

MODULE 4: ACTIVE DIRECTORY WEB SERVICE

Active Directory includes a wealth of information about your company's organization. This module will show you how to auto-populate fields in your InfoPath form with the email address and full name of the currently logged on user.

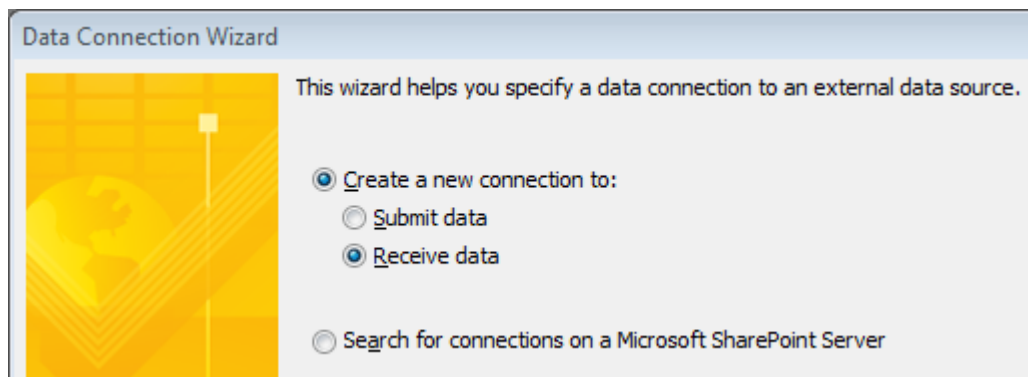
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CREATE THE DATA CONNECTION

First we need to create a data connection to the Active Directory web service.

1. Open the Expense Report form template that we have been working with in previous labs. To do this, right click on the Expense Report sample XSN on your local drive, and select **Design**.
2. In the InfoPath ribbon, select **Data** and then click on **Data Connections**. Click **Add**.
3. Select the radio button to **Create a New Connection to** and **Receive Data**. Click **Next**.



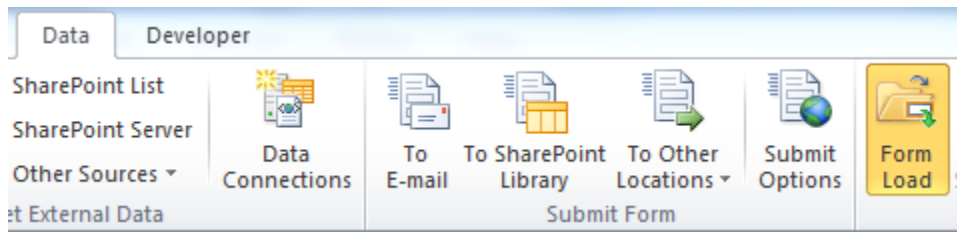
4. Select the radio button for **SOAP Web Service** and then click **Next**.
5. Enter the URL of the service:
http://<yourservername>/QdabraWebService/ADUserInfo.asmx. Click **Next**.
6. Select the operation (Web Method) named **GetMyInfo**. Click **Next**.
7. Click **Next**. There is no need to check the checkbox of **Store a copy of the data in the form template**.
8. Uncheck the **Automatically retrieve data when form is opened** checkbox, click **Finish**, and then click **Close**.

USE THE ACTIVE DIRECTORY DATA TO OBTAIN EMPLOYEE INFO

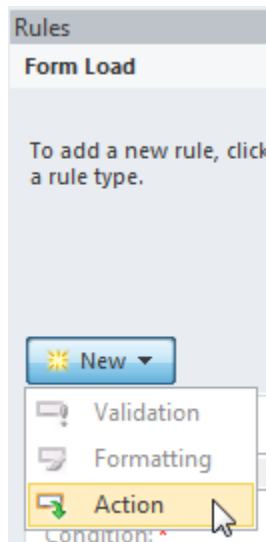
Now you will change the **Employee Email** and **Name** fields to auto-populate.

9. In the Data tab of InfoPath 2010, click **Form Load**.

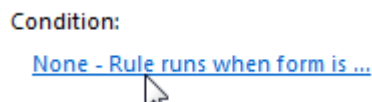
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10. Click **New** and select **Action**.

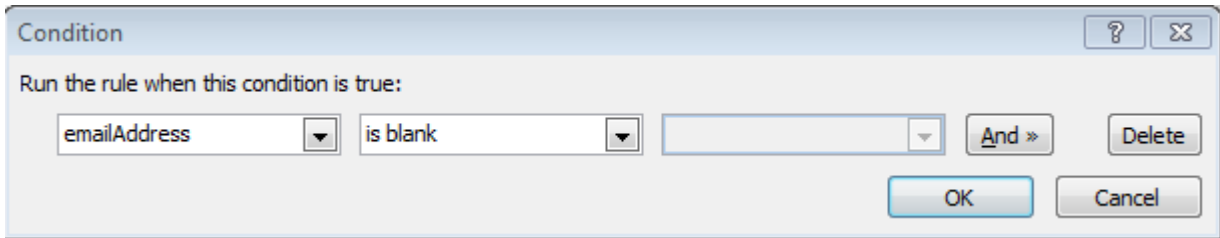


11. Click the blue text under **Condition**.

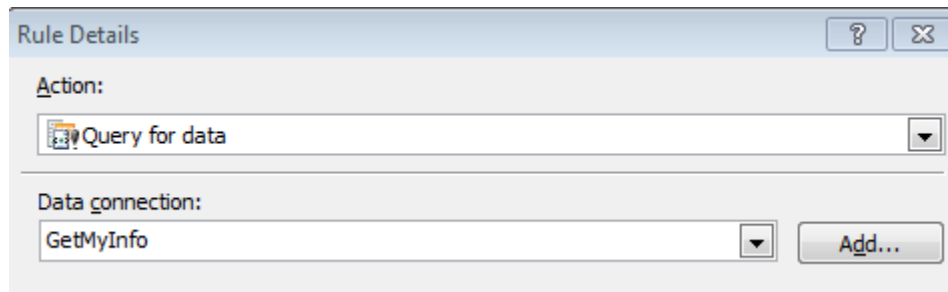


We will enter a condition because we only want to load this data once, when the form is first created.

