BCS Meta Man for Windows

Manual

Version 1 — Last update: March 28, 2014

Lightning Tools

Table of Contents

Introduction

This document provides a guide on how to install and use BCS Meta Man – Business Connectivity Services (BCS) tooling for Microsoft® SharePoint® 2013 and Microsoft® SharePoint® 2010, as well as Office 365™.

One of the service application in SharePoint is Business Connectivity Services (BCS), which helps small and medium-sized businesses as well as bigger organizations put their business data to work—and create valuable business solutions. Organizations often contain lots of data that is stored in dissimilar systems and databases throughout different departments. Using BCS, you can aggregate these external data sources into solutions and expose those solutions in SharePoint sites and Microsoft Office applications, such as Microsoft Word, Microsoft Access® and Microsoft Visio®. BCS Meta Man is a tool that helps you build these solutions.

Why use BCS Meta Man for SharePoint?

The key building block of Business Connectivity Services is the external content type. The data objects defined by external content types can be exposed on SharePoint sites using external lists, Web Parts, external columns in lists, and libraries, as well as allowing SharePoint Server to index external data. External content types, together with how to connect to your external data sources are defined in a Business Data Connectivity (BDC) model. This is an XML file, which once created needs to be stored in the BCS database, known as the metadata store or external content type repository.

Microsoft provides two tools which you can use to create a BDC model. Your choice of tool depends on the external data source that you are connecting to:

- SharePoint Designer 2013 and 2010. SharePoint Designer provides you with a code free option to connect to Microsoft SQL Server. You can also use SharePoint Designer to generate a connection to Windows Communication Foundation (WCF) data services, or other proprietary data that is accessed by using custom .NET assemblies. You will need a developer to create code to use WCF services and .NET assemblies.
- Visual Studio® 2012 and Visual Studio® 2013, when used with the appropriate Office Developer Tools for Visual Studio, provides you with a code free method to connect to Open Data Protocol (OData) sources. For all other data sources, you must write the code by hand unless you are using BCS Meta Man.

If you are using SharePoint 2010, you could the BCS Meta Man for Visual Studio add-in from Lightning Tools, however we recommend using BCS Meta Man for SharePoint 2010 and 2013, which is a Microsoft® Windows® application.

As the BDC model is an XML file, you are not limited to using only Microsoft tools, you could use an XML editor, Notepad, or a third-party tool, such as, BCS Meta Man. BCS Meta Man can generate BDC models for a wide range of systems, including web services, customer relationship management (CRM) applications, such as, Siebel and SAP® or data stored in databases created using: Microsoft SQL Server®, Oracle, Microsoft Access, Sybase, Firebird, MySQL, Informix, Progress and more. BCS Meta Man can also generate connections to OData, and other ODBC data sources without the requirement to write code. BCS Meta Man is a standalone Windows application that must be installed on a SharePoint server. The SharePoint server may not necessarily be the target SharePoint environment where you may want to use the BDC model, for example, that SharePoint server where you use BCS Meta Man could be a development environment, staging or production environment, you can then take the BDC Model files and use them on another SharePoint installation such as on-premises installations of SharePoint Foundation and SharePoint Server or SharePoint online in Office 365™. Of course BCS within each of these SharePoint products provides different capabilities.

Business Connectivity Services References

Introduction to external data →
Find content about external data →
Plan for Business Connectivity Services in SharePoint 2013 →
What does a Business Connectivity Services solution look like?
Use external data with Access →
Use external data columns in a Word document →
Using Business Connectivity Services in SharePoint 2010 →

Videos

Developing Advanced BI Visualizations with Microsoft Visio and SharePoint in the Cloud →
Crawl and Index all Enterprise Content with SharePoint 2013 Search →
Optimizing external data consumption through Business Connectivity Services (BCS) and OData Services →
Configuring Hybrid Business Connectivity Services with SharePoint 2013 →

Books

Microsoft SharePoint 2010: Business Connectivity Services, by Penelope Coventry, Brett Lonsdale, Phill Duffy

Installing BCS Meta Man

This section contains information on how to install the BCS Meta Man for Microsoft® SharePoint® 2013 and Microsoft® SharePoint® 2010. It is essential to read and complete the installation steps before you add the BCS Meta Man to your SharePoint server. Information on using and configuring the BCS Meta Man can be found later in the documentation.

To use BCS Meta Man complete the following tasks:

1. Install BCS Meta Man. BCS Meta Man is a Microsoft® Windows® application. Lightning Tools uses Windows Installer to install, maintain and remove BCS Meta Man. *Windows Installer* provides a complete user interface (UI) for installing an application or product. The user interface presents you with the options available to configure the installation and obtains information from you about the pending installation process. The Windows Installer user interface, therefore make it easy to install BCS Meta Man.

2. License BCS Meta Man. BCS Meta Man is available as a trial, that allows you with 5 uses or 5 days of use, whichever comes first. To use the full functionality of BCS Meta Man, the product will need to be licensed. You need to purchase a copy of Meta Man for each machine you want to install it on. A full version license key will be sent to you ,once you have purchased the product, which you need to activate. Once activated the license key is tied to the machine you activated it on. If you wish to purchase the product, please email sales@lightningtools.com. If you are experiencing issues with your license key, please contact Lightning Tools by clicking Submit Support Ticket on Lightning Tools web site.

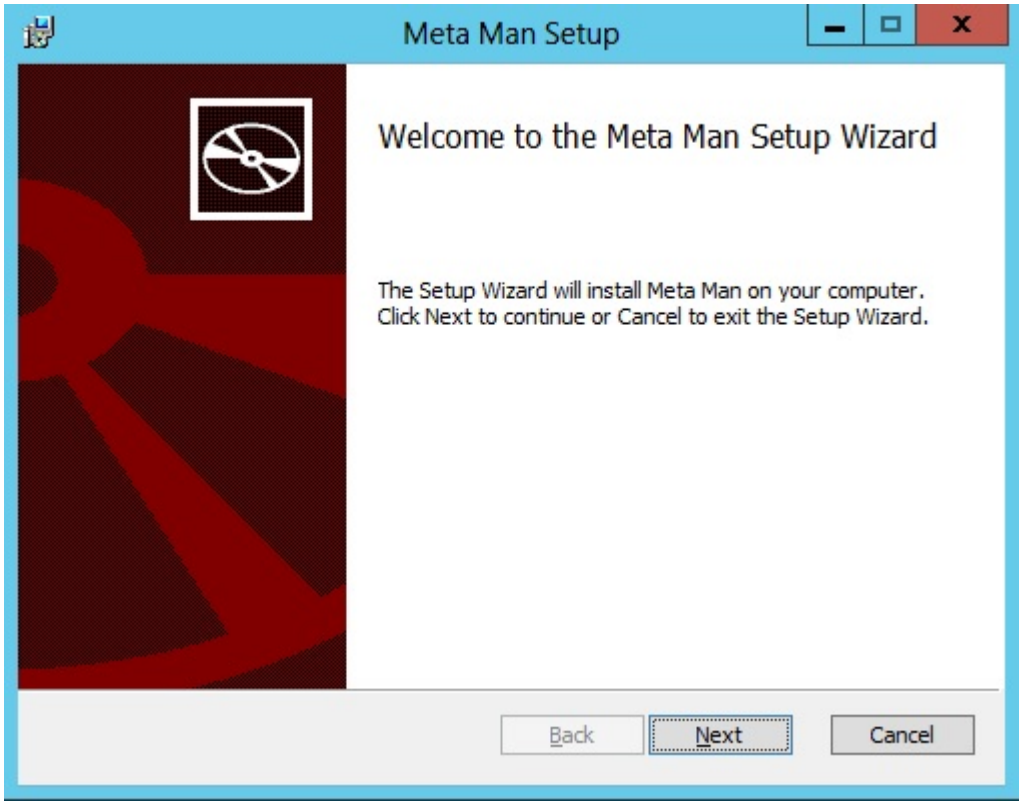
You can find the version of BCS Meta Man you have installed by clicking About on the Meta Man title bar.

Installing BCS Meta Man

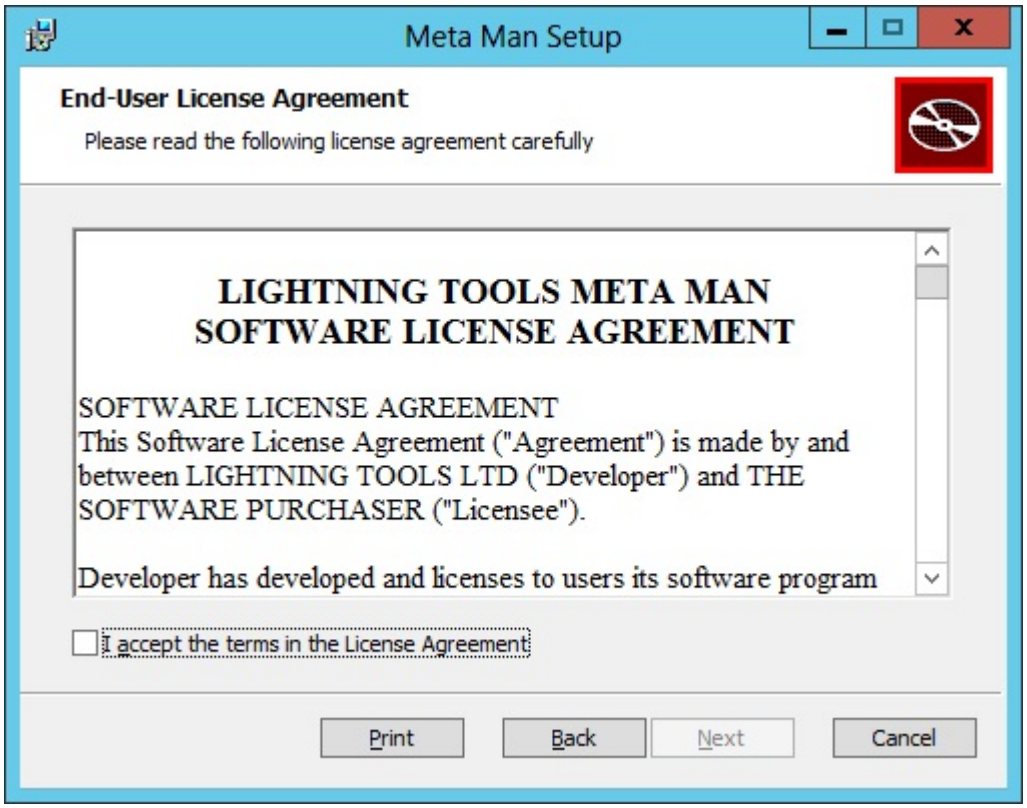
To install BCS Meta Man complete the following tasks:

1. Unzip the downloaded MetaMan.zip file to your computer.

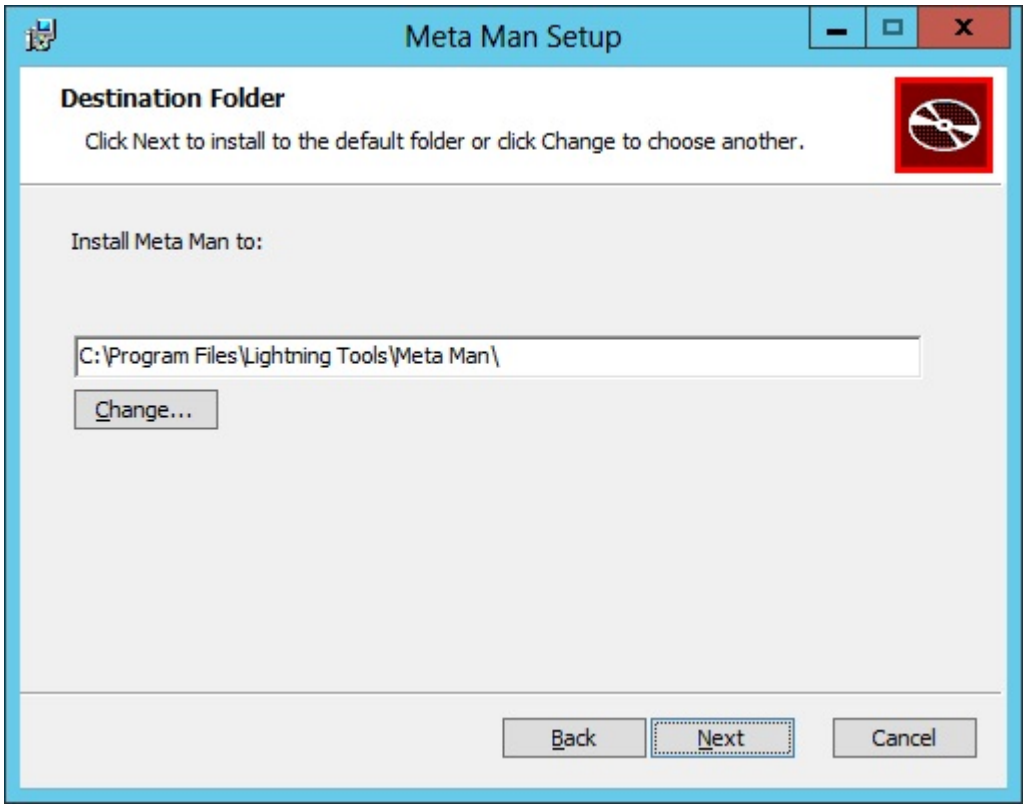
2. Double click **MetaManSetup.msi** to start the **Meta Man Setup Wizard**.**Note**: If you are re-installing the product, you will be prompted to remove the previous installation. To remove BCS Meta Man use the Control Panel and click **Uninstall a program**.



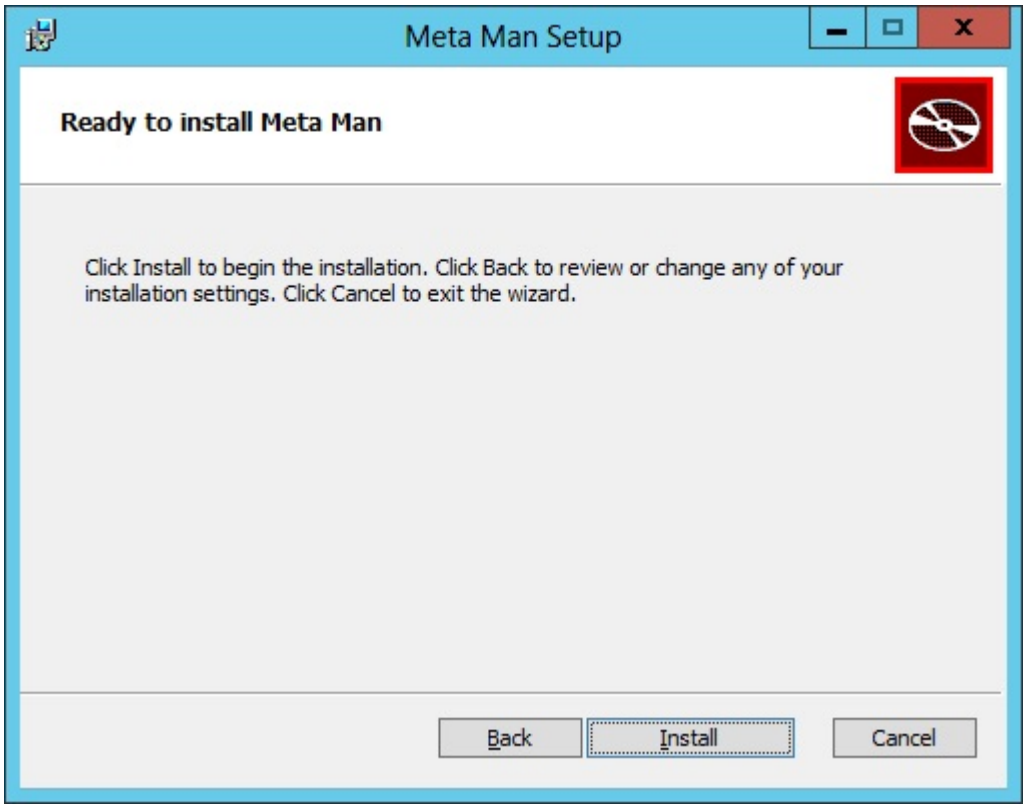
3. Click **Next** to display the **End-User License Agreement** step



4. Select the **I accept** check box to agree to the license agreement, and then click **Next** to display the **Destination Folder** step.



