



NSQL Portlets | Intermediate

Your Guides:

James Gille & Ben Rimmasch



Agenda

- Chart Portlets
 - Types / Uses
 - Creating a sample portlet
 - Limitations
- Drilldown Portlets
 - Overview
 - Example
- Questions

Chart Portlets



Let Rego be your guide.

Chart Portlets

- When to use charts
 - Displaying data containing multiple dimensions / metrics
 - Dashboards
 - Summarizing data
- What type of chart to use
 - 11 different chart types
 - Choose a chart that best suits the data you want to visualize
 - Ensure that your data provider contains the minimum number of metrics for the chart type

Chart Portlets: Types

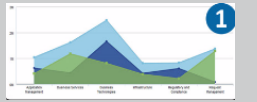
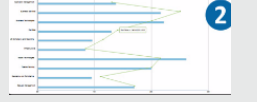

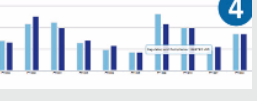


Chart Type	Description	Min Metrics	Max Metrics	Example
Area	Displays data points that are connected by lines along the axes. Displays different colors to fill in the area below the line.	1 / 1	Unlimited / 1	 1
Bar	Displays each dimension of the data in a horizontal bar.	1 / 1	Unlimited / Unlimited	 2
Bubble	Displays metrics on the horizontal and vertical axes. The size of each bubble represents a third metric.	3 / -	3 / -	 3
Column	Displays each dimension of the data in a vertical bar.	1 / 1	Unlimited / Unlimited	 4
Donut	Displays the data dimension objects in proportional segments, like a pie chart.	1 / -	Unlimited / -	 5
Funnel	Displays the data dimension objects in proportional rows in a funnel shape similar to a pie chart.	1 / -	Unlimited / -	 6

Chart Portlets: Types


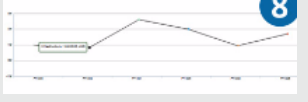



Chart Type	Description	Min Metrics	Max Metrics	Example
Heat Map	Displays a primary attribute or metric in a two-dimensional grid with values along the X-axis and Y-axis. The primary attribute values are represented using colors or shades of the same color.	3 / -	3 / -	
Line	Displays data points connected by lines along the axes.	1 / 1	Unlimited / 1	
Pie	Displays the data dimension objects in proportional slices.	1 / -	1 / -	
Scatter	Displays metrics across the X-axis and Y-axis.	2 / 2	2 / 2	
Tree Map	Displays data in a hierarchical tree with branched nodes. Chart values appear in different colors and can include clickable shapes that show the relative size of each subgroup. Tree maps progressively reveal more detailed information in deeper levels. The user can expand each subgroup to reveal the child data points in deeper levels.	3 / -	3 / -	

