# Rootstock Custom UI Rules and Actions

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| Version | Prepared By | Date Modified | Reviewed By | Remarks |
| 1 | Karthik Rajendran | 7/2/2021 | Ramesh Sunder | Initial draft |
| 2 | Karthik Rajendran | 7/28/2021 |  | Added maintenance instructions |
| 3 | Karthik Rajendran | 8/30/2021 |  | Added tracking/releasing rules/actions instructions and migration instructions |
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## Lightning App

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This lightning app can be enabled and made accessible only to System Admin profile so an admin can maintain these UI rule and UI Action records in lightning visually, also can be controlled via any other profiles as required.

App contains two custom object tabs to maintain rules and action records.

Graphical user interface, text, application, email

Description automatically generated

## Schema: Custom Objects

### Custom UI Rule (Custom\_UI\_Rule\_\_c)

|  |  |  |
| --- | --- | --- |
| **Field Label** | **API Name** | **Data Type** |
| Active | Active\_\_c | Checkbox |
| Allow Override | Allow\_Override\_\_c | Checkbox |
| Criteria | Criteria\_\_c | Text Area(255) |
| Description | Description\_\_c | Text Area(255) |
| Object Type | Object\_Type\_\_c | Text(40) |
| Priority | Priority\_\_c | Number(1, 0) |
| Unique Key | Unique\_Key\_\_c | Text(255)(External Id) (Unique Case Insensitive) |
| Version | Version\_\_c | Text(10) |

### Custom UI Action (Custom\_UI\_Action\_\_c)

|  |  |  |
| --- | --- | --- |
| **Field Label** | **API Name** | **Data Type** |
| Action | Action\_\_c | Picklist |
| Active | Active\_\_c | Checkbox |
| Allow Override | Allow\_Override\_\_c | Checkbox |
| Component Name | Component\_Name\_\_c | Text(100) |
| Controller API Name(s) | Controller\_API\_Names\_\_c | Text(255) |
| Criteria | Criteria\_\_c | Long Text Area(1000) |
| Description | Description\_\_c | Text Area(255) |
| Display API Names | Display\_API\_Names\_\_c | Long Text Area(1000) |
| Event Type | Event\_Type\_\_c | Picklist |
| Object API Name | Object\_API\_Name\_\_c | Text(100) |
| Sequence | Sequence\_\_c | Number(3, 0) |
| Target API Name | Target\_API\_Name\_\_c | Text(100) |
| Target API Names | Target\_API\_Names\_\_c | Long Text Area(1000) |
| Target Value | Target\_Value\_\_c | Long Text Area(1500) |
| Toast Body | Toast\_Body\_\_c | Text Area(255) |
| Toast Type | Toast\_Type\_\_c | Picklist |
| UI Rule | UI\_Rule\_\_c | Master-Detail(Custom UI Rule) |
| Unique Key | Unique\_Key\_\_c | Text(255)(External Id) (Unique Case Insensitive) |
| Version | Version\_\_c | Text(10) |

## Permissions and Restrictions

### Permission Set

A new permission set “**Rootstock Custom UI Rules and Actions - Edit**” has been created for users who needs edit/write access to UI Rules and UI Action Records.

A new permission set “**Rootstock Custom UI Rules and Actions - ReadOnly**” has been created for other users.

### Restrictions from Triggers: Preventing end customers from editing/deleting rules/actions we load.

Custom triggers will be created on Custom\_UI\_Rule\_\_c and Custom\_UI\_Action\_\_c objects which will restrict users from editing/deleting if their email is not “rootstock.com” and rule/action was created by user with “rootstock.com” email.

This will work in our internal LUI org where all our developer accounts are created using their Rootstock email addresses.

If customer users are granted with edit permissions to these custom objects, then they can create/edit/delete their own rules and actions.