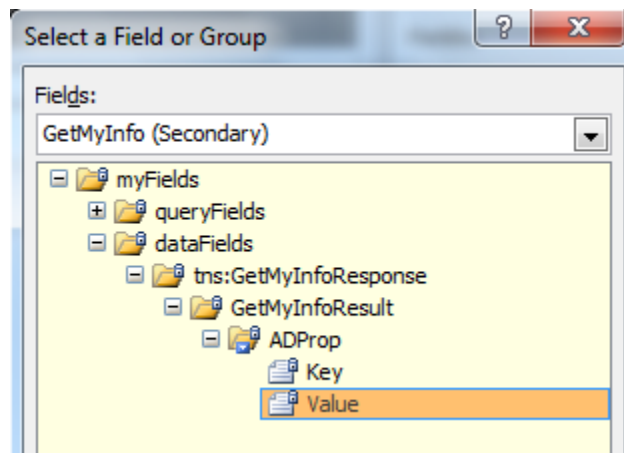
12. Select “**Select a field or group**” from the first dropdown and select the **emailAddress** under the **Employee** node. In the middle dropdown, select “**Is blank**”. The condition should look as shown below. Click **OK**.



13. Next to “Run these actions”, click **Add** and select “Query for data”.
14. Select the **GetMyInfo** data connection and click **OK**.



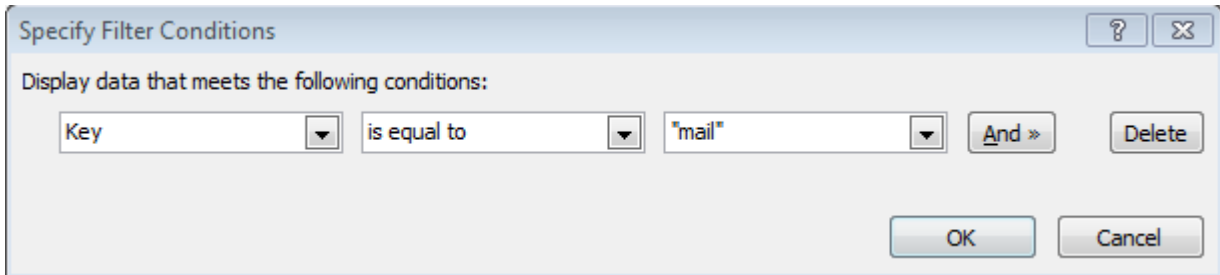
15. Next to “Run these actions”, click **Add** and select “Set a field’s value”.
16. Click the icon to the right of “Field” and select the **emailAddress** node under the **Employee** node.
17. Click the icon to the right of “Value” and click **Insert field or Group**. Use the dropdown to switch to the **GetMyInfo** secondary data connection.



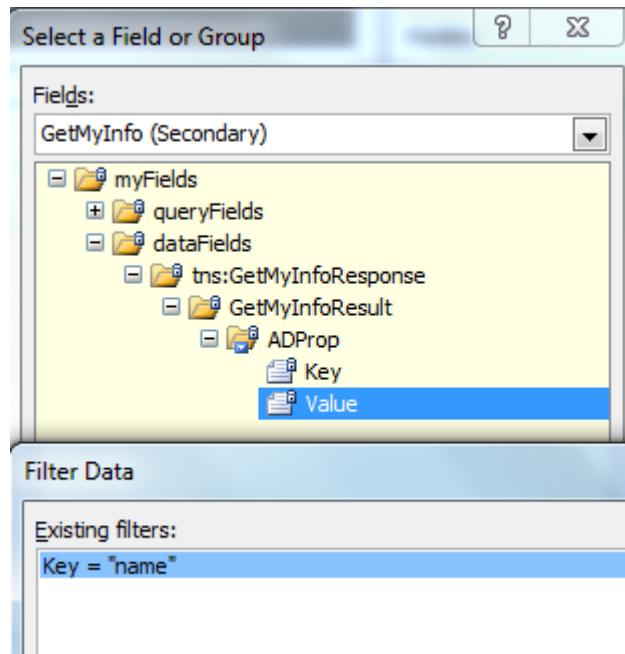
18. Expand the **datafields** node, select the **Value** node, and click **Filter Data**.

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19. Click **Add**. We need to add a filter because the Active Directory web service returns multiple keys and their values. At this point, we want only the email.
20. Select **Key** in the first dropdown and “**is equal to**” in the middle dropdown. In the third dropdown, select **Type text** and type in “**mail**” (no quotes).



21. Click OK until all dialogs are closed.
22. Now we'll set the employee name field. Next to “**Run these actions**”, click **Add** and select “**Set a field's value**”.
23. Click the icon to the right of “**Field**” and select the **name** field under the **Employee** node.
24. Click the icon to the right of “**Value**” and click **Insert field or Group**. Use the dropdown to switch to the **GetMyInfo** secondary data connection. Expand the **dataFields** node, select the **Value** node, and click **Filter Data**.
25. Click **Add**. We need to add a filter because the Active Directory web service returns multiple keys and their values. At this point, we want only the name.
26. Select **Key** in the first dropdown and “**is equal to**” in the middle dropdown. In the third dropdown, select **Type text** and type in “**name**” (no quotes).