Chart Portlets: Example

- The next several slides will demonstrate how to build a Donut Chart

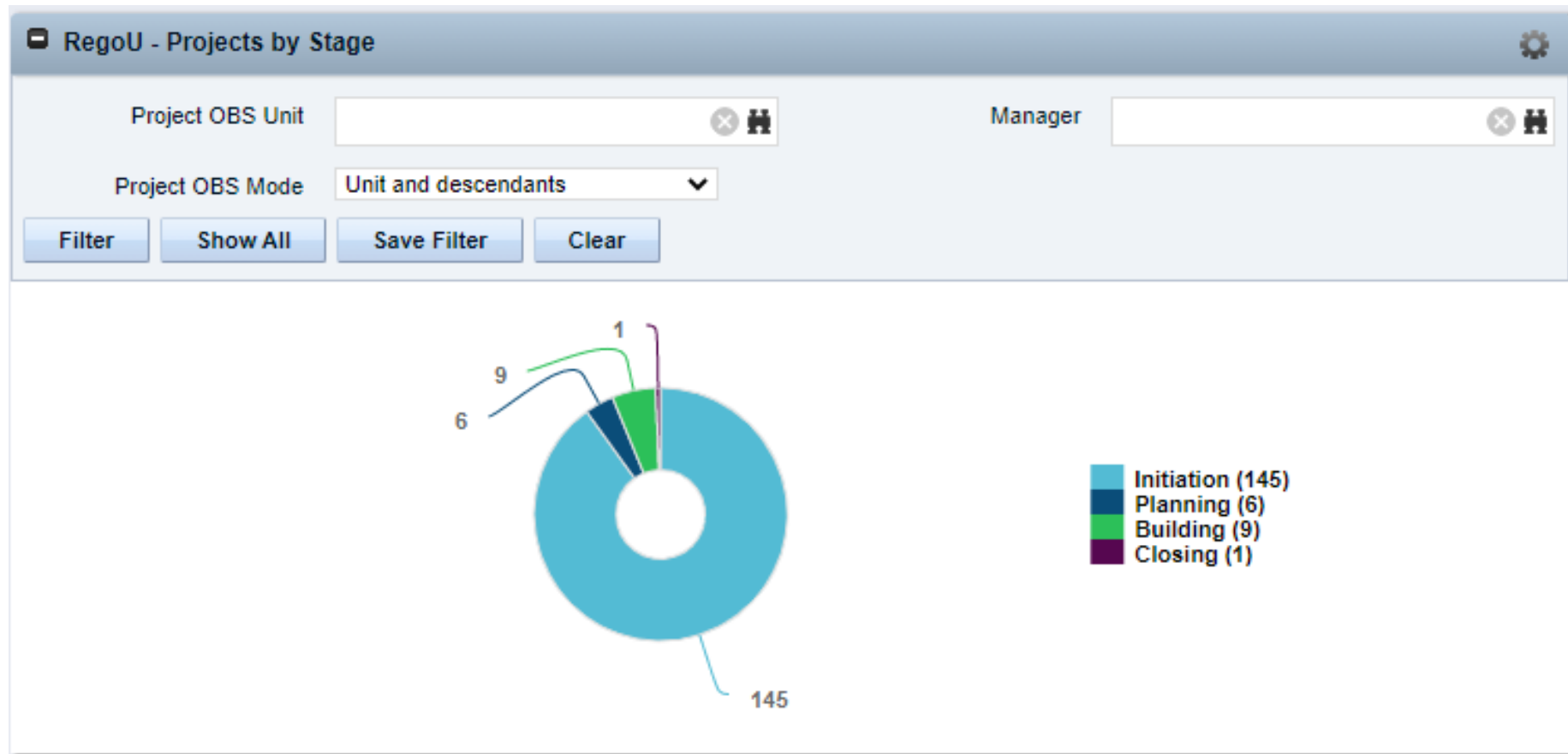
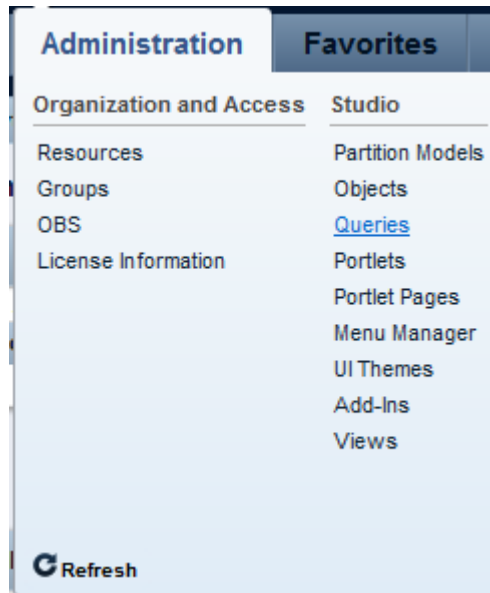


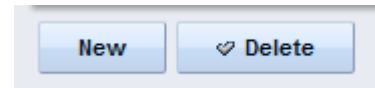
Chart Portlets: Example - Query

- Create Query

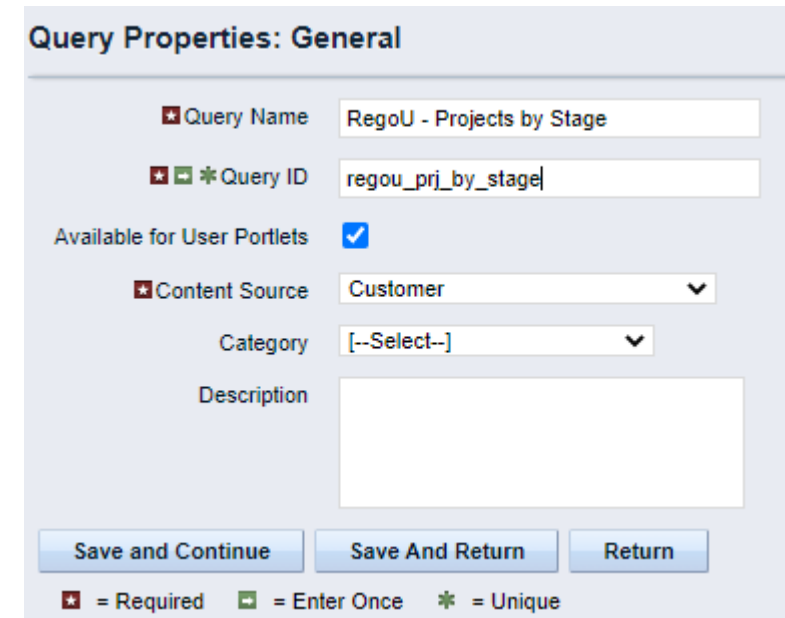
1) Administration -> Queries



2) Click New



3) Enter Query Name and ID, click Save and Continue

A screenshot of the 'Query Properties: General' form. It contains the following fields:

- Query Name**: Text input field with the value 'RegoU - Projects by Stage'.
- Query ID**: Text input field with the value 'regou_prj_by_stage'.
- Available for User Portlets**: Checkable box, currently checked.
- Content Source**: Dropdown menu with 'Customer' selected.
- Category**: Dropdown menu with '--Select--' selected.
- Description**: Large text area, currently empty.

