TECH TIP

DATA CUBE IN SHELL DASHBOARD
ORACLE PRIMAVERA UNIFIER

The ability to view a snapshot of current information is an invaluable feature of project management systems. This data could be focused at the enterprise-level or down to the project-level, and accessed without the need to run a report. Dashboards provide this necessary insight used by senior management as well as project managers and project administration. Unifier has built-in dashboard functionality more commonly known as shell dashboards.

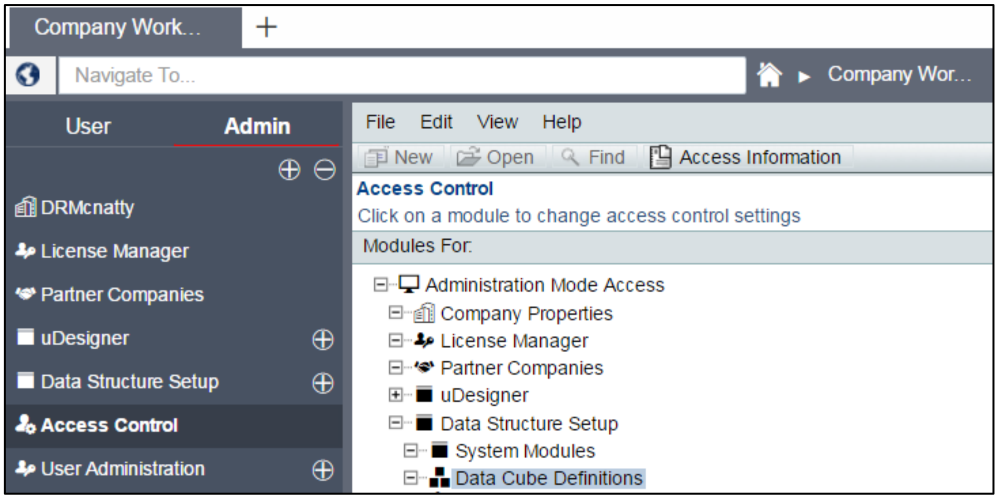
Data cubes are the data source for dashboards known as shell dashboards. In our tech tip we will create a data cube and use it within a user dashboard. This example will count 'Request for Information' business process records for all projects and have the ability to drill-down to the status breakdown per project. The drill-down feature is a very useful feature to provide a lower level detail of the data.

1. Data Cube Creation Permissions

The create permissions must be set for the user(s) or group(s).

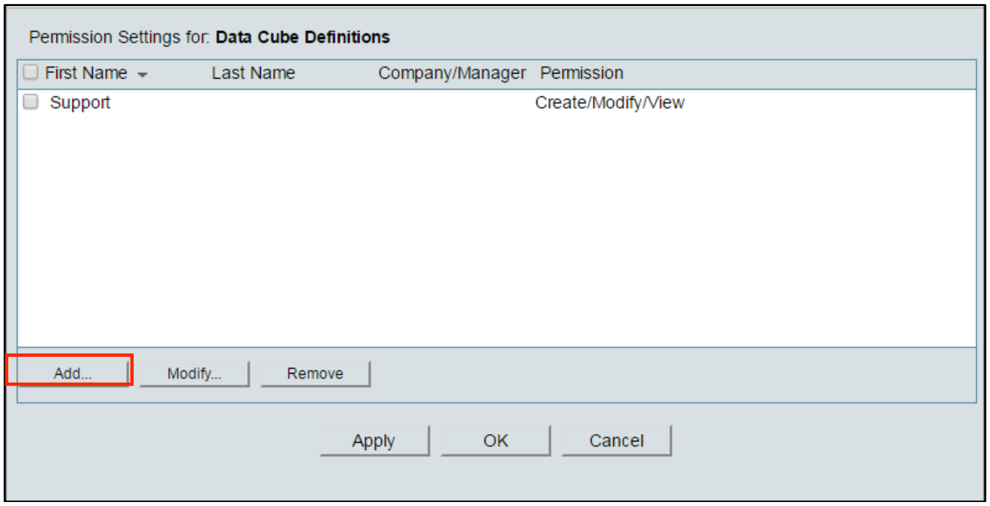
Go to the Company Workspace > Admin Mode > Access Control.

Select Administration Mode Access > Data Structure Setup > Data Cube Definitions from the Access Control modules pane.

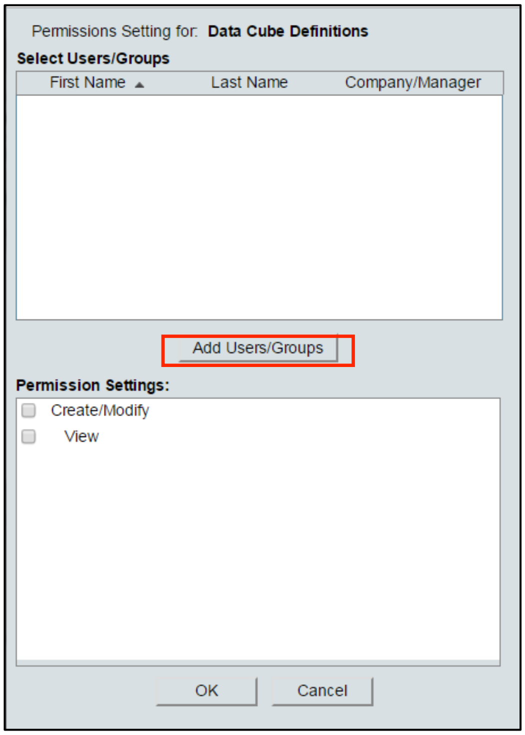


A window appears which lists the users or groups already assigned with Data Cube Definitions permissions.

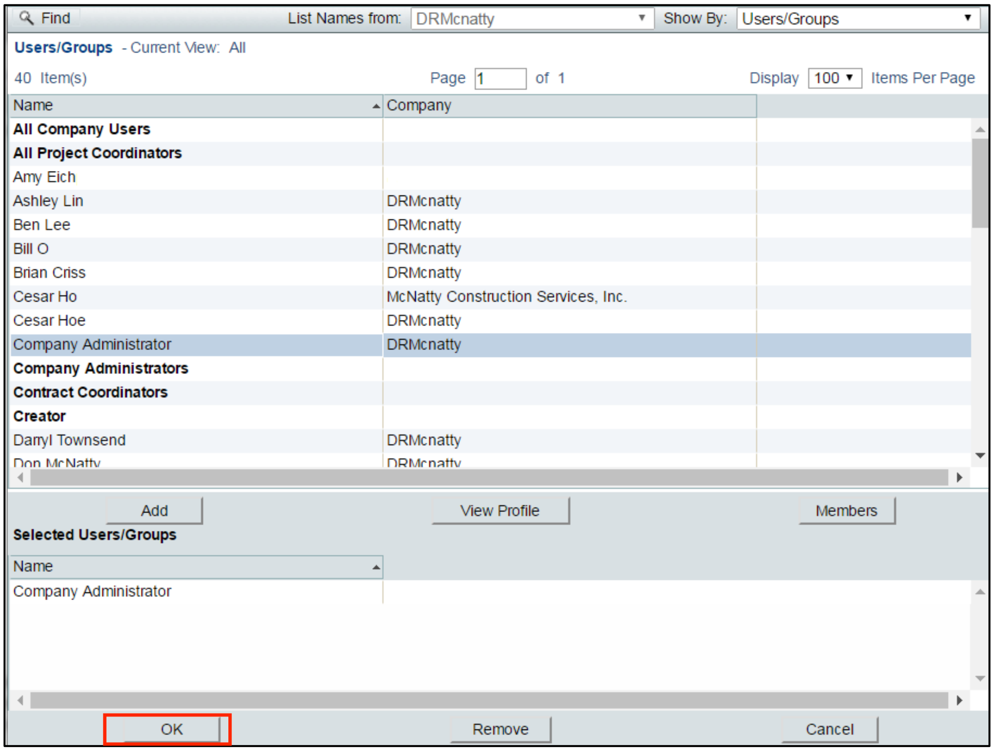
Click the ‘Add’ button.



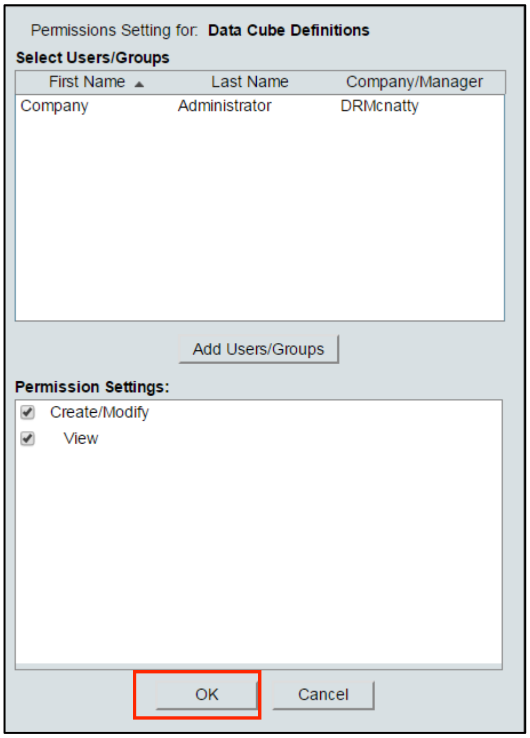
From this window the lower pane lists the two available permissions that can be assigned (‘Create/Modify’ and ‘View’). Click the ‘Add Users/Groups’ button.



