									

**Figure 47 – Audit Categories Table**

Highlight cell **B6** under the Total column.

Enter: **=COUNTIF(AuditEntries[CategoryName],[@CategoryName])**

Note: This formula counts the number of times an Audit Category has appeared in the Audit Entries Log on the previous worksheet. In order for this formula to work, you must have named the first worksheet **AuditEntries**.

=COUNTIF(AuditEntries[CategoryName],[@CategoryName])									
CategoryName	Total	Percentage							
PST Migration	19865								
File System Archive									
Domino Archive									

**Figure 48 – Using =COUNTIF**

Highlight the bottom right-hand corner of cell B6 until a + symbol appears.

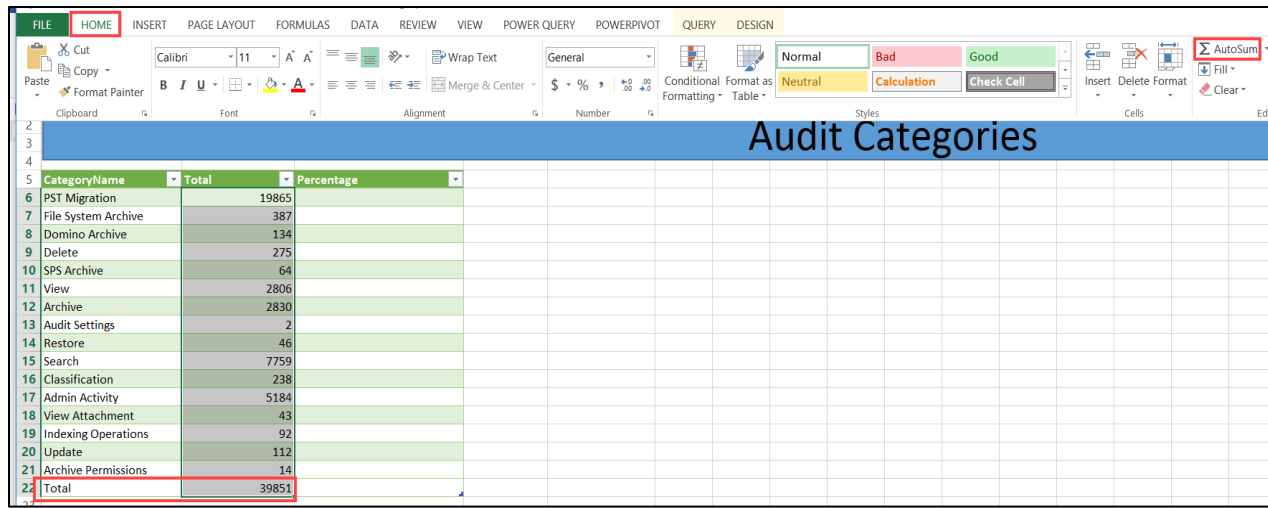
Double-click so the formula populates the remaining column cells.

CategoryName	Total	Percentage
PST Migration	19865	
File System Archive	387	
Domino Archive	134	
Delete	275	
SPS Archive	64	

**Figure 49 – Double click**

Select all rows in the **Total** Column and click **AutoSum**.





**Figure 50 – AutoSum**

To get the percentages, enter the following formula in cell C6: **=B6/B\$22**

Note: With this formula, we are dividing the number of items for a category by the total, to give us the percentage of entries in the audit log for that category.

<div> <div> <div></div> <div>:</div> <div>✕</div> <div>✓</div> <div><i>fx</i></div> </div> <div>=B6/B\$22</div> </div>		
A	B	C
CategoryName	Total	Percentage
PST Migration	19865	0.498481845
File System Archive	387	0.009711174
Domino Archive	134	0.003362525
Delete	275	0.006900705
SPS Archive	64	0.001605982
View	2806	0.070412286
Archive	2830	0.071014529
Audit Settings	2	5.01869E-05
Restore	46	0.0011543
Search	7759	0.194700258
Classification	238	0.005972247
Admin Activity	5184	0.130084565
View Attachment	43	0.001079019
Indexing Operations	92	0.0023086
Update	112	0.002810469
Archive Permissions	14	0.000351309
Total	39851	

*Figure 51 – Calculating Percentages*

If the formula did not populate in the remaining cells, highlight the bottom right-hand corner of cell C6 until a + symbol appears and double-click.

