inrule

irX for Salesforce

Help Documentation for the InRule Decision Platform

Date of Publication: 2/11/2021

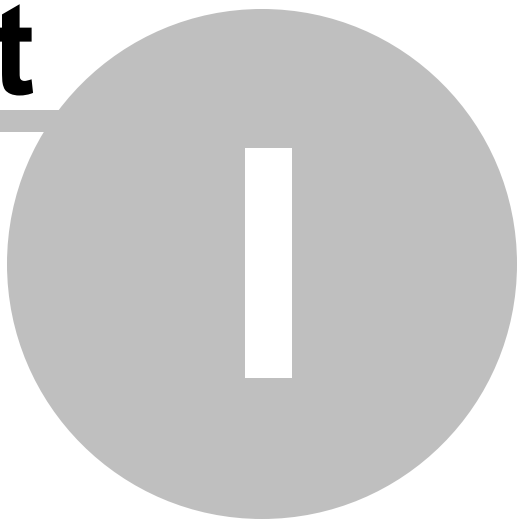
---- This page intentionally left blank ----

irX® for Salesforce® Help

Published: February 2021 in Chicago, IL

Table of Contents

Part



Before You Begin

Date of Publication: 2/11/2021

1 Before You Begin

irX® for Salesforce communicates with Salesforce in order to establish the InRule® Entities and Fields that correspond to those in Salesforce. To facilitate that communication, you must define some environments. You will need one environment for each Salesforce environment that irAuthor® will connect to.

For each environment, you must specify the following:

- The Salesforce Login Credentials needed to connect

In certain cases, such as using a custom Salesforce domain or a Salesforce Scratch Org you will also need:

- Your Salesforce Login URL

You will define these environments in Manage Salesforce Configuration.

NOTE: Not all irX for Salesforce Help environments support API access. However, irX for Salesforce requires a Salesforce instance that supports the API. If you attempt to connect with an instance that does not support this access, you will receive an error when connecting via irX that contains information such as "The REST API is not enabled for this Organization." The edition types that do NOT include API access are Contact Edition, Group Edition and Professional Edition. Please refer to official Salesforce documentation for up-to-date information as this list is subject to change.

Part II

Manage Salesforce Configuration

Date of Publication: 2/11/2021

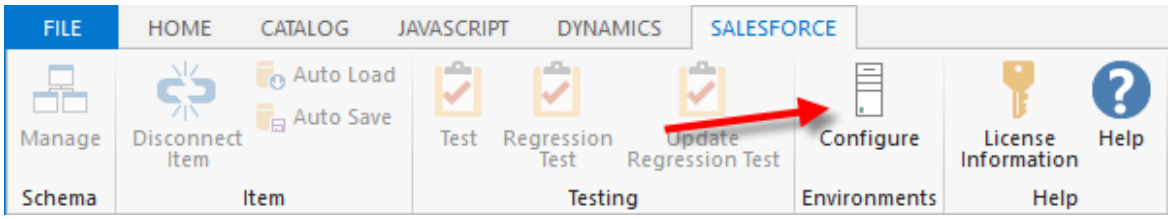
2 Manage Salesforce Configuration

2.1 Configure Environments

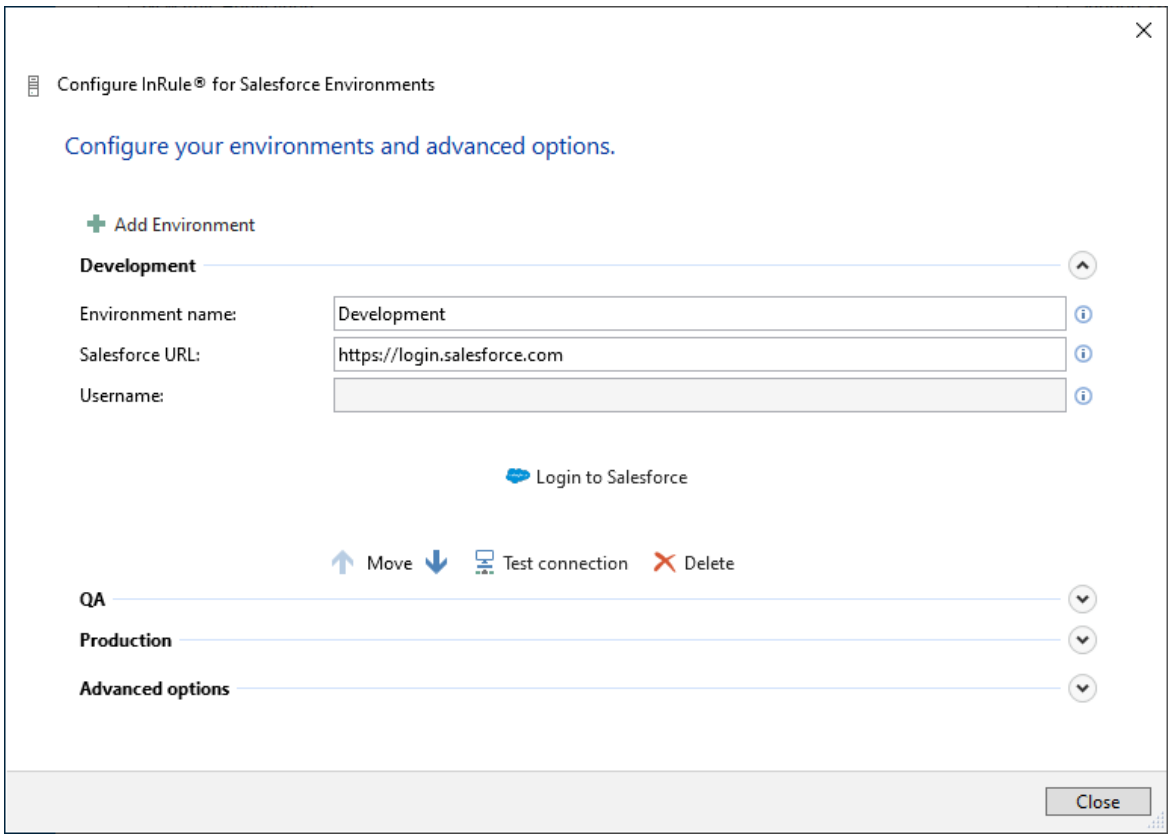
When irAuthor connects to a Salesforce service, it typically has a variety of services, credentials, and other options to select from in order to make the desired connection. You can specify those connection environments using the environment configuration dialog.

Select the Environment Connection Dialog

To begin, select the SALESFORCE tab of the irAuthor ribbon, then click the Configure button.



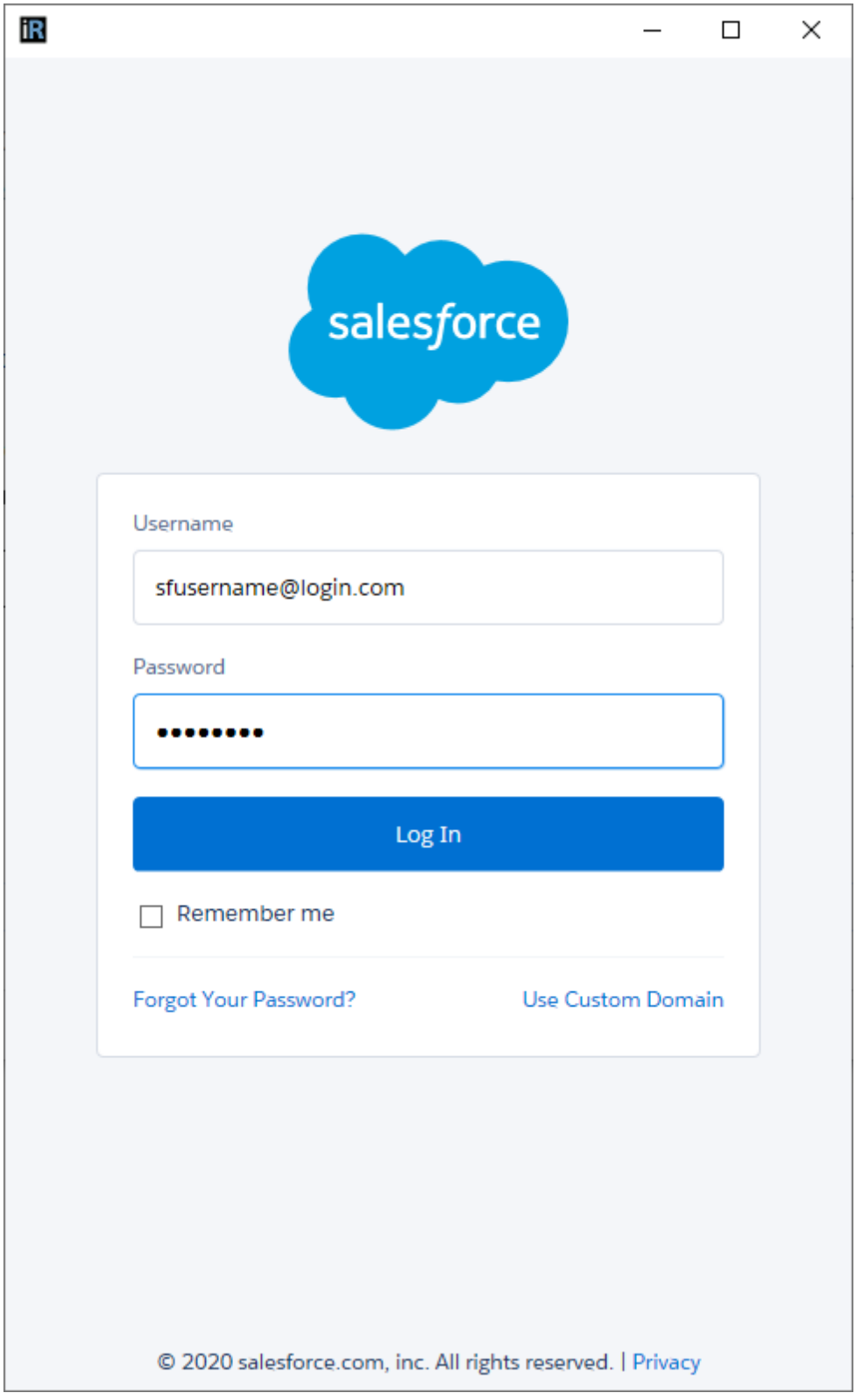
The dialog shows any environments that have been defined. If there are none, a new empty environment will display. Below we see three environments (Development, QA, and Production) and the first one has been expanded to the detail view.



Selecting the 'Login to Salesforce' button with open a Salesforce OAuth window for authenticating with Salesforce.

In most cases, the default Salesforce URL will allow a user to log in, but there are some cases where a user may want to provide an alternate URL.

For example, if using a sandbox environment, https://test.salesforce.com may be the preferred Salesforce URL. Alternatively, if using a custom Salesforce domain or Salesforce Scratch Org, users may need to provide the authentication url specific to their Salesforce environment.



Environment Configuration Panel Usage

Use the environment configuration panel to do the following:

- Add a new environment
- Expand or collapse the detail view of an environment
- Update an existing environment
- Delete an environment
- Change the display order of the environments
- Test the connection to an environment
- Adjust the connection timeout
- Change the Salesforce authentication URL

Add a new environment

To create a new environment, click the "Add Environment" button  . The new environment will be placed at the end of the list.

Expand or collapse an environment detail

Initially, environments are collapsed so you don't see their details. Click the Expand button  to see more details. Click the Collapse button to see fewer details.

Update an environment

If you need to update any of the fields for an environment, simply type the new value(s). The updates are saved automatically.

Delete an environment

To delete an environment definition, click the Delete button  in its expanded view.

Change the order of environments

To move an environment to a new position in the list, click the Move Up or Move Down button  in its expanded view.

Test an environment connection

To test the connection to the Salesforce environment, click the "Test connection" button  in the expanded view.

Set the connection timeout

By default, a connection to the Salesforce server will time out after two minutes. If you experience timeout problems while communicating with the server, you might increase this value. Expand the Advanced Settings section, which applies to all environments, and edit the timeout value.

Change the Salesforce URL

irX for Salesforce connects with the Salesforce application interface at `https://login.salesforce.com`. Normally, you would not need to change this value. However, if the need arises, you may supply an alternate URL for each environment.