At the bottom, there are three buttons: 'Save and Continue', 'Save And Return', and 'Return'. A legend at the very bottom indicates: a red star icon for 'Required', a green square icon for 'Enter Once', and a green asterisk icon for 'Unique'.

Chart Portlets: Example - Query

- Update query and click Save and Continue

General

NSQL

Attributes

Linking

Query: RegoU - Projects by Stage - NSQL

Source Database

Niku

(Your query will run against this database)

★ NSQL

```
SELECT  @SELECT:DIM:USER_DEF:IMPLIED:PROJECT:i.stage_code:PRJ_STAGE_ID@,
        @SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:l1.name:PRJ_STAGE@,
        @SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:l1.name || ' (' || COUNT(*) || ')':LABEL@,
        @SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:l1.sort_order:SORT_ORDER@,
        @SELECT:METRIC:USER_DEF:IMPLIED:COUNT(*) :PROJECT_COUNT:AGG@
FROM    inv_investments i
        JOIN odf_ca_project ocp ON i.id = ocp.id
        JOIN inv_projects ip ON ip.prid = i.id AND ip.is_template = 0 AND ip.is_program = 0 AND (i.purge_flag = 0 OR i.purge_flag = 1)
        JOIN cmn_lookups_v l1 ON l1.lookup_type = 'INV_STAGE_TYPE' AND l1.lookup_code = i.stage_code AND l1.l1 = 1
        LEFT JOIN skm_resources r ON r.user_id = i.manager_id
WHERE   1 = 1
        AND (@WHERE:PARAM:USER_DEF:INTEGER:prj_obs_unit@ IS NULL OR EXISTS (SELECT 1 FROM obs_units_flat by m WHERE m.prj_obs_unit = @WHERE:PARAM:USER_DEF:INTEGER:prj_obs_unit@ AND ((r.id IS NULL) OR (@WHERE:PARAM:USER_DEF:INTEGER:r.id:manager_id@))
        AND @WHERE:SECURITY:PROJECT:i.id@
        AND @FILTER@
GROUP BY i.stage_code, l1.name, l1.sort_order
HAVING  @HAVING_FILTER@
```

Preview

Save and Continue

Save And Return

Return

Chart Portlets: Example - Query

- Review Attributes

General NSQL **Attributes** Linking

Query: RegoU - Projects by Stage - *Attributes*

Attributes

Name	ID	Attribute Class	Data Type	Extended Data Type	Required	Lookup
project_count	project_count	Metric	Numeric	Numeric		
PROJECT						
↳ prj_stage_id	prj_stage_id	Dimension Key	String	String		
↳ prj_stage	prj_stage	Dimension Property	String	String		
↳ label	label	Dimension Property	String	String		
↳ sort_order	sort_order	Dimension Property	Numeric	Numeric		
param_manager_id	param_manager_id	Parameter	Numeric	Numeric		✓
param_prj_obs_unit	param_prj_obs_unit	Parameter	Numeric	Numeric		✓
param_prj_obs_mode	param_prj_obs_mode	Parameter	String	String		✓