Highlight the Percentage column and change the cell format to **Percentage**.

LE **HOME** INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW POWER QUERY POWERPIVOT QUERY

Cut Copy Format Painter

Calibri 11 A A

B I U

Wrap Text

Alignment Merge & Center

CategoryName	Total	Percentage
PST Migration	19865	0.498481845
File System Archive	387	0.009711174
Domino Archive	134	0.003362525
Delete	275	0.006900705
SPS Archive	64	0.001605982
View	2806	0.070412286
Archive	2830	0.071014529
Audit Settings	2	5.01869E-05
Restore	46	0.0011543
Search	7759	0.194700258
Classification	238	0.005972247
Admin Activity	5184	0.130084565
View Attachment	43	0.001079019
Indexing Operations	92	0.0023086
Update	112	0.002810469
Archive Permissions	14	0.000351309
Total	39851	

ABC 123 General No specific format

12 Number 0.50

Currency \$0.50

Accounting \$0.50

Short Date 1/0/1900

Long Date Saturday, January 0, 1900

Time 11:57:49 AM

**% Percentage 49.85%**

1/2 Fraction 1/2

10<sup>2</sup> Scientific 4.98E-01

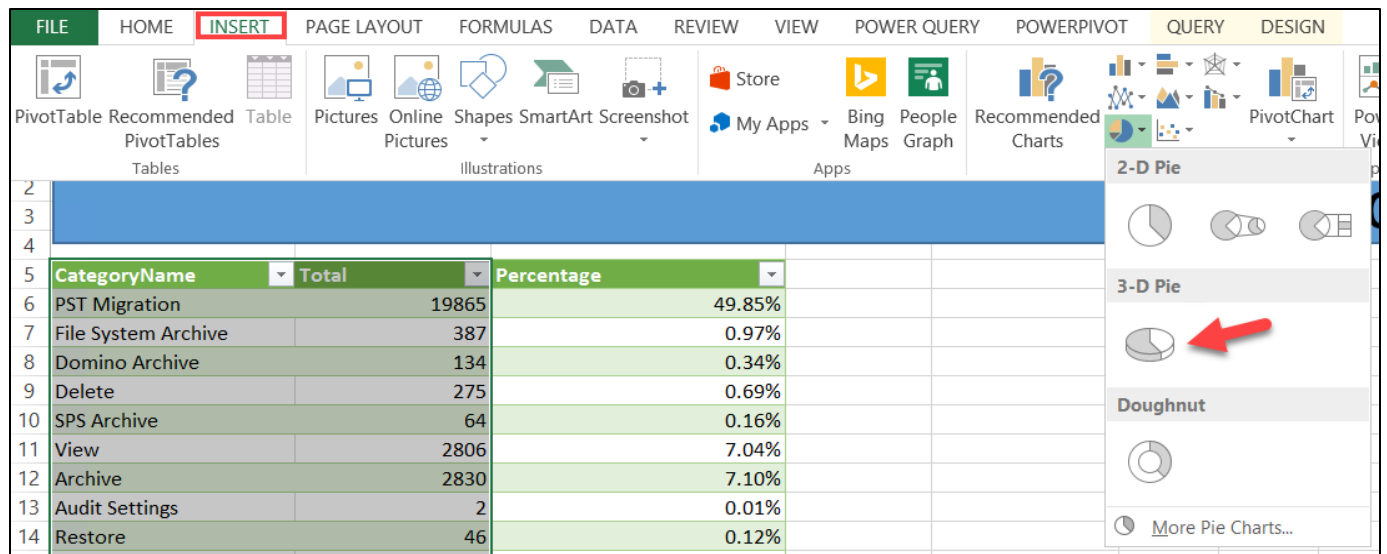
ABC Text 0.498481845

Figure 52 – Converting to Percentages

We now have a table that shows us the number of times a particular Enterprise Vault Audit Event occurred and its percentage. For example, nearly 50 % of our audit activity below deals with PST Migrations. Now we will create a chart to accompany the table.