27. Click **OK** until all dialogs are closed.

28. Switch to the **Home** tab in the InfoPath 2010 ribbon and click **Preview**. You will see the current user's data:



EXPENSE REPORT

Report Date: 2/27/2011 Expense Code:

Business Purpose:

Employee Information

Name: Ernesto Machado

Department:

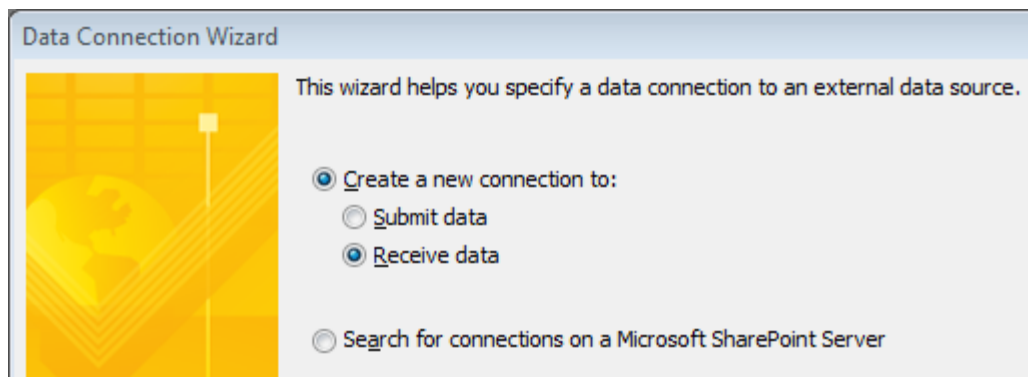
E-mail Address: Ernesto.Machado@qdabra.com

29. Click on **Close Preview**.

CREATE A SECOND DATA CONNECTION

Now we need to create a data connection to the Active Directory web service so that the form can obtain the manager for the current user.

30. In the InfoPath ribbon, select **Data** and then click on **Data Connections**.
31. Click **Add**.
32. Select the radio button to **Create a New Connection to** and **Receive Data**. Click **Next**.



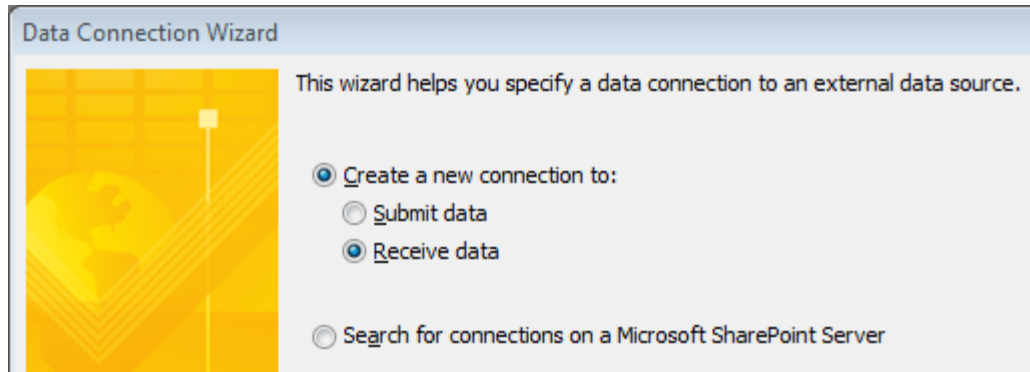
33. Select the radio button for **SOAP Web Service** and then click **Next**.
34. Enter the URL of the service:
http://<yourservername>/QdabraWebService/ADUserInfo.asmx. Click **Next**.
35. Select the operation (Web Method) named **GetManagerAlias**. Click **Next**.
36. Click **Next**. There is no need to check the checkbox of **Store a copy of the data in the form template**.
37. Uncheck the **Automatically retrieve data when form is opened** checkbox, click **Finish**, and then click **Close**.

CREATE A THIRD DATA CONNECTION

Now we need to create a data connection to the Active Directory web service so that the form can obtain the manager's data.

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38. In the InfoPath 2010 ribbon, select **Data** and then click on **Data Connections**.
39. Click **Add**.
40. Select the radio button to **Create a New Connection to** and **Receive Data**. Click **Next**.



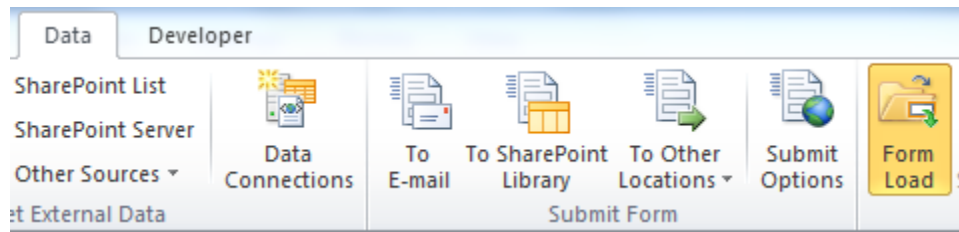
41. Select the radio button for **SOAP Web Service** and then click **Next**.
42. Enter the URL of the service:
http://<yourservername>/QdabraWebService/ADUserInfo.asmx. Click **Next**.
43. Select the operation (Web Method) named **GetUserInfo**. Click **Next**.
44. Click **Next**. There is no need to check the checkbox of **Store a copy of the data in the form template**.
45. Uncheck the **Automatically retrieve data when form is opened** checkbox, click **Finish**, and then click **Close**.

USE THE ACTIVE DIRECTORY DATA TO OBTAIN MANAGER INFO

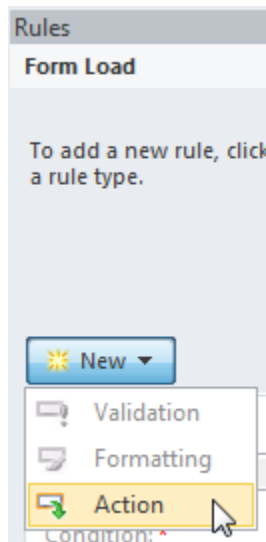
Now that all the data connections are ready, we can set up the form logic that will auto-populate the **Manager Email** and **Name**.

46. In the Data tab of InfoPath 2010, click **Form Load**.

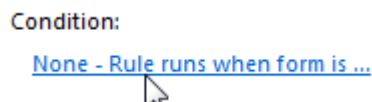
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47. Click **New** and select **Action**.

