Microsoft Dynamics CRM 2016 Configuration and Customization

Lab Manual

Contents

Module 2: Configuring Business Units, Teams and Users	1
Module 3: Microsoft Dynamics CRM Security Model	7
Module 4: Introduction to Microsoft CRM Solutions	16
Module 5: Entity and Field Customizations	22
Module 6: Additional Field Customizations	34
Module 7: Entity Relationships	46
Module 8: Customizing Forms	56
Module 9: Business Rules	72
Module 10: Views and Visualizations	78
Module 11: Introduction to Processes in Microsoft Dynamics CRM	100

This document is provided "as-is". Information and views expressed in this document, including URL and other Internet Web site references, may change without notice. Some examples depicted herein are provided for illustration only and are fictitious. No real association or connection is intended or should be inferred. This document does not provide you with any legal rights to any intellectual property in any Microsoft product. You may copy and use this document for your internal, reference purposes.

As the software licensee, you may make reasonable customizations to the software online help documentation for your internal use only. You are solely responsible for and bear any and all liability relating to any customizations you make. This includes any adverse effect that your customizations have on any functionality of the licensed software, the software documentation itself or otherwise relating to use of your customizations. Please note that installing software upgrades may rewrite customized online help files.

© 2016 Microsoft. All rights reserved.

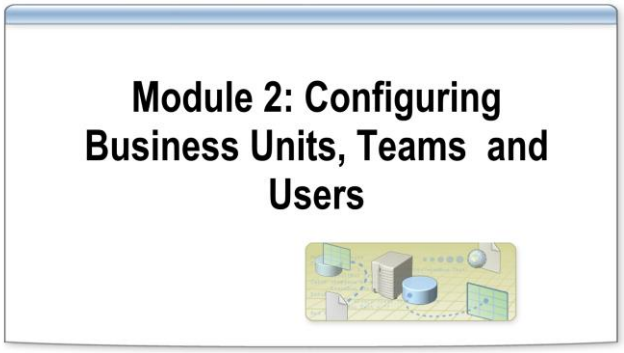
Microsoft, Active Directory, Azure, Bing, Excel, Internet Explorer, Microsoft Dynamics, Outlook, SharePoint, and Windows are trademarks of the Microsoft group of companies. All other trademarks are property of their respective owners.

Module 2

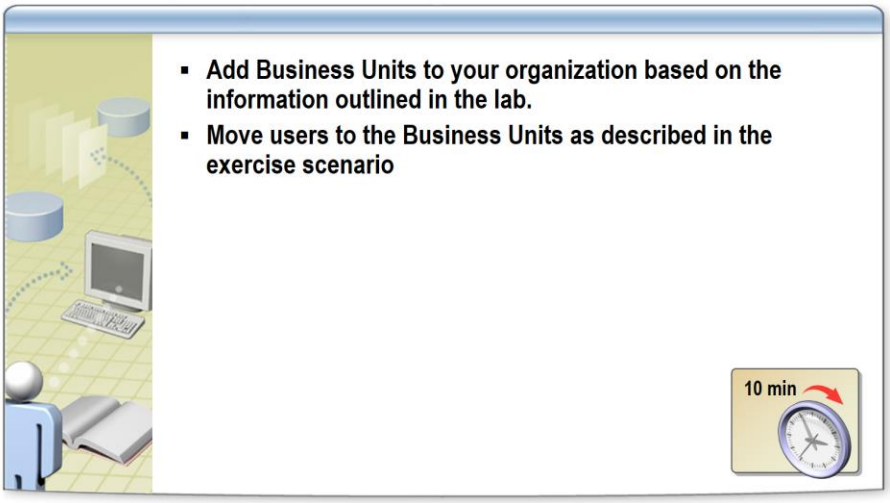
Configuring Business Units, Teams and Users

Contents

Lab 2.1 – Configuring Business Units, Teams and Users 2



Lab 2.1: Configuring Business Units, Teams and Users



Scenario

You are working for an organization that has configured a development environment alongside their live Microsoft Dynamics CRM system. You are configuring this development system in order to test changes that are required before transferring them to the live system.

Three users (Alan Jackson, Connie Watson and Ben Burton) will be performing much of the user acceptance testing (UAT) so we need to add them to your environment and ensure that they are in the same the appropriate Business Unit based on their role and function so that moving forward the roles and privileges assigned to them are tested properly.

Since the users have been created, you now need to create the specific business units that will used to assign each of the users to in the application. These business units will serve as the foundation for the application security that you will be configuring in the next module.

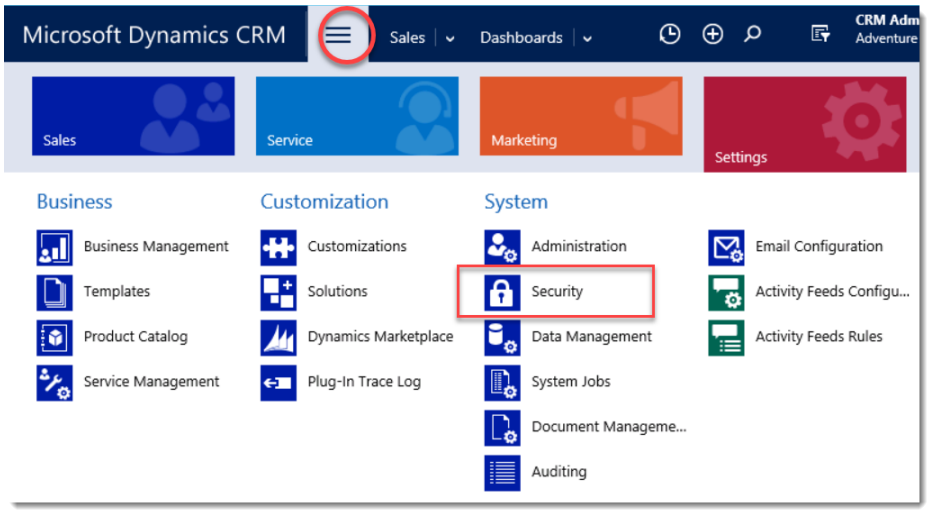
There are 5 business units that need to be created. Each of them will have a specific parent business unit. The table below outlines the details about the business units.

Name	Parent Business Unit
East	**Root Business Unit**
West	**Root Business Unit**
Central	**Root Business Unit**
New York	**East**
Los Angeles	**West**

Create Business Units

1. Open Internet Explorer and navigate to **http://LON-DC1:5555/AdventureWorksCycles**

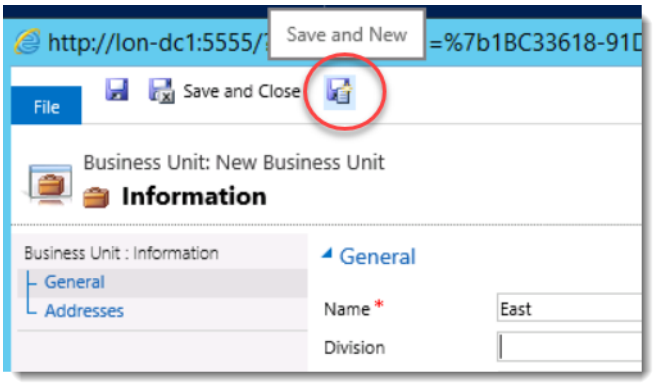
2. On the navigation bar, click the **Main** button (it looks like three lines), select **Settings**, then click **Security** under the **System** heading.



3. Click **Business Units**.
4. Just above the list of Business Units, click the **New** button.
5. On the **New Business Unit** form, enter **East** into the **Name** field.

Note: Do not change the Parent Business Unit.

6. Click **Save and New** (located just to the right of **Save and Close**).

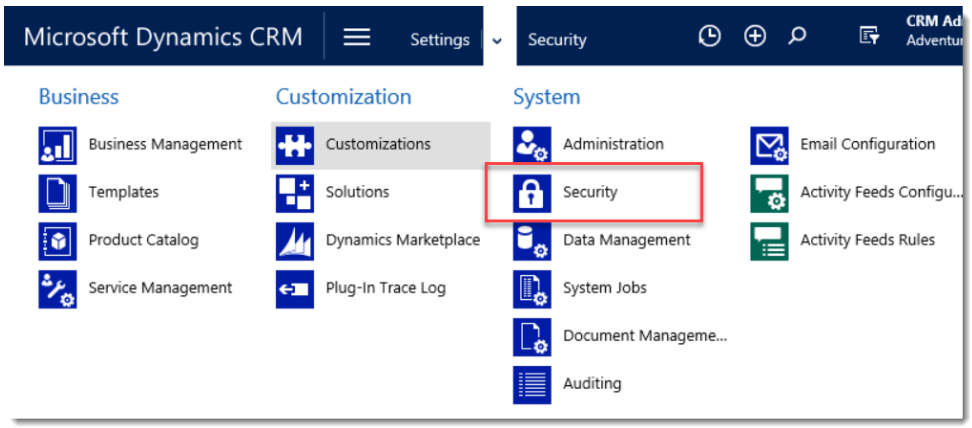


7. Enter **West** for the **Name**, and click **Save and New**.
8. Enter **Central** for the **Name**, and click **Save and Close**.
9. On the list of Business Units, click **New**.
10. Enter **New York** for the **Name**.
11. Click the lookup icon in the **Parent Business** field.
12. Click **Look Up More Records**.
13. Select **East** and then click **Add**.
14. Click **Save and New**.
15. Enter **Los Angeles** for the **Name**.
16. Click the lookup icon in the **Parent Business** field.
17. Click **Look Up More Records**.

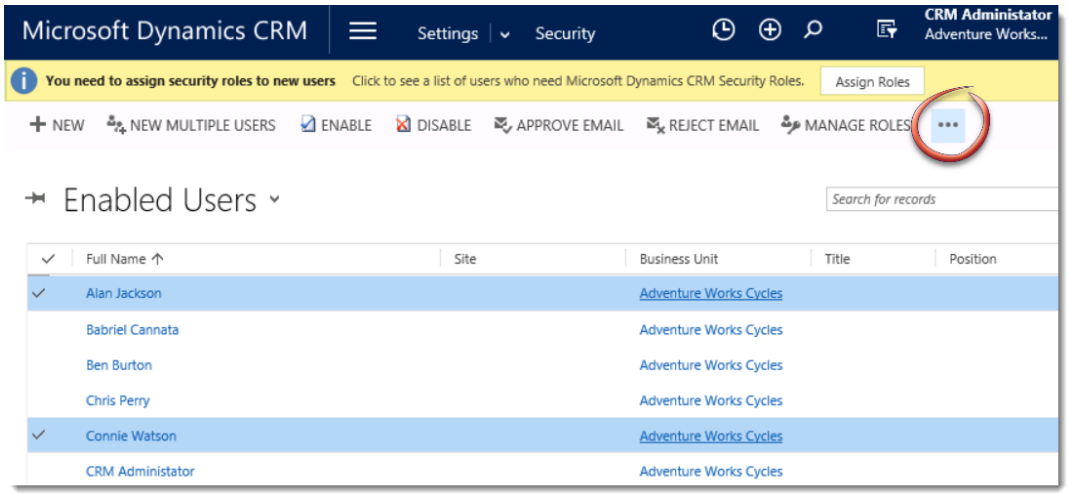
18. Select **West** and then click **Add**.
19. Click **Save and Close**.

Move users to the Business Units

1. In **Microsoft Dynamics CRM**, navigate to **Settings** > **Security**.



2. Click **Users**.
3. In the **Enabled Users** view, select **Alan Jackson** and **Connie Watson**.
4. On the command bar click **More Commands**.



5. In the drop-down list click **Change Business Unit**.
6. In the **Change Business Unit** dialog click the lookup button.
7. Click **Look Up More Records**, select the **Service** business unit, and then click **Add**.
8. In the **Change Business Unit** dialog click **OK**.
9. In the **Enabled Users** view, select **Ben Burton**.
10. On the command bar click **More Commands**.
11. In the drop-down list click **Change Business Unit**.
12. In the **Change Business Unit** dialog click the lookup button and select the **Marketing** business unit.

13. Click **OK**.

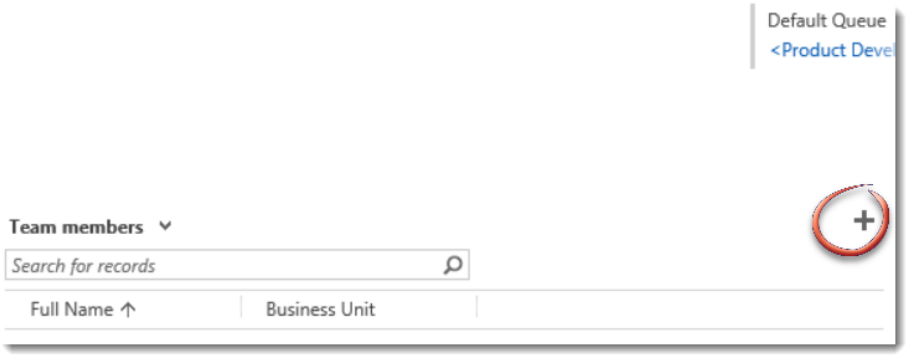
Create the Product Development Team

A team called Product Development is going to be used later for different purposes including record security. You will need to create the Product Development team now so it can be used in later modules.

1. In **Microsoft Dynamics CRM** navigate to **Settings** > **Security**.
2. Click **Teams**.
3. On the command bar click **New**.
4. In the **New Team** form enter **Product Development** in the **Team Name** field.
5. In the **Business Unit** field, click the lookup button and select the **Marketing** business unit.
6. In the **Administrator** field select the **CRM Administrator** user by using the lookup button.
7. On the command bar click the **Save** button.

Add a user to the new team

1. In the **Team members** section of the form click the **Add** button.



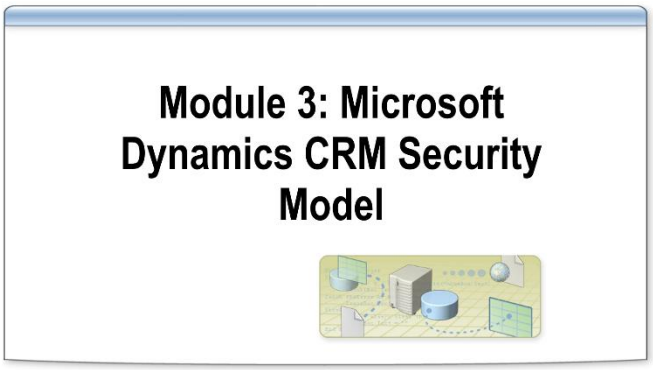
2. Click the lookup button and select **Alan Jackson** from the list.
3. Close **Internet Explorer**.

Module 3

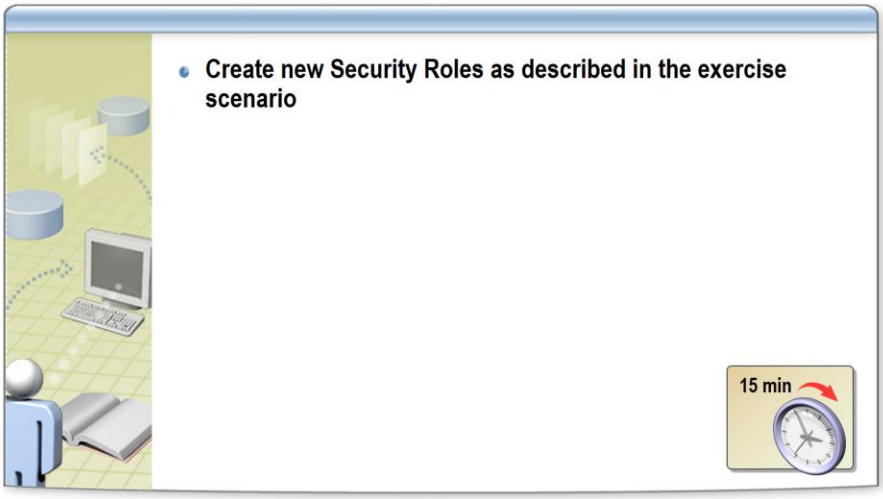
Microsoft Dynamics CRM Security Model

Contents

Lab 3.1 - Configuring Microsoft Dynamics CRM Security 8



Lab 3.1: Configuring Microsoft Dynamics CRM Security



Scenario

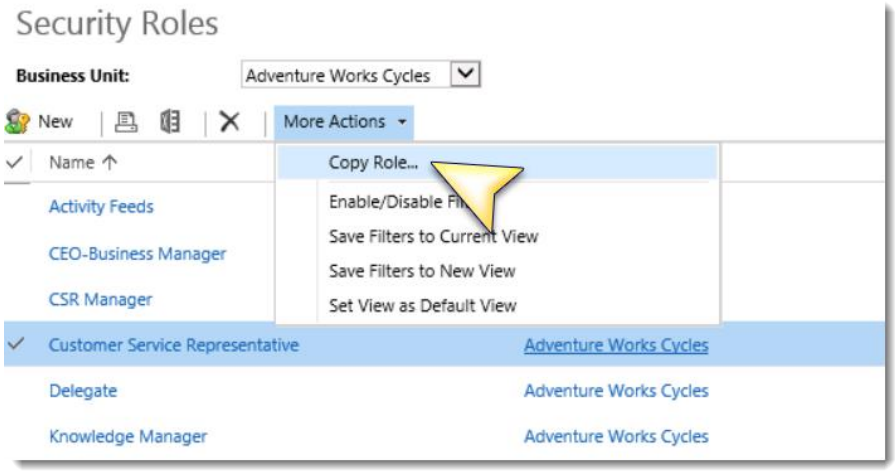
In order to support the new product development (NPD) process, some members of the Marketing Department will be responsible for managing prototype testing.

A new Security Role is required to give selected marketing Users access to create and manage their own Cases and assign them to Contracts owned by marketing Users, but not to edit Contracts outside the department. Some users in the customer service department need to assign cases created and owned by staff in the marketing department in order to pick these up and work on them to support customers who are testing prototypes.

In this lab you will create a new role that is a copy of the existing Customer Service Representative role.

Creating copies of existing Security Roles

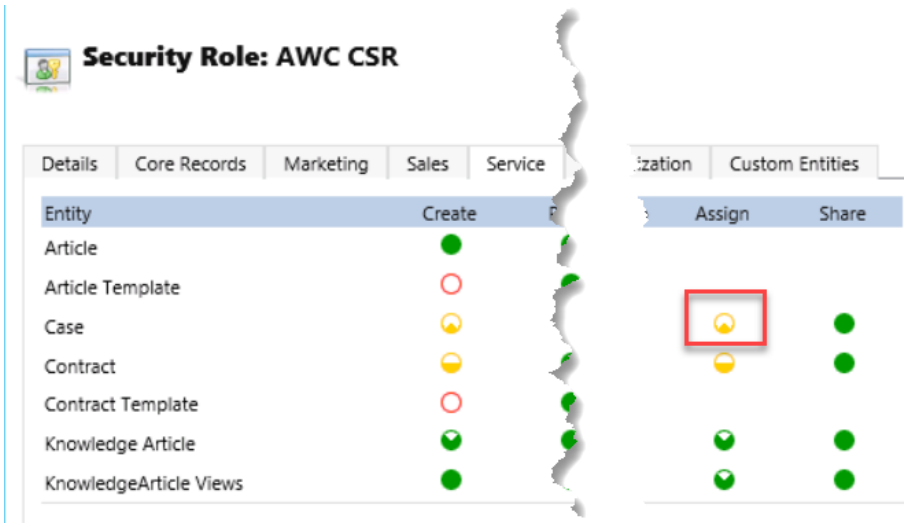
1. Open Internet Explorer and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button (looks like 3 lines).
3. Select **Settings**, and then click **Security** under the **System** heading.
4. Click **Security Roles**.
5. Select the **Customer Service Representative** role.
6. On the menu bar at the top of the list of Security Roles, click **More Actions**, and then click **Copy Role**.



7. In the **Copy Security Role** dialog box, in **New Role Name** enter **AWC CSR**.
8. Clear the **Open the new Security Role when copying is complete** checkbox and click the **OK** button.
9. In the **Security Roles** view select the **Marketing Professional** role.
10. On the menu bar, click **More Actions**, and then click **Copy Role**.
11. In the **Copy Security Role** dialog box, in **New Role Name** enter **AWC Marketing**.
12. Clear the **Open the new Security Role when copying is complete** checkbox and click the **OK** button.

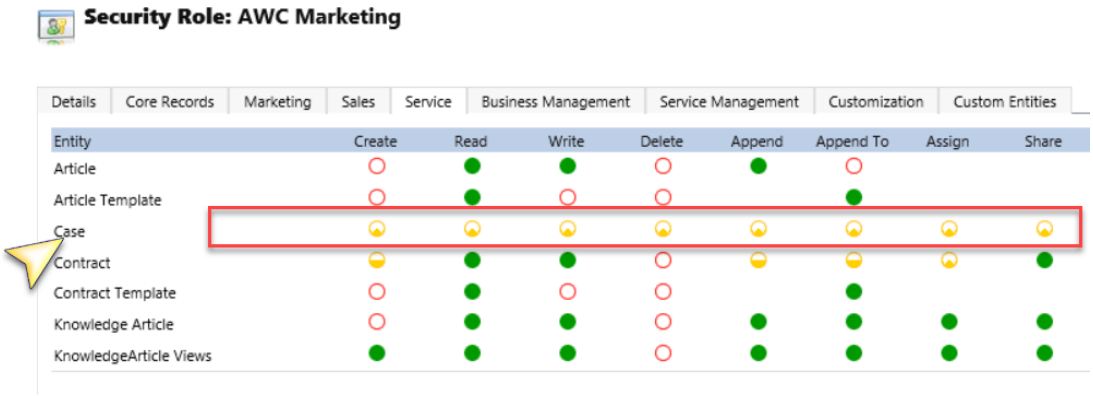
Modifying the new Security Roles

1. In the list of **Security Roles**, double-click the **AWC CSR** role to open it.
2. Click the **Service** tab.
3. Click the privilege for **Assign** on the **Case** entity until it is at **User** level.

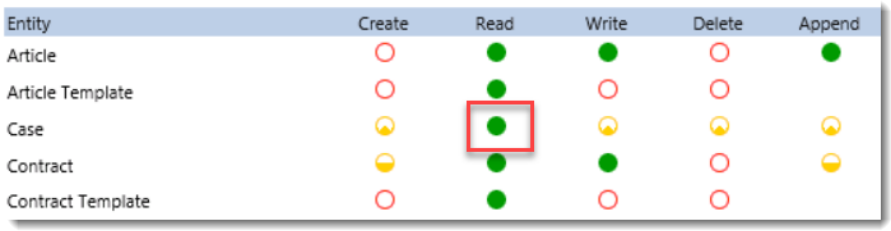


4. Click the **Sales** tab.
5. Click the **Delete** column header multiple times until the access level is set to **None** for all sales entities.

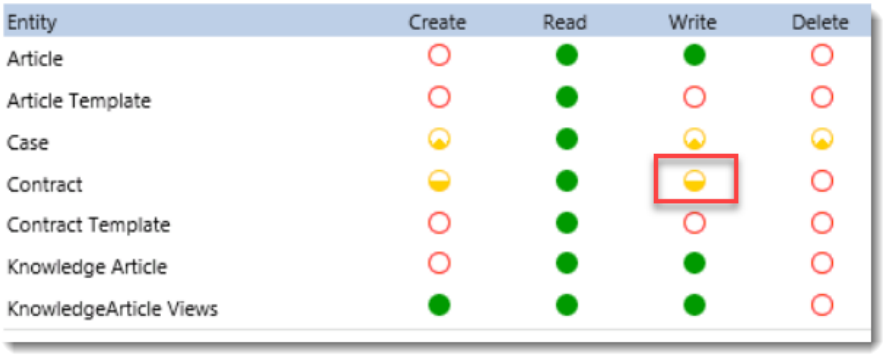
6. On the toolbar, click **Save and Close**.
7. Double-click the **AWC Marketing** security role to open it.
8. Click the **Service** tab.
9. Click the **Case** entity label multiple times until all privileges are set to **User** access level.



10. Click the privilege for **Read** on the **Case** entity until it is set to **Organization** access level.



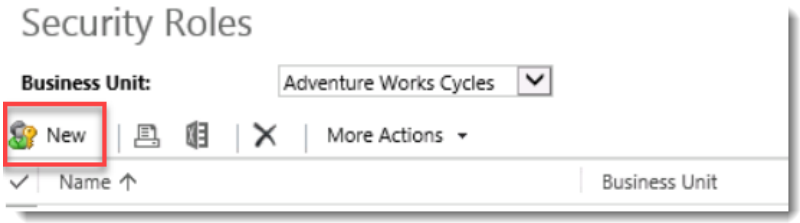
11. Click the privilege for **Write** on the **Contract** entity label until it is set to **Business Unit** access level.



12. On the toolbar, click **Save and Close**.

Creating a new Security Role from scratch

1. In the list of Security Roles, on the menu bar, click **New**.

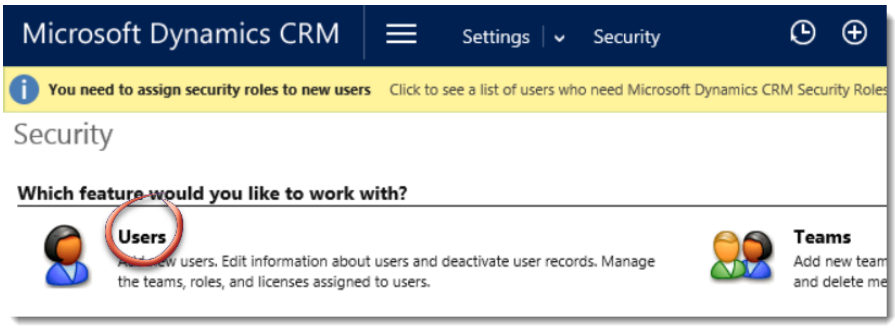


2. In the **Security Role: New Security Role** form, enter **AWC NPD** in the **Role Name** field.
3. In the **New Security Role** form click the **Service** tab.
4. For the **Case** entity, set the access level for the **Assign** privilege to **Business Unit**.

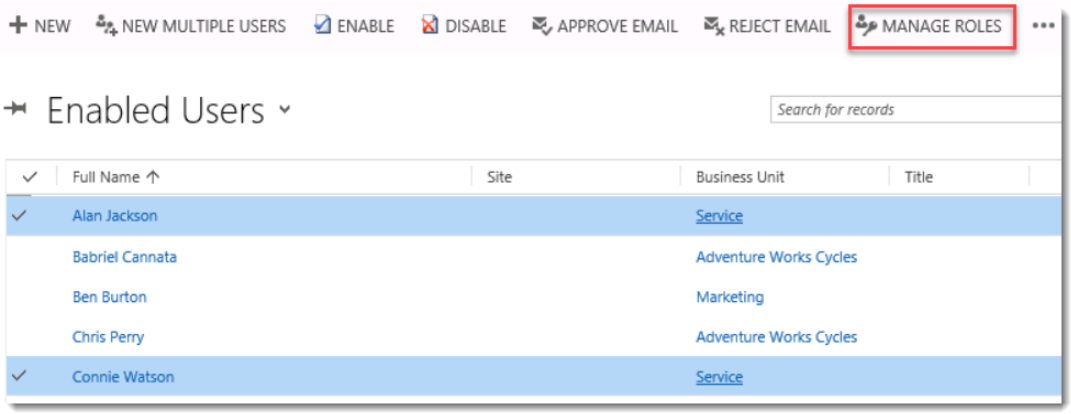
5. Click the **Save and Close** button on the command bar.

Assigning Security Roles to Users

1. In Microsoft Dynamics CRM, navigate to **Settings** > **Security**.
2. Click **Users**.



3. Maximize **Internet Explorer**.
4. In the **Enabled Users** view, select **Alan Jackson** and **Connie Watson**.
5. On the command bar click **Manage Roles**.



6. In the **Manage Roles** dialog check the box next to the **AWC CSR** role and then click **OK**.
7. In the **Enabled Users** view, select **Ben Burton**.
8. On the command bar click **Manage Roles**.

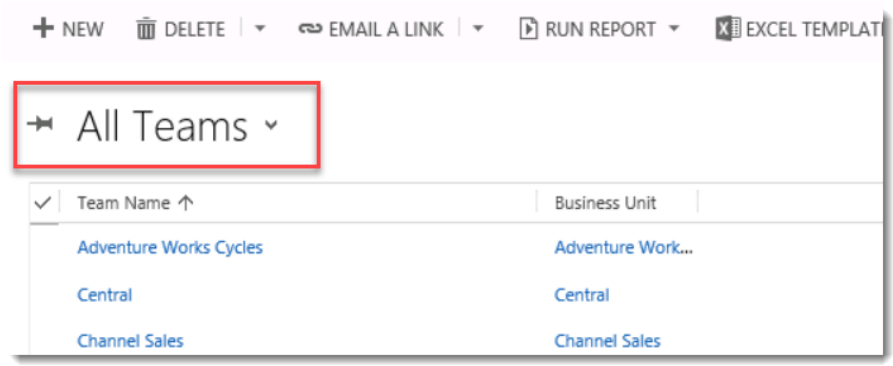
Note: If the **Manage Roles** button is not displayed on the command bar, click **More Commands** (•••) > **Manage Roles**.

---

9. In the **Manage Roles** dialog check the box next to the **AWC Marketing** role and then click **OK**.

↙ Assigning Security Roles to Teams

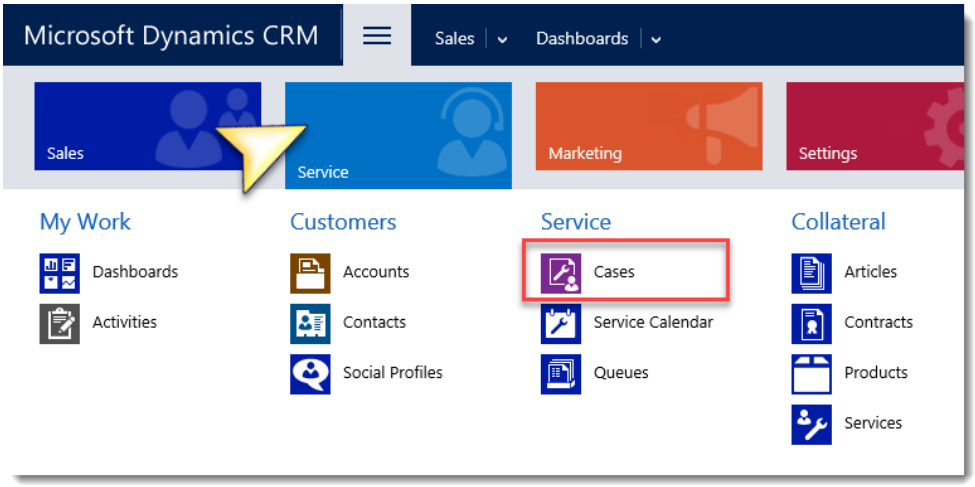
1. Navigate to **Settings** > **Security**.
2. Click **Teams**.
3. Change the current view to **All Teams**.



4. Select the **Product Development** Team.
5. On the command bar click **Manage Roles**.
6. In the **Manage Team Roles** dialog box, select the checkbox next to the **AWC NPD** security role.
7. Click the **OK** button.

Creating Test Case Records

1. In **Microsoft Dynamics CRM,** go to **Service** > **Cases**.

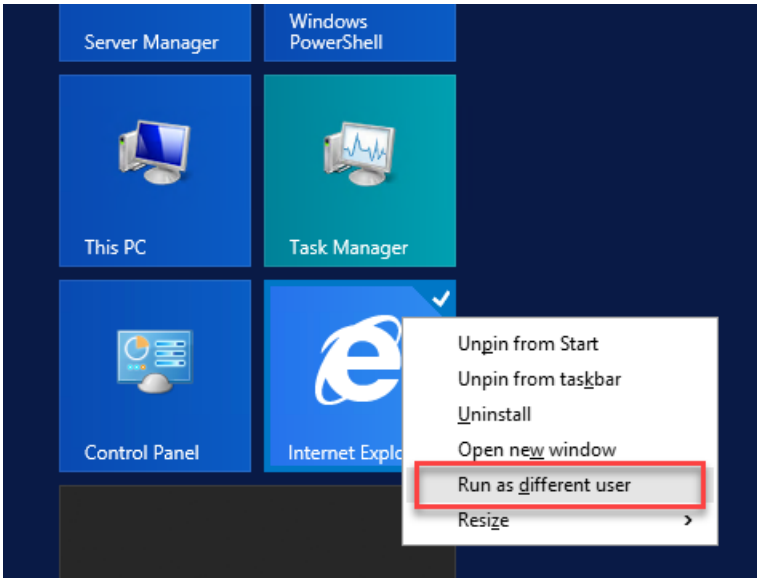


2. Click **New Case**.
3. In the **Case title** field, type **Alan Test**, and in the **Customer** field select **Adventure Works (sample)** using the lookup button.
4. In the header, in the **Owner** field, type **Alan** and press the Tab key.
5. On the command bar click **Save** and then click **New**.
6. In the **Case title** field, type **Ben Test**, and in the **Customer** field select **Adventure Works (sample)** using the lookup button.
7. In the header, in the **Owner** field, type **Ben** and press the Tab key.
8. On the command bar click **Save** and then click **New**.
9. In the **Case title** field, type **Connie Test**, and in the **Customer** field select **Adventure Works (sample)** using the lookup button.
10. In the header, in the **Owner** field, type **Connie** and press the Tab key.
11. On the command bar click **Save**.