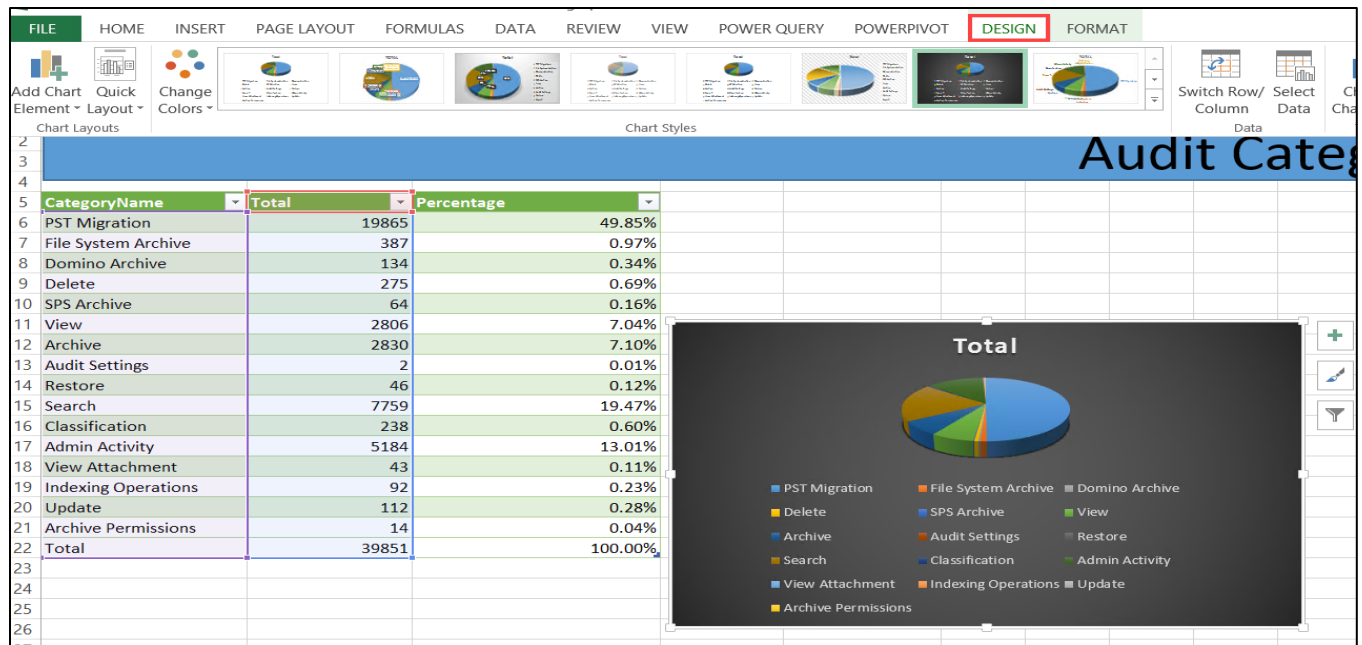
Highlight the **CategoryName** and **Total** Columns.

Click **Insert/3-D Pie**.



**Figure 53 – Inserting a Chart**

Click the **Design** tab to choose the type of chart that you want.