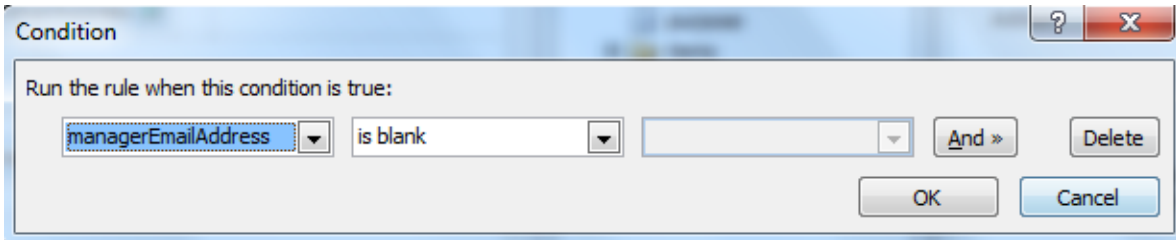


48. Click the blue text under **Condition**.



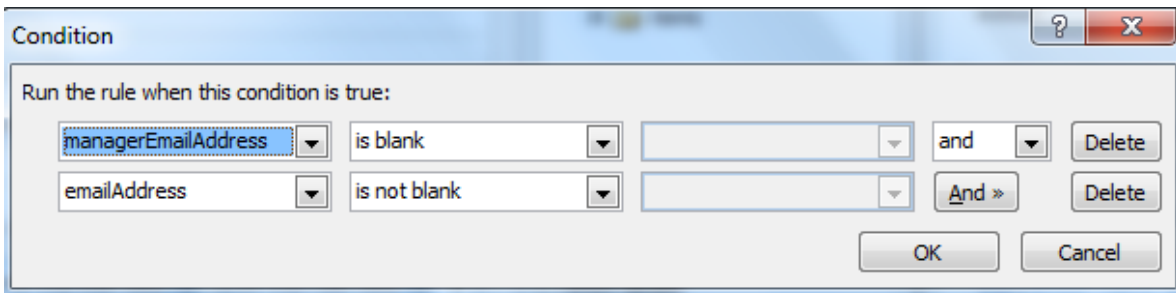
We will enter a condition because we only want to load this data once, when the form is first created.

49. Select “**Select a field or group**” from the first dropdown and select the **managerEmailAddress** under the **Manager** node. In the middle dropdown, select “**Is blank**”. The condition should look as shown below.



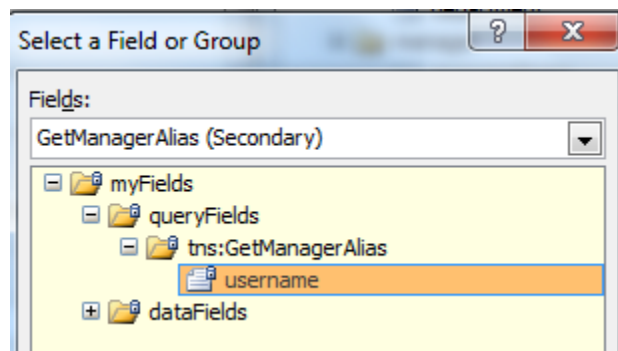
50. Add a second condition, because the rule can only execute when the current user's alias has been detected. Click **And**.

51. Select **"Select a field or group"** from the first dropdown and select the **emailAddress** under the **Employee** node. In the middle dropdown, select **"Is not blank"**. Click **OK**.

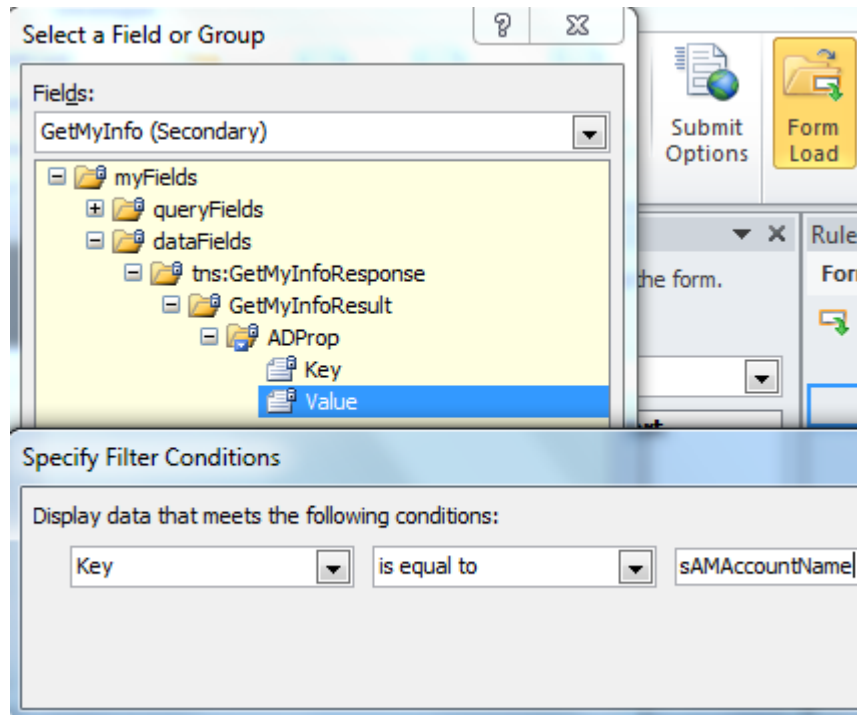


52. Next to **"Run these actions"**, click **Add** and select **Set a field's value**.

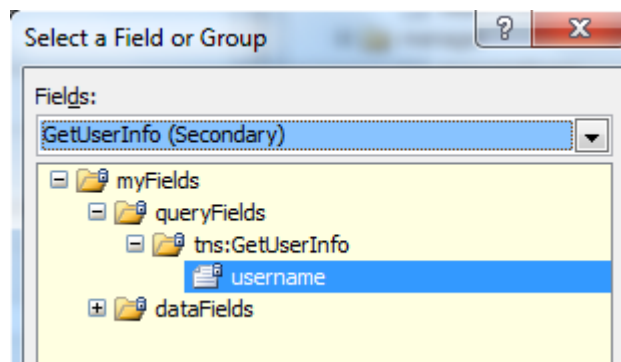
53. For **Field**, select the username node in the **GetManagerAlias** data connection.