## Maintenance

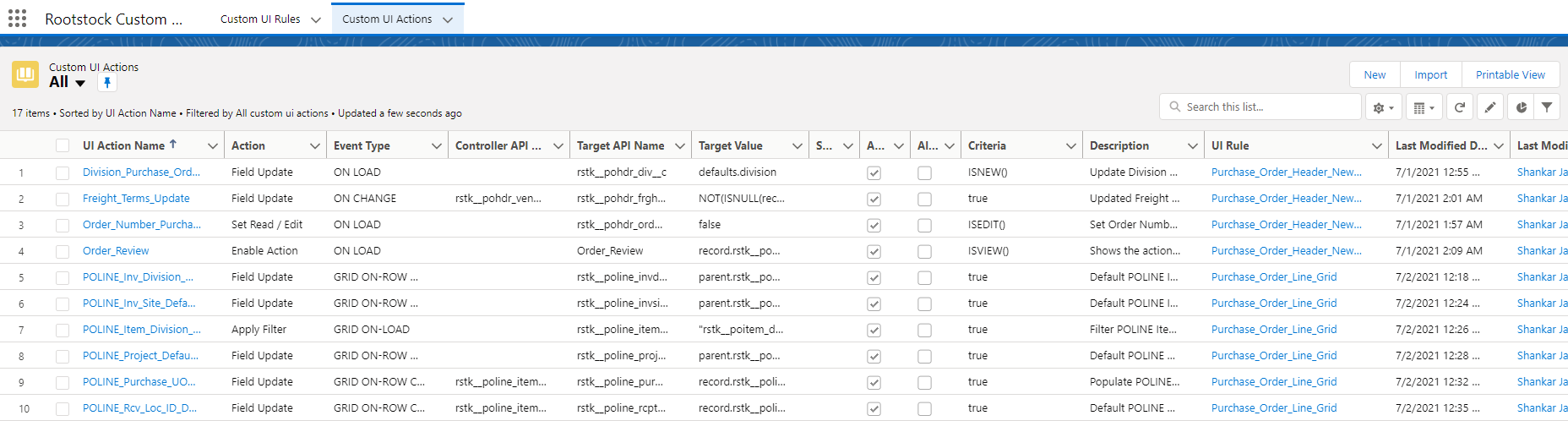
UI Rule and UI Action records maintenance can be done using the standard list views and standard new/edit record pages.

### List views

List views on Custom UI Rule and Action objects can be created by users per their preference and able to view the rules and action records.

Graphical user interface, text, application, email

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### Manually creating/editing UI Rule page

Leveraging the standard lightning page for creating/editing a UI Rule record as below.

Graphical user interface, text, application

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Graphical user interface

Description automatically generated

### Manually creating/editing UI Action page

Leveraging the standard lightning page for creating/editing a UI Action record as below.

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Graphical user interface

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### Dataload Custom UI Rules and Custom UI Actions

We maintain two separate CSV data load files contains all UI rules and actions that we release. We have an external Id field in both objects which will be helpful for easier dataloading into customer orgs. Using this external Id upsert mechanism we can create new records, update existing records (for example, deactivating a rule/action). **These rules and actions will be dataloaded in customer orgs for the first install and/or each package upgrade** **every time**.

#### Master CSV files

#### Import using Data Loader

##### Import UI Rule

Open Salesforce Data Loader, click Upsert and login into your salesforce org.

Graphical user interface, text, application

Description automatically generated

Select the custom object as “Custom\_UI\_Rule\_\_c” as below to import the data into and choose the CSV file to be loaded.

Graphical user interface, text, application

Description automatically generated

Select “Unique\_Key\_\_c” as the external ID field as below for the upsert action to work.

Graphical user interface, text, application

Description automatically generated

Click on “Create or Edit a Map” button.

Text

Description automatically generated with medium confidence

Click on the “Auto-Match Fields to Columns” button on the below mapping dialog and verify all the fields being imported are mapped correctly. Click on “Ok” after verifying the field mappings.

Graphical user interface

Description automatically generated with low confidence

Click “Next” button on the below screen and proceed – Dataloader will import the UI rule records into your org.

Text

Description automatically generated with medium confidence

##### Import UI Action

Open Salesforce Data Loader, click Upsert and login into your salesforce org.

Graphical user interface, text, application

Description automatically generated

Select the custom object as “Custom\_UI\_Action\_\_c” as below to import the data into and choose the CSV file to be loaded.

Graphical user interface, text, application

Description automatically generated

Select “Unique\_Key\_\_c” as the external ID field as below for the upsert action to work.

Graphical user interface, text, application

Description automatically generated

Select “Unique\_Key\_\_c” as the external ID field for UI\_Rule\_\_r lookup relationship to let dataloader use/fetch the correct parent UI Rule record.

Graphical user interface, text

Description automatically generated

Click on “Create or Edit a Map” button.

Text

Description automatically generated with low confidence

Click on the “Auto-Match Fields to Columns” button on the below mapping dialog and verify all the fields being imported are mapped correctly. Click on “Ok” after verifying the field mappings.

Table

Description automatically generated

Though the field mappings are correctly auto mapped, still the UI Rule parent field mapping is not mapped correctly with the Unique\_Key\_\_c field. So drag the \_\_r field from the top section to the botton UI\_Rule\_\_c field mapping.