Close the dialog

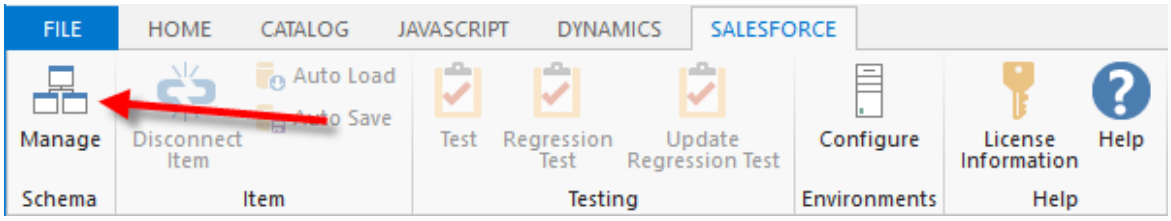
Once you have defined your environments, click the "Close" button.

2.2 Manage Entity Schema

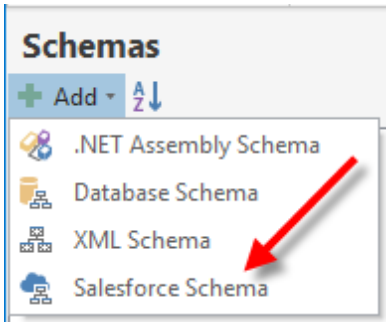
This section describes how to use the Configuration wizard to select the Entities, Fields and one-to-many relationships to use as the foundation of a Rule Application.

Select an Environment

After you open or create a new Rule Application, you can manage its schema using the Manage Schema wizard. Start by selecting the SALESFORCE tab of the irAuthor ribbon, then click the Manage button.



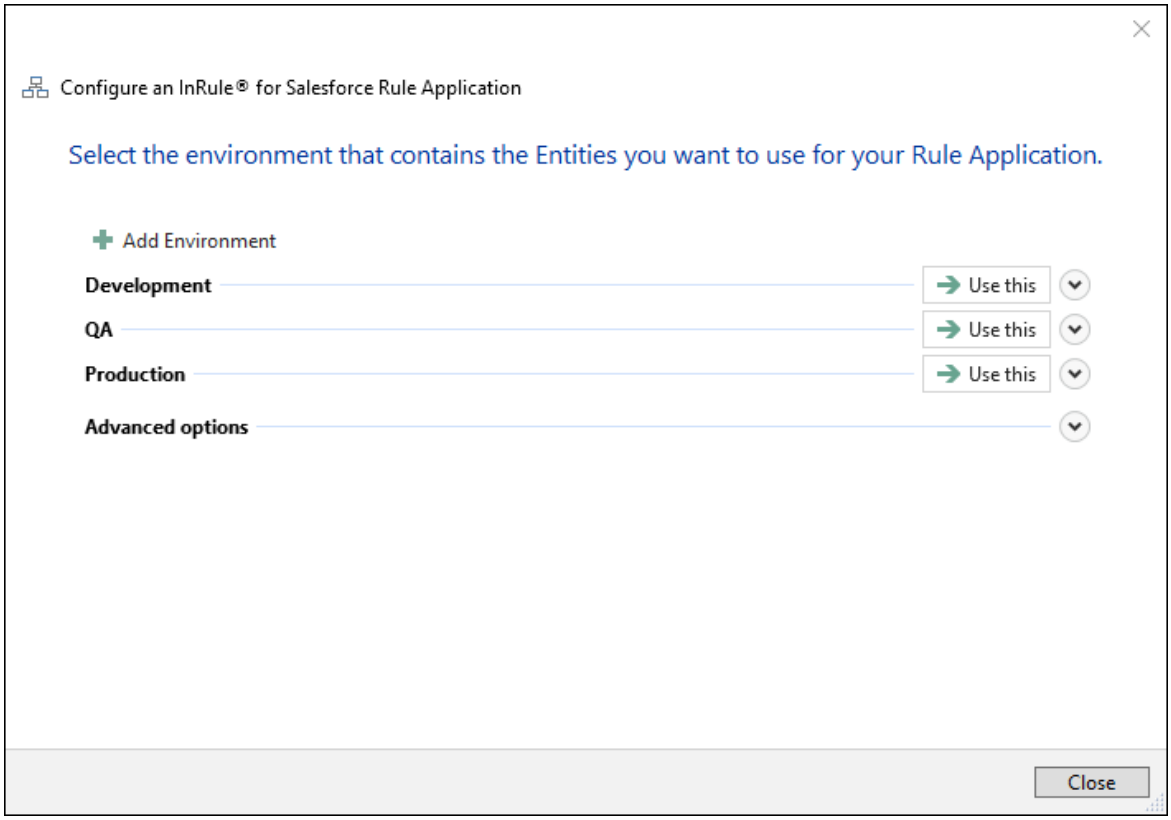
Alternatively, under the Schemas pane, you can add a Salesforce schema.



Unlike other types of schemas, a Rule Application may have no more than one Salesforce schema.

If your Rule Application is not already identified as a Salesforce Rule Application, this will enable the Salesforce functionality.

The first panel of the wizard shows any environments that have been defined. If there are none, a new empty environment will display. Below we see three environments (Development, QA, and Production).



Use this panel to manage your environments, much the same as when you initially configured your environments.

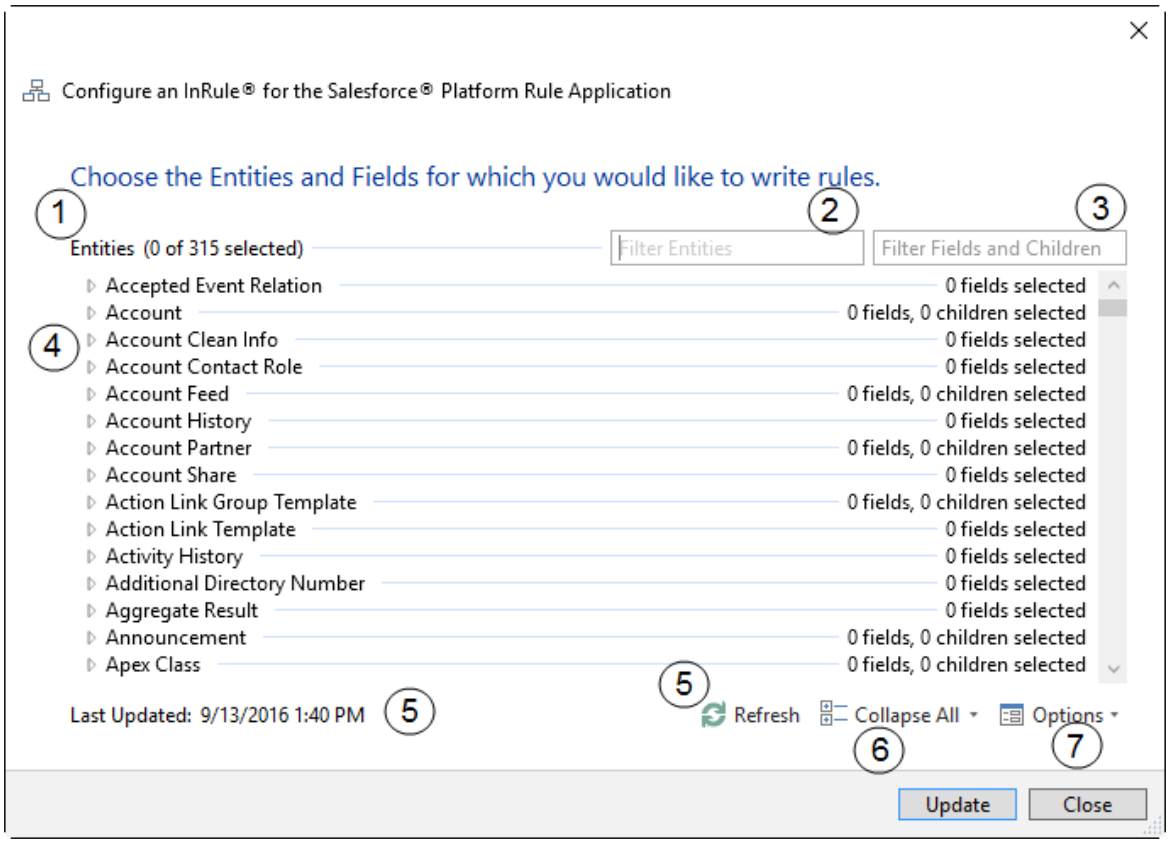
Select an environment

Once you have defined your environments, select the one you want to connect to by clicking the "Use this" button .

2.3 Select Entities to use in irAuthor

This section describes how to use the Configuration wizard to select the Entities, Fields and one-to-many relationships to use as the foundation of a Rule Application.

The Select Elements Screen



1. The top node of the Entity tree shows the number of Entities that one or more elements (Fields or one-to-many relationships) selected underneath it.

2. The Filter Entities box allows you to narrow the list of Entities that are displayed by typing text. The list will shrink or grow automatically as you type or remove letters into the box.

3. The Filter Fields and Children box allows you to narrow the list of items displayed underneath each individual Entity.

4. The Display Name for each Entity is displayed as a node in the tree and is the name that will be used for the Entity in irAuthor. The display name will be used for the Field or relationship in irAuthor. When an Entity node is collapsed, the number of selected Fields and children that are selected underneath it are displayed. The name of an Entity with at least one Field or relationship selected will also appear in bold to give it added visual distinction. If the Entity does not have any one-to-many relationships then only the number of Fields selected will be shown.

5. Because the Salesforce metadata can take some time to download, irX for Salesforce establishes a cache so the download is not required every time you use irAuthor. This screen shows the date and time this cache was last updated. If the metadata has changed since this date, click Refresh to update the cache. See Refresh Salesforce Items for more information.

   The metadata cache is removed whenever the irX for Salesforce environment URL changes, or

when irX for Salesforce is uninstalled. If you should ever need to remove the cache manually, it is stored in the `%APPDATA%\Roaming\InRule` directory.

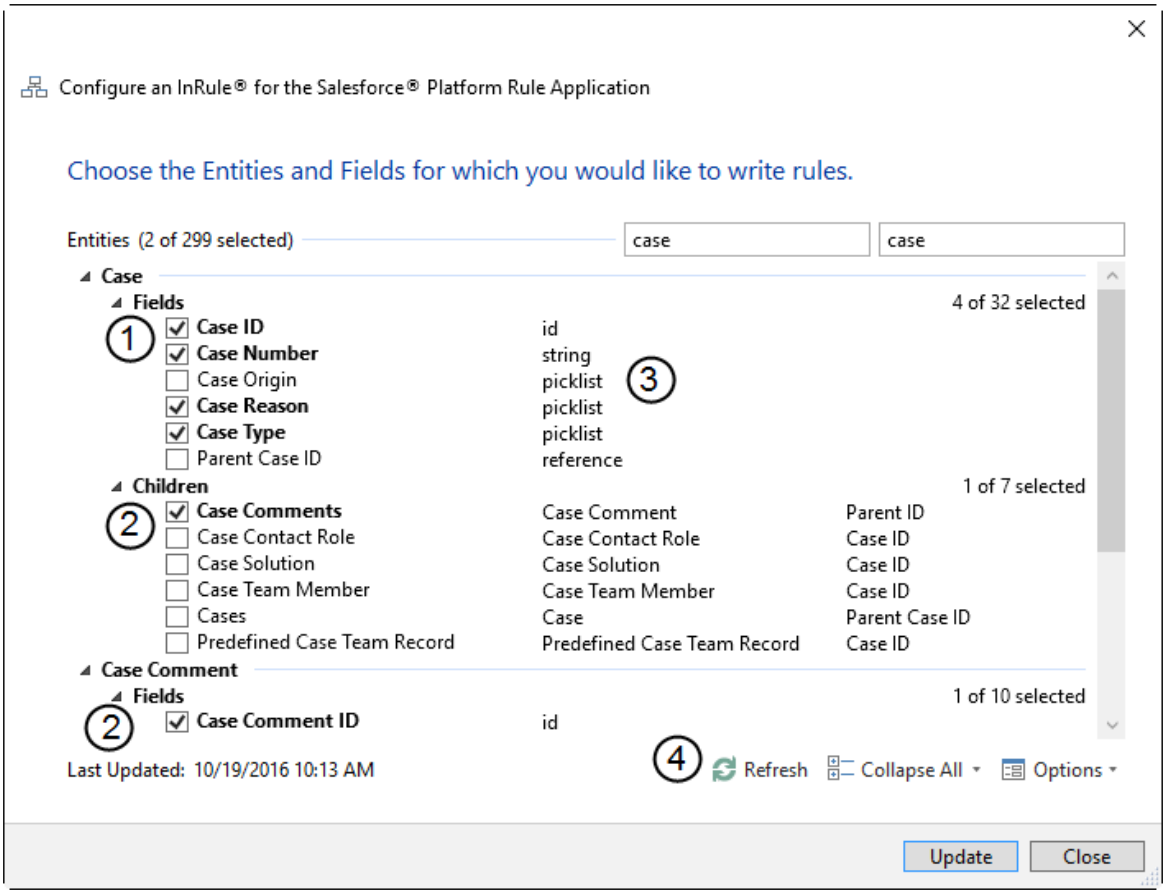
6. The Expand All and Collapse All buttons allow you to fully expand or collapse the tree. Click the drop-down arrow in the Collapse All button to expose the Expand All button. Note that due to the large number of Entities in Salesforce, expanding the entire tree may take several seconds and cause irAuthor to appear unresponsive.