5. Use the **Change** button if you wish to select a new destination folder, and then click **Next** to display the **Ready to Install Meta Man** step. The default destination for the BCS Meta Man binaries is, **C:\Program Files\Lightning Tools\Meta Man**.



6. Click **Install**, and if a User Account Control dialog box is displayed, click **Yes**.

7. When the **Completed the Meta Man Setup Wizard** step is display, click **Finish**.

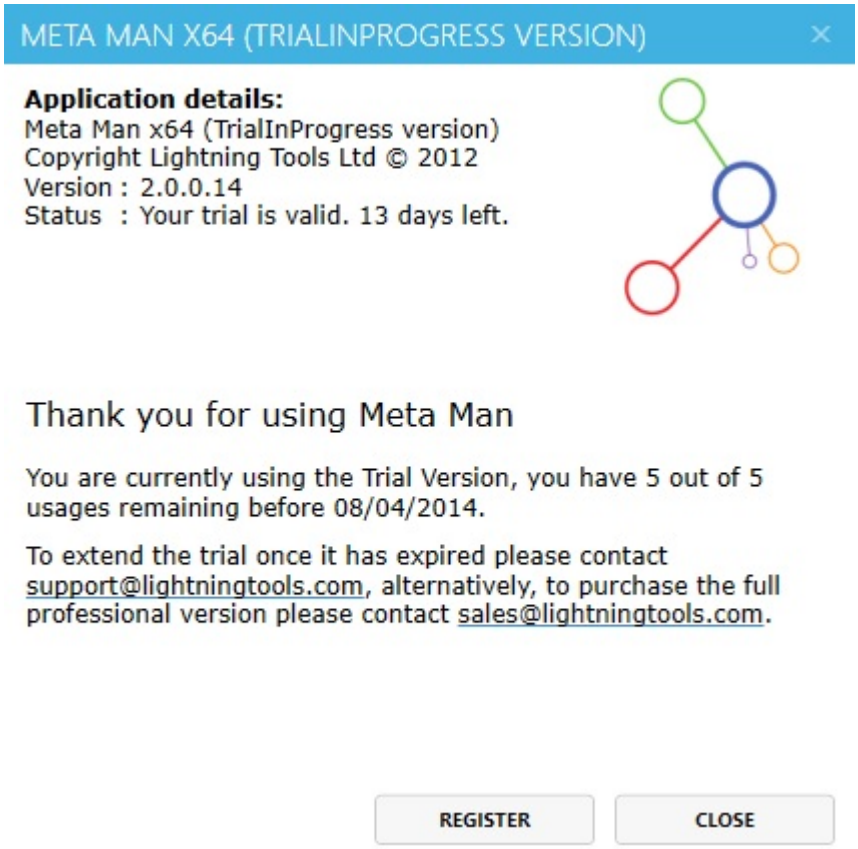
Go to top →

Activate BCS Meta Man license key

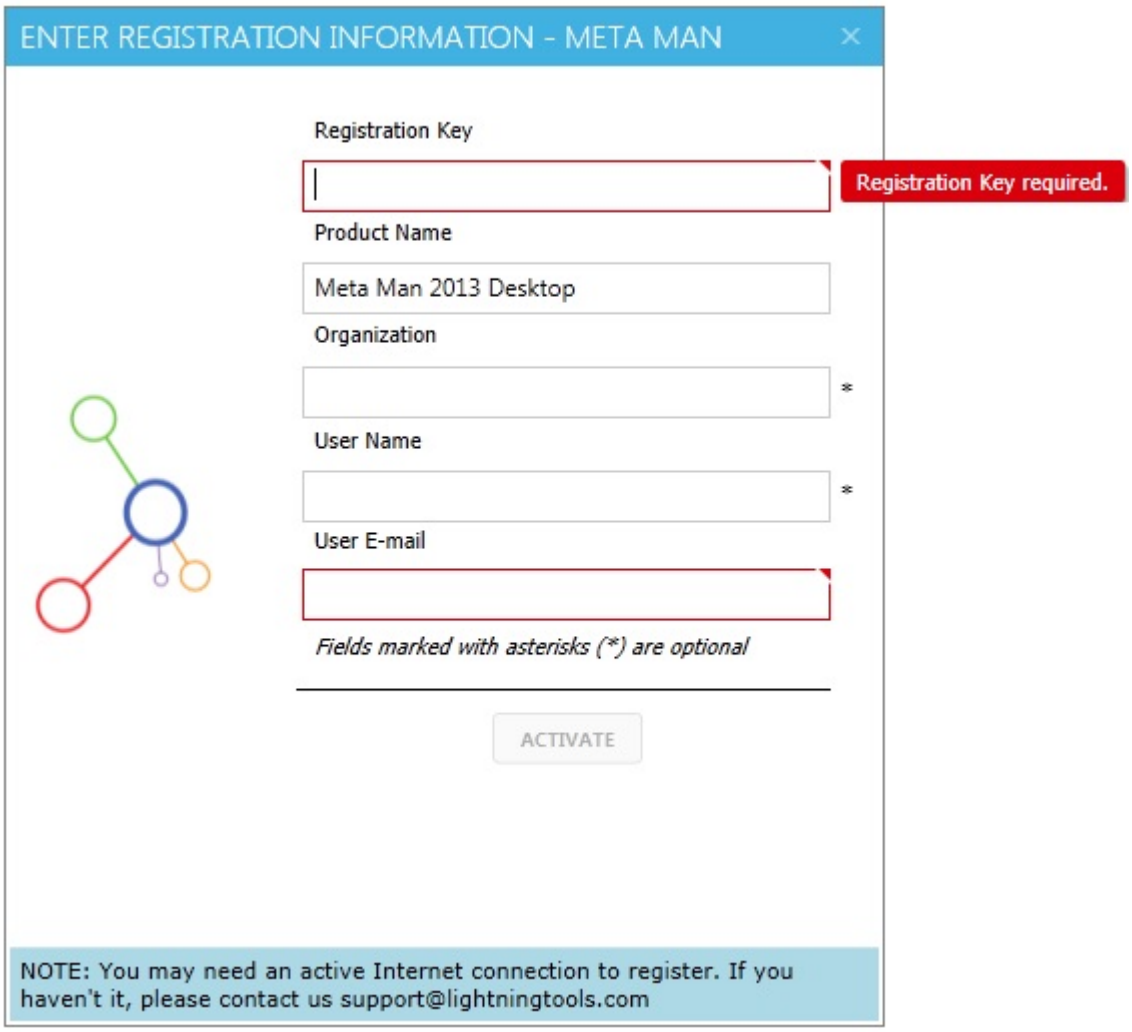
After purchasing BCS Meta Man, you will be sent a license key. To activate your BCS Meta Man license key, complete the following steps:

1. Ensure you have internet access from the machine where BCS Meta Man is installed.

2. Start Meta Man and then on the Meta Man title bar, click **About**.



3. Click **Register**.



4. In the **Registration Key** text box, type the license key and in the **User E-mail** text box type your email address. Optionally you can provide the name of your **Organization** and **User Name**.
5. Click **Activate**.

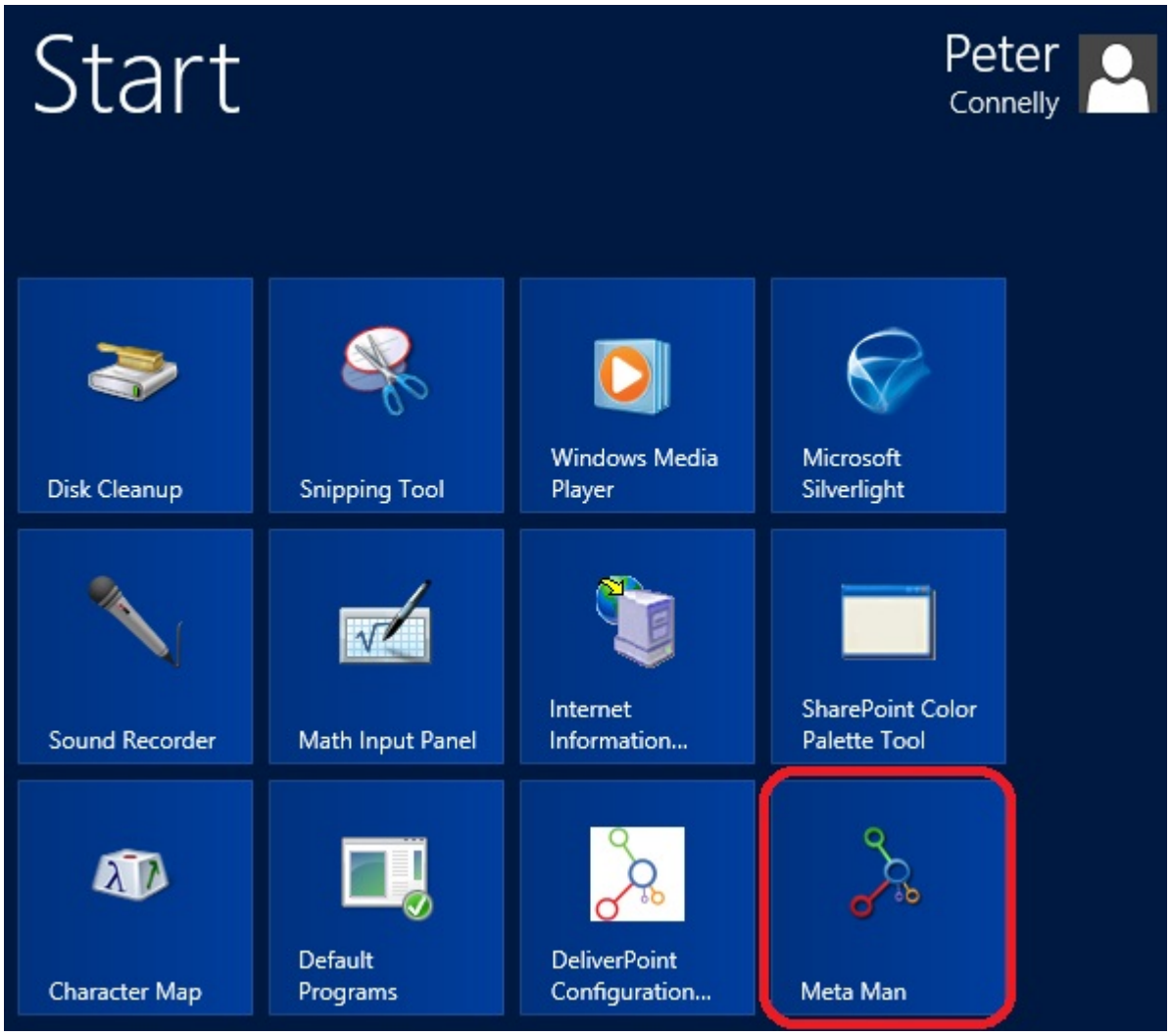
Go to top →

Using BCS Meta Man

BCS Meta Man is a Business Connectivity Services (BCS) tool that generates a Business Data Connectivity (BDC) model for external data source connections. The BCS Meta Man user interface provides a step by step, simple to use process, that enable you to create or modify a BDC model. Once you have created a BDC model you need to deploy and test the BDC model in your SharePoint environment

Starting Meta Man

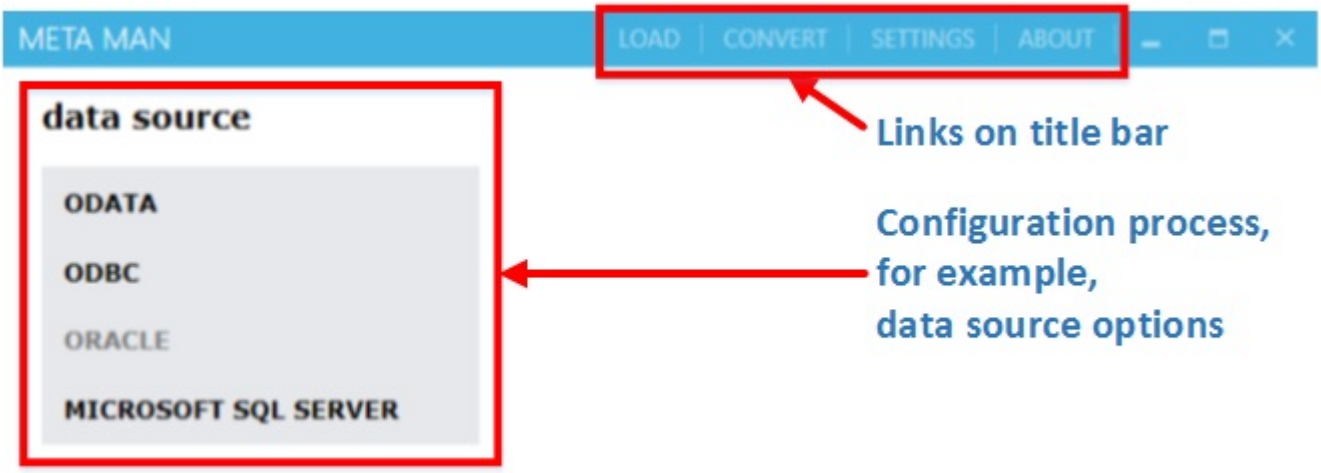
Once you have installed Meta Man, you can find Meta Man on Windows Server® 2008 by clicking **Start**, **All Programs**, **Meta Man**. For Windows Server® 2012, you can find Meta Man on the **Start** screen, as shown below:



Go to top →

Meta Man user interface

The Meta Man user interface contains four link in its title bar and a number of screens that take your through the configuration process.



Go to top →

Meta Man title links

The title links are:

- **Load**. When clicked the **Select BCS model file** dialog box is displayed that allows you to load an existing BDC model into Meta Man. A BCS model file has an extension of .bdcm.
- **Convert**. Use this link to load an existing a SharePoint 2010 BDC model and convert to a SharePoint 2013 BDC model.
- **Settings**. When clicked, the Settings dialog is displayed that allows you to:
  - Name the model file name,
  - Specify the location on the computer where you wish to save the file,
  - Set LoB Systems settings manually,
  - Select the BDC model file format – SharePoint 2010 or SharePoint 2013,
  - Specify the URL when you want to directly deploy the BDC model to the SharePoint Business Connectivity Services' BDC Metadata store.
- About. This link when clicked, displays a dialog that identifies the version of Meta Man that you are using and allows you to register your Meta Man license once you have purchased the product.

Go to top →

Creating a BDC model

The key to using Business Connectivity Services (BCS) in Microsoft® SharePoint® is the Business Data Connectivity (BDC) model. The BDC model has three main purposes:

- Describes how the connectivity component of BCS – BDC runtime – obtains data from the external data source, that is, it describes the interface – the protocol to use, the location of the external data source and the authentication method.
- Describes what can be done (methods) with the external data and the relationships among the different types of data (associations). For example, using BCS, you can create, read, update, and delete (CRUD) external data in SharePoint and Office client applications, if the external system supports the methods (operations) and is modelled appropriately in the BDC model.
- Provide meaningful text in the browser to help users determine the data they require from the external system.

The BDC model is usually created by a business analyst, a developer, or a database administrator (DBA). Together, they have the knowledge of the external data sources, as well as how the business uses the data.

Once you have started BCS Meta Man, the configuration process allows you to:

1. Selecting your external data source.

    - OData.
    - ODBC.
    - Oracle.
    - Microsoft SQL Server.

    Which ever data source you have selected, enter the appropriate information and then click the blue arrow  to move to the next step in the process.