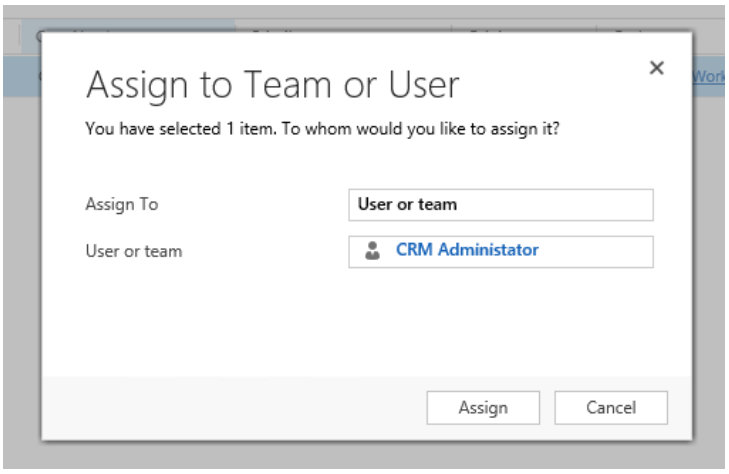
12. Close **Internet Explorer**.

Running Microsoft Dynamics CRM as Different User

1. Click the **Start** button.
2. Right-click the **Internet Explorer** tile and click **Run as different user**.



3. In the **Windows Security** dialog box type **Alan** in the **User name** textbox and **Pa$$w0rd** in the **Password** textbox and then click **OK**.
4. In **Internet Explorer** navigate to **http://LON-DC1:5555/AdventureWorksCycles**
5. If any additional dialog box appears, close it.
6. In **Microsoft Dynamics CRM,** go to **Service** > **Cases**.
7. If necessary, switch to the **My Active Cases** view.
8. Select the **Alan Test** Case, and then on the command bar click **Assign**.
9. In the **Assign to Team or User** dialog box, select **Assign to User or Team**.
10. Type **CRM** and press the Tab key. The **CRM Administrator** User record will be resolved and shown in the lookup field.



11. Click **Assign**.

Note that the action was successfully completed because Alan Jackson was the owner of the Alan Test case record.

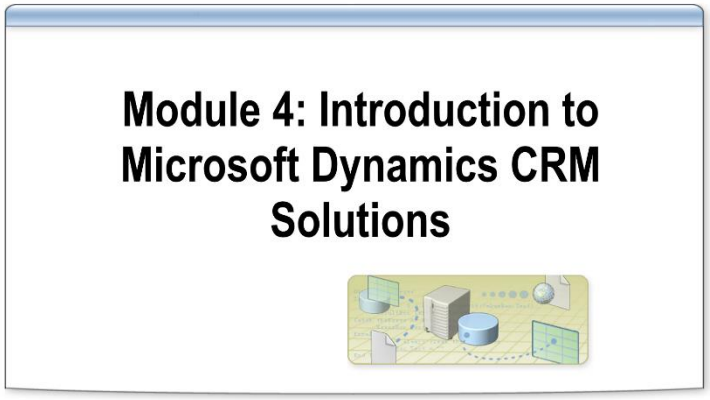
12. Close **Internet Explorer**.

Module 4

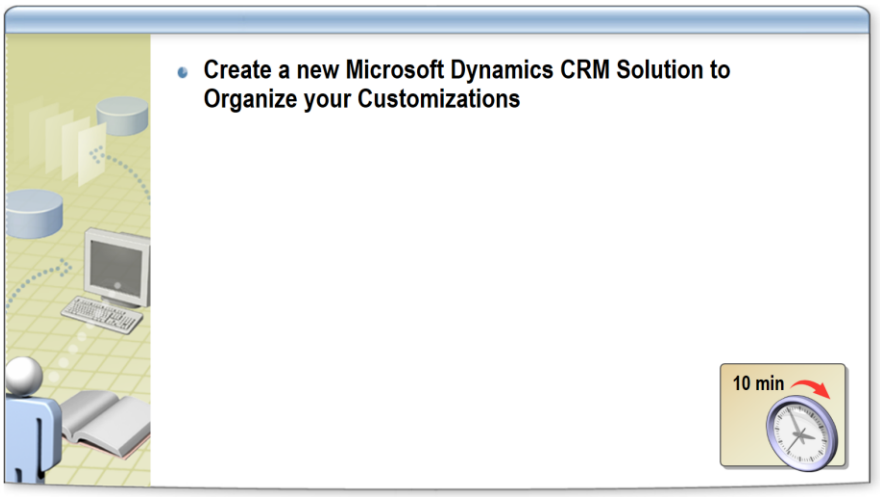
Introduction to Microsoft Dynamics CRM Solutions

Contents

Lab 4.1 - Creating a Microsoft Dynamics CRM Solution 17



Lab 4.1: Creating a Microsoft Dynamics CRM Solution



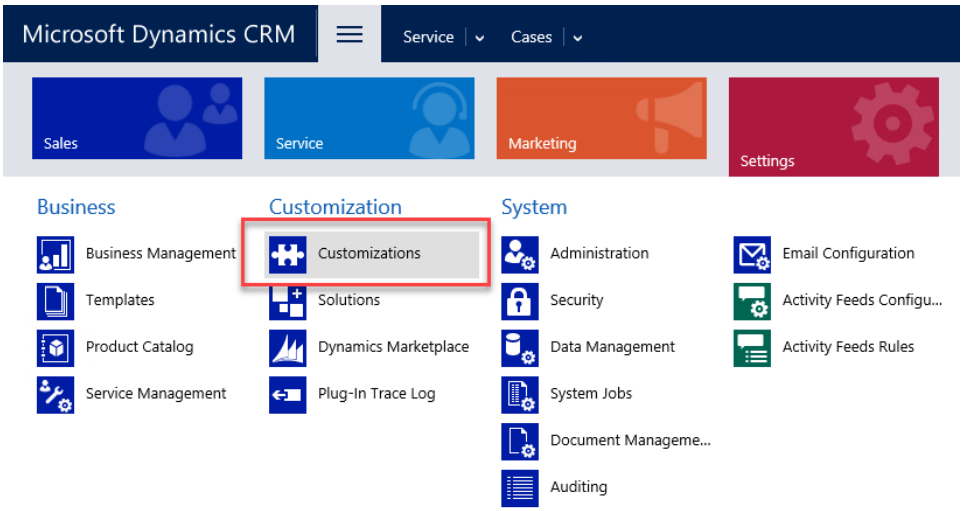
Scenario

As a member of the Microsoft Dynamics CRM project team for Adventure Works Cycles, you have to make a series of modifications to the system. The modifications will help the New Product Development (NPD) team manage its processes. You have to create several new entities, add fields to store specific data that is required by the NPD team, and create forms and views that the NPD team can use to work with its new records.

In this lab you will create a new Solution to contain your customizations. The Solution that you will create in this labs will be used in all remaining labs throughout the course as a container to perform all customizations.

Create a new Publisher

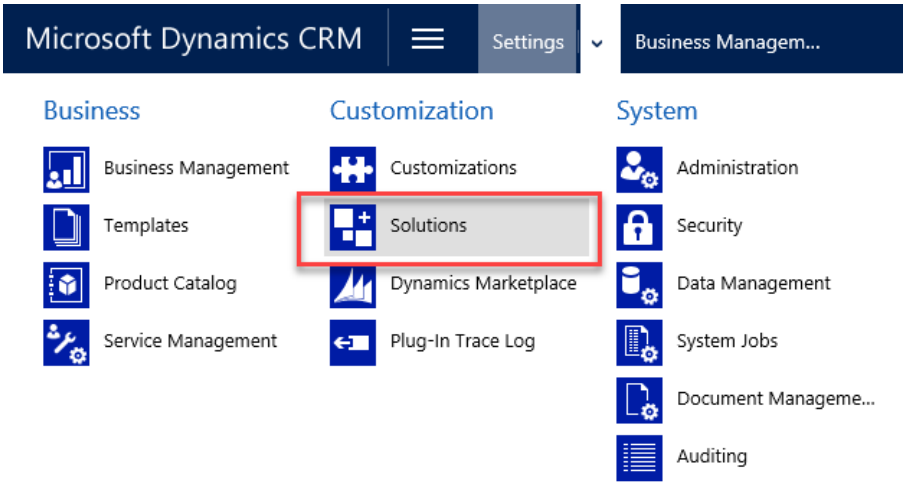
1. Open Internet Explorer and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button (looks like 3 lines).
3. Select **Settings**, and then click **Customizations** under the **Customization** heading.



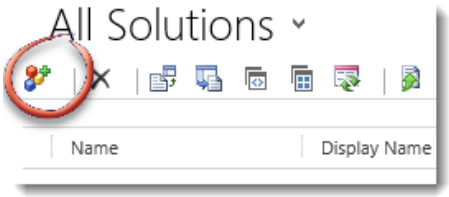
4. Click **Publishers**.
5. Click **New**.
6. Type **AWC NPD and Feedback** in the **Display Name** textbox.
7. Enter **awcnpd** for the **Prefix** (notice this converts to lowercase letters however you type it).
8. In the toolbar, click **Save and Close**.

Create a Solution

1. In **Microsoft Dynamics CRM**, go to **Settings** > **Solutions**.



2. Click **New**.

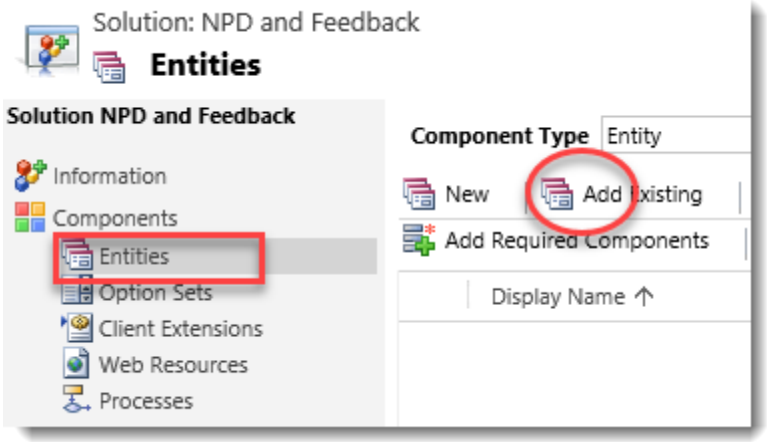


3. Enter **NPD and Feedback** as the **Display Name**.
4. In the **Publisher** field, click the lookup icon and select **AWC NPD and Feedback.**
5. Type **1.0.0.1** in the **Version** textbox.

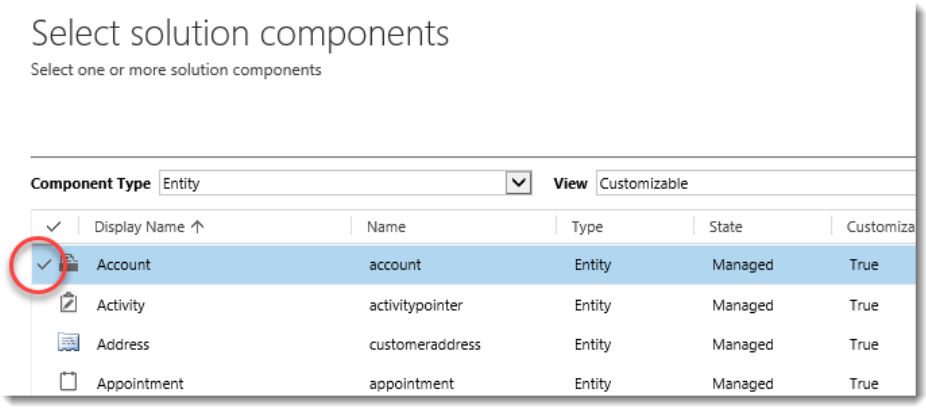
6. Click **Save**.

Add Existing Entities to the Solution

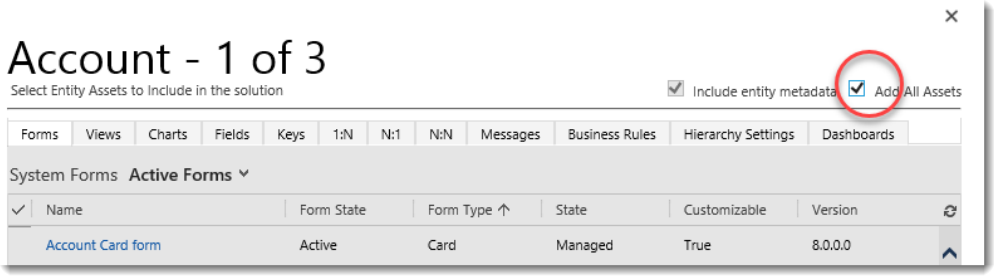
1. In the **Components** list, click **Entities**, and then, on the command bar choose **Add Existing**.



2. In the **Select solution components** dialog box, notice that the **Component Type** is filtered to **Entity** only.
3. Click the left side of the **Account**, **Campaign** and **Contact** entities.



4. Click **OK**.
5. Click the **Add All Assets** checkbox.

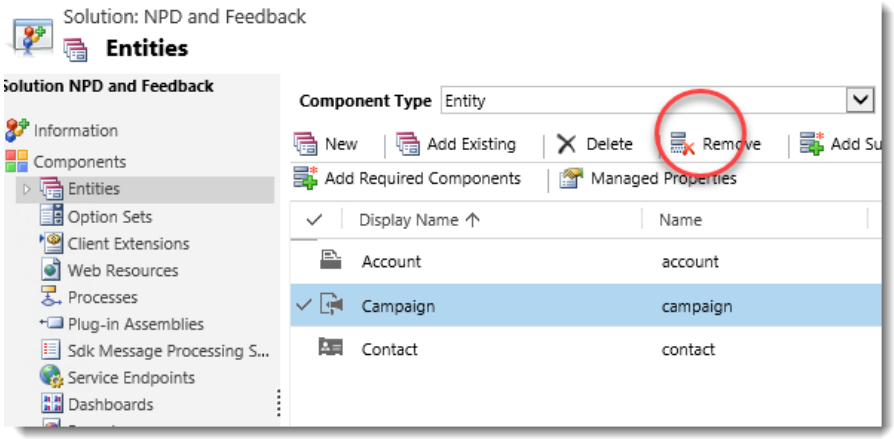


6. Click **Next**.
7. Check the **Add All Assets** checkbox for the **Campaign** entity.
8. Click **Next**.
9. Check the **Add All Assets** checkbox for **Contact** entity.
10. Click **Finish**.
11. Click the **Save** button.

Remove a Component from a Solution

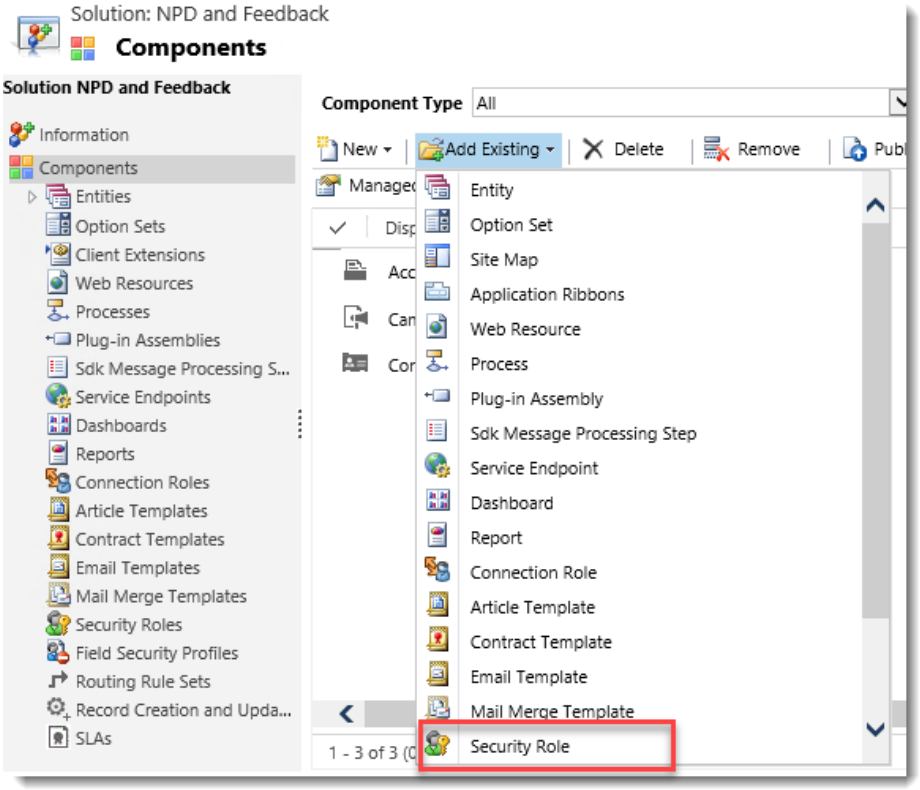
Sometimes you may find that you have a component that is no longer needed in a solution. In this case let's pretend that you realized that you do not need the Campaign entity.

1. In the **Solution:NPD and Feedback** form, in the **Entities** grid, select the **Campaign** entity.
2. At the top of the **Entities** grid, click **Remove**.



Add Security Roles to a Solution

1. In the **Solution:NPD and Feedback** form, click the **Add Existing** drop-down list and select **Security Roles**.



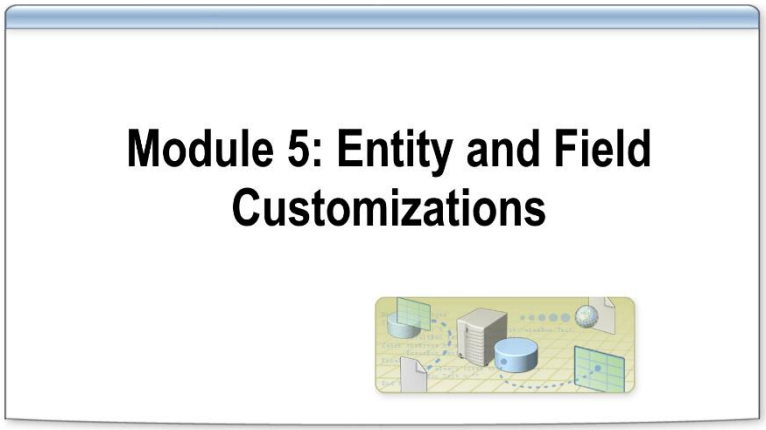
2. In the **Select solution components** dialog box, select the **AWC CSR**, **AWC Marketing** and **NWC NPD** security roles.
3. Click **OK**.
4. In the **Solution:NPD and Feedback** form, click the **Save and Close** button.
5. Close **Internet Explorer**.

Module 5

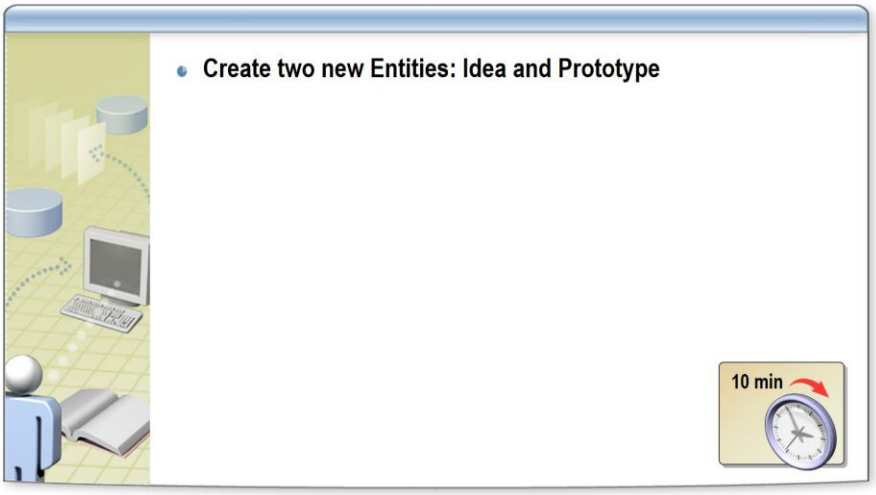
Entity and Field Customizations

Contents

Lab 5.1 - Creating Custom Entities	23
Lab 5.2 - Creating a Custom Activity Entity	27
Lab 5.3 – Creating Custom Fields	31



Lab 5.1: Creating Custom Entities



Scenario

Adventure Works Cycles wants to track suggestions that are made by employees and customers as Ideas by using Microsoft Dynamics CRM. When an Idea is submitted, the Adventure Works Cycles New Product Development (NPD) team will consider the feasibility of the Idea. Ideas that might be potentially worthwhile are proposed as Prototypes for testing and market research.

The properties of the custom entities will be configured as follows:

Idea Entity

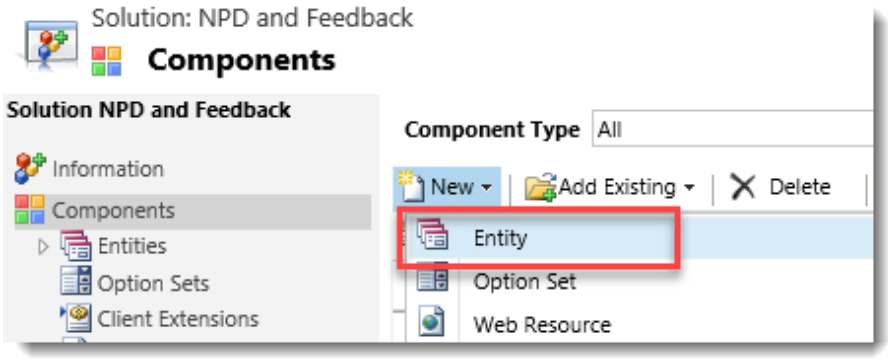
Property	Setting
Display Name	**Idea**
Plural Name	**Ideas**
Ownership	**User or Team**
Display Areas	**Sales, Service, Marketing**

Prototype Entity

Property	Setting
Display Name	**Prototype**
Plural Name	**Prototypes**
Ownership	**User or Team**
Display Areas	**Sales, Service**
Notes	**Enabled**
Activities	**Enabled**
Connections	**Enabled**
Queues	**Enabled**

Create the Idea Entity

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, click the **New** drop-down list and select **Entity**.



5. In the **Display Name** text box, type **Idea**.
6. In **Plural Name**, enter **Ideas**.
7. Make sure that the **Ownership** property is set to **User or Team**.
8. In the **Areas that display this entity** section, select **Sales**, **Service** and **Marketing**.
9. In the **Communication & Collaboration** section clear the check boxes for **Connections** and **Mail Merge**.
10. Click **Save and Close**.

Create the Prototype Entity

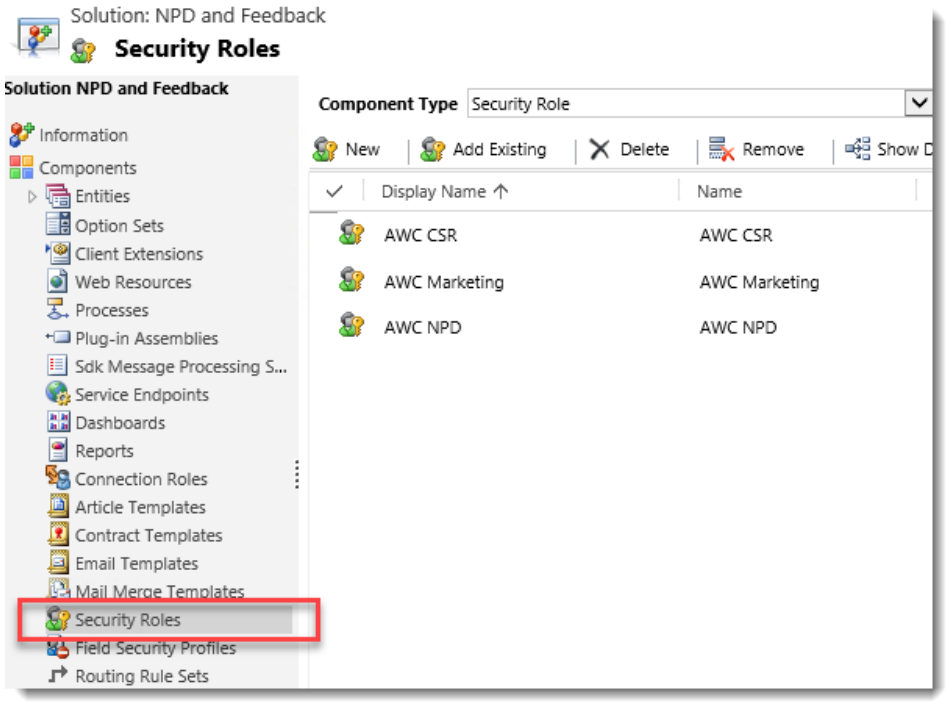
1. In the **Solution:NPD and Feedback** form, click the **New** drop-down list and select **Entity**.
2. In **Display Name**, enter **Prototype**.
3. In **Plural Name**, enter **Prototypes**.
4. Make sure that the **Ownership** property is set to **User or Team**.
5. In the **Areas that display this entity** section, select **Service** and **Marketing**.
6. In the **Communication & Collaboration** section make sure that **Notes**, **Activities**, **Connections** and **Queues** are enabled.
7. Click **Save and Close**.

Configure Security Roles

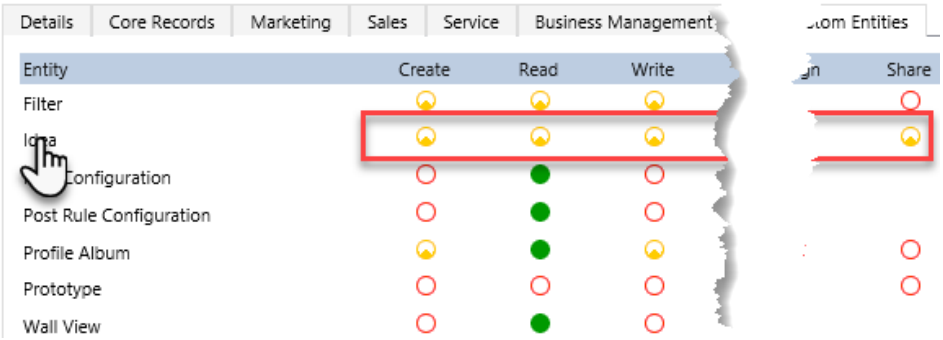
After you create the custom entities, the **AWC CSR** and **AWC Marketing** security roles should be modified to grant all privileges to both entities at the

User level except for **Read** and **Append To** privileges. These two privileges will be set at the **Organization** level.

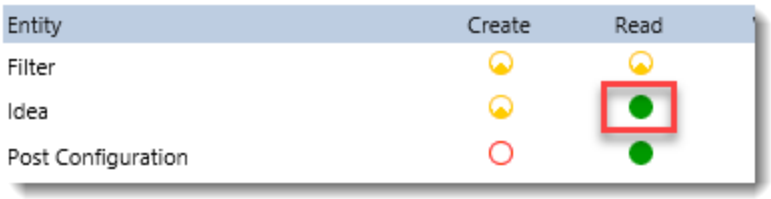
1. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, click **Security Roles**.



2. Double-click the **AWC CSR** security role.
3. Click the **Custom Entities** tab.
4. Click the **Idea** entity name until all privileges are set to **User** level.



5. Click the **Read** privilege for **Idea** until it is set to **Organization** level.



6. Click the **Append To** privilege for **Idea** until it is set to **Organization** level.
7. Click the **Prototype** entity name until all privileges are set to **User** level.

8. Click the **Read** privilege for **Prototype** until it is set to **Organization** level.
9. Click the **Append To** privilege for **Prototype** until it is set to **Organization** level.

10. Click **Save and Close**.
11. In the **Solution:NPD and Feedback** form, double-click the **AWC Marketing** security role.
12. Click the **Custom Entities** tab.
13. Click the **Idea** entity name until all privileges are set to **User** level.
14. Click the **Read** privilege for **Idea** until it is set to **Organization** level.
15. Click the **Append To** privilege for **Idea** until it is set to **Organization** level.
16. Click the **Prototype** entity name until all privileges are set to **User** level.
17. Click the **Read** privilege for **Prototype** until it is set to **Organization** level.
18. Click the **Append To** privilege for **Prototype** until it is set to **Organization** level.
19. Click **Save and Close**.

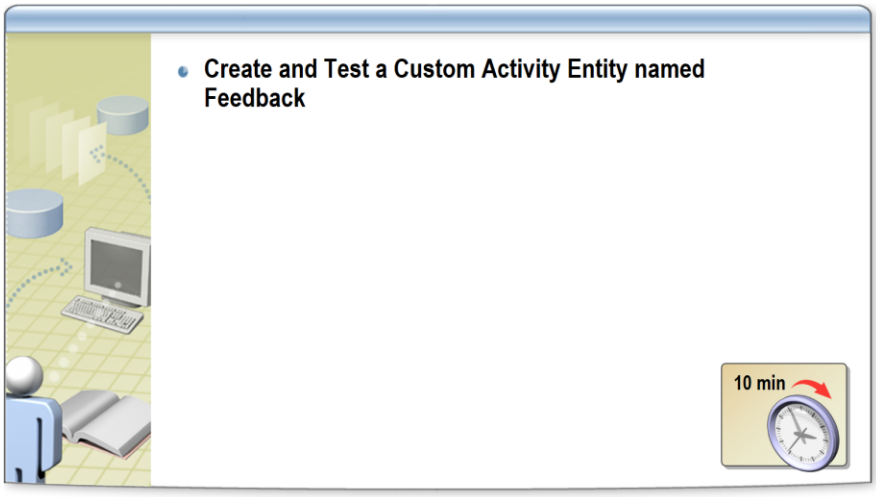
Publish Customizations

Publishing customizations makes the Web application aware of changes to the data that affects the user interface.

1. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.

2. Close the **Solution:NPD and Feedback** form.
3. Close **Internet Explorer**.

Lab 5.2: Creating a Custom Activity Entity

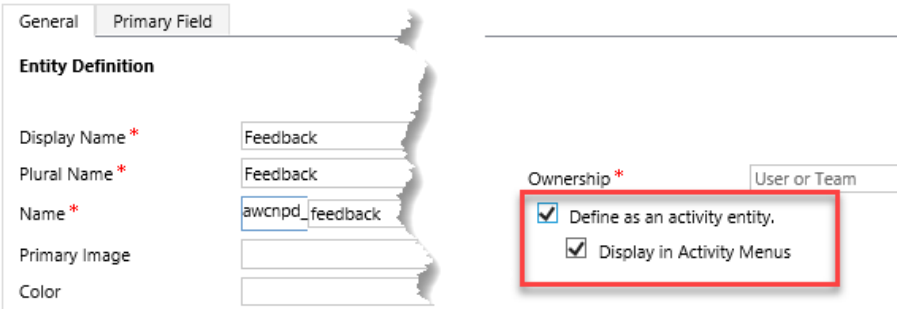


Scenario

Adventure Works Cycles wants to record structured feedback from employees and customers about various processes and interactions, such as placing an order, contacting support or attending an event. By creating a custom activity entity named Feedback this information can be associated with any record that supports activities.

Create the Feedback Entity

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, click the **New** drop-down list and select **Entity**.
5. In the **Display Name** field, enter **Feedback**.
6. In the **Plural Name** textbox, type **Feedback**.
7. Select both the **Define as an activity entity** and **Display in Activity Menus** checkboxes.



Note: If you skip these two settings (**Define as an activity entity** and **Display in Activity Menus**), the new custom activity entity will not function correctly. Also, notice that the **Ownership** property is set to **User or Team** and cannot be changed.

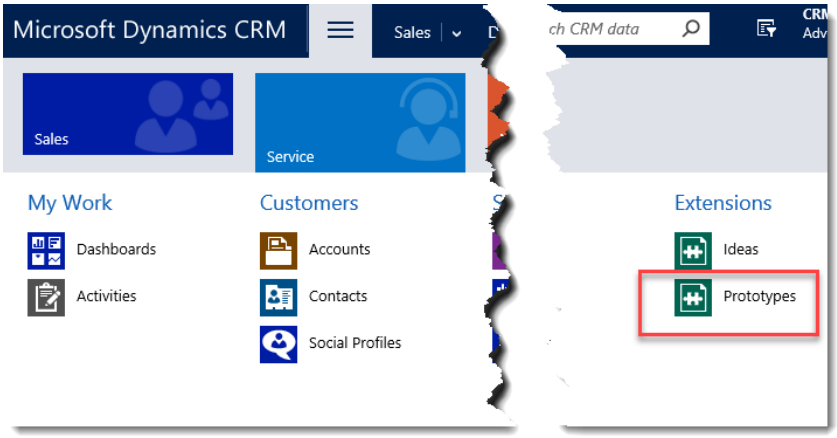
8. In the **Data Services** and **Outlook & Mobile** sections clear any options that are selected.

   The Offline capability for CRM for Outlook cannot be cleared.

9. Click **Save and Close**.
10. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.
11. Close the **Solution:NPD and Feedback** form.
12. Close **Internet Explorer**.

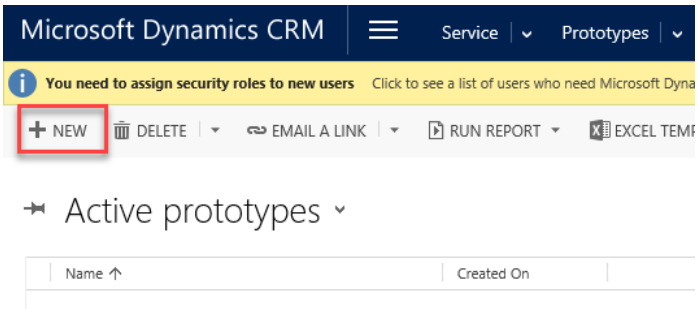
Test the Feedback Activity Entity

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Service**, and then click **Prototypes** under the **Extensions** heading.