Graphical user interface, application, table

Description automatically generated

Make sure the UI\_RULE\_\_C column is mapped with UI\_Rule\_\_r.Unique\_Key\_\_c as below.

Table

Description automatically generated

Click “Next” button on the below screen and proceed – Dataloader will import the UI rule records into your org.

Graphical user interface, text

Description automatically generated

#### Export Rule/Action from Export button on the listviews

We have built an ability to export selected UI Rule or UI Action records from the list view using a lightning flow and apex action class.

This export has a limitation where you can select only 200 records at a time. This is a standard list view record selection limitation that Salesforce enforces.

**IMPORTANT**: Do not open & save the exported CSV file(s) in Microsoft Excel software as it will corrupt the csv data format(quote, line ending characters, etc) which will cause issues while importing the csv back into org.

##### Export Rules

Go to “Custom UI Rules” tab, Go to any list view, Select the intended records and click “Export Rules” button.

Graphical user interface, text, application, email

Description automatically generated

When the export is complete, a confirmation message and a link to download the exported data will be displayed as below.

Graphical user interface, text, application

Description automatically generated

Click “Download” button to download the CSV file.

Graphical user interface, text, application

Description automatically generated

##### Export Actions

Go to “Custom UI Actions” tab, Go to any list view, Select the intended records and click “Export Actions” button.

Graphical user interface, text, application, email

Description automatically generated

When the export is complete, a confirmation message and a link to download the exported data will be displayed as below.

Graphical user interface, text, application, email

Description automatically generated

Click “Download” button to download the CSV file.

Graphical user interface, text, application

Description automatically generated

### Deleting Rule/Action

In some cases where we need to delete records created by us and delivered as part of previous package releases, then we will need to use a custom delete script like below and execute the same in developer console from RS user account since customers cannot delete rules created by RS account.

DELETE[SELECT ID FROM Custom\_UI\_Rule\_\_c WHERE Unique\_Key\_\_c IN (‘POLINE\_NEW\_EDIT’, ‘POLINE\_GRID’)];

DELETE[SELECT ID FROM Custom\_UI\_Action\_\_c WHERE Unique\_Key\_\_c IN (‘POLINE\_NEW\_EDIT’, ‘POLINE\_GRID’)];

### Internal: Tracking/Releasing UI Rule/Action

The master csv files being maintained for rules and actions will be stored in “rootstockmfg/banksy” repo under “UI-Rules-And-Actions” folder.

/UI-Rules-And-Actions/Custom\_UI\_Action\_\_c.csv

/UI-Rules-And-Actions/Custom\_UI\_Rule\_\_c.csv

**Notes to developers:**

Developers should create a new jira branch from develop branch, update the csv files with their new/modified rules and actions records, and check-in the csv files along with the other code changes. Always new records should be added at the end of the files, do not insert new records in between the existing records. **Do not open the csv files in excel as it will corrupt the csv formatting in the files**. Use vscode or notepad++ text editors to add new records into the csv files. Modify the existing records only for deactivating a rule/action.

**Notes to P&D team:**

P&D team should merge the csv files and make sure no rules/actions are deleted while merging. If there is any merge conflict and spotting the records deleted while comparing the changes, then please get confirmation from the developer who created the pull request.

After merging the csv files and creating a new LUI build,

take the new build version number

edit the csv files

enter the version number in the “Version” column on the new records

commit the files back into git

(All rules/actions must have a version number populated in the “Version” column before loading them into our internal managed orgs and external customer orgs)

## Migration from “\_\_mdt” old metadata to “\_\_c” records

Developers and customers who created their own metadata rules/actions in their orgs need to be migrated to our new UI Rule and UI Action records. It’s a two-step process using dataloader as described below.

* Export from UI\_Rule\_\_mdt and UI\_Action\_\_mdt metadatatypes
  + Open Dataloader
  + Click Export button
  + Select UI\_Rule\_\_mdt/UI\_Action\_\_mdt as source to export
  + Select a location to export data into a csv file
  + Select all fields except system fields
  + Click Finish
* Import into Custom\_UI\_Rule\_\_c and Custom\_UI\_Action\_\_c objects
  + Open Dataloader
  + Click Import button
  + Select Custom\_UI\_Rule\_\_c / Custom\_UI\_Action\_\_c objects to import
  + Select a location to export data into a csv file
  + Do the fields mapping
  + Click Finish