7. The Options drop-down menu exposes two checkboxes which allow you to customize which Entities, Fields, and children are displayed.

   The **Show selected only** checkbox allows you to see just the Entities, Fields and relationships that have been selected. This is often used to preview the entity model that will be constructed in irAuthor once the Finish button is clicked.

   Note: If items have been changed on the Salesforce server and those changes are not reflected on the screen, Refresh Salesforce Items to get the latest.

Selecting Fields & Relationships



1. Each Field and relationship is identified by the display name specified in Salesforce. The display name will be used for the Field or relationship in irAuthor. Use the checkbox to the left of each item to select it. Selected items appear in bold for additional visual distinction.

2. Lookup Fields and children (one-to-many relationships) in Salesforce point to other Entities. Because of this when you select either of those types of elements, the Name field on the related Entity is automatically selected. At least one Field on the related Entity must be selected so that the connection can be created in irAuthor. Thus if you unselect all of the Fields on a related Entity a warning message will appear stating that the Lookups or Children will be unselected on any other Entity referencing that one. You have the option whether or not to proceed with your changes.

3. Each Field has its Salesforce data type listed to the right while each Child (one-to-many relationship) has the related Entity's display name displayed on the right. See the article How Salesforce Data Types are Mapped for more information on how various Fields and Entity types are handled in irAuthor.
4. Because the Salesforce metadata can take some time to download, irX for Salesforce establishes a cache so the download is not required every time you use irAuthor. This screen shows the date and time this cache was last updated. If the metadata has changed since this date, click Refresh to update the cache. See Refresh Salesforce Items for more information.

Note: The Entity/Field selector wizard does not display the following:

- Lookups (references) or children (relationships) that can refer to more than one object type. (e.g. Owner can be a User or a Queue)
- Objects that are not queryable

2.4 How Salesforce Data Types are Mapped

irAuthor supports basic data types such as string, integer, decimal etc. This topic discusses how the various Salesforce Field data types are handled in irAuthor.

Field Data Types

Salesforce Friendly Data Type Name	Salesforce System Data Type Name	How it's handled in irAuthor
Address	address	Creates a **Text** field
Auto Number	autonumber	Creates a **Text** field
Checkbox	boolean	Creates a **Boolean** field
ComboBox	combobox	Creates a **Text** field linked to a value list that contains both the values and descriptions for each value
Currency	currency	Creates a **Decimal** field
Date	date	Creates a **Date** field
DateTime	datetime	Creates a **DateTime** field
Number	double	Creates a **Decimal** field
Email	email	Creates a **Text** field
ID	id	Creates a **Text** field
Integer	int	Creates an **Integer** field
Percent	percent	Creates a **Decimal** field
Phone	phone	Creates a **Text** field
Picklist	picklist	Creates a **Text** field linked to a value list that contains both the values and descriptions for each value
Picklist (Multi-Select)	multipicklist	Creates a **Text** field
Text	string	Creates a **Text** field
Text Area	textarea	Creates a **Text** field
Text Area (Long)	textarea	Creates a **Text** field
Text Area (Rich)	textarea	Creates a **Text** field
Time	time	Creates a **DateTime** field
URL	url	Creates a **Text** field

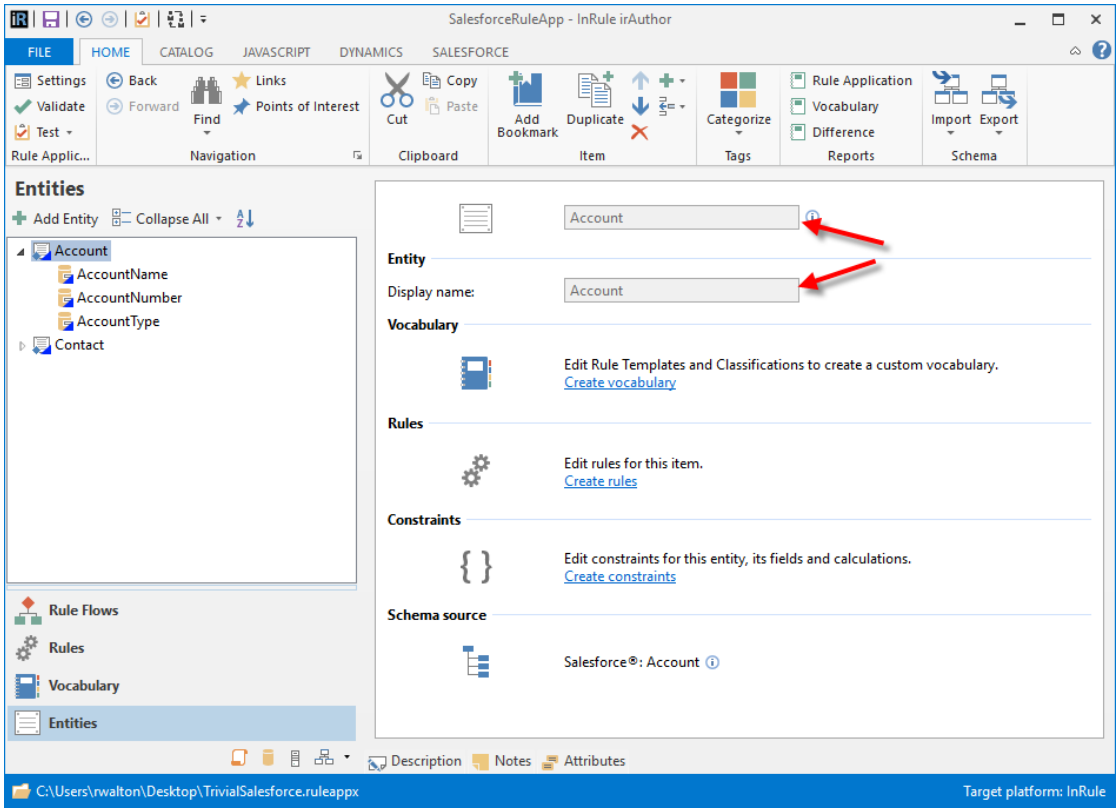
Note: The anytype, base64, complexvalue, geolocation, and encryptedstring types are not supported.

Lookup Fields and Children (one-to-many relationships)

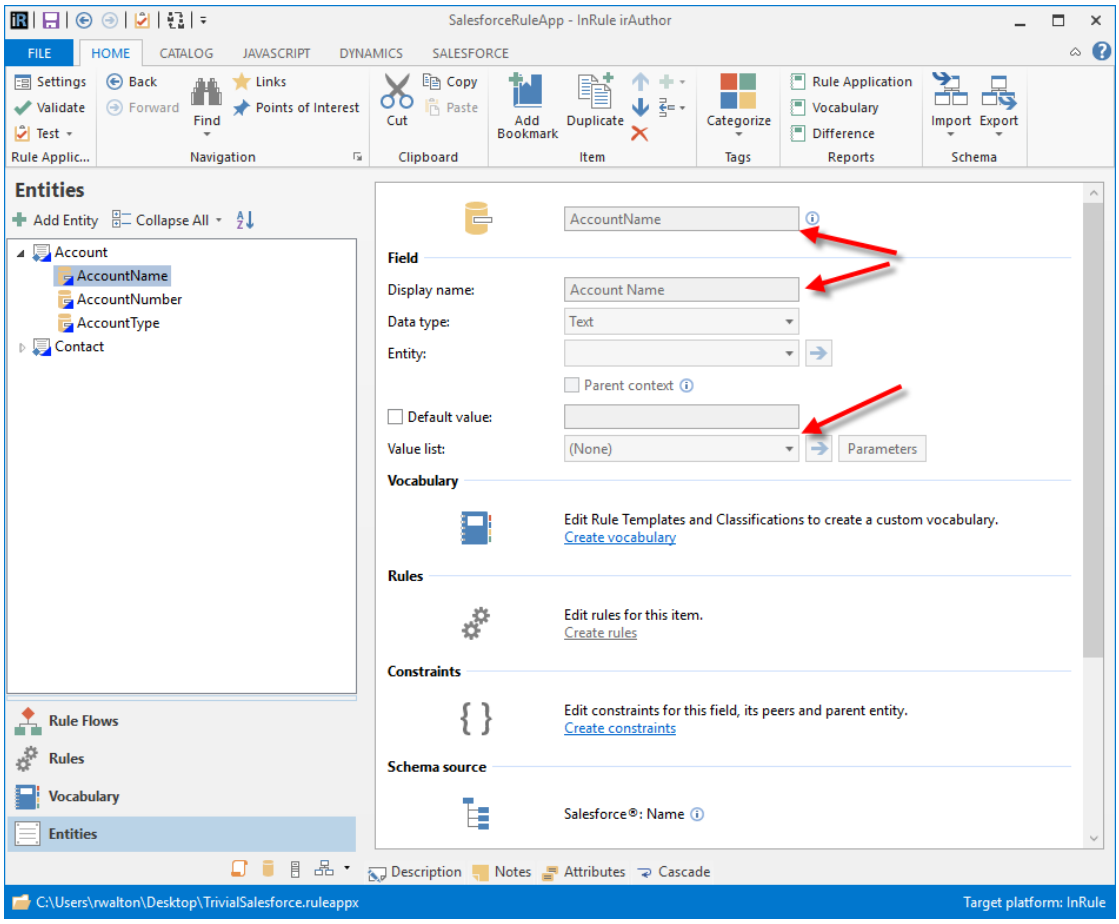
Salesforce Relationship Type	Name Used in Configuration Screen	How it's handled in irAuthor
Single Entity Lookup (field)	Lookup	The target Entity is created in irAuthor and a field linking the two Entities is created on the source Entity.
1:N Relationship	Children	One-to-many relationships are represented under the heading Children in the Configuration wizard. When you select a child Entity, the Name field of the target Entity type is automatically selected. During import both the parent and child Entities are created in irAuthor and linked through a collection on the parent. Rules written at the Parent context can be used to perform aggregation (sum, min, max, average, etc.) to retrieve data from a specific collection member or to execute rules against one or more of the collection members.

irAuthor Entity and Field Display

When irAuthor displays an Entity that was imported from Salesforce, its icon and the "Schema Source" section of the Entity display indicate that the Entity came from Salesforce. You cannot change the name or description of an imported Entity.

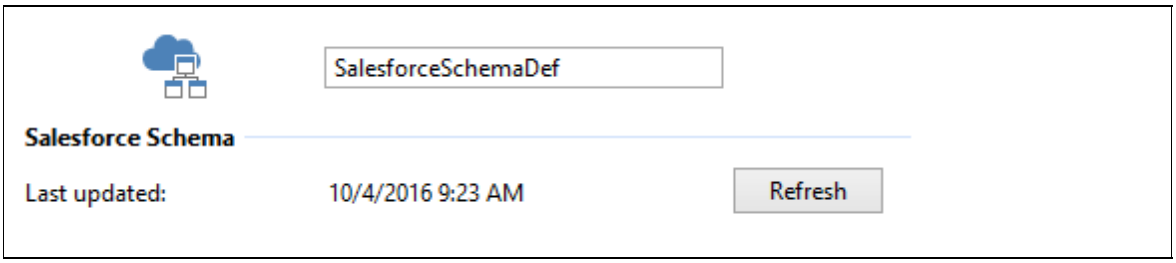


Similarly, when irAuthor displays a Field that was imported from Salesforce, its icon and the "Schema Source" section indicate that the Field came from Salesforce, and you cannot change the Field's name or description. In addition, you cannot specify a value list.