Select the user (our example is Company Administrator) and click the ‘Add’ button. The user appears in the lower pane. Click the ‘OK’ button to return to the previous window.

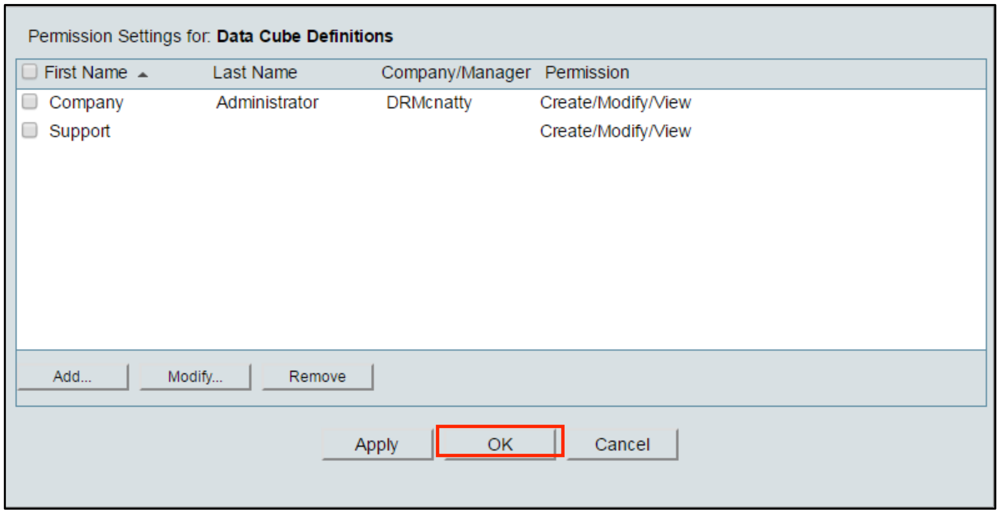


Check both permission settings in the lower pane to assign to the user. Click the‘OK’ button to return to the previous window.



The window lists the added user (Company Administrator) and its assigned permissions. Click the ‘OK’ button in this window to complete the settings.

The user can now create, modify and view Data Cubes.

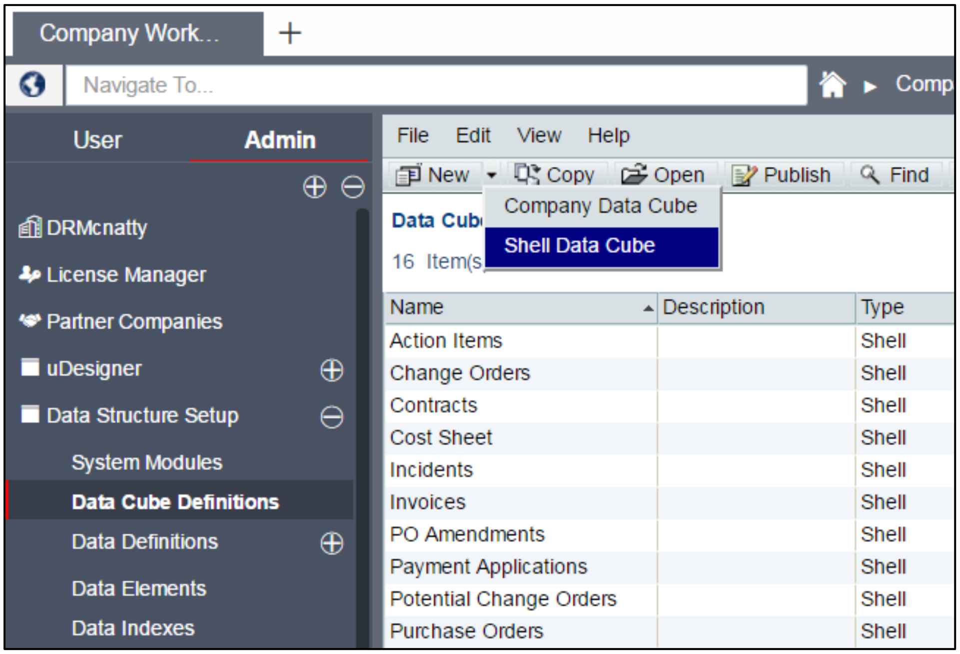


2. Create the Data Cube

Go to the Company Workspace > Admin Mode > Data Structure Setup > Data Cube Definitions.

Click 'New' from the Data Cubes log menu bar. A menu dropdown displays 'Company Data Cube' and 'Shell Data Cube'. In our example we selected Shell Data Cube.

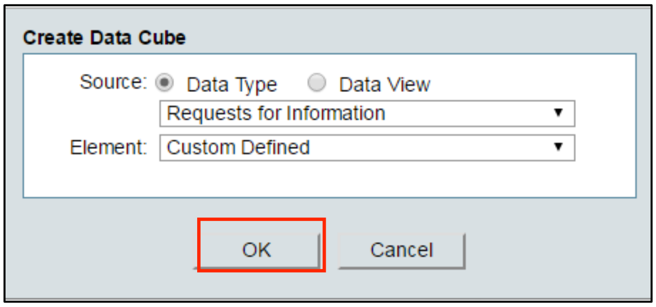
A 'Company Data Cube' is used for company-level custom dashboards which is a specific dashboard feature only supported for legacy clients that used it.



From this popup window there are two source options 'Data Type' and 'Data View'. 'Data Type' provides a list of all published business processes and manager modules. 'Data View' provides a list of published Data Views.

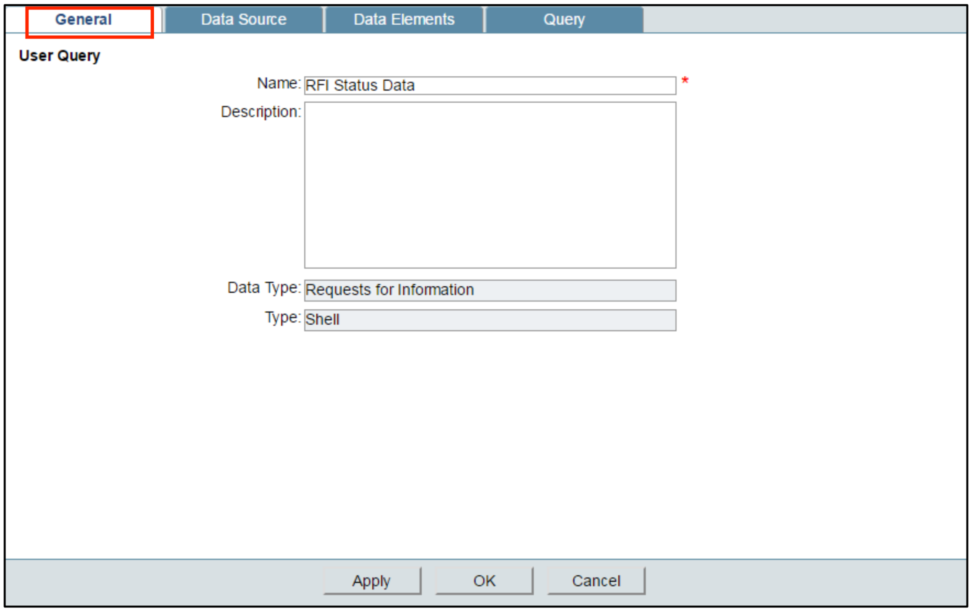
Select 'Data Type' and the 'Requests for Information' business process from the dropdown list. Custom Defined is automatically set for the Element field.

Click the ‘OK’ button.



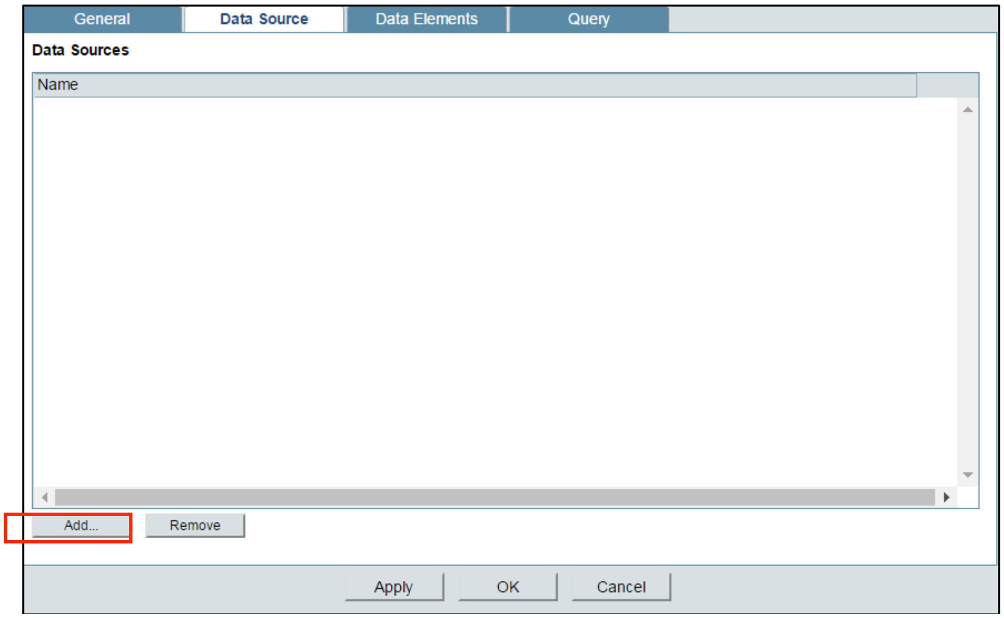
This new window is where the Data Cube is defined.