5. For each set of data – external content type – you wish to include in the BDC model
    - Select the data that you wish to model.
    - Provide a name for the external content type.
    - Select the methods you wish to generate. Using these methods and the authentication method you have chosen for the data source, users on SharePoint pages, will be able to retrieve, modify and create external data.

    - Modify the external content type you just created adding additional methods, mapping Office Item types, filters and custom actions
6. Define any associations between each set of data that are defined in your BDC model.

7. Name the BDC model, by clicking **Settings** on the Meta Man title bar.
8. Click **Generate**.

Go to top →

Once you have created a BDC model you must complete the following tasks:

1. Deploy the BCS model
2. Test the BCS model
3. Modify the model either because the model did not meet your requirements or new requirements were identified.

Go to top →

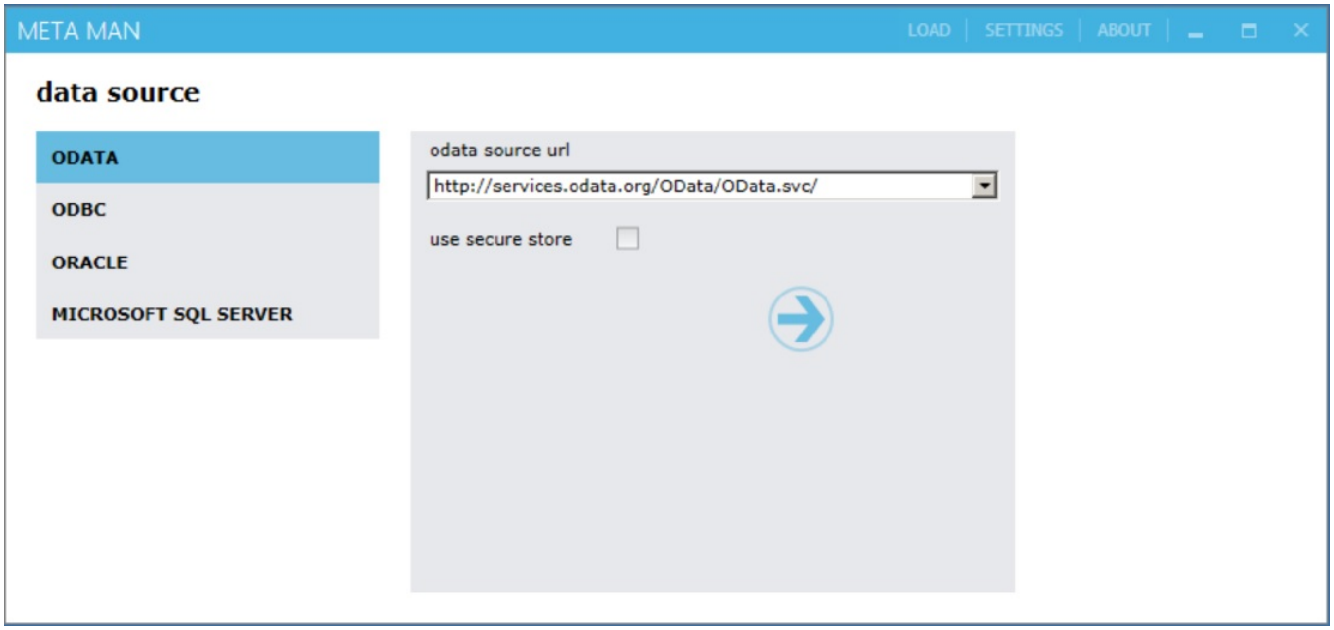
Connecting to OData

OData is a newly supported external data source that has been added to Business Connectivity Services in Microsoft SharePoint 2013. You can find out more information about OData from the web site: www.odata.org.

> The following URL is a useful OData service that you can use to Meta Man to build a OData BDC model: http://services.odata.org/OData/OData.svc/

Complete the following steps:

1. In the **odata source url** text box, type the url of the OData services which is exposing the data that you want to display in SharePoint.



2. Select the **use secure store** check box, if you want to use a SharePoint Secure Store Service.
3. Click the blue arrow icon  to move to the next step – build one or more external content types.

Connecting to ODBC

Open Data Base Connectivity (ODBC) is a driver based connectivity option which is supported by many external data sources. You must have the correct ODBC driver installed on your SharePoint server, both the machine where you have BCS Meta Man install as well as the SharePoint environment where you plan to use the BDC model in order for the ODBC option to work successfully.

> Information on ODBC drivers can be found on the following web site: http://en.wikipedia.org/wiki/ODBC#Drivers

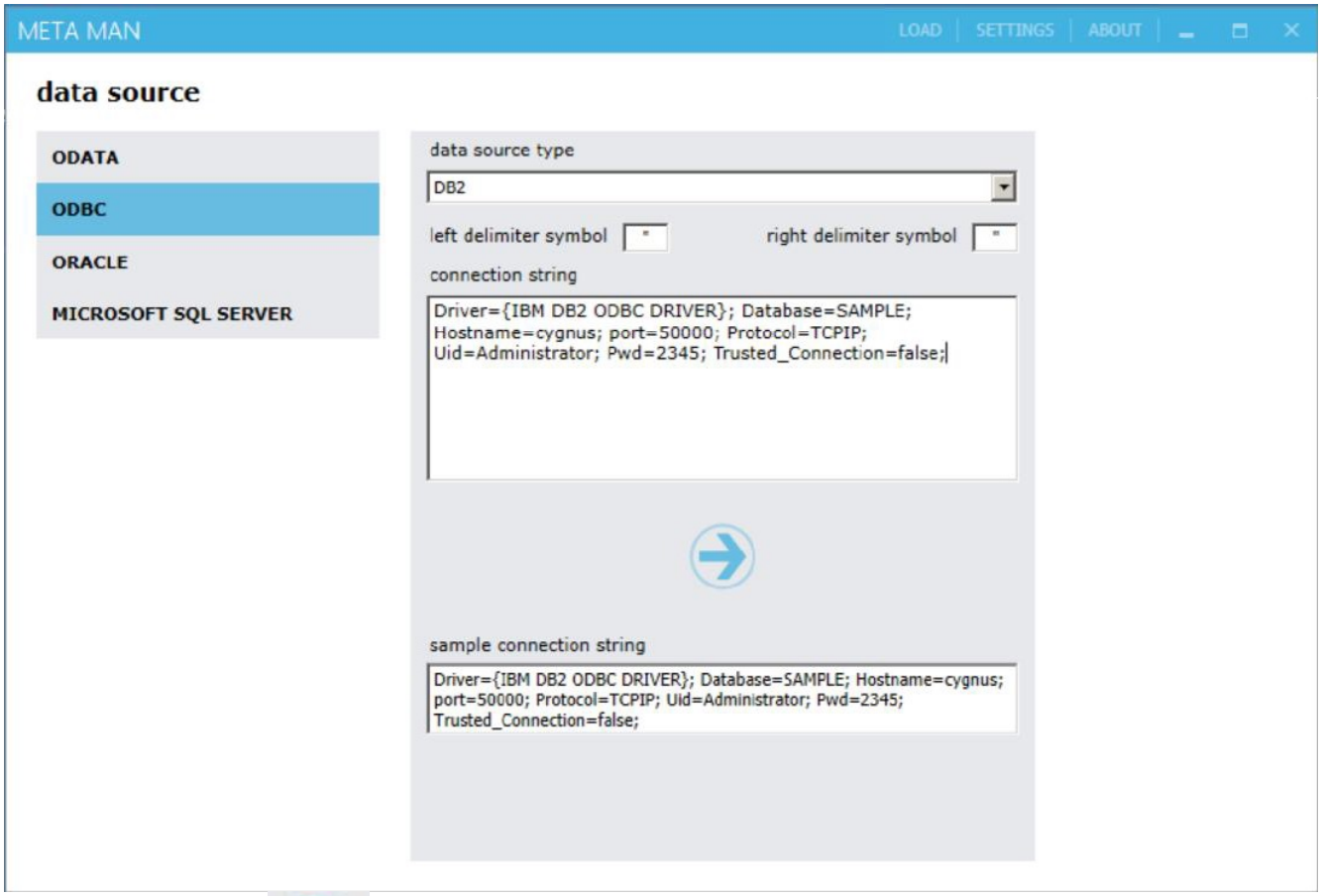
Complete the following steps:

1. In the **data source type** drop down list select one of the following:

    - Oracle
    - DB2
    - MySQL
    - PostgreSQL
    - Sybase
    - Microsoft SQL Server
    - Microsoft Access
    - FireBird
    - Informix
    - Progress
    - Sage Mas 90
    - SQL Anywhere
    - Other Data Source

14. Type a **left delimiter symbol** and a **right delimiter symbol**. The default is a double quote **"** for both.

15. In the **connection string** text box, type the connection string of how to connect to the ODBC data source.



16. Click the blue arrow  to move to the next step – build one or more external content types.

Connecting to Oracle

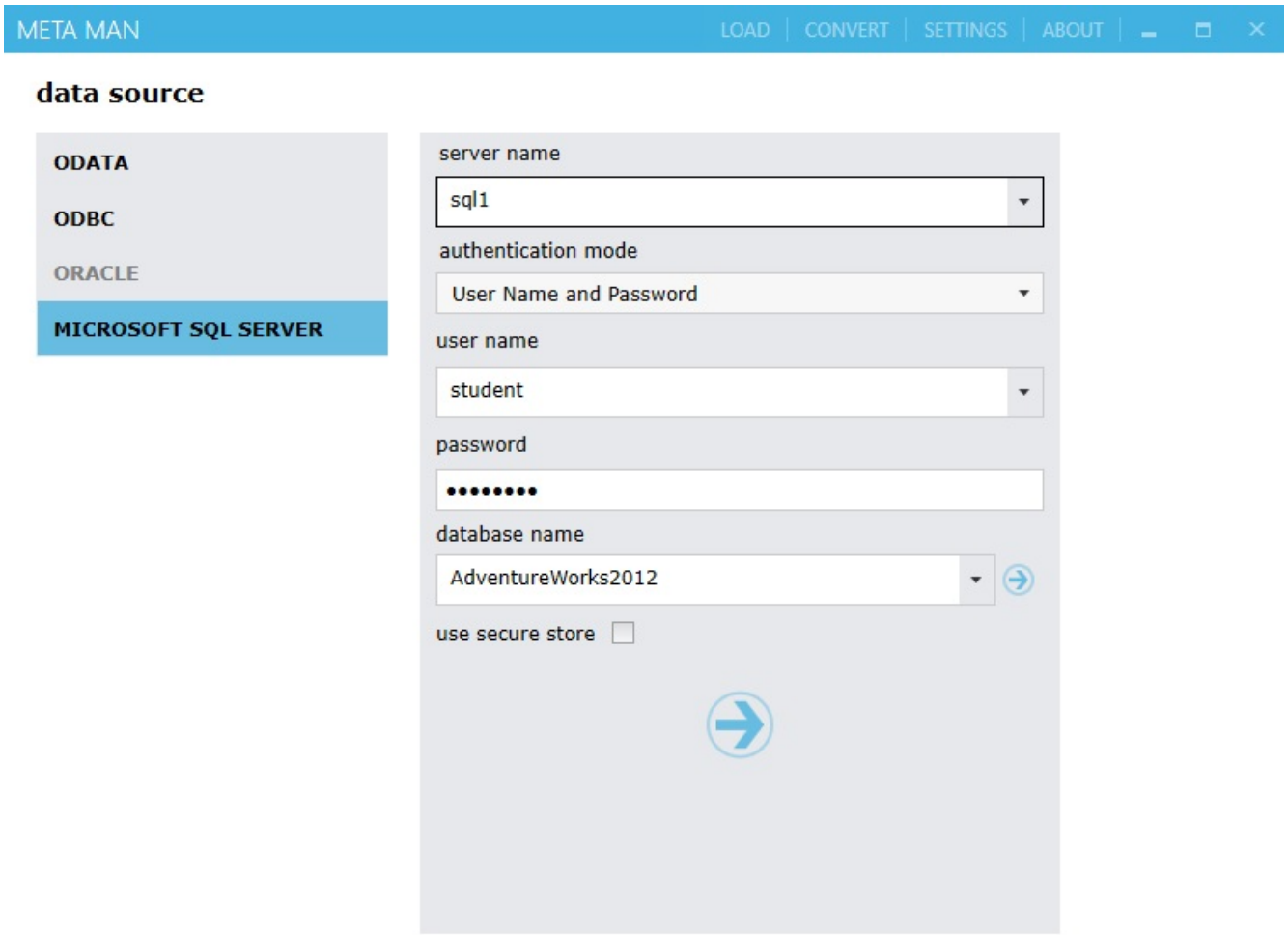
Display data from an Oracle® Database on a Microsoft® SharePoint® page, can be difficult and / or time consuming. Using BCS Meta Man for Microsoft® SharePoint® 2013 and 2010 from Lightning Tools, you can connect to your Oracle® Database and generate a BDC model – External Content Type – without having to write any code. The External Content Type is then used with Business Connectivity Services. This video shows how to generate an External Content Types using BCS Meta Man, for an Oracle® Database without writing any code.

When you are connecting to an Oracle data source, the correct Oracle Client must be installed on your the server where you intend to run BCS Meta Man and the SharePoint environment where you plan to use the BDC model generated by BCS Meta Man. Oracle clients can be downloaded from: http://www.oracle.com/technetwork/indexes/downloads/index.html.

Connecting to SQL Server

Complete the following steps to complete to a server running Microsoft® SQL Server®:

1. In the **server name** text box, type the name of the SQL Server.
2. From the **authentication mode** drop down list, select either **User Name and Password** or **Windows Authentication**.
3. When **User Name and Password** is selected, type the SQL user name and password in the text boxes provided.
4. Click the blue arrow to the right of the **database name** drop down list to populate the list with all the databases the authentication credentials has access to.
5. In the **database name** drop down list, select the database which you want to use as a basis for your external content types.
6. Select the **use secure store** check box, if you want to use a SharePoint Secure Store Service.