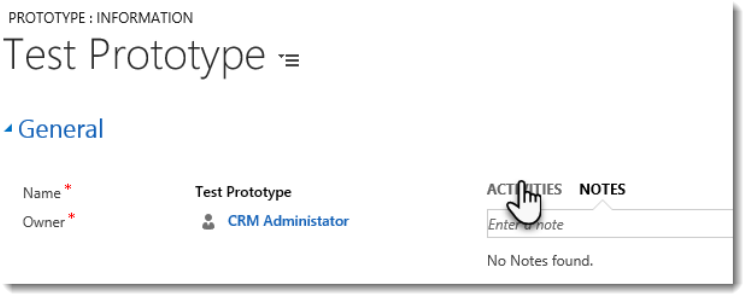


Note: If the **Prototypes** entry point does not appear, press **F5** to refresh **Internet Explorer**.

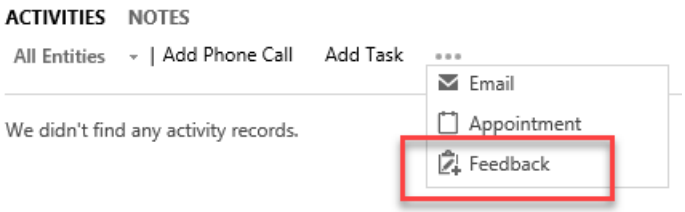
3. In the **Active Prototypes** view, click **New**.



4. In the **Name** field, enter **Test Prototype**.
5. Click **Save**.
6. Click the **Activities** tab of the **Social Pane**.

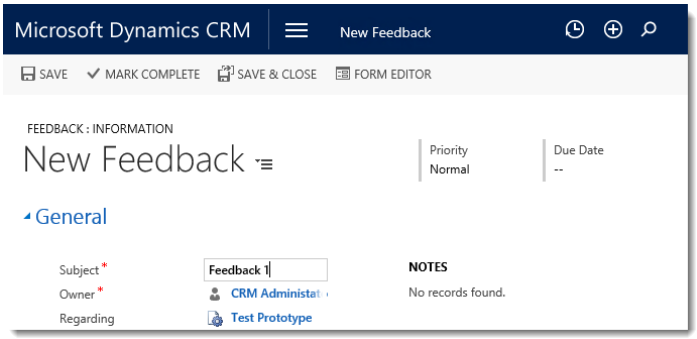


7. Click the **Add more activities** button (…), and select **Feedback**.

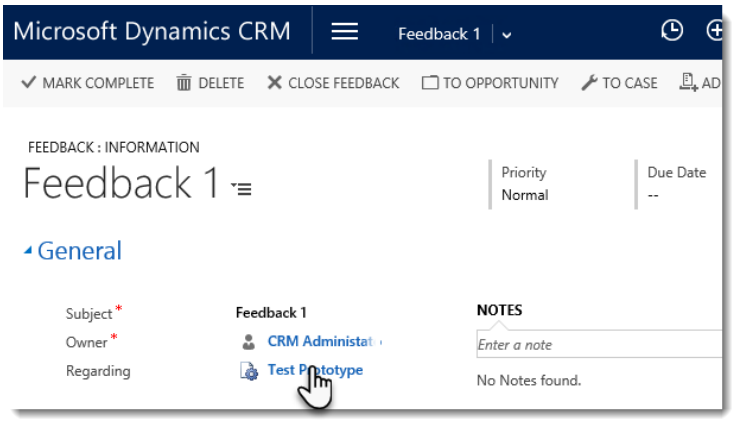


Note: If the **Add more activities** button **(…)** does not appear, maximize **Internet Explorer**. You can also, on the command bar, click the **Ellipsis** button > **Other Activities** > **Feedback**.

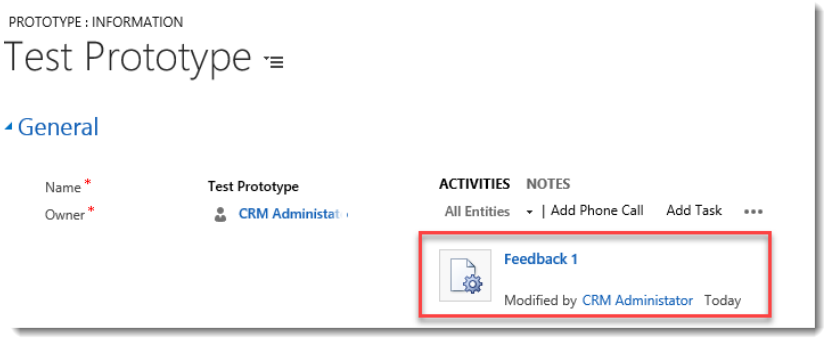
8. Type **Feedback 1** in the **Subject** field.



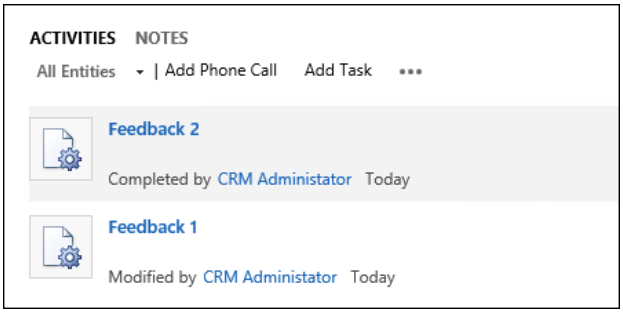
9. On the command bar click **Save**.
10. To return to the **Prototype** form, in the **Regarding** field, click the link to the **Test prototype** record.



11. Confirm that the new feedback record is shown in the **Activities** tab.



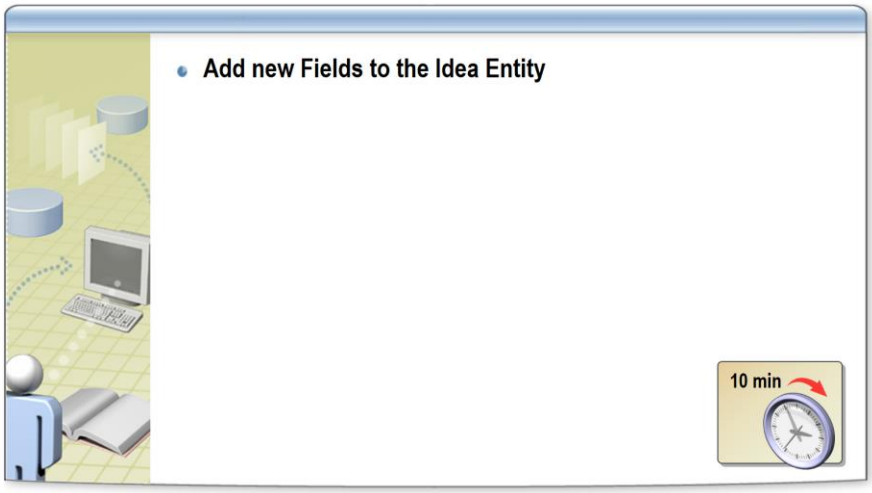
12. Click the **Add more activities** button (…), and select **Feedback**.
13. Type **Feedback 2** in the **Subject** field.
14. On the command bar click **Save**, and then click **Mark Complete**.
15. Confirm that the completed feedback record is shown in the **Prototype** record under the **Activities** tab of the social pane.



The completed activity is displayed with a gray background.

16. Close **Internet Explorer**.

Lab 5.3: Creating Custom Fields

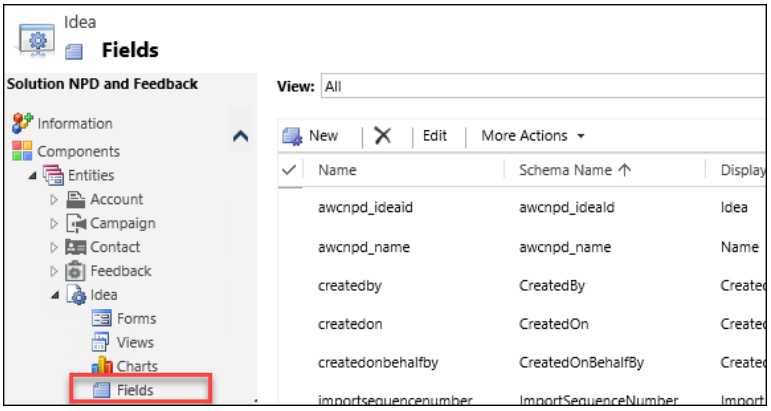


Scenario

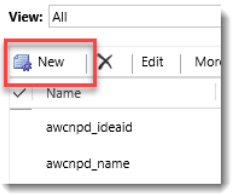
Adventure Works Cycles requires additional fields to be added to the **Idea** entity. In this lab you will create two additional fields within the **Idea** entity. In an incoming lab you will add the fields to the form.

Add new fields

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand the **Entities** node.
5. Expand the **Idea** entity and then click the **Fields** node.



6. On the **Actions** toolbar, click **New**.



7. In the **Display Name** field enter **Detailed Description**.
8. Set the **Field Requirement** property to **Business Required**.
9. Type **The detailed description of the idea** in the **Description** textbox.
10. Set the **Data Type** field to **Multiple Lines of Text**.
11. Click **Save and Close**.
12. On the **Actions** toolbar, click **New**.
13. In the **Display Name** field enter **Target Market Size**.
14. Set the **Field Requirement** property to **Business Recommended**.
15. Type **The size of the target market** in the **Description** textbox.
16. Set the **Data Type** field to **Whole Number**.
17. Set the **Minimum Value** field to **0**.
18. Set the **Maximum Value** field to **1,000,000,000**.
19. Click **Save and Close**.
20. Close the **Solution:NPD and Feedback** form.
21. Close **Internet Explorer**.

Module 6

Additional Field Customizations

Contents

Lab 6.1 - Creating and Using Global Option Sets 35

Lab 6.2 - Creating Calculated and Rollup Fields 37

Lab 6.3 - Configuring Field Security 41

Lab 6.1: Creating and Using Global Option Sets

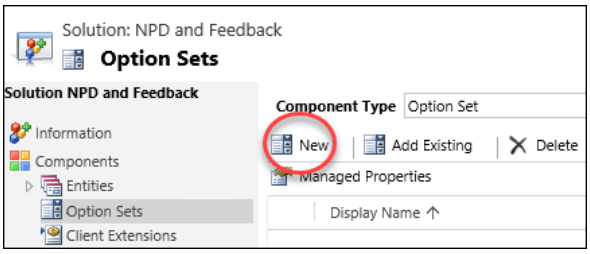
Scenario

Adventure Works Cycles wants to be able to track the satisfaction of their customers. Initially they only require to have this information on the feedback entity but eventually they may want to capture this on other entities. They require a new Option Set field called **Satisfaction Rating** to be created on the **Feedback** form.

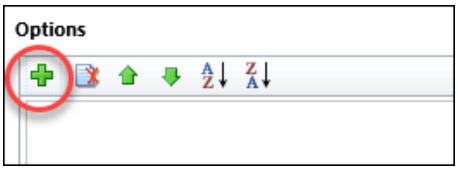
In this lab you will create a new Global Option Set and create a new field based on the new Global Option Set in the **Feedback** entity.

Create a new Global Option Set

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, click the **Option Sets** node.
5. On the toolbar click **New**.



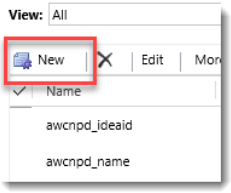
6. Type **Ratings** into the **Display Name** field.
7. In the **Description** field enter **Customer Satisfaction Ratings**.
8. In the **Options** sections click the **Add** button (green plus sign).



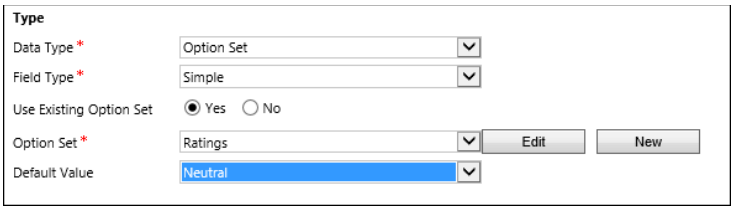
9. In the **Label** field enter **Very Happy**.
10. Click the **Add** button.
11. In the **Label** field type **Happy**.
12. Click the **Add** button.
13. In the **Label** field enter **Neutral**.
14. Click the **Add** button.
15. In the **Label** field type **Unhappy**.
16. Click the **Add** button.
17. In the **Label** field enter **Very Unhappy**.
18. Click **Save and Close**.

Add a new Option Set Field to the Feedback entity

1. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand the **Entities** node.
2. Expand the **Feedback** entity and then click the **Fields** node.
3. On the **Actions** toolbar, click **New**.

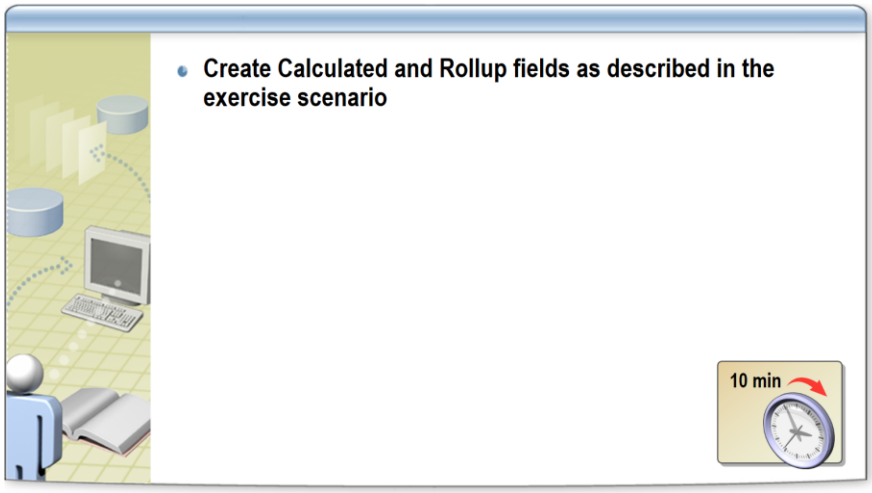


4. Type **Satisfaction Rating** into the **Display Name** field.
5. Set the **Field Requirement** field to **Business Required**.
6. In the **Data Type** field select **Option Set**.
7. In the **Use Existing Option Set** field select **Yes**.
8. In the **Option Set** field select **Ratings**.
9. In the **Default Value** field select **Neutral**.



10. Click **Save and Close**.
11. Close the **Solution:NPD and Feedback** form.
12. Close **Internet Explorer**.

Lab 6.2: Creating Calculated and Rollup Fields



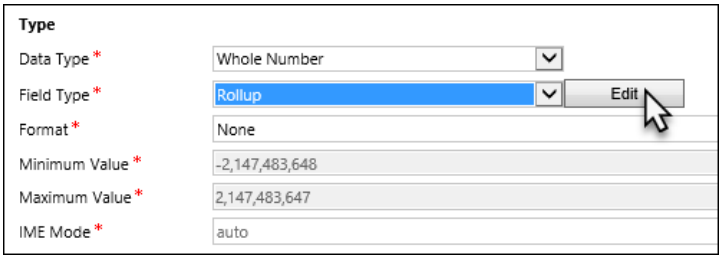
Scenario

It is important for Adventure Works Cycles to be able to see how many feedback records have been submitted for a specific prototype. In addition, some feedback records may have costs associated with them. Adventure Works wants to potentially be able to compare cost with budget on a specific prototype.

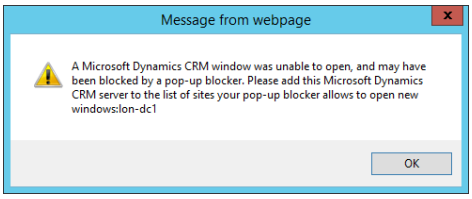
Create a Rollup Field

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand the **Entities** node.
5. Expand the **Prototype** entity and then click the **Fields** node.
6. On the **Actions** toolbar, click **New**.
7. In the **Display Name** field enter **Total Feedback**.
8. Set the **Data Type** field to **Whole Number**.
9. Select **Rollup** for **Field Type**.
10. Click **Edit**.

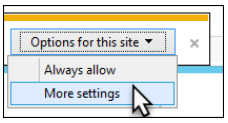
    *The new field will be saved by clicking the **Edit** button.*



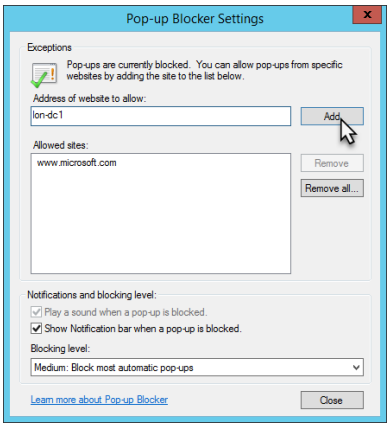
If a message box is displayed stating that a Microsoft Dynamics CRM window was unable to open, and may have been blocked by a pop-up blocker, click **OK**.



On the Notification bar, click the **Options for this site** drop-down list and then select **More Settings**.

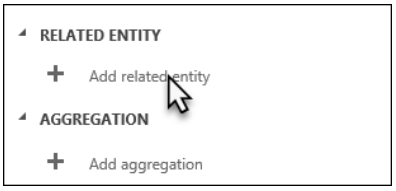


Type **lon-dc1** in the **Address of website to allow** textbox and click **Add**.

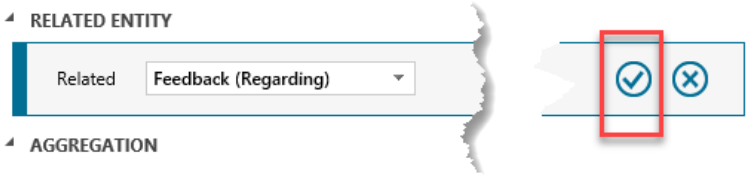


In the **Pop-Up Blocker Settings** dialog box, click **Close**.

11. In the **Rollup Field** editor, click **Add related entity**.

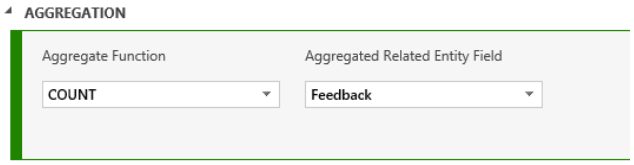


12. Select **Feedback (Regarding)** in the **Related** drop-down list and click **Save your changes** (check icon).



13. Click **Add Aggregation**.

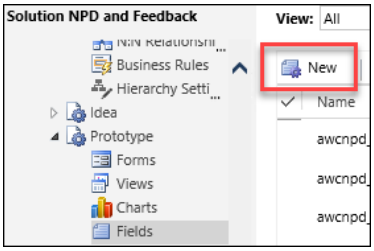
14. For **Aggregate Function**, select **Count**.



15. Click **Save your changes** (check icon).
16. Click **Save and Close**.
17. Close the **Total Feedback of Prototype** form.

Add Currency Fields

1. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand **Feedback** entity and then click the **Fields** node.
2. On the **Actions** toolbar, click **New**.
3. In the **Display Name** field, enter **Cost**.
4. Set the **Data Type** field to **Currency**.
5. Click **Save and Close**.
6. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand the **Entities** node, if it is not expanded.
7. Expand the **Prototype** entity if it is not expanded.
8. Click the **Fields** node under the **Prototype** node.
9. On the **Actions** toolbar, click **New**.

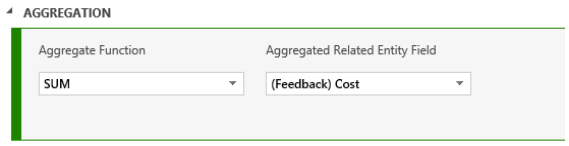


10. In the **Display Name** field enter **Budget**.
11. Set the **Data Type** field to **Currency**.
12. Click **Save and Close**.

Add a Total Rollup Field

1. Click the **Fields** node under the **Prototype** node.
2. On the **Actions** toolbar, click **New**.
3. In the **Display Name** field type **Total Cost**.
4. In the **Data Type** field select **Currency**.
5. Set the **Field Type** to **Rollup**.
6. Click **Edit**.

7. In the **Rollup Field** editor, click **Add related entity**.
8. Select **Feedback (Regarding)** in the **Related** drop-down list and click **Save your changes** (check icon).
9. Click **Add Aggregation**.
10. For **Aggregate Function**, select **Sum**.
11. For **Aggregated Related Entity Field**, make sure that the selected value is **(Feedback) Cost**.



12. Click **Save your changes** (check icon).
13. Click **Save and Close**.
14. Close the **Total Cost of Prototype** form.
15. Close the **Solution:NPD and Feedback** form.
16. Close **Internet Explorer**.

Lab 6.3: Configuring Field Security

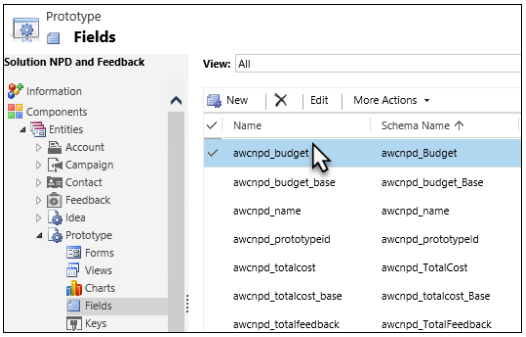
Scenario

The Marketing Manager at Adventure Works Cycles wants to track the budget allocated to a Prototype. This will depend on the expected market size, estimated feasibility of developing the prototype into a finished product and other factors. All users who work in the Product Development Team need to be able to view the value of the Budget field so they can make sure expenditure remains within the limit that has been set. Only NPD Managers must be able to change the value.

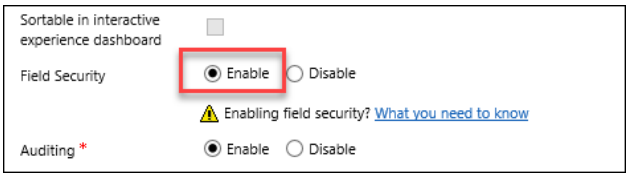
In this lab you will configure Field Security Profiles to control access to the Budget field to meet the business requirements.

Enable Field Security

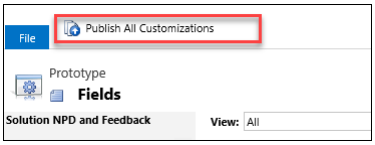
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand the **Entities** node.
5. Expand the **Prototype** entity and then click the **Fields** node.
6. In the list of fields, double-click the **Budget** field (awcnpd_budget).



7. Click **Enable** at the right of **Field Security**.

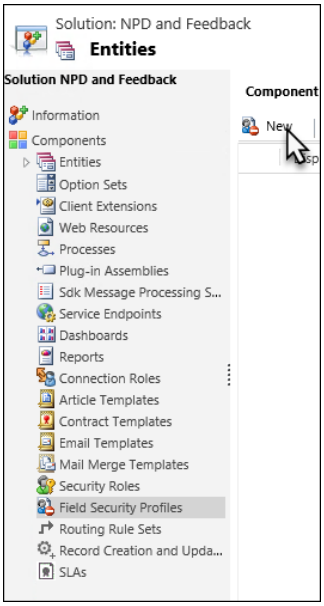


8. Click **Save and Close**.
9. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.

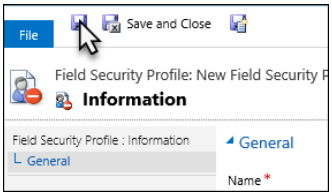


Configure Field Security Profile to allow Read access to a field

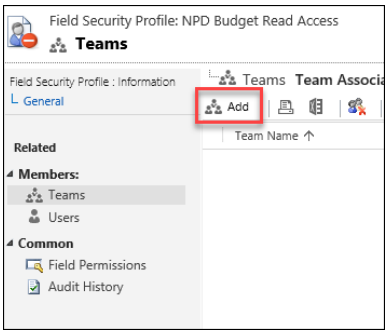
1. In the **Solution:NPD and Feedback** form, click **Field Security Profiles**.
2. Click **New.**



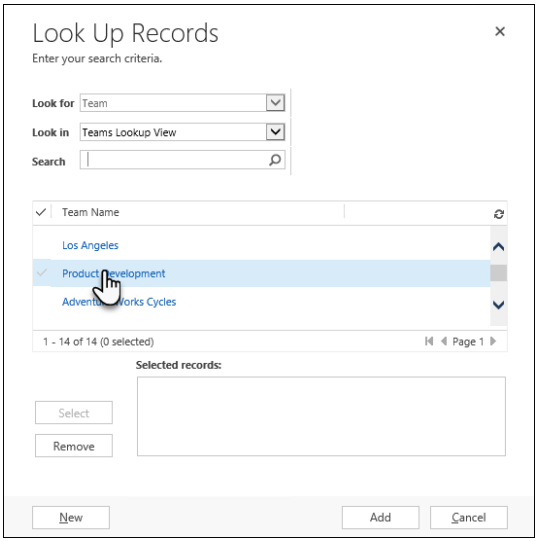
3. Type **NPD Budget Read Access** in the **Name** textbox.
4. Click **Save.**



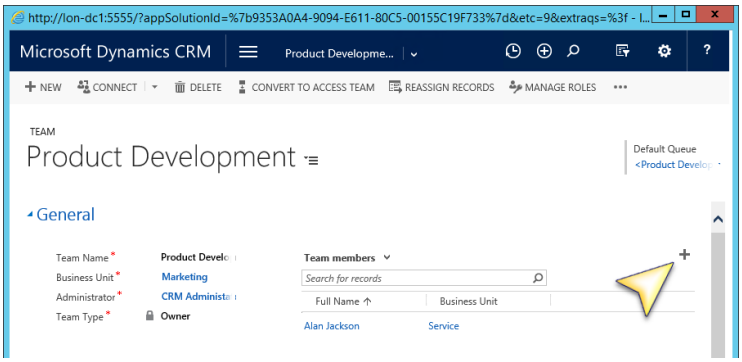
5. In the navigation pane, under the **Members** section, click **Teams**.
6. Click **Add**.



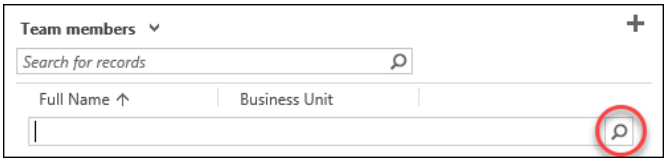
7. In the **Look Up Records** dialog box, locate and click **Product Development** to open the team record.



8. In the **Product Development** team form, in the **Team members** section, click the plus sign (**Add User record**).

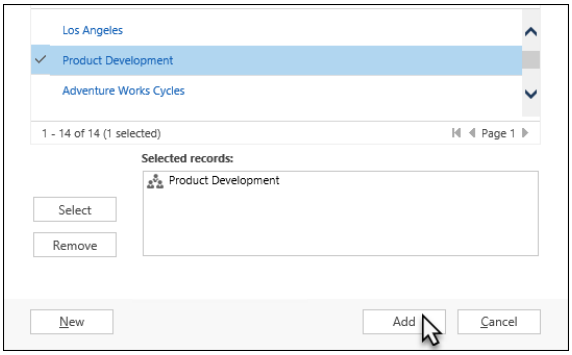


9. Click the lookup control that is displayed on the grid.

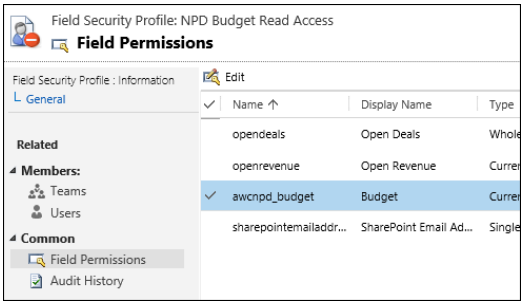


10. Select **Ben Burton** from the list.
11. Close the **Product Development** team form.
12. In the **Look Up Records** dialog box, make sure that the **Product Development** team record is selected and then click **Select**.

13. Click **Add**.



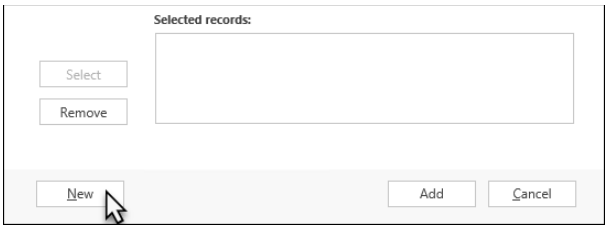
14. In the navigation pane, click **Field Permissions**.
15. Double-click the **Budget** field, or select it and then click **Edit**.



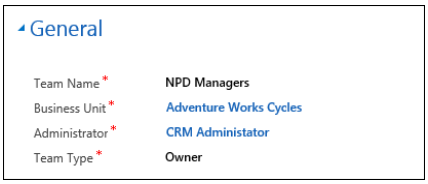
16. In **Allow Read**, select **Yes**. Leave the other options as **No**.
17. Click **OK**.
18. Click **Save and Close**.

Configure Field Security Profile to allow Update access to a field

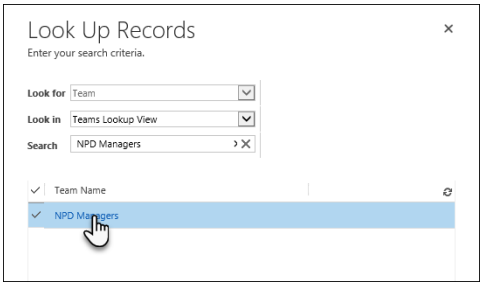
1. In the **Solution:NPD and Feedback** form, click **Field Security Profiles**.
2. Click **New.**
3. Type **NPD Managers Budget Update Access** in the **Name** textbox.
4. Click **Save.**
5. In the navigation pane, under the **Members** section, click **Teams**.
6. Click **Add**.
7. In the **Look Up Records** dialog box, click New.



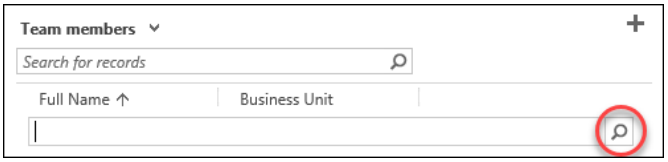
8. Type **NPD Managers** in the **Name** textbox.
9. In the **Administrator** field, type **CRM Admin** and then press Tab.



10. In the **Look Up Records** dialog box, click **NPD Managers** to open the team record.



11. In the **NPD Managers** team form, in the **Team members** section, click the plus sign (Add User record).
12. Click the lookup control that is displayed on the grid.



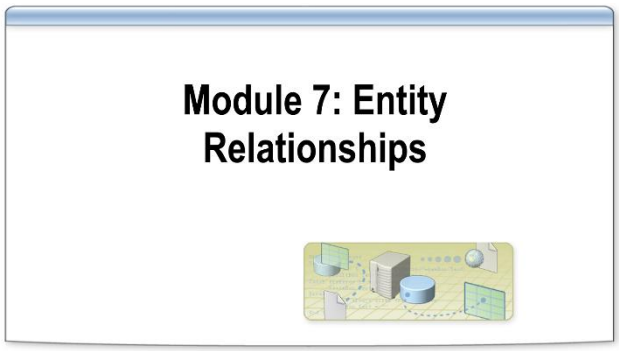
13. Select **Ben Burton** from the list.
14. Close the **NPD Managers** team form.
15. In the **Look Up Records** dialog box, click **Add**.
16. In the navigation pane, click **Field Permissions**.
17. Double-click the **Budget** field, or select it and then click **Edit**.
18. Set **Allow Read**, **Allow Update**, and **Allow Create** to **Yes**.
19. Click **OK**.
20. Click **Save and Close**.
21. Close the **Solution:NPD and Feedback** form.
22. Close **Internet Explorer**.

Module 7

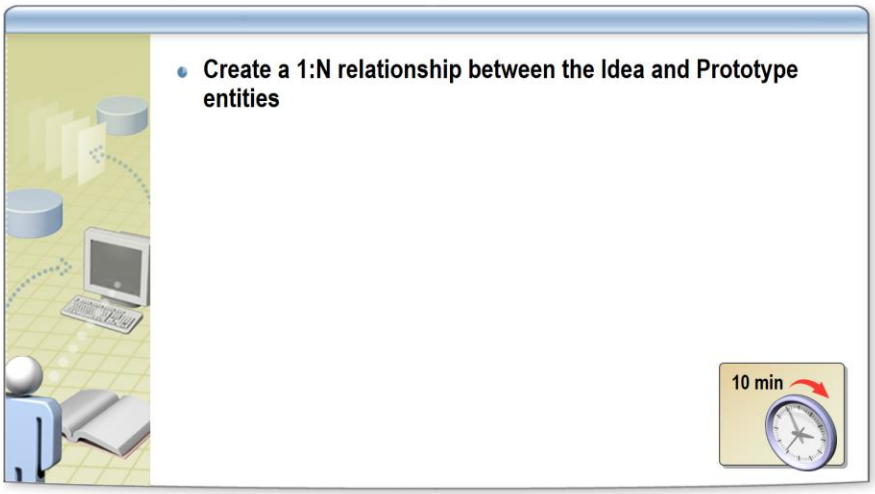
Entity Relationships

Contents

Lab 7.1 - Creating a 1:N Relationship	47
Lab 7.2 - Creating a N:N Relationship	49
Lab 7.3 - Customizing Relationship Mappings	53



Lab 7.1: Creating a 1:N Relationship

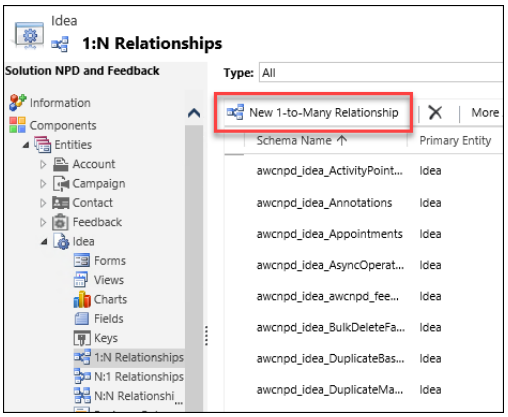


Scenario

Adventure Works Cycles requires that **Prototype** records are created always based on an **Idea**. In this lab you will create a 1:N relationship between the **Idea** and **Prototype** entities to meet this the business requirement.