Continue Return

Metric →

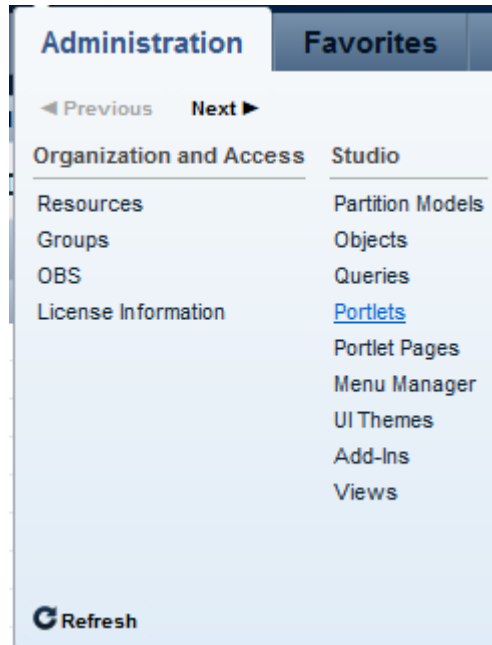
Properties →

Parameters →

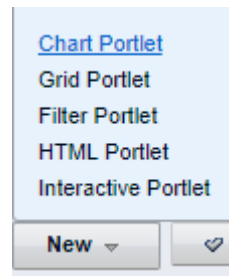
Chart Portlets: Example - Portlet

- Create Portlet

1) Administration -> Portlets



2) Click New -> Chart Portlet



3) Enter Portlet Name and ID, browse for NSQL Query as Data Provider

4) Click Next, then Finish and Open

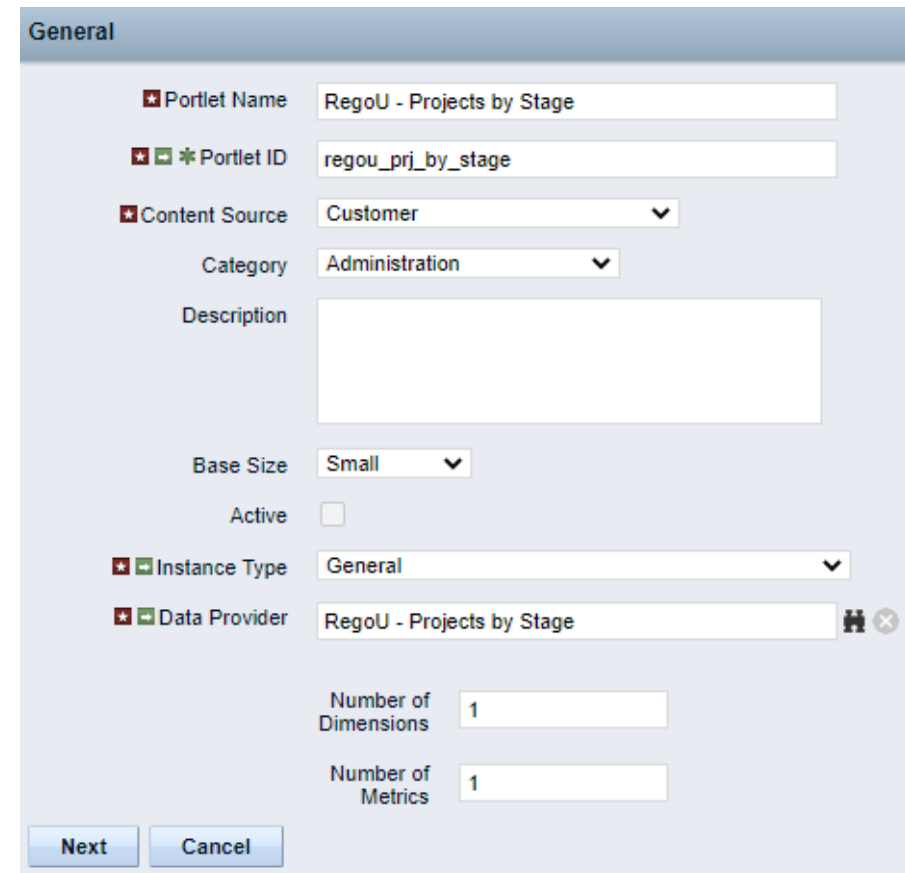
A screenshot of the 'General' configuration form for a new portlet. The form contains the following fields: 'Portlet Name' (RegoU - Projects by Stage), 'Portlet ID' (regou_prj_by_stage), 'Content Source' (Customer), 'Category' (Administration), 'Description' (empty text area), 'Base Size' (Small), 'Active' (checkbox), 'Instance Type' (General), 'Data Provider' (RegoU - Projects by Stage), 'Number of Dimensions' (1), and 'Number of Metrics' (1). 'Next' and 'Cancel' buttons are at the bottom.

Chart Portlets: Example - Portlet

- Select Chart Type
- Select Metric attribute
- Click “Finish and Open”
- Chart Section tab
 - Source Data sub-tab options depend on chart type

Portlet: RegoU - Projects by Stage - *Chart Type*

Chart Type

Portlet: RegoU - Projects by Stage - *Select Metric*

☒ Metric

Portlet: RegoU - Projects by Stage - *Finish*

Click on the Finish button to create the portlet. Further options are available after you click Finish and Open.

General | Chart Section ▼ | Chart Filter Section ▼ | Access to this Portlet ▼

Portlet: RegoU - Projects by Stage - *Source Data*

Metric

Chart Portlets: Example - Portlet

- Chart Section tab (cont)
 - Options sub-tab contents also varies depending on chart type
 - In this example the Legend Labels are a variable (label) whose value is set in the NSQL query:

```
l1.name || '(' || COUNT(*) || ')'
```

- Select “Do not show results until I filter” option for potentially large queries to improve usability and efficiency

Portlet: RegoU - Projects by Stage - Options

Click Save immediately after setting Legend Labels, Datapoint Labels, or Mouseover Labels or your changes may be lost.

Show Legend ☒

Show Title ☐

'Other' Category Threshold Value below which data point is added to the 'Other' category

Legend Labels

Datapoint Labels

Decimal Places

Show Separator ☐

Mouseover Labels

Label Attribute

Sort Column

Consistent Color Key

Use Consistent Colors

Filter ☒ Automatically show results
☐ Do not show results until I filter

Allow Configuration ☒

Allow Label Configuration ☒

Save Save And Return Return

Chart Portlets: Example - Portlet

- Chart Filter Section
 - Set filter layout and enter user-friendly labels as desired

General | Chart Section ▾ | Chart Filter Section ▾ | Access to this Portlet ▾

Portlet: RegoU - Projects by Stage - Chart Filter Fields

Display: Selected ▾

Filter Label	Column	Data Type	Display Type	Required in Filter
Manager	param_manager_id	Lookup - Number	Browse	
Project OBS Mode	param_prj_obs_mode	Lookup - String	Pull-Down	
Project OBS Unit	param_prj_obs_unit	Lookup - Number	Browse	

Save Save And Return Return

General | Chart Section ▾ | Chart Filter Section ▾ | Access to this Portlet ▾

Portlet: RegoU - Projects by Stage - Chart Filter Layout

Layout

Available	Selected (Left Column)	Selected (Right Column)
Label Project Count Sort Order Stage Stage ID	Project OBS Unit Project OBS Mode	Manager
	↕	↕

Add Field ➡ ⬅ Move Field ➡ ⬅ Move Field

Settings *

Section Title: RegoU - Projects by Stage Filter

Default Filter State: ☒ Collapsed ☐ Expanded

Allow Power Filter: ☐

Save Save And Return Return

Chart Portlets: Example - Portlet

- Add to a Portlet Page and you're all set!