2.5 Add or Update Entities, Fields & Collections

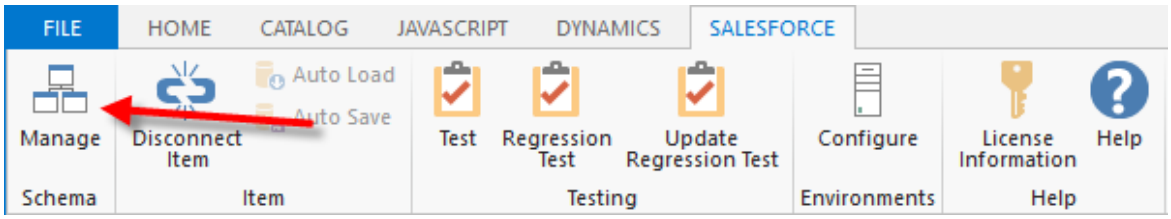
Any Rule Application that uses Salesforce Entities and Fields does so using the Salesforce Schema. This can be accessed through the Schemas tab in irAuthor.



The Schema display shows its name and the date and time of the most recent update.

A Rule Application may only have one Salesforce Schema.

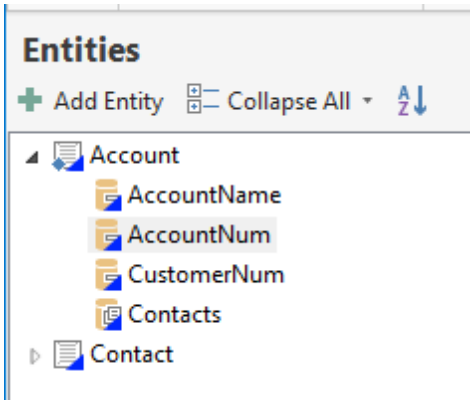
To add new Entities to your InRule Entity model or to add Fields or Collections to specific Entities, click the Refresh button on the Salesforce Schema or the Manage button in the ribbon's Schema group. After you select an environment, if irAuthor has not already pulled the Entity information from the Salesforce environment, it will do so. The Configuration Wizard will then be displayed with any Entities, Fields and Collections from the Entity model pre-selected. See the Select Entities to use in irAuthor section for more information on using the Configuration Screen.



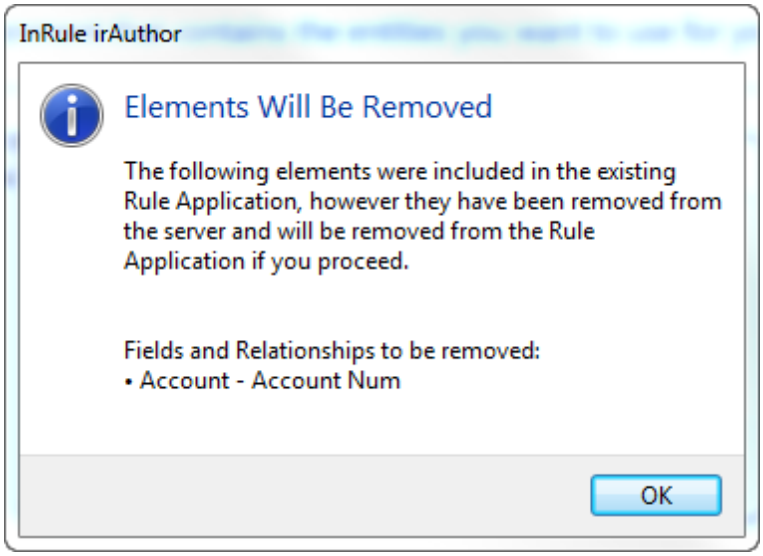
How Items Deleted on the Salesforce Server are Handled

Prior to opening the Configuration Wizard screen, irAuthor will check if any of the Fields in the Entity model have been removed from Salesforce. If so, a screen will display the Entities and Fields that will be removed from the irAuthor Entity model if you proceed with update.

For example, take the following simple Entity model:



On the Salesforce Server, Account Num has been removed. When the Manage button is clicked, the following confirmation screen appears:



If you do not want the items removed (e.g. you accidentally specified the wrong Salesforce instance on the prior screen) then click OK on the notification screen and Cancel on the Configuration Wizard.

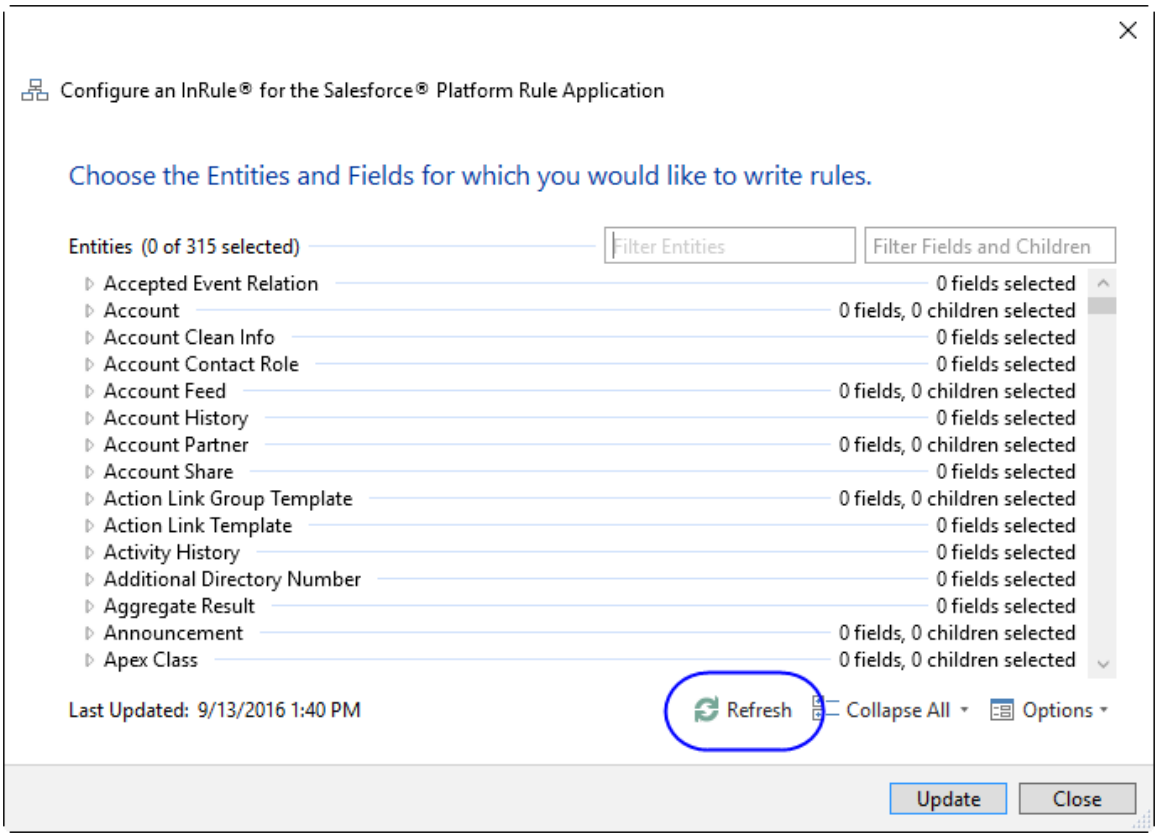
How Items Modified on the Salesforce Server are Handled

When the display name of Entities, Fields and Relationships are changed or Option Set items are added, removed or changed those changes will be made to the appropriate items in irAuthor.

Note: Changes made manually to the Names, Display Names or Value Lists of items sourced from Salesforce are not supported and will be blown away during an update. Any items such as Entities and Fields that were created manually and not sourced from Salesforce will be left unchanged by the update.

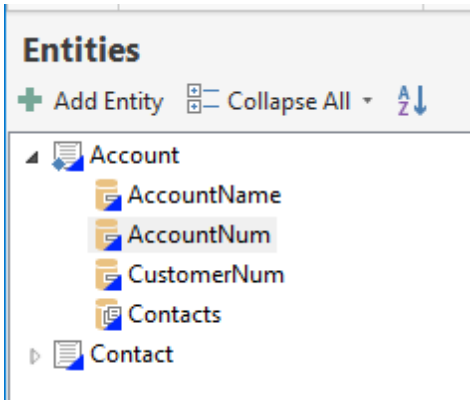
2.6 Refresh Salesforce Items

Since the Add or Update Entities capability does not force a refresh from the Salesforce server you can click the Refresh button to make sure the latest information is available in the Configuration Wizard. This will force a call to the Salesforce server and will update the imported irAuthor items accordingly. Any items such as Entities and Fields that were created manually and not sourced from Salesforce will be left unchanged by the refresh.

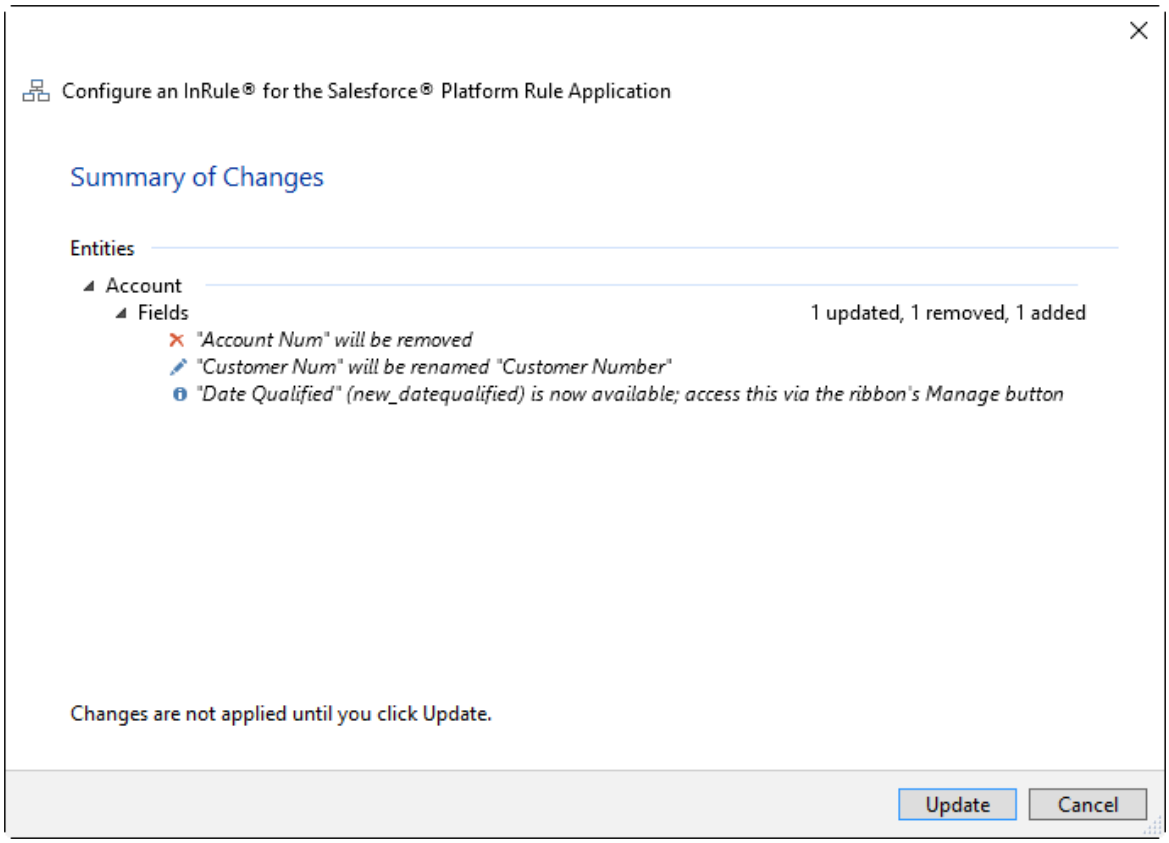


Confirming the Refresh

The refresh will notify you of the changes it is about to make. For example, take the following simple Entity model:



On the server, Account Num has been removed and Customer Num has been renamed. When the Refresh button is clicked, the following confirmation screen appears:



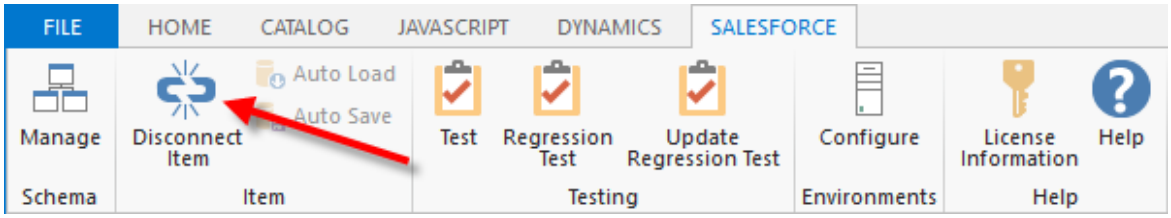
The confirmation screen provides an opportunity to opt out of the changes by clicking Cancel. Opting out of the changes can be especially important if you accidentally specified a refresh from the wrong Salesforce environment.

