Create and edit business rules CRM 2015

In Microsoft Dynamics CRM, you can apply form logic without writing JavaScript code or developing plug-ins. Business rules provide a simple declarative interface to implement and maintain fast changing, commonly used business rules that will be applied to Main and Quick Create forms, and to an entity, in the Web application and Microsoft Dynamics CRM for tablets. It is applied to the Main and Quick forms in the Outlook client in online and offline modes.

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Why business rules?

Business rules provide an easy declarative way of evaluating the business logic on the client or on the server, without needing to write code. Client-side logic is more immediate because it can be performed as someone creates or edits a record. However, you have an option to evaluate the business rule logic on the server, after a record has been created or updated, and apply it to all clients.

What can business rules do?

Business rules allow for a subset of the capabilities provided by form scripts. You can define conditions and apply the following actions:

- Set field values
- Set field requirement levels
- Show or hide fields
- Enable or disable fields
- Validate data and show error messages

Business rules can be set to apply to all Main or Quick Create entity forms or specific Main forms that you choose. You can also set the rule to apply to an entity.

You can transport business rules from one organization to another by including them in a solution and you can install solutions that contain business rules.

How do I configure business rules?

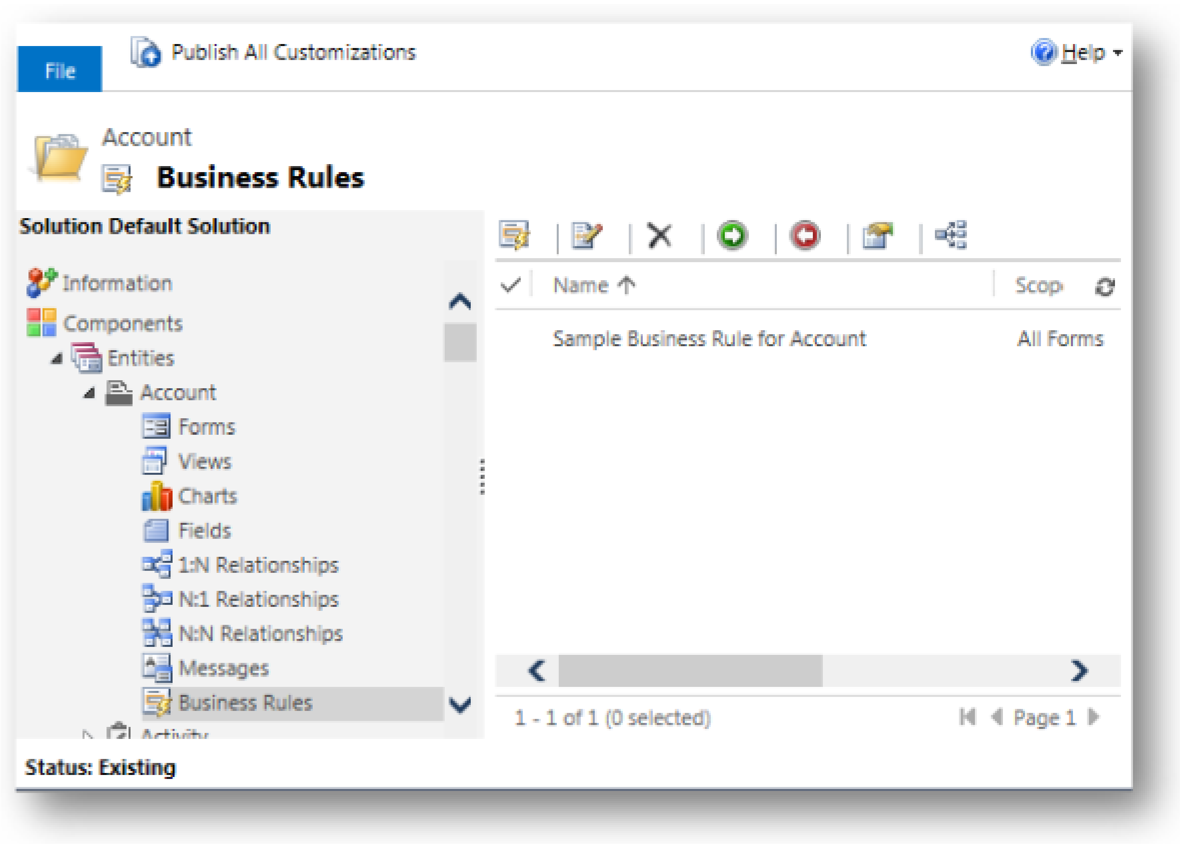
First, you need to have the privileges necessary to navigate to **Settings** > **Customization**. This typically requires the **System Administrator** or **System Customizer** security role. To activate a business rule, you must have the **Activate Business Rules** privilege.