7. Click the blue arrow  to move to the next step – build one or more external content types.

Creating an External Content Type

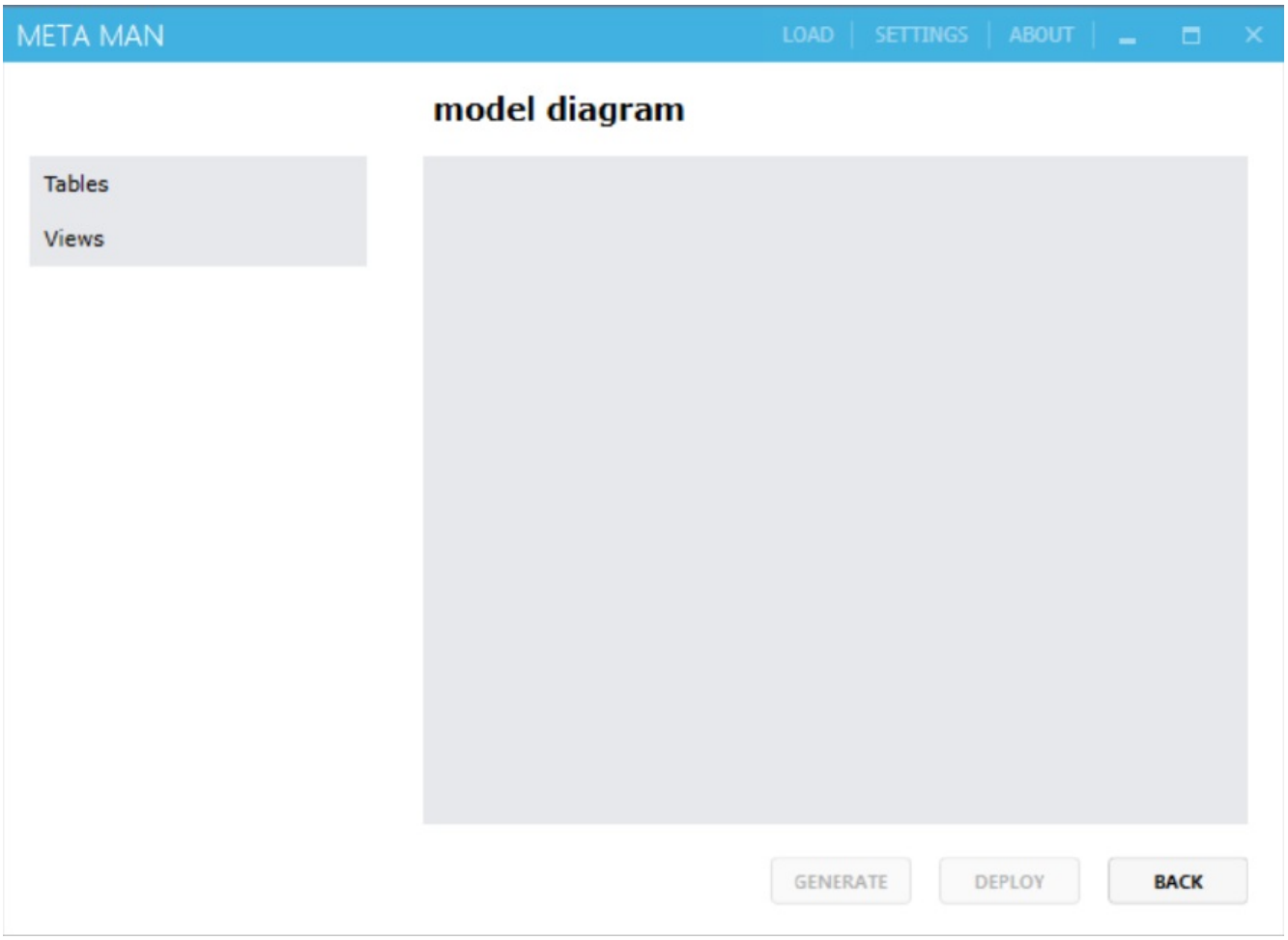
Once you have specified the data source, you next need to define what data from the data source you want to interact with in SharePoint. Depending on your data source, you can select the data source objects to use to build your *external content types*. For example, when you select a Microsoft® SQL Server® database, the **model diagram** page displays the component types: **Tables**, **Views** and **Store Procedures**.

External content types were a new concept introduce with SharePoint 2010 and are the building blocks of Business Connectivity Services, and are similar to what was known as an entity object in Microsoft Office SharePoint Server 2007. External content types refer to external data objects and define the fields, methods, and behavior of the data in SharePoint and Office client applications.
Both read and write capabilities are included, along with batch and bulk operation support. ECTs are defined in the BDC model.

Complete the following steps to create an external content type

1. Start BCS Meta Man and define your data source and then click the blue arrow  .

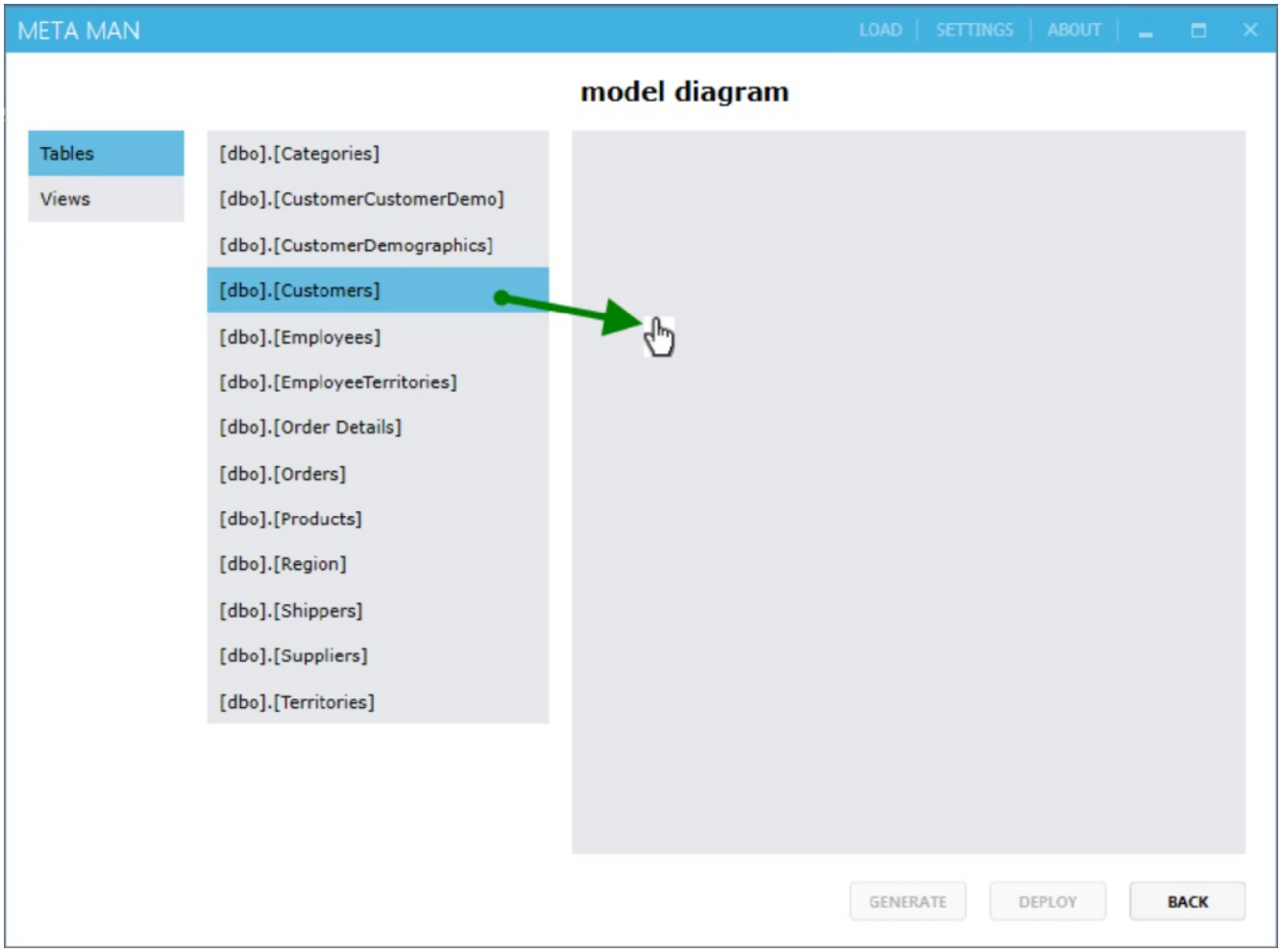
   The **model diagram** page is displayed, where the type of objects supported by the data source are displayed.



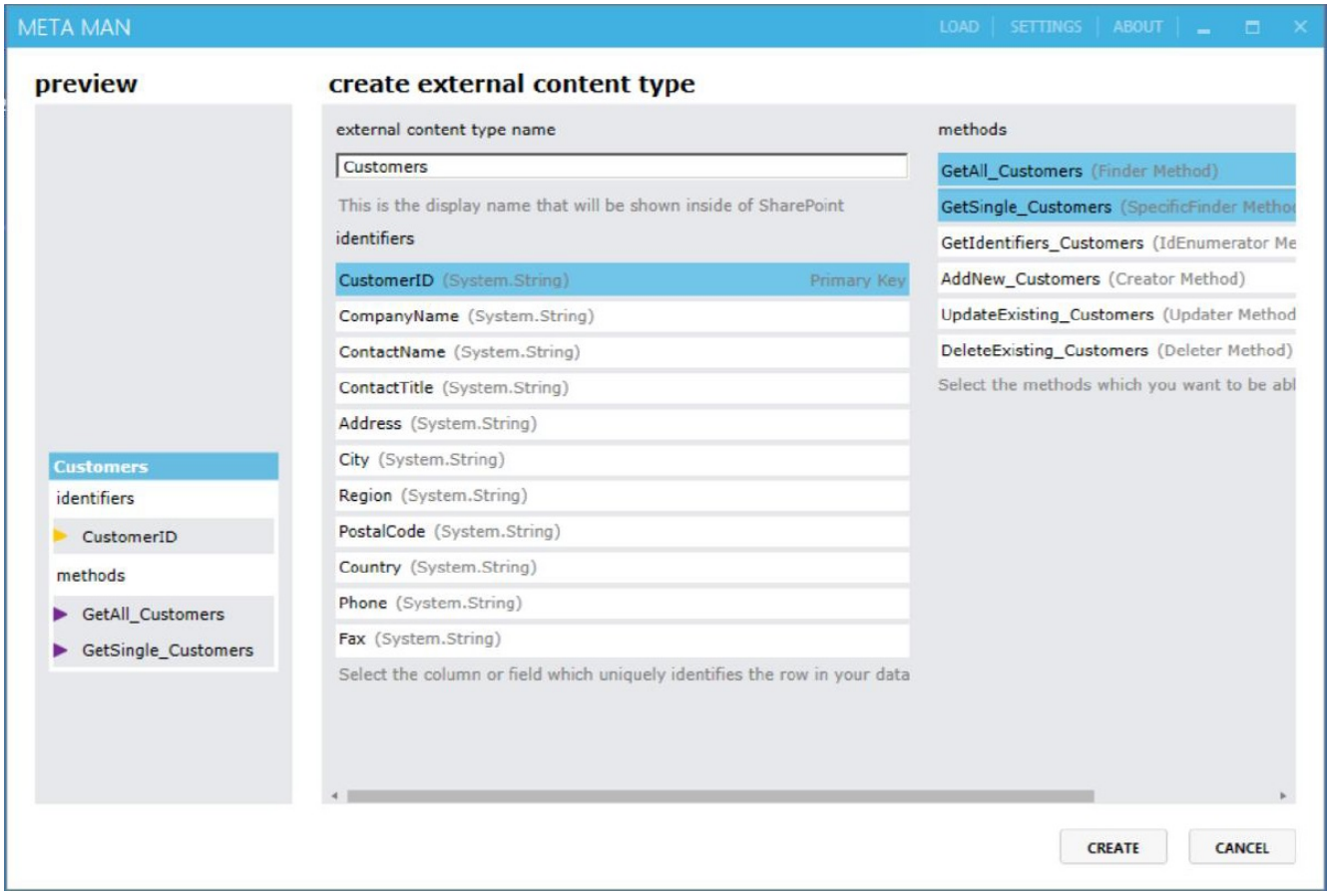
2. Click the object type, for example **Tables**. Meta Man then connects the data source, and then in the middle page, the tables you are authorized to access are displayed.

   Note: If you are using the trial version, you may be prompted to activate or register your license of Meta Man if your trial has expired. If your trial version is still active, Meta Man displays only three randomly selected tables.

3. Drag the table that you wish to base your external content type to the model diagram square.



4. Meta Man again connects to the data source to display the preview and identifies.

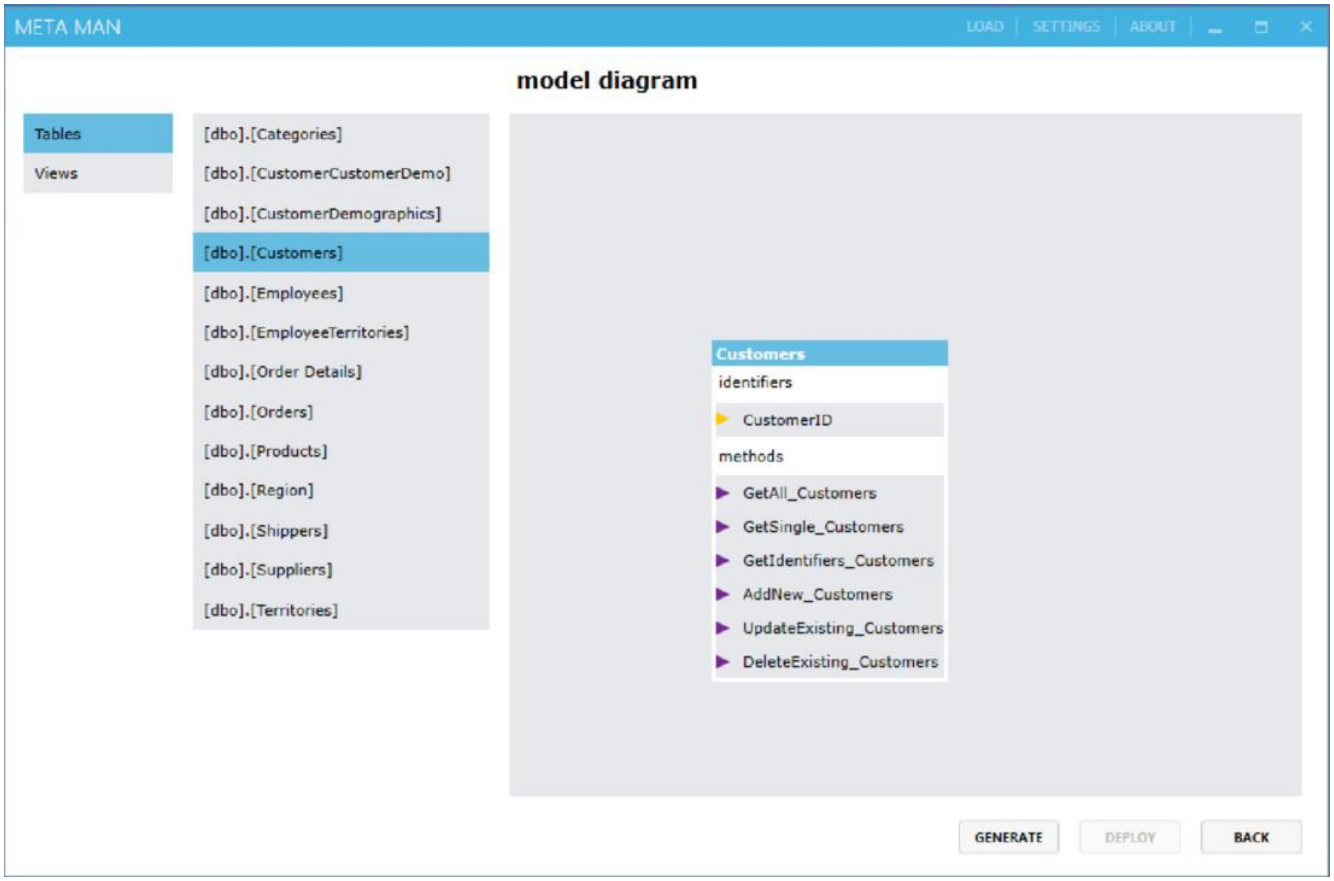


5. In the **external content type name** text box type a name for your external content type.
   The name you provide is displayed when users create, for example, an external list from this external content type or in external content type picker dialog box when users create an external column; therefore you should think carefully about the name – make it short but meaningful. By default the name is the name of the object from the data source, which is usually not meaning to most users in SharePoint. An external content type once installed in the metadata store, is identified internally by a randomly generated number, known as a globally unique identifier (GUID), which is generated based partly on the external content type name. Therefore if you change the name of the external content type and redeploy it to the metadata store, it is considered as a totally different external content type – so think carefully of the name you chose.

6. Under **methods** select the operation type that you wish to generate. The operation types are described below, you must select at least the **Finder** and **Specific Finder** methods.

- **Finder**. Also known as the *Read List* operation, this method is used within external lists and Web Parts, the **Finder** method returns all rows and columns from the Table or View. Each Finder method can contain one or more filters.
- **Specific Finder**. Also known as the *Read Item* operation, this method is used in search, external lists and Business data Web Parts when displaying or selecting a single row. This method returns a single row using a parameter. The Table or View that the external content is based on, must contain a column that contains unique values, such as, a column that contains the primary key for the table.
- **ID Enumerator**. Used by the search index component and is required if you want SharePoint search to return data from you external data source.
- **Creator**. Used in external lists to create new items.
- **Updater**. Used in external lists to update data.
- **Deleter**. Used in external lists to remove rows of data.