Note: Newly added Fields in your Entities, such as "Date Qualified" above, are not automatically added to your Rule Application. To add them, use the Select Entities pane.

2.7 Disconnect Salesforce Items

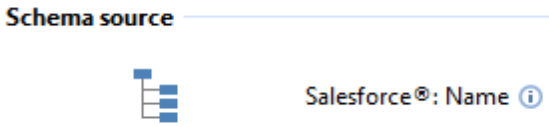
Sometimes you may want to "disconnect" an Entity or Field from Salesforce so that changes to its value do not update the database. This is useful, for example, if you are using a Salesforce Field for an interim calculation but don't want that value to get written to the database.

To disconnect an item, right-click it in the Entities view and select Disconnect Item. Alternatively, with the item selected, click the Disconnect Item button on the SALESFORCE ribbon.



Confirming the Disconnection

The Schema Source section of a Field definition indicates where the Entity or Field originated. For a Salesforce Field, this would look something like this.

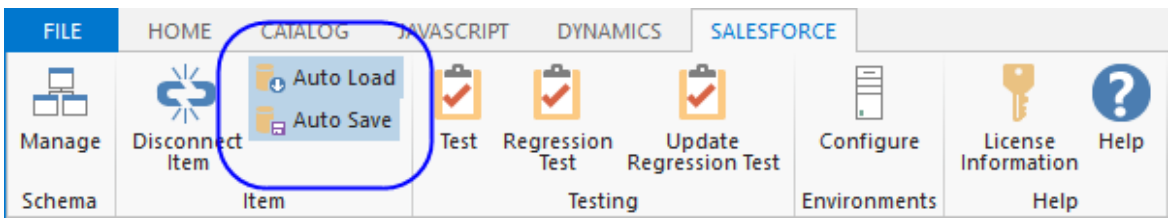


After you disconnect the Field, the Schema Source will simply say "internal," such as for any Field you added using irAuthor.

2.8 Auto Load and Save Salesforce Items

If you have a Collection or relationship that you do not want to populate automatically, you can disable "Auto Load" for the Field. This will set the "RelationshipAutoLoad" property on the Field's SalesforceFieldMetadata object to false. When loading data from Salesforce, your runtime assembly can access that property and skip the Field. Auto Load can be toggled on or off by clicking the button in the SALESFORCE ribbon or through the context menu.

Similarly, if you have a Collection or relationship that you do not want to be saved back to Salesforce, you can disable "Auto Save" for the Field. This will set the "RelationshipAutoSave" property on the Field's SalesforceFieldMetadata object to false. When saving data to Salesforce, your runtime assembly can access that property and skip the Field. Auto Save can be toggled on or off by clicking the button in the SALESFORCE ribbon or through the context menu.



The Auto Load and Auto Save buttons are disabled for Fields that are not relationships.

Part III

Testing Your Rules

Date of Publication: 2/11/2021

3 Testing Your Rules

InRule provides a full featured testing tool called irVerify® which you can use to test and verify your Rule Applications. irX for Salesforce allows you to obtain test data directly from a Salesforce instance so that you do not need to enter that test data manually.

irX for Salesforce provides the following functions for testing your Rule Application:

- Test with a Salesforce record: Test the rules against a single record from Salesforce
- Regression Test with Salesforce Records: Run multiple Salesforce records through the rules and then compare the results to a set of assertions.
- Update a Regression Test Suite: Update data stored locally in Test Suites with the latest values available in the Salesforce instance.

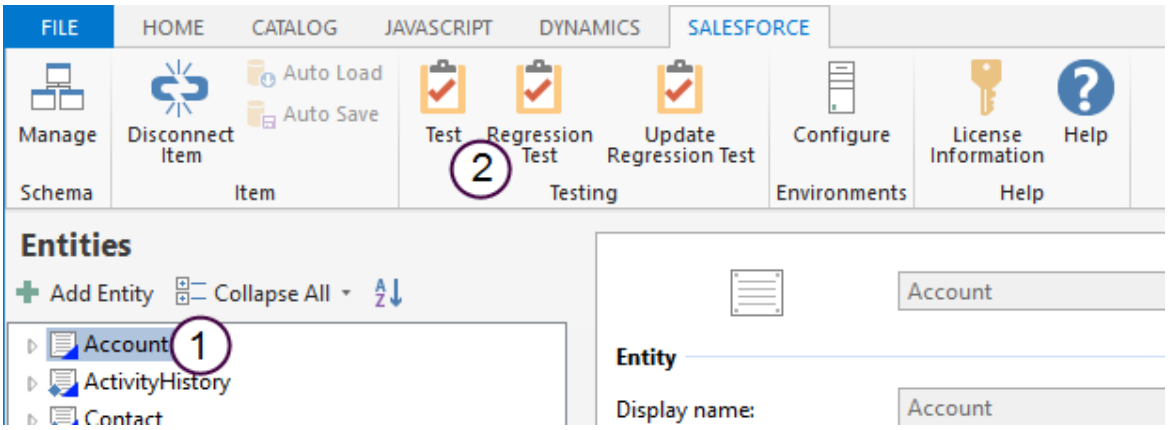
InRule provides a default Rule Application that can be useful for familiarizing yourself with testing Rule Applications

For detailed information on how to use irVerify, refer to the *InRule Help, Author Version*.

3.1 Test with a Salesforce Record

This section describes how to create a Test Session using a Salesforce record. Note that all data will be tested locally and that no updates will be made to data in Salesforce.

Select the Entity Type to Test



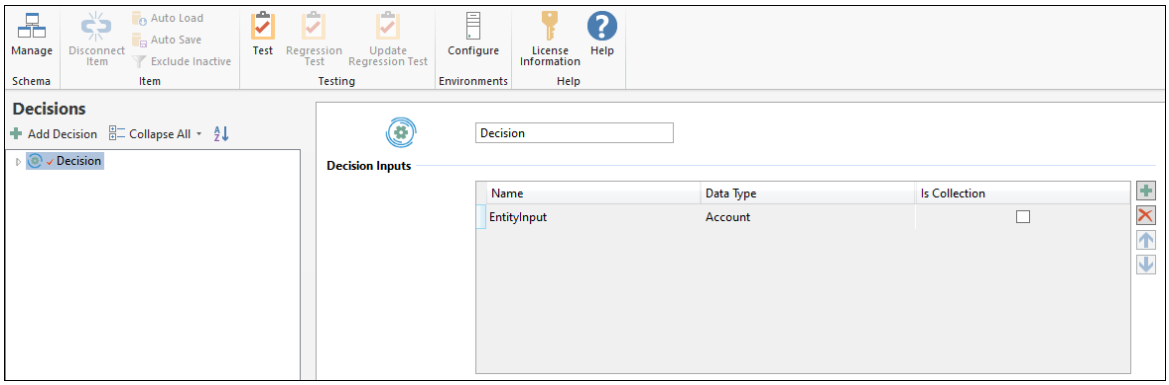
1. To create a Test Session using a Salesforce record, first select the Entity you wish to test. To do this, select the Entity or one of its children either in the irAuthor Entities view or the irAuthor Rules View. This screen shows the Entities View.

2. On the SALESFORCE ribbon tab, click the Test button.

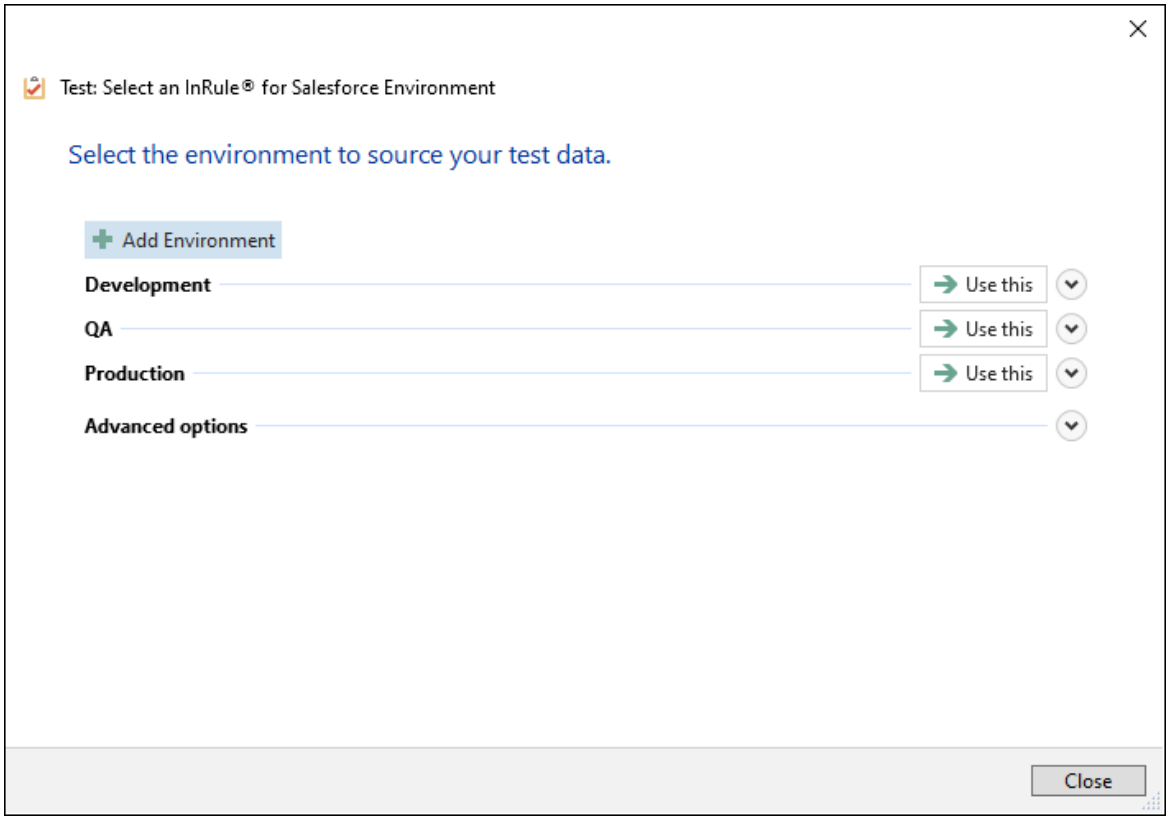
The Select Salesforce Environment window appears.

If testing a Decision, select the Decision and set the Entity Type as the Data Type of the first input.

Then click the Test button for the Salesforce Environment window to appear.