Enter an appropriate ‘Name’ in the General tab.



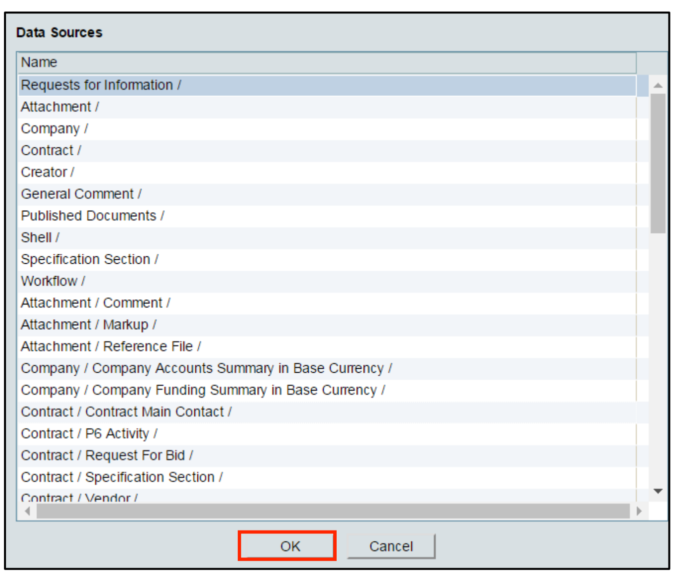
Next is to add which data sources will make up the data cube. These are set in the Data Source tab.

Click the ‘Add’ button.

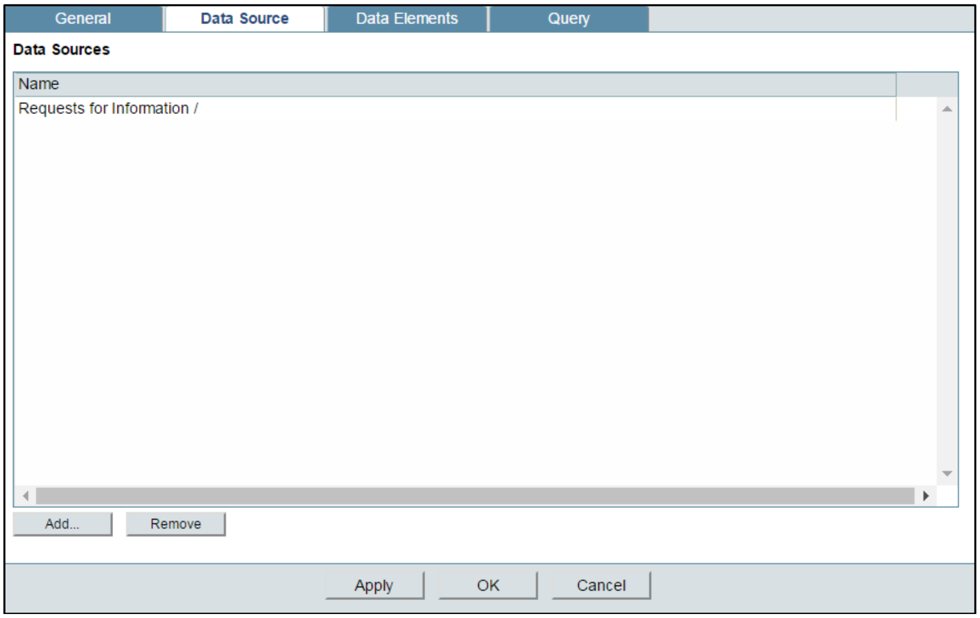


This window lists workflow, business processes, shells and any other related data sources. Multiple data sources allow the capture of a wide variety of information associated with the data type business process. The BP selected as the data type will still need to be selected from the list.

For this simple example only the ‘Request for Information’ data source is selected. Clicking the ‘OK’ button will return you to the previous window.

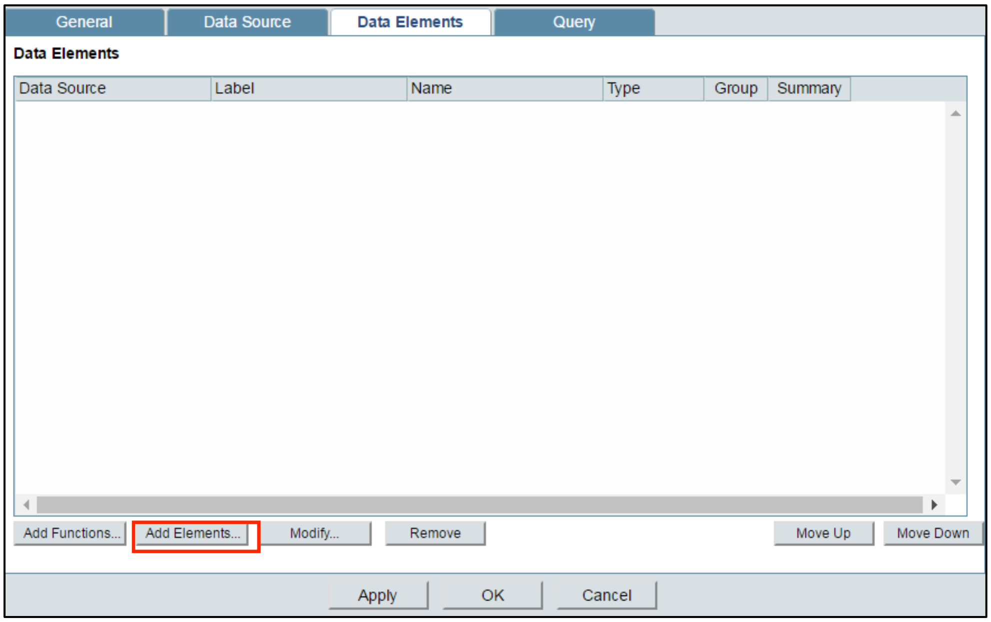


'Request for Information' is now displayed as the data source.

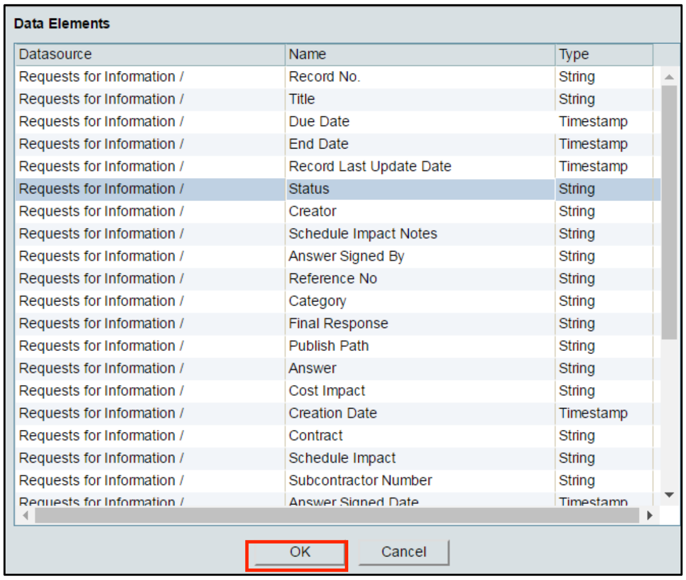


The Data Elements tab is where data elements can be selected. Additionally, calculated fields can also be added from the 'Add Functions..' button. This can create formulas using numeric data elements as well as data calculations.

For this example we are using only data elements. Click the 'Add Elements..' button.



The Data Elements list will appear. For what is required for the data cube we will select Project Number and Status and click the 'OK' button'.