7. Click **Create** to return to the model diagram, where the external content type is added.



8. Modify the external content type as required.
9. Repeat steps 3. to 8. for each external content type you wish to create.
10. Next create any associations between the external content types.

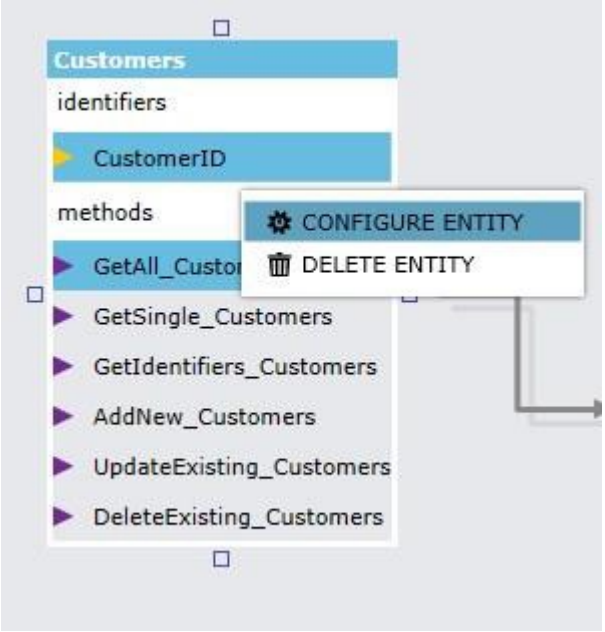
11. Give the BDC model a name, and configure any other settings at the external content type or BDC model levels.
12. At the bottom of the dialog, click **Generate**.
13. Deploy and test the BDC model.

Modifying an External Content Type

You can modify an external content type to configure properties such as the title column, add additional methods, create filters and create custom actions.

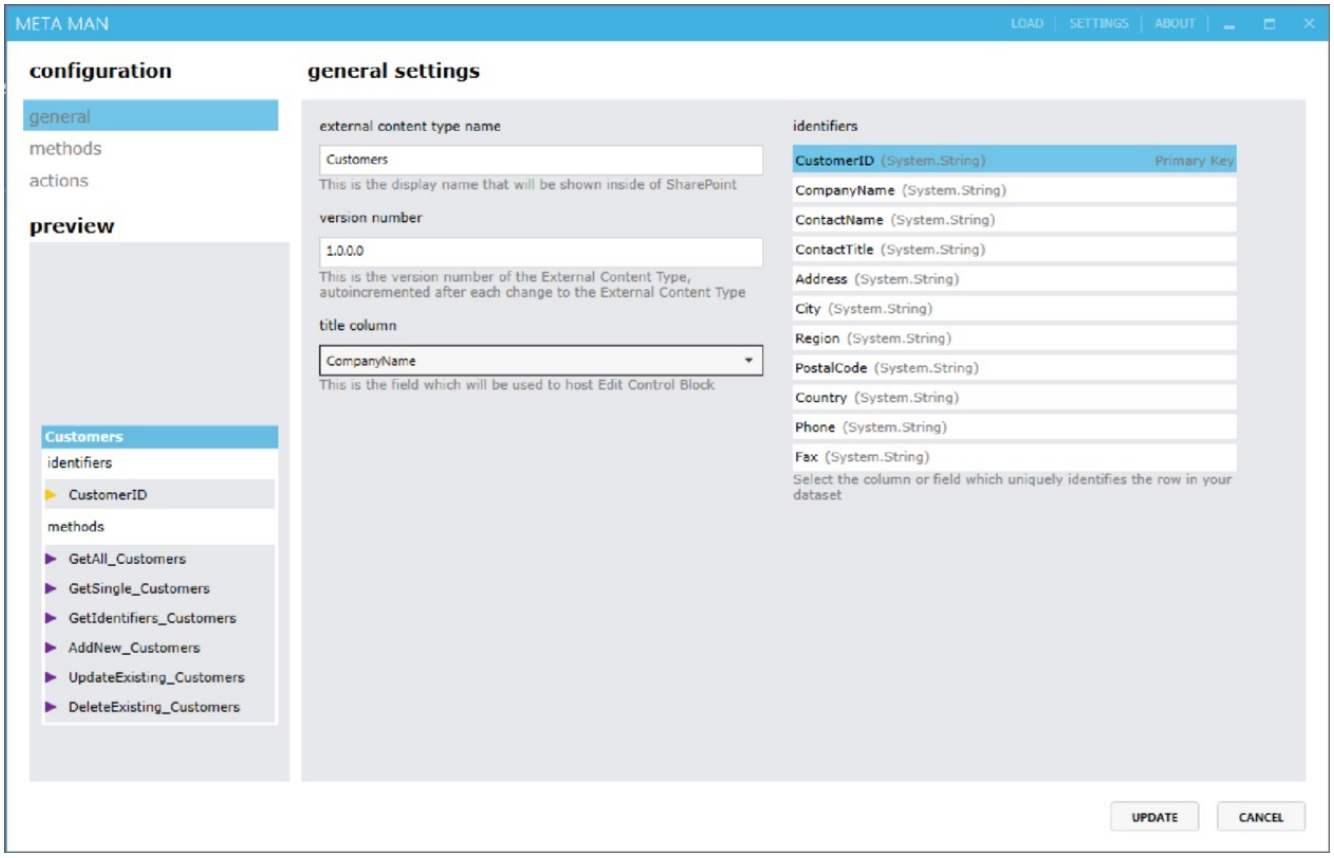
To modify an external content type complete the following steps:

1. Create an external content type.
2. On the **model diagram**, right click the external content type that you wish to configure and click **Configure Entity**.



The configuration screen is displayed. Under **configurations** you are provided with three configuration options; General, Methods and Actions. Click each option as required, and complete the

necessary configurations.



3. Click **Update**.

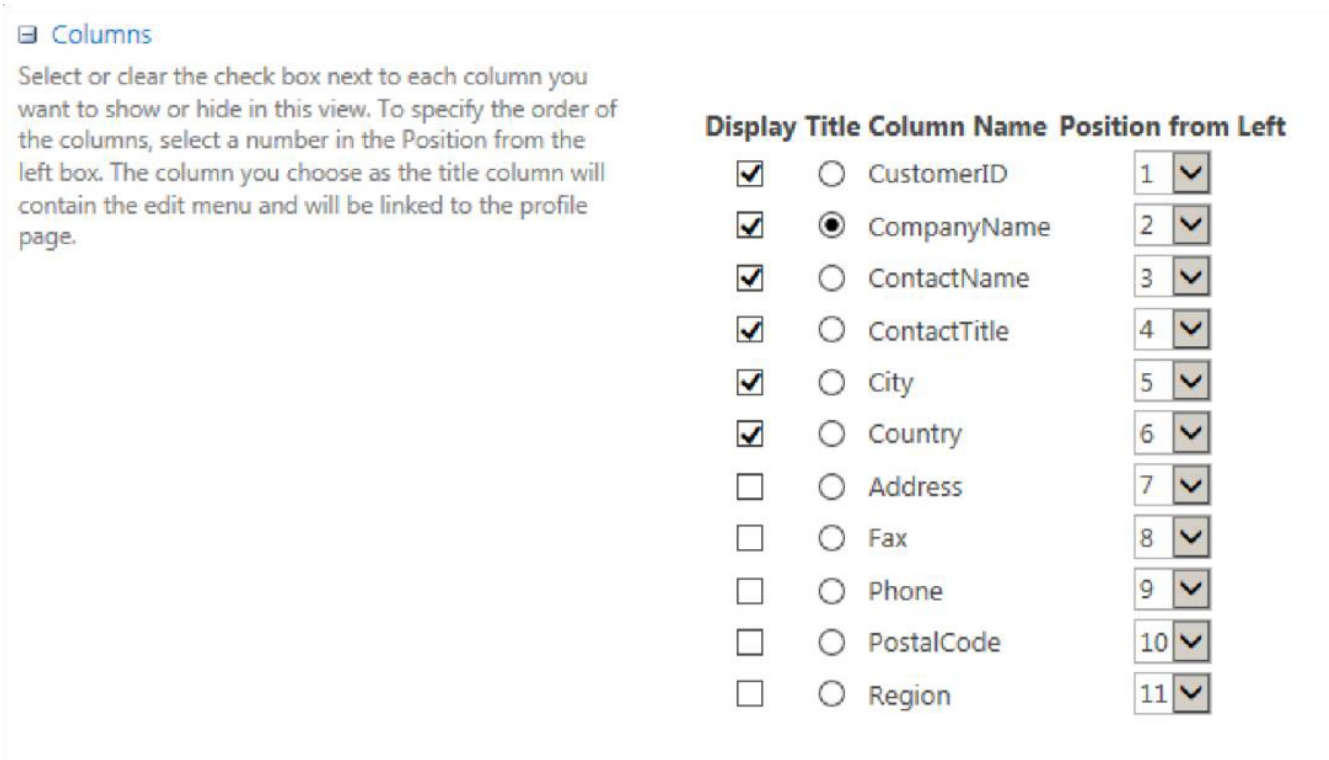
General.

Use this section to configure the following:

- **External content type name** – The external content type name is important to the business user who will be configuring the business data web parts as they will need to understand the type of data that will be returned. For example dbo.CRM_CUSTS would not be meaningful to an end user.

- **Version Number** – This is the version of the model file which allows you to increment the version of your model file after making changes to it.

- **Title column** – The title column is the column that provides you the list item menu drop down list that contains links to **Edit Item**, **Delete item** and custom actions. You can also type the title column using the Business Data Web Parts.

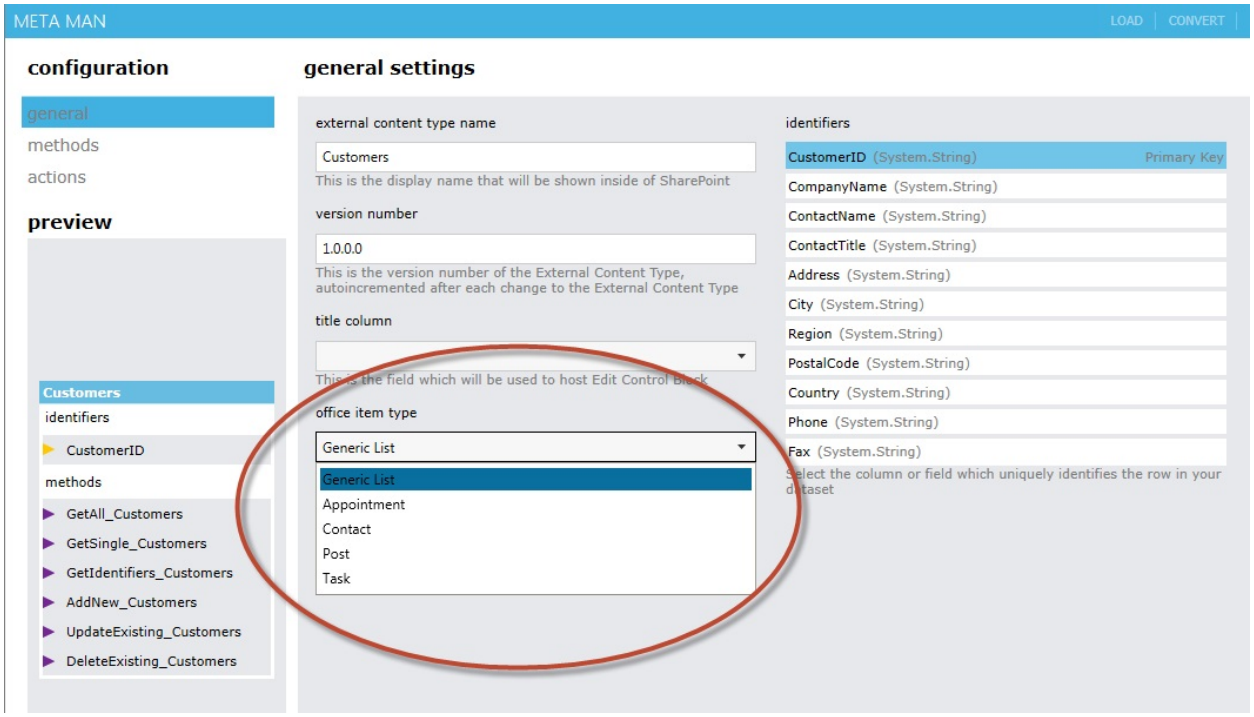


- **Office Item Type**. You can use the office item type drop down list, to control the behaviour of your external data within a Microsoft Office application. Microsoft Outlook has specific views for different data types, for example, it allows you to view contacts as business cards, or as a list, appointments within calendars. Once you set the office item type, you will need to map the columns from your external data source to the Microsoft Office column types, for example **Last Name** in the external content type mapped to the **Lastname** Office data type.

  Note: The Office Item Types have required mappings. For example Last Name and Full Name are required for the Contact Office Item Type

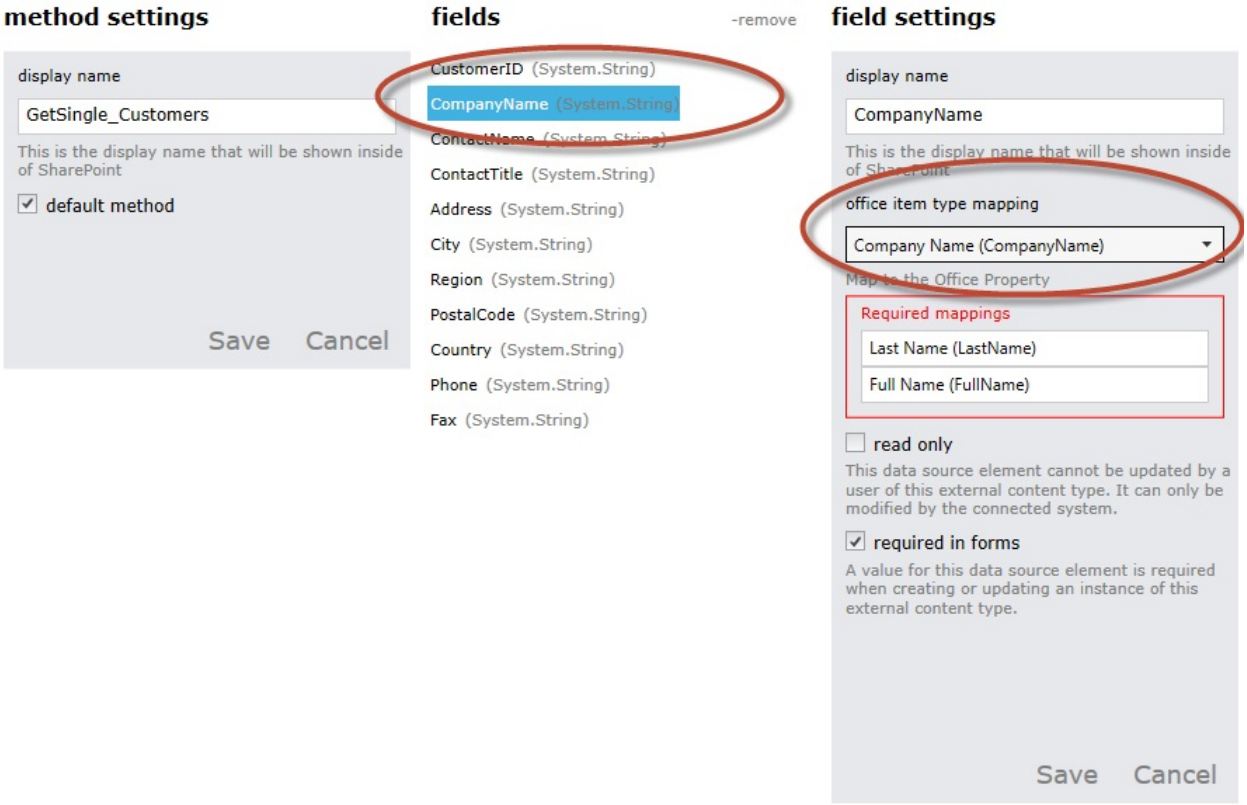
  To set the Office Item Type:

- In **General Settings** section, from **office item type** drop down list, select **Generic List**, **Appointment**, **Contact**, **Post** or **Task**.