Note
Business rules will only work for Updated Entities or custom entities.

There are four ways you can view, create, or edit business rules:

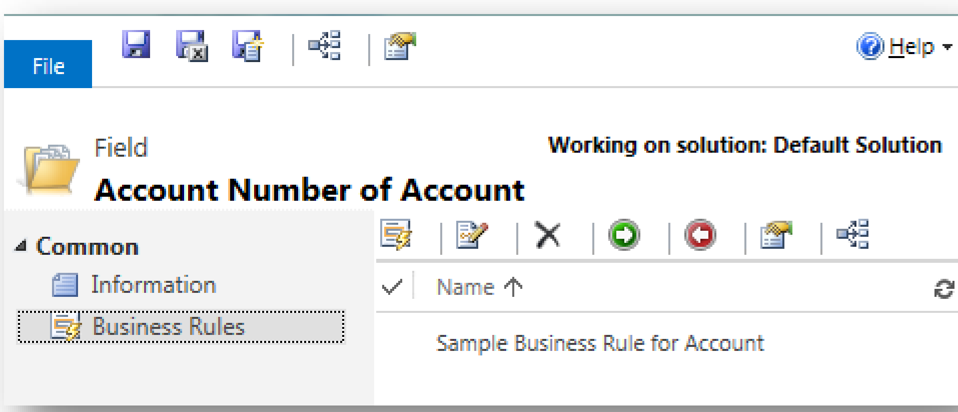
Solution > Entity

From a solution, such as the default solution, you will find a **Business Rules** node for all entities.



Solution > Entity > Field

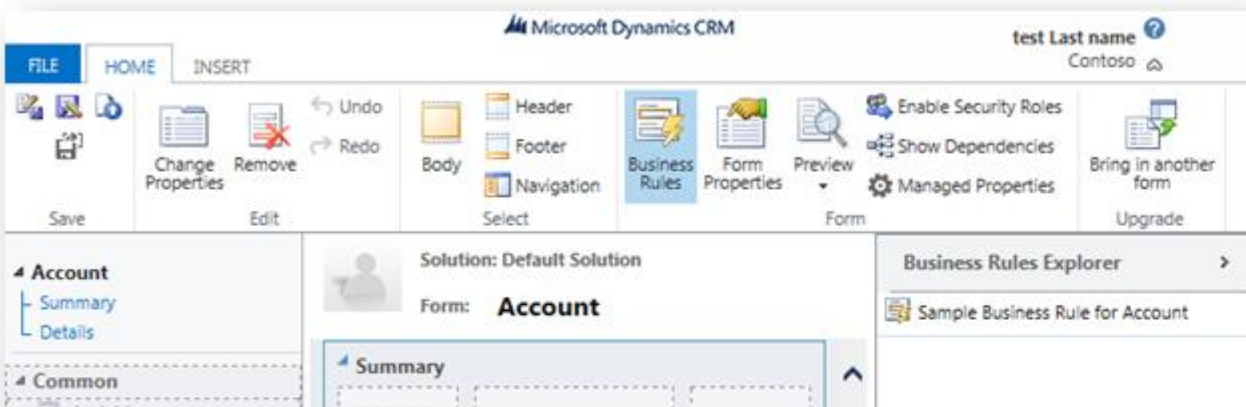
When you view an entity field, you will find a **Business Rules** node that will show you only the business rules that include this attribute.