Data Elements

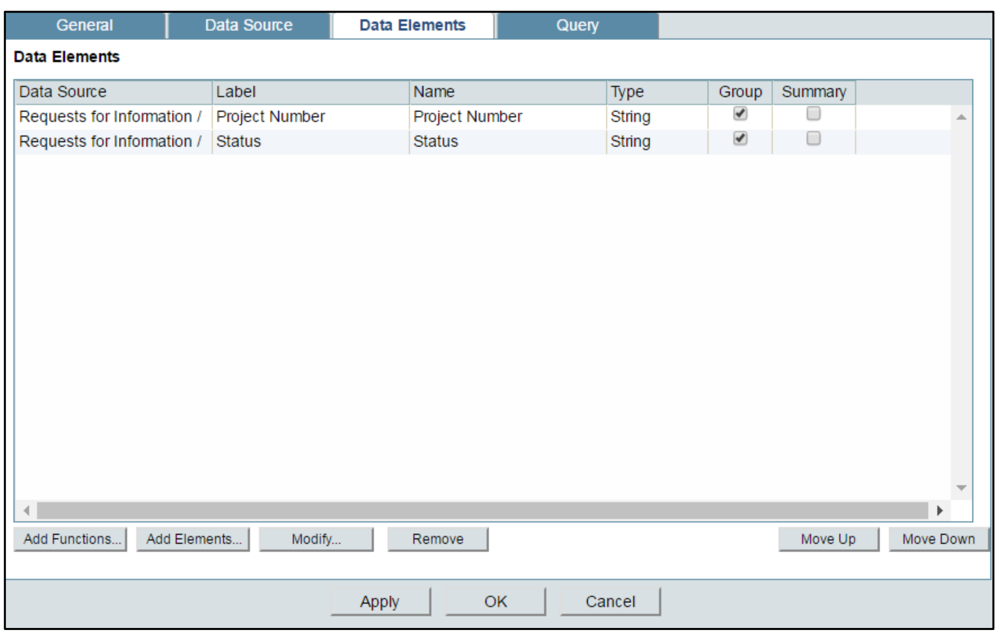
Datasource	Name	Type
Requests for Information /	Record No.	String
Requests for Information /	Title	String
Requests for Information /	Due Date	Timestamp
Requests for Information /	End Date	Timestamp
Requests for Information /	Record Last Update Date	Timestamp
Requests for Information /	Status	String
Requests for Information /	Creator	String
Requests for Information /	Schedule Impact Notes	String
Requests for Information /	Answer Signed By	String
Requests for Information /	Reference No	String
Requests for Information /	Category	String
Requests for Information /	Final Response	String
Requests for Information /	Publish Path	String
Requests for Information /	Answer	String
Requests for Information /	Cost Impact	String
Requests for Information /	Creation Date	Timestamp
Requests for Information /	Contract	String
Requests for Information /	Schedule Impact	String
Requests for Information /	Subcontractor Number	String
Requests for Information /	Answer Signed Date	Timestamp

OK Cancel

Data Elements tab now shows our selection. Two additional columns 'Group' and 'Summary' need to be set.

Project Number and Status will both have Group set which make these available for grouping in the dashboard.

Setting Summary is not required for our example. Summary in the shell dashboard includes basic aggregate functions such as summation, average, minimum or maximum.



General Data Source Data Elements Query

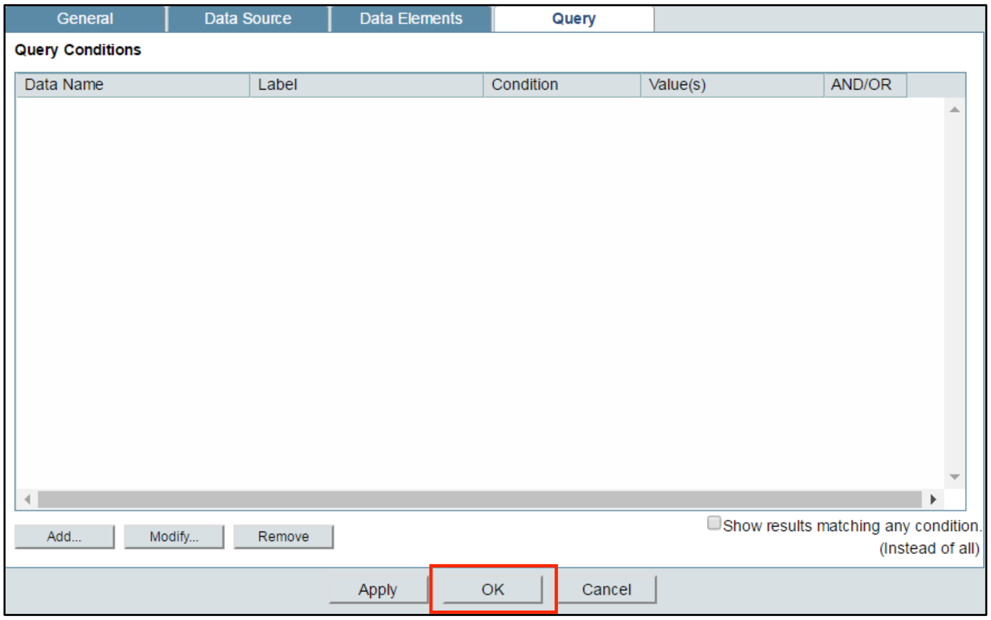
Data Elements

Data Source	Label	Name	Type	Group	Summary
Requests for Information /	Project Number	Project Number	String	✔	☐
Requests for Information /	Status	Status	String	✔	☐

Add Functions... Add Elements... Modify... Remove Move Up Move Down

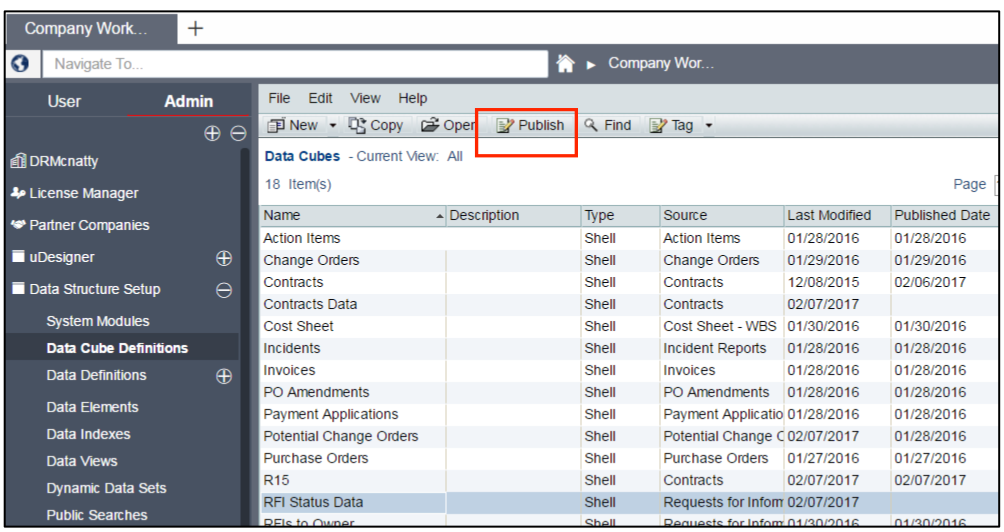
Apply OK Cancel

Query tab will be left empty since we do not require the user to enter a query parameter at runtime to filter the output.

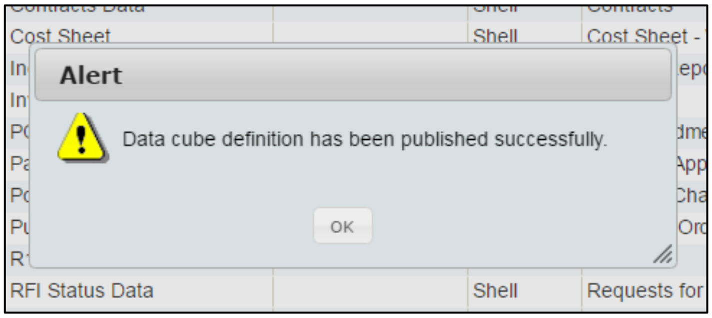


Click ‘OK’ button to return to the main Data Cubes log.

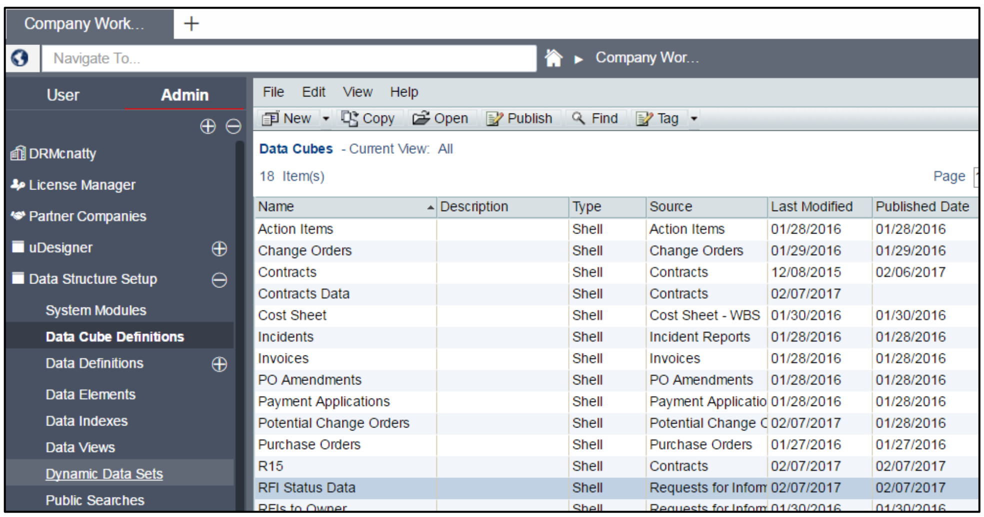
The data cube must be published before it can be made available in User Mode. Published Date is initially blank. Click the ‘Publish’ button from the menu bar on the data cube.