- Under **Configuration**, click ‘methods’ and then select the **Specific Finder Method**.
- Under **fields**, select the column that you wish to map to display the **field settings** section. The **Map to Office Property** section displays the required mapping for the Office Item type you selected.

- From the **office item type mapping** drop down list, select the appropriate Office Item type, for example, **Last Name (LastName)**.



- Click **Save** and then click **OK** in the **Information** dialog that states that thee mapping was successfully saved.

- **Identifiers** – The identifier in a column within your table or view that contains only unique values and is used by the IDEnumerator method and Specific Finder method. This is detected automatically for you, but can be changed.

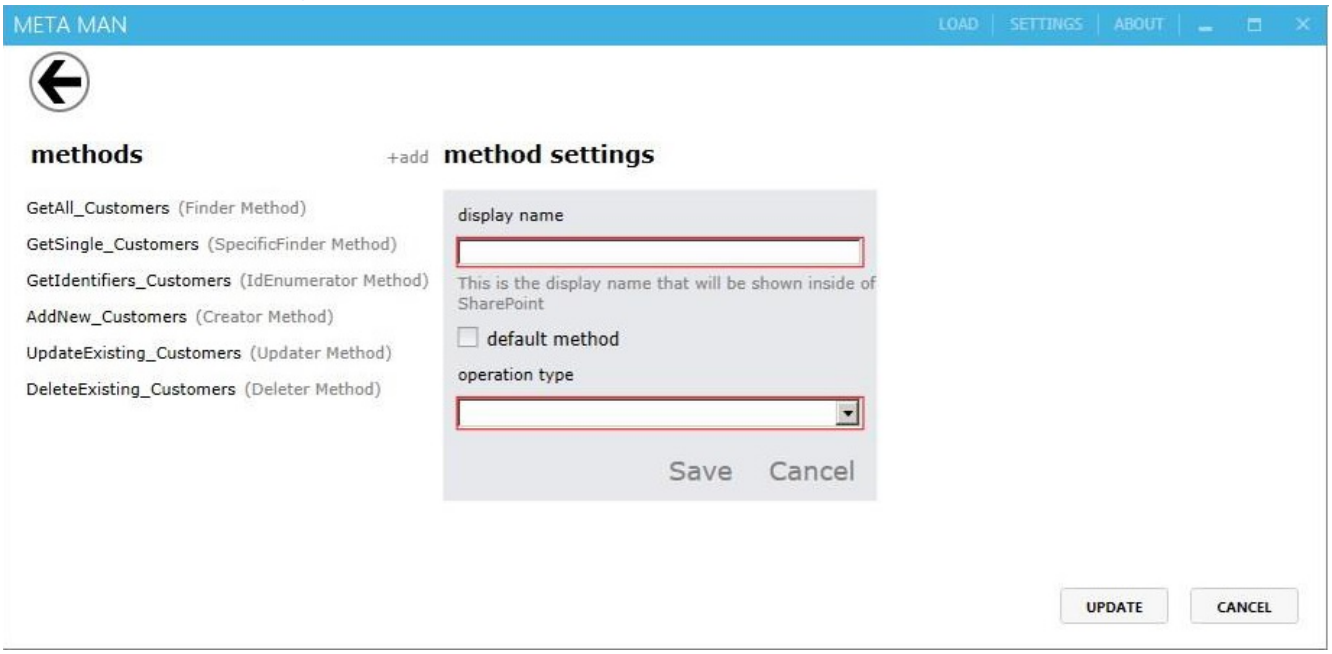
Go to top →

Methods.

The methods that you selected when creating the external content type, are available in the methods section. You will have the ability to add additional methods which is useful when you require a different view of the data from the external data source, such as, an additional view for an external list that you created from the external content type, as compared with the Business Data List Web Part that you placed on a SharePoint page. You can also use the Methods option to add filters and map Office Item types.

To create a new method, use the following steps:

1. Click **Add**
2. In the display name text box, type a name for your method, ensuring that you choose a name that is self-explanatory to the business user.
3. Select the **default method** check box, when this will be the default finder method
4. Choose the operation type.



To add a filter to a method, complete the following steps. Filters are useful to build views in Business Connectivity Services for business reasons such as *Customers in 'USA'*. However, they are also a requirement if you have lots of data. For example, the Business Data Item Picker can only display a maximum of 200 items and therefore a wildcard filter would be required enabling users to filter the items to less than 200 items using the first few letters of a company name.

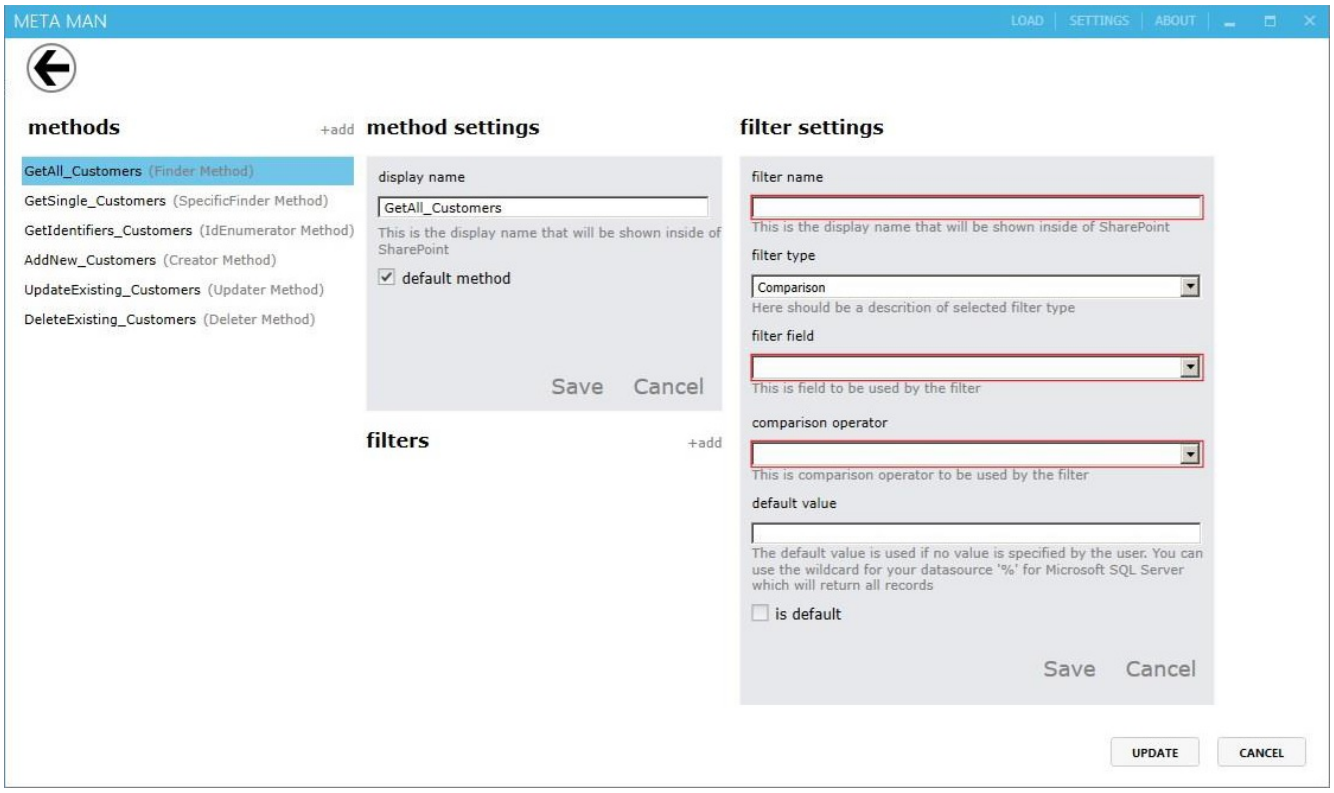
1. Select the finder method that you want to apply the filter against.
2. Click Add to add a filter.
3. Type a filter name.
4. Select the type of filter that you wish to create.

    - **Comparison**. This filter type can be used to set a default value for the filter. For example, you may want to show all customers where the City column is equal to 'New York'.
    - **Wildcard**. Use when you would like to use a begins with filter. This is useful for the External Data Columns item picker. The picker can only display 200 items. Using a wildcard filter, you

will be able to reduce the number of rows by setting a filter such as CompanyName begins with A.

- **Limit**. Use to only return a particular number of rows. The External list in SharePoint 2010 had a limit of 2000 rows. The limit is much higher in SharePoint 2013, but it still makes good sense to ensure that a limit filter is in place to avoid error messages when the data grows beyond the limits.

4. Set the filter field, operator and value, or limit as required.



5. Click **save**.

Go to top →

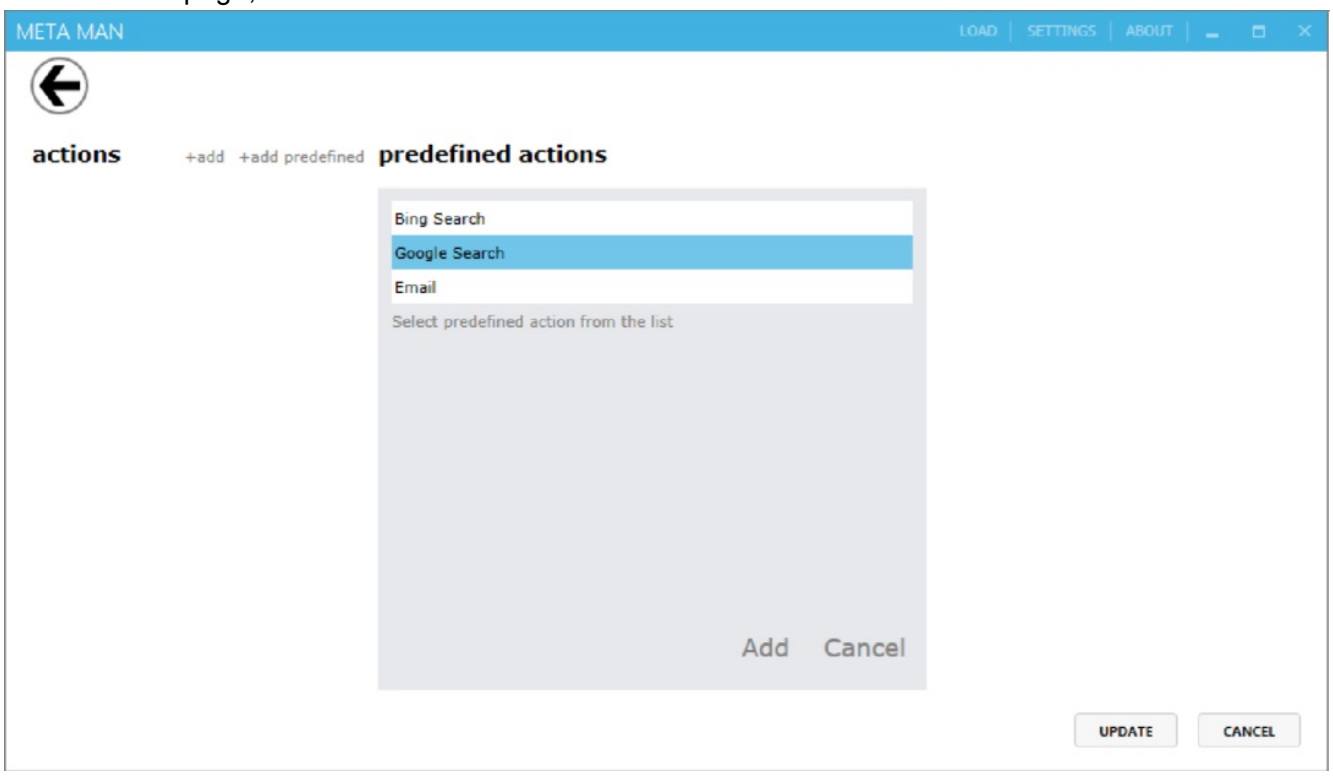
Actions

Custom Actions are actions that users can perform on the external data and are built using a URL that accepts one or more parameters. These parameters are values from a specific row of data. The custom actions are then available for users to click from, on the list item menu on the title column of the external content type, for example, on an external list created from the external content type. The custom actions that are available on search results pages, when the following data is return as a result of a search query: title column, external list, profile pages and business data column.

An example of a custom action would be to Google a customer name. Instead of opening a new browser and performing a Google search and typing the customer name, you could just click a button to perform the same. BCS Meta Man provides a number of predefined custom actions, such as, Email, Bing, or Google which you can add to an external content type, or add your own custom action. You will then have to provide a URL and the correct format for the parameter.

To add a predefined custom action, complete the following steps:

1. Under **configuration**, click the **actions**, and then click **add** or **add predefined**.
2. If you choose to add a predefined action, select the predefined action that you wish to use and at the bottom of the page, click **Add**



3. An **Information** dialog is displayed, stating that the action was successfully added. Click **OK**.
4. Click the action you just added to display the **actions settings** section.
5. Type the name for the custom action, again remember to make this meaningful to your business users.
6. If Select the action parameter, that is, the column you wish the action to use, for example, when you select **Google Search**, you would select the **Customer Name** column and not the **Customer id** column.
7. Optionally browse for a picture icon that will display to the of the action on the list item menu.
8. Choose whether to open the action in the same window or in a new browser window.
9. Set whether or not this is the default action, when a user clicks on the title of the external content type.

Go to top →

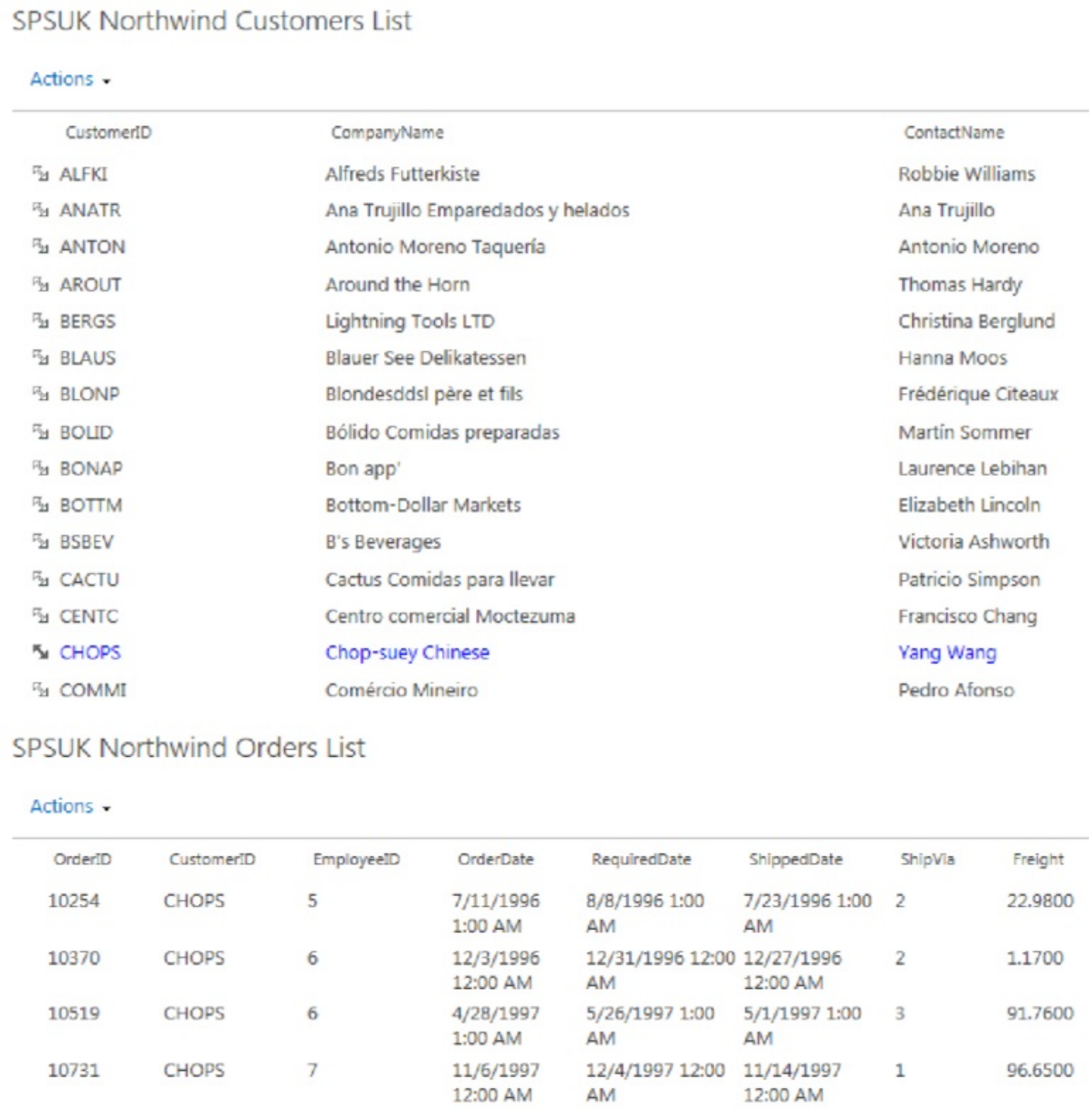
Building Associations

Associations can be created when there is a relationship between two external content types, for example, a customers external content type and an orders external content type, that point to data, where each customer may have one or many orders. This is known as a *one-to-many* , master-detail or master-child relationshiop. Defining an association documents this relationship in the BDC model.