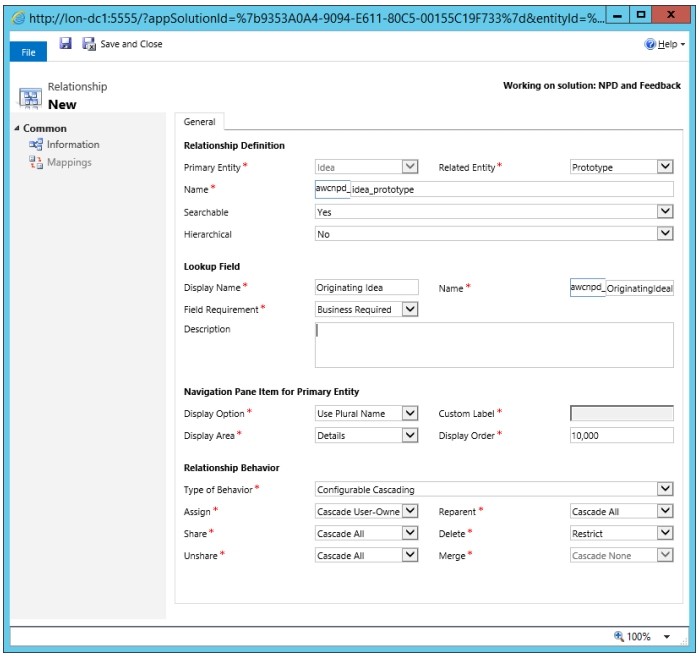
Create a 1:N relationship

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand **Entities**.
5. Expand the **Idea** entity and then click the **1:N Relationships** node.
6. On the **Action** toolbar click **New 1-to-Many Relationship**.



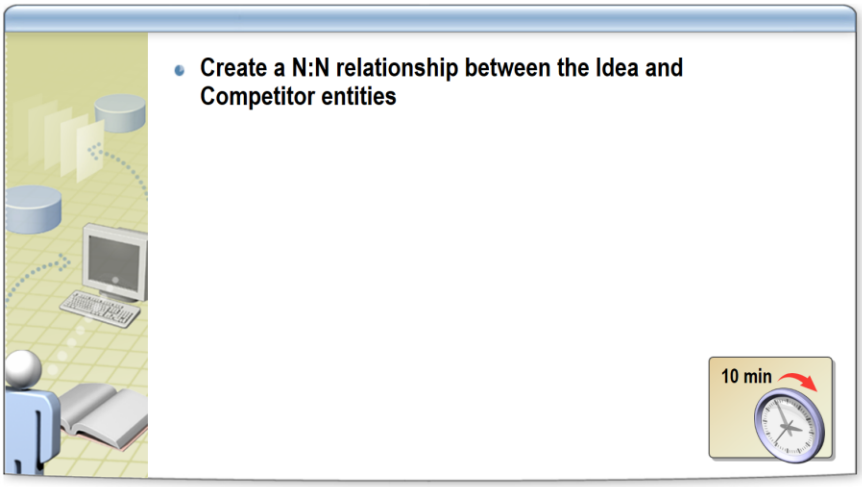
7. In the **Relationship** form, in the **Related Entity** list select **Prototype**.
8. In the **Name** textbox replace the existing text with **idea_prototype**.

9. In the **Display Name** field, type **Originating Idea**.
10. In the **Field Requirement** list, select **Business Required**.
11. In the **Type of Behavior** list, select **Configurable Cascading**.
12. In the **Assign** list, select **Cascade User Owned**.
13. In the **Delete** list, select **Restrict**.



14. Click **Save and Close**.
15. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.
16. Close the **Solution:NPD and Feedback** form.
17. Close **Internet Explorer**.

Lab 7.2: Creating a N:N Relationship



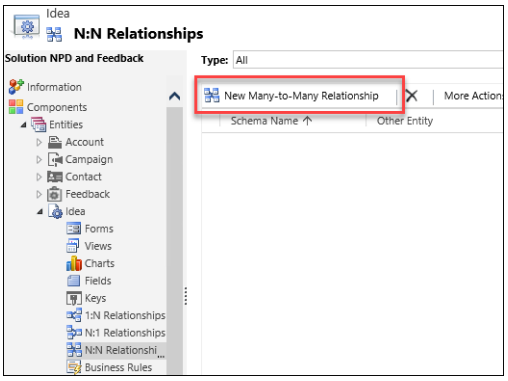
Scenario

When ideas are submitted, Adventure Works Cycles need to identify competitors to assess the feasibility of competing effectively against them. By tracking **Ideas** against **Competitors**, Adventure Works Cycles will steer product development in the most viable direction, for example whether innovation, price, quality or other factors are more likely to make a new product successful.

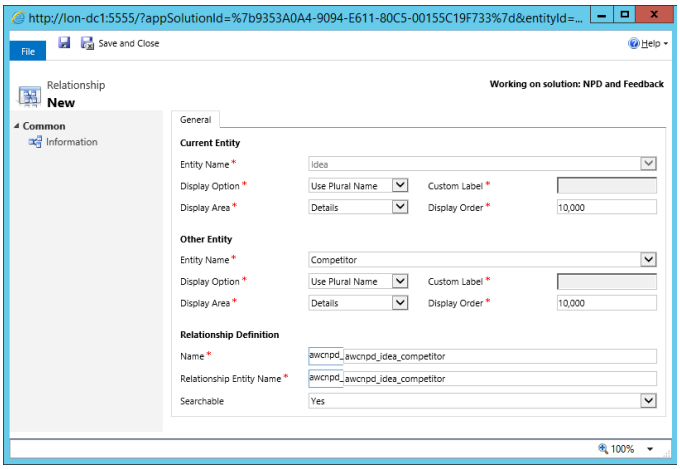
In this lab you will create a many-to-many relationship between the **Idea** entity and the built-in **Competitor** entity.

Create a N:N relationship

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand **Entities**.
5. Expand the **Idea** entity and then click the **N:N Relationships** node.
6. On the **Action** toolbar click **New Many-to-Many Relationship**.



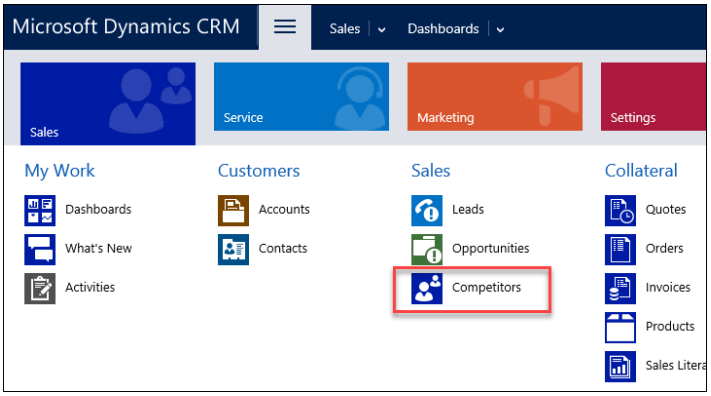
7. In the **Current Entity** section, in the **Display Option** list, select **Use Plural Name**.
8. In the **Other Entity** section, set the **Entity Name** list to **Competitor**.
9. In the **Other Entity** section, in the **Display Option** list, select **Use Plural Name**.



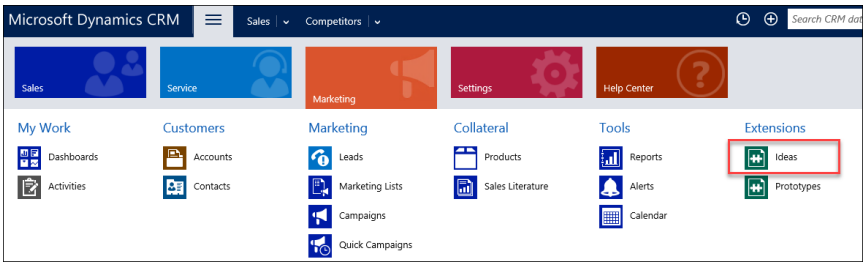
10. Click **Save and Close**.
11. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.
12. Close the **Solution:NPD and Feedback** form.
13. Close **Internet Explorer**.

Test the Relationship Functionality

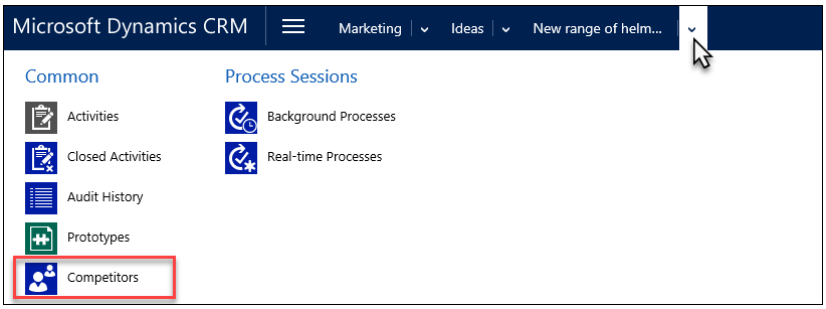
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Sales**, and then click **Competitors**.



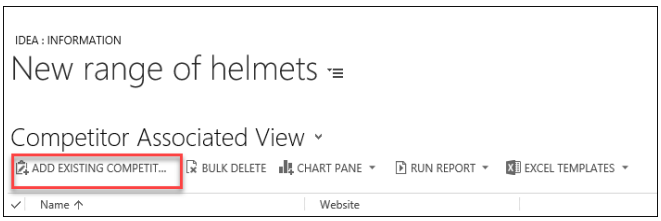
3. Click **New**.
4. In the **Name** textbox, type **Wingtip Toys**.
5. Click **Save and Close**.
6. Click the **Main** button, select **Marketing**, and then click **Ideas**.



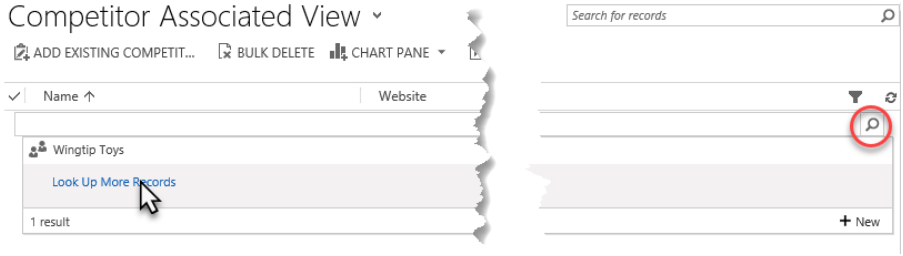
7. Click **New**.
8. Type **New range of helmets** in the **Name** field.
9. Click **Save**.
10. On the navigation bar, click the down arrow next to the idea you are working on and then click **Competitors**.



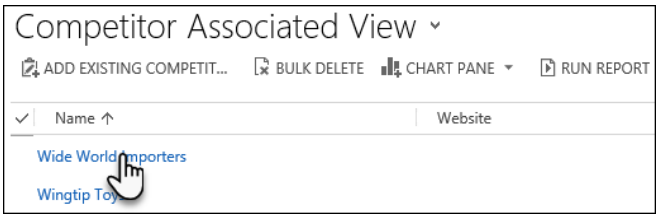
11. Click **Add Existing Competitor**.



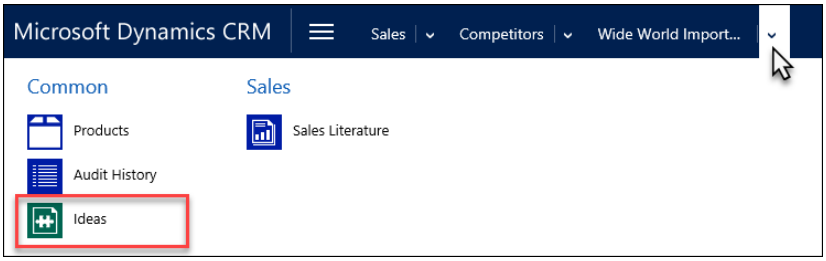
12. In the lookup entry enter **Wingtip** and press the Tab key.
13. Click **Add Existing Competitor**.
14. Click the lookup icon, and then click **Look Up More Records**.



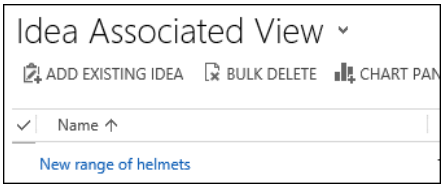
15. In the **Look Up Records** dialog box, click **New**.
16. In the **New Competitor** form, type **Wide World Importers** in the **Name** field and then click **Save**.
17. In the **Look Up Records** dialog box, click **Add**.
18. In the **Competitor Associated View** list, click **Wide World Importers**.



19. On the navigation bar, click the down arrow ⌄ next to the competitor you are working on and then click **Ideas**.



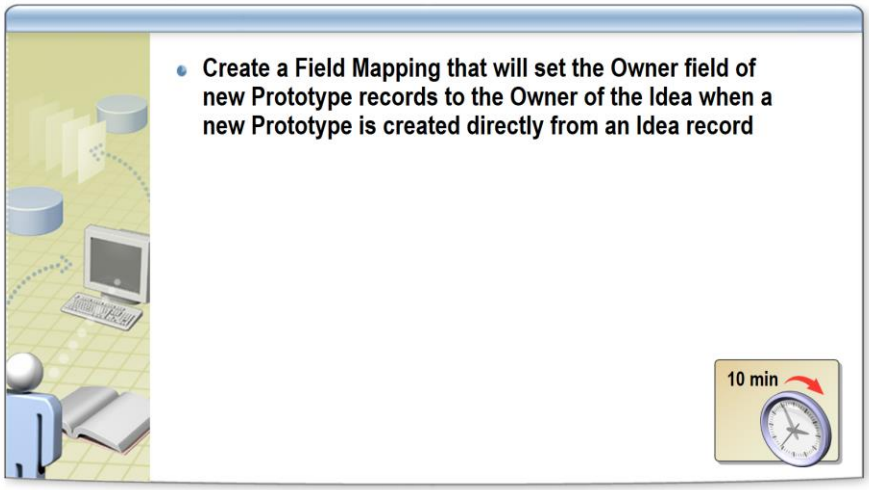
20. Verify **New range of helmets** is shown in the list of associated ideas.



N:N relationships are symmetrical.

21. Close **Internet Explorer**.

Lab 7.3: Customizing Relationship Mappings



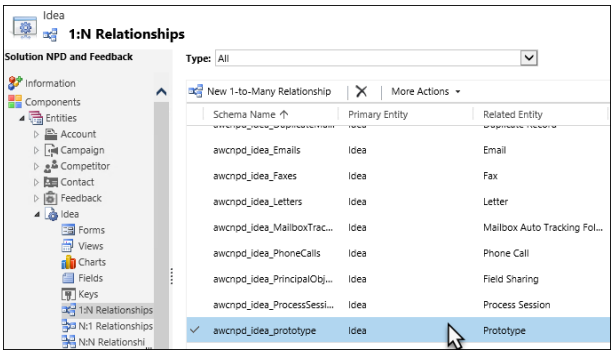
Scenario

Adventure Works requires to have specific information auto-populated when new prototypes are created for specific ideas. Generally, the person who is the owner of a specific idea is also the owner of its related prototypes.

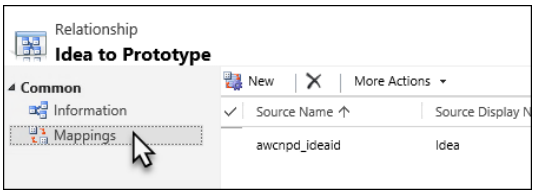
In this Lab you will create a field mapping that will set the owner field of new prototype records to the owner of the originating idea when a new prototype is created directly from an idea record.

Create a Field Mapping

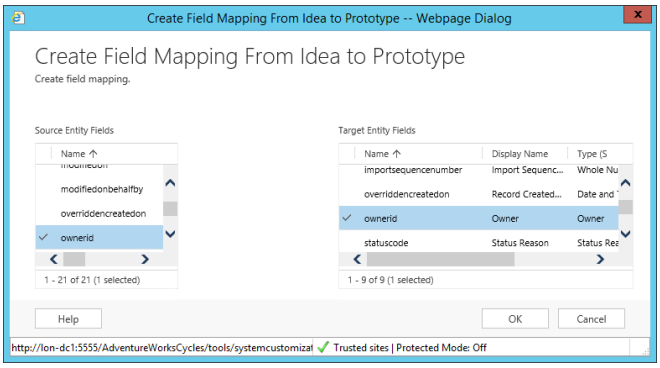
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand **Entities**.
5. Expand the **Idea** entity and then click the **1:N Relationships** node.
6. Locate and double-click the relationship where **Prototype** is the **Related Entity**.



7. In the **Idea to Prototype** relationship form, in the navigation pane, click **Mappings**.



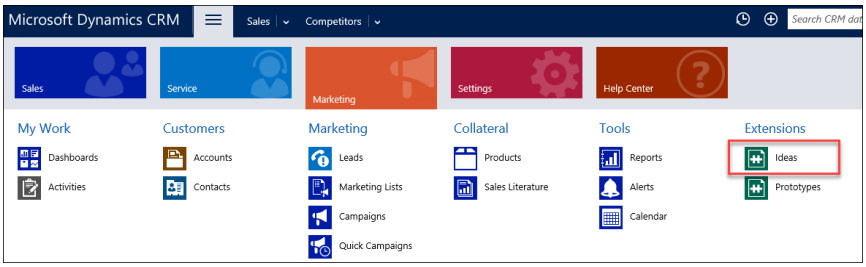
8. On the **Action** toolbar, click **New**.
9. In the **Source Entity Fields** list, select **ownerid**.
10. In the **Target Entity Fields** list, select **ownerid**.



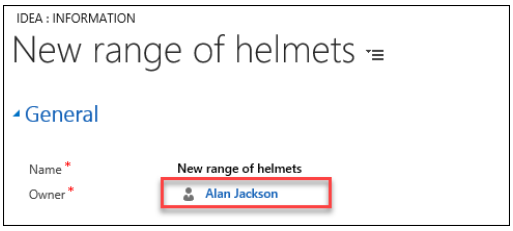
11. Click **OK**.
12. In the **Idea to Prototype** relationship form, click **Save and Close**.
13. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.
14. Close the **Solution:NPD and Feedback** form.
15. Close **Internet Explorer**.

Test the Filed Mapping Functionality

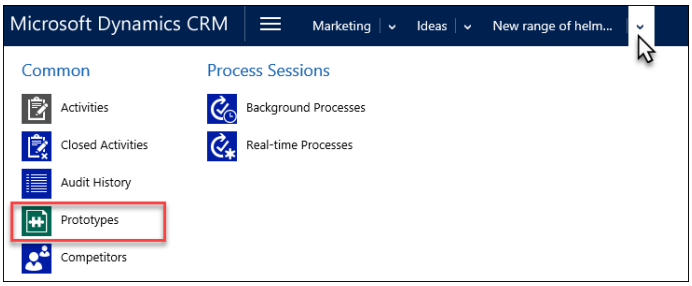
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Marketing**, and then click **Ideas**.



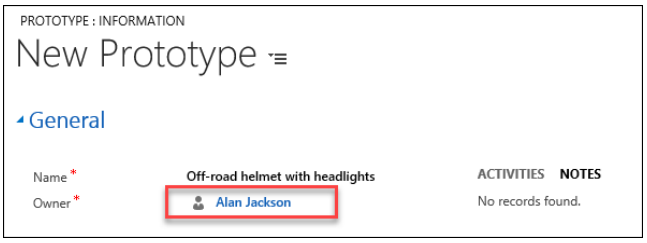
3. Open the **New range of helmets** idea record.
4. Change the **Owner** field to **Alan Jackson**.



5. On the navigation bar, click the down arrow next to the idea record you are working on and then click **Prototypes**.



6. Click **Add New Prototype**.
7. In the **New Prototype** form, type **Off-road helmet with headlights** in the **Name** field.
8. Verify that the owner of the new prototype record matches the owner of the originating idea.



9. Click **Save and Close**.
10. Close **Internet Explorer**.

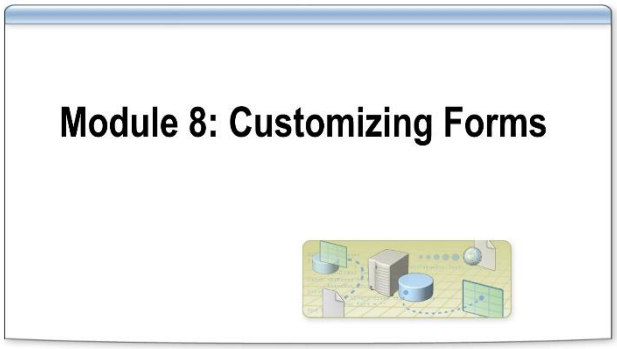
Module 8

Customizing Forms

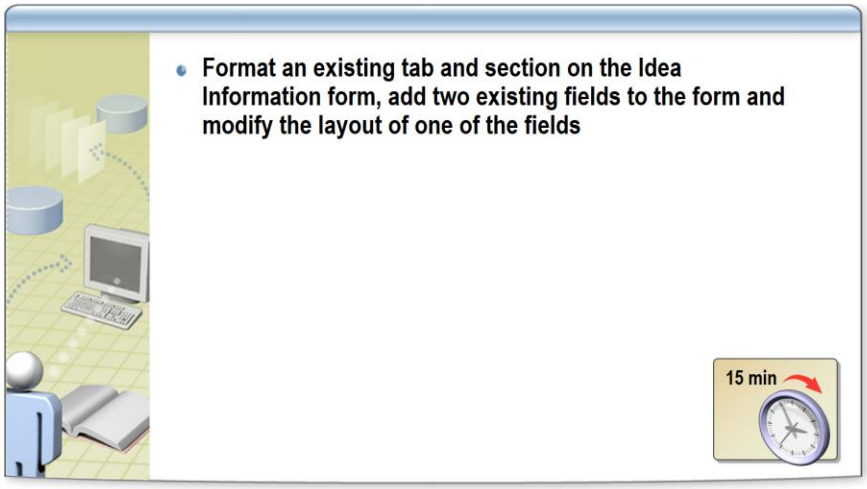
Contents

Lab 8.1 - Adding Fields to Forms 57

Lab 8.2 - Creating a Role-Based Form 66



Lab 8.1: Adding Fields to Forms

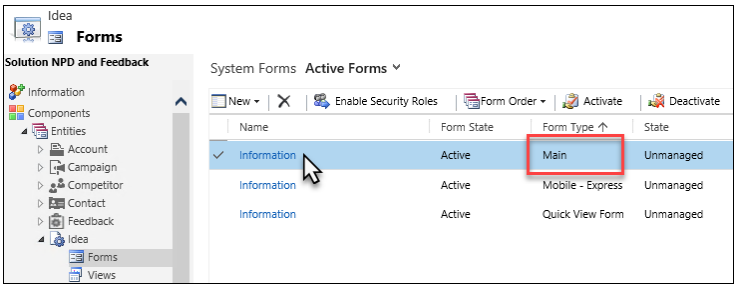


Scenario

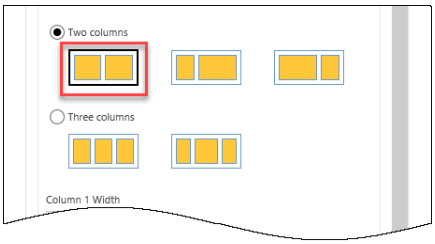
In this lab you will add fields and modify the layout of the **Idea** main form. You also will modify the **Prototype** main form.

Add Fields to a Form

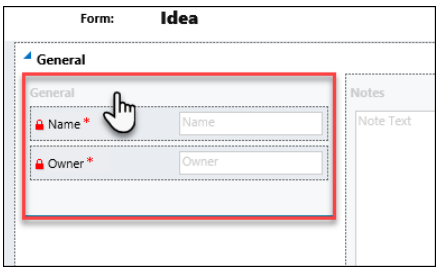
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand **Entities**.
5. Expand the **Idea** entity and then click the **Forms** node.
6. Double-click the **Main Information** form.



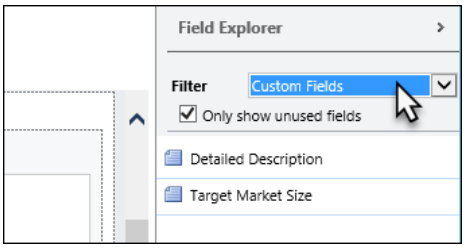
7. Double-click the **General** tab.
8. In the **Tab Properties** dialog box, click the **Formatting** tab.
9. In the **Layout** section, under **Two Columns**, click the first column icon from the left.



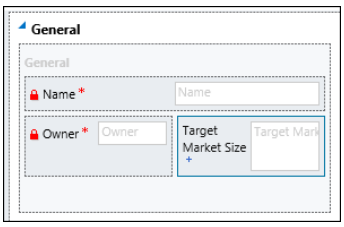
10. Click **OK**.
11. Double-click the **General** section.



12. In the **Section Properties** dialog box, click the **Formatting** tab.
13. In the **Layout** section, click **Two Columns**.
14. Click **OK**.
15. Double-click the **Name** field on the form.
16. In the **Field Properties** dialog box, click the **Formatting** tab.
17. In the **Layout** section, click **Two columns**.
18. Click **OK**.
19. In the **Field Explorer** pane, in the **Filter** list, select **Custom Fields**.



20. In the **Field Explorer** pane double-click the **Target Market Size** field.
21. Drag the **Target Market Size** field it next to the **Owner** field.

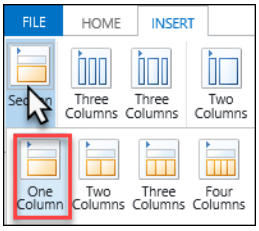


22. Double click the **Target Market Size** field.
23. In the **Field Properties** dialog box, on the **Display** tab, replace the current label to **Target Market**.
24. Click **OK**.
25. In the **Field Explorer** pane, double-click the **Detailed Description** field.

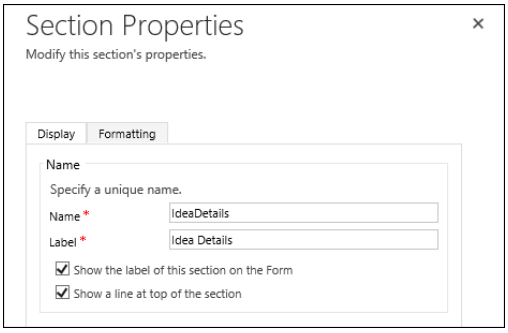
26. Drag the **Detailed Description** field under the **Owner** field.
27. Double-click the **Detailed Description** field.
28. In the **Field Properties** dialog box, click the **Formatting** tab.
29. In the **Layout** section, click **Two columns**.
30. In the **Row Layout** section, in **Number of Rows** textbox, type **5**.
31. Click **OK**.

Add a new Section

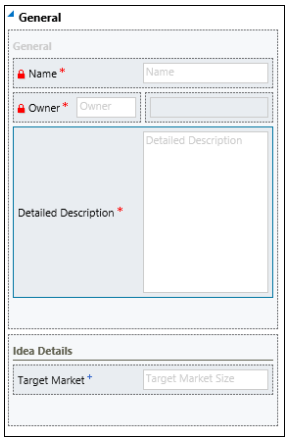
1. On the form editor ribbon, click the **Insert** tab.
2. Click **Section** and then click **One Column**.



3. Double-click the new section.
4. In the **Section Properties** dialog box, in the **Name** field, replace the existing text with **IdeaDetails**.
5. Change the **Label** textbox to **Idea Details**.
6. Select **Show the label of this section on the form** and **Show a line at the top of the section**.

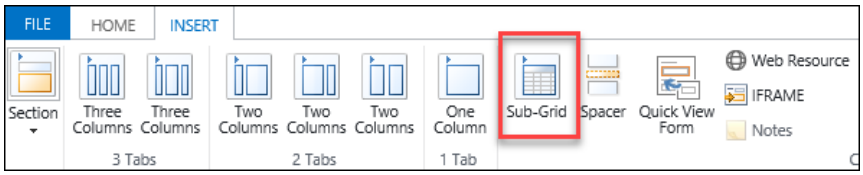


7. Click **OK**.
8. In the **Field Explorer**, click the **Target Market** field and drag it into the **Idea Details** section.

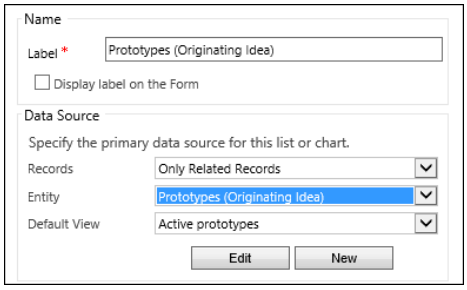


Add a new Sub-Grid

1. On the form editor ribbon, click the **Insert** tab.
2. Click **Section** and then click **One Column**.
3. Double-click the new section.
4. In the **Section Properties** dialog box, in the **Name** field, replace the existing text with **Prototypes**.
5. Change the **Label** textbox to **Prototypes**.
6. Select **Show the label of this section on the form** and **Show a line at the top of the section**.
7. Click **OK**.
8. On the form editor ribbon, on the **Insert** tab, click **Sub-Grid**.



9. Type **Prototypes** in the **Name** textbox.
10. In the **Data Source** section, in the **Entity** list, select **Prototypes (Originating Idea)**.
11. Verify that **Only Related Records** is selected in the **Records** list.

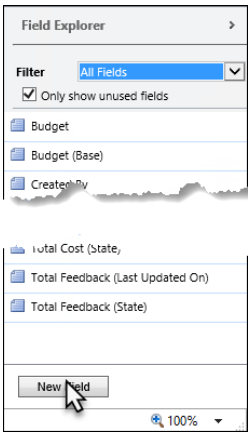


12. In the **Section Properties** dialog box, click **Set**.
13. On the form editor ribbon, click the **Home** tab and then click **Save**.
14. Click **Publish**.
15. Click **Save and Close**.

16. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, under **Entities**, expand the **Feedback** entity and then click the **Forms** node.
17. Double-click the **Main Information** form.
18. In the **Field Explorer** pane, in the **Filter** list, select **Custom Fields**.
19. Double-click the **Cost** field.
20. Double-click the **Satisfaction Rating** field.
21. Click **Save**.
22. Click **Publish**.
23. Click **Save and Close**.

Add a new Field to an Entity from the Form Editor

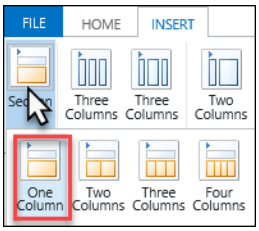
1. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, under **Entities**, expand the **Prototype** entity and then click the **Forms** node.
2. Double-click the **Main Information** form.
3. In the **Field Explorer** pane, in the **Filter** list, select **Custom Fields**.
4. Double-click the **Originating Idea** field.
5. Double-click the **Total Feedback** field.
6. Double-click the **Total Cost** field.
7. Click **Save**.
8. In the **Field Explorer** pane, in the **Filter** list, select **All Fields**.
9. In the **Field Explorer** pane, click **New Field**.



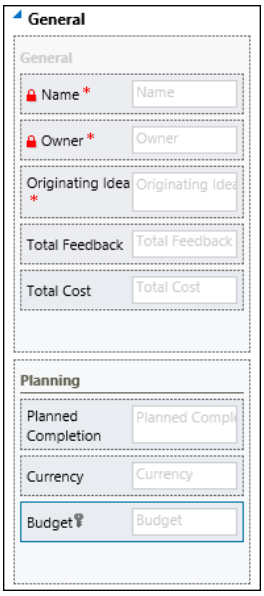
10. In the **New for Prototype** form, type **Planned Completion** in the **Display Name** field.
11. In the **Data Type** list, select **Date and Time**.
12. Click the **Save and Close**.

Add a new Section

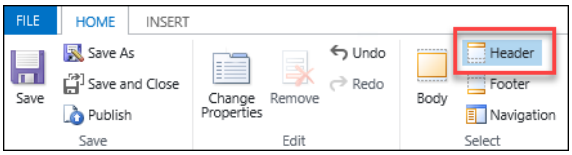
1. On the form editor ribbon, click the **Insert** tab.
2. Click **Section** and then click **One Column**.