A message will appear saying the publishing was successful.



The published date for the data cube is now populated. It should be noted there is no 'Draft' or 'Published' modes so it is important to remember to publish the data cube after any change to its definition.



3. Data Cube Creation Permissions

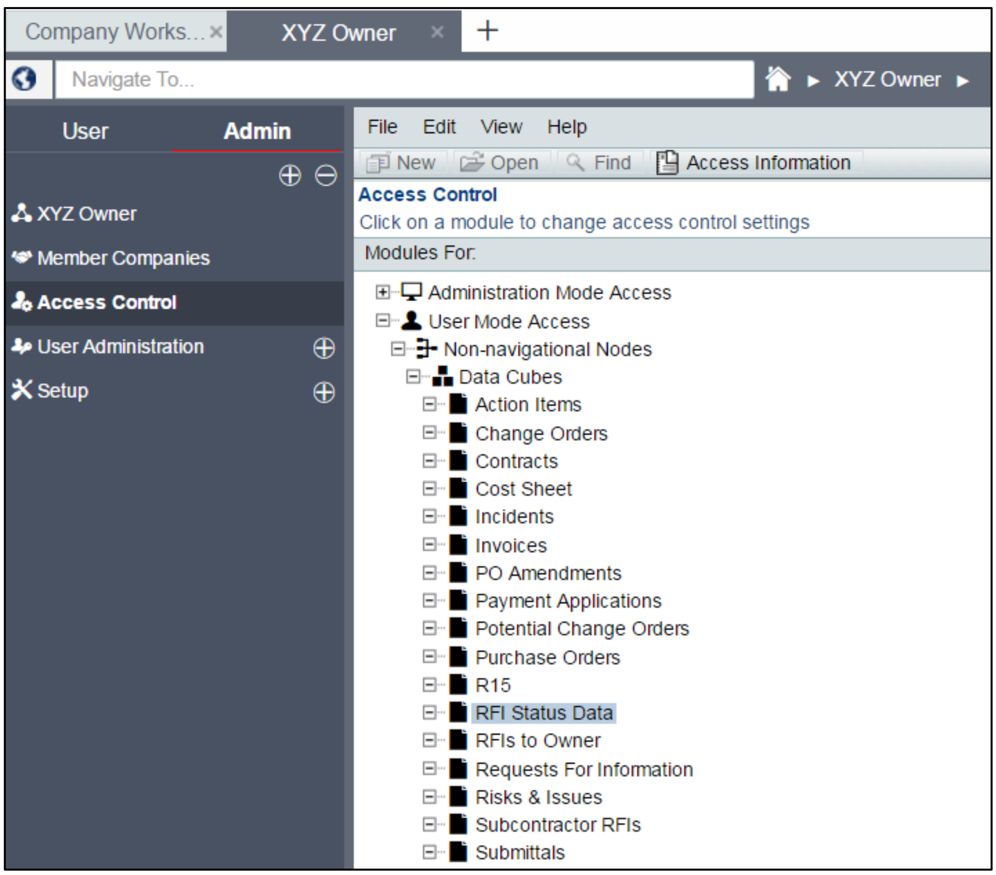
Now that the data cube is available in User Mode, we need to set permissions for its use in a shell.

We want our dashboard example to include data from all projects. To do this means the data cube needs to be accessible from the anchor shell (top of the shell hierarchy) where the dashboard will be created. (for more information on shell hierarchies please reference the previous Unifier Tech Tip on 'Creating Programs'.) Its configuration can be set to include all sub-shells data which is all the projects in the hierarchy.

Go to the anchor shell. In our instance it is XYZ Owner.

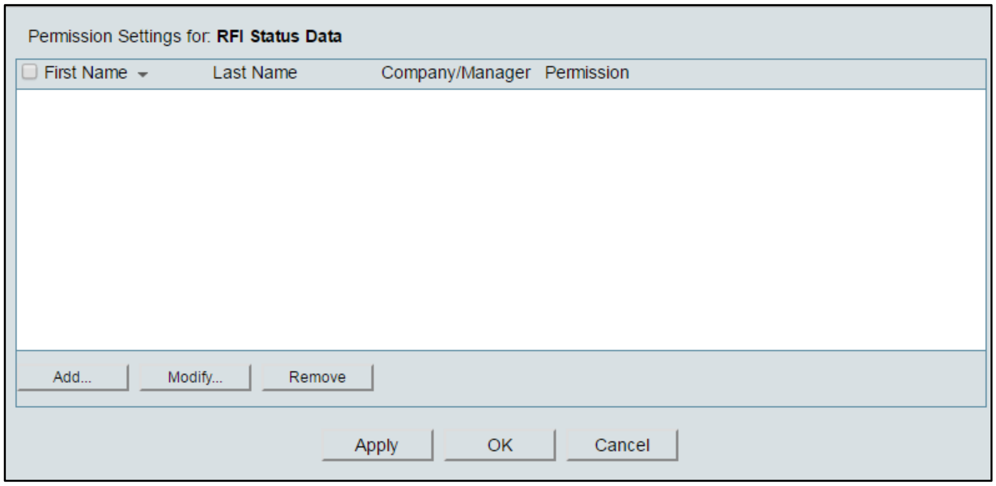
Go to *XYZ Owner* > Admin> Access Control > User Mode Access > Non-navigational Nodes > Data Cubes > *RFI Status Data.*

Note: If this data cube was not published it would not be seen in the list.

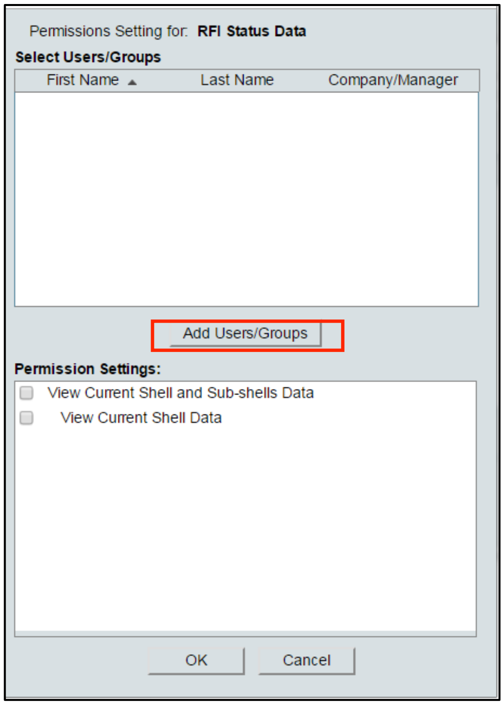


Selecting the newly available data cube from the list will open its Permission Settings window Adding users and assigning their permissions uses the same steps as when we assigned the Create/Modify and View permissions at the beginning of this Tech Tip.

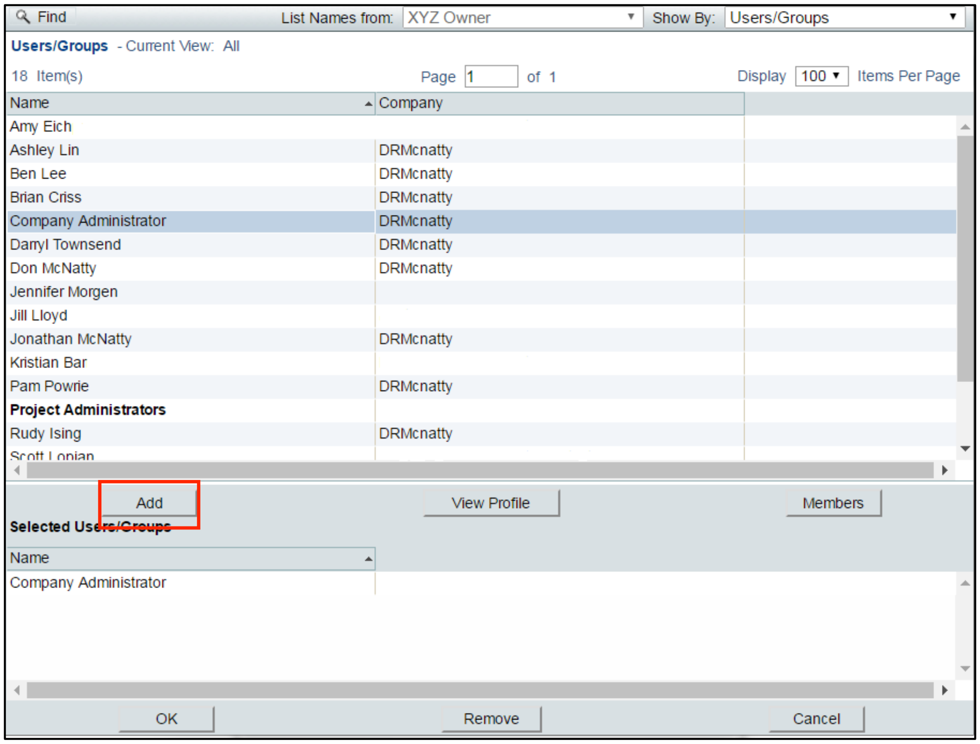
Click the 'Add' button.