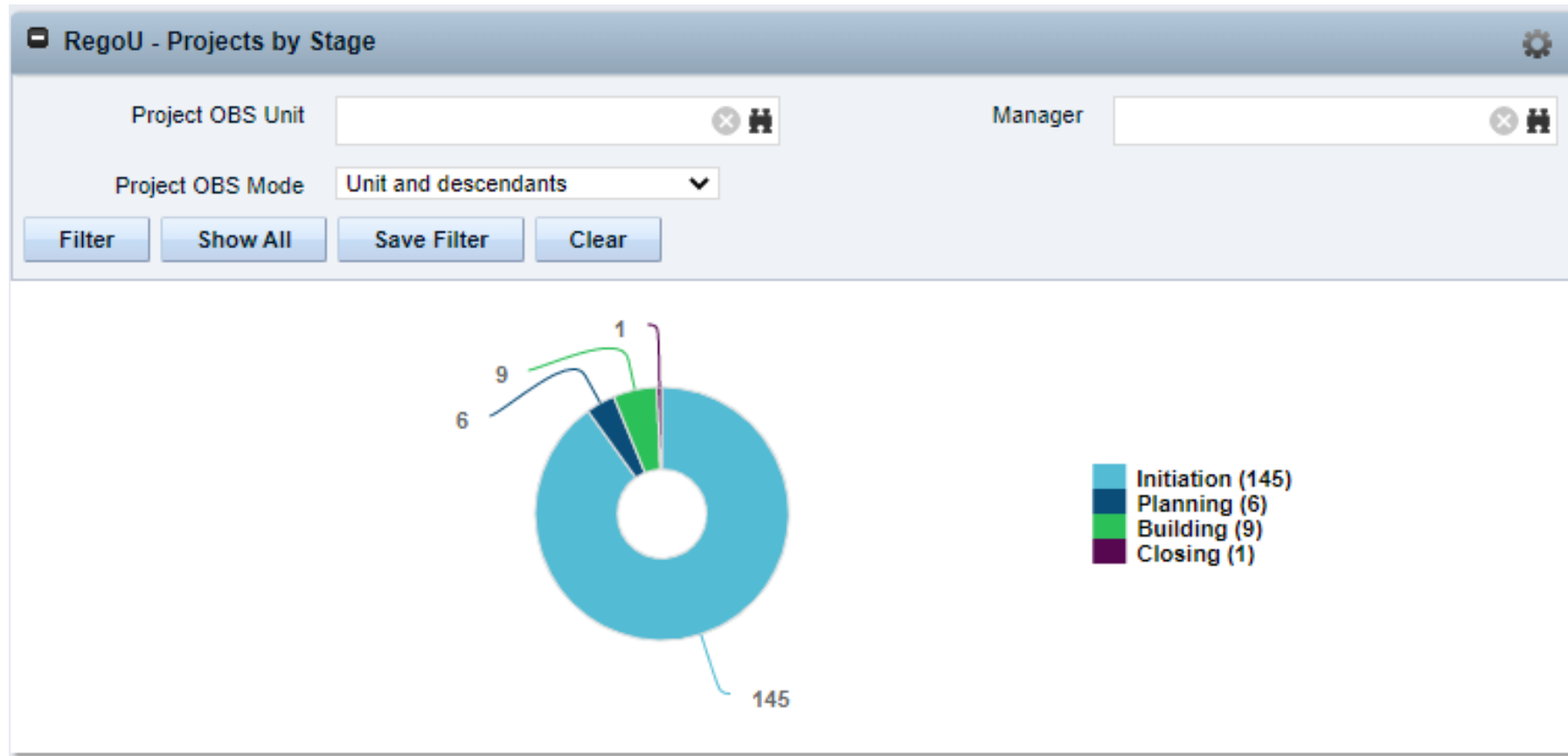


Chart Portlets: Limitations

- Take into account metric and dimensional limits
- Consistent Colors can be used, but it's a system general setting and is limited.
 - Improved in 15.1 by allowing RGB colors, transparency and improved borders.
- Other limitations to portlets apply like the NSQL governors.

Drilldown Portlets



Let Rego be your guide.

Drilldown Portlets

- More complex but a nice usability enhancement
- Several examples available on regoXchange
- Key components
 - Two portlets
 - Linking
 - XPATH construct
 - Portlet pages (one or two)
 - Filtering

Drilldown Portlets

- What is a Drilldown Portlet ?