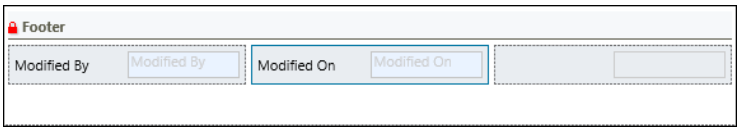
3. Double-click the new section.
4. In the **Section Properties** dialog box, in the **Name** field, replace the existing text with **Planning**.
5. Change the **Label** textbox to **Planning**.
6. Select **Show the label of this section on the form** and **Show a line at the top of the section**.
7. Click **OK**.
8. In the **Field Explorer** pane, double-click the **Planned Completion** field.
9. Double-click the **Currency** field.
10. Double-click the **Budget** field.



11. In the **General** section, double-click the **Originating Idea** field.
12. In the **Field Properties** dialog box, in the **Field Behavior** section, select the **Field is read-only** check box.
13. Click **OK**.
14. On the form editor ribbon, click the **Home** tab.
15. On the **Home** tab, in the **Select** group, click **Header**.



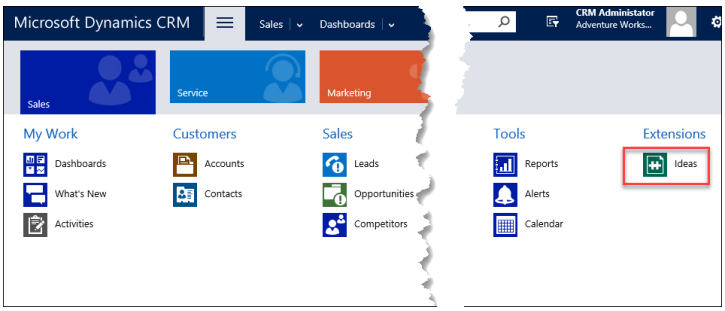
16. In the **Field Explorer** pane, double-click the **Owner** field.
17. On the **Home** tab, in the **Select** group, click **Body**.
18. Click the **Owner** field and then on the **Home** tab, in the **Edit** group, click **Remove**.
19. On the **Home** tab, in the **Select** group, click **Footer**.
20. In the **Field Explorer** pane, double-click the **Modified By** field.
21. Drag the **Modified On** field from the **Field Explorer** pane and drop it into the middle position in the Footer.



22. On the form editor ribbon, click **Save**, and then click **Publish**.
23. Click **Save and Close**.
24. Close the **Solution:NPD and Feedback** form.
25. Close **Internet Explorer**.

Test the forms

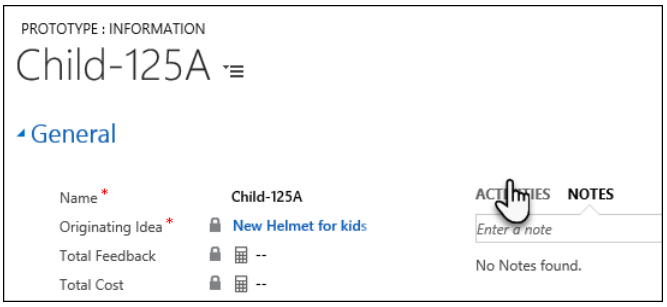
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Sales**, and then click **Ideas**.



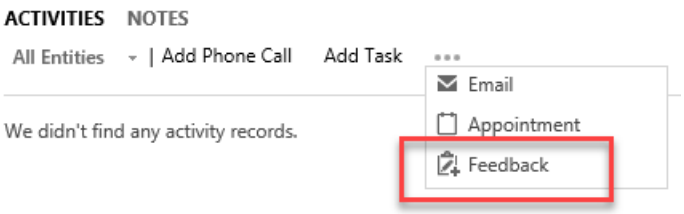
3. Click **New**.
4. In the **Name** field, type **New Helmet for Kids**.
5. In the **Detailed Description** field type **This new helmet will be lighter and stronger**.
6. In the **Target Market** field, enter **100**.
7. Click **Save**.

   Notice the Prototypes Sub-Grid is now Active.
8. Click the plus sign icon button to add a new prototype.

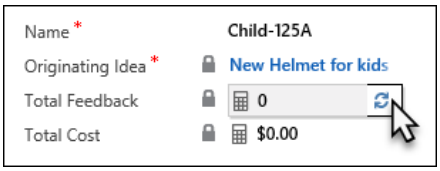
9. In the **Name** field, enter **Child-125A**.
10. In the **Planned Completion** field, select a date in the near future.
11. In the **Budget** field, type **10000**.
12. Click **Save**.
13. Click the **Activities** tab of the **Social Pane**.



14. Click the **Add more activities** button (…), and select **Feedback**.

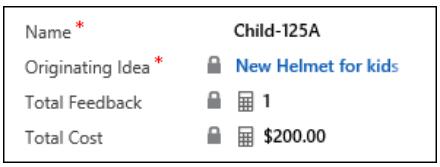


15. In the **Subject** field, type **Buckle Sticks**.
16. In the **Cost** field, type **200.00**.
17. Click **Save and Close**.
18. Hover over the **Total Feedback** rollup field on the form to see the time of the last rollup calculation.
19. Refresh the **Total Feedback** rollup value by clicking the **Refresh** icon next to the **Total Feedback** field.



The Total Feedback field should now display 1.

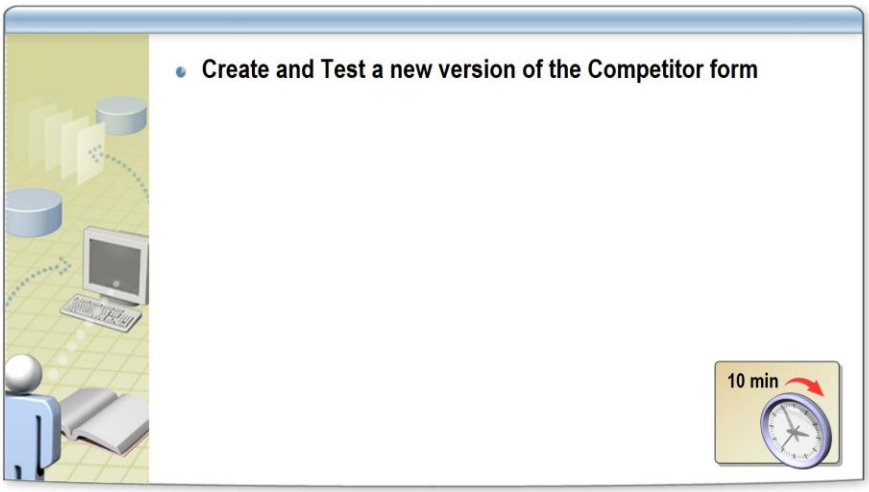
20. Click the **Refresh** icon next to the **Total Cost** field.



The Total Cost field should now display 200.00.

21. Close the **Prototype** form.
22. Close **Internet Explorer**.

Lab 8.2: Creating a Role-Based Form



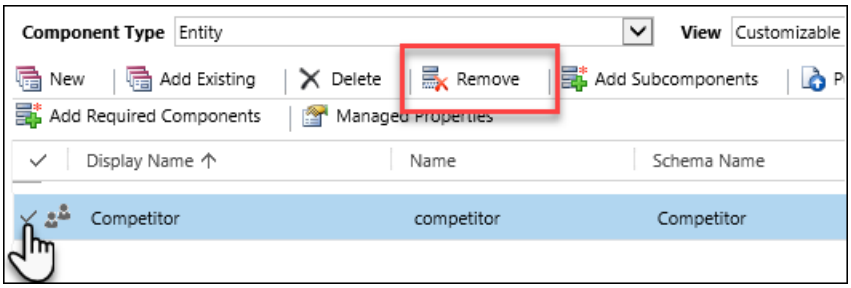
Scenario

The Marketing Manager at Adventure Works Cycles has asked for some changes to be made in the Competitor form to support the new product development (NPD) process. Users managing NPD need to see information about related Ideas on Competitor records, but this is not useful to everyone.

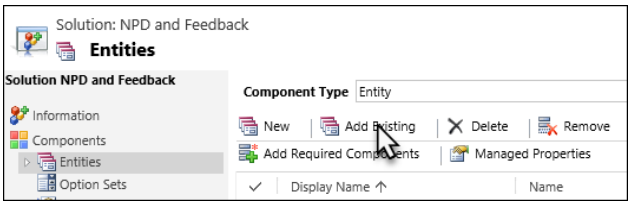
In this lab you will create a second form for the NPD users to meet their requirements without affecting other departments.

Add the Competitor Entity to a Solution

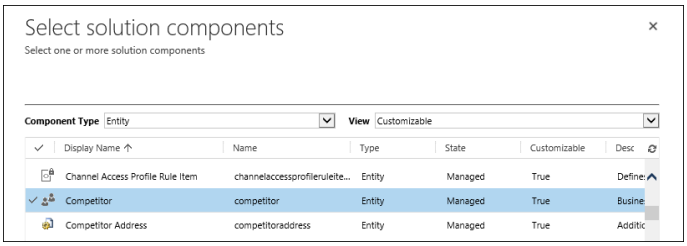
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions** under the **Customization** heading.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, click **Entities**.
5. If the **Competitor** entity is already in the list, select the **Competitor** entity, and then on the **Action** toolbar, click **Remove**.



6. On the **Action** toolbar, click **Add Existing**.



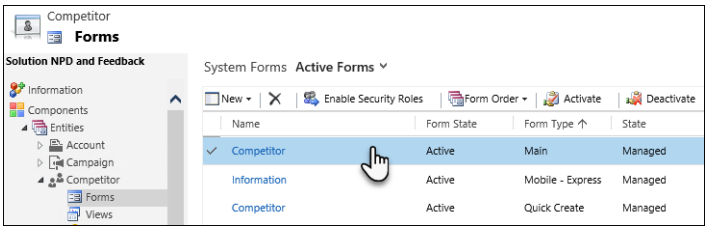
7. In the **Select solution components** dialog box, click the left side of the **Competitor** entity.



8. Click **OK**.
9. Click the **Add All Assets** check box.
10. Click **Finish**.
11. Click the **Save** button.

Create a Copy of an Existing Form

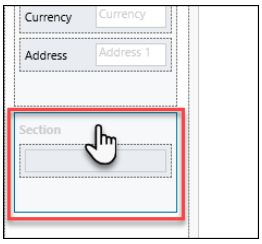
1. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand **Entities**.
2. Expand the **Competitor** entity and then click the **Forms** node.
3. Double-click the **Main Information** form.



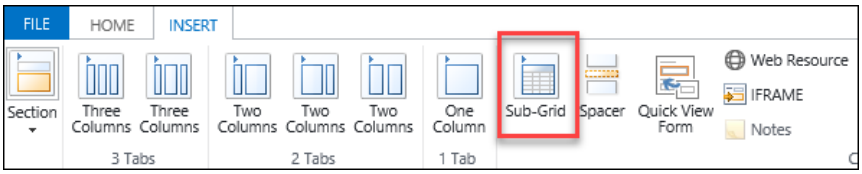
4. On the form editor ribbon, click **Save As**.
5. In the **Save As** dialog box, change the **Name** to **NPD**.
6. Type **A form for the NPD team** in the **Description** textbox.
7. Click **OK**.

Add a Sub-Grid

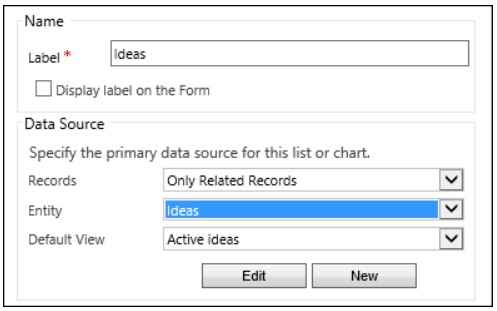
1. On the form editor ribbon, click the **Insert** tab.
2. Click **Section** and then click **One Column**.
3. Double-click the new section.



4. In the **Section Properties** dialog box, in the **Name** field, replace the existing text with **Ideas**.
5. Change the **Label** textbox to **Ideas**.
6. Select **Show the label of this section on the form** and **Show a line at the top of the section**.
7. Click **OK**.
8. On the form editor ribbon, on the **Insert** tab, click **Sub-Grid**.



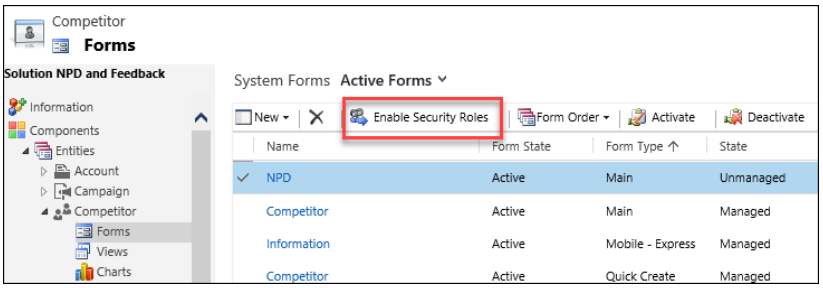
9. Type **Ideas** in the **Name** textbox.
10. In the **Data Source** section, in the **Entity** list, select **Ideas**.
11. Verify that **Only Related Records** is selected in the **Records** list.



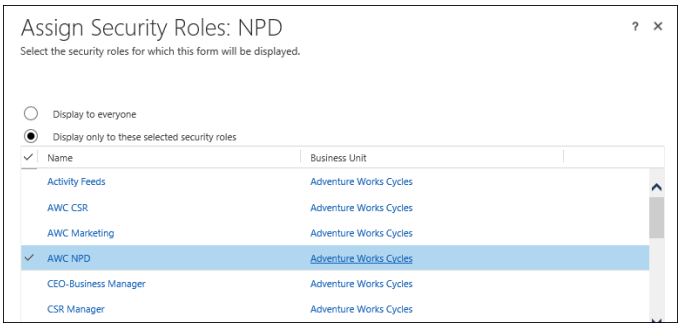
12. In the **Section Properties** dialog box, click **Set**.
13. On the form editor ribbon, click the **Home** tab and then click **Save**.
14. Click **Publish**.
15. Click **Save and Close**.

Assign the new form to a Security Role

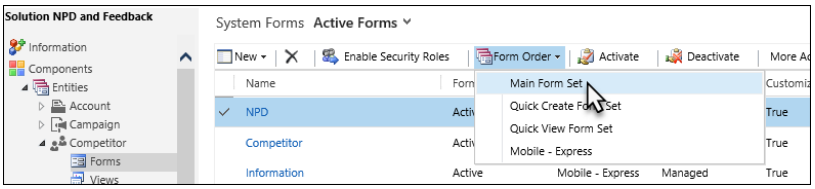
1. In the **Solution:NPD and Feedback** form, in the **System Forms** list of the **Competitor** entity, select the **NPD** form.
2. On the **Action** toolbar, click **Enable Security Roles**.



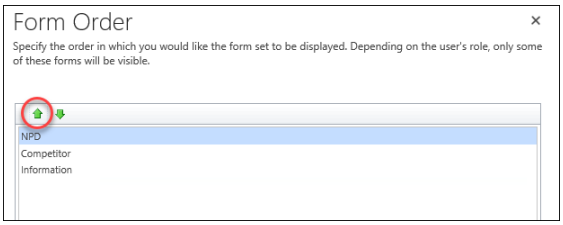
3. In the **Assign Security Roles** dialog box, select the **AWC NPD** role.



4. Click **OK**.
5. On the **Action** toolbar, click **Form Order**, and then click **Main Form Set**.



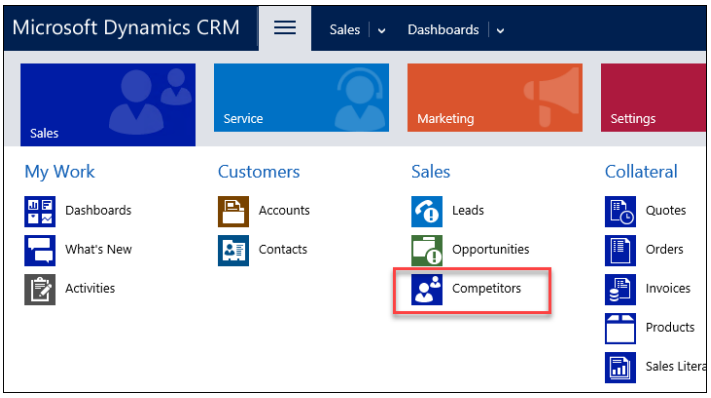
6. Move the **NPD** form to the top of the list by selecting the form and clicking the up arrow above the list.



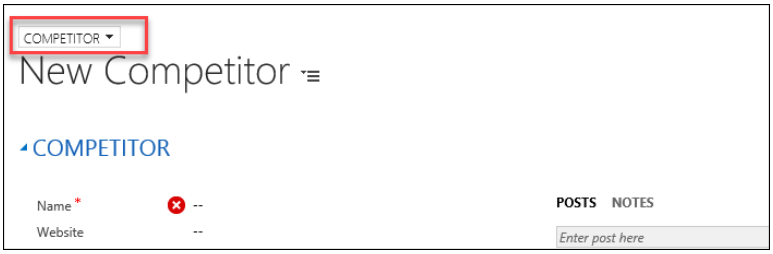
7. Click **OK**.
8. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.
9. Close the **Solution:NPD and Feedback** form.
10. Close **Internet Explorer**.

↙ Test the new Form

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Sales**, and then click **Competitors**.



3. Click **New**.
4. Verify that the form selector appears on the **New Competitor** form.



5. Click the form selector and then click the **NPD** form.

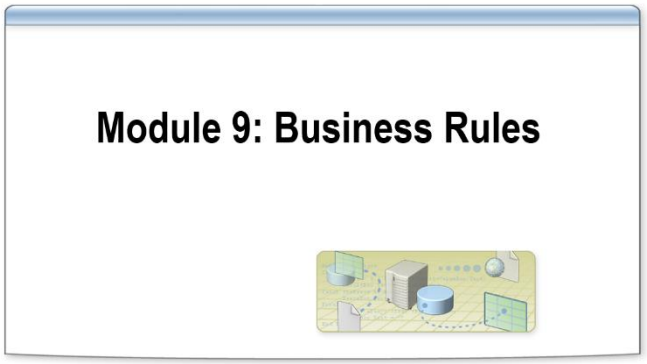
6. Close **Internet Explorer**.

Module 9

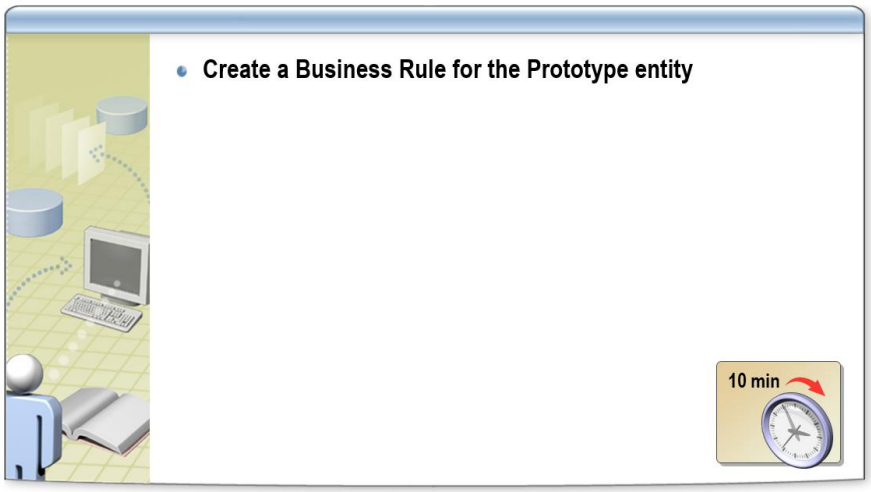
Business Rules

Contents

Lab 9.1 - Creating a Business Rule 73



Lab 9.1: Creating a Business Rule



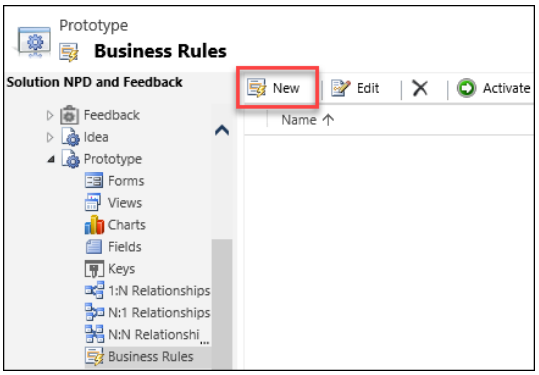
Scenario

After creating a Prototype, users must not be able to relate it to a different idea than the original one. However, if you create a Prototype from anywhere else, the record cannot be saved because the field is both required and read-only.

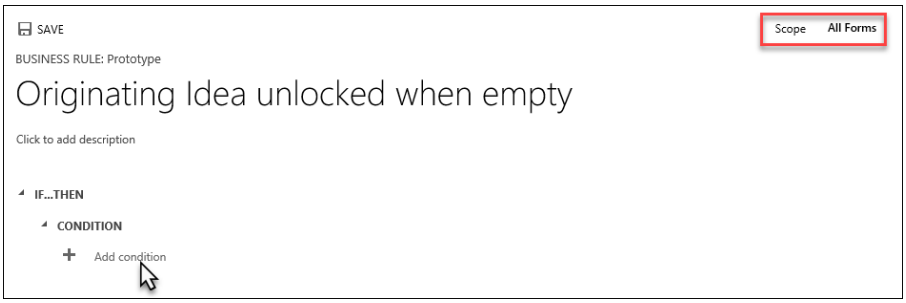
In this lab, you will create a Business Rule that enables the **Originating Idea** field if it does not contain data.

Create a new Business Rule

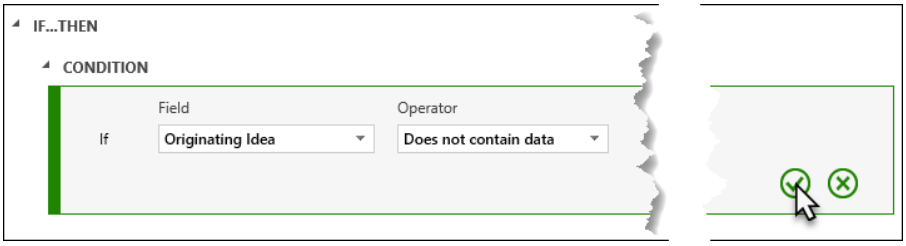
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions**.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand **Entities**.
5. Expand the **Prototype** entity and then click the **Business Rules** node.
6. On the **Action** toolbar, click **New**.



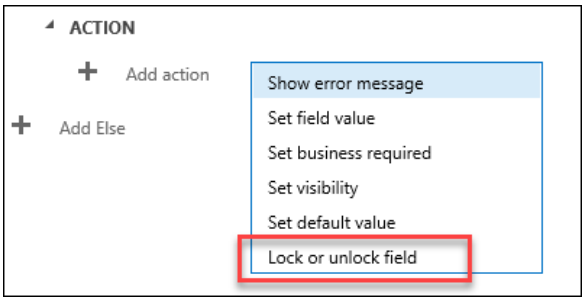
7. In the **Rule name** field, type **Originating Idea unlocked when empty**.
8. Verify that at the upper right side corner, the **Scope** list is set to **All Forms**.
9. In the **Condition** section, click the plus sign to add a condition.



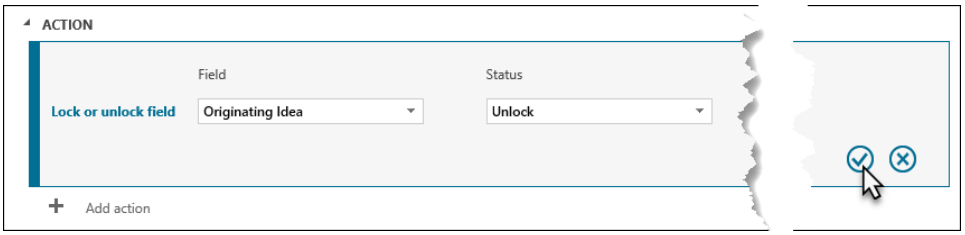
10. In **Field**, select **Originating Idea**.
11. In the **Operator** list, select **Does not contain data**.
12. Click the green check mark icon to save the condition.



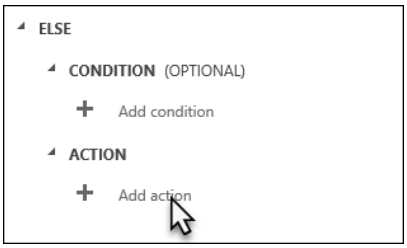
13. In the **Action** section, click the plus sign to add an action.
14. In the list of actions, select **Lock or unlock field**.



15. In **Field**, select **Originating Idea**.
16. In **Status**, select **Unlock**.
17. Click the blue check mark icon to save the action.



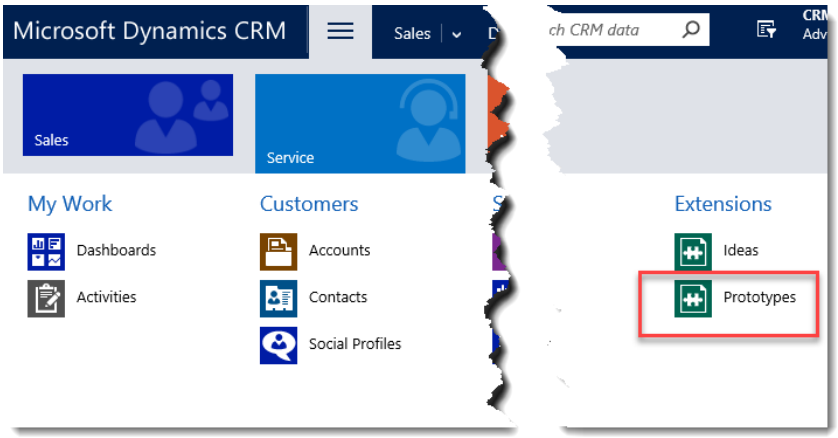
18. Click **Add Else**.
19. Click **Add action** under the **Action** section.



20. In the list, select **Lock or Unlock Field**.
21. In **Field**, select **Originating Idea**.
22. In **Status**, select **Lock**.
23. Click the blue check mark icon to save the action.
24. Click **Save**.
25. Click **Activate**.
26. In the **Process Activate Confirmation** dialog box, click **Activate**.
27. Close the **Business Rule** designer.
28. Close the **Solution:NPD and Feedback** form.

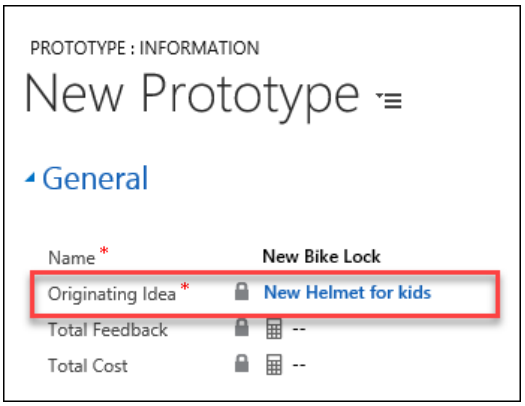
Test the new Business Rule

1. Click the **Main** button, select **Services**, and then click **Prototypes**.



2. Click **New**.
3. In **Name**, enter **New Bike Lock**.

   Notice the Originating Idea field is unlocked.
4. In the **Originating Idea** field, click the lookup icon and then select any existing Idea record.



Notice that a padlock appears next to the Originating Idea field and the field is locked.

5. Click **Save**.

   Notice that the field continues to display a padlock icon since it is still locked.

6. Close **Internet Explorer**.

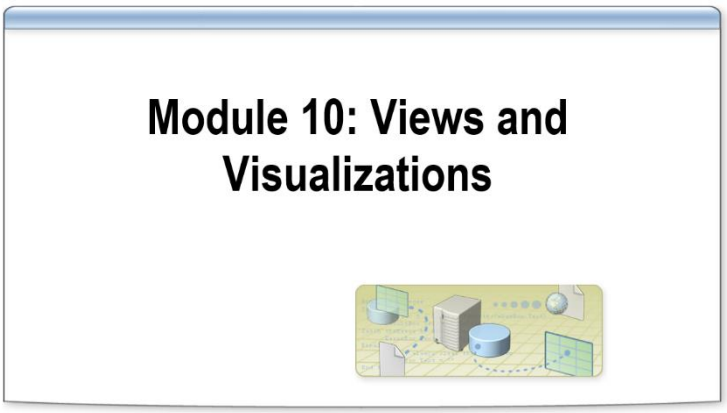
Module 10

Views and Visualizations

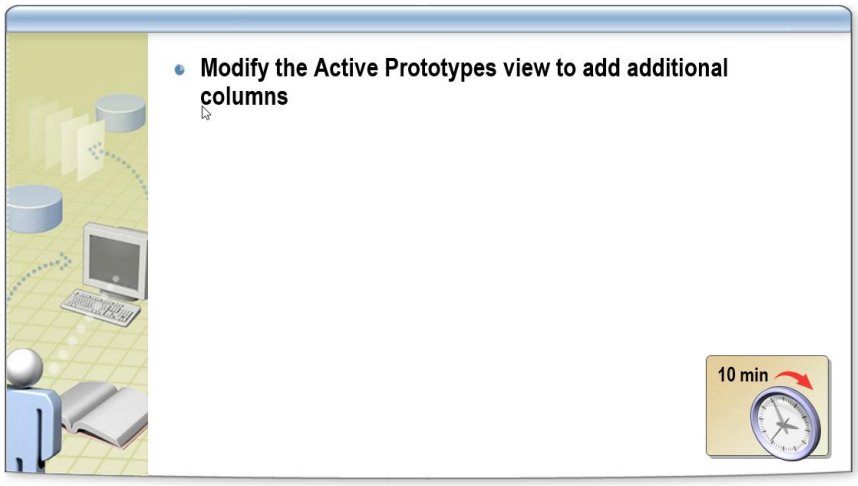
Contents

Lab 10.1 - Modifying a View 79

Lab 10.2 - Creating a Custom View 82



Lab 10.1: Modifying a View

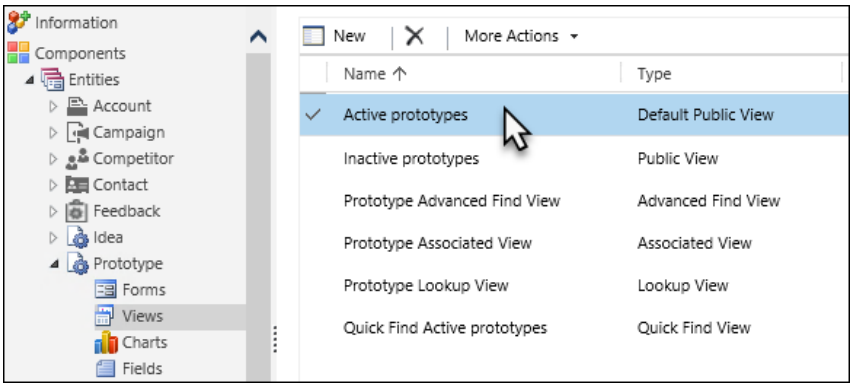


Scenario

In this lab, you will modify the **Active Prototypes** view to add additional columns.

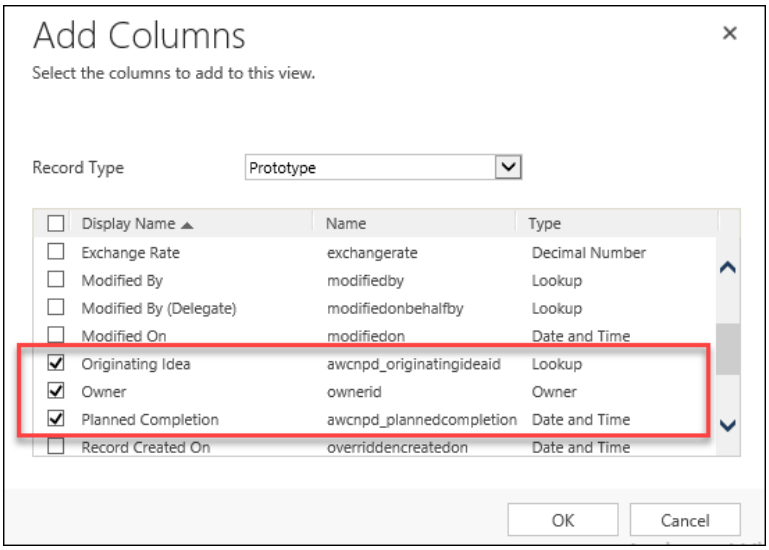
Modify a View

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions**.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand **Entities**, expand **Prototype**, and then click **Views**.
5. Double-click on the **Active prototypes** view.

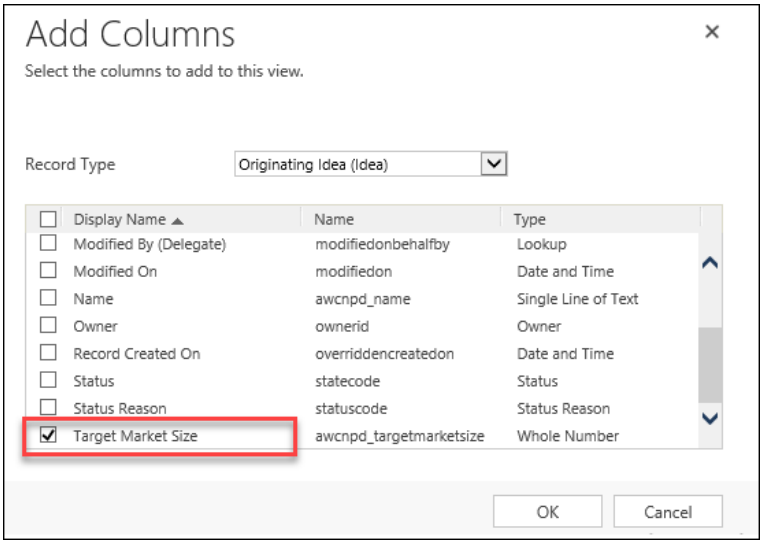


6. Click the **Created On** column and then click **Remove** in the **Common Tasks** area.
7. Click **OK** to confirm the deletion.
8. Click the **Name** column and then click **Change Properties** in the **Common Tasks** area.
9. Select **200px** as the column width.

