

Technical Note:

Using the XMLA connector with SharePoint 2013

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	Version	Author	Details
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Introduction

This document shows how to configure SharePoint 2013 to work with the ODBO provider from Arquery (XMLA connect).

SharePoint 2013 is able to render online practically everything that Excel 2013 can render on the desktop through the use of its “Excel Services” Technology.

Please note: In order to use Excel Services the Enterprise edition of the SharePoint server is required. Excel Services is unavailable under SharePoint server Standard edition.

Structure of this document

This document is divided in two main parts:

1. Configure SharePoint for Excel Services and XMLA connect.
2. How to use data from an external XMLA server.

The reader of this document is advised that SharePoint Server 2013 implements a sophisticated access rights schema. Therefore, configuring the system should take some time (1 hour or more).

Configuration for Excel Services and XMLA Connect

This chapter shows how to setup SharePoint to enable Excel Services and XMLA Connect.

Please note: In order to use Excel Services the Enterprise edition of the SharePoint server is required. Excel Services is unavailable under SharePoint server Standard edition.

Please note: XMLA Connect should be installed on the SharePoint Server. The connector can be downloaded for free from Arquery web site (<http://www.arquery.com/ArqueryXMLAConnector>) or from SourceForge (<https://sourceforge.net/projects/xmlaconnect/>).

Excel services runs under a dedicated domain account. Before executing the following steps make sure you create a dedicated domain account for the Excel Services. For the purpose of this document the following account was defined:

User Account	Type
spsCalculation	Standard User

Enable Secure Store services

To enable Secure Store Services go to the SharePoint 2013 Central Administration site. This is available through the Start menu in Windows Server: **Start->All Programs->Microsoft SharePoint 2013 Products->Sharepoint 2013 Central Administration**. This will open the default web browser on the Central Administration page. Authenticate here with an account that has administrator rights for SharePoint.

1. Start Secure Store Services

- From **Central Administration Home**
- Go to **System Settings** and click **Manage services on server**
- Ensure that Secure Store Services is started. Click **Start** if the service is stopped

2. Create a Secure Store Service Application

- From **Central Administration Home**
- Click on **Application Management**
- Under **Service Application** click on **Manage Service Applications**
- Click **New->Secure Store Service** on the ribbon on top of the page. A dialog will popup. The following parameters are essential:
 - **Service Application Name:** Excel Unatt
 - **Create new application pool:**
 - **Application pool name:** Excel_UNATT
 - **Security account** should be set to **Configurable**. Enter spsCalculation in the input box below.
 - In the case the intended user account is not available in the list click on **Register new managed account**. Enter here the user name and click OK. The new account should appear in the list.
- Click OK to create the application
- Click OK to dismiss the confirmation popup and finish this step.

3. Configure the Secure Store Service Application

- From **Central Administration Home**
- Click on **Application Management**
- Under **Service Application** click on **Manage Service Applications**
- The application created on the step 2 will be visible in the list. Click on **Excel Unatt Secure Store Service Application** (**careful**: the application and not the application proxy).
- From the ribbon on top of the page click on **Generate Key**. Make sure you store the passphrase in the next dialog as this is required for server maintenance.
- From the ribbon on top of the page click on **New**. A wizard will start. Fill parameters as follows, page by page:
 - **Target Application Settings** page:
 - **Target Application ID:** ExcelSvcAppID
 - **Display Name:** Excel Services App ID
 - **Contact E-mail:** Email to receive notifications
 - **Target Application Type:** Group
 - **Target Application Page URL:** None
 - **Skip next page** by pressing **Next**
 - **On the next page** (The rules defined here should be an application of the internal policy of the company that runs SharePoint). A suggestion follows:
 - **Target Application Administrators:** Administrators, according to the company rules
 - **Members:** All Users
- In the page that follows **select ExcelSvcAppID** (the application just created). From the ribbon on the top of the page click **Generate New Key**. A new passphrase should be entered at this point. We recommend to use the same passphrase as above, for simplicity reasons.
- Back in the same page **select ExcelSvcAppID**. From the ribbon on the top of the page click on **Set Credentials**. Fill the following parameters:
 - **Windows User Name:** spsCalculation
 - **Windows Password:** the password for the user
 - **Confirm Windows Password:** the password for the user
- Click OK to finish this step

Enable Excel Services

To enable Excel Services go to the SharePoint 2013 Central Administration site. This is available through the Start menu in Windows Server: **Start->All Programs->Microsoft SharePoint 2013 Products->Sharepoint 2013 Central Administration**. This will open the default web browser on the Central Administration page. Authenticate here with an account that has administrator rights for SharePoint.