- A portlet that provides additional detail for a piece of information in another portlet and is accessed by clicking on a link in the parent portlet
- Examples
 - Pie Chart linking to a grid portlet that shows the details
 - Grid portlet showing summarized data linked to another grid that shows the detailed info

Drilldown Portlets

- High Level Implementation Steps:
 - Create Portlet Page with link parameter(s)
 - Create Query for detail Portlet that utilizes the parameter(s) from the portlet page
 - Create Portlet based on Detail Query
 - Place Detail Portlet on the Portlet Page
 - Create Query for Summary Portlet with link to the Portlet Page
 - Create Portlet based on Summary Query
 - Add Summary Portlet to a portlet page
 - Determine Filtering Approach

Drilldown Portlets: Example - Detail Portlet Page

- Create Portlet Page with a link parameter

1) Create a new Portlet Page

Page: [New Page] - Create Page

★ Page Name

★ □ ★ Page ID

★ Content Source

Type

Description

★ Layout

Personalizable ☐

2) Check the Linkable box and Click Save and Continue

Page: RegoU Projects by Stage Drilldown - Properties

General

★ Page Name

★ □ ★ Page ID

★ Content Source

Description

Personalizable ☐

Linkable ☒

OBS

3) Create a Link Parameter (make sure the ID is all lowercase)

Page: RegoU Projects by Stage Drilldown - Link Parameter

★ Parameter Name
(The parameter label that the administrator will see when)

★ □ ★ Parameter ID
(This ID will be used in the URL when calling this page)

★ = Required □ = Enter Once ★ = Unique

Drilldown Portlets: Example - Detail Query

- Detail Query will utilize parameters passed from summary portlet
 - XPATH (XML Parameter) NSQL Construct
 - Enables a portlet to retrieve a name-value pair from the XML page URL to a user-defined portlet
 - Ex: @where:param:xml:string:/data/stage_id/@value@
 - Case sensitive (Best Practice - all lowercase IDs)
 - If the drilldown page is added to the Menu, then the parameter value will default to the Parameter Source, as seen on the Link Parameter screen on the portlet page

Page: RegoU Projects by Stage Drilldown - *Link Parameter*

★ Parameter Name	Stage ID
(The parameter label that the administrator will see when link	
★ ☆ Parameter ID	stage_id
(This ID will be used in the URL when calling this page)	
★ ☆ Parameter Source	APT_CUST_5432412

★ = Required ☆ = Enter Once ☆ = Unique

Drilldown Portlets: Example - Detail Query

- Create Query for detail portlet

```

SELECT @SELECT:DIM:USER_DEF:IMPLIED:PROJECT:i.id:INV_ID@,
       @SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:i.code:INV_CODE@,
       @SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:i.name:INV_NAME@,
...
FROM   inv_investments i
       JOIN odf_ca_project ocp ON ocp.id = i.id
...
WHERE  1 = 1
       AND (@WHERE:PARAM:XML:STRING:/data/stage_id/@value@ IS NULL
           OR @WHERE:PARAM:XML:STRING:/data/stage_id/@value@ = i.stage_code)
       AND @WHERE:SECURITY:PROJECT:i.id@
       AND @FILTER@

```

Drilldown Portlets: Example - Detail Query

- Create Query for detail portlet

1) Enter Query Name and ID,
click Save and Continue

Query Properties: General

Query Name:

Query ID:

Available for User Portlets: ☒

Content Source:

Category:

Description:

2) Update query and click Save and Continue

Query: RegoU - Projects by Stage Drilldown - NSQL

Use this template to create your Niku SQL statement.

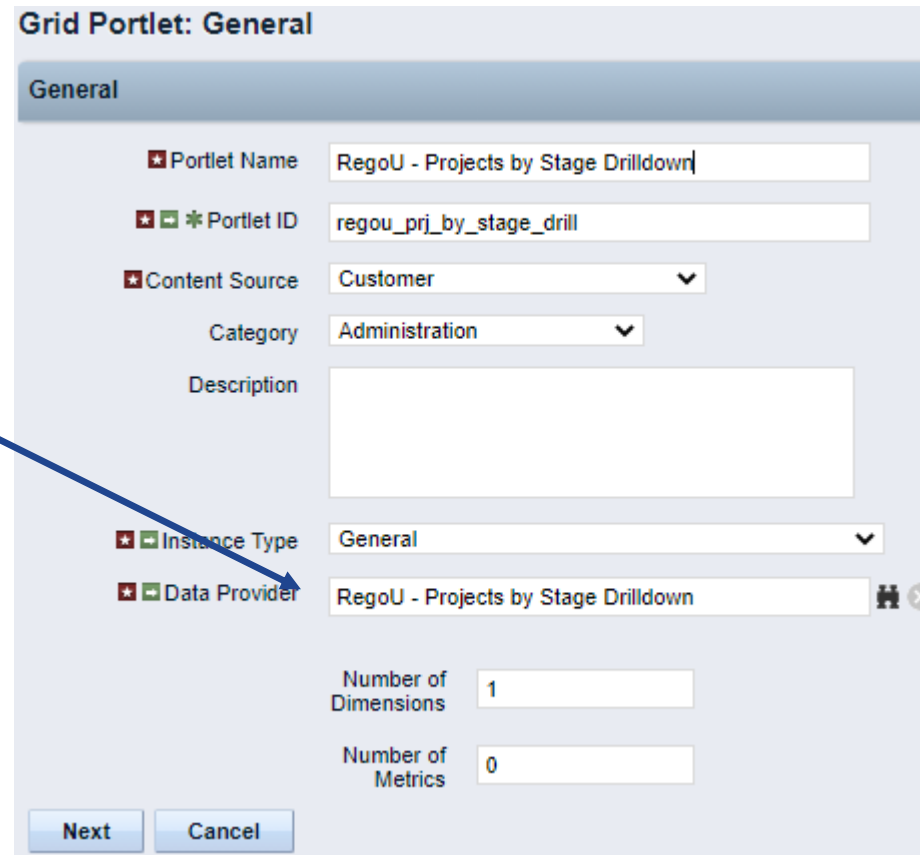
Source Database: (Your query will run against this database)