Form Editor

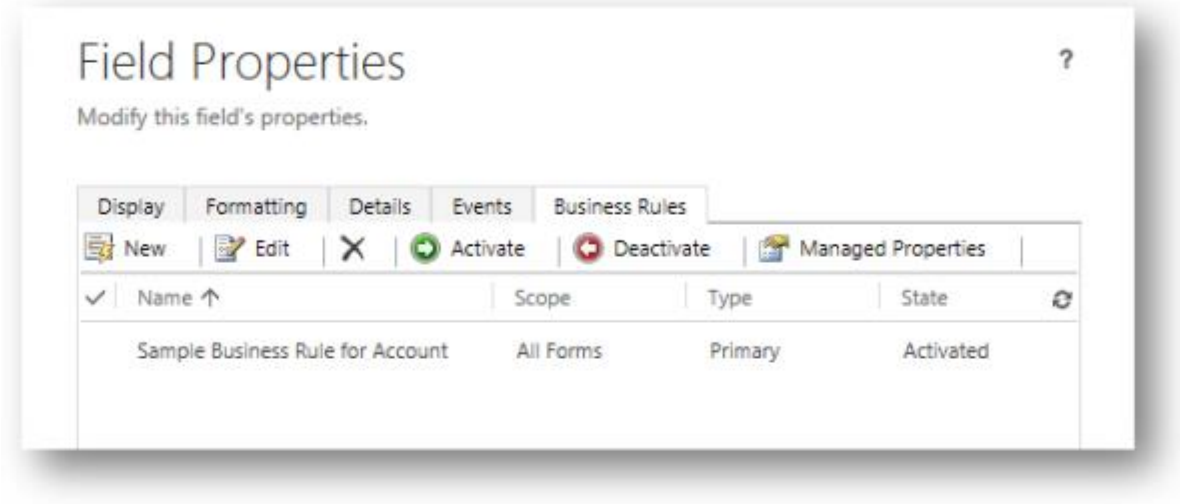
From the form editor, you can use the **Business Rules** button in the ribbon to show the **Business Rules Explorer** on the right side. This will show you all business rules that will be applied just for this form.

If you create a rule from the form editor, the default scope is for that form. More information: Setting Scope



Form Editor > Field

When you view the properties for a field that is used in a form, you will see a **Business Rules** tab that shows you the business rules that include this attribute.



If an existing rule is similar to a rule you want to make, you can open that rule and use the **Save As** button to copy an existing rule as a starting point for a new rule.

Set the scope

In the top right of the form, use the **Scope** field to set the scope for the rule.

Scope	Where it runs run
Entity	All forms and server
All forms	All forms
Specific form	Just that form

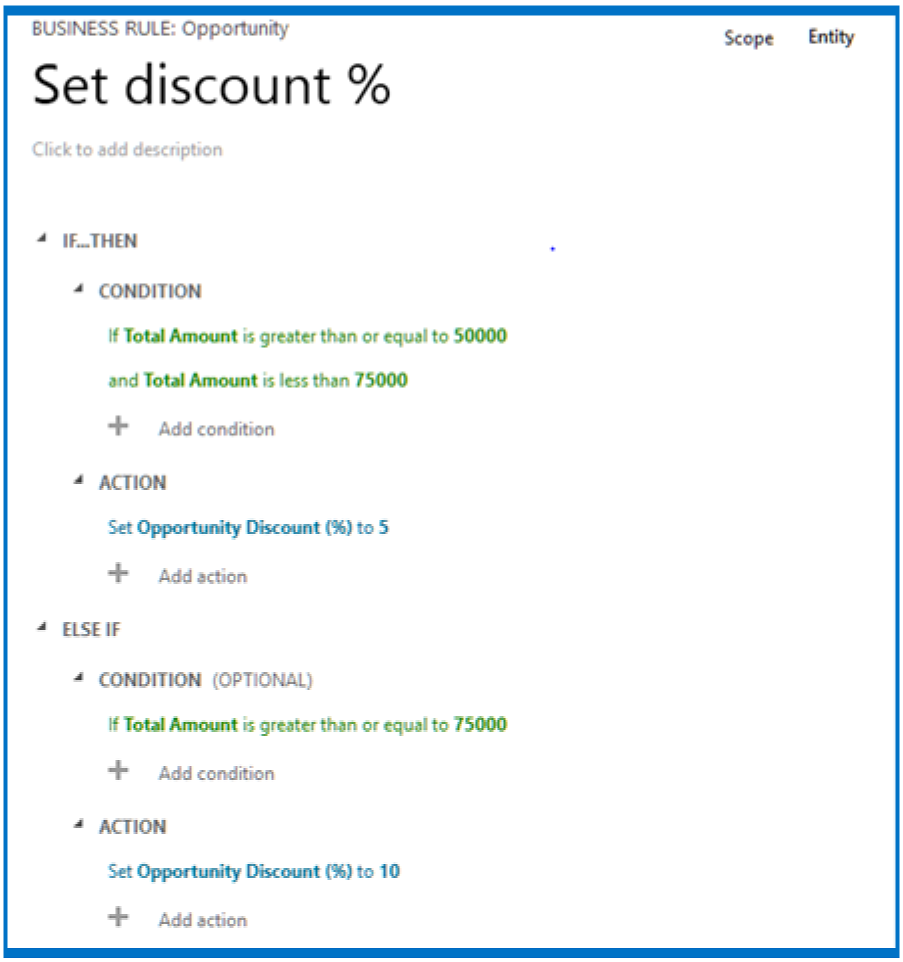
You cannot select multiple specific forms. If you choose **All Forms**, the rule will be applied to all the Main forms and the Quick Create form, as long as the form includes all the fields referenced by the rule. If you create a new business rule by using the form editor, the default scope is just that form.