> When you create an association between two external content types, Business Connectivity Services cannot ensure the referential integrity between the external content types, unlike linking two tables in a relational database, where business logic can be used.

You only need to create an association if you wish to use the Business Data Related List Web Part to provide a relationship—a Web Part connection—between itself and a Business Data List Web Part as shown in the next screenshot, or when you customize a solution for Office applications, such as adding a custom task pane

to Outlook, where the task pane shows both customer details and all active orders for that customer.



SPSUK Northwind Customers List

Actions

CustomerID	CompanyName	ContactName
ALFKI	Alfreds Futterkiste	Robbie Williams
ANATR	Ana Trujillo Emparedados y helados	Ana Trujillo
ANTON	Antonio Moreno Taquería	Antonio Moreno
AROUT	Around the Horn	Thomas Hardy
BERGS	Lightning Tools LTD	Christina Berglund
BLAUS	Blauer See Delikatessen	Hanna Moos
BLONP	Blondesddsl père et fils	Frédérique Citeaux
BOLID	Bólido Comidas preparadas	Martín Sommer
BONAP	Bon app'	Laurence Lebihan
BOTTM	Bottom-Dollar Markets	Elizabeth Lincoln
BSBEV	B's Beverages	Victoria Ashworth
CACTU	Cactus Comidas para llevar	Patricio Simpson
CENTC	Centro comercial Moctezuma	Francisco Chang
CHOPS	Chop-suey Chinese	Yang Wang
COMMI	Comércio Mineiro	Pedro Afonso

SPSUK Northwind Orders List

Actions

OrderID	CustomerID	EmployeeID	OrderDate	RequiredDate	ShippedDate	ShipVia	Freight
10254	CHOPS	5	7/11/1996 1:00 AM	8/8/1996 1:00 AM	7/23/1996 1:00 AM	2	22.9800
10370	CHOPS	6	12/3/1996 12:00 AM	12/31/1996 12:00 AM	12/27/1996 12:00 AM	2	1.1700
10519	CHOPS	6	4/28/1997 1:00 AM	5/26/1997 1:00 AM	5/1/1997 1:00 AM	3	91.7600
10731	CHOPS	7	11/6/1997 12:00 AM	12/4/1997 12:00 AM	11/14/1997 12:00 AM	1	96.6500

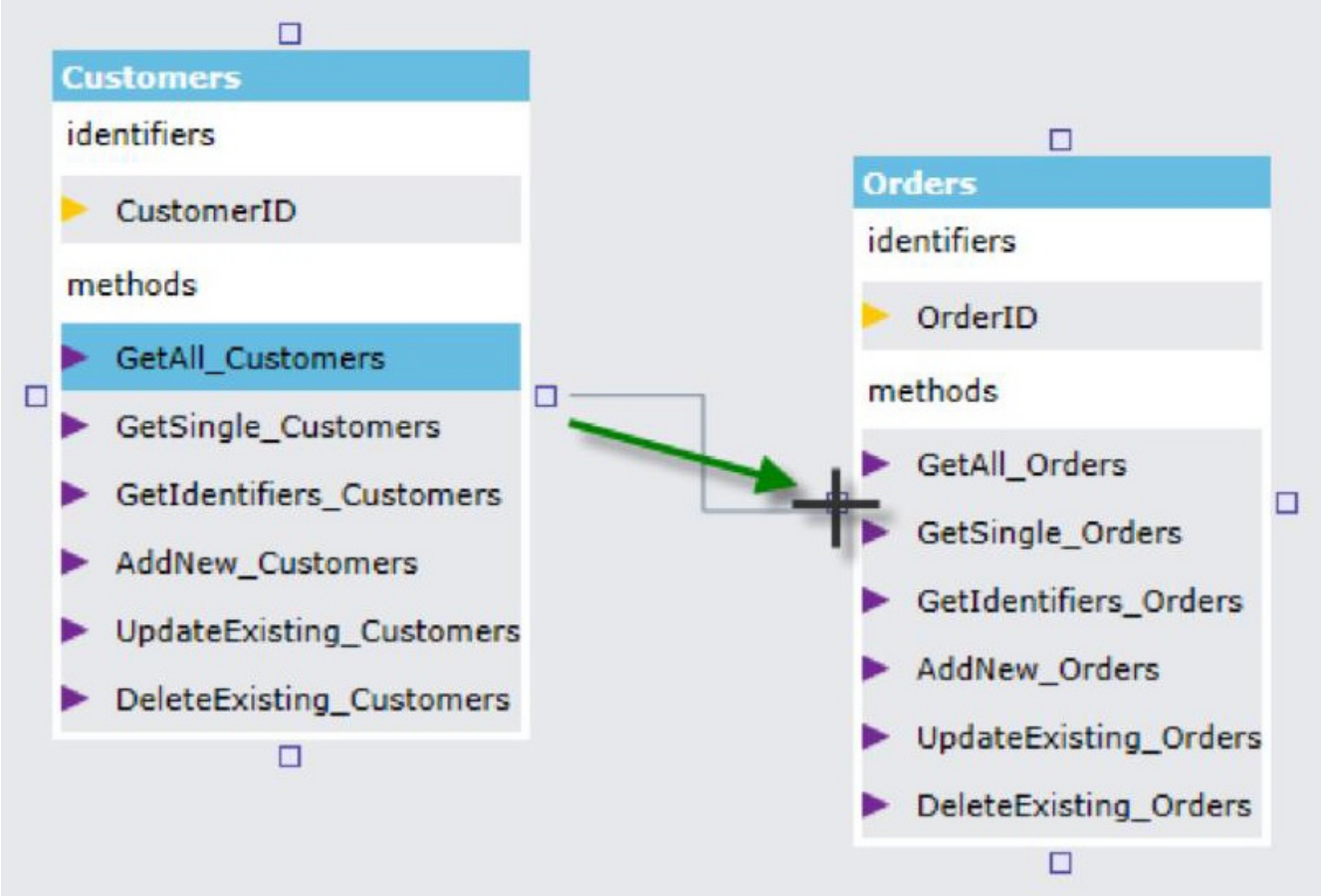
Business Data Web Parts can only be used with the on-premises enterprise edition of SharePoint Server and Office 365™ plans E3, E4 and SharePoint Online Enterprise External Users.

An external content type's profile page also use Business Data Web Parts and will use associations to display related data as well as the item picker.

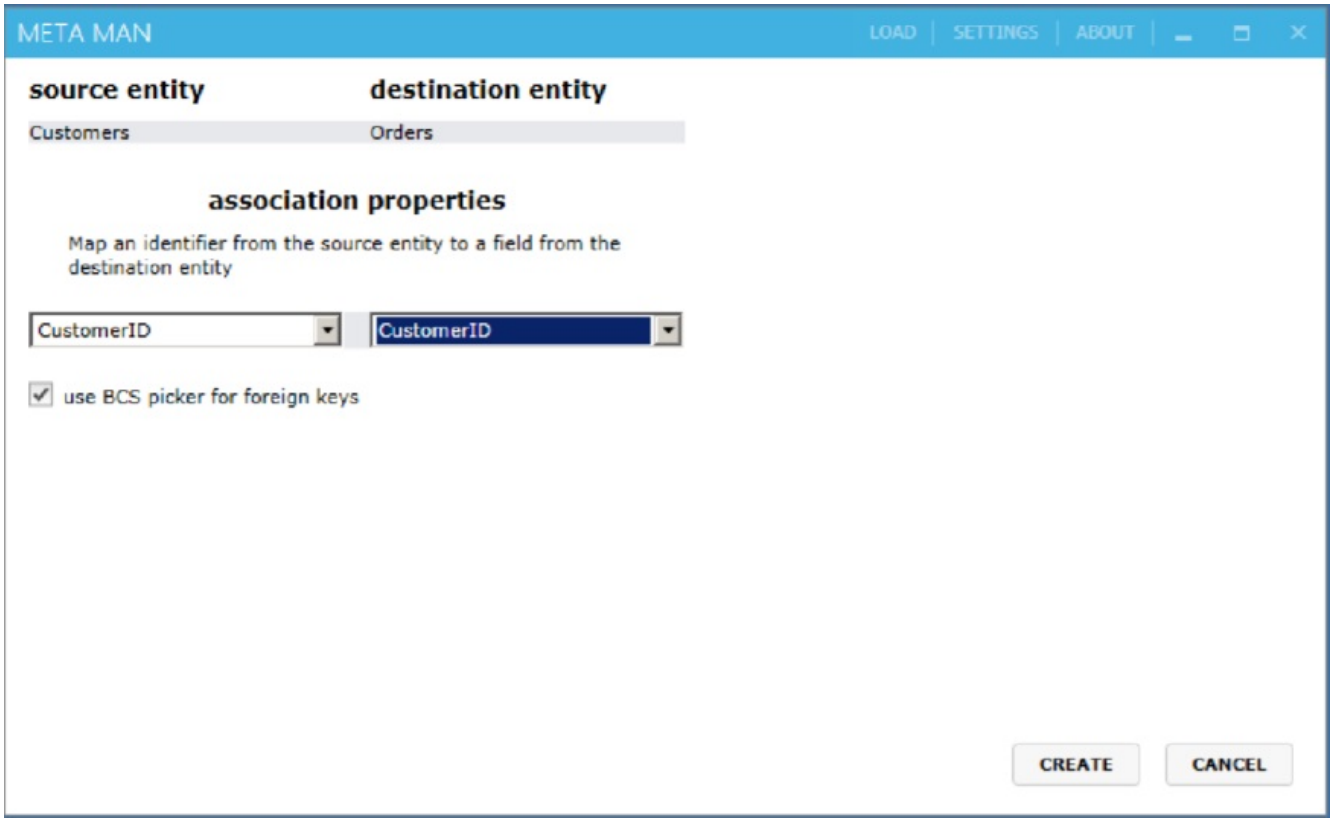
Note. You can use the Central Administration web site and SharePoint Designer to create profile pages.

To build an association with Meta Man, use the following steps:

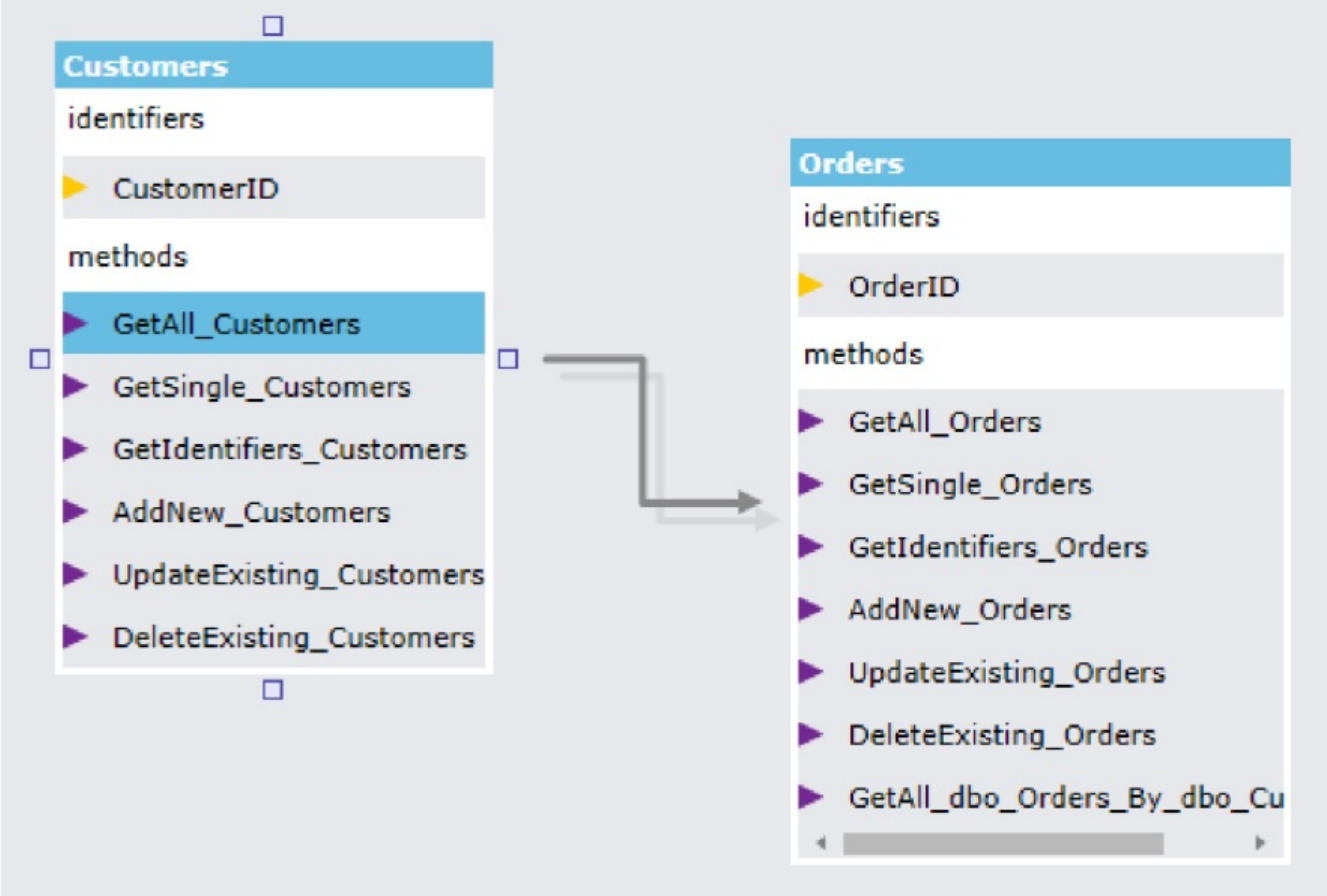
1. Create at least two external content types (entities) to the model diagram area.
2. Ensure that the both external content types are part of a primary/foreign key relationship.
3. Move the mouse pointer to a drag handle on the one side of an external content type and drag it to the drag handle on the many side of the second external content type, as shown in the diagram below:



4. Once you have dragged the association line between the two external content types, you are prompted to select the two columns that have common values in the two external content types.



5. Once you have selected the columns, click create. The association will then be displayed on the design surface.



When the many side external content type does not have a primary key or unique column of its own, a specific finder will not be created and therefore your search indexing will not work.