NSQL

```
SELECT @SELECT:DIM:USER_DEF:IMPLIED:PROJECT:i.id:INV_ID@,
@SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:i.code:INV_CODE@,
@SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:i.name:INV_NAME@,
@SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:i.is_active:INV_ACTIVE@,
@SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:i.schedule_start:START_DATE@,
@SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:i.schedule_finish:FINISH_DATE@,
@SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:r.full_name:PM@,
@SELECT:DIM_PROP:USER_DEF:IMPLIED:PROJECT:l1.name:STAGE@
FROM inv_investments i
JOIN inv_projects ip ON i.id = ip.prjid AND ip.is_template = 0 AND ip.is_program = 0 AND (i.purge_flag = 0)
JOIN odf_ca_project ocp ON ocp.id = i.id
JOIN odf_ca_inv oci ON i.id = oci.id
LEFT JOIN srm_resources r ON i.manager_id = r.user_id
LEFT JOIN cmm_lookups_v l1 ON l1.lookup_type = 'INV_STAGE_TYPE' AND l1.lookup_code = i.stage_code AND l1 = 1
WHERE AND (@WHERE:PARAM:USER_DEF:INTEGER:prj_obs_unit@ IS NULL OR EXISTS (SELECT 1 FROM obs_units_flat by m
AND ((r.id IS NULL) OR (@WHERE:PARAM:USER_DEF:INTEGER:r.id:manager_id@))
AND (NVL(@WHERE:PARAM:XML:STRING:/data/stage_id/@value@,'All') = 'All' OR @WHERE:PARAM:XML:STRING:/da
AND @WHERE:SECURITY:PROJECT:i.id@
AND @FILTER@
```

Drilldown Portlets: Example - Detail Portlet

- Create Detail Portlet based on Detail Query
- Input Portlet Name and ID
- Browse for Query
- Click Next
- Click Finish and Open
- Format Portlet Layout



The screenshot shows the 'Grid Portlet: General' configuration window. The 'General' tab is active. The fields are as follows:

- Portlet Name:** RegoU - Projects by Stage Drilldown
- Portlet ID:** regou_prj_by_stage_drill
- Content Source:** Customer (dropdown)
- Category:** Administration (dropdown)
- Description:** (empty text area)
- Instance Type:** General (dropdown)
- Data Provider:** RegoU - Projects by Stage Drilldown (with a browse icon and a close icon)
- Number of Dimensions:** 1
- Number of Metrics:** 0


At the bottom are 'Next' and 'Cancel' buttons. A blue arrow from the 'Browse for Query' step in the list on the left points to the 'Data Provider' field.

Drilldown Portlets: Example - Detail Portlet

- Place detail portlet on the Portlet Page

Properties Link Parameters **Content** Page Filters Layout Access to this Page ▾

Page: RegoU Projects by Stage Drilldown - Content

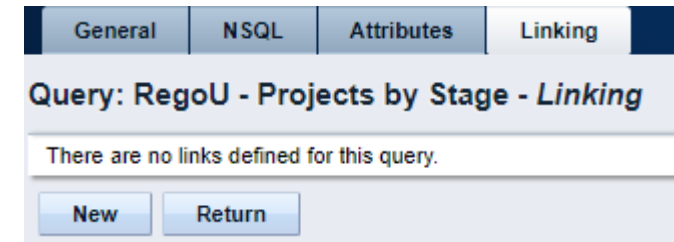
<input type="checkbox"/>	Content	Category	Description	Maximized	Active
<input type="checkbox"/>	No Maximized Portlet			<input checked="" type="radio"/>	
<input type="checkbox"/>	RegoU - Projects by Stage Drilldown	 Administration		<input type="radio"/>	<input checked="" type="checkbox"/>

Displaying 1 - 1 of 1

Add Remove Save and Continue Save And Return Return

Drilldown Portlets: Example - Summary Query

- Navigate to the Query for the Summary portlet, click on the Linking tab, and click New
- Input Name, Link ID, and select the Detail portlet page as the Action
- Map the Parameter(s) needed for the detail query as needed