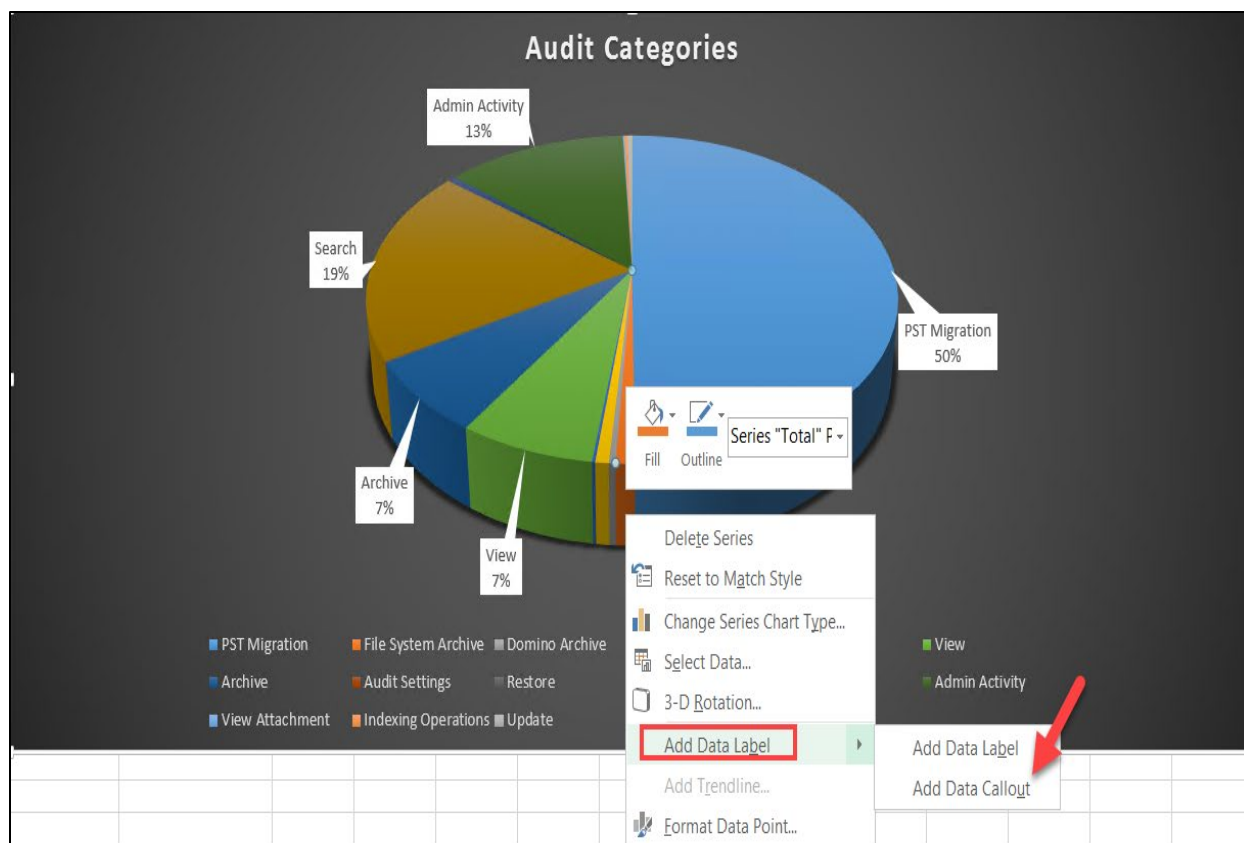


**Figure 54 – Designing a Chart**

Size the chart appropriately.

Rename the chart's header, if required.

By right clicking on a pie slice, select **Add Data Label/Add Data Callout** to show the percentages.



**Figure 55 – Audit Categories Chart**

At the end of this tutorial, you should have two worksheets created in Excel, showing accounting information extracted from Enterprise Vault using OData.

The Audit Entries worksheet allows you to view the audit entries dataset and filter based upon user and type of audit event (e.g. Archive, Delete, Classification, etc.).

The Audit Categories worksheet shows the number and percentage of audit events that have occurred within your Enterprise Vault environment in both a table and chart format.