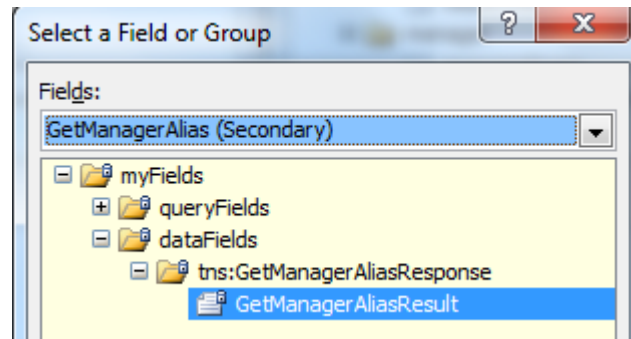
54. For **Value**, select the **Value** node from the **GetMyInfo** data connection, but add a **Filter**, such that **Key** equals **sAMAccountName**.



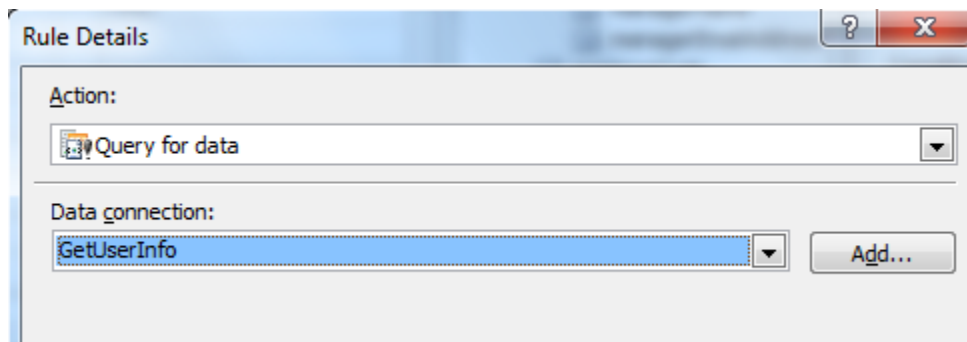
55. Next to “Run these actions”, click **Add** and select “**Query for data**”.
56. Select the **GetManagerAlias** data connection and click **OK**.
57. Next to “Run these actions”, click **Add** and select **Set a field’s value**.
58. For the **Field**, select the username field in the **GetUserInfo** data connection.



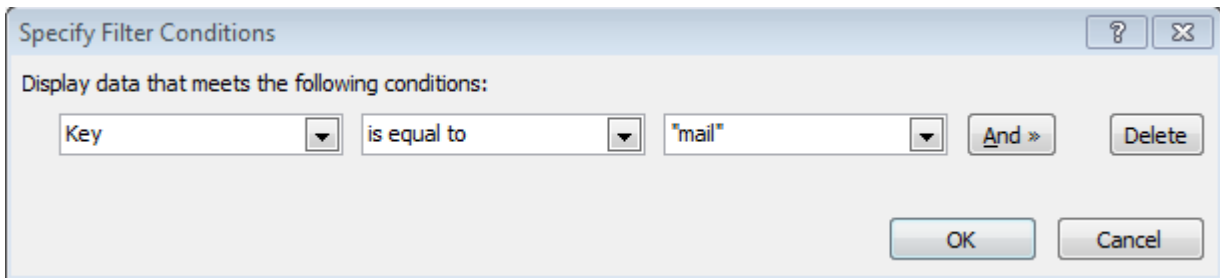
59. For the **Value**, select the **GetManagerAliasResult** node in the **GetManagerAlias** data connection.



60. Next to “Run these actions”, click **Add** and select “Query for data”. Select the **GetUserInfo** data connection.



61. Next to “Run these actions”, click **Add** and select “Set a field’s value”.
62. Click the icon to the right of “Field” and select the **managerEmailAddress** node under the **Manager** node.
63. Click the icon to the right of “Value” and click **Insert field or Group**. Use the dropdown to switch to the **GetUserInfo** secondary data connection. Expand the **datafields** node, select the **Value** node, and click **Filter Data**.
64. Click **Add**. Select **Key** in the first dropdown and “is equal to” in the middle dropdown. In the third dropdown, select **Type text** and type in “mail” (no quotes).



65. Click **OK** until all dialogs are closed.
66. Now we'll set the managerName field. Next to "**Run these actions**", click **Add** and select "**Set a field's value**".
67. Click the icon to the right of "**Field**" and select the **ManagerName** field under the **Manager** node.
68. Click the icon to the right of "**Value**" and click **Insert field or Group**. Use the dropdown to switch to the **GetUserInfo** secondary data connection. Expand the **dataFields** node, select the **Value** node, and click **Filter Data**.
69. Click **Add**. Select **Key** in the first dropdown and "**is equal to**" in the middle dropdown. In the third dropdown, select **Type text** and type in "**name**" (no quotes).
70. Click **OK** until all dialogs are closed.
71. Switch to the **Home** tab in the InfoPath ribbon and click **Preview**. You will see the current user's data, as well as the manager's data.