Server side business rules and support for IF-Else and AND/OR logic

Previously, you had an ability to evaluate the business rules on an individual client. To evaluate the business rule logic on the server and apply it to all clients, you had to provide the plug-ins, which are expensive to develop and maintain. Setting the scope of the business rule at an entity level, gives you an ability to evaluate the business rule once on the server and apply it to all clients without writing code. You can move the logic for commonly used scenarios out of plug-ins into the entity-level business rules. In addition, we provided the support for default values in a business rule. For instance, if Contoso only does business in the United States, a simple business rule can be implemented that on creation of an incoming lead, the country is automatically set to U.S.A.

Note
When the scope is set to an Entity and you create or edit a record using the forms, the rule runs on the client side, but later, it runs again on the server. Because of this, we prevent you from creating a circular reference to a field, if you set the scope to an Entity. For example, you can't set Credit Limit = Credit Limit + 1000, because it would increase the value once on the client side and then would try to run again on the server side.

For more complex business scenarios, you needed to use multiple business rules that were evaluated using the **AND** logic operator. All conditions had to be true before the actions were applied. There was no **If-Else** or **AND/OR** support. This functionality is now added and will let you create more elaborate business rules with less effort. The following example of the business rule uses the **If-Else** logic:



There are a few limitations that you should be aware of:

- Nested **If-Else** statements are not supported.

- Grouping of expressions in a condition is not supported.
- Expressions can be combined either using **AND**, or using **OR**, but not both.

Configure conditions

If you want to change an activated business rule, you must deactivate it before you can edit it.

To add a condition, click the **+** icon and a new condition row will appear with default values set. Enter the field name to set the **Field**, and then choose the appropriate **Operator**. Operator options will change depending on the data type of the field.

Conditions are checked whenever any field referenced within the condition changes.

You can choose three different types of conditions:

Field

Use this type to compare the value of one form field with another.

Value

Use this type to compare the value of one form field with a value you enter.

Formula

This option appears only for numerical or date data types. It does not appear for fields that contain text. Use this type to compare the result of a simple calculation that may use either a value in another form field or a value you enter.

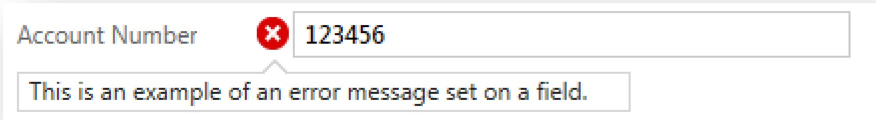
When you are finished entering or editing the rule, click or tap the check mark icon to save it or the **(X)** icon to discard changes. To remove a previously saved condition, place your cursor over the condition and click the icon.

Configure actions

To add an action, click the **+** icon and you will have the following options:

Show error message

Use this action to set an error message on a field if the data within it is not valid. The text you specify for the message will be displayed with an error icon near the field.



The record cannot be saved as long as this message is displayed. After the data in the field has been corrected according to the conditions set in your rule, the message will disappear and the record can be saved.

Set field value

Choose the **Field** and then the **Type**. There are three types:

Field

Use this type to set the value of one form field with the value of another field.

Value

Use this type to set the value of a form field with a value you enter.

Formula

This option appears only for numerical or date data types. It does not appear for fields that contain text. Use this type to set the value to the result of a simple calculation that may use either a value in another form field or a value you enter.

Set business required

Use this type to change the requirement level for the field. The options are **Not Business Required** and **Business Required**. There is no option to set this to business recommended.