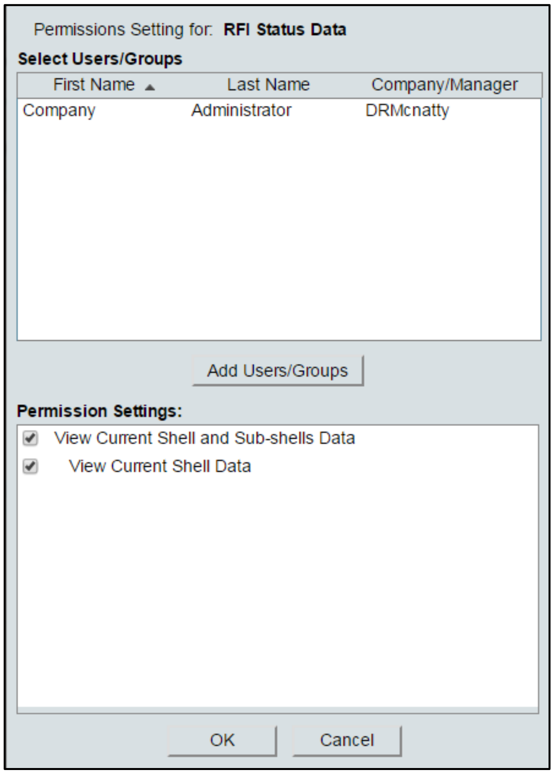
Click 'Add Users/Groups' button.



Select our user and click the ‘Add’ button. Company Administrator is used in this example and now appears in the lower pane. Click ‘OK’ to return to the previous window.

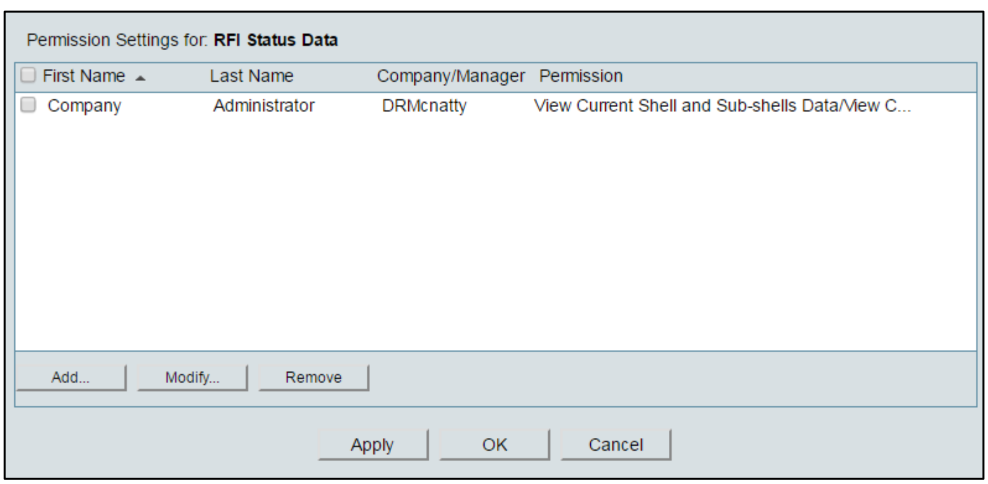


The permissions can now be set to this user. View Current Shell and Sub-shells Data is the permission required. View Current Shell Data is auto-selected since it is a child permission. Click the 'OK' button.



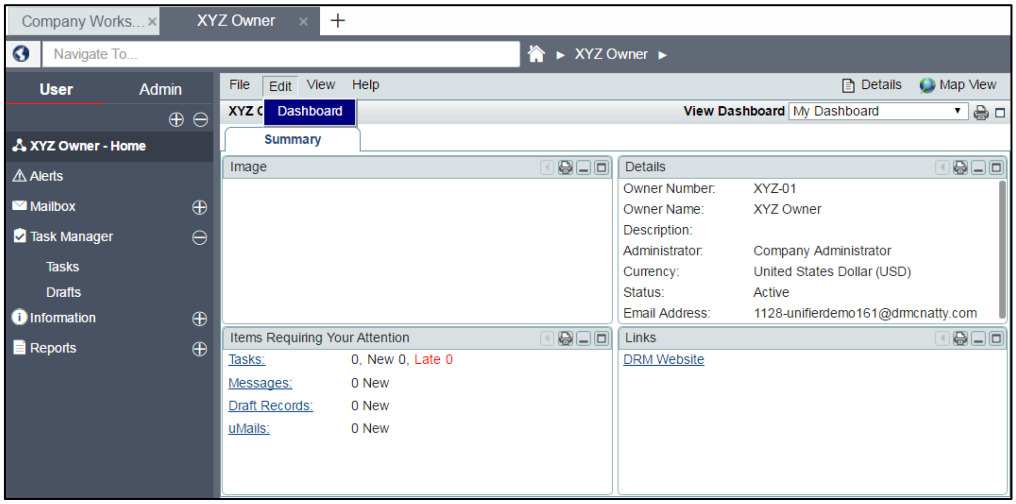
Click the 'OK' button.

The data cube is ready for use in the anchor shell.



4. Create the dashboard.

Our anchor shell landing page (in User mode) displays the default shell dashboard tab (Summary) with four dashboard sections (referred to as blocks). To create our dashboard (block) we select Dashboard from the Edit menu.

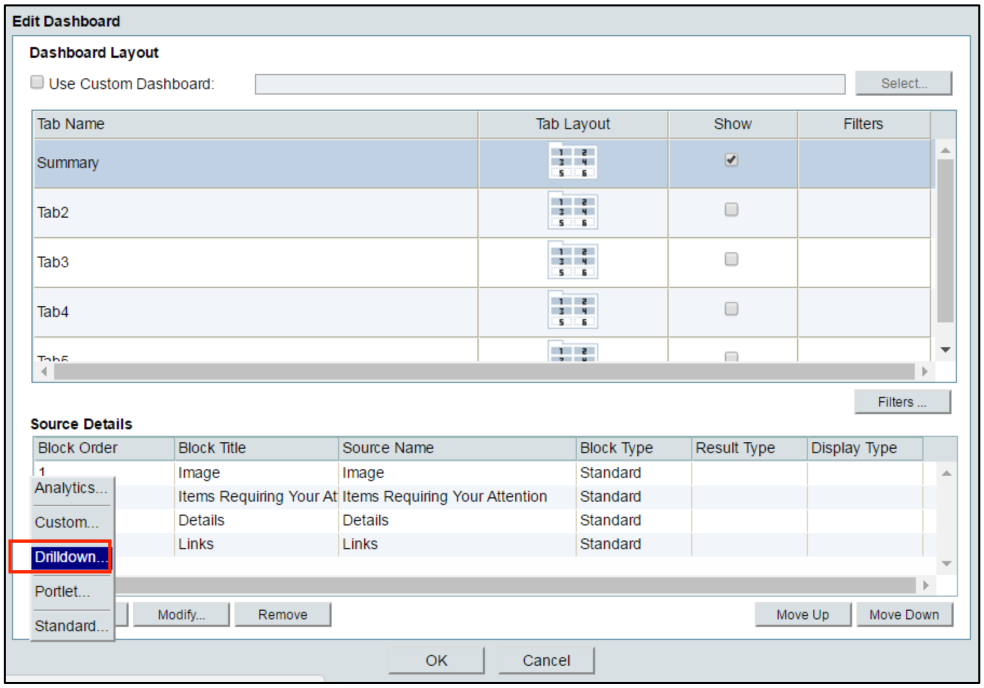


The following window is the Edit Dashboard. The top pane references the dashboard tabs set up. The lower pane references the specific dashboard blocks.