EXPENSE REPORT

Report Date: <input type="text" value="3/19/2012"/>	Expense Code: <input type="text"/>	Start Date: <input type="text"/>	End Date: <input type="text"/>
Business Purpose: <input type="text"/>			

Employee Information

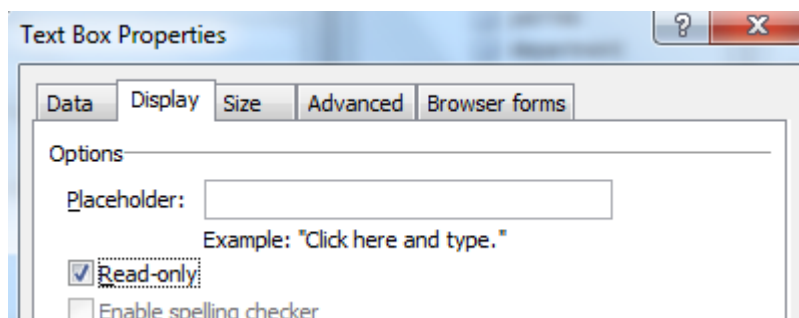
Name: <input type="text" value="Ernesto Machado"/>	Title: <input type="text"/>
Department: <input type="text"/>	ID Number: <input type="text"/>
E-mail Address: <input type="text" value="Ernesto.Machado@qdabra.com"/>	

Manager Information

Name: <input type="text" value="Patrick Halstead"/>	E-mail Address: <input type="text" value="Patrick.Halstead@Qdabra.com"/>
--	---

72. Click on **Close Preview**.

Optionally, you can right click on each of the four fields that are now being set automatically, and make these read-only, such that the user cannot modify their values.



CONVERT DATA CONNECTIONS TO UDCS

Before using this form in the browser, in the Event Receiver scenario, we must convert all QdabraWebService data connections to UDC, and update them to use the Secure Store App ID.

This is not necessary in the Integrated scenario.

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73. In your SharePoint site, create a Data Connections library (if one does not already exist).

74. In InfoPath designer, go to **Data > Data Connections**.

Repeat the steps below for any data connections.

75. Select the data connection and click “Convert to connection file”.

76. Enter the URL for the new UDC file, such as
`http://<servername>/Data%20Connections/ADWSGetMyInfo.udcx`, and click OK.

77. Using Internet Explorer, navigate to the Data Connections library.

78. Download a copy of the UDC file, open the UDC file locally in Notepad or a similar text editor.

79. Within the UDC file, change this line:

```
<!--udc:Authentication><udc:SSO AppId="" CredentialType="" /></udc:Authentication-->
```

to

```
<udc:Authentication><udc:SSO AppId='<YOUR_APP_ID>' CredentialType='NTLM'  
></udc:Authentication>
```

80. Save and close the UDC file, then upload it to the Data Connections library, making sure to overwrite the existing file.

Remember to execute the steps above for all QdabraWebService data connections.

SIMULATE INFOPATH USER ROLES

You have already added a connection to the Active Directory web service, and now you will leverage that information to simulate InfoPath User Roles.

InfoPath User Roles are not available in InfoPath browser forms. However, there are workarounds:

- Microsoft documents a workaround by using a secondary XML file (<http://blogs.msdn.com/b/infopath/archive/2007/01/10/implementing-roles-in-browser-forms.aspx>)

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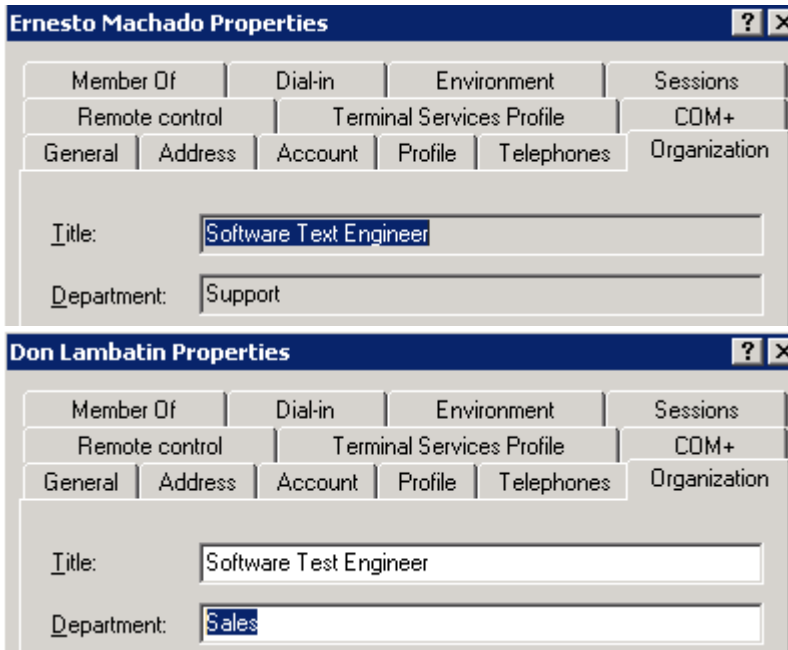
- Clayton Cobb (Microsoft MVP) has documented workarounds using Active Directory and another using a contacts list:
 - <http://claytoncobb.wordpress.com/2009/07/19/infopath-user-roles-in-browser-enabled-forms-using-groups/>
 - <http://claytoncobb.wordpress.com/2009/06/14/user-roles-in-browser-enabled-forms/>

This next section will demo Qdabra's recommendation, using Active Directory to simulate InfoPath User Roles.

The benefits of this method include:

- Form Load rules to control which view the user sees – a unique view can be created for each user type.
- Individual controls can be hidden or disabled according to the user opening the form.
- Control submit options based on user role.
- The form will be streamlined for the user (easier to fill out)
- Parts of the form that the user does not need to see are hidden from view.
- Validation rules can be based on the user – some information can be made required for certain users.

When querying Active Directory, we really only need one property to be able to determine what the user should see in the form. In this case, we will use the **Department** property:



We will set up the browser form to show different options for users who are a member of this Department.