Set visibility

Use this type to change whether the field is displayed in the form. The options are **Show Field** and **Hide Field**.

Lock or unlock field

Use this type to change whether the field is enabled in the form. The options are **Lock** and **Unlock**. When the field is locked, people will not be able to edit the value in the field.

After you have defined an action, you can change the order or delete it by using the options available when you place your cursor over the action.

Set the description

Setting a description is optional. It isn't displayed anywhere else except in the business rule editor. But it is a good idea to include a description of what the rule is supposed to do and why it has been added.

Test and activate your business rules

Before anyone can use the business rules you have created, you must activate them. Before you activate them, you should test them. You can test business rules by using the **Preview** button in the form editor.

Limitations for business rules

Business rules are intended to address common actions. Compared to what a developer can do by using form scripts, business rules have limitations. However, business rules are not intended to replace form scripts.

Here are a few limitations to using business rules:

- Business rules run only when the form loads and when field values change. They do not run when a record is saved, unless the scope for the rule is set at an entity level.
- Business rules work only with fields. If you need to interact with other visible elements, such as tabs and sections, within the form you need use form scripts.
- When you set a field value by using a business rule, any OnChange event handlers for that field will not run. This is to reduce the potential for a circular reference, which could lead to an infinite loop.
- If a business rule references a field that is not present on a form, the rule will simply not run. There will be no error message.
- Whole Number fields that use the formats for TimeZone, Duration, or Language will not appear in the rule editor for the conditions or actions, so they cannot be used with business rules.
- For Microsoft Dynamics CRM for tablets, the definition of the business rules are downloaded and cached when CRM for tablets opens. Changes made to business rules are not applied until CRM for tablets is closed and re-opened.
- When you set the value of a lookup field, the text of the primary field value that is set in the form will always match the text that is visible in the rule definition. If the text representing the primary field value of the record you are setting in the lookup changes,

the value set by your rule will continue to use the text portion of the primary field value defined by the rule. To fix this, update the rule definition to use the current primary name field value.

It is useful to understand that the value set for a lookup has three parts:

- **Name**: The text of the primary field value you see in the form.
- **Id**: The unique identifier for the record. This is the data that is saved. This is not visible in the form.
- **LogicalName**: The name of the entity, such as **contact**, **account**, or **opportunity**.

The rule will set all three parts of this value. The **Id** value for a specific record never changes, but the **Name** value might change.

For example, if you define a rule to set a lookup to a contact that has the **Full Name** of ‘Old Name’, this text is the **Name** you will see in the lookup when it is set by your business rule even if someone later changes the **Full Name** of the contact to ‘New Name’. The lookup **Id** value will be correctly set to the expected record, but the **Name** (which is not saved) will reflect the rule definition value rather than the current **Full Name** value of the record it references.

Clear the actions from your rules

Except for showing error messages, you must be sure to include a separate business rule to clear any actions you may have applied. For example, let’s say you have a rule on an Account entity that says:

If **Preferred Method of Contact** equals “**Phone**”
Set **Business Phone** as **Business Required**

This will work whenever the **Preferred Method of Contact** field is set to **Phone**. But if the **Preferred Method of Contact** field is later changed to something else, the **Phone** field will remain **Business Required**. In order to clear this action, you need to include a separate rule to apply the following logic:

If **Preferred Method of Contact** does not equal “**Phone**”
Set **Business Phone** as **Not Business Required**

The **Show error message** action is different because it automatically evaluates any conditions used to set the error message and will remove it if the conditions are no longer true.

Order in which logic is applied

The logic included in your business rules is applied together with other logic in the form that could include system scripts, custom scripts, and other business rules. The order in which this logic is applied will affect the outcome. The order is as follows:

1. Any system scripts are applied first.

2. Any logic in custom form scripts is applied.

3. Logic in business rules is applied.

   When there are multiple business rules, they are applied in the order they were activated, from oldest to newest.

4. The Entity scope business rules are executed on the server, after the synchronous plug-ins.

This means that to control the order in which business rules are applied, you must deactivate and reactivate the ones you want to be applied last.

Localize error messages used in business rules

If you have more than one language provisioned for your organization, you will want to localize any error messages that you have set. Each time you set a message, a label is generated by the system. If you export the translations in your organization, you can add localized versions of your messages and then import those labels back into Microsoft Dynamics CRM, so that people using languages other than your base language can view the translated messages.