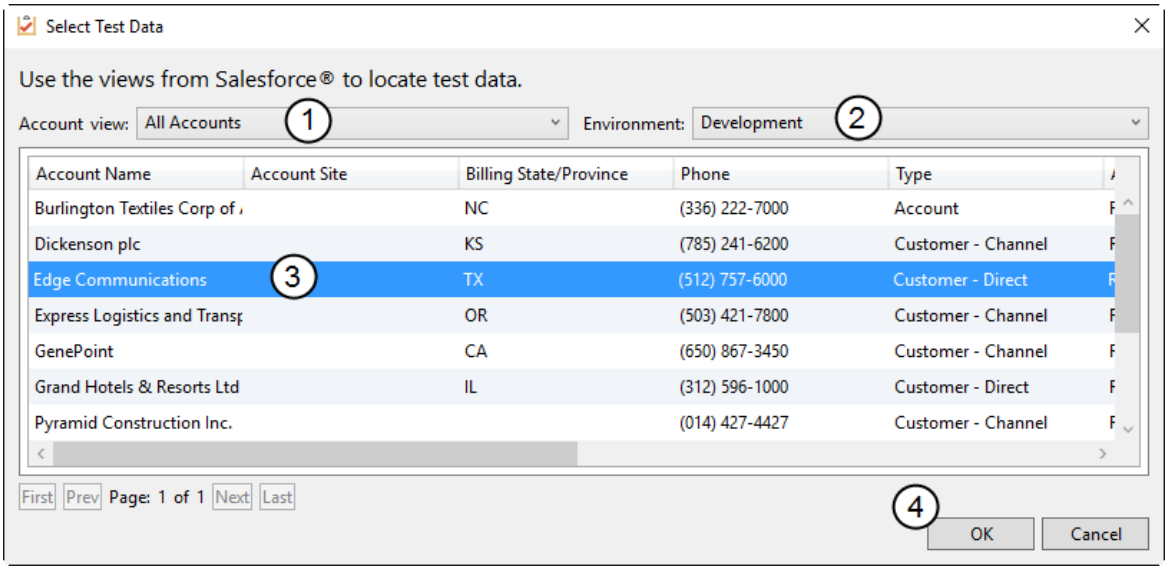
Select the Salesforce Environment



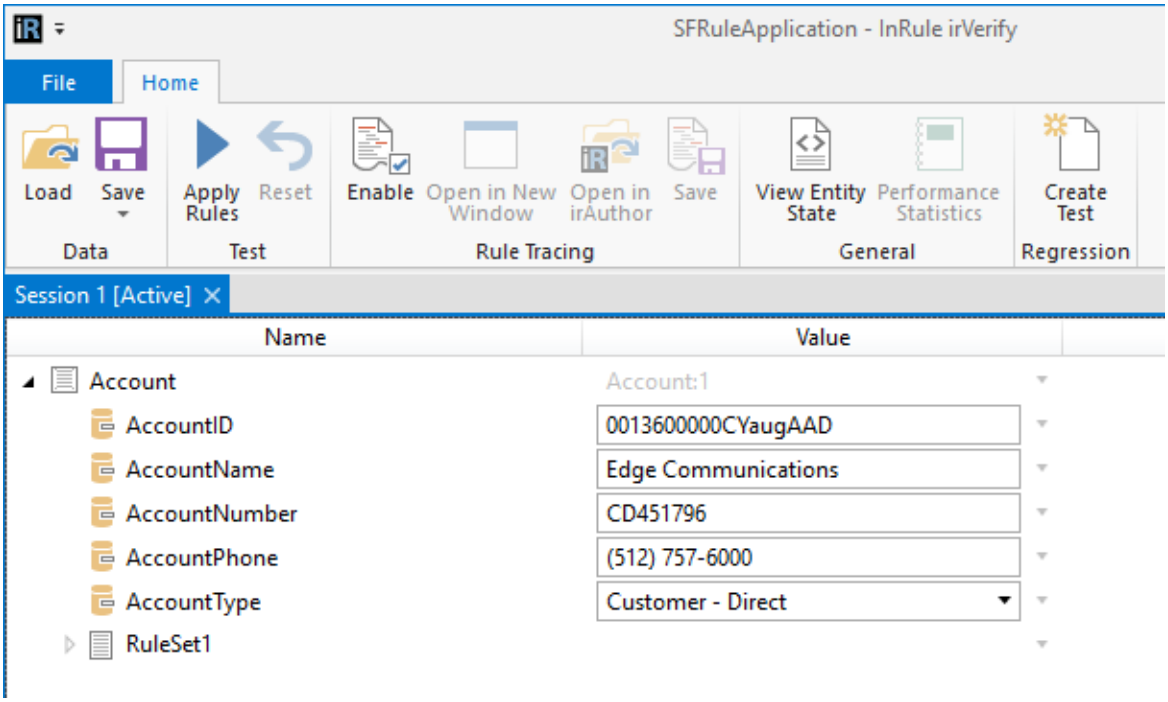
Select the environment you want to use to update the Test Suite by clicking the "Use this" button .

Select Record

Use the Select Test Data window to select the Salesforce record for your test data.



1. Use the view selection drop-down, here called "Account view," to select the view you want.
2. Select the appropriate Salesforce environment.
3. Select the row for the Salesforce record you want.
4. Click OK.



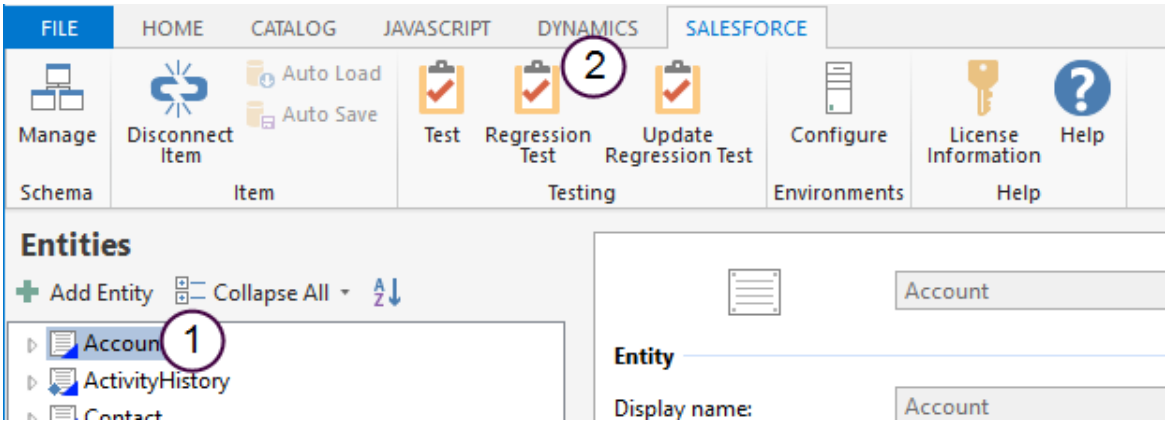
Proceed with your testing.

3.2 Regression Test with Salesforce Records

This section describes how to create a Test Suite using Salesforce records. Test Suites can be used to run the rules against records in Salesforce and then test the end results using a set of assertions. For example, if the final price on various quotes is calculated by a complex set of rules you might want to create a test suite to check the final price and some of the interim values on a set of quotes. Rerunning the test suite every time rules are changed can be a good way to make sure no inadvertent changes were made.

Select the Test Entity

To create a Test Suite using a Salesforce record, first select the Entity you wish to test. To do this, select the Entity or one of its children either in the irAuthor Entities view or the irAuthor Rules View. This screen shows the Entities View.

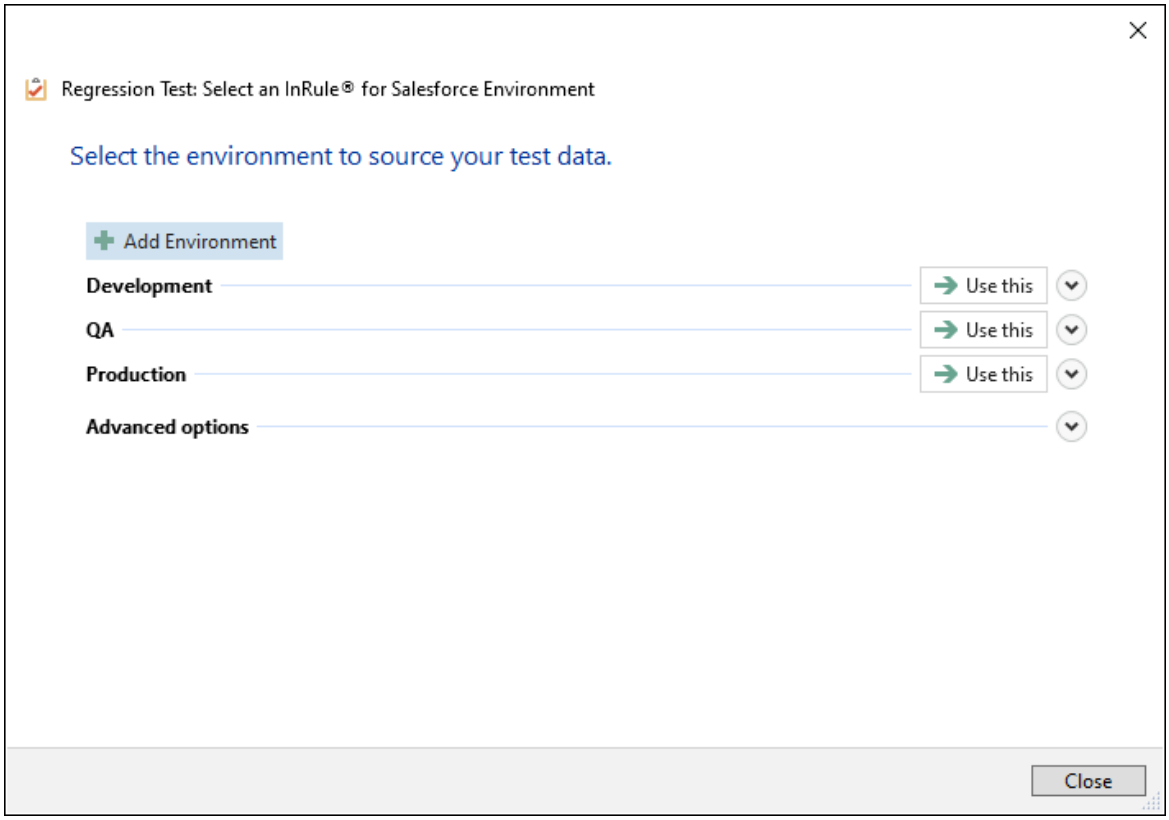


1. Select the Entity you wish to test. Here, the "Account" Entity is selected.

2. On the ribbon, click the Regression Test button.

The Select Salesforce Environment window appears.

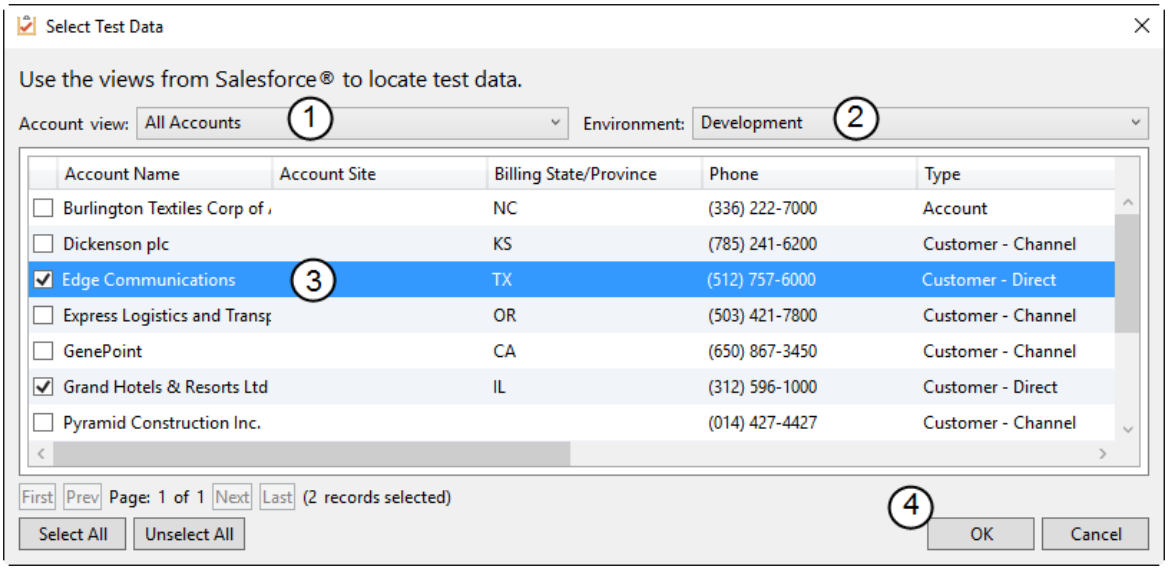
Select the Salesforce Environment



Select the environment you want to use to update the Test Suite by clicking the "Use this" button → .

Select Records

Use the Select Test Data window to select the Salesforce records for your test suite.



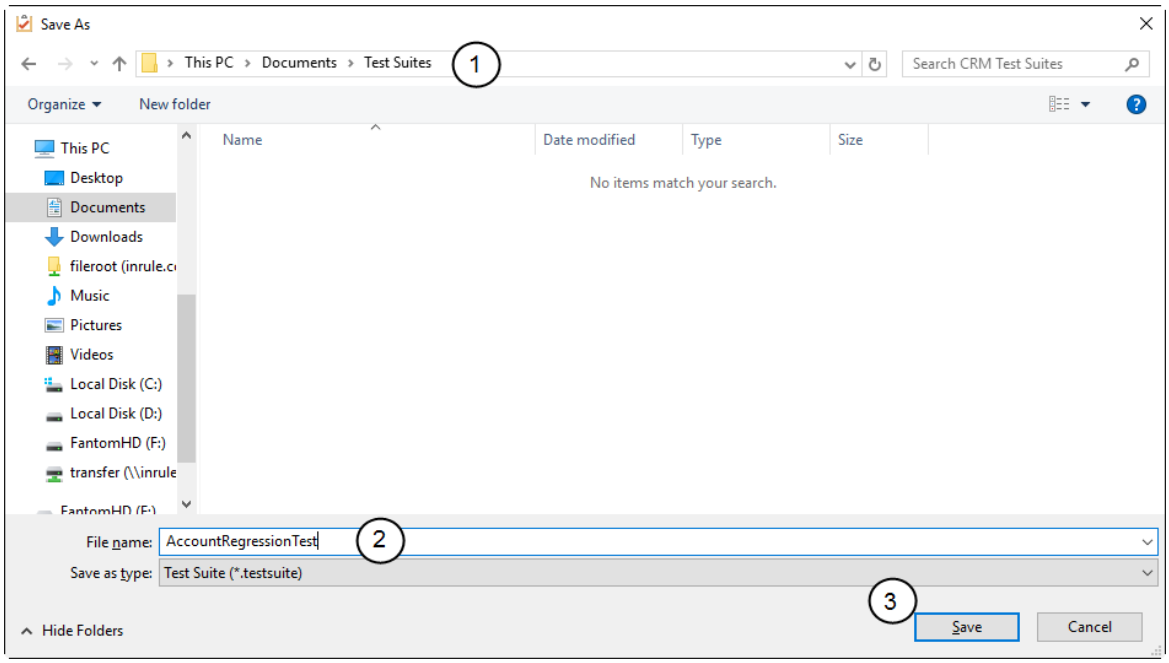
1. Use the view selection drop-down, here called "Account view," to select the view you want.