Audit Entries

UserName	AuditID	AuditDate	Status	UserName	CategoryName	SubCategoryName	ObjectID
EVDEMO\admin	10395	1/8/2015 9:33	SUCCESS	EVDEMO\evsvc	PST Migration	Information	201501080734791~200601182110040000~Z~B00CC579EE2D26A37258BAEF3F805901
	15245	1/8/2015 9:35	SUCCESS	EVDEMO\evsvc	PST Migration	Information	201501080734912~200601232152310000~Z~B014E0B7A0B9C42ED04063694B5D7B41
	16865	1/8/2015 9:36	SUCCESS	EVDEMO\evsvc	PST Migration	Information	201501080734962~200601051019180000~Z~B01822DE77FD7169A56EC2D2C51A3441
EVDEMO\carlos.diaz	28507	1/9/2015 14:30	SUCCESS	Admin Activity	ExchangeMailboxEntry	16177EC94BA750DC489CB67FC64AE180261n10000ev	
	56100	1/20/2016 7:01	SUCCESS	Admin Activity	ExchangeMailboxEntry	14CCE99B1D72BE043B2B2F0112C63F4B51n10000ev	
EVDEMO\charles.fillmore	82989	3/2/2017 13:12	SUCCESS	EVDEMO\evsvc	Search	Searches	
	82776	3/2/2017 13:12	SUCCESS	EVDEMO\evsvc	Search	Searches	
EVDEMO\evsvc	82891	3/2/2017 13:12	SUCCESS	EVDEMO\evsvc	Search	Searches	
EVDEMO\joshua.lambert	109618	10/11/2017 13:27	SUCCESS	EVDEMO\evsvc	Search	Searches	
EVDEMO\mike.smith	18863	1/8/2015 9:36	SUCCESS	EVDEMO\evsvc	PST Migration	Item	201501080735003~200602141642170000~Z~B01AE603A2968ED4FC9E3703BD4DEBE1
	21676	1/8/2015 9:38	SUCCESS	EVDEMO\evsvc	PST Migration	Item	201501080735081~200601032113560000~Z~B020216ADF849AEF5008B6E71360601
	4148	1/8/2015 7:17	SUCCESS	Archive	Item	201501080726654~201412121801260000~Z~90B830D51D6E2617E94D857EEDD202C1	
CategoryName	31793	1/12/2015 10:05	SUCCESS	EVDEMO\mike.smith	View	Item	201501080734720~200608050518250000~Z~B008097013C0E0CF6DF69488BF79C21
Admin Activity	11023	1/8/2015 9:33	SUCCESS	EVDEMO\evsvc	PST Migration	Information	201501080734799~200512231915030000~Z~B00D409E624C857B5F366E29EC817BD1
	25178	1/8/2015 9:39	SUCCESS	EVDEMO\evsvc	PST Migration	Information	201501080735175~200601200652070000~Z~B0266CF18055ECF575A857B9C3AA9811
Archive	9689	1/8/2015 9:33	SUCCESS	EVDEMO\evsvc	PST Migration	Information	201501080734785~200601101920280000~Z~B00C5E27417150E7F40EF4C6EC60DE81
Archive Permissions	55587	1/8/2016 6:45	SUCCESS	EVDEMO\evsvc	Admin Activity	ExchangeMailboxEntry	1EDA664496E3F4F46BCFFF6FBE4D296931n10000ev
Audit Settings	55780	1/8/2016 8:38	SUCCESS	EVDEMO\evsvc	Admin Activity	ExchangeMailboxEntry	150AC287E96234D46AF7FB1FC99F4F2941n10000ev
Classification	57041	1/21/2016 10:13	SUCCESS	EVDEMO\evsvc	Admin Activity	ExchangeMailboxEntry	1A0E935CA3F52004FAE01CC504D0349761n10000ev
	62693	8/15/2016 12:55	SUCCESS	EVDEMO\evsvc	Search	Searches	
Delete	5534	1/8/2015 9:31	SUCCESS	EVDEMO\evsvc	PST Migration	Item	201501080734697~20060120151790000~Z~B00682CB9326441A8831726BCD0E3DE1
	20968	1/8/2015 9:37	SUCCESS	EVDEMO\evsvc	PST Migration	Item	201501080735068~200601061643030000~Z~B01F3CC0C168B8CD411EAC9A6B0364A1
Domino Archive	27402	1/9/2015 7:38	SUCCESS	<N/A>	SPS Archive	Item	urn:kvsplc-com:ev:ArchiveFolder:(EEC10A7C63B6B94E91E38A8998110637):ItemId:Alte
File System Archive	16579	1/8/2015 9:35	SUCCESS	EVDEMO\evsvc	PST Migration	Information	201501080734959~200601101302020000~Z~B017F255C9C827066FAA7829102A911
	17309	1/8/2015 9:36	SUCCESS	EVDEMO\evsvc	PST Migration	Information	201501080734974~200602060812370000~Z~B018F5E087FA5BE90FCB2B0C09935EB1
Indexing Operations	27701	1/15/2015 9:06	SUCCESS	Admin Activity	DominoMailboxEntry	1B5FC7552D3237A443801D728115603236081013000ev	