References

[Create associations in SharePoint 2013]
[Using Business Data Web Parts]
[How to: Configure Business Data Web Parts to Navigate ECT Associations]
[Creating Intermediate Declarative Outlook Solutions Using Business Connectivity Services]

Deploying the BCS model

Using Lightning Tools BCS Meta Man, there are two options to deploy a BCS model to the Microsoft® SharePoint® Business Connectivity Services (BCS) Business Data Connectivity (BDC) metadata store.

1. Deploy directly from BCS Meta Man to a SharePoint installation. This option is more suited to a SharePoint development environment.
2. Generate the *.bdcm file and import that file manually into the BDC metadata store using the Business Connectivity Services service application. Your organization may have a policy that only SharePoint farm administrator can import BDC models in a production environment or system integration test environments. You can manually install a BDC model using the SharePoint Central Administration web site or Windows PowerShell®.

Note: For either options, you must have one of the following administrative credentials:

- You must be a SharePoint farm administrator.
- You must be an administrator of the Business Data Connectivity service application and have **Edit** permission on the BDC metadata store.

When you use either process you will be invoking the SharePoint import process, which parses the BDC model file and validates it. If errors are found during the import process, additional information is displayed. You can find additional information in the Windows event logs and the SharePoint log file, which are located, for example, in SharePoint 2013 at %ProgramFiles%\Common Files\Microsoft Shared\web server extensions\15\LOGS, where the relevant messages will appear in the Business Data category. If you did not create the BDC model yourself, then you might have to pass this information back to the user who created the BDC model.

References

Business Data Connectivity service administration →
Manage BDC models →
Use Windows PowerShell to administer SharePoint →
Use Windows PowerShell cmdlets to manage Business Connectivity Services →

Using BDC Meta Man to deploy BDC model

You must have one of the following administrative credentials:

* You must be a SharePoint farm administrator.

* You must be an administrator of the Business Data Connectivity service application and have **Edit** permission on the BDC metadata store.

To deploy your BDC model directly to the BDC metadata store complete the following steps.

1. Start Meta Man, create a BDC model or upload an existing BDC model.
2. On the Meta Man title bar, click **Settings** to display the *Settings* dialog.
3. In the **Model file path** text box, type the path of your output file using the bdcm or xml extension.
4. In the **Model File Format** section, select **Sharepoint 2010** or **SharePoint 2013**. SharePoint 2013 model file format is the default.
5. In the **Model deployment URL** text box deploy directly, type the URL of SharePoint Central Administration web site.
6. Click **Save**.

Importing BDC model using Central Administration web site and Windows PowerShell

When you create a BDC model using SharePoint Designer or a third-party tool, such as, BCS Meta Man, or you need to transfer a BDC model from a development environment to a production environment, you can import the BDC model file using the SharePoint Central Administration web site or using Windows PowerShell®.

To use either method, you must have one of the following administrative credentials:

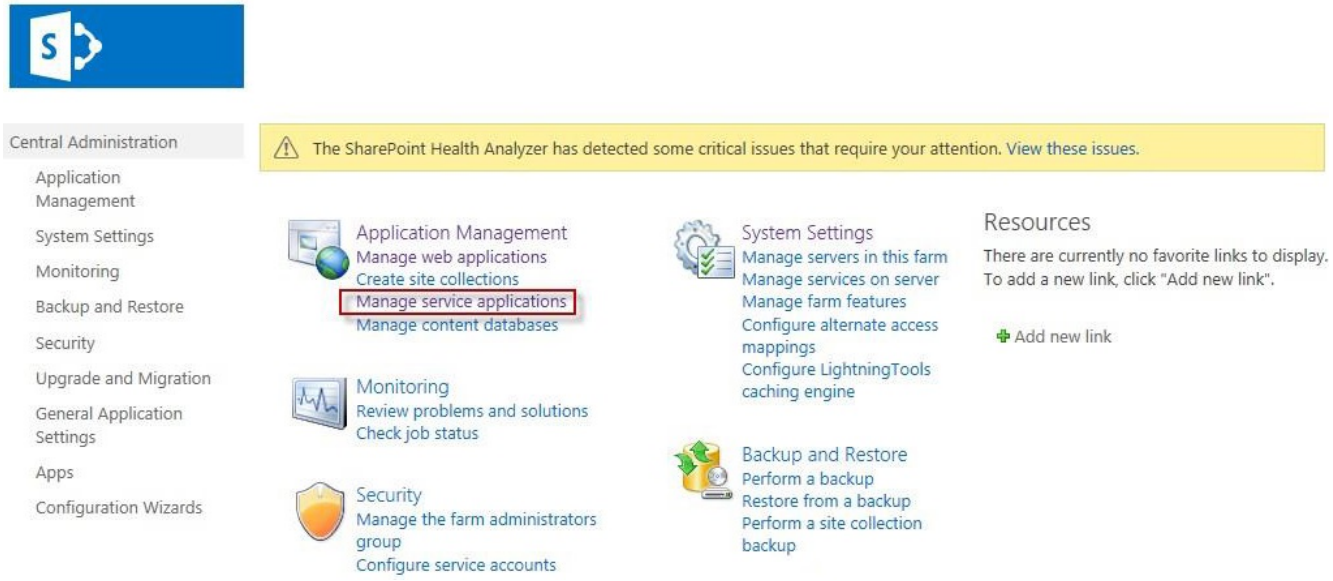
* You must be a SharePoint farm administrator.

* You must be an administrator of the Business Data Connectivity service application and have **Edit** permission on the BDC metadata store.

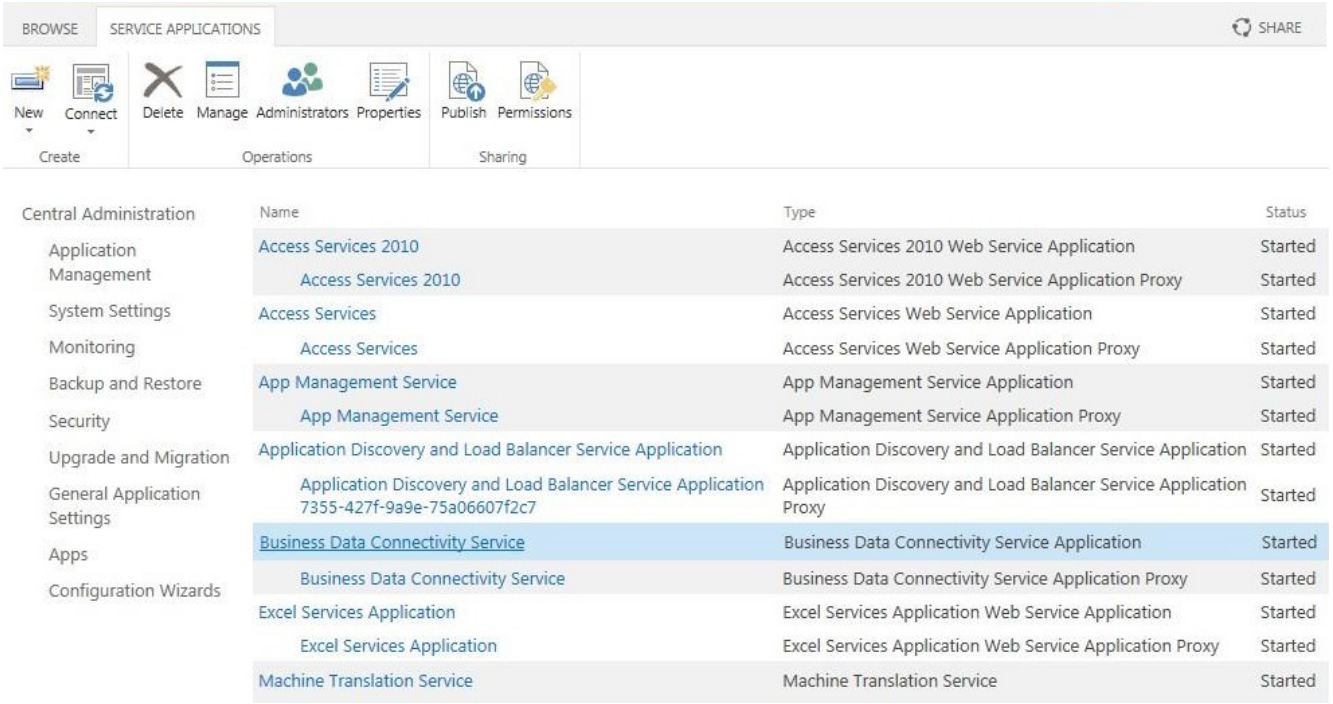
Using the Central Administration web site to import a BDC model

To import the BDC Model using the Central Administration web site, complete the following steps:

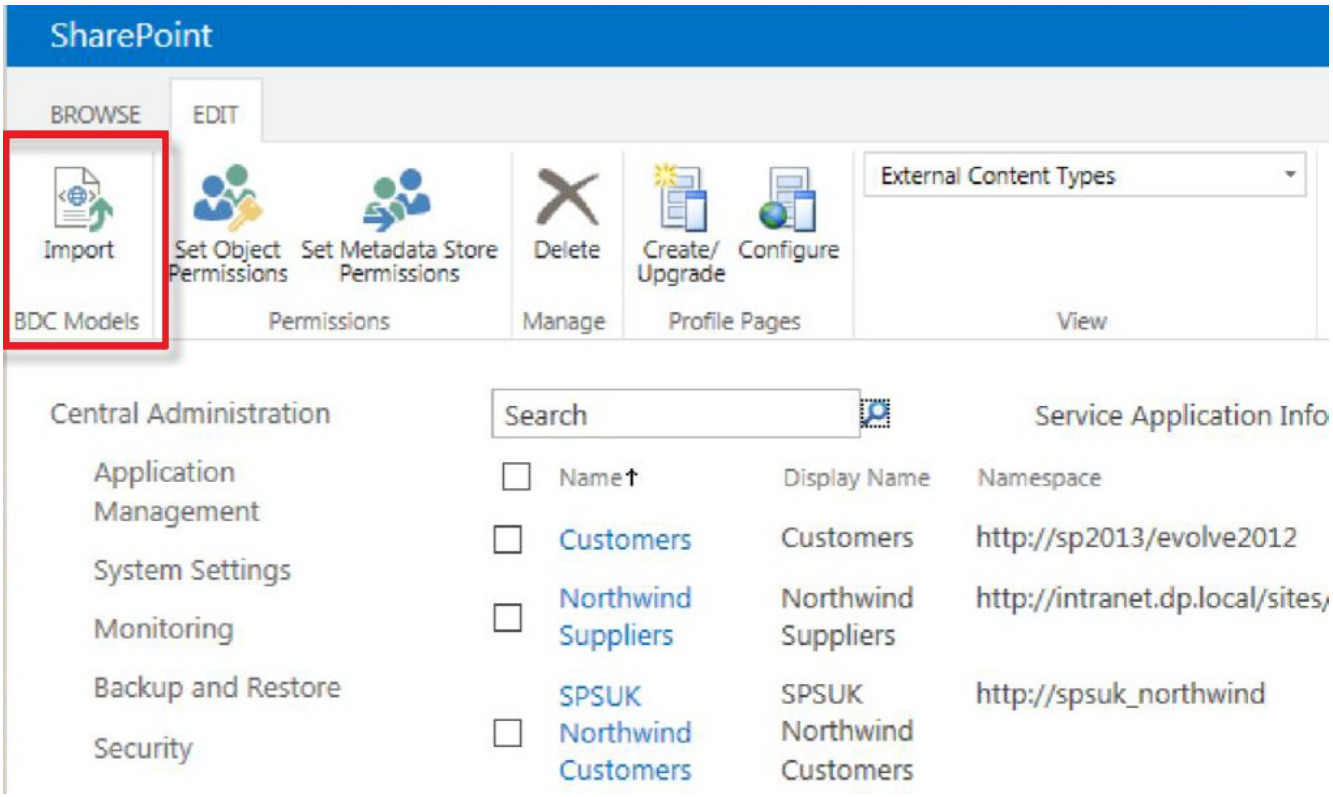
1. Open SharePoint Central Administration web site, and under **Application Management**, click **Manage service applications**.



2. Click the name of the Business Data Connectivity service application where you want to import the BDC model.



3. On the BCS application information page, click **Import** in the **BDC Models** group on the **Edit** ribbon tab.



4. On the **Import BDC Model** page, in the **BDC Model** section, click **Browse** and navigate to where you saved the BDC model generated by BCS Meta Man.

5. Click **Import**.

A successful import will result in the message **Application definition was successfully imported**. The import process can identify any deficits in the BDC model, in which case you will see the message **Application definition was successfully imported**, together with any warnings issued.

Manage BDC models →
Go to top →

Using Windows PowerShell to import a BDC model

Open the SharePoint Management Shell and type:

$MetadataStore = Get-SPBusinessDataCatalogMetadataObject -BdcObjectType Catalog -ServiceContext "http//SP01:12345"

Import-SPBusinessDataCatalogModel -Identity $MetadataStore -Path "C:\tools\BDCmodel.bdcm"

Where **http://SP01:12345** is the URL of your central administration web site, and **c:\tools\BDCmodel.bdcm** is the name of your BDC model file and the location where it was saved.

If the preceding set of commands is successful and there were no warnings or errors, you will see no output. You should check that the model successfully loaded and that you can use the ECTs that the model may contain. To display all BDC models in the metadata store, type on one line the following command:

Get-SPBusinessDataCatalogMetadataObject -BdcObjectType Mode -ServiceContext http://SP01:12345 -Name "*" | select Name

To display all the external systems in the BDC metadata store, and to display the type of external system together with its entities (external content types), use the following command:

Get-SPBusinessDataCatalogMetadataObject -BdcObjectType LoBSystem -ServiceContext http://SP01:12345 -Name "*" | select Name, SystemType, Entities

Use Windows PowerShell cmdlets to manage Business Connectivity Services →
Go to top →

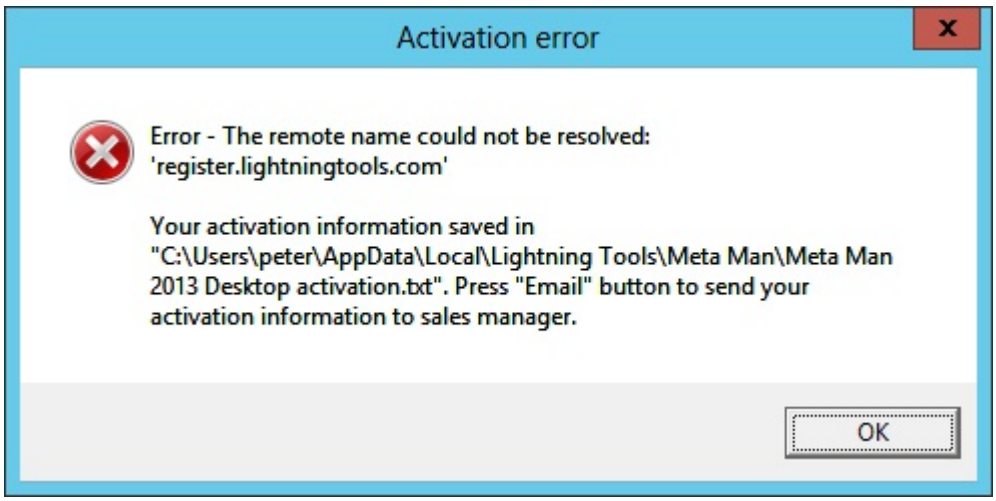
Troubleshooting

This section contains issues that make be experienced when installing or using BCS Meta Man.

Licensing Error

Symptom:

When you try to register the license for the BCS Meta Man, a dialog box is displayed with a title: **Activation error** that states the **The remote name could not be resolved 'register.lightningtools.com'**.



Resolution:

This **Activation error** dialog box is displayed when your SharePoint® server does not have Internet access. Click **Email** to activate your license key using email. If you continue to experience problems, please contact Lightning Tools by clicking Submit Support Ticket on Lightning Tools web site.