2. Select the appropriate Salesforce environment.
3. Use the check boxes to select the Salesforce records you want.
4. Click OK.

A dialog appears, prompting you to save the Test Suite.

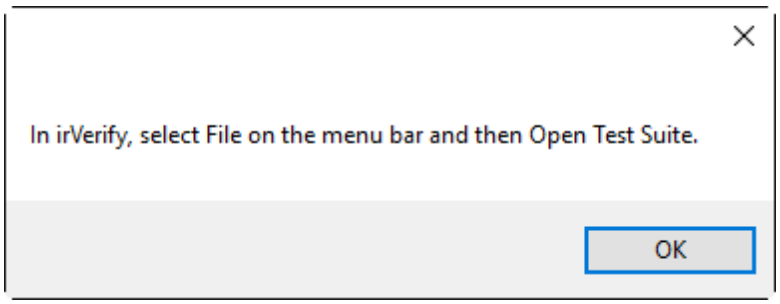
Save the Test Suite

Use the Save As window to save your Test Suite.



1. Choose the disk location for the Test Suite.
2. Type in a file name for the saved Test Suite.
3. Click Save.

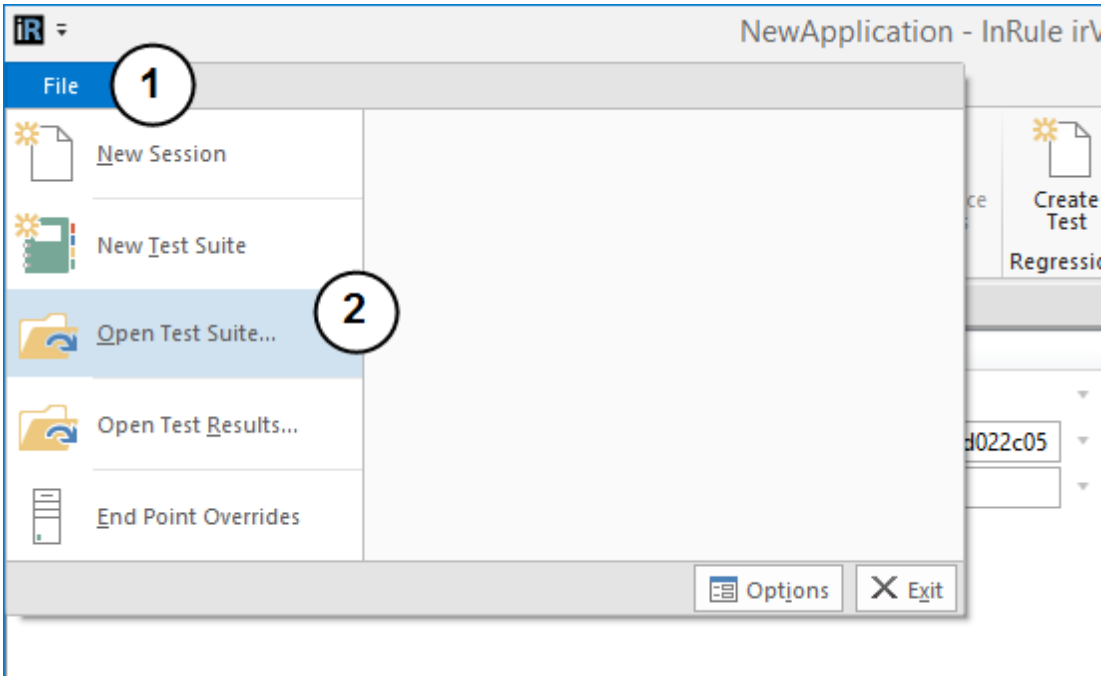
A message window appears with instructions for the next step.



Click OK, and the irVerify window appears.

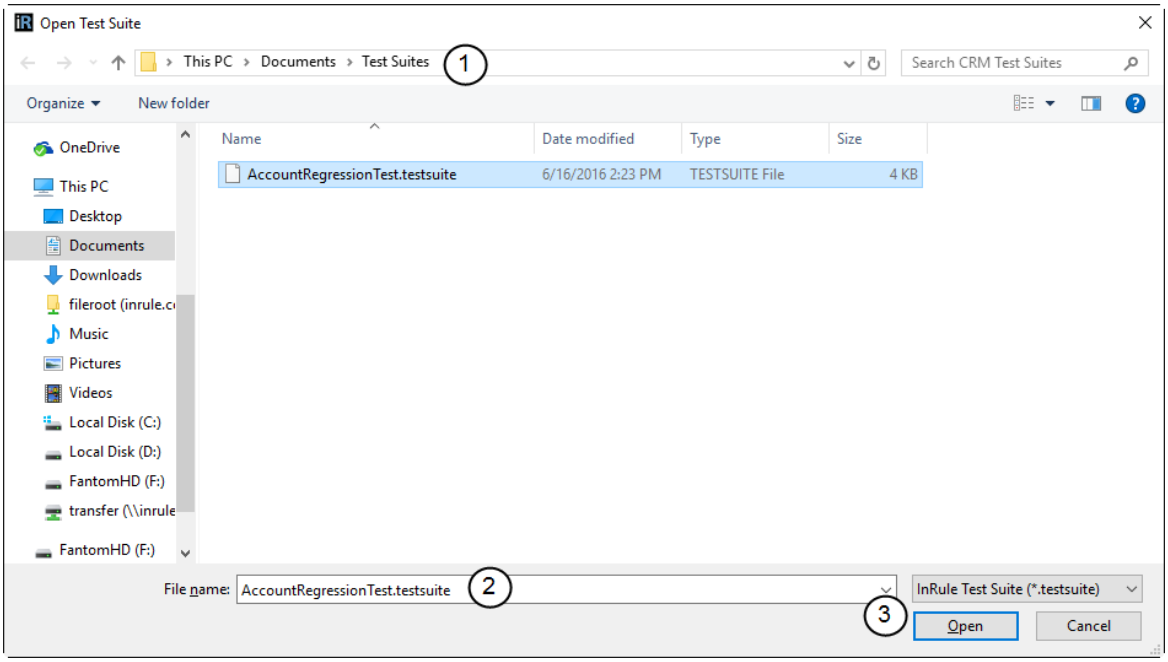
Open the Test Suite

Once you are in irVerify, open the test suite.



1. Click File to expand the File menu.
2. Click Open Test Suite.

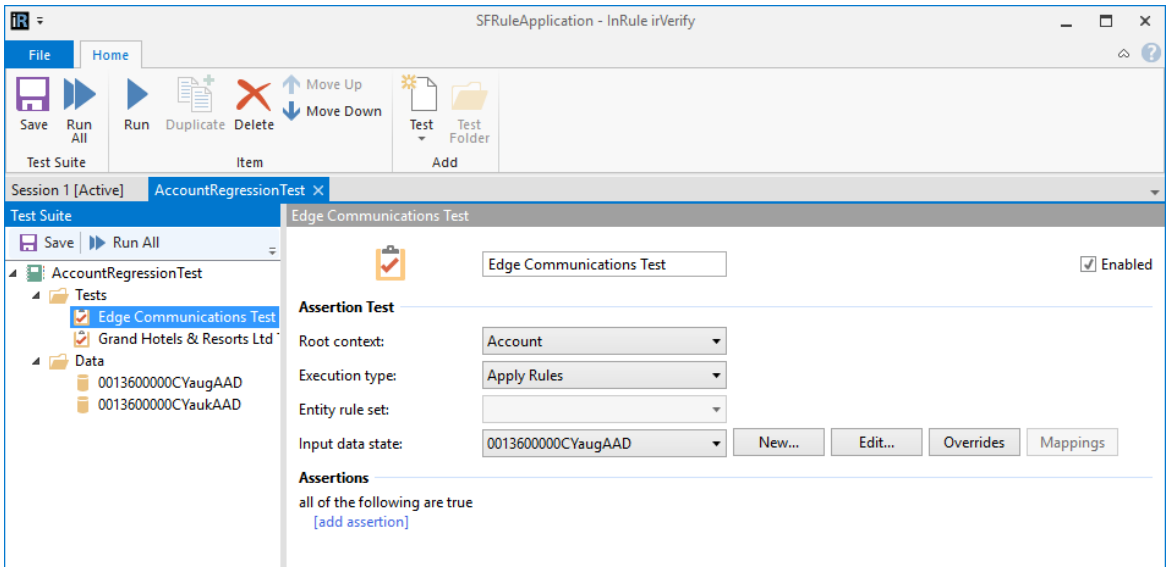
The Open Test Suite window appears.



1. If necessary, navigate to the location where you saved the Test Suite earlier.
2. Select the Test Suite file.

3. Click Open.

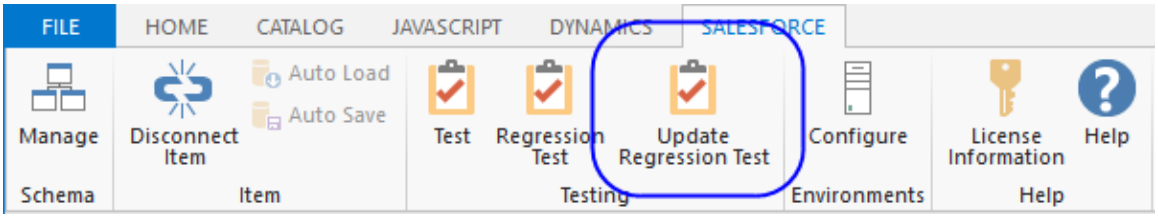
The Test Suite tab appears in irVerify.



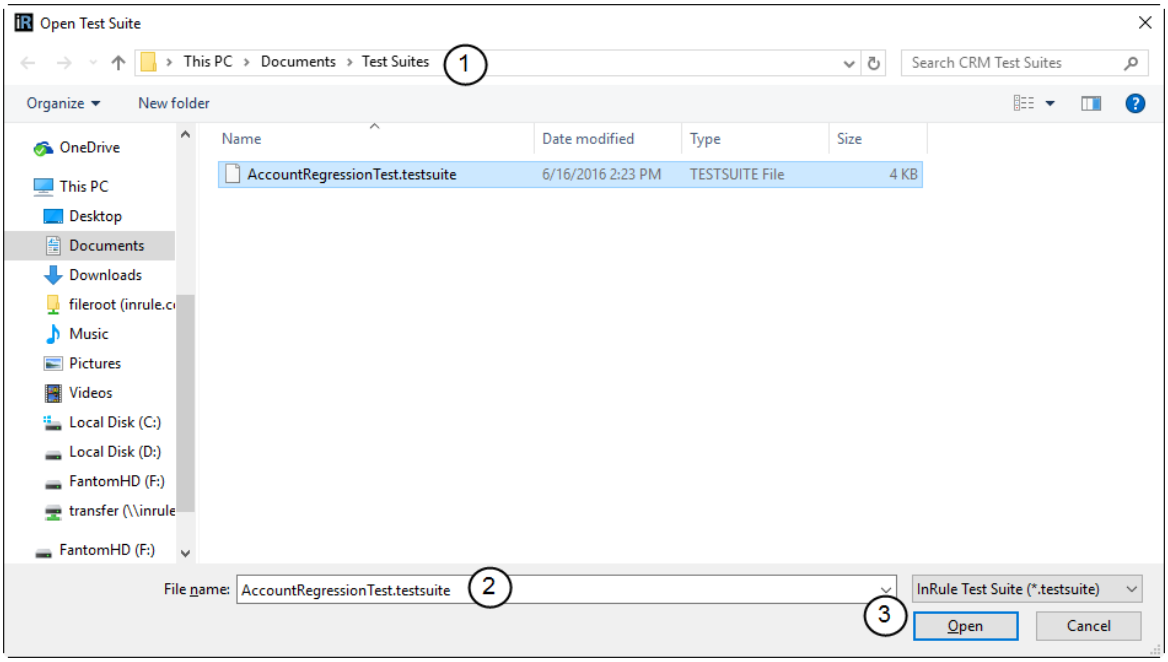
Proceed with your testing.