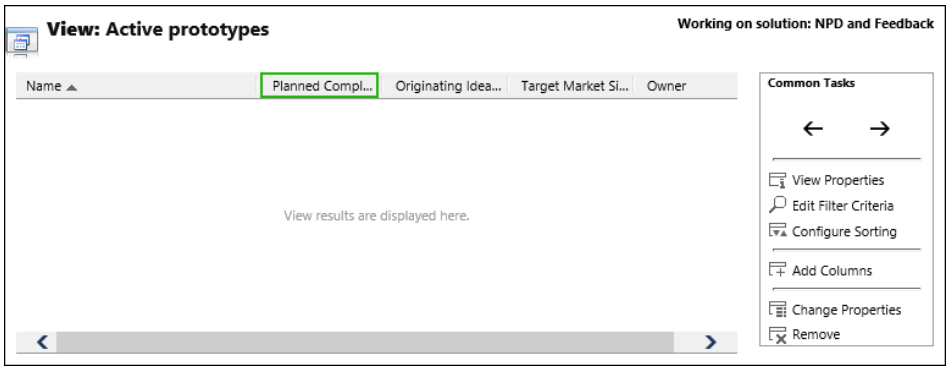
10. Click **OK**.
11. Click **Add Columns**.
12. In the **Add Columns** dialog box, select **Originating Idea**, **Planned Completion**, and **Owner**.



13. Click **OK**.
14. Click **Add Columns**.
15. In the **Record Type** field at the top of the **Add Columns** dialog box, click the drop-down arrow and select **Originating Idea (Idea)**.
16. Select **Target Market Size**.

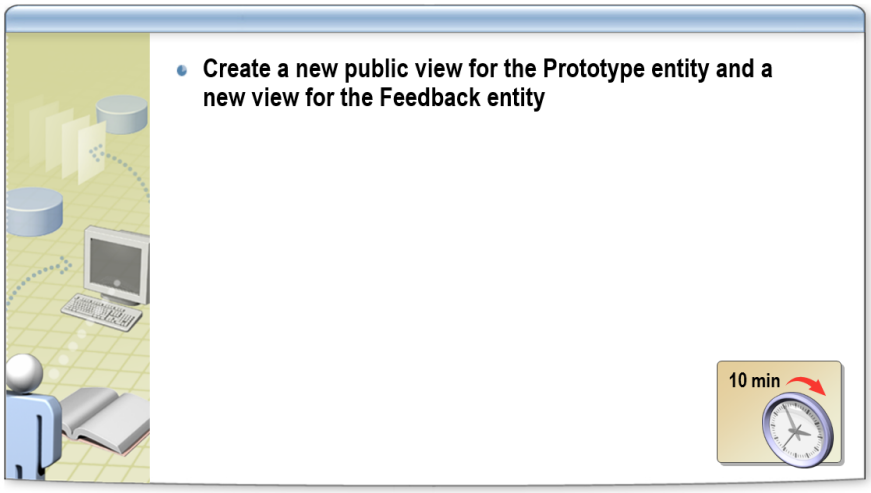


17. Click **OK**.
18. In the view structure, click the **Planned Completion** column heading.
19. In the **Common Tasks** area, click the green left arrow as needed to move the **Planned Completion** column to the immediate right of the **Name** column.



20. Click **Save and Close** on the toolbar.
21. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.
22. Close the **Solution:NPD and Feedback** form.
23. Close **Internet Explorer**.

Lab 10.2: Creating a Custom View

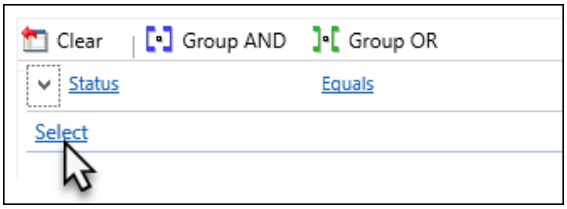


Scenario

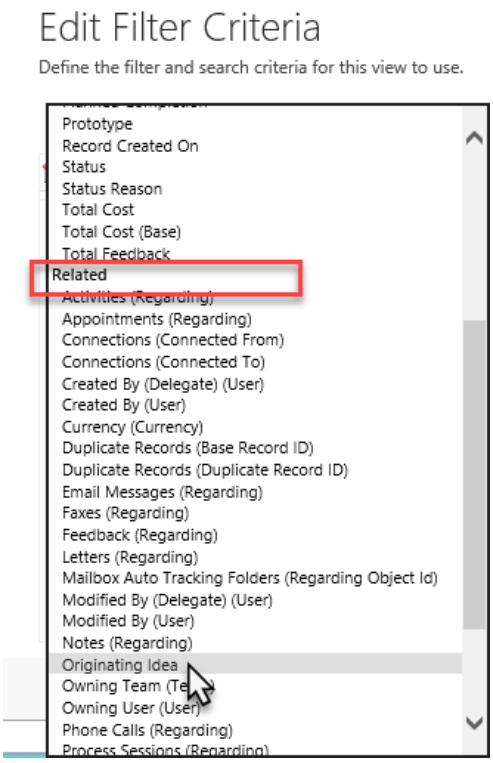
In this lab, you will create new custom views for the **Prototype** and **Feedback** entities.

Create a Custom View for the Prototype Entity

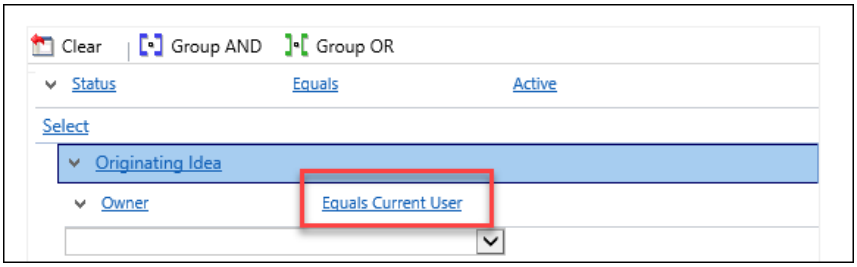
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions**.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand **Entities**, expand **Prototype**, and then click **Views**.
5. Double-click on the **Active prototypes** view.
6. Click **Save As**.
7. Change the **Name** field to **All Prototypes for My Ideas** and then click **OK**.
8. To customize the filter properties, click **Edit Filter Criteria** in the **Common Tasks** area.
9. In the **Edit Filter Criteria** dialog box, click **Select**.



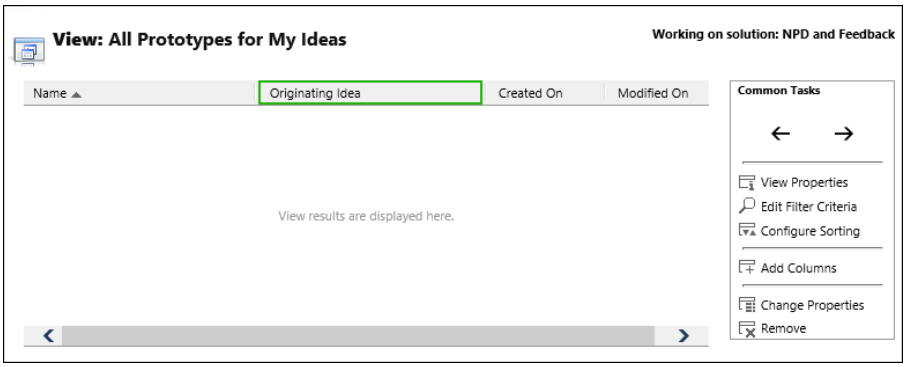
10. At the lower part of the list, under the **Related** section, click **Originating Idea**.



11. Underneath **Originating Idea**, click **Select**.
12. From the list, click **Owner**.
13. Make sure that the selected value to the right of the **Owner** field is **Equals current user**.



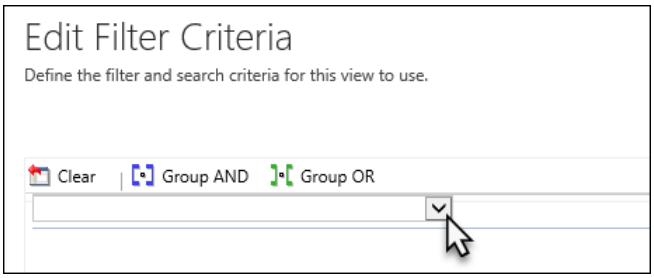
14. Click **OK**.
15. To remove the **Owner** field, click on its column heading and then click **Remove** in the **Common Tasks** area. Click **OK** to confirm the deletion.
16. Click the **Target Market Size** column and then click **Remove** in the **Common Tasks** area. Click **OK** to confirm the deletion.
17. Click the **Planned Completion** column and then click **Remove** in the **Common Tasks** area. Click **OK** to confirm the deletion.
18. In the **Common Tasks** area, click **Add Columns.**
19. The **Add Columns** dialog box now displays the list of **Prototype** attributes.
20. Select **Created On** and **Modified On** and then click **OK**.
21. Click the **Originating Idea** column and then click **Change Properties** in the **Common Tasks** area.
22. In the **Change Column Properties** dialog box, select **200px** and click **OK**.



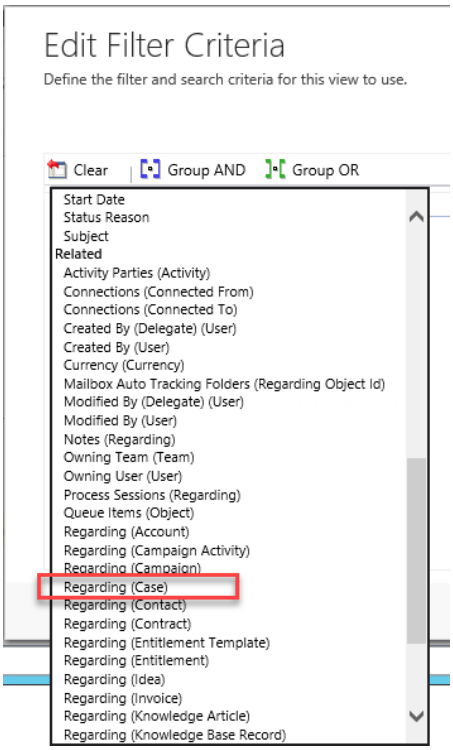
23. Click **Save and Close**.
24. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.

Create a Custom View for the Feedback Entity

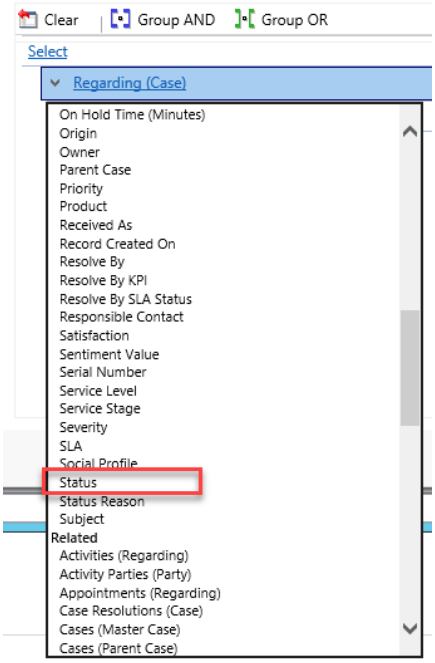
1. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, under **Entities**, expand the **Feedback** entity and then click the **Views** node.
2. Click **New**.
3. In the **Name** field type **Service Feedback Last 3 Months** and then click **OK**.
4. Click **Edit Filter Criteria** in the **Common Tasks** area.
5. In the **Edit Filter Criteria** dialog box, click the drop-down arrow.



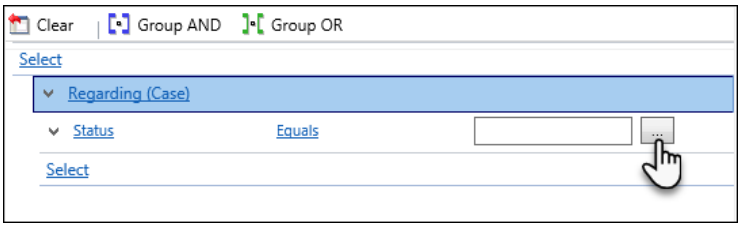
6. At the lower part of the list, under the **Related** section, click **Regarding (Case)**.



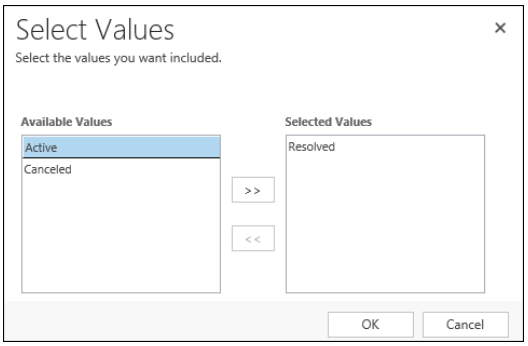
7. Underneath **Regarding (Case)**, click the **Select** control, and then click **Status**.



8. Hold your mouse over the **Enter Value: Status** link.
9. The link is converted into a field followed by an ellipsis button.
10. Click the ellipsis button.

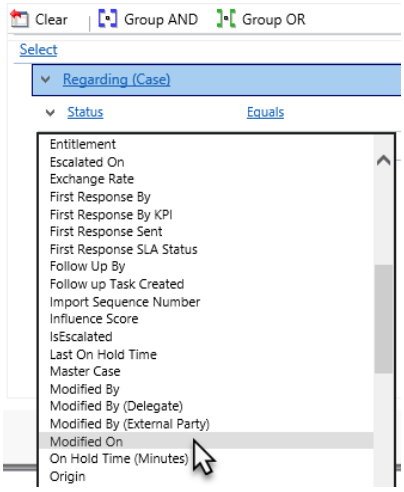


11. In the **Select Values** dialog box, select **Resolved** in the **Available Values** column and then click the right arrow button (>>) to move it into the **Selected Values** column.



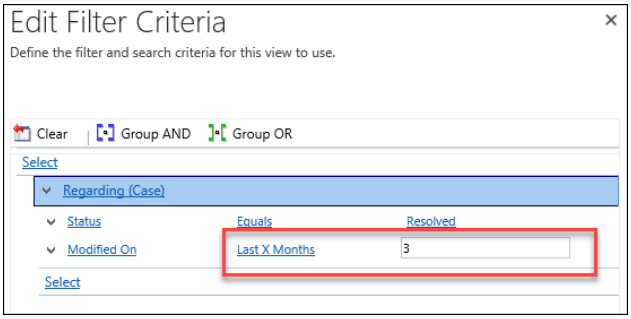
12. Click **OK**.

13. Click the **Select** control, underneath **Regarding (Case)**, and then click **Modified On**.



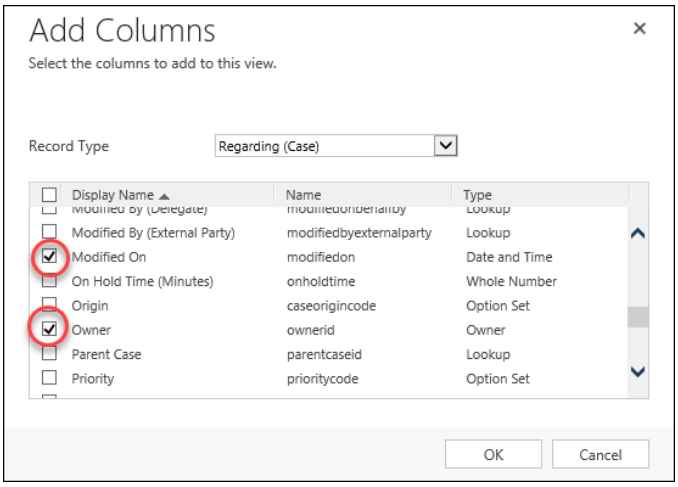
14. In the **Condition** list, select **Last X Months**.

15. In the **Choose Date** textbox, type **3**.

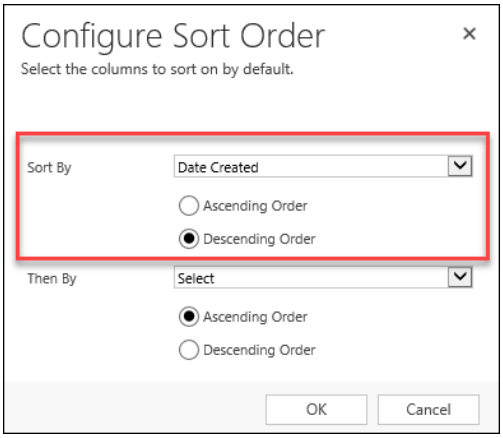


16. Click **OK**.

17. In the **Common Tasks** area, click **Add Columns.**
18. The **Add Columns** dialog box now displays the list of **Feedback** attributes.
19. Select **Date Created** and **Satisfaction Rating** and then click **OK**.
20. In the **Common Tasks** area, click **Add Columns.**
21. In the **Record Type** field at the top of the **Add Columns** dialog box, click the drop-down arrow and select **Regarding (Case)**.
22. Select **Modified On** and **Owner.**



23. Click **OK**.
24. Double-click the **Owner (Regarding)** column.
25. In the **Change Column Properties** dialog box, change the width of the column to **125px**.
26. Click **OK**.
27. Click **Configure Sorting** in the **Common Tasks** area.
28. In the **Configure Sort Order** dialog box, click the **Sort By** dropdown arrow and select **Date Created** from the list.
29. In the **Sort by** section, click **Descending Order**.

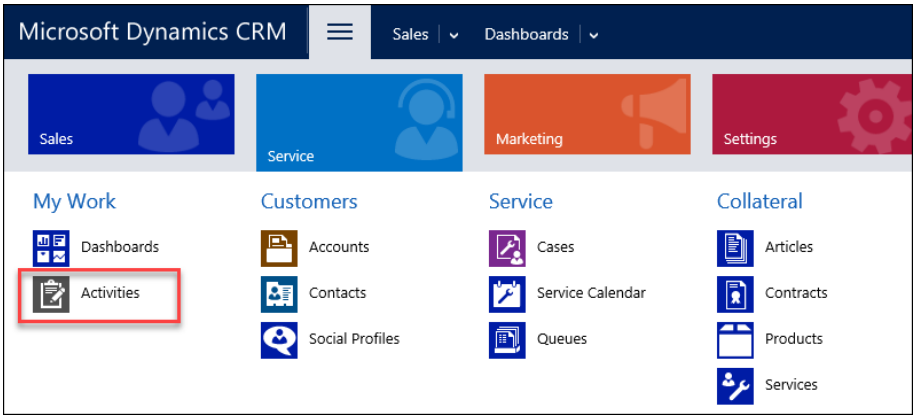


30. Click **OK**.
31. Click **Save and Close**.
32. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.

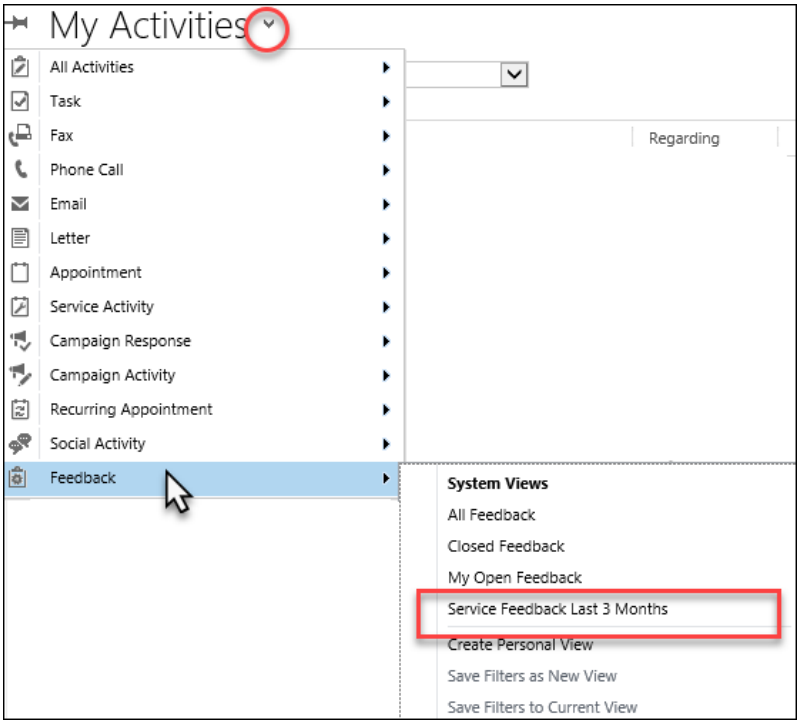
33. Close the **Solution:NPD and Feedback** form.
34. Close **Internet Explorer**.

Test the new View

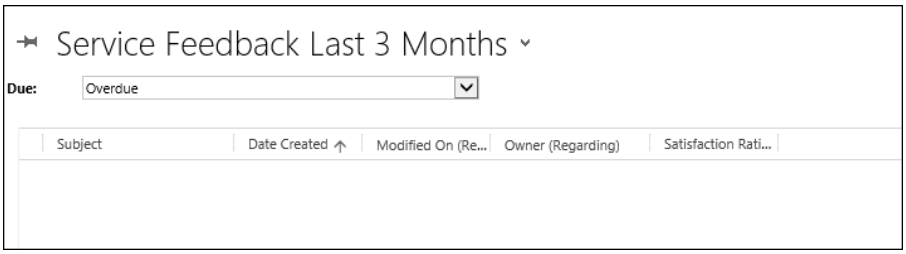
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Service**, and then click **Activities**.



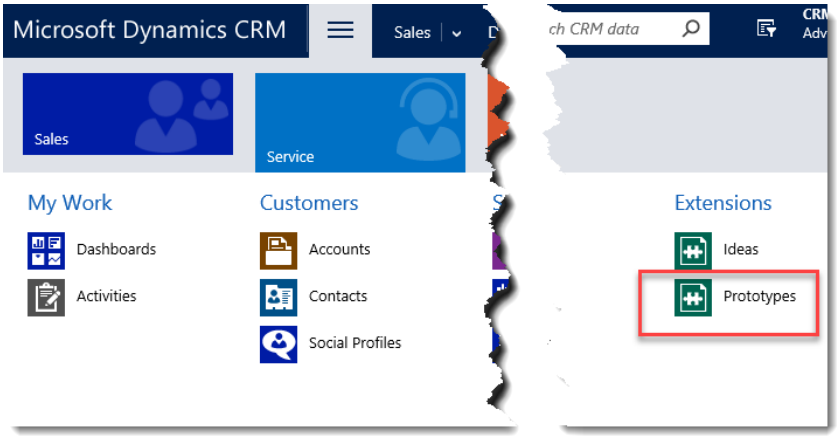
3. Click the view selector, click **Feedback** and then click **Service Feedback Last 3 Months**.



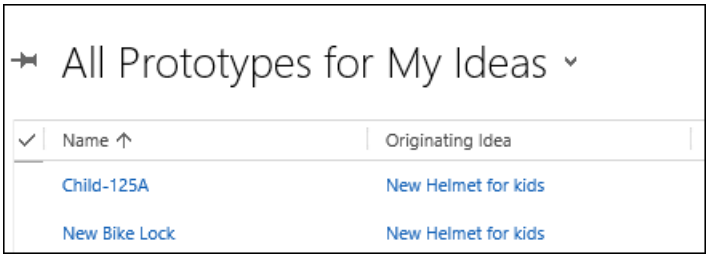
4. The new view will display cases with **Feedback** activities that were resolved during the last 3 months, if any.



5. Click the **Main** button, select **Service**, and then click **Prototypes**.

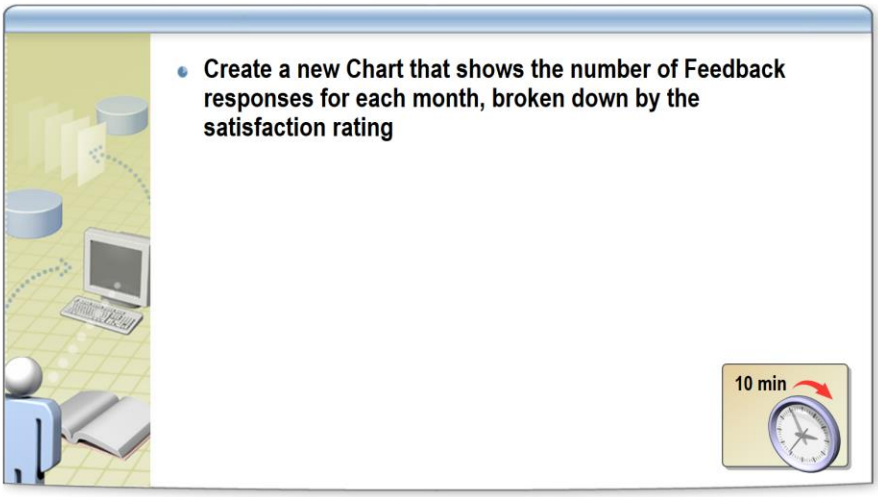


6. Click the view selector and then click **All Prototypes for My Ideas**.
7. The new view will display all the prototypes where the owner of the originating idea is the current user.



8. Close **Internet Explorer**.

Lab 10.3: Creating a Custom Chart

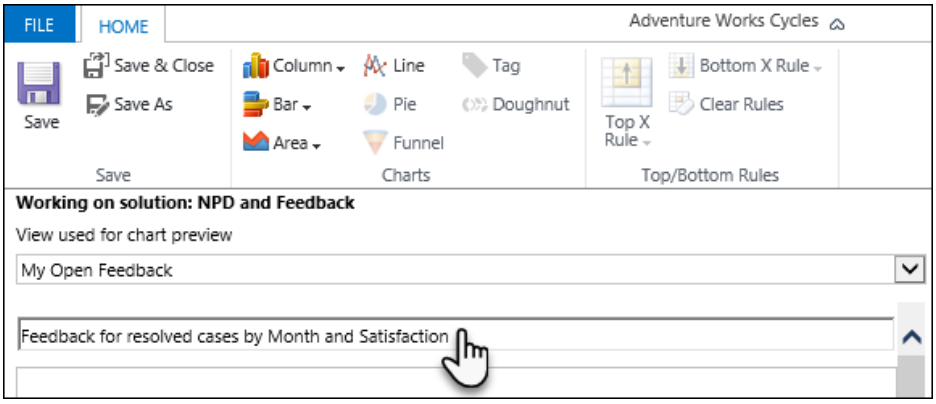


Scenario

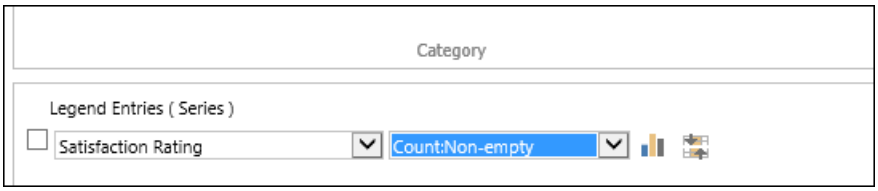
In this lab, you will create a new chart for the Feedback activities. You will then test the chart before you add the chart to a dashboard.

Create a Custom Chart for the Feedback Entity

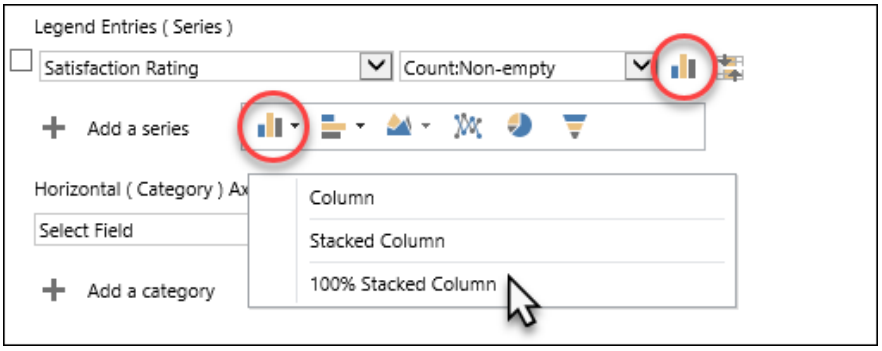
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions**.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, expand **Entities**, expand **Feedback**, and then click **Charts**.
5. On the **Actions** toolbar, click **New**.
6. In the **View used for chart preview** list, select **Service Feedback Last 3 Months**.
7. Type **Feedback for resolved cases by Month and Satisfaction** in the chart name text box.



8. In the first drop-down box under **Legend Entries (Series)**, select the **Satisfaction Rating** field.
9. In the **Aggregate** drop-down box, choose the **Count:Non-empty** option.

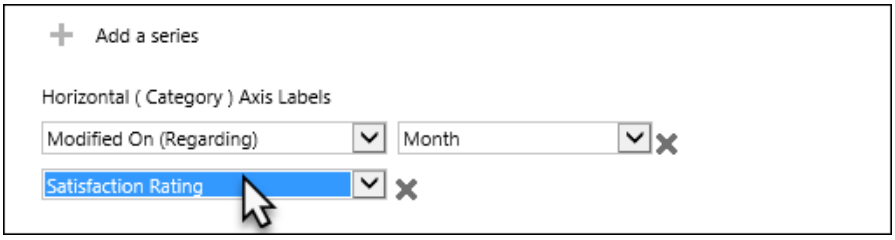


10. Click the **Current chart type** icon, click the **Column** icon and then select **100% Stacked Column**.



11. From the list under **Horizontal (Category) Axis Labels**, select the **Modified On (Regarding)** field.

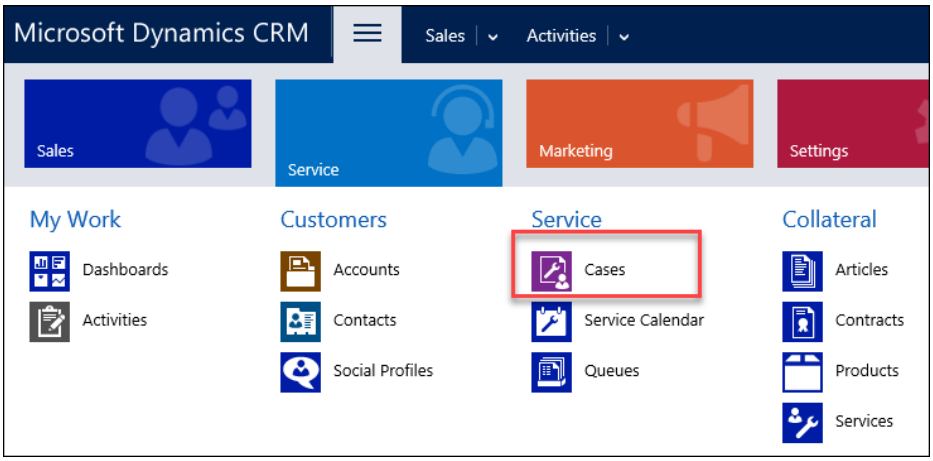
12. Click the **Add a category** icon, and then select the **Satisfaction Rating** field.



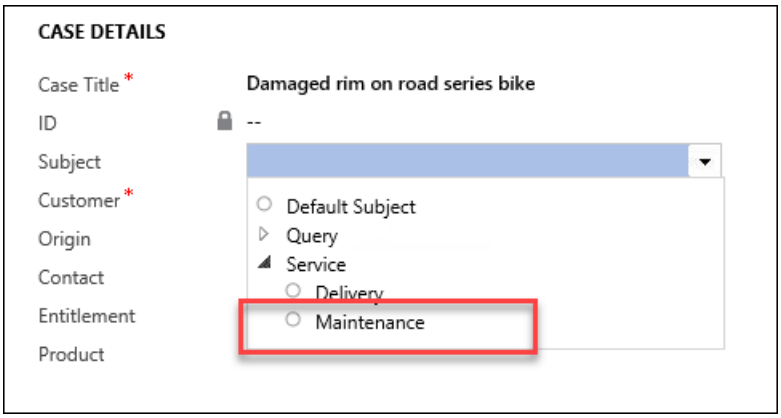
13. Click **Save and Close**.
14. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.
15. Close the **Solution:NPD and Feedback** form.
16. Close **Internet Explorer**.

Create and Resolve a Case

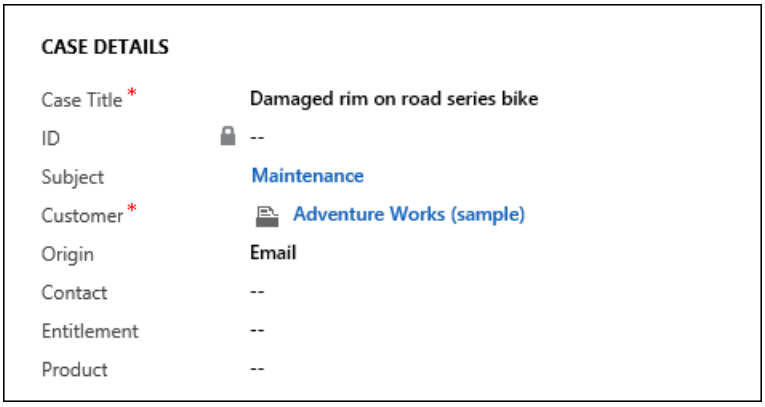
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Service**, and then click **Cases**.