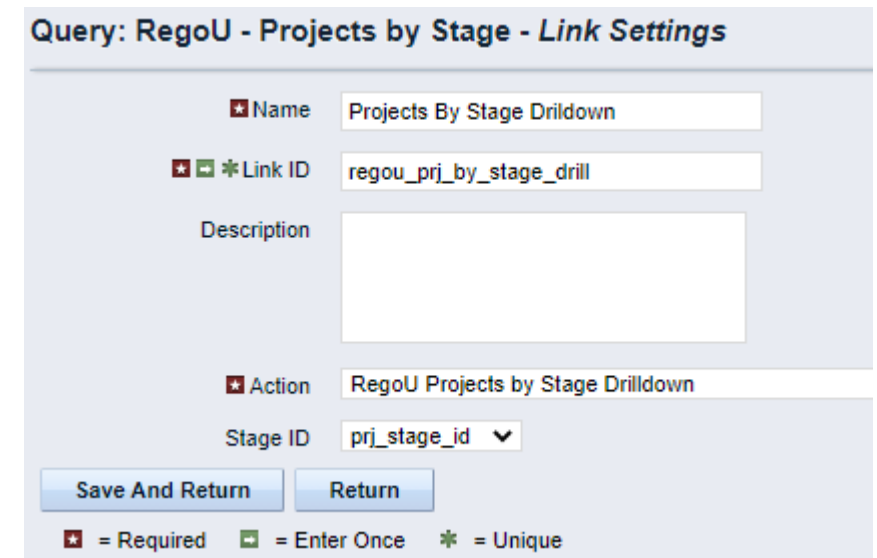


General NSQL Attributes **Linking**

Query: RegoU - Projects by Stage - Linking

There are no links defined for this query.

New Return



Query: RegoU - Projects by Stage - Link Settings

Name Projects By Stage Drilldown

Link ID regou_prj_by_stage_drill

Description

Action RegoU Projects by Stage Drilldown

Stage ID prj_stage_id

Save And Return Return

★ = Required ■ = Enter Once * = Unique

Drilldown Portlets: Example - Summary Portlet

- Navigate to the Summary Portlet
- Update the Link option under Chart Section -> Options to set the link to the link to the detail page
- Hit Save And Return
- Note: If the Summary Portlet is a Grid portlet, then the link will be set on the properties for a specific field

The screenshot shows the configuration interface for a portlet titled "Portlet: RegoU - Projects by Stage - Options". The interface includes several tabs at the top: "General", "Chart Section", "Chart Filter Section", and "Access to this P". The "Chart Section" tab is currently selected. Below the tabs, there is a instruction: "Click Save immediately after setting Legend Labels, Datapoint Labels, or Mouseover Labels". The configuration options are as follows:

- Show Legend:** ☒
- Show Title:** ☐
- 'Other' Category Threshold:** [Empty text box] Value below which data point is added to
- Link:** Projects By Stage Drilldown (highlighted with a red box)
- Legend Labels:** label
- Datapoint Labels:** Value
- Decimal Places:** 0
- Show Separator:** ☐
- Mouseover Labels:** Label
- Label Attribute:** label
- Sort Column:** sort_order
- Consistent Color Key:** [--Select--]
- Use Consistent Colors:** [--Select--]
- Filter:** ☒ Automatically show results ☐ Do not show results until I filter
- Allow Configuration:** ☒

At the bottom, there are three buttons: "Save", "Save And Return", and "Return".

Drilldown Portlets: Example - Summary Portlet

- The Summary Portlet can be placed at any of the following locations
 - On an existing portlet page
 - On a new portlet page, which you can then add to the menu
 - On the same portlet page as the detail portlet, which can then be added to the menu

Drilldown Portlets: Filtering Approach

- Determine Filtering Approach
 - Page Filters
 - Must use the same page filter on both the summary portlet and the detail portlet
 - Very easy to implement
 - Allows for multi-select filters
 - Allows user to filter after drilling down
 - Passing Filters through Parameters
 - Doesn't allow for multi-select
 - Doesn't allow user to filter after drilling down
 - Requires additional code in the NSQL query to handle each filter parameter
 - Page less cluttered without the filter portlet

RegoXchange Portlet References

- **regoXchange** contains some EXCELLENT drilldown portlets
 - Allocation Compliance Pie Chart Drilldown
 - Project Change Request count w/ Drilldown
 - Project Count by Stage w/ Drilldown
 - Projects by Status Indicator - Pie w/ Drilldown
 - Milestone Task Dependency
 - Actuals/ETC/Allocations per Resource
 - Capacity Graph
 - And more...



Questions?



Let Rego be your guide.

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- Access your account at pmi.org
- Click on **Certifications**
- Click on **Maintain My Certification**
- Click on **Visit CCR's** button under the **Report PDU's**
- Click on **Report PDU's**
- Click on **Course or Training**
- Class Name = **regoUniversity**
- Course Number = **Session Number**
- Date Started = **Today's Date**
- Date Completed = **Today's Date**
- Hours Completed = **1 PDU per hour of class time**
- Training classes = **Technical**
- Click on **I agree** and **Submit**



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