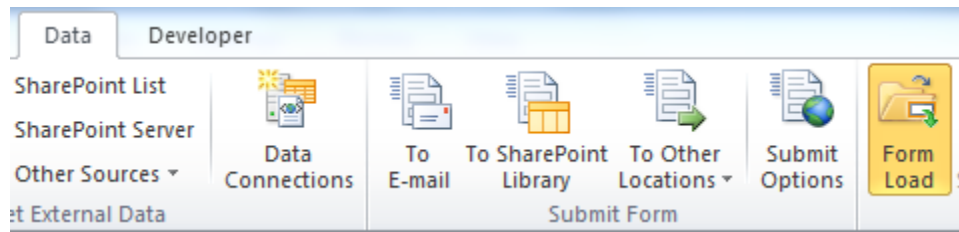
Note: You are not restricted to use this specific property. You could

- Use any other property (i.e. zip code)
- Call `GetManagerAlias`, which determines the current user's manager, and base your form logic on that.
- Call `IsUserMemberofGroup`, to determine if a user is a member of a specific group, and base form logic on group membership.

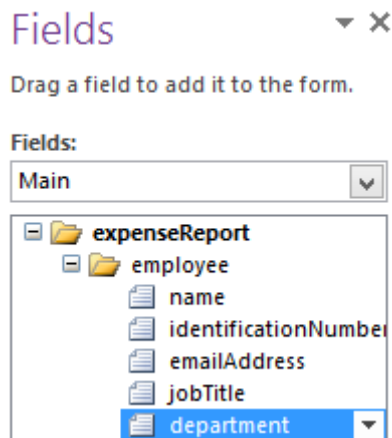
USE THE ACTIVE DIRECTORY DATA TO OBTAIN USER INFO

In the Form Load rules, we're already setting the value of nodes for the Name and Email. An additional action will set the value of the Department.

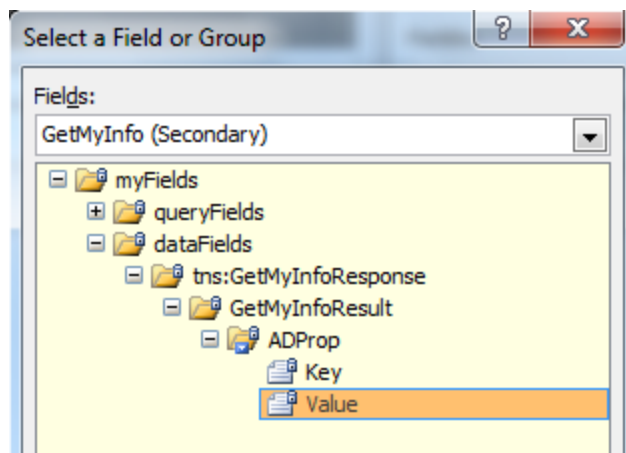
81. In the Data tab, click **Form Load**.



- 82. Next to “Run these actions”, click **Add** and select “Set a field’s value”.
- 83. Click the icon to the right of “Field” and select the department node in the main data source.

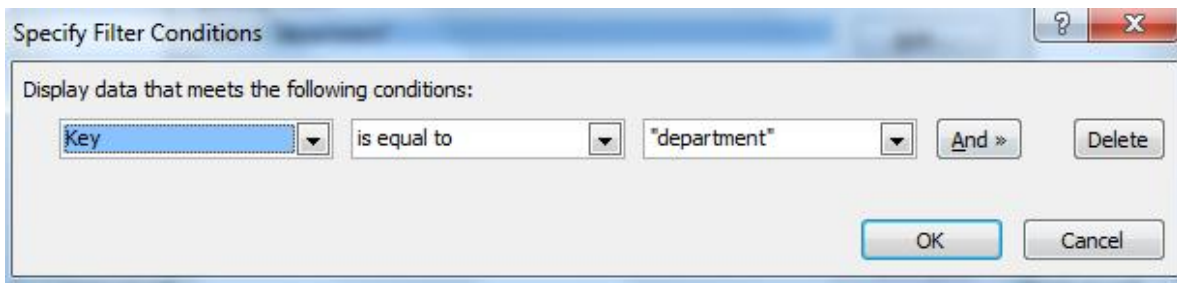


- 84. Click the icon to the right of “Value” and click **Insert field or Group**.
- 85. Use the dropdown to switch to the **GetMyInfo** secondary data connection.



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86. Expand the **datafields** node, select the **Value** node, and click **Filter Data**.
87. Click **Add**. We need to add a filter because the Active Directory web service returns multiple keys and their values. At this point, we want only the Department.
88. Select **Key** in the first dropdown and “**is equal to**” in the middle dropdown. In the third dropdown, select **Type text** and type in “**department**” (no quotes).



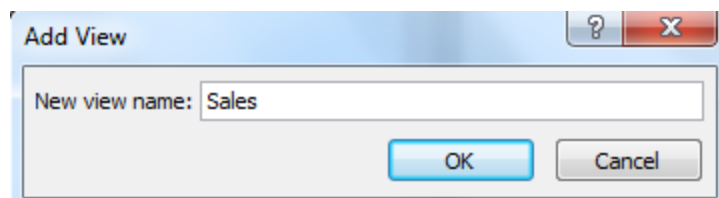
89. Click OK until all dialogs are closed.

Extra credit: Since we’re filling out five fields using rules, we could make these all read only, so the user cannot change their value manually.

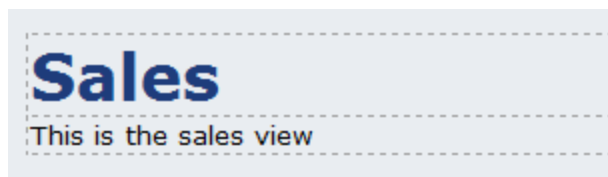
ADD VIEW SWITCHING

To illustrate the concept, let’s show how to switch views based on the department.