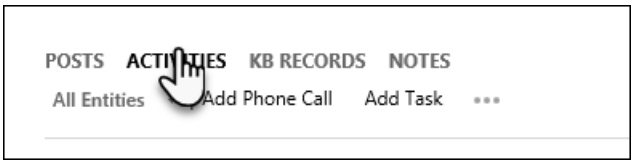
3. Click **New Case**.
4. In the **Case Title** textbox, type **Damaged rim on road series bike**.
5. In the **Subject** drop-down list, expand **Service** and then select **Maintenance**.



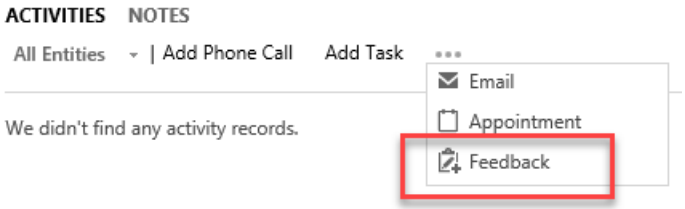
6. In the **Customer** textbox, click the **Lookup** icon and then select **Adventure Works (sample)**.
7. In the **Origin** drop-down list, select **E-mail**.



8. Click **Save**.
9. Click the **Activities** tab of the **Social Pane**.



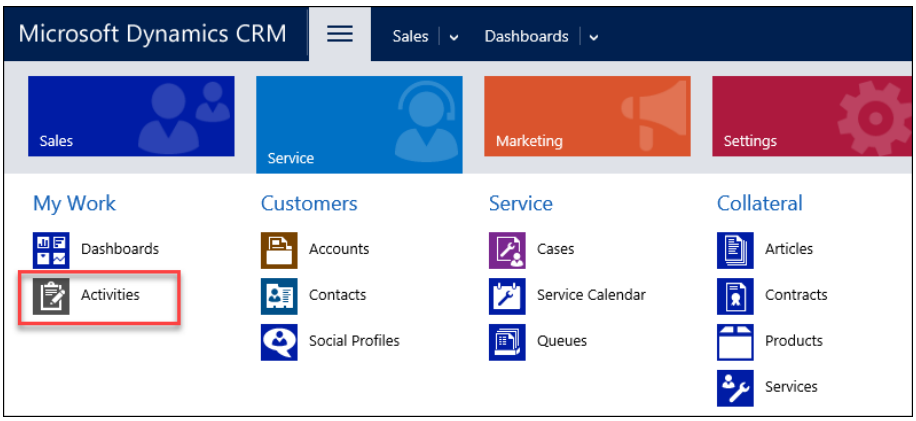
10. Click the **Add more activities** button (…), and select **Feedback**.



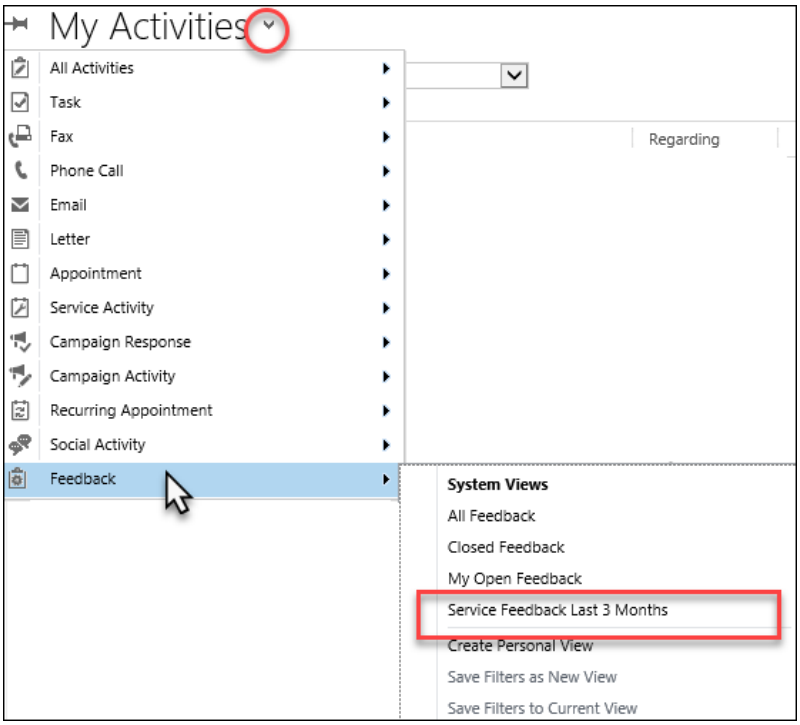
11. In the **Subject** field, type **Customer would like a replacement rim**.
12. In the **Cost** field, type **50.00**.
13. In the **Satisfaction Rating** drop-down list select **Happy**.
14. Click **Mark Complete**.
15. On the **Case** form's command bar click **Resolve Case**.
16. On the **Resolve Case** dialog box, in the **Resolution** textbox, type **E-mailed customer**.
17. In the **Remarks** textbox, type **Called Adventure Works to gather additional details**.
18. Click **Resolve**.

Test the new Chart

1. Click the **Main** button, select **Service**, and then click **Activities**.

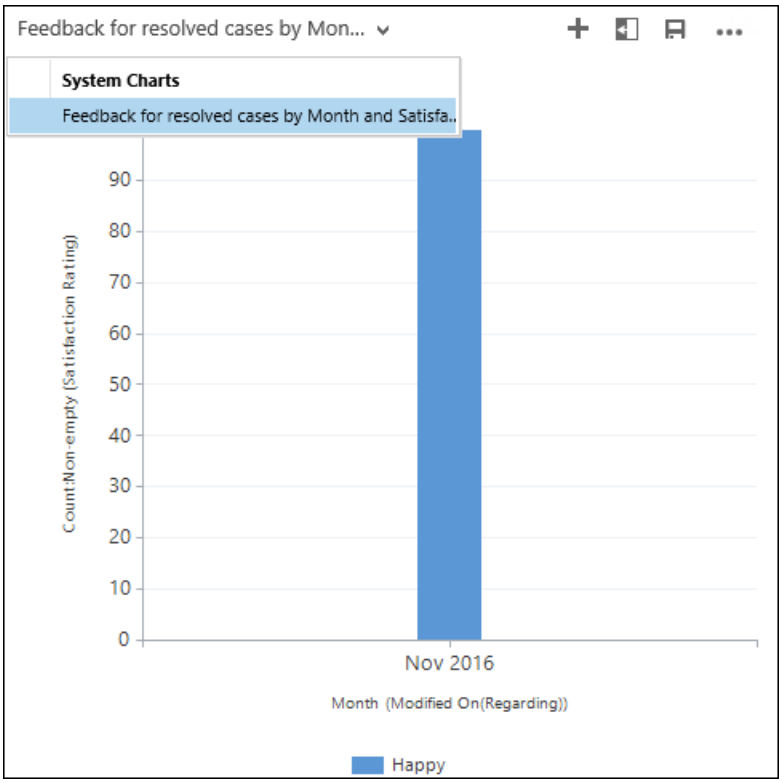


2. Click the view selector, click **Feedback** and then click **Service Feedback Last 3 Months**.



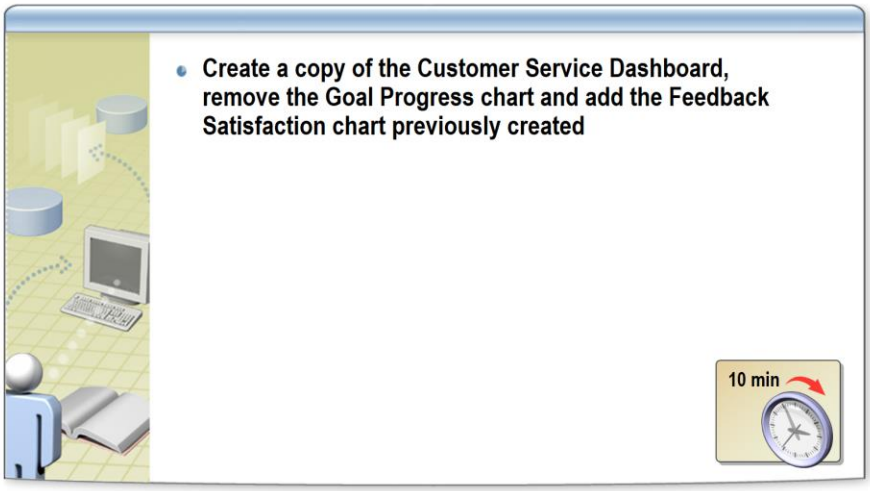
3. The view will display cases with **Feedback** activities that were resolved during the last 3 months.
4. On the right side, click **Charts** to expand the chart pane.

5. Verify that there is only one chart available for the **Feedback** activities.



6. Close **Internet Explorer**.

Lab 10.4: Creating a Dashboard

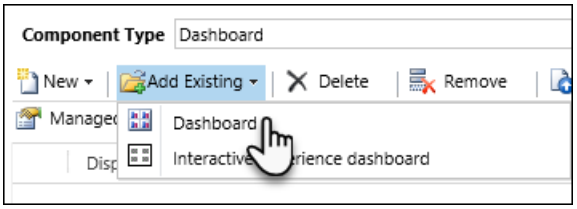


Scenario

In this lab, you will create a copy of the Customer Service Dashboard, remove the Goal Progress chart and add the Feedback satisfaction chart that you created in the previous lab. Then, you will move the new chart to the upper-left side to give the chart more prominence, and then test your changes.

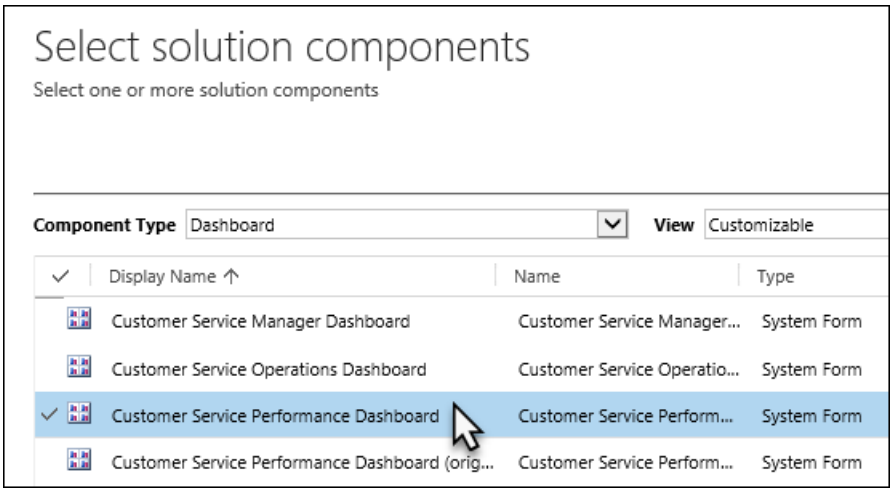
Create a copy of the Customer Service Performance dashboard

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Settings**, and then click **Solutions**.
3. In the **All Solutions** view, double-click the **NPD and Feedback** solution.
4. In the **Solution:NPD and Feedback** form, in the **Solution Explorer** pane, click **Dashboards**.
5. On the **Action** toolbar, click **Add Existing** and then click **Dashboard.**

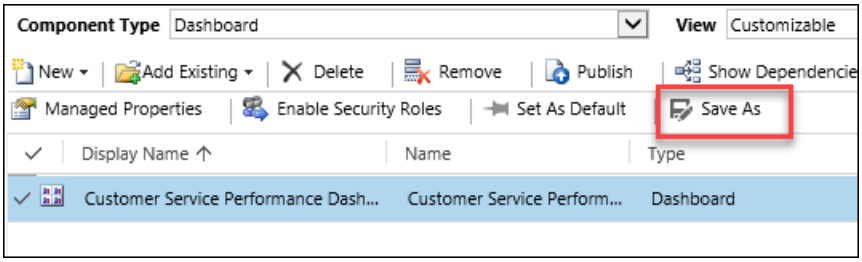


6. In the **Select solution components** dialog box, select **Customer Service Performance Dashboard**.

.



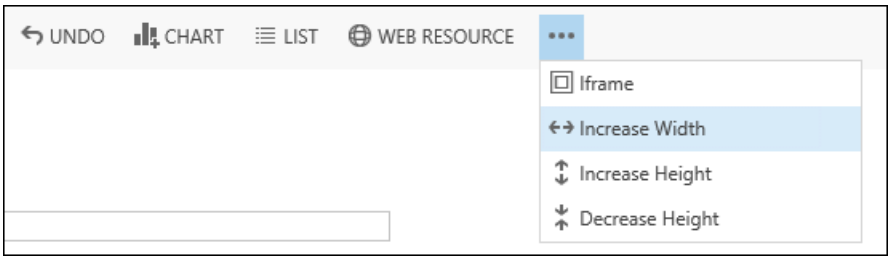
7. Click **OK**.
8. In the **Solution:NPD and Feedback** form, in the list of dashboards, select **Customer Service Performance Dashboard**.
9. On the **Actions** toolbar, click **Save As**.



10. In the **Dashboard Properties** dialog box, enter **Customer Service and Feedback** as the **Name** and **Description** of the dashboard and then click **Save**.
11. In the **Solution:NPD and Feedback** form, in the list of dashboards, select **Customer Service Performance Dashboard**.
12. On the **Actions** toolbar, click **Remove**.

↙ Remove the Goal Progress chart and replace it with a Feedback chart

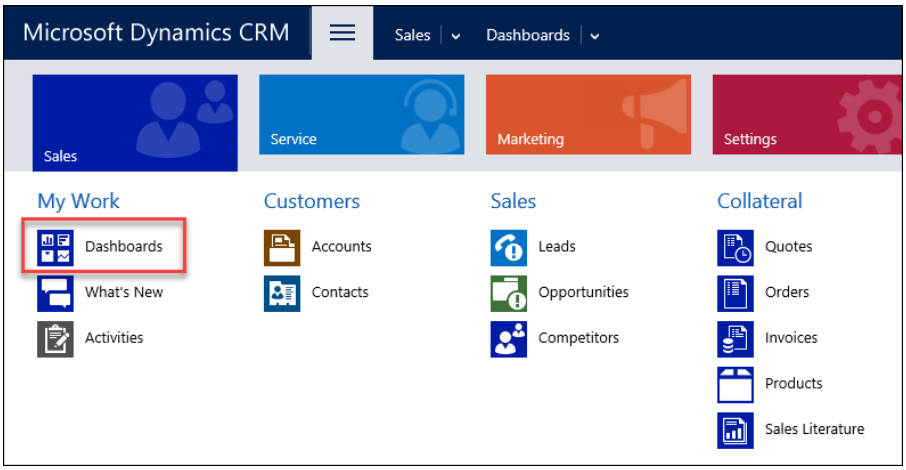
1. Double-click the **Customer Service and Feedback** dashboard.
2. Click the chart component in the lower-left corner, and then on the command bar click **Remove**.
3. On the command bar, click **Chart**.
4. In the **Add Component** dialog box, select **Feedback** as the **Record Type**.
5. Select **Service Feedback Last 3 Months** as the **View**.
6. The **Feedback for resolved cases by Month and Satisfaction** chart should already be selected because it is the only chart that you have created.
7. Click **Add** to confirm.
8. Make sure that the chart component is still selected, and on the command bar click **More Commands** (•••) > **Increase Width**.



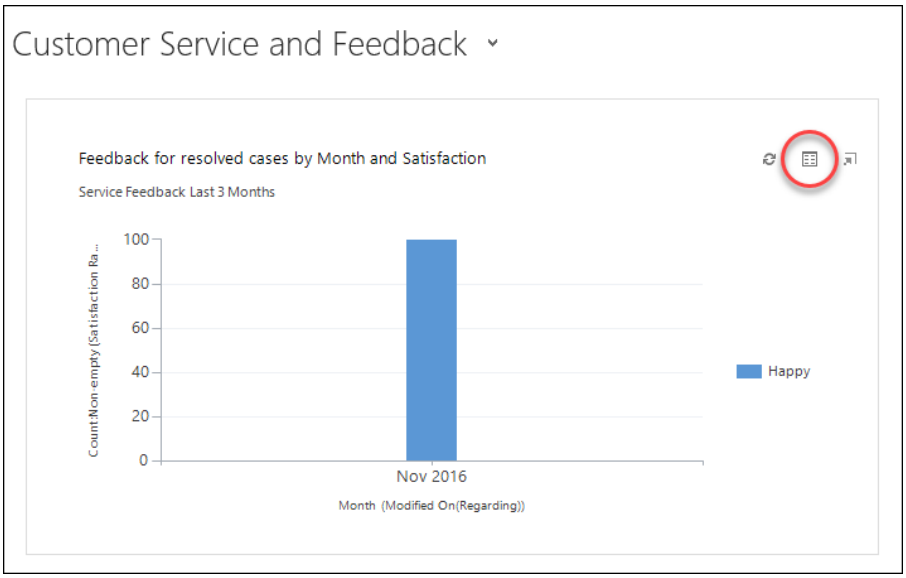
9. If the chart component is not at the upper-left position, drag the chart component to the upper-left position on the dashboard, or press the **Up Arrow** key to move it. Notice that the other components are rearranged automatically.
10. Click **Save** and then click **Close**.
11. In the **Solution:NPD and Feedback** form, click **Publish All Customizations**.
12. Close the **Solution:NPD and Feedback** form.
13. Close **Internet Explorer**.

Test the new Dashboard

1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. Click the **Main** button, select **Sales**, and then click **Dashboards**.



3. Click the dashboard selector, and then click **Customer Service and Feedback**.
4. When the dashboard is finished loading, click the Feedback chart.
5. Make sure that three buttons appear at the upper right corner of the chart component.
6. Click the **View the records that are used to generate the chart** button.



7. Verify that the correct view and chart are displayed, and then close all the **Internet Explorer** windows.

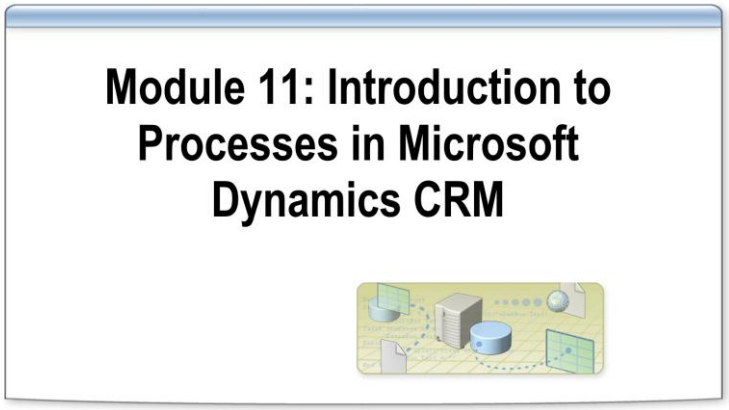
Module 11

Introduction to Processes in Microsoft Dynamics CRM

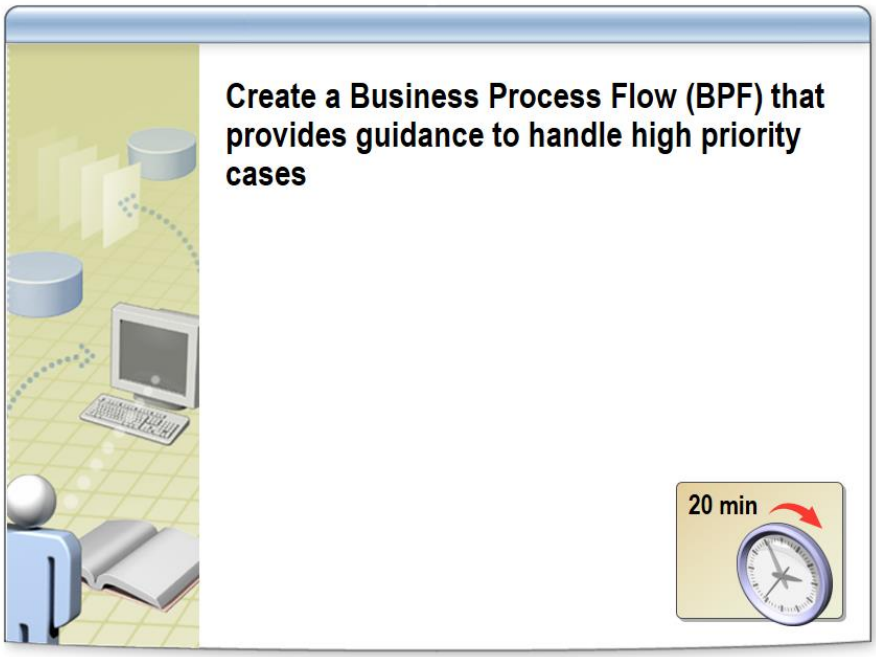
Contents

Lab 11.1 – Creating a Business Process Flow 101

Lab 11.2 - Assigning Opportunities Workflow 109



Lab 11.1: Creating a Business Process Flow

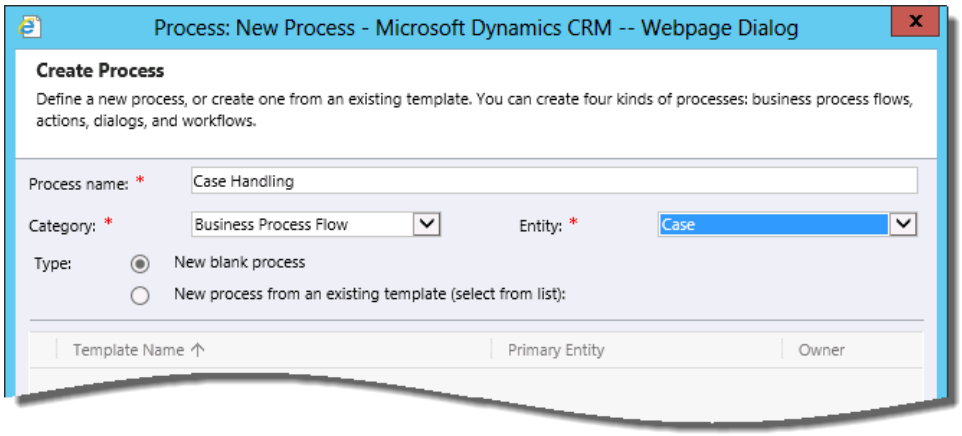


Scenario

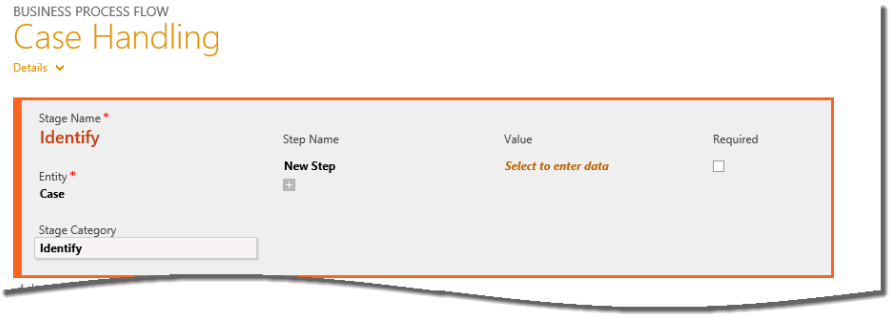
You are a manager for a technical support team. There is a complex escalation process if a Premier customer logs a support case with high priority. However, due to complexity of the condition, and operation itself, several cases eligible for the process are not handled appropriately. You decided to create a Business Process Flow (BPF) so that all the eligible cases are handled correctly.

Create the Business Process Flow

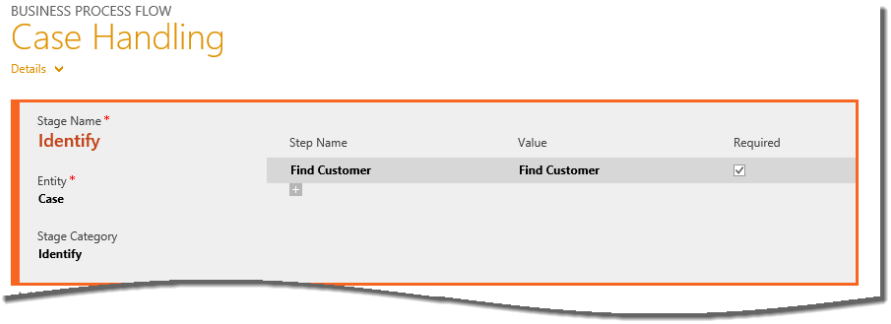
1. Open **Internet Explorer** and navigate to **http://LON-DC1:5555/AdventureWorksCycles**
2. On the navigation bar, click the **Main** button, select **Settings**, click **Processes,** and then click **New**.
3. In the **Process name** text box enter **Case Handling**.
4. In the **Category** drop-down list, select **Business Process Flow**.
5. In the **Entity** list, select **Case**.



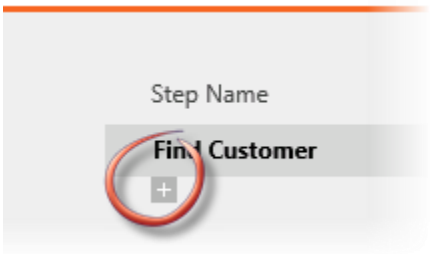
6. Click **OK**.
7. Change the **Stage Name** to **Identify**.
8. In the **Stage Category** list, select **Identify**.



9. Click **Select to enter data** and then select **Find Customer**.
10. Select the **Required** checkbox.

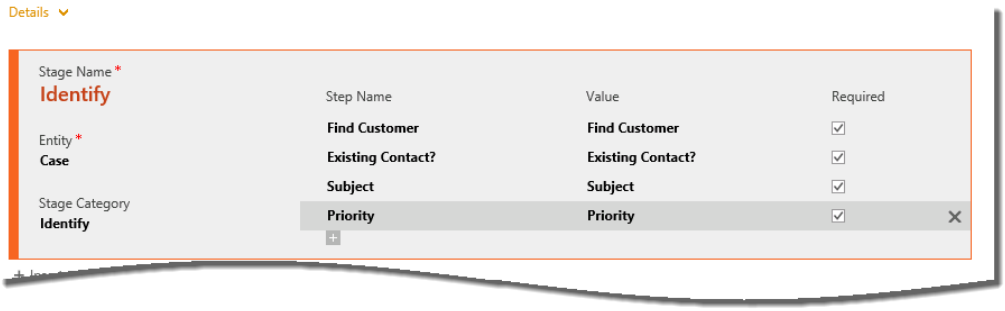


11. Click the [+] button under the **Find Customer** step.



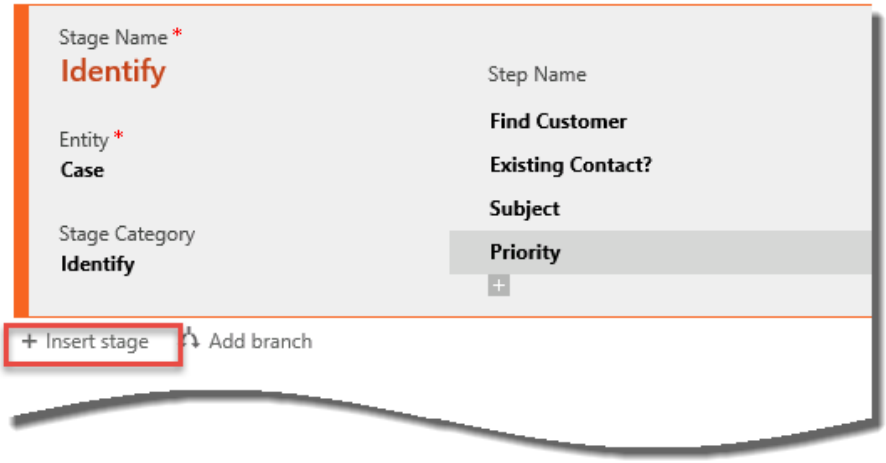
12. Click **Select to enter data** and then select **Existing Contact?**
13. Select the **Required** checkbox.

14. Create additional steps as shown below.

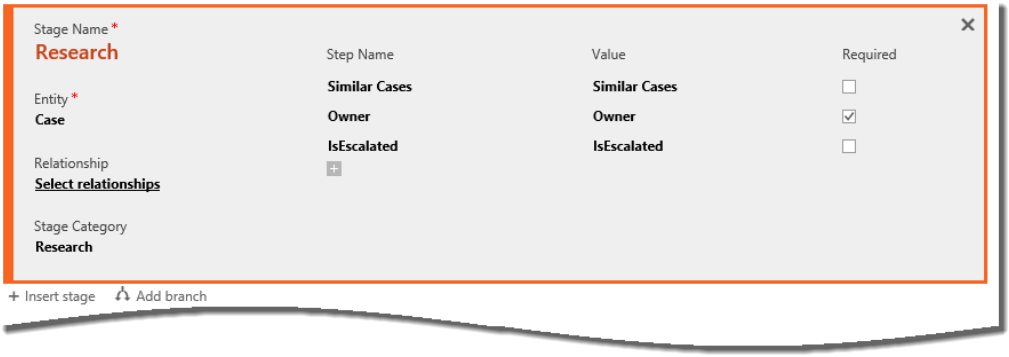


Add Additional Stages

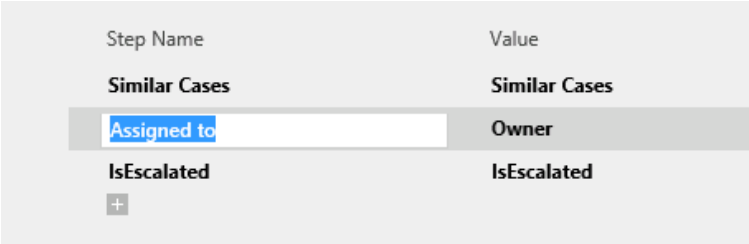
1. Click **Insert stage**.



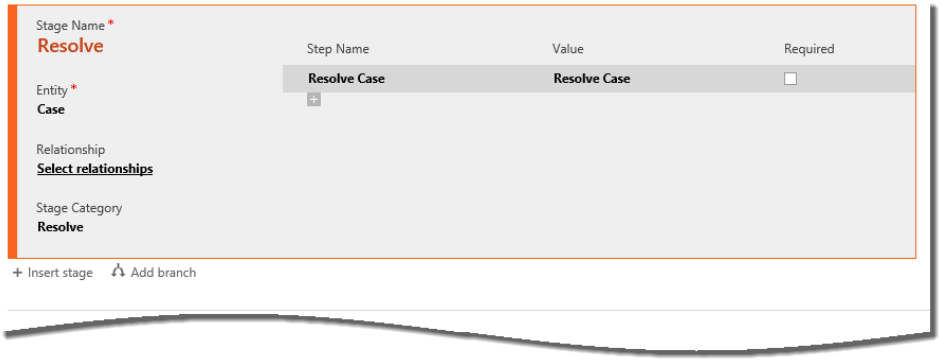
2. Create steps as shown in the following illustration.



3. Click the **Owner** step and change the name to **Assign to Others**.

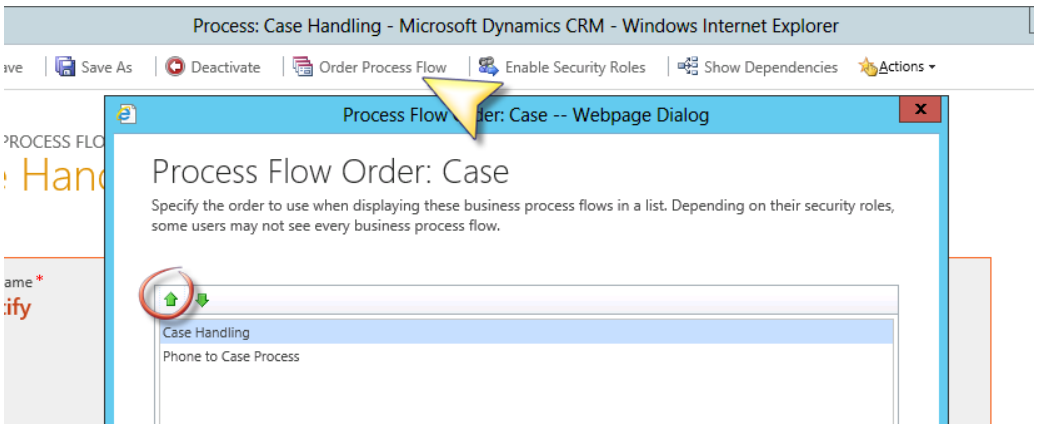


4. Add a new stage as shown below.



Save the process

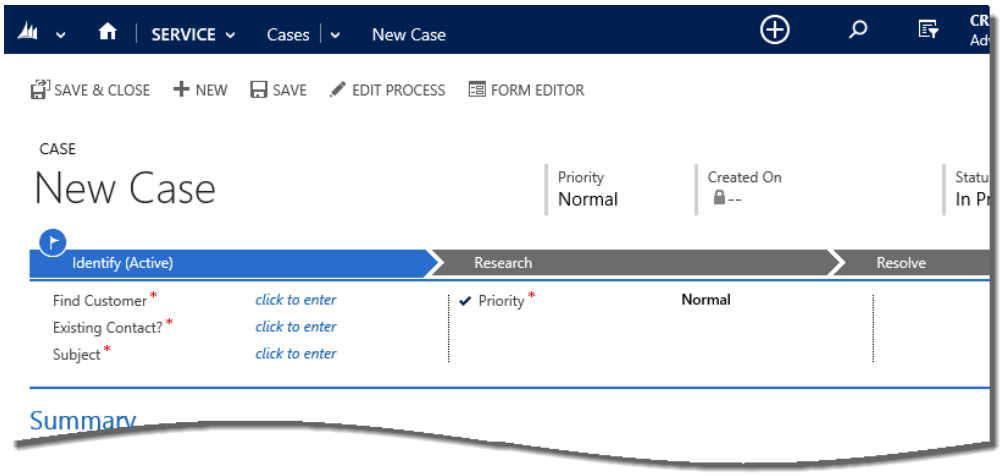
1. Click **Save** at the top of the screen.
2. Click **Activate**.
3. Click **Order Process Flow**.
4. Click **Case Handling** and click the up arrow to move it up.