3.3 Update a Regression Test Suite

This section describes how to update a Test Suite with existing Salesforce records. Since the data used in test suites is saved locally on a machine, this functionality provides a way to easily update that data with the latest values available in the Salesforce instance.



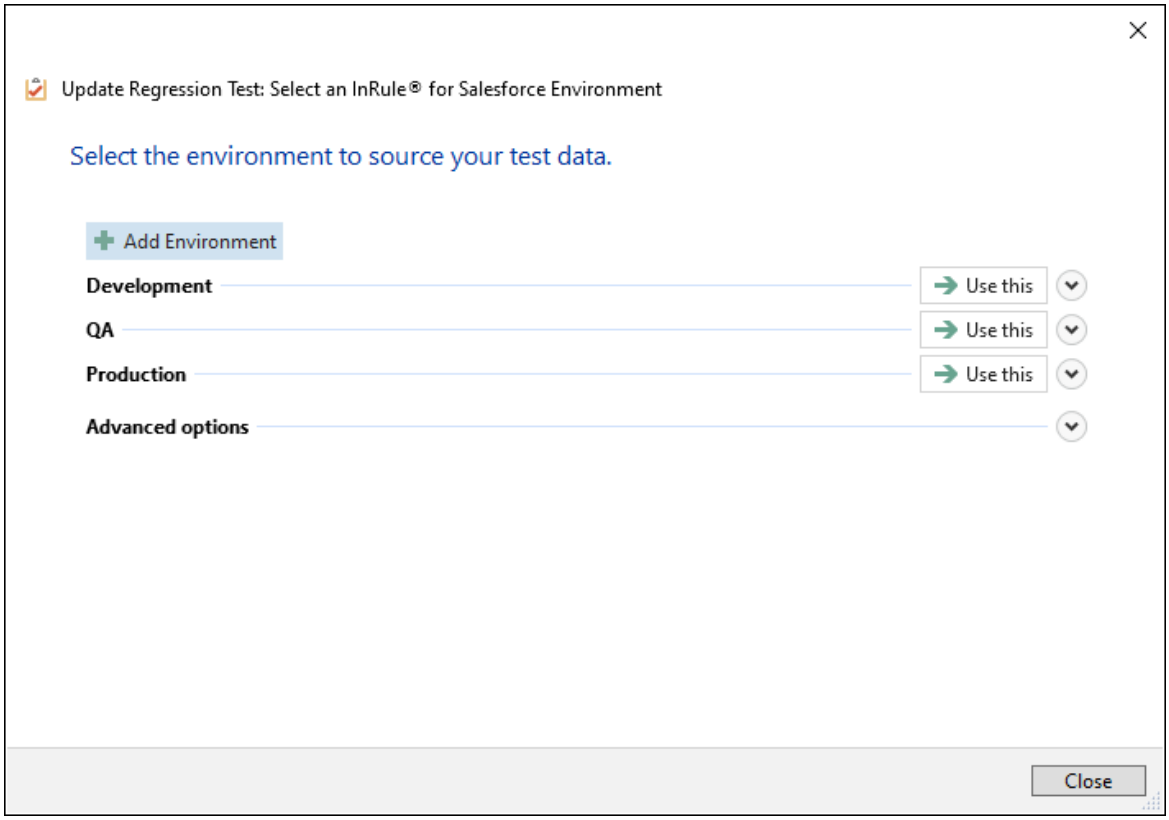
Select the Test Suite File



1. If necessary, navigate to the location of the Test Suite file.
2. Select the Test Suite file.
3. Click Open.

The Select Salesforce Environment window appears.

Select the Salesforce Environment

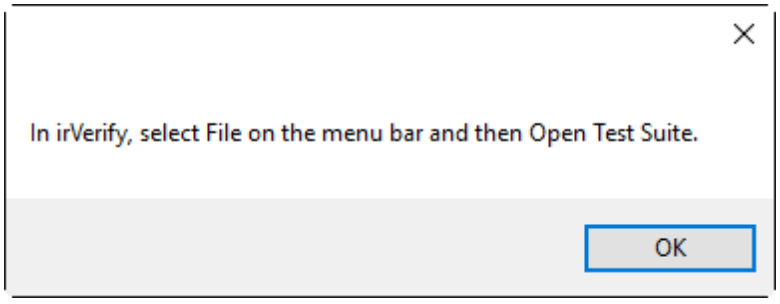


Select the environment you want to use to update the Test Suite by clicking the "Use this" button .

Log In to Salesforce

You will be logged in to Salesforce if needed.

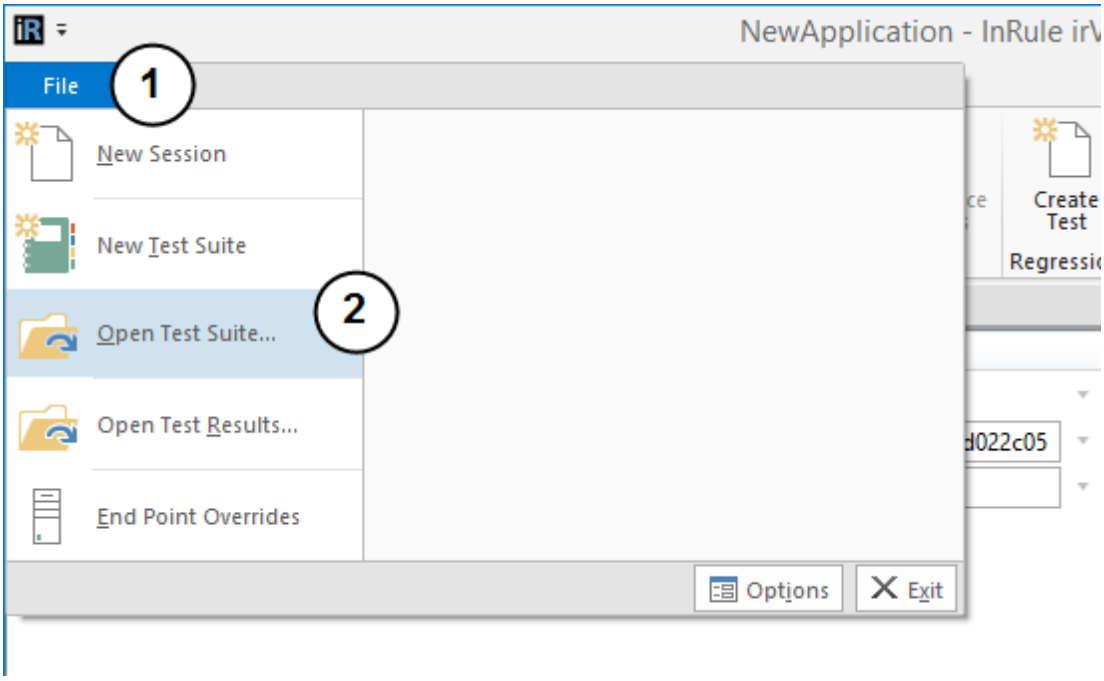
A message window appears with instructions for the next step.



Click OK, and the irVerify window appears.

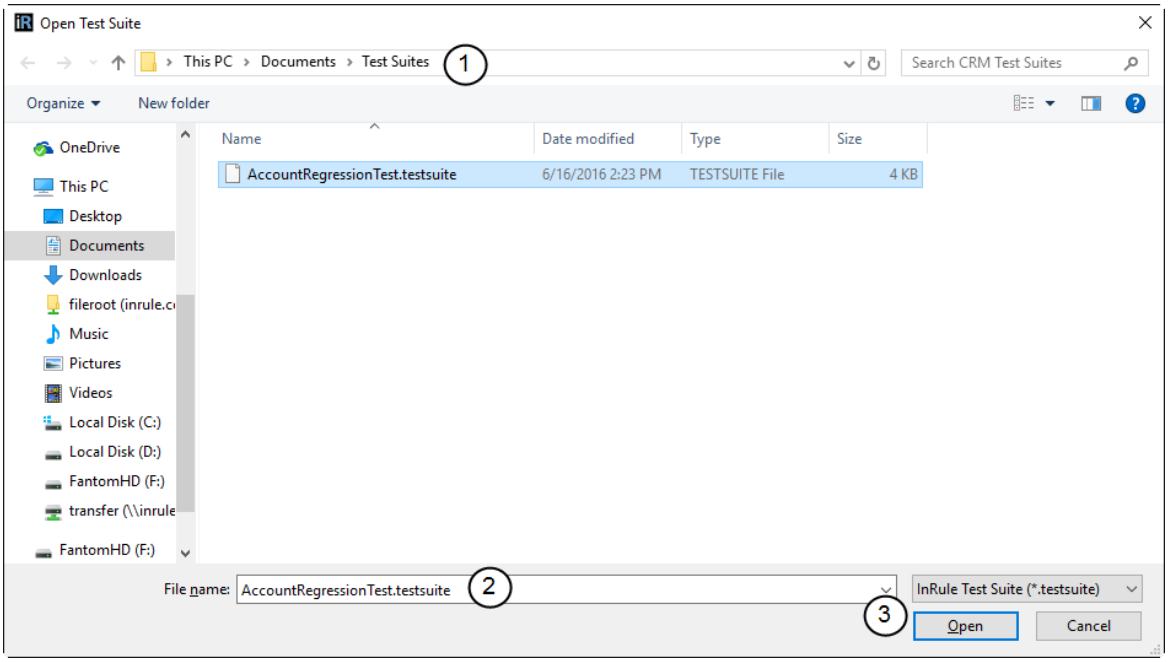
Open the Test Suite

Once you are in irVerify, open the test suite.



1. Click File to expand the File menu.
2. Click Open Test Suite.

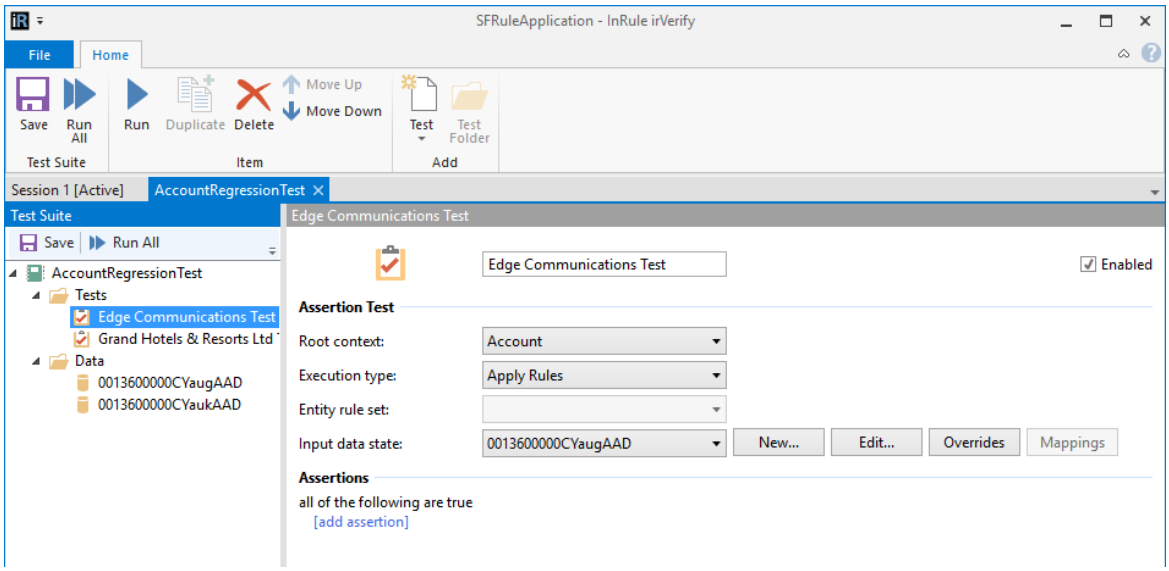
The Open Test Suite window appears.



1. If necessary, navigate to the location of the Test Suite file.
2. Select the Test Suite file.

3. Click Open.

The Test Suite tab appears in irVerify.



Proceed with your testing.

Part IV

Attribution

4 Attribution

Index

inrule

For more information about InRule, please visit https://www.inrule.com.

For support please visit https://support.inrule.com

If you would like to report an issue or request a feature enhancement, please email support@inrule.com.

Date of Publication: 2/11/2021