1. Start Excel Services

- From **Central Administration Home**
- Go to **System Settings** and click **Manage services on server**
- Ensure that Excel Calculation Services is started. Click **Start** if the service is stopped

2. Create Excel Services Application

- From **Central Administration Home**
- Go to **Application Management** and click **Manage Service applications**
- Click **New -> Excel Services Application** on the ribbon on top of the page. A dialog will popup. The following parameters are essential:
 - **Name:** Excel Services
 - **Application Pool:** Create new application pool
 - **Application Pool name:** ExcelServices
 - **Account Name:** spsCalculation
 - **Add to default proxy list:** Ensure the checkbox for Add this service application's proxy to the farm's default proxy list **is checked**.

- Click **OK** to finish.

3. Configure the Excel Services Application

- From **Central Administration Home**
- Go to **Application Management** and click **Manage Service applications**
- The application created on the step 2 will be visible in the list. Click on **Excel Services** in the list. The type is Excel Services Application Web Service Application (**careful**: the application and not the application proxy).
- On the next page (Manage Excel Services Application) click on **Global Settings**.
- Scroll to the bottom of the page. On **External Data** check **Use an existing Unattended Service Account**. Under **Target Application ID** enter ExcelSvcAppID (this was created in the previous chapter)
- Click OK to finish this step

Enable XMLA Connect

Make sure XMLA Connect is installed in the target machine. The connector can be downloaded for free from Arquery web site (<http://www.arquery.com/ArqueryXMLAConnector>) or from SourceForge (<https://sourceforge.net/projects/xmlaconnect/>).

1. Add XMLA Connect as a trusted data provider
 - From **Central Administration Home**
 - Go to **Application Management** and click **Manage Service applications**
 - The application created on the previous chapter ([Enable Secure Store services](#)), step 2 will be visible in the list. Click on **Excel Services** in the list. The type is Excel Services Application Web Service Application (**careful**: the application and not the application proxy).
 - On the **Manage Excel Services** page click **Trusted Data Providers**
 - In the next page click **Add Trusted Data Provider**.
 - Use the following parameters:
 - **Provider ID:** XMLAProvider.data_source.1
 - **Provider Type:** OLE DB
 - **Description:** XMLA Connect from Arquery
 - Click OK to finish this step

Ensure the new applications are enabled on the web site

1. Check the applications are enabled for the target site
 - From **Central Administration Home**
 - Go to **Application Management** and click **Manage Web applications**
 - **Select** the site (default should be Share Point – 80)
 - Click **Service Connections** on the ribbon on top of the page.
 - Ensure Excel Services is checked here. This is the application configured on the chapter Enable Excel Services above.
 - Ensure Excel Unatt is checked here. This is the application configured on the chapter Enable Secure Store Services above.

Ensure proper Database Access for the calculation user

The “magic” spsCalculation user should have content database access to the SharePoint Database. There are a number of options to achieve this, depending of the actual disposition of the SharePoint installation.

Arquery recommends using SharePoint 2013 Management Shell. This process is documented here [https://technet.microsoft.com/en-us/library/jj219698\(v=office.15\).aspx](https://technet.microsoft.com/en-us/library/jj219698(v=office.15).aspx) on the Chapter **Grant content database access to the managed account**. The following commands must be executed in the management shell:

```
$w = Get-SPWebApplication -identity http://<WebApplication>  
$w.GrantAccessToProcessIdentity(" <Domain>\spsCalculation")
```

How to use data from an external XMLA server

There are two different types involved in using the data from an external XMLA server as follows:

- A connection file required to access the data
- An Excel file required to present the data

Each type of the document is kept in its own library. SharePoint controls access to independent libraries by trust and this should be explicitly given.

This document presumes there is no initial configuration for the site. Both libraries will be created and configured.

This configuration **does not happen on the Central Administration but on a SharePoint Site**. Login to the site with the browser by accessing that site URL. Use an account that has administrative right to the site (default site is on port 80).

However, trust assignment **does happen on the Central Administration**.

Connection data files

1 Create a Data Connection Library

- Connected on the SharePoint Web Site, with an account that has administrative rights.
- From the **root** of the SharePoint Site go to **Site Contents**
- Click **add an app**
- Choose **Data Connection Library** (It might be on the next pages)
- On the popup enter XMLA_Connections as name for the Data Connection Library.
- Click **Create**

2 Add Trust for the new library

- From **Central Administration Home**
- Go to **Application Management** and click **Manage Service applications**
- On **Excel Services** (This is the application configured on the chapter Enable Excel Services above) click **Trusted Data Connection Libraries**
- On the next page click **Add Trusted Data Connection Library**
- On the next page use the following parameters:
 - **Address** The URL of the newly created library. Use http://domain_name/XMLA_Connections (change domain_name accordingly)
- Click OK to finish this step