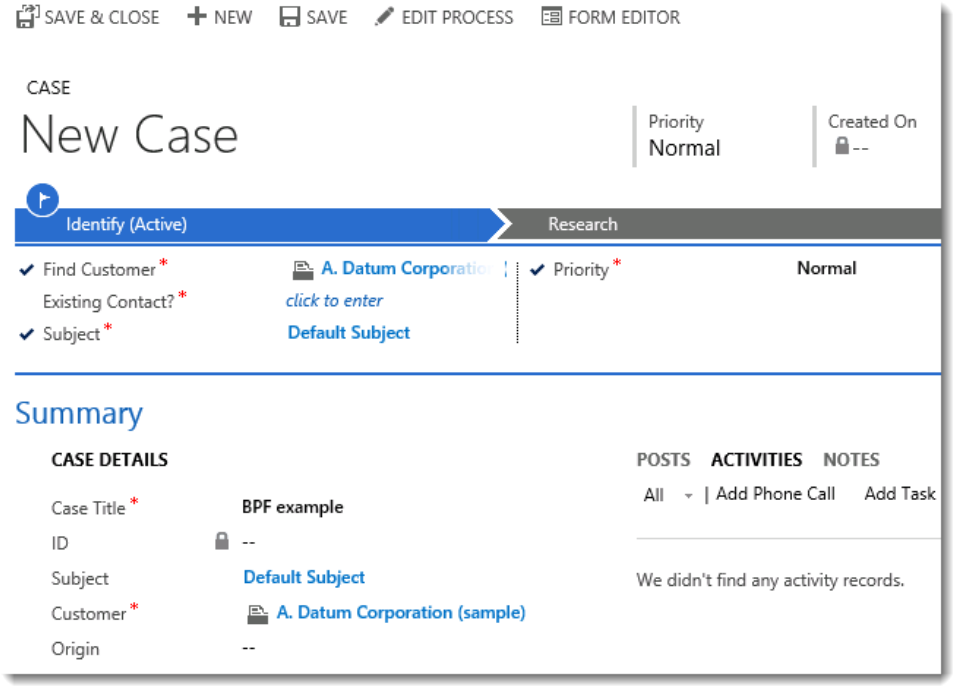
5. Click **OK**.
6. Close the editor.

Create a Case

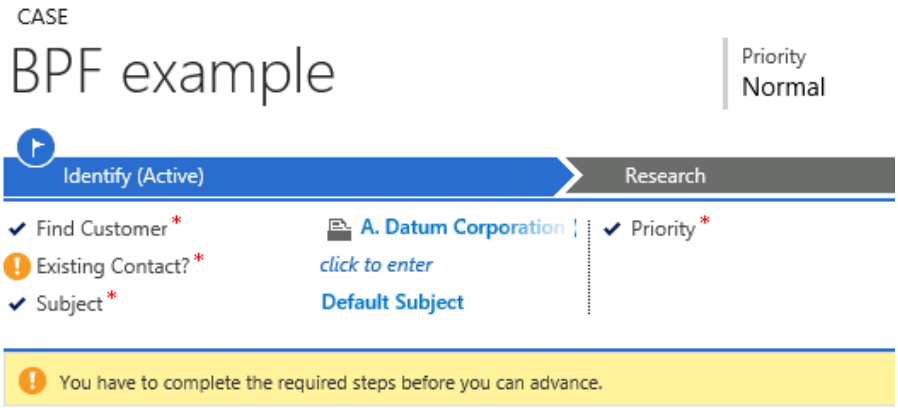
1. Go to **Service** > **Cases**.
2. Click **New Case**.



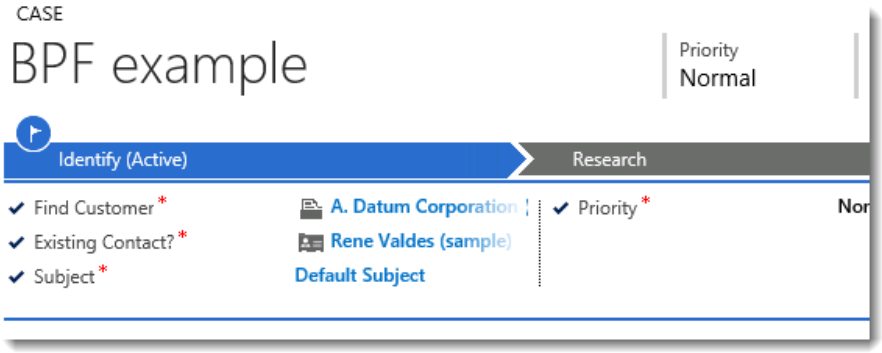
3. Select the customer **A. Datum Corporation (sample)**.
4. In the Subject field, select **Default subject**.
5. In the **Case** title field, type **BPF example**.



6. Click **Save**.
7. Click **Next Stage** on the right end of the Business Process Flow.
8. Confirm you see a warning indicating that you need to complete required fields before moving to the next stage.

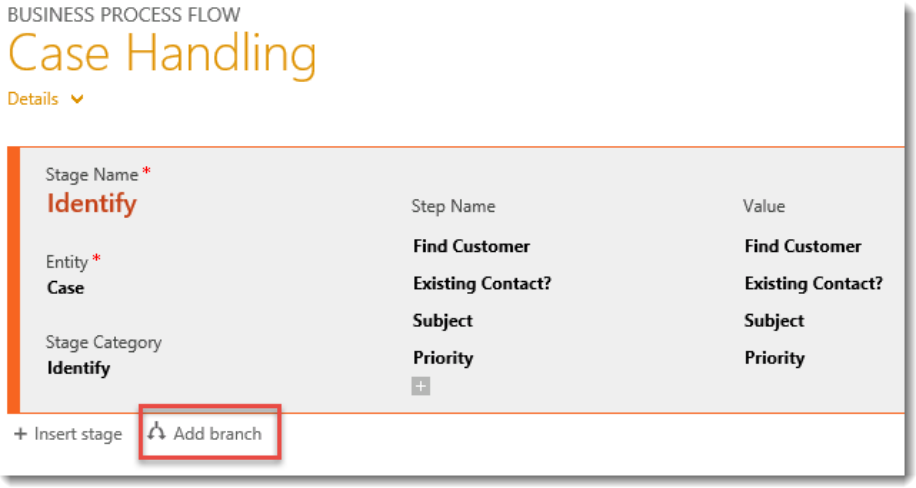


9. Complete all required fields.
10. Click **Next Stage** and confirm you can move to next stage.

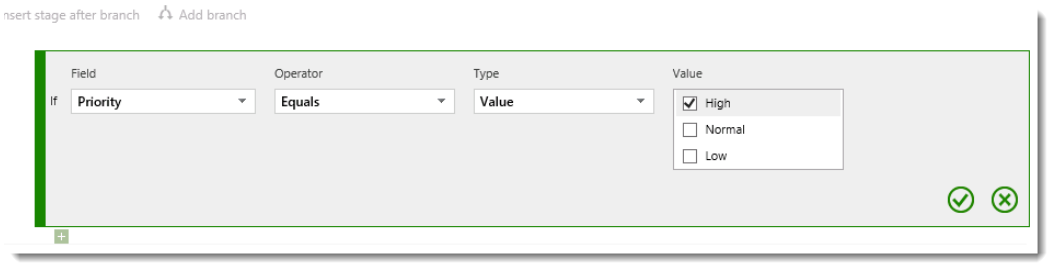


Add Branching

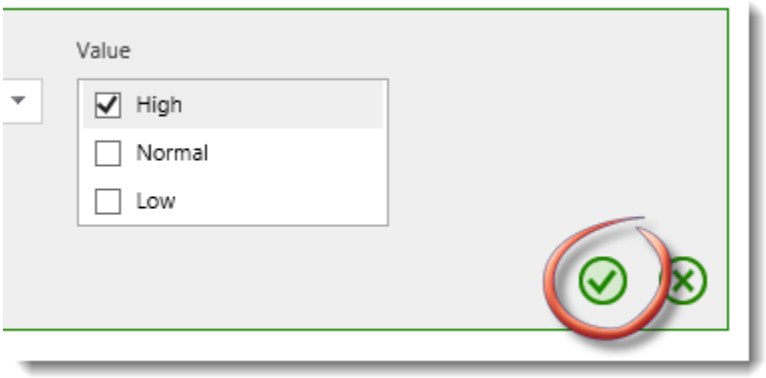
1. Go to **Microsoft Dynamics CRM** > **Settings** > **Processes**.
2. Open the **Case Handling** Business Process Flow.
3. Click **Deactivate** and then in the Confirmation dialog click **Deactivate** again.
4. Click **Add branch** under the **Identify** stage.



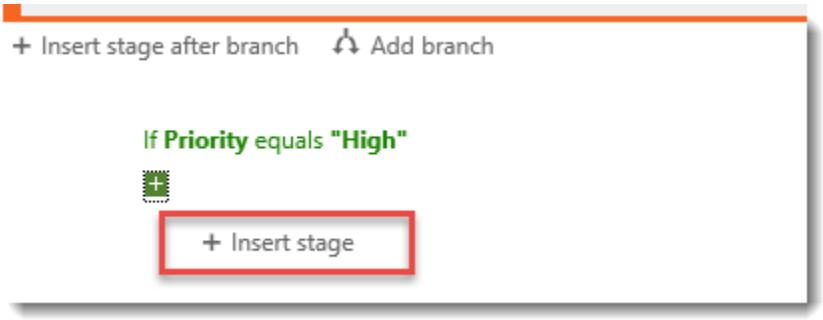
5. Select **Priority** for **Field**, **Equals** for **Operator**, **Value** for **Type** and **High** for **Value**.



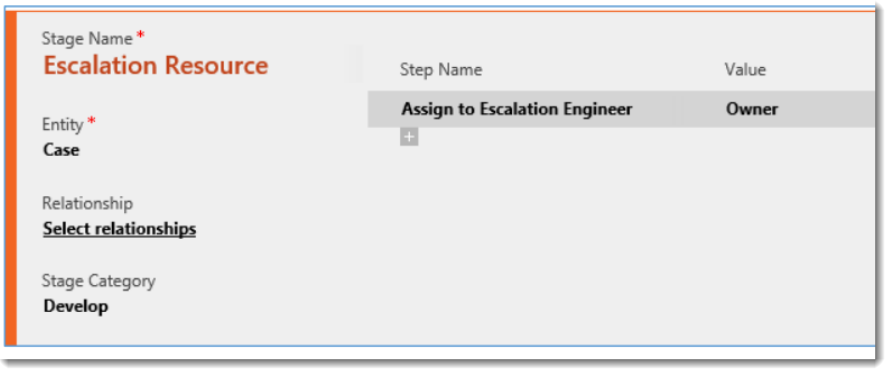
6. Click the check icon displayed at the lower right corner of the section to set the conditions of the branch**.**



7. Add a stage in the branch by clicking **Insert Stage**.



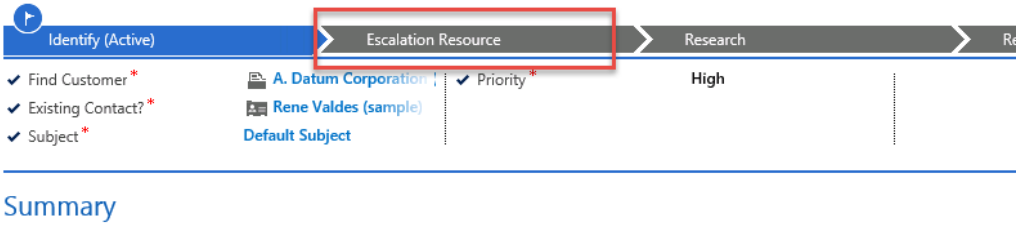
8. Change the new stage as shown below.



9. Click **Save** and then click **Activate** to activate the Business Process Flow again.

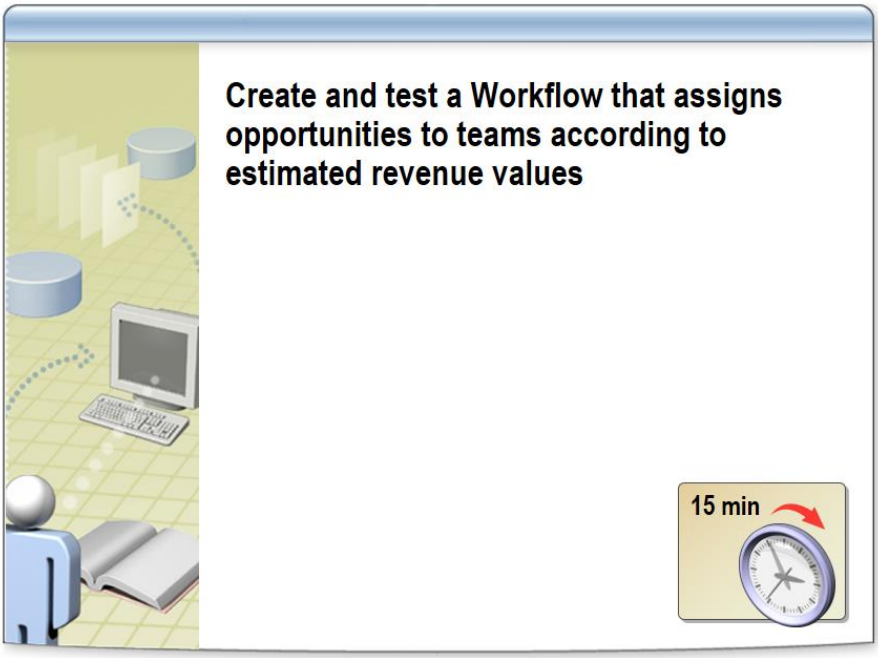
Test the Business Process Flow

1. Go to **Service** > **Cases**.
2. Click **New Case**.
3. Select the customer **A. Datum Corporation (sample)**.
4. In the Subject field, select **Default subject**.
5. In the Case title field, type **BPF example 2**.
6. Select a contact for the **Existing contact?** field.
7. Confirm that as soon as you change **Priority** to **High**, the **Escalation Resource** stage appears next to the **Identify** stage.



8. Click **Save**.

Lab 11.2: Assigning Opportunities Workflow



Scenario

During the implementation of Microsoft Dynamics CRM, Adventure Works Cycles identified a number of processes which can be implemented as workflows.

One of the workflows is an opportunity assignment process which meets the following requirements:

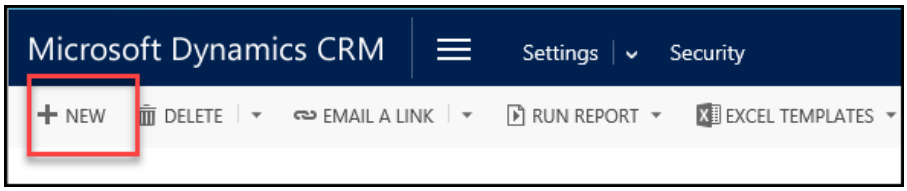
- Opportunities with an estimated revenue of $50,000 and over are assigned to the High Value Opportunities team
- Opportunities with an estimated revenue less than $50,000 are assigned to the Standard Opportunities team.

Your task as the implementation consultant is to create and test the workflow to implement the above process.

You will need to create the two teams (High Value Opportunities and Standard Opportunities). So that the teams can own records, assign each team the Salesperson security role.

Create the teams

1. Navigate to **Settings** > **Security** and then click **Teams**.
2. On the Actions toolbar, click the **New** button.

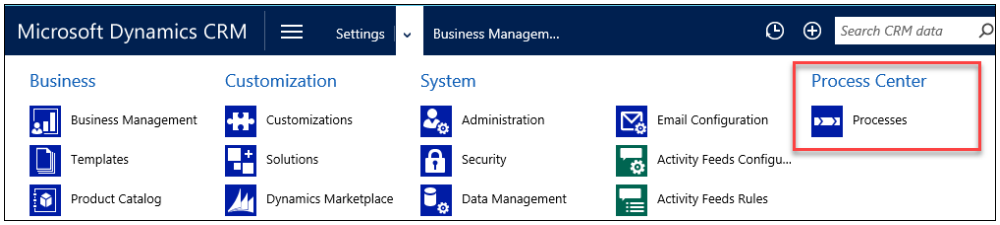


3. In **Team Name**, type **High Value Opportunities**.

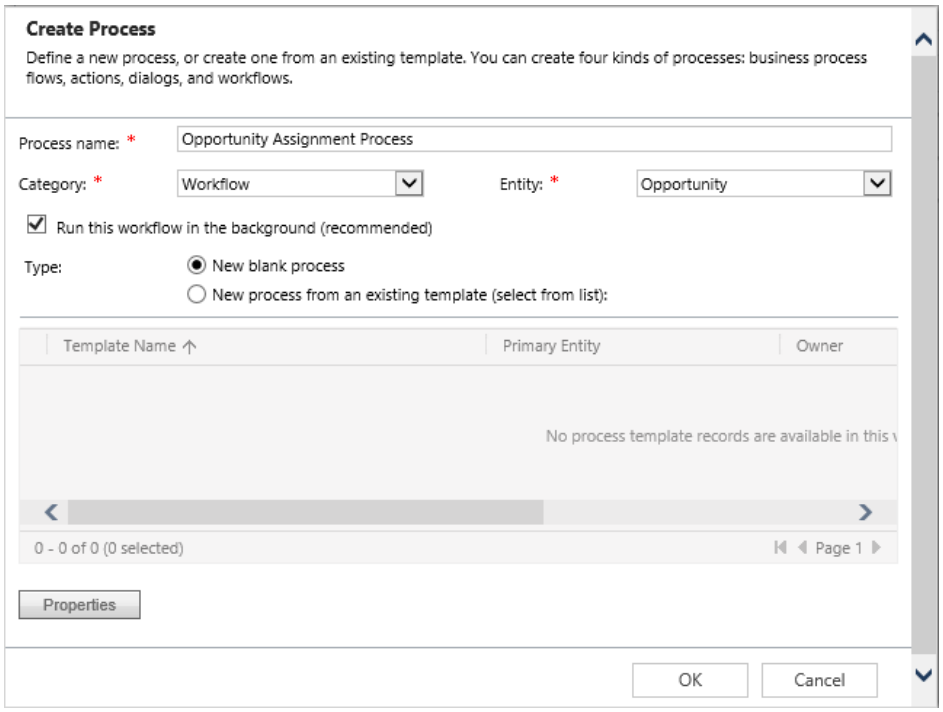
4. In **Administrator**, type **CRM Admin** and then press tab.
5. Click **Save**.
6. On the Actions toolbar, click **Manage Roles**.
7. In the **Confirm Security Role Assignment** window, select the **Salesperson** role, and then click **OK**.
8. Click **Save** and **Close**.
9. Repeat steps 2-8 to create the **Standard Opportunities** team.

Create the workflow

1. Click **Settings**.
2. Under **Process Center**, click **Processes**.



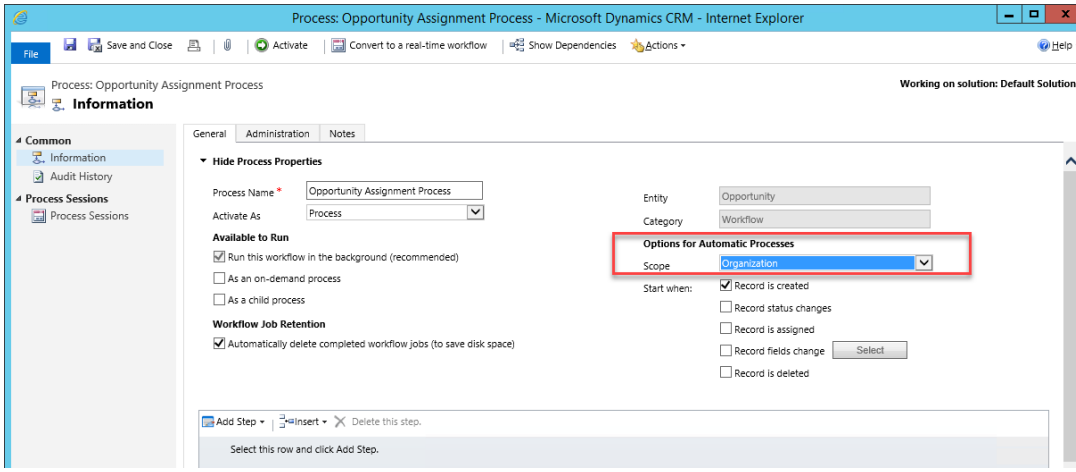
3. On the toolbar, click **New**.
4. In **Process Name**, type **Opportunity Assignment Process**.
5. In the **Entity** list, select **Opportunity**.
6. In the Category list, select **Workflow**.



7. Click **OK**.

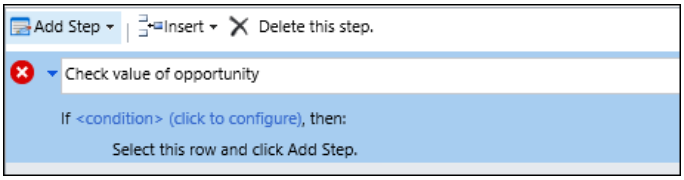
Specify the scope and triggers for the workflow

1. In the **Process: Opportunity Assignment Process** window, under **Options for Automatic Processes**, in **Scope**, select **Organization**.
2. Under **Options for Automatic Processes**, accept the default of **Record is created**.



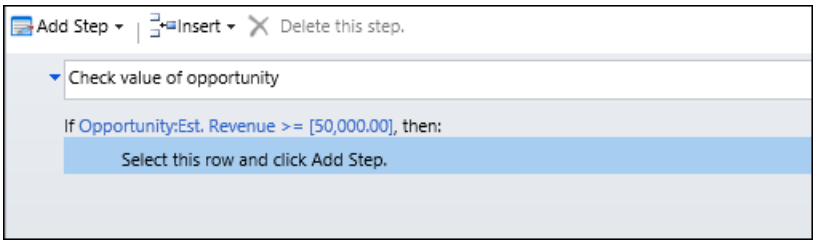
Add the check condition for high value opportunities

1. Click **Add Step**, and then click **Check Condition**.
2. In **Type a step description here**, type **Check value of opportunity**.

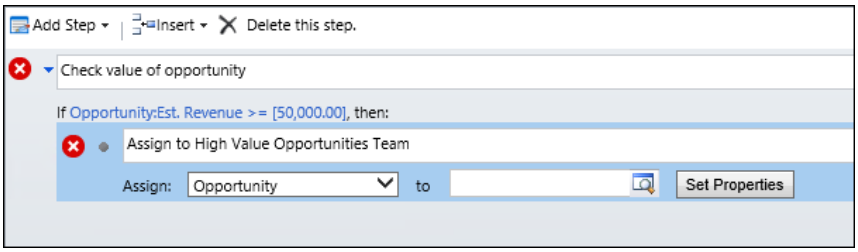


3. Click **<condition> (click here to configure)**.
4. In the **Specify Condition** window, click **Select**, and then select **Opportunity**.
5. On the right of **Opportunity**, click **Select**, and then select **Est. Revenue**.
6. On the right of **Est. Revenue**, click **Select**, and then select **Is Greater Than or Equal To**.
7. Click **Enter Value**, and type **50000**.

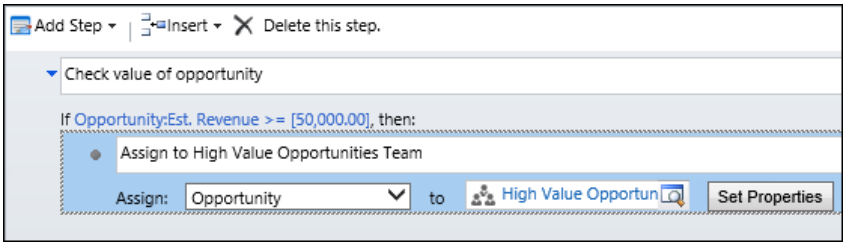
8. Click **Save and Close**.
9. In the line below the check condition, click **Select this row and click Add Step**.



10. Click **Add Step**, and then click **Assign Record**.
11. In **Type a step description here**, type **Assign to High Value Opportunities Team**.

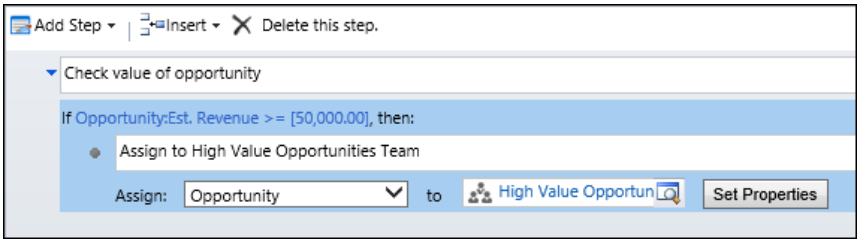


12. In the **Assign** step, click the look up icon and then select **High Value Opportunities**.

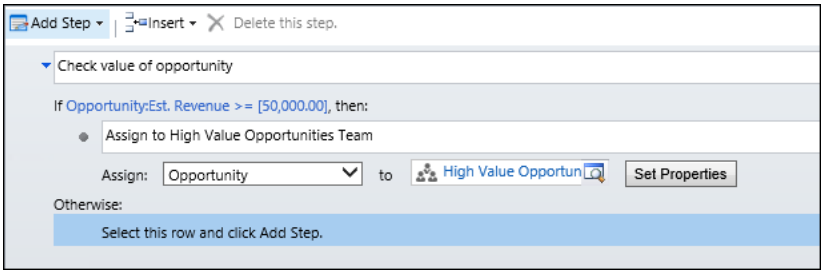


Add the default action step

1. Highlight the **If** step.

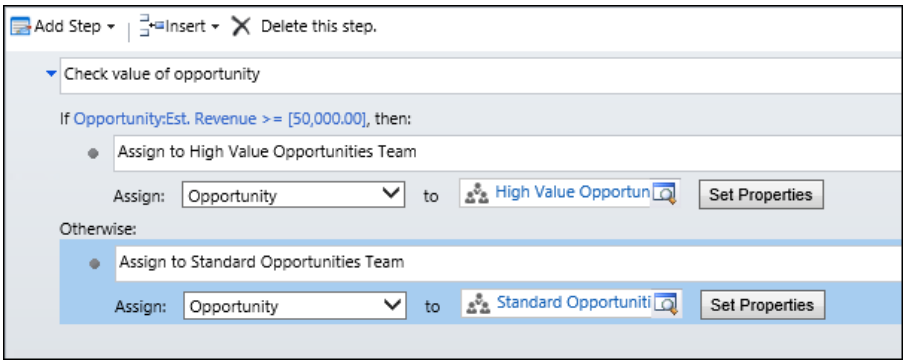


2. Click **Add Step**, and then click **Default Action**.
3. In the line below the **Otherwise** step, click **Select this row and click Add Step**.



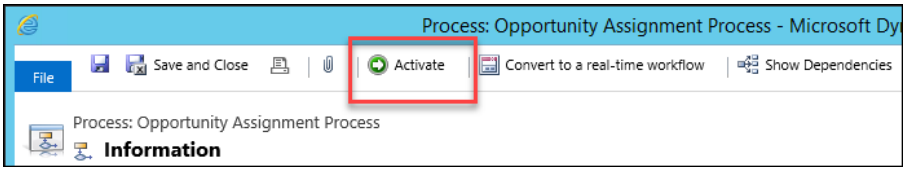
4. Click **Add Step** and then click **Assign Record**.

5. In **Type a step description here**, type **Assign to Standard Opportunities Team**.
6. In the **Assign** step, click the look up icon and then select **Standard Opportunities**.



Activate the workflow

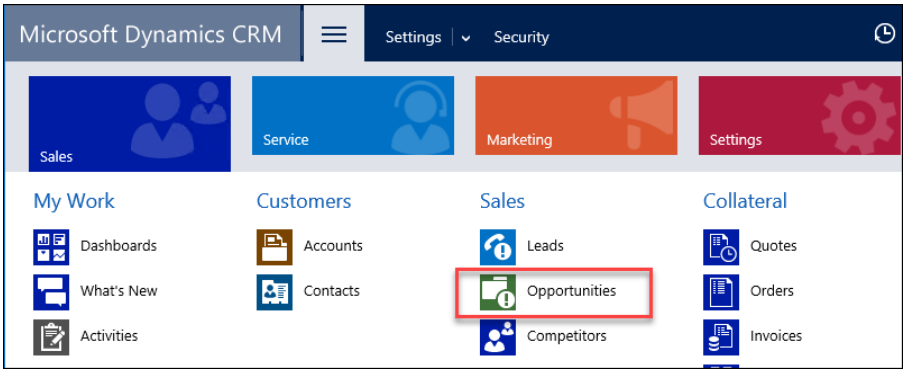
1. In the **Process: Opportunity Assignment Process** window click **Activate**.



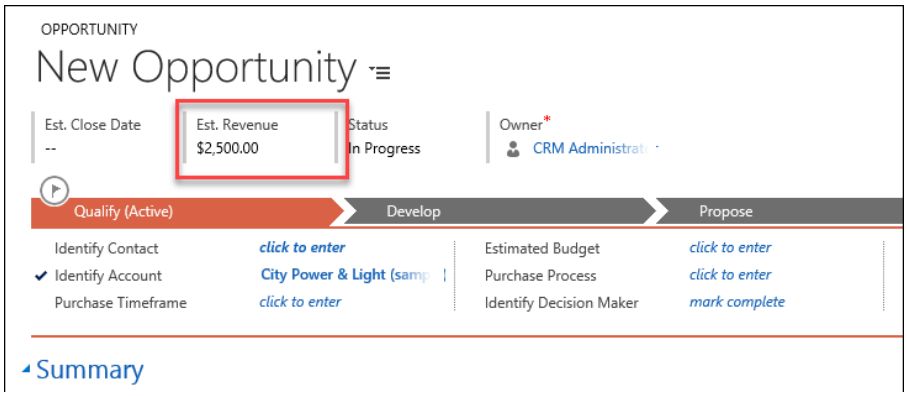
2. In the **Process Activate Confirmation** window, click **Activate**.
3. Note that the workflow status is shown as **Activated**.
4. On the Actions toolbar, click **Close**.

Test the workflow

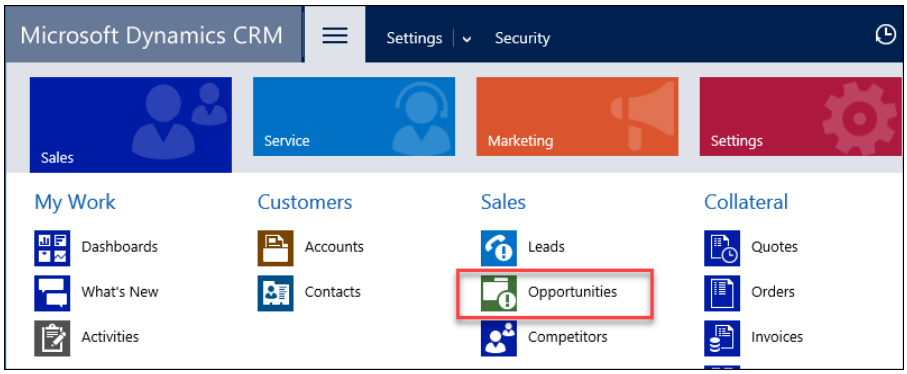
1. In **Microsoft Dynamics CRM**, go to **Sales** > **Opportunities**



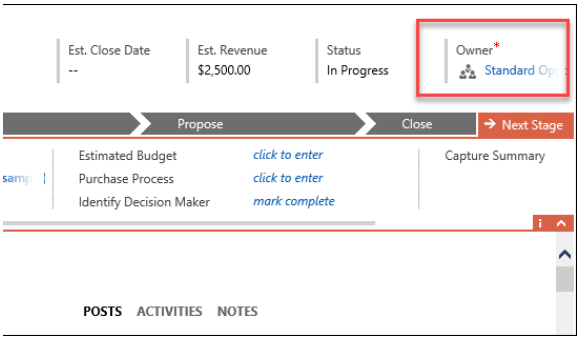
2. Click **New**.
3. In **Topic**, type **Lab 11.2 - Test A**.
4. In **Account**, click the look up icon and select **City Power & Light (sample)**.
5. In **Est. Revenue**, type **2500**.



6. Click **Save** and then click **New**.
7. In **Topic**, type **Lab 11.2 - Test B**.
8. In **Account**, click the look up icon and select **City Power & Light (sample)**.
9. In **Est. Revenue**, type **50000**.
10. Click **Save & Close**.
11. In **Microsoft Dynamics CRM**, go to **Sales** > **Opportunities**



12. Note that the two opportunities you have just created are not shown in the **My Open Opportunities** view. The workflow has assigned them to the teams.
13. Change the view to **Open Opportunities**.
14. Open the record, **Lab 11.2 - Test A**.
15. Note the owner is the **Standard Opportunities** team.



16. Navigate to the **Open Opportunities** view.

17. Open the record, **Lab 11.2 - Test B**.
18. Note the owner is the **High Value Opportunities** team.