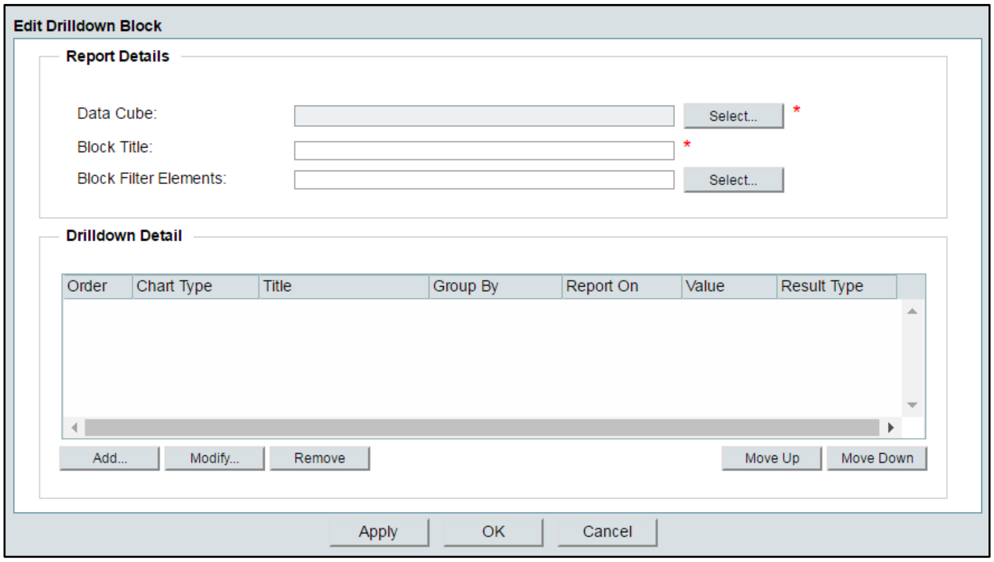
There are five dashboard block types when clicking the 'Add' button:

1. Analytics – data derived from Primavera Analytics platform
2. Custom – data with no drilldown capability
3. Drilldown - data with drilldown capability
4. Portlet – display a URL link
5. Standard – data based on predefined options

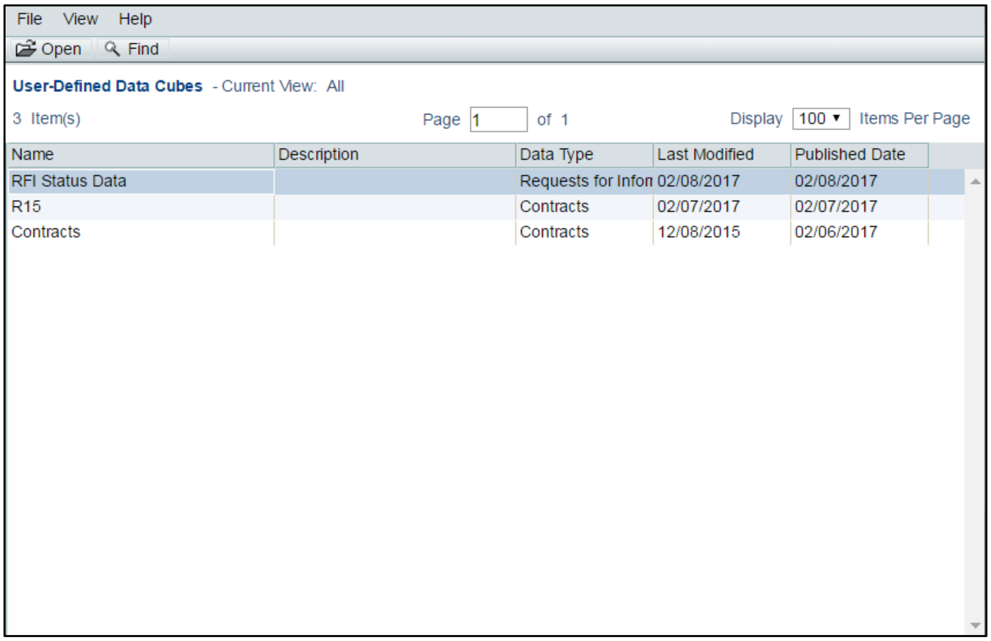
For our example "Drilldown" will be selected.



The Edit Drilldown Block window appears. Click the 'Select' button for the Data Cube field to include the one needed.

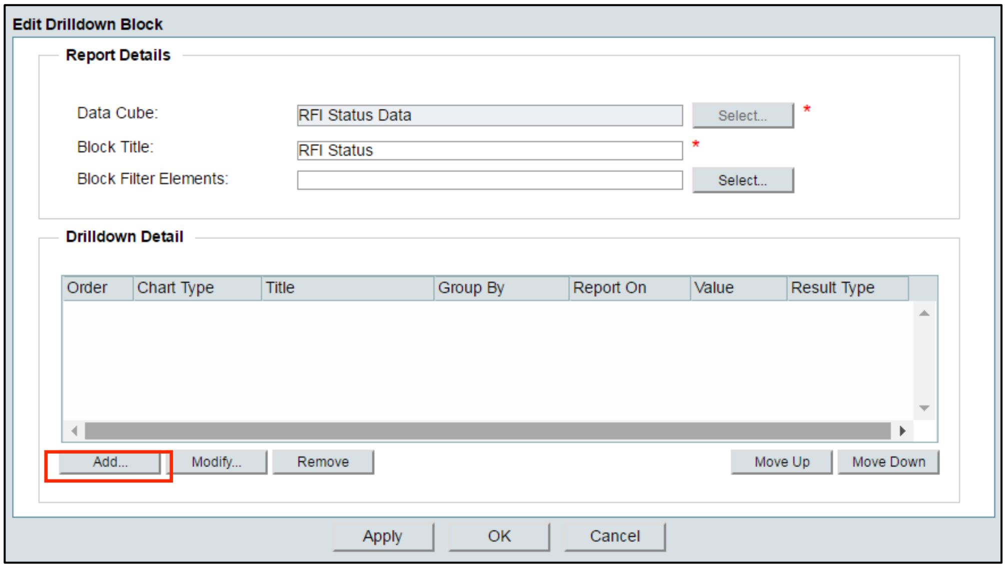


Select '*RFI Status Data*' from the popup list and click the'Open' button.



The data cube is auto-populated. The Block Title could be changed if required.

To add the dashboard display click 'Add..' button from the Drilldown Detail section.

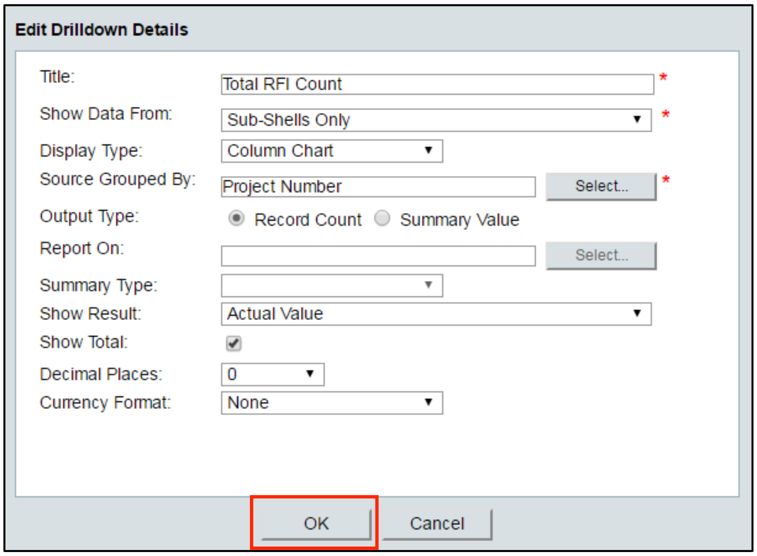


The following will be added to this window:

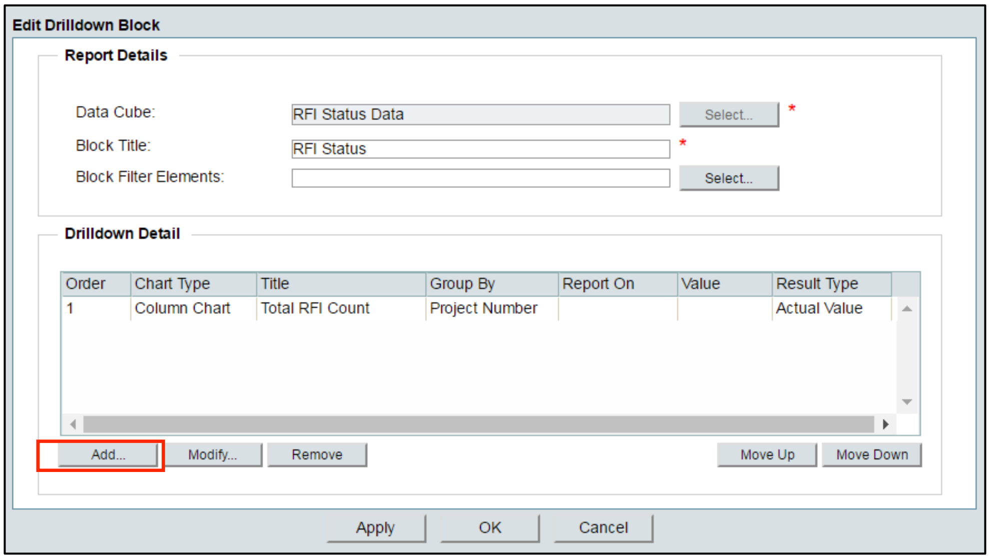
1. Title: As appropriate.
2. Show Data From: Select 'Sub-shells Only' so we can include all projects data.
3. Display Type: Select Column Chart for this example.
4. Source Grouped By: Based on our Grouping selections from the data cube we will select Project Number.
5. Output Type: Select 'Record Count'.
6. Show Total: Check this box.
7. Decimal Places: Change to 0.
8. Leave other fields as is.

These settings will perform a count of all 'Request for Information' records per project and display as a column chart.

Click 'OK' button to return to previous screen.



The lower level (drilldown) detail needs to be added. Click the ‘Add...’ button again.