Figure 56 – Audit Entries

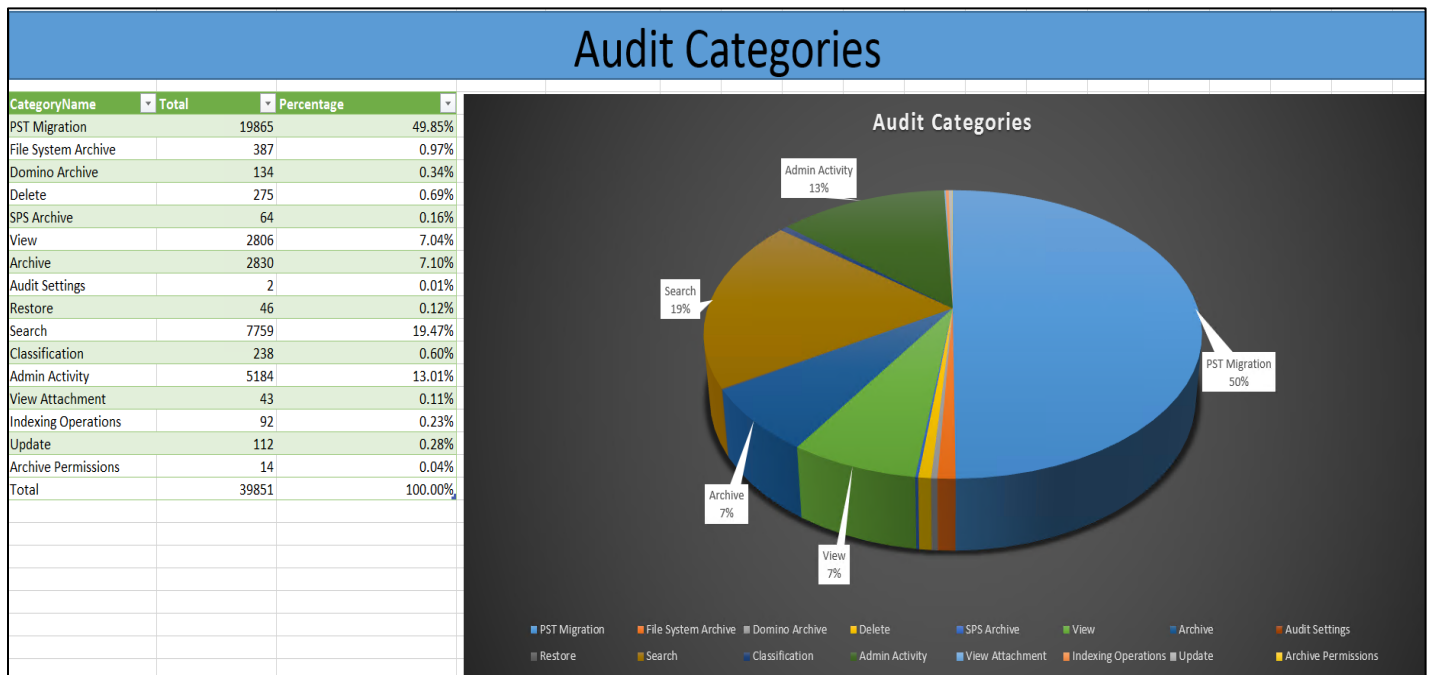


Figure 57 – Audit Categories

**About Veritas**

Veritas Technologies LLC enables organizations to harness the power of their information, with solutions designed to serve the world's largest and most complex heterogeneous environments. Veritas works with 86 percent of Fortune 500 companies today, improving data availability and revealing insights to drive competitive advantage. More information is available at [www.veritas.com](http://www.veritas.com).

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