Workbook Files

1 Create a Document library

- Connected on the SharePoint Web Site, with an account that has administrative rights.
- From the **root** of the SharePoint Site go to **Site Contents**
- Click **add an app**
- Choose **Document Library** (It might be on the next pages)
- On the popup enter XMLA_Workbooks as name for the Document Library.
- Click **Create**

2 Add Trust for the new library

- From **Central Administration Home**
- Go to **Application Management** and click **Manage Service applications**
- On **Excel Services** (This is the application configured on the chapter Enable Excel Services above) click **Trusted File Locations**
- On the next page click **Add Trusted File Location**
- On the next page use the following parameters:
 - **Address** The URL of the newly created library. Use http://domain_name/XMLA_Worbooks (change domain_name accordingly)
 - **Location Type** Microsoft SharePoint Foundation
 - **Check Data refresh from REST enabled**
- Click OK to finish this step

The first Workbook connected to XMLA data

Excel especially in version 2013 is tightly integrated to SharePoint Server. It is possible to save load files straight from the server

The normal configuration of the SharePoint 2013 occurs with data generated in Excel and then uploaded in the site.

The following steps are typical (an example on a Foodmart Database on Mondrian):

Workbook Creation

1. Create a Workbook in Excel:

The screenshot shows the Microsoft Excel 2013 interface. The ribbon is set to 'ANALYZE' with the 'DESIGN' sub-tab selected. The 'PivotTable Fields' task pane is open on the right side of the window. The main worksheet area displays a PivotTable with the following data:

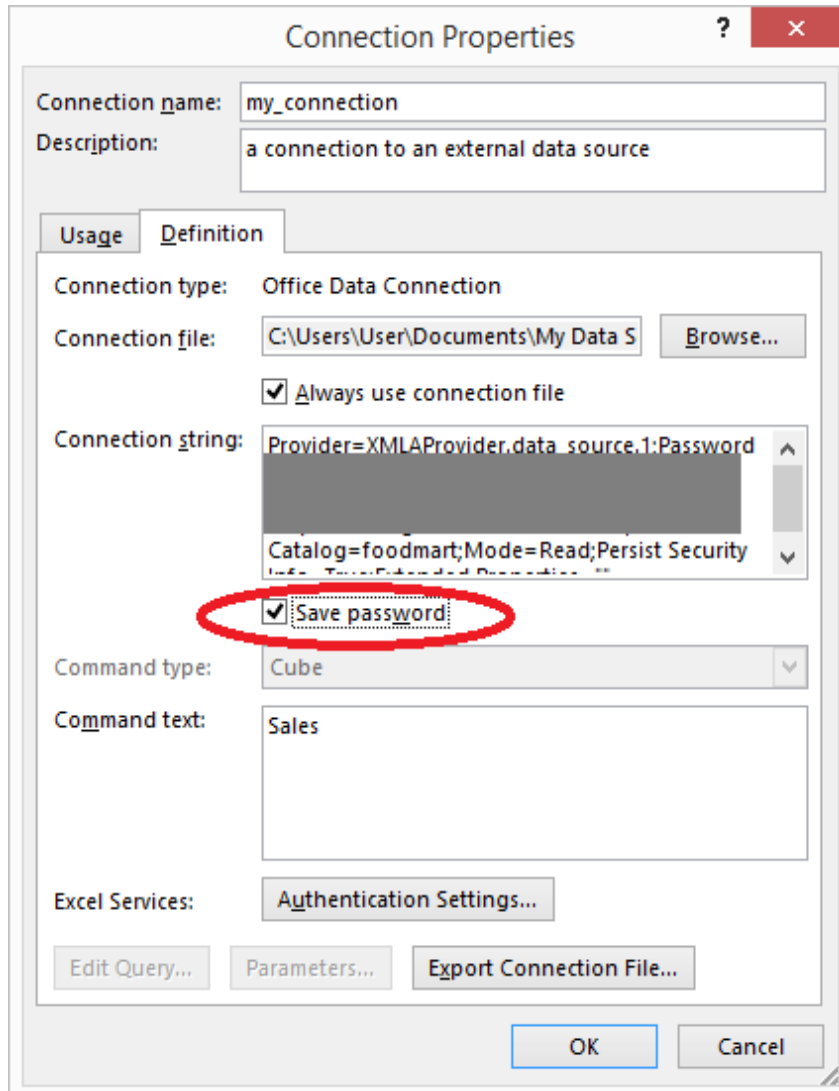
Row Labels	Profit
USA	\$339,610.90
Grand Total	\$339,610.90

The PivotTable Fields task pane shows the following configuration:

- Choose fields to add to report:**
 - Customers (checked)
 - Education Level (unchecked)
 - Gender (unchecked)
- Drag fields between areas below:**
 - FILTERS:** (empty)
 - COLUMNS:** (empty)
 - ROWS:** Customers
 - VALUES:** Profit
- Defer Layout Update:** (unchecked)
- UPDATE** button

Export the connection file

2. With the pivot selected, In the Excel Ribbon do to **Data->Connections**
3. In the Popup click Properties go to **Definition**
4. Make sure the Save Password is set otherwise SharePoint won't be able to refresh data:

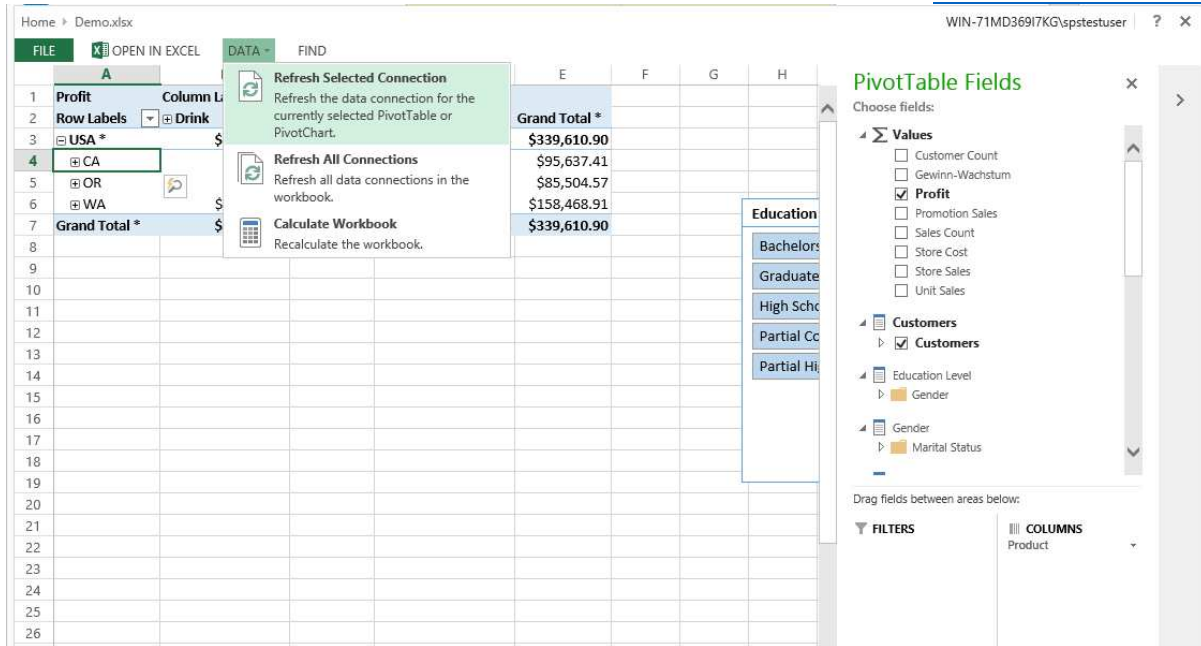


5. Click **Export Connection File**. On the File Save dialog in the address bar on top type the URL of the Data Connection Library (http://domain_name/XMLA_Connections for this case). Login with an account that has access to the site.
6. Choose a name and press **Save**. In the Following dialog choose the following parameters:
 - a. **Content Type:** Universal Data Connection File
 - b. **UDC Purpose:** ReadWrite
 - c. **Connection Type:** SharePointLibrary
7. Press OK

Export the file

8. From Excel go to **Save As**. There are a number of options here however, on a computer that never had connected to SharePoint use Save as -> Computer and choose Brose.
9. In the Save As Dialog on the address bar type the URL of the Document Library previously configured (http://domain_name/XMLA_Worbooks for this case). Login with an account that has access to the site.
10. Choose a Filename and press **Save**.

At this point the file is available in the SharePoint Server. Navigating to http://domain_name/XMLA_Worbooks will show the file in the list. Clicking on the file link will open it in the browser. Test that everything is working by going to Data -> Refresh Selected Connection.



Further reading

Microsoft has on its TechNet a page about Excel Services here: <https://technet.microsoft.com/en-us/library/ee681487.aspx> .

A video tutorial for SharePoint 2007 is here https://www.youtube.com/watch?v=fVG9UTag_cE . The security model has been upgraded with the Secure Store Services for 2013 but the other concepts are valid.

On TechNet there is a document that outlines the topic of external data for SharePoint 2007 here <https://technet.microsoft.com/en-us/library/cc262899.aspx> .

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