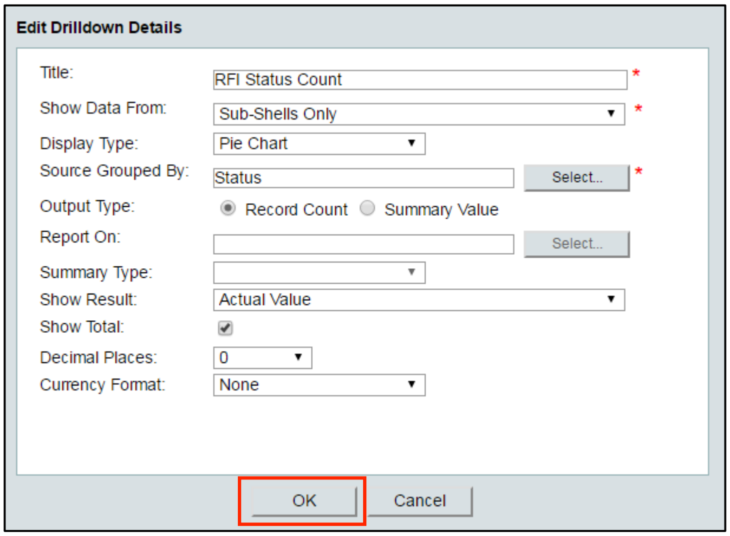


The following will be added:

1. Title: As appropriate.
2. Show Data From: Select ‘Sub-shells Only’ again.
3. Display Type: Select Pie Chart this time.
4. Source Grouped By: Based on our Grouping selections from the data cube we will select Status.
5. Output Type: Select ‘Record Count’.
6. Show Total: Check this box.
7. Decimal Places: Change to 0.
8. Leave other fields as is.

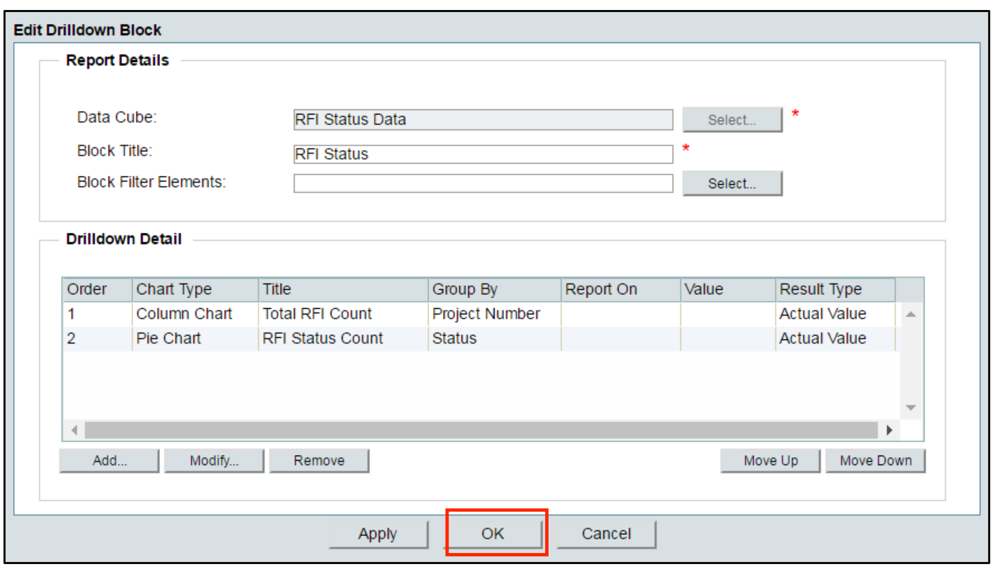
These settings will perform a record count of each status (per project) displayed as a pie chart.

Click the ‘OK’ button to return to previous screen.

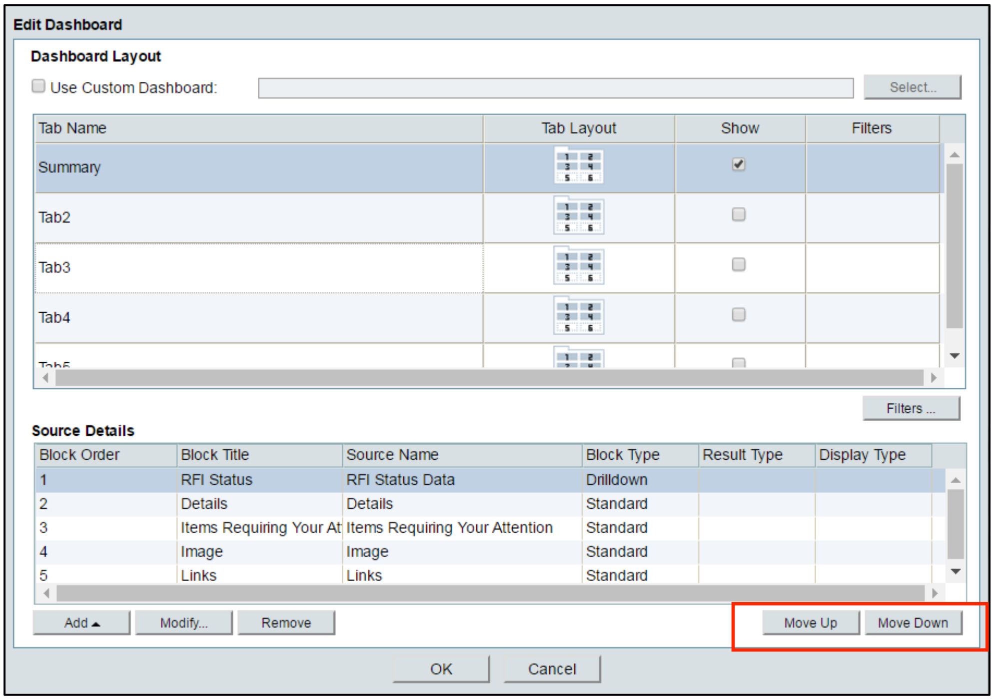


The drilldown block is now complete. It is worth mentioning that additional drilldown detail can be added so long as graphical chart types are used. Once a tabular chart is used you cannot add more drilldown details.

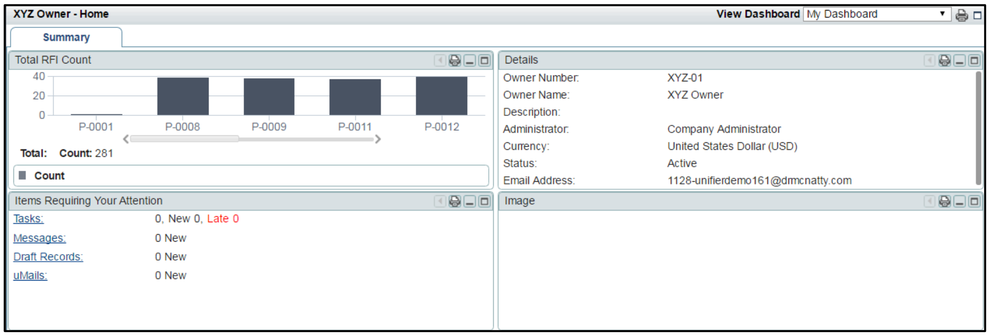
Click the ‘OK’ to return to previous window.



Select the newly created dashboard block from the Source Details lower pane and continue to click the 'Move Up' button until it reaches the top. The Image block can be moved down using the 'Move Down' button.

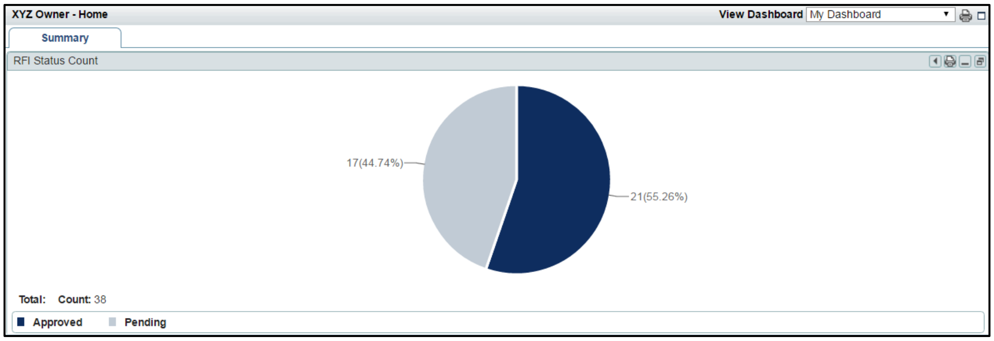


Our dashboard can be seen at the top of the Summary tab. Click the 'Maximize' icon in the top right corner of the block to maximize the dashboard.



The dashboard is a column chart displaying 'Request for Information' record counts per project. Hover over each column (project) to show the exact record count. Double-click on a column to drill down to the next level of detail.

The next dashboard is the pie chart which breaks down the project's record count by the statuses "Approved" and "Pending".



Dashboards are a great way to track KPIs for project performance. Unifier provides users with the ability to quickly set up dashboards and data cubes without the need for any coding.