90. Go to **Page Design**.

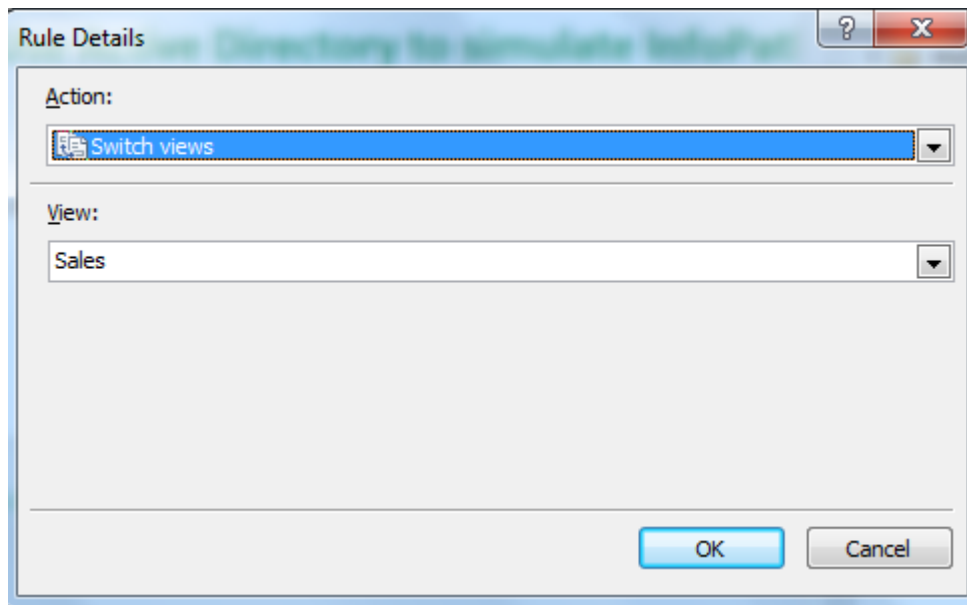


91. Under **View**, add a new view and call it **Sales**.

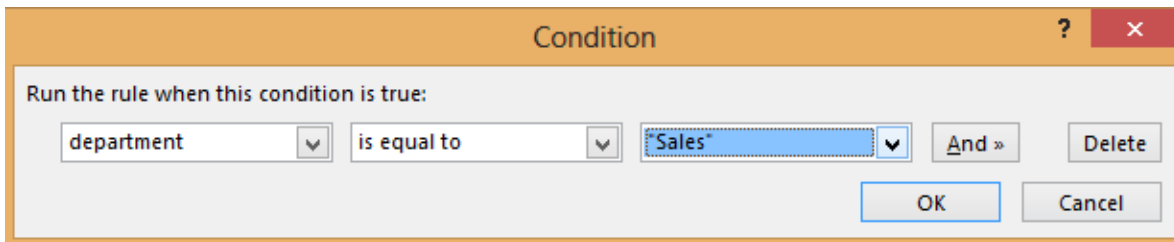


We've added a very plain view, since this is just to illustrate the technique. In a real world scenario, you would design this view as desired.

92. Still under **Form Load**, click **New** and select **Action**.
93. Next to **“Run these actions”**, click **Add** and select **“Switch views”**, and select the Sales view in the dialog.



94. We don't want this to always execute, so let's add a condition. Click on the blue text under **“Condition”**.

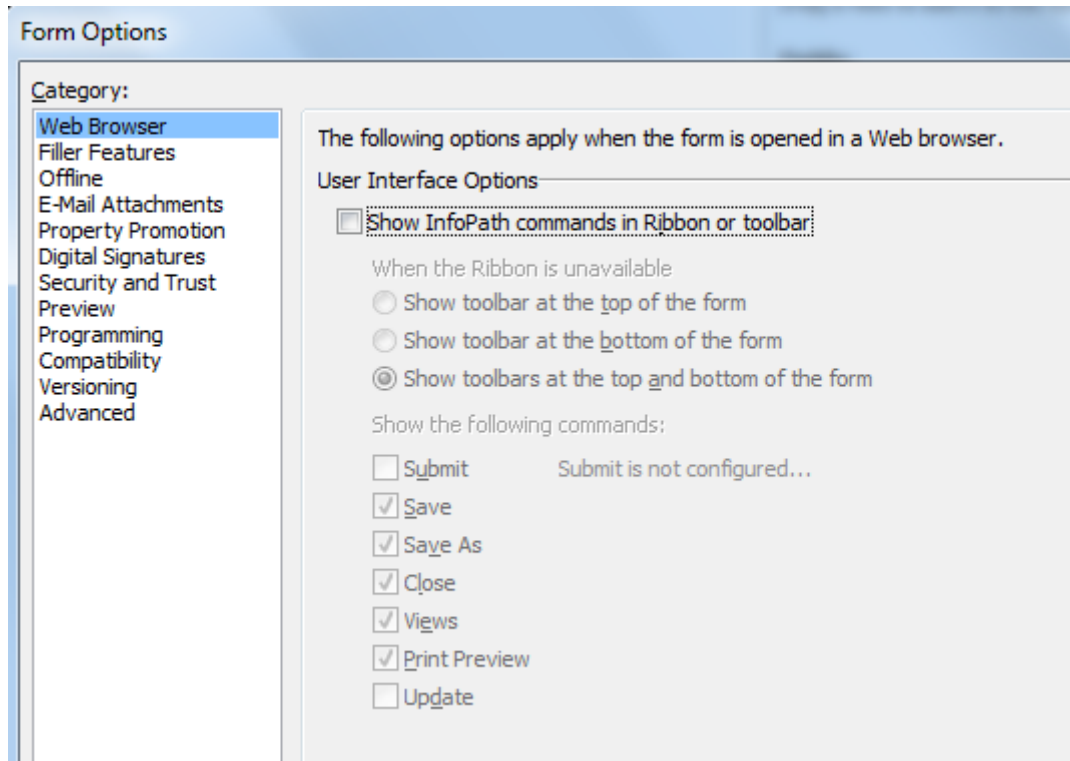


95. In the first dropdown, select the department node. In the middle dropdown, select **“is equal to”**. In the third dropdown, select **“Type text”** and type in **“Sales”**. Click **OK**.

TEST

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Under **File > Form Options**, uncheck “Show InfoPath commands in Ribbon or toolbar” to ensure users won’t switch views this way.



Publish this form and open the form, in the browser, using different user’s accounts, some members of the Sales department and some not. Notice that the view switches as expected. (The training admin might choose to modify some user accounts to demonstrate this.)